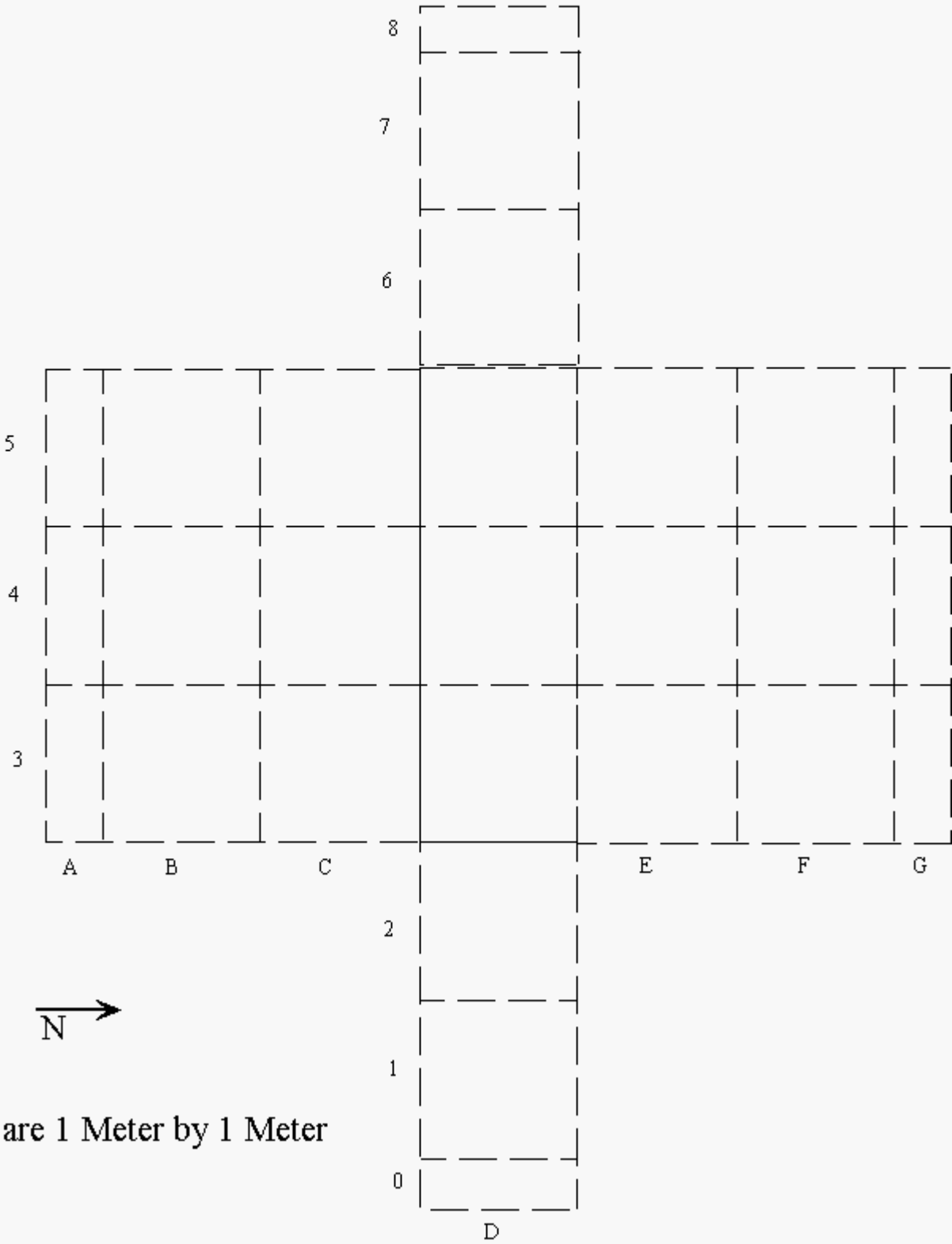
Appendix N
Room R1 Final Status Survey Data

Room R-1 Grid Map



Grids are 1 Meter by 1 Meter

RADIOLOGICAL SURVEY
SIGN TEST FORM

Survey Location:	Walter Reed AIR		Instrument:	Model 2224		
Survey Unit:	Room R-1		SN:	143048	$DCGL_w$ dpm/100cm^2:	1,500
Survey Unit Classification:	Class 1		Detector:	Model 43-68		
Survey Unit Size in Meters^2:	30		SN:	147960		
Date:	09/07/2000		Det Size in cm^2:	125		
Time:	0800		Cal Due Date:	06/03/2001		
Surveyor:	Dave Davis, Charles Russo		Bkg Time:	1	Minutes	
Reviewed by:	Dan Spicuzza		Sample Count Time:	1	Minutes	
Type of Survey:	Beta-Gamma Scan and Direct Measurement Survey of Walls & Floor		Surface Efficiency:	0.8		
			Surveyor Efficeincy Factor:	0.5		
			Daily Bkg α:	5	CPM	
			Daily Bkg $\beta\gamma$:	150	CPM	
			Efficiency α:	0.09		
			Efficiency $\beta\gamma$:	0.12		
			$L_{C\,\alpha}$:	5.2	CPM	
			$L_{D\,\alpha}$:	13.4	CPM	
			Direct Measurement MDC α:	148.9	dpm/100cm^2	
			$S_{i\alpha}$:	1.89		
			$B_{i\alpha}$:	0.33		
			Scan MDCR α:	28.4	CPM	
			Scan MDC α:	446.4	dpm/100cm^2	
			$L_{C\,\beta\gamma}$:	28.5	CPM	
			$L_{D\,\beta\gamma}$:	60.0	CPM	
			Direct Measurement MDC $\beta\gamma$:	499.6	dpm/100cm^2	
			$S_{i\beta\gamma}$:	10.37		
			$B_{i\beta\gamma}$:	10.00		
			Scan MDCR $\beta\gamma$:	156	CPM	
			Scan MDC $\beta\gamma$:	1833.6	dpm/100cm^2	

Survey Data Location	Scan Survey Results CPM	Scan Survey Results DPM/100cm^2	Direct Measurement Reading CPM	Direct Measurement Reading DPM/100cm^2	$DCGL_w$ - Data DPM/100cm^2	Sign
D-0	220	466.67	206	373.33	1,127	1
D-1	200	333.33	204	360.00	1,140	1
D-2	220	466.67	205	366.67	1,133	1
A-3	200	333.33	203	353.33	1,147	1
B-3	180	200.00	188	253.33	1,247	1
C-3	180	200.00	183	220.00	1,280	1
D-3	220	466.67	205	366.67	1,133	1
E-3	200	333.33	202	346.67	1,153	1
F-3	200	333.33	204	360.00	1,140	1
G-3	260	733.33	256	706.67	793	1
A-4	200	333.33	207	380.00	1,120	1
B-4	200	333.33	217	446.67	1,053	1
C-4	200	333.33	224	493.33	1,007	1
D-4	240	600.00	203	353.33	1,147	1
E-4	200	333.33	212	413.33	1,087	1
F-4	200	333.33	206	373.33	1,127	1
G-4	180	200.00	192	280.00	1,220	1
A-5	220	466.67	211	406.67	1,093	1
B-5	220	466.67	228	520.00	980	1
C-5	280	866.67	288	920.00	580	1
D-5	240	600.00	235	566.67	933	1
E-5	200	333.33	201	340.00	1,160	1
F-5	220	466.67	218	453.33	1,047	1
G-5	200	333.33	208	386.67	1,113	1
D-6	200	333.33	198	320.00	1,180	1
D-7	200	333.33	188	253.33	1,247	1
D-8	200	333.33	208	386.67	1,113	1
D-3 Ceiling	200	333.33	232	546.67	953	1
D-4 Ceiling	200	333.33	198	320.00	1,180	1
D-5 Ceiling	200	333.33	290	933.33	567	1

Remarks: Micro/hr readings at 1 meter from surfaces	Critical Value:	10	Number of positive differences S+ =	30
of all grids is 5 µR/hr.	Standard Deviation =	168.79	Number of Required Date Points:	14
Model 19 S/N:133178	Mean Value =	426.67	Sign P:	1.0
Grids are 1 m by 1 m	Median =	373.33	LBGR:	750
			Δ/σ:	4.43

RADIOLOGICAL SURVEY
SIGN TEST FORM

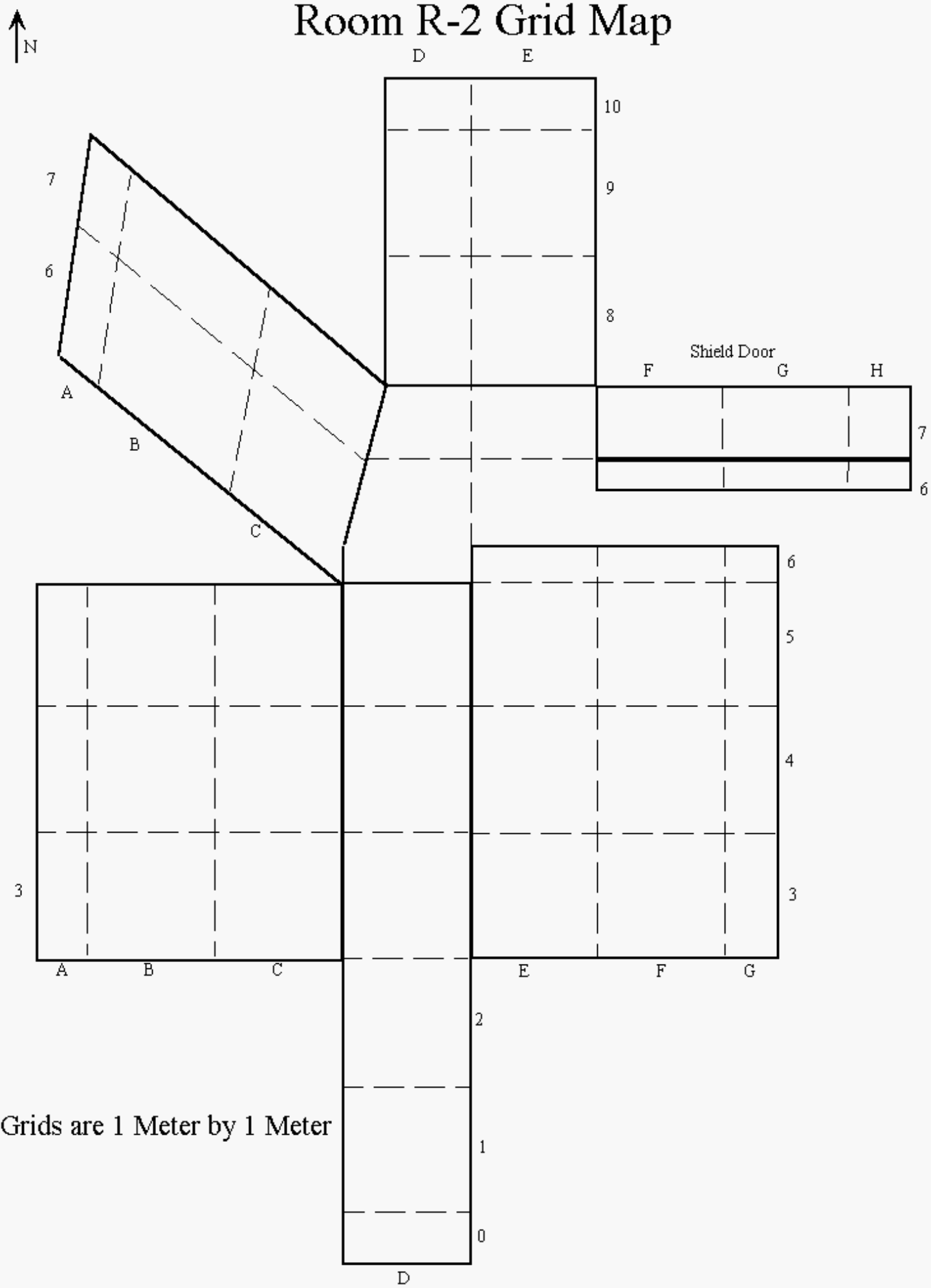
Survey Location:	Walter Reed AIR		Instrument:	Model 2224		
Survey Unit:	Room R-1		SN:	143048	$DCGL_w$ dpm/100cm^2:	100
Survey Unit Classification:	Class 1		Detector:	Model 43-68		
Survey Unit Size in Meters^2:	30		SN:	147960		
Date:	09/07/2000		Det Size in cm^2:	125		
Time:	1300		Cal Due Date:	06/03/2001		
Surveyor:	Dave Davis, Charles Russo		Bkg Time:	1	Minutes	
Reviewed by:	Dan Spicuzza		Sample Count Time:	1	Minutes	
Type of Survey:	Alpha Scan and Direct Measurement Survey of Walls & Floor		Surface Efficiency:	0.6		
			Surveyor Efficeincy Factor:	0.5		
			Daily Bkg α:	5	CPM	
			Daily Bkg $\beta\gamma$:	150	CPM	
			Efficiency α:	0.09		
			Efficiency $\beta\gamma$:	0.12		
			$L_{C\,\alpha}$:	5.2	CPM	
			$L_{D\,\alpha}$:	13.4	CPM	
			Direct Measurement MDC α:	198.5	dpm/100cm^2	
			$S_{i\alpha}$:	1.89		
			$B_{i\alpha}$:	0.33		
			Scan MDCR α:	28.4	CPM	
			Scan MDC α:	595.1	dpm/100cm^2	
			$L_{C\,\beta\gamma}$:	28.5	CPM	
			$L_{D\,\beta\gamma}$:	60.0	CPM	
			Direct Measurement MDC $\beta\gamma$:	666.1	dpm/100cm^2	
			$S_{i\beta\gamma}$:	10.37		
			$B_{i\beta\gamma}$:	10.00		
			Scan MDCR $\beta\gamma$:	156	CPM	
			Scan MDC $\beta\gamma$:	2444.8	dpm/100cm^2	

Survey Data Location	Scan Survey Results CPM	Scan Survey Results DPM/100cm^2	Direct Measurement Reading CPM	Direct Measurement Reading DPM/100cm^2	$DCGL_w$ - Data DPM/100cm^2	Sign
D-0	10	44.44	12	62.22	38	1
D-1	5	0.00	6	8.89	91	1
D-2	5	0.00	8	26.67	73	1
A-3	5	0.00	6	8.89	91	1
B-3	5	0.00	7	17.78	82	1
C-3	10	44.44	11	53.33	47	1
D-3	5	0.00	7	17.78	82	1
E-3	5	0.00	6	8.89	91	1
F-3	5	0.00	4	-8.89	109	1
G-3	10	44.44	8	26.67	73	1
A-4	5	0.00	6	8.89	91	1
B-4	5	0.00	8	26.67	73	1
C-4	5	0.00	8	26.67	73	1
D-4	10	44.44	12	62.22	38	1
E-4	5	0.00	5	0.00	100	1
F-4	5	0.00	6	8.89	91	1
G-4	5	0.00	8	26.67	73	1
A-5	5	0.00	4	-8.89	109	1
B-5	5	0.00	6	8.89	91	1
C-5	10	44.44	9	35.56	64	1
D-5	10	44.44	13	71.11	29	1
E-5	5	0.00	6	8.89	91	1
F-5	5	0.00	7	17.78	82	1
G-5	5	0.00	5	0.00	100	1
D-6	5	0.00	8	26.67	73	1
D-7	5	0.00	7	17.78	82	1
D-8	5	0.00	6	8.89	91	1
D-3 Ceiling	5	0.00	4	-8.89	109	1
D-4 Ceiling	5	0.00	5	0.00	100	1
D-5 Ceiling	5	0.00	6	8.89	91	1

Remarks: Micro/hr readings at 1 meter from surfaces	Critical Value:	11	Number of positive differences S+ =		30
of all grids is 5 µR/hr.	Standard Deviation =	20.84	Number of Required Date Points:		15
Model 19 S/N:133178	Mean Value =	18.96		Sign P:	0.993790
Grids are 1 m by 1 m	Median =	13.33		LBGR:	50
				Δ/σ:	2.39

Appendix 0
Room R2 Final Status Survey Data

Room R-2 Grid Map



Grids are 1 Meter by 1 Meter

RADIOLOGICAL SURVEY
SIGN TEST FORM

Survey Location:	Walter Reed AIR		Instrument:	Model 2224		
Survey Unit:	Room R-2		SN:	143048	$DCGL_w$ dpm/100cm^2:	1,500
Survey Unit Classification:	Class 1		Detector:	Model 43-68		
Survey Unit Size in Meters^2:	50		SN:	147960		
Date:	09/09/2000		Det Size in cm^2:	125		
Time:	1000		Cal Due Date:	06/03/2001		
Surveyor:	Dave Davis, Charles Russo		Bkg Time:	1	Minutes	
Reviewed by:	Dan Spicuzza		Sample Count Time:	1	Minutes	
Type of Survey:	Beta-Gamma Scan and Direct Measurement Survey of Walls & Floor		Surface Efficiency:	0.8		
			Surveyor Efficeincy Factor:	0.5		
			Daily Bkg α:	5	CPM	
			Daily Bkg $\beta\gamma$:	150	CPM	
			Efficiency α:	0.09		
			Efficiency $\beta\gamma$:	0.12		
			$L_{C\,\alpha}$:	5.2	CPM	
			$L_{D\,\alpha}$:	13.4	CPM	
			Direct Measurement MDC α:	148.9	dpm/100cm^2	
			$S_{i\alpha}$:	1.89		
			$B_{i\alpha}$:	0.33		
			Scan MDCR α:	28.4	CPM	
			Scan MDC α:	446.4	dpm/100cm^2	
			$L_{C\,\beta\gamma}$:	28.5	CPM	
			$L_{D\,\beta\gamma}$:	60.0	CPM	
			Direct Measurement MDC $\beta\gamma$:	499.6	dpm/100cm^2	
			$S_{i\beta\gamma}$:	10.37		
			$B_{i\beta\gamma}$:	10.00		
			Scan MDCR $\beta\gamma$:	156	CPM	
			Scan MDC $\beta\gamma$:	1833.6	dpm/100cm^2	

Survey Data Location	Scan Survey Results CPM	Scan Survey Results DPM/100cm^2	Direct Measurement Reading CPM	Direct Measurement Reading DPM/100cm^2	$DCGL_w$ - Data DPM/100cm^2	Sign
D-0	200	333.33	201	340.00	1,160	1
D-1	180	200.00	186	240.00	1,260	1
D-2	200	333.33	202	346.67	1,153	1
A-3	200	333.33	206	373.33	1,127	1
B-3	180	200.00	186	240.00	1,260	1
C-3	180	200.00	188	253.33	1,247	1
D-3	260	733.33	265	766.67	733	1
E-3	180	200.00	185	233.33	1,267	1
F-3	180	200.00	188	253.33	1,247	1
G-3	220	466.67	227	513.33	987	1
A-4	180	200.00	190	266.67	1,233	1
B-4	180	200.00	184	226.67	1,273	1
C-4	200	333.33	209	393.33	1,107	1
D-4	280	866.67	287	913.33	587	1
E-4	180	200.00	188	253.33	1,247	1
F-4	200	333.33	204	360.00	1,140	1
G-4	180	200.00	185	233.33	1,267	1
A-5	180	200.00	179	193.33	1,307	1
B-5	180	200.00	183	220.00	1,280	1
C-5	180	200.00	188	253.33	1,247	1
D-5	260	733.33	267	780.00	720	1
E-5	200	333.33	208	386.67	1,113	1
F-5	180	200.00	191	273.33	1,227	1
G-5	240	600.00	244	626.67	873	1
B-6	200	333.33	207	380.00	1,120	1
C-6	200	333.33	211	406.67	1,093	1
D-6	220	466.67	228	520.00	980	1
E-6 Floor	280	866.67	272	813.33	687	1
F-6 Door	240	600.00	279	860.00	640	1
G-6 Door	260	733.33	270	800.00	700	1
H-6 Door	260	733.33	268	786.67	713	1
A-7	200	333.33	208	386.67	1,113	1
B-7	220	466.67	229	526.67	973	1
C-7	200	333.33	208	386.67	1,113	1
D-7	280	866.67	299	993.33	507	1
E-7	260	733.33	276	840.00	660	1
F-7 Door	240	600.00	256	706.67	793	1
G-7 Door	260	733.33	266	773.33	727	1
H-7 Door	240	600.00	235	566.67	933	1
D-8	200	333.33	203	353.33	1,147	1
E-8	200	333.33	211	406.67	1,093	1
D-9	240	600.00	234	560.00	940	1
E-9	200	333.33	195	300.00	1,200	1
D-10	200	333.33	206	373.33	1,127	1
E-10	180	200.00	196	306.67	1,193	1
D-3 Ceiling	220	466.67	226	506.67	993	1
D-4 Ceiling	240	600.00	249	660.00	840	1
D-5 Ceiling	200	333.33	206	373.33	1,127	1
D-6 Ceiling	280	866.67	288	920.00	580	1
D-7 Ceiling	200	333.33	207	380.00	1,120	1
E-7 Ceiling	220	466.67	222	480.00	1,020	1

Remarks: Micro/hr readings at 1 meter from surfaces	Critical Value:	10	Number of positive differences S+ =		51
of all grids is 5 µR/hr.	Standard Deviation =	227.26	Number of Required Date Points:		14
Model 19 S/N:133178	Mean Value =	476.60	Sign P:		1.0
Grids are 1 m by 1 m	Median =	386.67	LBGR:		750
			Δ/σ:		3.3

RADIOLOGICAL SURVEY
SIGN TEST FORM

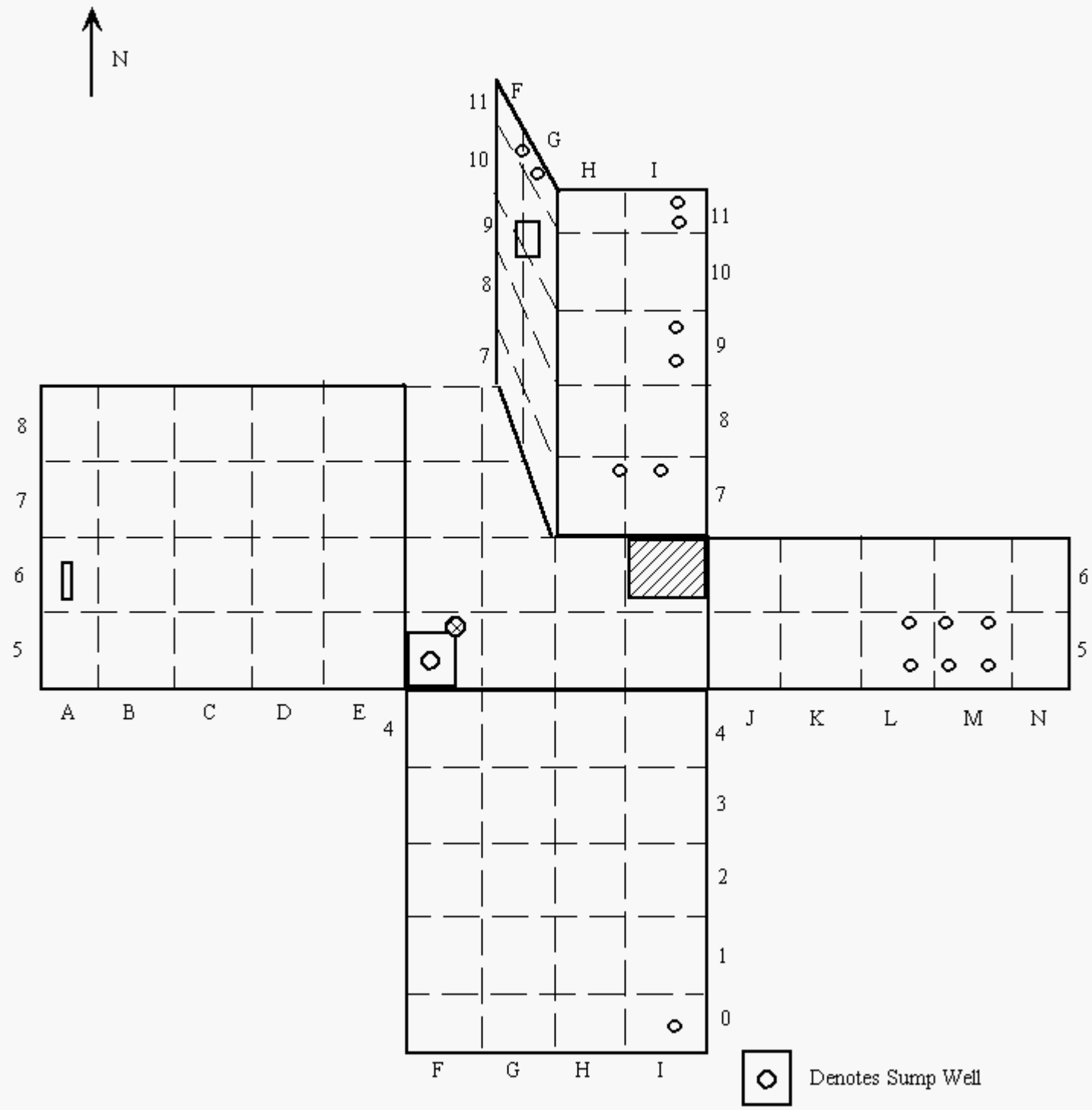
Survey Location:	Walter Reed AIR		Instrument:	Model 2224		
Survey Unit:	Room R-2		SN:	143048	$DCGL_w$ dpm/100cm^2:	100
Survey Unit Classification:	Class 1		Detector:	Model 43-68		
Survey Unit Size in Meters^2:	50		SN:	147960		
Date:	09/09/2000		Det Size in cm^2:	125		
Time:	1400		Cal Due Date:	06/03/2001		
Surveyor:	Dave Davis, Charles Russo		Bkg Time:	1	Minutes	
Reviewed by:	Dan Spicuzza		Sample Count Time:	1	Minutes	
Type of Survey:	Alpha Scan and Direct Measurement Survey of Floor		Surface Efficiency:	0.6		
			Surveyor Efficeincy Factor:	0.5		
			Daily Bkg α:	1	CPM	
			Daily Bkg $\beta\gamma$:	150	CPM	
			Efficiency α:	0.09		
			Efficiency $\beta\gamma$:	0.12		
			$L_{C\,\alpha}$:	2.3	CPM	
			$L_{D\,\alpha}$:	7.7	CPM	
			Direct Measurement MDC α:	113.3	dpm/100cm^2	
			$S_{i\alpha}$:	0.85		
			$B_{i\alpha}$:	0.07		
			Scan MDCR α:	12.7	CPM	
			Scan MDC α:	266.2	dpm/100cm^2	
			$L_{C\,\beta\gamma}$:	28.5	CPM	
			$L_{D\,\beta\gamma}$:	60.0	CPM	
			Direct Measurement MDC $\beta\gamma$:	666.1	dpm/100cm^2	
			$S_{i\beta\gamma}$:	10.37		
			$B_{i\beta\gamma}$:	10.00		
			Scan MDCR $\beta\gamma$:	156	CPM	
			Scan MDC $\beta\gamma$:	2444.8	dpm/100cm^2	

Survey Data Location	**Scan Survey Results CPM**	**Scan Survey Results DPM/100cm^2**	**Direct Measurement Reading CPM**	**Direct Measurement Reading DPM/100cm^2**	**$DCGL_w$ - Data DPM/100cm^2**	**Sign**
D-3	5	35.56	5	35.56	64	1
D-4	5	35.56	4	26.67	73	1
D-5	5	35.56	6	44.44	56	1
D-6	5	35.56	4	26.67	73	1
D-7	5	35.56	3	17.78	82	1
E-7	5	35.56	4	26.67	73	1

Remarks: Micro/hr readings at 1 meter from surfaces	Critical Value:	10	Number of positive differences S+ =		6
of all grids is 5 µR/hr.	Standard Deviation =	9.18	Number of Required Date Points:		14
Model 19 S/N:133178	Mean Value =	29.63		Sign P:	1.0
Grids are 1 m by 1 m	Median =	26.67		LBGR:	750
				Δ/σ:	5.44

Appendix P
Room R3 Final Status Survey Data

Room R-3 Grid Map



Grids are .5 Meter by .5 Meter

RADIOLOGICAL SURVEY
SIGN TEST FORM

Survey Location:	Walter Reed AIR		Instrument:	Model 2224		
Survey Unit:	Room R3		SN:	143048	$DCGL_w$ dpm/100cm^2:	1,500
Survey Unit Classification:	Class 1		Detector:	Model 43-68		
Survey Unit Size in Meters^2:	19		SN:	147960		
Date:	09/11/2001		Det Size in cm^2:	125		
Time:	0800		Cal Due Date:	06/03/2001		
Surveyor:	Dave Davis, Charles Russo		Bkg Time:	1	Minutes	
Reviewed by:	Dan Spicuzza		Sample Count Time:	1	Minutes	
Type of Survey:	Beta-Gamma Scan and Direct Measurement Survey of Walls & Floor		Surface Efficiency:	0.8		
			Surveyor Efficeincy Factor:	0.5		
			Daily Bkg α:	5	CPM	
			Daily Bkg $\beta\gamma$:	150	CPM	
			Efficiency α:	0.09		
			Efficiency $\beta\gamma$:	0.12		
			$L_{C\,\alpha}$:	5.2	CPM	
			$L_{D\,\alpha}$:	13.4	CPM	
			Direct Measurement MDC α:	148.9	dpm/100cm^2	
			$S_{i\alpha}$:	1.89		
			$B_{i\alpha}$:	0.33		
			Scan MDCR α:	28.4	CPM	
			Scan MDC α:	446.4	dpm/100cm^2	
			$L_{C\,\beta\gamma}$:	28.5	CPM	
			$L_{D\,\beta\gamma}$:	60.0	CPM	
			Direct Measurement MDC $\beta\gamma$:	499.6	dpm/100cm^2	
			$S_{i\beta\gamma}$:	10.37		
			$B_{i\beta\gamma}$:	10.00		
			Scan MDCR $\beta\gamma$:	156	CPM	
			Scan MDC $\beta\gamma$:	1833.6	dpm/100cm^2	

Survey Data Location	Scan Survey Results CPM	Scan Survey Results DPM/100cm^2	Direct Measurement Reading CPM	Direct Measurement Reading DPM/100cm^2	$DCGL_w$ - Data DPM/100cm^2	Sign
F-0	200	333.33	212	413.33	1,087	1
G-0	220	466.67	218	453.33	1,047	1
H-0	240	600.00	242	613.33	887	1
I-0	240	600.00	245	633.33	867	1
F-1	200	333.33	201	340.00	1,160	1
G-1	220	466.67	219	460.00	1,040	1
H-1	240	600.00	236	573.33	927	1
I-1	250	666.67	252	680.00	820	1
F-2	200	333.33	207	380.00	1,120	1
G-2	220	466.67	221	473.33	1,027	1
H-2	240	600.00	241	606.67	893	1
I-2	240	600.00	233	553.33	947	1
F-3	240	600.00	232	546.67	953	1
G-3	250	666.67	248	653.33	847	1
H-3	300	1000.00	289	926.67	573	1
I-3	300	1000.00	297	980.00	520	1
F-4	220	466.67	218	453.33	1,047	1
G-4	250	666.67	256	706.67	793	1
H-4	300	1000.00	299	993.33	507	1
I-4	300	1000.00	307	1046.67	453	1
A-5	300	1000.00	313	1086.67	413	1
B-5	300	1000.00	319	1126.67	373	1
C-5	300	1000.00	299	993.33	507	1
D-5	260	733.33	253	686.67	813	1
E-5	280	866.67	288	920.00	580	1
F-5	300	1000.00	314	1093.33	407	1
G-5	300	1000.00	309	1060.00	440	1
H-5	400	1666.67	422	1813.33	-313	-1
I-5	500	2333.33	502	2346.67	-847	-1
J-5	300	1000.00	313	1086.67	413	1
K-5	300	1000.00	303	1020.00	480	1
L-5	300	1000.00	311	1073.33	427	1
M-5	300	1000.00	301	1006.67	493	1
N-5	220	466.67	228	520.00	980	1
A-6	300	1000.00	302	1013.33	487	1
B-6	300	1000.00	304	1026.67	473	1
C-6	300	1000.00	289	926.67	573	1
D-6	280	866.67	299	993.33	507	1
E-6	260	733.33	267	780.00	720	1
F-6	300	1000.00	311	1073.33	427	1
G-6	300	1000.00	305	1033.33	467	1
H-6	500	2333.33	512	2413.33	-913	-1
I-6	1800	11000.00	1805	11033.33	-9,533	-1
J-6	300	1000.00	312	1080.00	420	1
K-6	300	1000.00	305	1033.33	467	1
L-6	300	1000.00	296	973.33	527	1
M-6	300	1000.00	304	1026.67	473	1
N-6	220	466.67	216	440.00	1,060	1
A-7	200	333.33	207	380.00	1,120	1

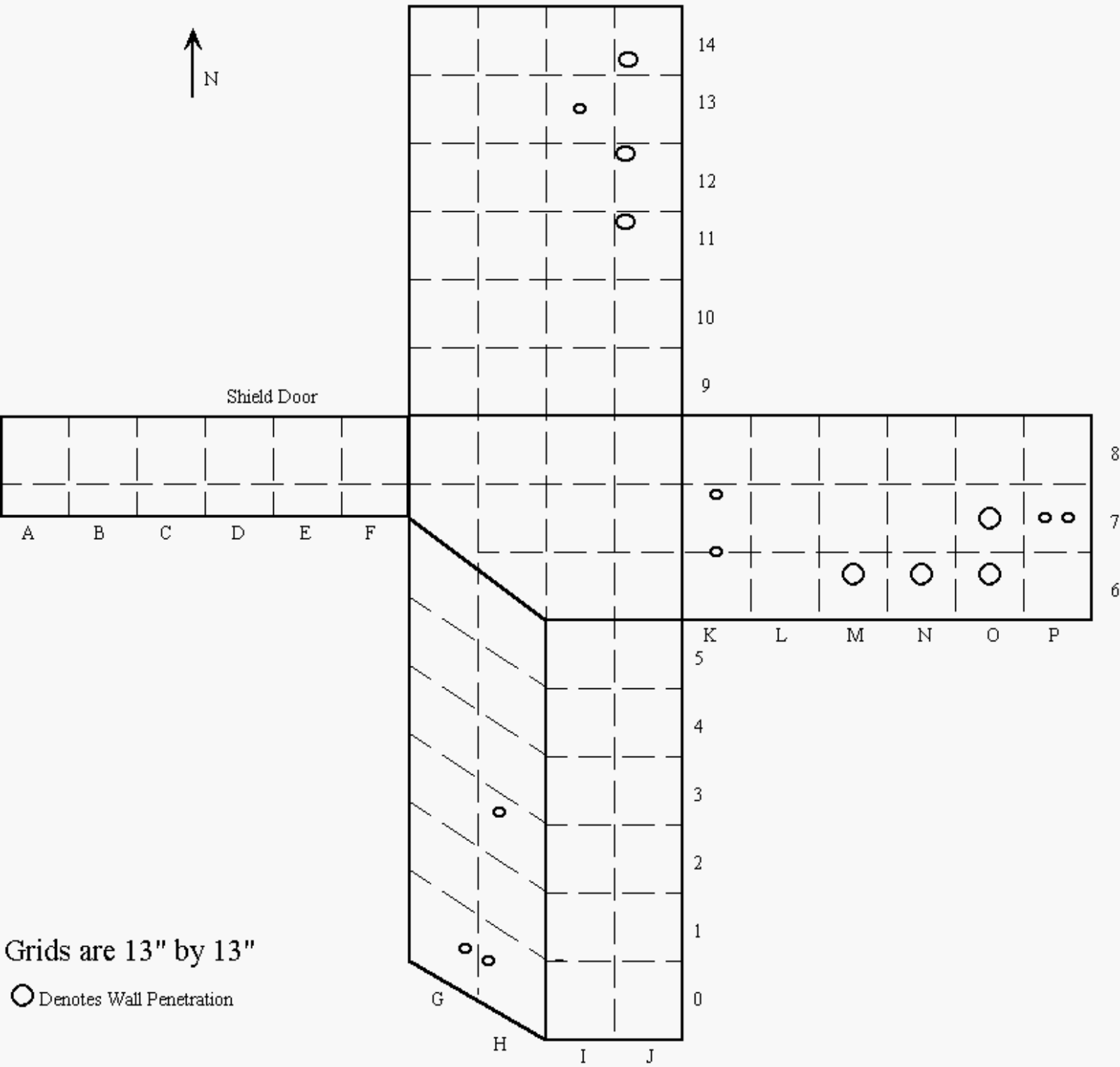
RADIOLOGICAL SURVEY
SIGN TEST FORM

Survey Location:	Walter Reed AIR		Instrument:	Model 2224		
Survey Unit:	Room R3		SN:	143048	$DCGL_w$ dpm/100cm^2:	1,500
Survey Unit Classification:	Class 1		Detector:	Model 43-68		
Survey Unit Size in Meters^2:	19		SN:	147960		
Date:	09/11/2001		Det Size in cm^2:	125		
Time:	0800		Cal Due Date:	06/03/2001		
Surveyor:	Dave Davis, Charles Russo		Bkg Time:	1	Minutes	
Reviewed by:	Dan Spicuzza		Sample Count Time:	1	Minutes	
Type of Survey:	Beta-Gamma Scan and Direct Measurement Survey of Walls & Floor		Surface Efficiency:	0.8		
			Surveyor Efficeincy Factor:	0.5		
			Daily Bkg α:	5	CPM	
			Daily Bkg $\beta\gamma$:	150	CPM	
			Efficiency α:	0.09		
			Efficiency $\beta\gamma$:	0.12		
			$L_{C\,\alpha}$:	5.2	CPM	
			$L_{D\,\alpha}$:	13.4	CPM	
			Direct Measurement MDC α:	148.9	dpm/100cm^2	
			$S_{i\alpha}$:	1.89		
			$B_{i\alpha}$:	0.33		
			Scan MDCR α:	28.4	CPM	
			Scan MDC α:	446.4	dpm/100cm^2	
			$L_{C\,\beta\gamma}$:	28.5	CPM	
			$L_{D\,\beta\gamma}$:	60.0	CPM	
			Direct Measurement MDC $\beta\gamma$:	499.6	dpm/100cm^2	
			$S_{i\beta\gamma}$:	10.37		
			$B_{i\beta\gamma}$:	10.00		
			Scan MDCR $\beta\gamma$:	156	CPM	
			Scan MDC $\beta\gamma$:	1833.6	dpm/100cm^2	
B-7	220	466.67	227	513.33	987	1
C-7	220	466.67	216	440.00	1,060	1
D-7	250	666.67	255	700.00	800	1
E-7	260	733.33	258	720.00	780	1
F-7 Floor	280	866.67	288	920.00	580	1
F-7 Wall	220	466.67	229	526.67	973	1
G-7 Floor	260	733.33	255	700.00	800	1
G-7 Wall	220	466.67	213	420.00	1,080	1
H-7	280	866.67	292	946.67	553	1
I-7	300	1000.00	296	973.33	527	1
A-8	200	333.33	206	373.33	1,127	1
B-8	220	466.67	227	513.33	987	1
C-8	220	466.67	216	440.00	1,060	1
D-8	250	666.67	264	760.00	740	1
E-8	280	866.67	273	820.00	680	1
F-8	220	466.67	207	380.00	1,120	1
G-8	220	466.67	221	473.33	1,027	1
H-8	300	1000.00	304	1026.67	473	1
I-8	280	866.67	291	940.00	560	1
F-9	300	1000.00	307	1046.67	453	1
G-9	300	1000.00	314	1093.33	407	1
H-9	300	1000.00	306	1040.00	460	1
I-9	280	866.67	274	826.67	673	1
F-10	300	1000.00	321	1140.00	360	1
G-10	300	1000.00	298	986.67	513	1
H-10	300	1000.00	300	1000.00	500	1
I-10	300	1000.00	309	1060.00	440	1
F-11	250	666.67	244	626.67	873	1
G-11	250	666.67	258	720.00	780	1
H-11	220	466.67	210	400.00	1,100	1
I-11	220	466.67	220	466.67	1,033	1
F-5 Ceiling	280	866.67	269	793.33	707	1
G-5 Ceiling	280	866.67	273	820.00	680	1
H-5 Ceiling	280	866.67	291	940.00	560	1
I-5 Ceiling	280	866.67	267	780.00	720	1
F-6 Ceiling	280	866.67	277	846.67	653	1
G-6 Ceiling	280	866.67	287	913.33	587	1
H-6 Ceiling	280	866.67	289	926.67	573	1
I-6 Ceiling	280	866.67	265	766.67	733	1
F-7 Ceiling	300	1000.00	294	960.00	540	1
G-7 Ceiling	280	866.67	281	873.33	627	1
F-8 Ceiling	280	866.67	262	746.67	753	1
G-8 Ceiling	300	1000.00	298	986.67	513	1

Remarks: Micro/hr readings at 1 meter from surfaces	Critical Value:	32	Number of positive differences S+ =		88
of all grids is 6 µR/hr.	Standard Deviation =	1119.21	Number of Required Date Points:		53
Model 19 S/N:133178	Mean Value =	944.49		Sign P:	0.758036
Grids are .5 m by .5 m	Median =	860.00		LBGR:	750
				Δ/σ:	0.67

Appendix Q
Room GR Final Status Survey Data

Room GR Grid Map



RADIOLOGICAL SURVEY
SIGN TEST FORM

Survey Location:	Walter Reed AIR		Instrument:	Model 2224		
Survey Unit:	Room GR		SN:	143048	$DCGL_w$ dpm/100cm^2:	1,500
Survey Unit Classification:	Class 1		Detector:	Model 43-68		
Survey Unit Size in Meters^2:	11		SN:	147960		
Date:	09/11/2001		Det Size in cm^2:	125		
Time:	0800		Cal Due Date:	06/03/2001		
Surveyor:	Dave Davis, Charles Russo		Bkg Time:	1	Minutes	
Reviewed by:	Dan Spicuzza		Sample Count Time:	1	Minutes	
Type of Survey:	Beta-Gamma Scan and Direct Measurement Survey of Walls & Floor		Surface Efficiency:	0.8		
			Surveyor Efficeincy Factor:	0.5		
			Daily Bkg α:	5	CPM	
			Daily Bkg $\beta\gamma$:	150	CPM	
			Efficiency α:	0.09		
			Efficiency $\beta\gamma$:	0.12		
			$L_{C\,\alpha}$:	5.2	CPM	
			$L_{D\,\alpha}$:	13.4	CPM	
			Direct Measurement MDC α:	148.9	dpm/100cm^2	
			$S_{i\alpha}$:	1.89		
			$B_{i\alpha}$:	0.33		
			Scan MDCR α:	28.4	CPM	
			Scan MDC α:	446.4	dpm/100cm^2	
			$L_{C\,\beta\gamma}$:	28.5	CPM	
			$L_{D\,\beta\gamma}$:	60.0	CPM	
			Direct Measurement MDC $\beta\gamma$:	499.6	dpm/100cm^2	
			$S_{i\beta\gamma}$:	10.37		
			$B_{i\beta\gamma}$:	10.00		
			Scan MDCR $\beta\gamma$:	156	CPM	
			Scan MDC $\beta\gamma$:	1833.6	dpm/100cm^2	

Survey Data Location	Scan Survey Results CPM	Scan Survey Results DPM/100cm^2	Direct Measurement Reading CPM	Direct Measurement Reading DPM/100cm^2	$DCGL_w$ - Data DPM/100cm^2	Sign
G-0	200	333.33	201	340.00	1,160	1
H-0	200	333.33	205	366.67	1,133	1
I-0	180	200.00	202	346.67	1,153	1
J-0	200	333.33	206	373.33	1,127	1
G-1	220	466.67	214	426.67	1,073	1
H-1	240	600.00	242	613.33	887	1
I-1	200	333.33	203	353.33	1,147	1
J-1	200	333.33	209	393.33	1,107	1
G-2	220	466.67	213	420.00	1,080	1
H-2	200	333.33	207	380.00	1,120	1
I-2	180	200.00	197	313.33	1,187	1
J-2	220	466.67	211	406.67	1,093	1
G-3	260	733.33	266	773.33	727	1
H-3	200	333.33	196	306.67	1,193	1
I-3	200	333.33	197	313.33	1,187	1
J-3	220	466.67	208	386.67	1,113	1
G-4	300	1000.00	304	1026.67	473	1
H-4	200	333.33	206	373.33	1,127	1
I-4	260	733.33	256	706.67	793	1
J-4	220	466.67	218	453.33	1,047	1
G-5	260	733.33	262	746.67	753	1
H-5	220	466.67	223	486.67	1,013	1
I-5	200	333.33	203	353.33	1,147	1
J-5	200	333.33	247	646.67	853	1
H-6 Floor	260	733.33	266	773.33	727	1
I-6 Floor	240	600.00	231	540.00	960	1
J-6 Floor (1ft^2)	600	3000.00	602	3013.33	-1,513	-1
K-6	240	600.00	232	546.67	953	1
L-6	200	333.33	198	320.00	1,180	1
M-6	280	866.67	290	933.33	567	1
N-6	240	600.00	245	633.33	867	1
O-6	180	200.00	196	306.67	1,193	1
P-6	240	600.00	238	586.67	913	1
A-7	200	333.33	203	353.33	1,147	1
B-7	180	200.00	201	340.00	1,160	1
C-7	200	333.33	211	406.67	1,093	1
D-7	200	333.33	202	346.67	1,153	1
E-7	180	200.00	193	286.67	1,213	1
F-7	240	600.00	238	586.67	913	1
G-7 Floor	280	866.67	311	1073.33	427	1
H-7 Floor	260	733.33	266	773.33	727	1
I-7 Floor	260	733.33	256	706.67	793	1
J-7 Floor	240	600.00	247	646.67	853	1
K-7	220	466.67	218	453.33	1,047	1
L-7	240	600.00	208	386.67	1,113	1
M-7	300	1000.00	287	913.33	587	1
N-7	300	1000.00	308	1053.33	447	1
O-7	260	733.33	233	553.33	947	1
P-7	260	733.33	221	473.33	1,027	1
A-8	180	200.00	192	280.00	1,220	1
B-8	180	200.00	188	253.33	1,247	1
C-8	200	333.33	191	273.33	1,227	1
D-8	220	466.67	217	446.67	1,053	1

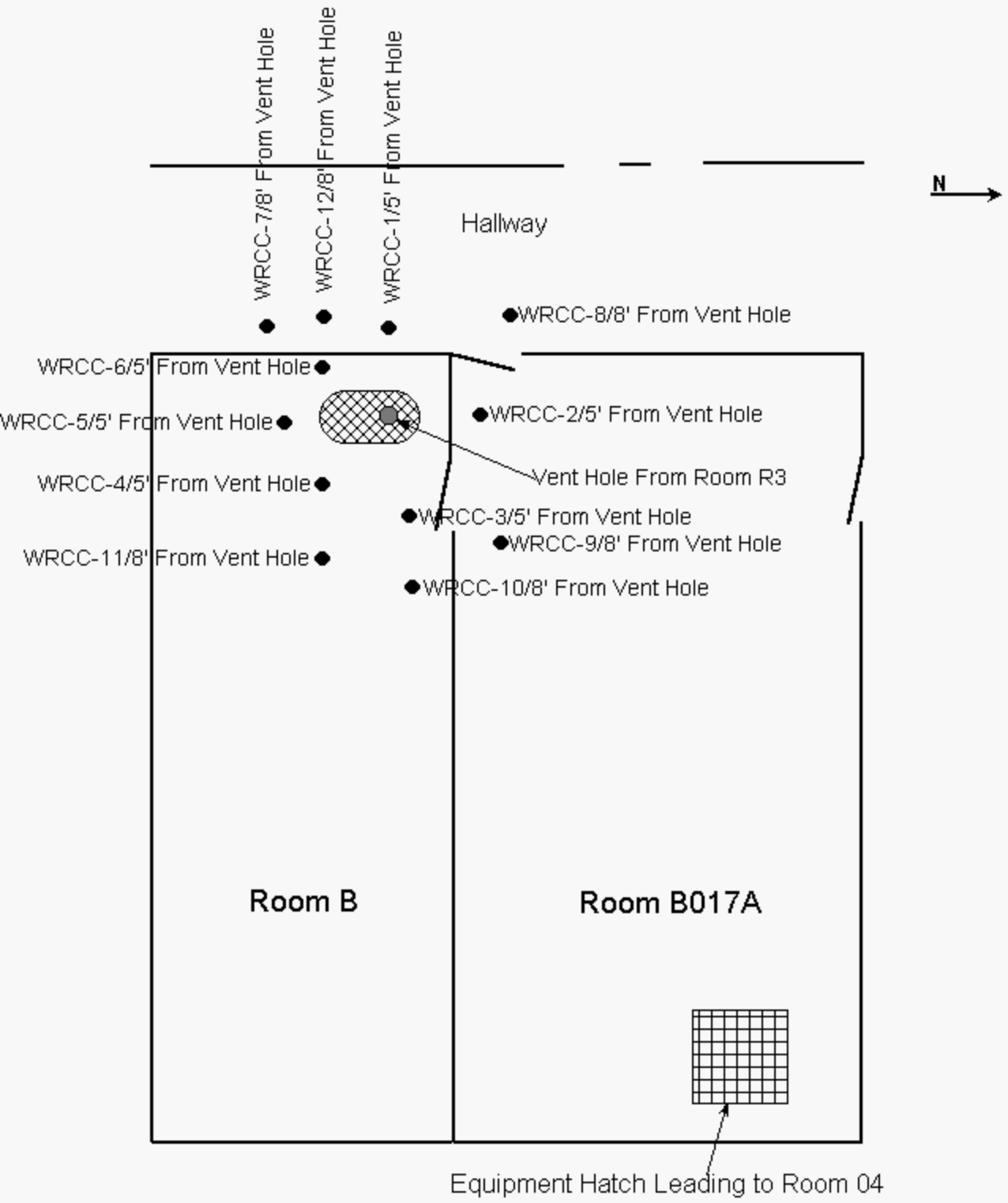
RADIOLOGICAL SURVEY
SIGN TEST FORM

Survey Location:	Walter Reed AIR		Instrument:	Model 2224		
Survey Unit:	Room GR		SN:	143048	$DCGL_w$ dpm/100cm^2:	1,500
Survey Unit Classification:	Class 1		Detector:	Model 43-68		
Survey Unit Size in Meters^2:	11		SN:	147960		
Date:	09/11/2001		Det Size in cm^2:	125		
Time:	0800		Cal Due Date:	06/03/2001		
Surveyor:	Dave Davis, Charles Russo		Bkg Time:	1	Minutes	
Reviewed by:	Dan Spicuzza		Sample Count Time:	1	Minutes	
Type of Survey:	Beta-Gamma Scan and Direct Measurement Survey of Walls & Floor		Surface Efficiency:	0.8		
			Surveyor Efficeincy Factor:	0.5		
			Daily Bkg α:	5	CPM	
			Daily Bkg $\beta\gamma$:	150	CPM	
			Efficiency α:	0.09		
			Efficiency $\beta\gamma$:	0.12		
			$L_{C\,\alpha}$:	5.2	CPM	
			$L_{D\,\alpha}$:	13.4	CPM	
			Direct Measurement MDC α:	148.9	dpm/100cm^2	
			$S_{i\alpha}$:	1.89		
			$B_{i\alpha}$:	0.33		
			Scan MDCR α:	28.4	CPM	
			Scan MDC α:	446.4	dpm/100cm^2	
			$L_{C\,\beta\gamma}$:	28.5	CPM	
			$L_{D\,\beta\gamma}$:	60.0	CPM	
			Direct Measurement MDC $\beta\gamma$:	499.6	dpm/100cm^2	
			$S_{i\beta\gamma}$:	10.37		
			$B_{i\beta\gamma}$:	10.00		
			Scan MDCR $\beta\gamma$:	156	CPM	
			Scan MDC $\beta\gamma$:	1833.6	dpm/100cm^2	
E-8	180	200.00	182	213.33	1,287	1
F-8	180	200.00	190	266.67	1,233	1
G-8 Floor	280	866.67	269	793.33	707	1
H-8 Floor	280	866.67	237	580.00	920	1
I-8 Floor	280	866.67	247	646.67	853	1
J-8 Floor	200	333.33	195	300.00	1,200	1
K-8	200	333.33	194	293.33	1,207	1
L-8	200	333.33	197	313.33	1,187	1
M-8	180	200.00	192	280.00	1,220	1
N-8	180	200.00	189	260.00	1,240	1
0-8	200	333.33	198	320.00	1,180	1
P-8	220	466.67	197	313.33	1,187	1
G-9	180	200.00	199	326.67	1,173	1
H-9	240	600.00	252	680.00	820	1
I-9	180	200.00	188	253.33	1,247	1
J-9	220	466.67	216	440.00	1,060	1
G-10	200	333.33	192	280.00	1,220	1
H-10	200	333.33	204	360.00	1,140	1
I-10	180	200.00	186	240.00	1,260	1
J-10	180	200.00	192	280.00	1,220	1
G-11	180	200.00	185	233.33	1,267	1
H-11	200	333.33	208	386.67	1,113	1
I-11	180	200.00	188	253.33	1,247	1
J-11	200	333.33	210	400.00	1,100	1
G-12	180	200.00	184	226.67	1,273	1
H-12	180	200.00	188	253.33	1,247	1
I-12	180	200.00	189	260.00	1,240	1
J-12	180	200.00	190	266.67	1,233	1
G-13	180	200.00	201	340.00	1,160	1
H-13	180	200.00	199	326.67	1,173	1
I-13	180	200.00	189	260.00	1,240	1
J-13	180	200.00	184	226.67	1,273	1
G-14	180	200.00	198	320.00	1,180	1
H-14	200	333.33	213	420.00	1,080	1
I-14	180	200.00	184	226.67	1,273	1
J-14	180	200.00	188	253.33	1,247	1
H-6 Ceiling	260	733.33	265	766.67	733	1
I-6 Ceiling	180	200.00	186	240.00	1,260	1
J-6 Ceiling	200	333.33	206	373.33	1,127	1
G-7 Ceiling	260	733.33	276	840.00	660	1
H-7 Ceiling	300	1000.00	308	1053.33	447	1
I-7 Ceiling	280	866.67	289	926.67	573	1
J-7 Ceiling	240	600.00	246	640.00	860	1
G-8 Ceiling	200	333.33	219	460.00	1,040	1
H-8 Ceiling	200	333.33	208	386.67	1,113	1
I-8 Ceiling	280	866.67	287	913.33	587	1
J-8 Ceiling	240	600.00	244	626.67	873	1

Remarks: Micro/hr readings at 1 meter from surfaces	Critical Value:	11	Number of positive differences S+ =		99
of all grids is 6 µR/hr.	Standard Deviation =	338.18	Number of Required Date Points:		15
Model 19 S/N:133178	Mean Value =	488.87		Sign P:	0.993790
Grids are 13" by 13"	Median =	383.33		LBGR:	750
				Δ/σ:	2.21

Appendix R
Concrete Core Sample Location Map
Concrete Core Sample Results

Core Sample Location Map



● Denotes 2 1/4" Concrete Core Sample Location

● Denotes Room R3 Vent Hole

Barringer Laboratories, Inc.

15000 W 6th Avenue Suite 300 Golden, Colorado 80401-5047 (800) 654-0506 (303) 277-1687 Fax (303) 277-1689

Date: 25-Jan-01

Client: New World Technology
Project: Walter Reed Ga00367
Work Order: 0012177

CASE NARRATIVE

All reported values in this report have been rounded to the correct number of significant figures. All calculations have been performed before applying significant figures, therefore, not all calculations may be reproducible with the results printed in this report.

Barringer Laboratories, Inc.

15000 W 6th Avenue Suite 300 Golden, Colorado 80401-5047 (800) 654-0506 (303) 277-1687 Fax (303) 277-1689

Date: 25-Jan-01

CLIENT SAMPLE REPORT

Client: **New World Technology**
Work Order: **0012177**
Project: **Walter Reed Ga00367**

Client Sample ID: **WR CC-1**
Tag Number:

Lab Sample ID: **0012177-01A**
Date Collected: **12/19/2000**
Matrix: **Solid**

Analyte	CAS#	Method	Result	± 2 sigma	Limit	Qual	Unit	DF	Prepped	Analyzed	Analyst	Batch
Actinium-228, total	14331-83-0	EPA 901.1	1.0	± 0.22	0.2		pCi/g	1		01/19/2001	LLC	A12470A
Bismuth-212, total	14913-49-6	EPA 901.1	1.1	± 0.40	0.7		pCi/g	1		01/19/2001	LLC	A12470A
Bismuth-214, total	14733-03-0	EPA 901.1	0.34	± 0.090	0.1		pCi/g	1		01/19/2001	LLC	A12470A
Lead-212, total	15092-94-1	EPA 901.1	1.0	± 0.11	0.09		pCi/g	1		01/19/2001	LLC	A12470A
Lead-214, total	15067-28-4	EPA 901.1	0.34	± 0.084	0.1		pCi/g	1		01/19/2001	LLC	A12470A
Potassium-40, total	13966-00-2	EPA 901.1	1.6	± 0.41	0.5		pCi/g	1		01/19/2001	LLC	A12470A
Thallium-208, total	14913-50-9	EPA 901.1	0.36	± 0.062	0.06		pCi/g	1		01/19/2001	LLC	A12470A

Client: **New World Technology**
Work Order: **0012177**
Project: **Walter Reed Ga00367**

Client Sample ID: **WR CC-2**
Tag Number:

Lab Sample ID: **0012177-02A**
Date Collected: **12/19/2000**
Matrix: **Solid**

Analyte	CAS#	Method	Result	± 2 sigma	Limit	Qual	Unit	DF	Prepped	Analyzed	Analyst	Batch
Actinium-228, total	14331-83-0	EPA 901.1	0.83	± 0.18	0.2		pCi/g	1		01/19/2001	LLC	A12470A
Bismuth-212, total	14913-49-6	EPA 901.1	0.93	± 0.36	0.6		pCi/g	1		01/19/2001	LLC	A12470A
Bismuth-214, total	14733-03-0	EPA 901.1	0.27	± 0.064	0.09		pCi/g	1		01/19/2001	LLC	A12470A
Lead-212, total	15092-94-1	EPA 901.1	0.88	± 0.10	0.08		pCi/g	1		01/19/2001	LLC	A12470A
Lead-214, total	15067-28-4	EPA 901.1	0.28	± 0.077	0.1		pCi/g	1		01/19/2001	LLC	A12470A
Potassium-40, total	13966-00-2	EPA 901.1	2.2	± 0.47	0.6		pCi/g	1		01/19/2001	LLC	A12470A
Thallium-208, total	14913-50-9	EPA 901.1	0.26	± 0.043	0.06		pCi/g	1		01/19/2001	LLC	A12470A

Client: **New World Technology**
Work Order: **0012177**
Project: **Walter Reed Ga00367**

Client Sample ID: **WR CC-3**
Tag Number:

Lab Sample ID: **0012177-03A**
Date Collected: **12/19/2000**
Matrix: **Solid**

Analyte	CAS#	Method	Result	± 2 sigma	Limit	Qual	Unit	DF	Prepped	Analyzed	Analyst	Batch
Actinium-228, total	14331-83-0	EPA 901.1	0.97	± 0.19	0.1		pCi/g	1		01/19/2001	LLC	A12470A
Bismuth-212, total	14913-49-6	EPA 901.1	0.87	± 0.32	0.5		pCi/g	1		01/19/2001	LLC	A12470A
Bismuth-214, total	14733-03-0	EPA 901.1	0.28	± 0.060	0.08		pCi/g	1		01/19/2001	LLC	A12470A
Lead-212, total	15092-94-1	EPA 901.1	0.92	± 0.10	0.07		pCi/g	1		01/19/2001	LLC	A12470A
Lead-214, total	15067-28-4	EPA 901.1	0.26	± 0.067	0.09		pCi/g	1		01/19/2001	LLC	A12470A
Thallium-208, total	14913-50-9	EPA 901.1	0.31	± 0.041	0.04		pCi/g	1		01/19/2001	LLC	A12470A

Qualifiers:
ND - Not detected at the reporting limit
B - Analyte detected in method blank
Z - Sample > 10 times blank result
J - Analyte detected below reporting limit
L - Contract/Client reporting limit exceeded
M - Maximum contaminant level exceeded
E - Value above quantitation range
R - RPD outside accepted recovery limits
X - Duplicate sample(s) < 5 times limit
S - Spike outside accepted recovery limits
Y - Unspiked sample > 4 times amount spiked

Barringer Laboratories, Inc.

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Date: 25-Jan-01

CLIENT SAMPLE REPORT

Client: **New World Technology**
Work Order: **0012177**
Project: **Walter Reed Ga00367**

Client Sample ID: **WR CC-4**
Tag Number:

Lab Sample ID: **0012177-04A**
Date Collected: **12/19/2000**
Matrix: **Solid**

Analyte	CAS#	Method	Result	± 2 sigma	Limit	Qual	Unit	DF	Prepped	Analyzed	Analyst	Batch
Actinium-228, total	14331-83-0	EPA 901.1	1.1	± 0.24	0.2		pCi/g	1		01/19/2001	LLC	A12470A
Bismuth-212, total	14913-49-6	EPA 901.1	1.1	± 0.40	0.7		pCi/g	1		01/19/2001	LLC	A12470A
Bismuth-214, total	14733-03-0	EPA 901.1	0.28	± 0.061	0.08		pCi/g	1		01/19/2001	LLC	A12470A
Lead-212, total	15092-94-1	EPA 901.1	1.2	± 0.095	0.09		pCi/g	1		01/19/2001	LLC	A12470A
Lead-214, total	15067-28-4	EPA 901.1	0.34	± 0.082	0.1		pCi/g	1		01/19/2001	LLC	A12470A
Thallium-208, total	14913-50-9	EPA 901.1	0.44	± 0.049	0.05		pCi/g	1		01/19/2001	LLC	A12470A

Client: **New World Technology**
Work Order: **0012177**
Project: **Walter Reed Ga00367**

Client Sample ID: **WR CC-4**
Tag Number:

Lab Sample ID: **0012177-04B**
Date Collected: **12/19/2000**
Matrix: **Solid**

Analyte	CAS#	Method	Result	± 2 sigma	Limit	Qual	Unit	DF	Prepped	Analyzed	Analyst	Batch
Cesium-137, total	10045-97-3	EPA 901.1	ND		0.05		pCi/g	1		01/22/2001	LLC	A12470C

Client: **New World Technology**
Work Order: **0012177**
Project: **Walter Reed Ga00367**

Client Sample ID: **WR CC-5**
Tag Number:

Lab Sample ID: **0012177-05A**
Date Collected: **12/20/2000**
Matrix: **Solid**

Analyte	CAS#	Method	Result	± 2 sigma	Limit	Qual	Unit	DF	Prepped	Analyzed	Analyst	Batch
Actinium-228, total	14331-83-0	EPA 901.1	0.83	± 0.19	0.2		pCi/g	1		01/19/2001	LLC	A12470A
Bismuth-212, total	14913-49-6	EPA 901.1	0.75	± 0.33	0.5		pCi/g	1		01/19/2001	LLC	A12470A
Bismuth-214, total	14733-03-0	EPA 901.1	0.22	± 0.066	0.1		pCi/g	1		01/19/2001	LLC	A12470A
Lead-212, total	15092-94-1	EPA 901.1	0.81	± 0.082	0.09		pCi/g	1		01/19/2001	LLC	A12470A
Lead-214, total	15067-28-4	EPA 901.1	0.29	± 0.071	0.1		pCi/g	1		01/19/2001	LLC	A12470A
Thallium-208, total	14913-50-9	EPA 901.1	0.28	± 0.046	0.06		pCi/g	1		01/19/2001	LLC	A12470A

Client: **New World Technology**
Work Order: **0012177**
Project: **Walter Reed Ga00367**

Client Sample ID: **WR CC-6**
Tag Number:

Lab Sample ID: **0012177-06A**
Date Collected: **12/20/2000**
Matrix: **Solid**

Analyte	CAS#	Method	Result	± 2 sigma	Limit	Qual	Unit	DF	Prepped	Analyzed	Analyst	Batch
Actinium-228, total	14331-83-0	EPA 901.1	0.95	± 0.21	0.2		pCi/g	1		01/19/2001	LLC	A12470A
Bismuth-212, total	14913-49-6	EPA 901.1	0.99	± 0.34	0.5		pCi/g	1		01/19/2001	LLC	A12470A

Qualifiers:
ND - Not detected at the reporting limit
B - Analyte detected in method blank
Z - Sample > 10 times blank result
J - Analyte detected below reporting limit
L - Contract/Client reporting limit exceeded
M - Maximum contaminant level exceeded
E - Value above quantitation range
R - RPD outside accepted recovery limits
X - Duplicate sample(s) < 5 times limit
S - Spike outside accepted recovery limits
Y - Unspiked sample > 4 times amount spiked

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CLIENT SAMPLE REPORT

Bismuth-214, total	14733-03-0	EPA 901.1	0.43 ± 0.076	0.09	pCi/g	1	01/19/2001	LLC	A12470A
Lead-212, total	15092-94-1	EPA 901.1	0.83 ± 0.079	0.08	pCi/g	1	01/19/2001	LLC	A12470A
Lead-214, total	15067-28-4	EPA 901.1	0.39 ± 0.086	0.1	pCi/g	1	01/19/2001	LLC	A12470A
Thallium-208, total	14913-50-9	EPA 901.1	0.30 ± 0.046	0.05	pCi/g	1	01/19/2001	LLC	A12470A

Client: **New World Technology** — Client Sample ID: **WR CC-7** — Lab Sample ID: **0012177-07A**
Work Order: **0012177** — Tag Number: — Date Collected: **12/20/2000**
Project: **Walter Reed Ga00367** — Matrix: **Solid**

Analyte	CAS#	Method	Result ± 2 sigma	Limit	Qual	Unit	DF	Prepped	Analyzed	Analyst	Batch
Actinium-228, total	14331-83-0	EPA 901.1	1.2 ± 0.21	0.1		pCi/g	1		01/19/2001	LLC	A12470A
Bismuth-212, total	14913-49-6	EPA 901.1	1.3 ± 0.43	0.7		pCi/g	1		01/19/2001	LLC	A12470A
Bismuth-214, total	14733-03-0	EPA 901.1	0.22 ± 0.059	0.09		pCi/g	1		01/19/2001	LLC	A12470A
Lead-212, total	15092-94-1	EPA 901.1	1.1 ± 0.093	0.09		pCi/g	1		01/19/2001	LLC	A12470A
Lead-214, total	15067-28-4	EPA 901.1	0.29 ± 0.072	0.1		pCi/g	1		01/19/2001	LLC	A12470A
Thallium-208, total	14913-50-9	EPA 901.1	0.41 ± 0.050	0.05		pCi/g	1		01/19/2001	LLC	A12470A

Client: **New World Technology** — Client Sample ID: **WR CC-7** — Lab Sample ID: **0012177-07B**
Work Order: **0012177** — Tag Number: — Date Collected: **12/20/2000**
Project: **Walter Reed Ga00367** — Matrix: **Solid**

Analyte	CAS#	Method	Result ± 2 sigma	Limit	Qual	Unit	DF	Prepped	Analyzed	Analyst	Batch
Cesium-137, total	10045-97-3	EPA 901.1	ND	0.4		pCi/g	1		01/22/2001	LLC	A12470C

Client: **New World Technology** — Client Sample ID: **WR CC-8** — Lab Sample ID: **0012177-08A**
Work Order: **0012177** — Tag Number: — Date Collected: **12/20/2000**
Project: **Walter Reed Ga00367** — Matrix: **Solid**

Analyte	CAS#	Method	Result ± 2 sigma	Limit	Qual	Unit	DF	Prepped	Analyzed	Analyst	Batch
Bismuth-214, total	14733-03-0	EPA 901.1	0.21 ± 0.089	0.2		pCi/g	1		01/23/2001	LLC	A12470B
Lead-212, total	15092-94-1	EPA 901.1	0.19 ± 0.055	0.09		pCi/g	1		01/23/2001	LLC	A12470B
Lead-214, total	15067-28-4	EPA 901.1	0.20 ± 0.091	0.1		pCi/g	1		01/23/2001	LLC	A12470B

Client: **New World Technology** — Client Sample ID: **WR CC-8** — Lab Sample ID: **0012177-08B**
Work Order: **0012177** — Tag Number: — Date Collected: **12/20/2000**
Project: **Walter Reed Ga00367** — Matrix: **Solid**

Analyte	CAS#	Method	Result ± 2 sigma	Limit	Qual	Unit	DF	Prepped	Analyzed	Analyst	Batch

Qualifiers:
ND - Not detected at the reporting limit
B - Analyte detected in method blank
Z - Sample > 10 times blank result
J - Analyte detected below reporting limit
L - Contract/Client reporting limit exceeded
M - Maximum contaminant level exceeded
E - Value above quantitation range
R - RPD outside accepted recovery limits
X - Duplicate sample(s) < 5 times limit
S - Spike outside accepted recovery limits
Y - Unspiked sample > 4 times amount spiked

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CLIENT SAMPLE REPORT

Analyte	CAS#	Method	Result	± 2 sigma	Limit	Qual	Unit	DF	Prepped	Analyzed	Analyst	Batch
Cesium-137, total	10045-97-3	EPA 901.1	ND		0.2		pCi/g	1		01/23/2001	LLC	A12470C

Client: **New World Technology** Client Sample ID: **WR CC--9** Lab Sample ID: **0012177-09A**
Work Order: **0012177** Tag Number: Date Collected: **12/21/2000**
Project: **Walter Reed Ga00367** Matrix: **Solid**

Analyte	CAS#	Method	Result	± 2 sigma	Limit	Qual	Unit	DF	Prepped	Analyzed	Analyst	Batch
Actinium-228, total	14331-83-0	EPA 901.1	0.96	± 0.20	0.2		pCi/g	1		01/23/2001	LLC	A12470B
Bismuth-212, total	14913-49-6	EPA 901.1	1.3	± 0.36	0.5		pCi/g	1		01/23/2001	LLC	A12470B
Bismuth-214, total	14733-03-0	EPA 901.1	0.24	± 0.063	0.1		pCi/g	1		01/23/2001	LLC	A12470B
Lead-212, total	15092-94-1	EPA 901.1	1.0	± 0.096	0.09		pCi/g	1		01/23/2001	LLC	A12470B
Lead-214, total	15067-28-4	EPA 901.1	0.34	± 0.087	0.1		pCi/g	1		01/23/2001	LLC	A12470B
Potassium-40, total	13966-00-2	EPA 901.1	1.4	± 0.35	0.4		pCi/g	1		01/23/2001	LLC	A12470B
Thallium-208, total	14913-50-9	EPA 901.1	0.35	± 0.062	0.05		pCi/g	1		01/23/2001	LLC	A12470B

Client: **New World Technology** Client Sample ID: **WR CC--9** Lab Sample ID: **0012177-09B**
Work Order: **0012177** Tag Number: Date Collected: **12/21/2000**
Project: **Walter Reed Ga00367** Matrix: **Solid**

Analyte	CAS#	Method	Result	± 2 sigma	Limit	Qual	Unit	DF	Prepped	Analyzed	Analyst	Batch
Cesium-137, total	10045-97-3	EPA 901.1	ND		0.6		pCi/g	1		01/23/2001	LLC	A12470C

Client: **New World Technology** Client Sample ID: **WR CC-10** Lab Sample ID: **0012177-10A**
Work Order: **0012177** Tag Number: Date Collected: **12/21/2000**
Project: **Walter Reed Ga00367** Matrix: **Solid**

Analyte	CAS#	Method	Result	± 2 sigma	Limit	Qual	Unit	DF	Prepped	Analyzed	Analyst	Batch
Actinium-228, total	14331-83-0	EPA 901.1	1.1	± 0.25	0.2		pCi/g	1		01/23/2001	LLC	A12470B
Bismuth-214, total	14733-03-0	EPA 901.1	0.29	± 0.086	0.09		pCi/g	1		01/23/2001	LLC	A12470B
Lead-212, total	15092-94-1	EPA 901.1	0.99	± 0.094	0.08		pCi/g	1		01/23/2001	LLC	A12470B
Lead-214, total	15067-28-4	EPA 901.1	0.32	± 0.086	0.1		pCi/g	1		01/23/2001	LLC	A12470B
Potassium-40, total	13966-00-2	EPA 901.1	2.4	± 0.50	0.6		pCi/g	1		01/23/2001	LLC	A12470B
Thallium-208, total	14913-50-9	EPA 901.1	0.30	± 0.046	0.06		pCi/g	1		01/23/2001	LLC	A12470B

Qualifiers:
ND - Not detected at the reporting limit
B - Analyte detected in method blank
Z - Sample > 10 times blank result
J - Analyte detected below reporting limit
L - Contract/Client reporting limit exceeded
M - Maximum contaminant level exceeded
E - Value above quantitation range
R - RPD outside accepted recovery limits
X - Duplicate sample(s) < 5 times limit
S - Spike outside accepted recovery limits
Y - Unspiked sample > 4 times amount spiked

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CLIENT SAMPLE REPORT

Analyte	CAS#	Method	Result ± 2 sigma	Limit	Qual	Unit	DF	Prepped	Analyzed	Analyst	Batch
Thallium-208, total	14913-50-9	EPA 901.1	0.36 ± 0.050	0.06		pCi/g	1		01/23/2001	LLC	A12470B

Client: **New World Technology**
Work Order: **0012177**
Project: **Walter Reed Ga00367**

Client Sample ID: **WR CC-12**
Tag Number:

Lab Sample ID: **0012177-12B**
Date Collected: **12/21/2000**
Matrix: **Solid**

Analyte	CAS#	Method	Result ± 2 sigma	Limit	Qual	Unit	DF	Prepped	Analyzed	Analyst	Batch
Cesium-137, total	10045-97-3	EPA 901.1	ND	0.1		pCi/g	1		01/23/2001	LLC	A12470C

Qualifiers:
ND - Not detected at the reporting limit
B - Analyte detected in method blank
Z - Sample > 10 times blank result
J - Analyte detected below reporting limit
L - Contract/Client reporting limit exceeded
M - Maximum contaminant level exceeded
E - Value above quantitation range
R - RPD outside accepted recovery limits
X - Duplicate sample(s) < 5 times limit
S - Spike outside accepted recovery limits
Y - Unspiked sample > 4 times amount spiked

Appendix S
Chain of Custody's

New World Technology

Chain of Custody

Page 1 of 1

Project Name: Walter Reed

Project #: GA00267

P.O.#: 3145

Sampler: Dan Spicuzza Cell: (703) 599-[illegible]

Notes:

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Other	# of containers	Analysis Required: Cannot Scan	Remarks	Check if RUSH
WR CC-1	11-9-00	0900					X	1	X		
WR CC-2	11-9-00	1030					X	1	X		
WR CC-3	11-9-00	1330					X	1	X		
WR CC-4	11-9-00	1530					X	1	X		
WR CC-5	11-10-00	1000					X	1	X		
WR CC-6	11-10-00	1130					X	1	X		
WR CC-7	11-10-00	1400					X	1	X		
WR CC-8	11-10-00	1800					X	1	X		
WR CC-9	11-10-00	2000					X	1	X		

Name of Shipper	Airbill No.	Date	Time	Sample Relinquished By:	Date	Time	Sample Received By:	Date	Time
				Dan Spicuzza	11-10-00	1600			

Received by (Lab)	Date	Time	Condition on receipt

Turnaround Time Requested: (please circle): (Normal) Rush

(Rush TAT is subject to Client approval and Laboratory surcharge)

Report Results By: (Date) _____

Rush results requested by: (please circle): Phone Fax

Report Results To: Dan Spicuzza at NWT

Address: Endcompliance@aol.com

Telephone:

Fax:

Type: (please circle) Haz Rad Mixed (Unknown)

Disposal By: (please circle) (Lab) Client Contractor

White Copy – (Original) Retain with Samples Yellow Copy - Customer Pink Copy - Retain for Project Files

New World Technology

Chain of Custody

Page 1 of 1

Project Name : Walker Road

Project # : [illegible]

Analysis Required

P.O.# : 3145

Sampler: Dan Spurr & Ann Wilson

Notes:

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Other	# of containers	Cl, Br, Conc								Remarks	Check if RUSH
WRCC-11	11-1-16	1300					X	1	X									
WRCC-12	11-1-16	1500					X	1	X									

Name of Shipper	Airbill No.	Date	Time	Sample Relinquished By:	Date	Time	Sample Received By:	Date	Time
				Dan Spurr	11-1-16	1600			

Received by (Lab)	Date	Time	Condition on receipt

Turnaround Time Requested: (please circle): (Normal) Rush

(Rush TAT is subject to Client approval and Laboratory surcharge)

Report Results By: (Date) _____

Rush results requested by: (please circle): Phone Fax

Report Results To: Dan Spurr & Matt

Address: Petrocraft Alaska

Telephone:

Fax:

Type: (please circle) Haz Rad Mixed (Unknown)

Disposal By: (please circle) (Lab) Client Contractor

White Copy – (Original) Retain with Samples Yellow Copy - Customer Pink Copy - Retain for Project Files

New World Technology

Chain of Custody

Page 1 of 1

Project Name : Walter Reed

Project # : GA00367

P.O.# : NA

Sampler: Russ, Davis

Notes: Swabs for LSC Counting

Analysis Required

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Other	# of Containers	LSC								Remarks	Check if RUSH
Swabs #1 thru #195	9-9-00	1200					X	1	X									

NA

Name of Shipper	Airbill No.	Date	Time	Sample Relinquished By:	Date	Time	Sample Received By:	Date	Time
Fed Ex	822525131473	9-11-00	1600	DA Davis	9-11-00	1600	Tim	9-13	1100

Received by (Lab)	Date	Time	Condition on receipt
			OK

Turnaround Time Requested: (please circle): (Normal) Rush

(Rush TAT is subject to Client approval and Laboratory surcharge)

Report Results By: (Date) _____

Rush results requested by: (please circle): Phone Fax

Report Results To: Dan Spicuzza

Address: NWT

Telephone: (410) 874-1355 **Fax:** (410) 874-8256

Type: (please circle) Haz Rad Mixed (Unknown)

Disposal By: (please circle) (Lab) Client Contractor

White Copy – (Original) Retain with Samples Yellow Copy - Customer Pink Copy - Retain for Project Files

03-00116-195

New World Technology

Chain of Custody

Page 1 of 1

Project Name : Wall of Remembrance

Project # : GA00367

P.O.# : NA

Sampler: NA

Notes: Entrance Biopsies

Analysis Required

Sample Identification	Date	Time																Remarks	Check if RUSH
Chris Watson	9-11-00	0715					X	1	X									DOB 10-12-73 SS# 558-29-3984	
Phil Wright	9-11-00	0730					X	1	X									DOB 10-20-75 SS# 569-41-2469	
									NA										

Name of Shipper	Airbill No:	Date	Time	Sample Relinquished By:	Date	Time:	Sample Received By:	Date	Time
FedEx	811515137700	9-12-00	1200	Dan Spicuzza	9-12-00	1200			

Received by (Lab)	Date	Time:	Condition on receipt

Turnaround Time Requested: (please circle) Normal Rush

(Rush TAT is subject to Client approval and Laboratory surcharge)

Report Results By: (Date) _____

Rush results requested by: (please circle): Phone Fax

Report Results To: Dan Spicuzza

Address: NWT

Telephone: **Fax:**

Type: (please circle) Haz Rad Mixed Unknown

Disposal By: (please circle) Lab Client Contractor

White Copy – (Original) Retain with Samples Yellow Copy - Customer Pink Copy - Retain for Project Files

New World Technology

Chain of Custody

Page 1 of 1

Project Name: Walter Reed

Project #: GA00367

P.O.#: NA

Sampler: NIA

Notes: Enhance Bioassay's

Analysis Required

	Sample Identification	Collected											Remarks	Check if RUSH
		Date	Time											
1	Spicuzza, Dan	8-8-00	1000						X	1	X		DOB 5-27-60 SS# 190-54-4555	
2	Russo, Charles	8-8-00	1000						X	1	X		DOB 7-26-70 SS# 429-27-1466	
3	Davis, Dale	8-8-00	1000						X	1	X		DOB 11-11-61 SS# 260-95-1004	
4	Mccoy, Mindy	8-8-00	1000						X	1	X		DOB 8-14-54 SS# 190-74-2145	
5	Nash, Cory	8-8-00	1000						X	1	X		DOB 9-1-51 SS# 215-30-1954	
											NA			

Name of Shipper	Airbill No.	Date	Time	Sample Relinquished By:	Date	Time	Sample Received By:	Date	Time
Fed Ex	811525731360	8-12-00	1200	Dan Spicuzza	8-12-00	1200			
Received by (Lab)	**Date**	**Time**	**Condition on Receipt**						

Turnaround Time Requested: (please circle): Normal Rush

(Rush TAT is subject to Client approval and Laboratory surcharge)

Report Results By: (Date) _____

Rush results requested by: (please circle): Phone Fax

Report Results To: Dan Spicuzza

Address: NWT

Telephone:

Fax:

Type: (please circle) Haz Rad Mixed Unknown

Disposal By: (please circle) Lab Client Contractor

White Copy -- (Original) Retain with Samples Yellow Copy - Customer Pink Copy - Retain for Project Files

New World Technology

Chain of Custody

Page 1 of 1

Project Name: Walter Reed

Project #: GA00367

P.O.#: NA

Sampler: NA

Notes: Exit Biopsies

Analysis Required

Sample Identification	Collected																		Remarks	Check if RUSH
6 Nancy Morey	8-18-00	1400							X	1	X								DOB 8-12-54 SS# 440-74-1115	
7 Gary Mason	8-18-00	1405							X	1	X								DOB 8-1-51 SS# 015-36-1954	
10 Dan Spencer	9-1-00	0800							X	1	X								DOB 5-17-60 SS# 190-54-4454	
11 Charles Russo	9-7-00	1400							X	1	X								DOB 7-10-70 SS# 149-17-1106	
12 David Davis	9-12-00	0900							X	1	X								DOB 11-12-61 SS# 160-15-1067	
13 Chris Watson	9-12-00	0800							X	1	X								DOB 10-13-73 SS# 356-19-7954	
14 Phil Wagner	9-8-00	1200							X	1	X								DOB 10-10-75 SS# 569-44-7069	

Name of Shipper	Airbill No.	Date	Time	Sample Relinquished By:	Date	Time	Sample Received By:	Date	Time
Fed Ex	811525131561	9-12-00	1200	Dan Spencer	9-12-00	1200			
Received by (Lab)	**Date**	**Time**	**Condition on receipt**						

Turnaround Time Requested: (please circle) Normal Rush

(Rush TAT is subject to Client approval and Laboratory surcharge)

Report Results By: (Date) _____

Rush results requested by: (please circle): Phone Fax

Report Results To: Dan Spencer

Address: NWT

Telephone: **Fax:**

Type: (please circle) Haz Rad Mixed Unknown

Disposal By: (please circle) Lab Client Contractor

White Copy – (Original) Retain with Samples Yellow Copy - Customer Pink Copy - Retain for Project Files

Appendix T
Waste Manifests

FORM 540 CHEM-NUCLEAR CONSOLIDATION FACILITY

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

SHIPPING PAPER

1. EMERGENCY TELEPHONE NUMBER (Include Area Code)
(925) 443-7967

ORGANIZATION
New World Technology

2. IS THIS AN "EXCLUSIVE USE" SHIPMENT?
[X] YES [ ] NO

3. TOTAL NUMBER OF PACKAGES IDENTIFIED ON THIS MANIFEST =====> 5

4. DOES EPA REGULATED WASTE REQUIRING A MANIFEST ACCOMPANY THIS SHIPMENT? [ ] YES [X] NO
If "Yes," provide Manifest Number =====>

EPA MANIFEST NUMBER
N/A

5. SHIPPER -- NAME AND FACILITY
(DC) Walter Reed Army Medical Center
6825 16th Street, NW
Washington, DC 20307-5001

S.C. TRANSPORT PERMIT NUMBER
6137-00-00-E

SHIPMENT NUMBER
USA 98-065

CONTACT
Mr. Kelly Crooks

6. CARRIER -- Name and Address
R & R Trucking
P.O. Box 545
Duenweg, MO 64841

CONTACT
Mr. Don Ritchie

SIGNATURE -- *Authorized carrier acknowledging waste receipt*

SHIPMENT I.D. NUMBER
SCN-01SJ-00

[ ] COLLECTOR
[ ] PROCESSOR
[X] GENERATOR TYPE (Specify) C

TELEPHONE NUMBER (Include Area Code)
(309) 782-0338

EPA I.D. NUMBER
MOR000012948

SHIPPING DATE
8/31/00

TELEPHONE NUMBER (Include Area Code)
(417) 623-6885

DATE

7. FORM 540 AND 540A PAGE 1 OF 1 PAGE(S)
FORM 541 AND 541A 2 PAGE(S)
FORM 542 AND 542A 1 PAGE(S)
ADDITIONAL INFORMATION None PAGE(S)

8. MANIFEST NUMBER
(Use this number on all continuation pages)
USA 98-065

9. CONSIGNEE - Name and Facility Address
Chem-Nuclear Systems, LLC
Chem-Nuclear Consolidation Facility
Hwy 64 (1 mile west of Snelling)
Barnwell, SC 29812

CONTACT
John Lash

TELEPHONE NUMBER (Include Area Code)
803-259-1119

SIGNATURE - *Authorized consignee acknowledging waste receipt*

DATE

10. CERTIFICATION

This is to certify that the herein-named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. This also certifies that the materials are classified, packaged, marked, and labeled and are in proper condition for transportation and disposal as described in accordance with the requirements of 10 CFR Parts 20 and 61, or equivalent state regulations.

AUTHORIZED SIGNATURE Todd EASTMAN TITLE Sr Broker, NWT DATE 9/6/00 (*)

11. U.S. DEPARTMENT OF TRANSPORTATION DESCRIPTION (Including proper shipping name, hazard class, UN ID number, and any additional information)	12. DOT LABEL "RADIOACTIVE"	13. TRANSPORT INDEX	14. PHYSICAL AND CHEMICAL FORM	15. INDIVIDUAL RADIONUCLEIDES			16. TOTAL PACKAGE ACTIVITY MBq	16. TOTAL PACKAGE ACTIVITY Ci	17. LSA/SCO CLASS	18. TOTAL WEIGHT OR VOLUME (Use appropriate units)	19. IDENTIFICATION NUMBER OF PACKAGE
US DOT Exempt	NA	N/A	Solid Oxides	Cs-137	Sr-90		3.4924E+00	9.4387E-02	NA	820. LBS; 7.5 FT3	Bldg40-1
US DOT Exempt	NA	N/A	Solid Oxides	Cs-137	Sr-90		2.0864E+00	5.6387E-02	NA	510. LBS; 7.5 FT3	Bldg40-2
US DOT Exempt	NA	N/A	Solid Oxides	Cs-137	Sr-90		3.9003E+00	1.0542E-01	NA	910. LBS; 7.5 FT3	Bldg40-4
US DOT Exempt	NA	N/A	Solid Oxides	Cs-137	Sr-90		1.6324E+00	4.4129E-02	NA	410. LBS; 7.5 FT3	Bldg40-5
US DOT Exempt (floor tiles)	NA	N/A	Solid Oxides	Cs-137	Sr-90		1.3151E+00	3.5548E-02	NA	340. LBS; 7.5 FT3	Bldg40-3

FOR CONSIGNEE USE ONLY

20. "Certification is hereby made to the South Carolina Department of Health and Environmental Control that this shipment of low-level radioactive waste has been inspected in accordance with the requirements of South Carolina Radioactive Material License 287-04 as amended, and the effective consolidation facility acceptance criteria, within 48 hours prior to shipment, and further certification is made that the inspection revealed no items of non-compliance with all applicable laws, rules, and regulations."

Date 9/6/00 (*) Signature Todd EASTMAN

Title and Organization Sr. Broker, NWT

Telephone No. (925) 443-7967 or 803 356-3717

FORM 540 (10-96)

(*) Corrected Manifest from 8/31/00

FORM 541 CHEM-NUCLEAR CONSOLIDATION FACILITY

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CONTAINER AND WASTE DESCRIPTION

Additional Nuclear Regulatory Commission (NRC) Requirements for Control, Transfer and Disposal of Radioactive Waste

1. MANIFEST TOTALS

NUMBER OF PACKAGES/ DISPOSAL CONTAINERS	NET WASTE VOLUME		NET WASTE WEIGHT		SPECIAL NUCLEAR MATERIAL (grams) U-233	U-235	Pu	TOTAL
5	m3	1.0620	kg	1383.4568	NP	NP	NP	NP
	ft3	37.5000	lb	3050.0000				

ACTIVITY	ALL NUCLIDES	TRITIUM	C-14	Tc-99	I-129	SOURCE	
MBq	1.2427E+01	NP	NP	NP	NP	(kgs)	NA
mCi	3.3587E-01	NP	NP	NP	NP	(lbs)	NA

2. MANIFEST NUMBER: USA 98-065

3. PAGE 1 OF 2 PAGE(S)

4. SHIPPER NAME: (DC) Walter Reed Army Medical

SHIPMENT ID NUMBER: SCN-0153-00

DISPOSAL CONTAINER DESCRIPTION / **WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER**

5. CONTAINER IDENTIFICATION NUMBER/S.C. TRANSPORT PERMIT NUMBER	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) (lb)	9. SURFACE RADIATION LEVEL mSv/hr mrem/hr	10. SURFACE CONTAMINATION MBq/100 cm2 dpm/100 cm2 ALPHA	BETA-GAMMA	PHYSICAL DESCRIPTION 11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3 & Note 3A)	14. CHEMICAL DESCRIPTION CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT IF >0.1%	15. RADIOLOGICAL DESCRIPTION INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT RADIONUCLIDES	MBq	mCi	16. WASTE CLASSIFICATION AS-Class A Stable AU-Class A Unstable B-Class B C-Class C
Bldg40-1/0137-00-00-E 6825 16th Street, NW Washington, DC 20307-5001	4	0.2124	371.9458	<1.0000E-03	<1.5700E-06	<1.6700E-05	59-LABTRASH (PAPER,PLASTIC,METAL,WOOD),DEBRIS, SAND BLAST MEDIA, PPE, METAL-HK	0.2124	100 100	Oxides None	0.00	Cs-137 Sr-90 ------ Subtotal	1.9402E+00 1.5522E+00 ------ 3.4924E+00	5.2437E-02 4.1950E-02 ------ 9.4387E-02	AU
		7.5000	820.0300	<1.000E-01	<1.000E+02	<1.000E+03		7.5000				Total	3.4924E+00	9.4387E-02	
Bldg40-2/0137-00-00-E 6825 16th Street, NW Washington, DC 20307-5001	4	0.2124	231.3321	<1.0000E-03	<1.5700E-06	<1.6700E-05	59-LABTRASH (PAPER,PLASTIC,METAL,WOOD),DEBRIS, SAND BLAST MEDIA, PPE, METAL-HK	0.2124	100 100	Oxides None	0.00	Cs-137 Sr-90 ------ Subtotal	1.1991E+00 9.2726E-01 ------ 2.0864E+00	3.1326E-02 2.5061E-02 ------ 5.6387E-02	AU
		7.5000	510.0000	<1.000E-01	<1.000E+02	<1.000E+03		7.5000				Total	2.0864E+00	5.6387E-02	
Bldg40-3/0137-00-00-E 6825 16th Street, NW Washington, DC 20307-5001	4	0.2124	154.2214	<1.0000E-03	<1.6700E-06	<1.6700E-05	59-FLOOR TILE-HL	0.2124	100 100	Oxides None	0.00	Cs-137 Sr-90 ------ Subtotal	7.2071E-01 5.8456E-01 ------ 1.3153E+00	1.9749E-02 1.5799E-02 ------ 3.5548E-02	AU
		7.5000	340.0000	<1.000E-01	<1.000E+02	<1.000E+03		7.5000				Total	1.3153E+00	3.5548E-02	

NOTE 1: Container Description Codes. For containers of waste requiring disposal in approved structural overpacks the numerical code must be followed by "-OP."

1. Wooden Box or Crate
2. Metal Box
3. Plastic Drum or Pail
4. Metal Drum or Pail
5. Metal Tank or Liner
6. Concrete Tank or Liner
7. Polyethlene Tank or Liner
8. Fiberglass Tank or Liner
9. Demineralizer
10. Gas Cylinder
11. Bulk: Unpackaged Waste
12. Unpackaged Components
13. High Integrity Container
19. Other. Describe in Item 6. or additional page.

Note 1A: Barnwell Specific Container Description Codes. (Choose one code as may be applicable.)

A. High Integrity Container - Poly
B. High Integrity Container - Poly with Steel Shell
C. High Integrity Drum Overpack - Poly
D. High Integrity Container - Stainless Steel
E. High Integrity Container - Fiberglass
F. Liner - Steel

NOTE 2: Waste Descriptor Codes. (Choose up to three which predominate by volume.)

20. Charcoal
21. Incinerator Ash
22. Soil
23. Gas
24. Oil
25. Aqueous Liquid
26. Filter Media
27. Mechanical Filter
28. EPA or State Hazardous
29. Demolition Rubble
30. Cation Ion-exchange Media
31. Anion Ion-exchange Media
32. Mixed Bed Ion-exchange Media
33. Contaminated Equipment
34. Organic Liquid (except oil)
35. Glassware or Labware
36. Sealed Source/Device
37. Paint or Plating
38. Evaporator Bottoms/Sludges Concentrates
39. Compactible Trash
40. Non-compactible Trash
41. Animal Carcass
42. Biological Material (except animal carcass)
43. Activated Material
59. Other. Describe in Item 11. or additional page

Note 2A: Barnwell Specific Waste Descriptor Codes (Choose all applicable codes.)

G. Dewatered
H. Solid
I. Combustible
J. Non-combustible
K. Air Filtration Filters
L. Asbestos

Note 3: Solidification and Stabilization Media Codes. (Choose up to three which predominate by volume.) For media meeting disposal site structural stability requirements, the numerical code must be followed by "-S" and the media vendor and brand name must also be identified in Item 13. Code 100=NONE REQUIRED.

Solidification
90. Cement
91. Concrete (encapsulation)
92. Bitumer
93. Vinyl Chloride
94. Vinyl Ester Styrene
99. Other. Describe in Item 13, or additional page
100. None Required.

Note 3A: Barnwell Specific Solidification and Stabilization Media Codes (Choose this code if applicable)

M. Wax Binder

FORM 541 (10-95)

FORM 541A

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

CHEM-NUCLEAR CONSOLIDATION FACILITY

2. MANIFEST NUMBER
USA 98-065

3 PAGE 2 OF 2 PAGE(S)

CONTAINER AND WASTE DESCRIPTION (CONTINUATION)

DISPOSAL CONTAINER DESCRIPTION							WASTE DESCRIPTION FOR EACH WASTE TYPE IN CONTAINER							
							PHYSICAL DESCRIPTION			14. CHEMICAL DESCRIPTION		15. RADIOLOGICAL DESCRIPTION		
5. CONTAINER IDENTIFICATION NUMBER/ S.C. TRANSPORT PERMIT NUMBER	6. CONTAINER DESCRIPTION (See Note 1 & Note 1A)	7. VOLUME (m3) (ft3)	8. WASTE AND CONTAINER WEIGHT (kg) (LB)	9. SURFACE RADIATION LEVEL mSv/hr mrem/hr	10. SURFACE CONTAMINATION MBq/100 cm2 dpm/100 cm2 ALPHA	BETA-GAMMA	11. WASTE DESCRIPTOR (See Note 2 & Note 2A)	12. APPROXIMATE WASTE VOLUME(S) IN CONTAINER (m3) (FT3)	13. SOLIDIFICATION OR STABILIZATION MEDIA (See Note 3 & Note 3A)	CHEMICAL FORM/ CHELATING AGENT	WEIGHT % CHELATING AGENT (IF>0.1%)	INDIVIDUAL RADIONUCLIDES AND ACTIVITY (MBq) AND CONTAINER TOTAL; OR CONTAINER TOTAL ACTIVITY AND RADIONUCLIDE PERCENT			16. WASTE CLASSIFICATION A-Class A Stable AU-Class A Unstable B-Class B C-Class C
												RADIONUCLIDES	MBq	mCi	
Bldg40-4/0137-00-00-E 6825 16th Street, NW Washington, DC 20307-5001	4	0.2124	412.7691	<1.0000E-03	<1.6700E-06	<1.6700E-05	59-LABTRASH (PAPER,PLASTIC,METAL,WOOD),DEBRIS, SAND BLAST MEDIA, PPE, METAL-H	0.2124	100 100	Oxides None	0.00	Cs-137 Sr-90 Subtotal	2.1669E+00 1.7336E+00 3.9005E+00	5.8566E-02 4.6853E-02 1.0542E-01	AU
		7.5000	910.0000	<1.000E-01	<1.000E+02	<1.000E+03		7.5000							
												Total	3.9005E+00	1.0542E-01	
Bldg40-5/0137-00-00-E 6825 16th Street, NW Washington, DC 20307-5001	4	0.2124	185.9729	<1.0000E-03	<1.6700E-06	<1.6700E-05	59-LABTRASH (PAPER,PLASTIC,METAL,WOOD),DEBRIS, SAND BLAST MEDIA, PPE, METAL-H	0.2124	100 100	Oxides None	0.00	Cs-137 Sr-90 Subtotal	9.0709E-01 7.2568E-01 1.6328E+00	2.4516E-02 1.9613E-02 4.4129E-02	AU
		7.5000	410.0000	<1.000E-01	<1.000E+02	<1.000E+03		7.5000							
												Total	1.6328E+00	4.4129E-02	
Shipment Totals		1.0620	1356.2413										1.2427E+01	3.3587E-01	
		37.5000	2990.0000												

FORM 541A (10-96)

FORM 542

CHEM-NUCLEAR CONSOLIDATION FACILITY

UNIFORM LOW-LEVEL RADIOACTIVE WASTE MANIFEST

MANIFEST INDEX AND REGIONAL COMPACT TABULATION

List all original "PROCESSED WASTE" generators (if any) before "COLLECTED WASTE" generators.

1. WASTE COLLECTOR/PROCESSOR

NAME: (DC) Walter Reed Army Medical Center

IDENTIFICATION NUMBER: 0137-00-00-E

SHIPPING DATE: 8/31/00

SHIPPER USE ONLY

2. MANIFEST NUMBER: USA 98-065

3. PAGE 1 OF 1 PAGE(S)

4. SC TRANSPORT ERMIT NUMBER	5. GENERATOR NAME AND TELEPHONE NUMBER	6. GENERATOR FACILITY ADDRESS	6A. WASTE DESCRIPTION (NOMENCLATURE)	7. PREPROCESSED WASTE (OR MATERIAL) VOLUME (m3)	(ft3)	8. MANIFEST NUMBER(S) UNDER WHICH WASTE (OR MATERIAL) RECEIVED AND DATE OF RECEIPT	9. WASTE CODE P = PROCESSED C = COLLECTED	10. ORIGINATING COMPACT REGION OR STATE	11. AS PROCESSED/COLLECTED TOTAL A. SOURCE MATERIAL (kg)	(lb)	B. SNM (g)	C. ACTIVITY (MBq)	(mCi)	D. VOLUME (m3)	(ft3)	E. WEIGHT (lb)	F. MAXIMUM PACKAGE RADIATION LEVEL mrem/hr
37-00-00-E	(DC) Walter Reed Army Medical Center (202) 356-6062	6825 16th Street, NW Washington, DC 20307-5001	LABTRASH (PAPER,PLASTIC,METAL,WOOD)	1.0620	37.5042	N/A (/ /)	C	DC	0.0000E+00	0.0000E+00	0.0000E+00	1.2427E+01	3.3587E-01	1.0619	37.5000	2,990.0000	8.0000E-02
			DEBRIS, SAND BLAST MEDIA, PPE, METAL														
			FLOOR TILE														

TOTALS OF ALL PAGES (FORMS 542 AND 542A)

0.0000E+00	0.0000E+00	0.0000E+00	1.2427E+01	3.3587E-01	1.0619	37.5000	2,990.0000	8.0000E-02

Form 542 (10-96)

Appendix U
Room 01 Sink Survey Data

RADIOLOGICAL SURVEY REPORT

NWTS #: N/A

DATE: 8/16/2000	INSTRUMENTATION USED				
TIME: 1000	MODEL	S/N	EFF.%	BKRD	CAL. DUE DATE
SURVEYOR: Nancy Morey	M-2929 Pr-43-10-1	95575 096688	α 13 βγ 15	α 0.1 βγ 59	03/09/2001
LOCATION: WRAIR	M-2224 43-68	143048 147960	α 12 βγ 12	α 0 βγ 150	06/03/2001
REVIEWED BY: Dan Spicuzza	N/A	N/A	N/A	N/A	N/A

Smear Locations Circled; Dose Rates = μR/hr

PURPOSE OF SURVEY: Final Status Survey

All accessible areas of the sink were 100 % direct scan surveyed.

No detectable activity over background levels was found. levels

1-Minute Direct Measurements were obtained
on the sink drain and drain trap the results are below:

Sink Drain: 182 CPM

Sink Drain Trap: 175 CPM

Remarks:

SMEAR RESULTS
RESULTS = DPM/100cm^2
UNLESS NOTED

#	βγ	α
See Attached Sheet		
	NA	

DATE: 08/16/2000	NWTS# N/A	ANALYSIS PERFORMED BY: Nancy Morey

COUNTING SYSTEM DATA

INSTRUMENT I.D.:	α 95575	β 95575	DETECTOR I.D.:	α 096688	β 096688
MODEL NUMBER:	α 2929	β 2929	MODEL NUMBER:	α 43-10-1	β 43-10-1
EFFICIENCIES: α:	0.13		MDA: α:	21.7	DPM
βγ:	0.2		βγ:	140.3	DPM

PERFORMED BY: Nancy Morey

SAMPLE COUNT TIME:	2 Minute	ACTIVITY REPORT IN:	DPM/100 cm^2
α BACKGROUND:	0.2 CPM	βγ BACKGROUND:	66 CPM

SAMPLE I.D./DESCRIPTION	GROSS COUNTS		NET COUNTS		ACTIVITY	
	α	βγ	α	βγ	α	βγ
Sink	0.5	72	0.3	6	<MDA	<MDA
Sink	2	69	1.8	3	<MDA	<MDA
Sink	0.5	76	0.3	10	<MDA	<MDA
Sink	1.5	64	1.3	-2	<MDA	<MDA
Sink	0.5	70	0.3	4	<MDA	<MDA
Cabinet	0.5	76	0.3	10	<MDA	<MDA
Cabinet	0.5	75	0.3	9	<MDA	<MDA
Cabinet	0	61	-0.2	-5	<MDA	<MDA
Cabinet	0	73	-0.2	7	<MDA	<MDA
Cabinet	0.5	61	0.3	-5	<MDA	<MDA
Sink Drain Trap	0.5	64	0.3	-2	<MDA	<MDA
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A	N/A	N/A	N/A	N/A	N/A	N/A

Remarks: Cabinet, sink, and drain trap in Room 01.

Reviewed by: Dan Spicuzza Date: 08/16/2000

Appendix V
Room Penetration Survey Data

Room Penetration Survey Data Form

Survey Location:	Walter Reed AIR
Survey Unit:	Room GR
Survey Unit Classification:	Class 1
Survey Unit Size in Meters^2:	11
Date:	09/11/2000
Time:	1400
Surveyor:	Charles Russo
Reviewed by:	Dan Spicuzza
Instrument:	Model 19
SN:	133178
Detector:	N/A
SN:	N/A
Det Size in cm^2:	N/A
Cal Due Date:	04/03/2001

Penetration Grid ID # Location	Contact Reading in μR/hr
G-0	7
H-0	7
H-2	6
K-6	6
K-7	6
P-7 Top	7
P-7 Bottom	7
I-13	6
J-14	6
J-12	6
J-11	6

Room Penetration Survey Data Form

Survey Location:	Walter Reed AIR
Survey Unit:	Room R3
Survey Unit Classification:	Class 1
Survey Unit Size in Meters^2:	19
Date:	09/11/2000
Time:	1430
Surveyor:	Charles Russo
Reviewed by:	Dan Spicuzza
Instrument:	Model 19
SN:	133178
Detector:	N/A
SN:	N/A
Det Size in cm^2:	N/A
Cal Due Date:	04/03/2001

Penetration Grid ID # Location	Contact Reading in μR/hr
I-0	6
I-7	8
H-7	8
I-11 Top	7
I-11 Bottom	7
G-10	7
F-11	6

Appendix W
Room R3 Sump Well Survey Data

RADIOLOGICAL SURVEY
SIGN TEST FORM

Survey Location:	Walter Reed AIR		Instrument:	Model 2224		
Survey Unit:	Room R-3 Sump Well		SN:	143048	$DCGL_w$ dpm/100cm^2:	1,500
Survey Unit Classification:	Class 1		Detector:	Model 43-68		
Survey Unit Size in Meters^2:	N/A		SN:	147960		
Date:	08/21/2000		Det Size in cm^2:	125		
Time:	0900		Cal Due Date:	06/03/2001		
Surveyor:	Charles Russo		Bkg Time:	1	Minutes	
Reviewed by:	Dan Spicuzza		Sample Count Time:	1	Minutes	
Type of Survey:	Beta-Gamma Scan and Direct Measurement Survey of Room R3 Sump Well		Surface Efficiency:	0.7		
			Surveyor Efficeincy Factor:	0.5		
			Daily Bkg α:	1	CPM	
			Daily Bkg $\beta\gamma$:	150	CPM	
			Efficiency α:	0.09		
			Efficiency $\beta\gamma$:	0.12		
			$L_{C\,\alpha}$:	2.3	CPM	
			$L_{D\,\alpha}$:	7.7	CPM	
			Direct Measurement MDC α:	97.1	dpm/100cm^2	
			$S_{i\alpha}$:	0.85		
			$B_{i\alpha}$:	0.07		
			Scan MDCR α:	12.7	CPM	
			Scan MDC α:	228.1	dpm/100cm^2	
			$L_{C\,i\beta\gamma}$:	28.5	CPM	
			$L_{D\,i\beta\gamma}$:	60.0	CPM	
			Direct Measurement MDC $\beta\gamma$:	571.0	dpm/100cm^2	
			$S_{i\beta\gamma}$:	10.37		
			$B_{i\beta\gamma}$:	10.00		
			Scan MDCR $\beta\gamma$:	156	CPM	
			Scan MDC $\beta\gamma$:	2095.5	dpm/100cm^2	

Survey Data Location	Scan Survey Results CPM	Scan Survey Results DPM/100cm^2	Direct Measurement Reading CPM	Direct Measurement Reading DPM/100cm^2	$DCGL_w$ - Data DPM/100cm^2	Sign
1' Deep	220	466.67	225	500.00	1,000	1
2' Deep	200	333.33	208	386.67	1,113	1
3' Deep	240	600.00	249	660.00	840	1
4' Deep	200	333.33	205	366.67	1,133	1
5' Deep	200	333.33	213	420.00	1,080	1
6' Deep	180	200.00	195	300.00	1,200	1
7' Deep	200	333.33	205	366.67	1,133	1

Remarks:				
	Critical Value:	N/A	Number of positive differences S+ =	7
	Standard Deviation =	118.80	Number of Required Date Points:	N/A
	Mean Value =	428.57	Sign P:	N/A
	Median =	386.67	LBGR:	750
			Δ/σ:	N/A

RADIOLOGICAL SURVEY
SIGN TEST FORM

Survey Location:	Walter Reed AIR		Instrument:	Model-3		
Survey Unit:	Room R-3 Sump Well		SN:	134115	$DCGL_w$ dpm/100cm^2:	1,500
Survey Unit Classification:	Class 1		Detector:	Model 44-9		
Survey Unit Size in Meters^2:	N/A		SN:	151135		
Date:	08/21/2000		Det Size in cm^2:	15		
Time:	1100		Cal Due Date:	08/04/2001		
Surveyor:	Charles Russo		Bkg Time:	1	Minutes	
Reviewed by:	Dan Spicuzza		Sample Count Time:	1	Minutes	
Type of Survey:	Beta-Gamma Scan and Direct Measurement Survey of Room R3 Sump Well		Surface Efficiency:	0.8		
			Surveyor Efficeincy Factor:	0.5		
			Daily Bkg α:	N/A	CPM	
			Daily Bkg $\beta\gamma$:	50	CPM	
			Efficiency α:	N/A		
			Efficiency $\beta\gamma$:	0.15		
			$L_{C\,\alpha}$:	N/A	CPM	
			$L_{D\,\alpha}$:	N/A	CPM	
			Direct Measurement MDC α:	N/A	dpm/100cm^2	
			$S_{i\alpha}$:	N/A		
			$B_{i\alpha}$:	N/A		
			Scan MDCR α:	N/A	CPM	
			Scan MDC α:	N/A	dpm/100cm^2	
			$L_{C\,\beta\gamma}$:	16.5	CPM	
			$L_{D\,\beta\gamma}$:	35.9	CPM	
			Direct Measurement MDC $\beta\gamma$:	1993.4	dpm/100cm^2	
			$S_{i\beta\gamma}$:	5.99		
			$B_{i\beta\gamma}$:	3.33		
			Scan MDCR $\beta\gamma$:	90	CPM	
			Scan MDC $\beta\gamma$:	7057.4	dpm/100cm^2	

Survey Data Location	Scan Survey Results CPM	Scan Survey Results DPM/100cm^2	Direct Measurement Reading CPM	Direct Measurement Reading DPM/100cm^2	$DCGL_w$ - Data DPM/100cm^2	Sign
1' Deep	50	0.00	60	446.67	1,053	1
2' Deep	50	0.00	60	446.67	1,053	1
3' Deep	80	1340.00	80	1340.00	160	1
4' Deep	50	0.00	50	0.00	1,500	1
5' Deep	80	1340.00	80	1340.00	160	1
6' Deep	80	1340.00	80	1340.00	160	1
7' Deep	80	1340.00	80	1340.00	160	1

Remarks:				
	Critical Value:	N/A	Number of positive differences S+ =	7
	Standard Deviation =	576.64	Number of Required Date Points:	N/A
	Mean Value =	893.33	Sign P:	N/A
	Median =	1340.00	LBGR:	750
			Δ/σ:	N/A

Appendix X
Room R3 And GR Concrete Sample Results

Barringer Laboratories, Inc.

15000 W 6th Avenue Suite 300 Golden, Colorado 80401-5047 (800) 654-0506 (303) 277-1687 Fax (303) 277-1689

Date: 09-Oct-00

Thomas Dias
New World Technology
1236 Concannon Blvd.
Livermore, CA 94550

Phone: 1-925-443-7967
Fax: 1-925-443-0119

Work Order: 0009100
Project: Walter Reed

Dear Thomas Dias,

Barringer Laboratories received 2 samples on 09/13/00 for the analyses presented in the following report.

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these test results, please feel free to call.

10/9/00

Michael Howard
Radiochemistry Laboratory Manager

10/9/00

J.R. Ritenour
Project Manager

Date: 09-Oct-00

Barringer Laboratories, Inc.

15000 W 6th Avenue Suite 300 Golden, Colorado 80401-5047 (800) 654-0506 (303) 277-1687 Fax (303) 277-1689

Sample Receipt Checklist

Client Name	**New World Technology**	Date and Time Received	**13-Sep-00**
Work Order	**0009100**	Received By	**NSW**
Carrier	**FedEx**	Checklist Created By	**NSW**

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Coolers and samples screened for radioactivity?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated tests?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	Temp: 12°C
VOA vials have less than pea-sized headspace?	Yes ☐	No ☐	No VOA vials ☑
Was pH acceptable upon receipt?	Yes ☑	No ☐	
Was pH left unadjusted?	Yes ☑	No ☐	Preservative: Lot#:

Comments:
WR-RS-1 on COC but sample id on container states WR-R3-1.

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Date: 09-Oct-00

Client: New World Technology
Project: Walter Reed
Work Order: 0009100
Date Received: 9/13/00
Temp Received: 12°C

SAMPLE SUMMARY

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Matrix	Bottle and Preservation
0009100-01A	WR-GR-1		9/9/00	Soil	1000g gamma jar, unpreserved
0009100-02A	WR-R3-1		9/9/00	Soil	1000g gamma jar, unpreserved

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Date: 09-Oct-00

CLIENT SAMPLE REPORT

Client: **New World Technology**
Work Order: **0009100**
Project: **Walter Reed**

Client Sample ID: **WR-GR-1**
Tag Number:

Lab Sample ID: **0009100-01A**
Date Collected: **09/09/2000**
Matrix: **Soil**

Analyte	CAS#	Method	Result ± 2 sigma	Limit	Qual	Unit	DF	Prepped	Analyzed	Analyst	Batch
Actinium-228, total	14331-83-0	EPA 901.1	0.87 ± 0.17	0.2		pCi/g	1	09/14/2000	09/18/2000	LLC	A10227
Bismuth-212, total	14913-49-6	EPA 901.1	0.91 ± 0.35	0.6		pCi/g	1	09/14/2000	09/18/2000	LLC	A10227
Bismuth-214, total	14733-03-0	EPA 901.1	0.39 ± 0.097	0.2		pCi/g	1	09/14/2000	09/18/2000	LLC	A10227
Cesium-137, total	10045-97-3	EPA 901.1	22 ± 0.90	0.09		pCi/g	1	09/14/2000	09/18/2000	LLC	A10227
Lead-212, total	15092-94-1	EPA 901.1	0.86 ± 0.12	0.2		pCi/g	1	09/14/2000	09/18/2000	LLC	A10227
Lead-214, total	15067-28-4	EPA 901.1	0.39 ± 0.12	0.2		pCi/g	1	09/14/2000	09/18/2000	LLC	A10227
Potassium-40, total	13966-00-2	EPA 901.1	3.8 ± 0.58	0.5		pCi/g	1	09/14/2000	09/18/2000	LLC	A10227
Thallium-208, total	14913-50-9	EPA 901.1	0.28 ± 0.060	0.1		pCi/g	1	09/14/2000	09/18/2000	LLC	A10227
Strontium-89/90, total	11-10-9	EPA 905.0/SM704	6.1 ± 0.83	1		pCi/g	1	09/14/2000	10/05/2000	MTC	P7201

Client: **New World Technology**
Work Order: **0009100**
Project: **Walter Reed**

Client Sample ID: **WR-R3-1**
Tag Number:

Lab Sample ID: **0009100-02A**
Date Collected: **09/09/2000**
Matrix: **Soil**

Analyte	CAS#	Method	Result ± 2 sigma	Limit	Qual	Unit	DF	Prepped	Analyzed	Analyst	Batch
Actinium-228, total	14331-83-0	EPA 901.1	1.2 ± 0.25	0.2		pCi/g	1	09/14/2000	09/18/2000	LLC	A10227
Bismuth-212, total	14913-49-6	EPA 901.1	1.3 ± 0.38	0.6		pCi/g	1	09/14/2000	09/18/2000	LLC	A10227
Bismuth-214, total	14733-03-0	EPA 901.1	0.40 ± 0.098	0.2		pCi/g	1	09/14/2000	09/18/2000	LLC	A10227
Cesium-137, total	10045-97-3	EPA 901.1	20 ± 0.81	0.1		pCi/g	1	09/14/2000	09/18/2000	LLC	A10227
Lead-212, total	15092-94-1	EPA 901.1	1.2 ± 0.12	0.2		pCi/g	1	09/14/2000	09/18/2000	LLC	A10227
Lead-214, total	15067-28-4	EPA 901.1	0.48 ± 0.13	0.2		pCi/g	1	09/14/2000	09/18/2000	LLC	A10227
Potassium-40, total	13966-00-2	EPA 901.1	3.8 ± 0.55	0.5		pCi/g	1	09/14/2000	09/18/2000	LLC	A10227
Thallium-208, total	14913-50-9	EPA 901.1	0.39 ± 0.058	0.08		pCi/g	1	09/14/2000	09/18/2000	LLC	A10227
Strontium-89/90, total	11-10-9	EPA 905.0/SM704	5.2 ± 0.89	1		pCi/g	1	09/14/2000	10/05/2000	MTC	P7201

Qualifiers:
ND - Not detected at the reporting limit
B - Analyte detected in method blank
Z - Sample > 10 times blank result
J - Analyte detected below reporting limit
L - Contract/Client reporting limit exceeded
M - Maximum contaminant level exceeded
E - Value above quantitation range
R - RPD outside accepted recovery limits
X - Duplicate sample(s) < 5 times limit
S - Spike outside accepted recovery limits
Y - Unspiked sample > 4 times amount spiked

Date: 09-Oct-00

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BATCH QC SUMMARY REPORT

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Client: **New World Technology** | Batch ID: **A10227** | Sample ID: **0009100-01ADUP** | Method: **EPA 901.1** | Prepped: **9/14/00**
Work Order: **0009100** | Seq No: **202485** | Unit: **pCi/g** | Analyzed: **9/18/00**
Project: **Walter Reed** | **Sample Duplicate** | Run ID: **GAMMASPEC_000918F** | Matrix: **Soil** | Analyst: **LLC**

Analyte	Result ± 2 sigma	Limit	SpikeVal	SpikeRefVal	%REC	LowLimit	HighLimit	DupRefVal	± 2 sigma	RPD/RER	RPDLimit	Qual
Actinium-228, total	0.79 ± 0.20	0.1						0.87	± 0.17	0.18	1.00	
Bismuth-212, total	0.83 ± 0.28	0.4						0.91	± 0.35	0.10	1.00	
Bismuth-214, total	0.45 ± 0.10	0.2						0.39	± 0.097	0.28	1.00	
Cesium-137, total	22 ± 0.90	0.1						22	± 0.90	0.02	1.00	
Lead-212, total	0.86 ± 0.12	0.2						0.86	± 0.12	0.01	1.00	
Lead-214, total	0.46 ± 0.15	0.2						0.39	± 0.12	0.26	1.00	
Potassium-40, total	3.7 ± 0.59	0.6						3.8	± 0.58	0.06	1.00	
Thallium-208, total	0.28 ± 0.059	0.1						0.28	± 0.060	0.03	1.00	

Client: **New World Technology** | Batch ID: **A10227** | Sample ID: **LCS1-BLI#3644** | Method: **EPA 901.1** | Prepped:
Work Order: **0009100** | Seq No: **202483** | Unit: **pCi/g** | Analyzed: **9/18/00**
Project: **Walter Reed** | **Laboratory Control Spike** | Run ID: **GAMMASPEC_000918F** | Matrix: **Soil** | Analyst: **LLC**

Analyte	Result ± 2 sigma	Limit	SpikeVal	SpikeRefVal	%REC	LowLimit	HighLimit	DupRefVal	± 2 sigma	RPD/RER	RPDLimit	Qual
Cesium-137, total	61 ± 2.4	0.8	60		101	81	119					

Client: **New World Technology** | Batch ID: **P7201** | Sample ID: **0009122-01ADUP** | Method: **EPA 905.0/SM704** | Prepped: **9/18/00**
Work Order: **0009100** | Seq No: **201930** | Unit: **pCi/g** | Analyzed: **10/5/00**
Project: **Walter Reed** | **Sample Duplicate** | Run ID: **GFPC_001005D** | Matrix: **Solid** | Analyst: **MTC**

Analyte	Result ± 2 sigma	Limit	SpikeVal	SpikeRefVal	%REC	LowLimit	HighLimit	DupRefVal	± 2 sigma	RPD/RER	RPDLimit	Qual
Stromtium-89/90, total	0.81 ± 0.73	1						2.0	± 0.77	0.77	1.00	

Client: **New World Technology** | Batch ID: **P7201** | Sample ID: **LCS1-7201** | Method: **EPA 905.0/SM704** | Prepped:
Work Order: **0009100** | Seq No: **201924** | Unit: **pCi/L** | Analyzed: **10/5/00**
Project: **Walter Reed** | **Laboratory Control Spike** | Run ID: **GFPC_001005D** | Matrix: **Aqueous** | Analyst: **MTC**

Analyte	Result ± 2 sigma	Limit	SpikeVal	SpikeRefVal	%REC	LowLimit	HighLimit	DupRefVal	± 2 sigma	RPD/RER	RPDLimit	Qual
Stromtium-89/90, total	39 ± 1.4	0.9	42		93	82	118					

Client: **New World Technology** | Batch ID: **P7201** | Sample ID: **MB1-7201** | Method: **EPA 905.0/SM704** | Prepped:
Work Order: **0009100** | Seq No: **201925** | Unit: **pCi/L** | Analyzed: **10/5/00**
Project: **Walter Reed** | **Method Blank** | Run ID: **GFPC_001005D** | Matrix: **Aqueous** | Analyst: **MTC**

Analyte	Result ± 2 sigma	Limit	SpikeVal	SpikeRefVal	%REC	LowLimit	HighLimit	DupRefVal	± 2 sigma	RPD/RER	RPDLimit	Qual
Stromtium-89/90, total	0.14 ± 0.54	0.9										

Qualifiers:
ND - Not detected at the reporting limit
J - Analyte detected below quantitation limit
E - Value above quantitation range
R - RPD outside accepted recovery limits
X - Duplicate sample(s) < 5 times limit
S - Spike recovery outside accepted recovery limits
Y - Unspiked sample > 4 times amount spiked
B - Analyte detected in the associated method blank
Z - Sample > 10 times blank result

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Date: 09-Oct-00

BATCH QC SUMMARY REPORT

Qualifiers:

ND - Not detected at the reporting limit
J - Analyte detected below quantitation limit
E - Value above quantitation range
R - RPD outside accepted recovery limits
X - Duplicate sample(s) < 5 times limit
S - Spike recovery outside accepted recovery limits
Y - Unspiked sample > 4 times amount spiked
B - Analyte detected in the associated method blank
Z - Sample > 10 times blank result

000100

New World Technology

Chain of Custody

Page 1 of 1

Project Name: Walter Reed

Project #: GA

P.O.#: 3046

Sampler: David Davis

Notes:

Analysis Required

Sample Identification	Date Collected	Time Collected	Soil	Water	Air	Wipe	Other	# of Containers	γ spec	Total Strontium Sr-90	Remarks	Check if RUSH
WR-GR-1	9-9-00			X				1			γ spec Sr 90	
WR-R3-1	9-9-00							1				

Name of Shipper	Airbill No.	Date	Time	Sample Relinquished By:	Date	Time	Sample Received By:	Date	Time
Fed Ex	813514369448	9-12-00	0900	David Davis	9-1200	0900	[illegible]	9/13/00	0930

Received by (Lab)	Date	Time	Condition on receipt

Turnaround Time Requested: (please circle): (Normal) Rush

(Rush TAT is subject to Client approval and Laboratory surcharge)

Report Results By: (Date): _____

Rush results requested by: (please circle): Phone Fax

Report Results To: Dan Spicuzza NWT

Address: 448 Commerce Way Livermore CA 94550

Telephone: 412-848-7022 **Fax:** 925-443-0119

Type: (please circle) Haz (Rad) Mixed Unknown

Disposal By: (please circle) (Lab) Client Contractor

White Copy – (Original) Retain with Samples Yellow Copy - Customer Pink Copy - Retain for Project Files

Appendix Y
NWT Radioactive Material License

RADIOACTIVE MATERIAL LICENSE

Pursuant to the California Code of Regulations, Division 1, Title 17, Chapter 5, Subchapter 4, Group 2, Licensing of Radioactive Material, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, use, possess, transfer, or dispose of radioactive material listed below; and to use such radioactive material for the purpose(s) and at the places(s) designated below. This license is subject to all applicable rules, regulations, and orders of the Department of Health Services now or hereafter in effect and to any standard or specific condition specified in this license.

1. *Licensee*	New World Technology	3. *License Number* 5363-01	*Amendment Number*: 15
2. *Address*	448 Commerce Way Livermore, CA 94550	4. *Expiration date* January 12, 2004	(3)
Attention	Donald K. Wadsworth Radiation Safety Officer	5. *Inspection agency*	Radiologic Health Branch Berkeley

License Number 5363-01 is hereby amended as follows:

6. Nuclide	7. Form	8. Possession Limit
A. Any radionuclides except: special nuclear material, source material, and any other alpha emitters.	A. Packaged waste	A. Not to exceed the customers authorized possession limits.
B. Alpha emitters except: special nuclear and source material.	B. Package waste	B. Not to exceed the customers authorized possession limits.
C. Special nuclear material	C. Packaged waste	C. Not to exceed the customers authorized possession limits.
D. Source material	D. Packaged waste	D. Not to exceed the customers authorized possession limits.
E. Any radionuclide with atomic numbers 1-88.	E. Sealed sources (Isotope Products Laboratories or Eberline calibration standards)	E. 10 microcuries per nuclide, total not to exceed 100 microcuries.
F. Any radionuclide with atomic numbers 90, 92, 94 and 95.	F. Alpha emitter standard sets.	F. 5 microcuries per nuclide, not to exceed 100 microcuries.
G. Any radionuclide with atomic numbers 1-88, 90, 92, 94 and 95.	G. Environmental samples and wipe samples.	G. 1 microcurie total.
H. Californium-252	H. Sealed source (Isotope Products Laboratories Model FF-362)	H. As per customer's license.
I. Any radionuclide	I. Any radioactive contamination	I. See condition for decontamination levels
J. Nickel-63	J. Sealed source (Shimadzu, Model GC-Mini2)	J. One source not to exceed 10 millicuries.

9. Authorized Use

A.-D. To be used for transferring of radioactive waste packaged in DOT approved containers as a customer service.

E.-F. To be used for operational checks and calibration of count rate instruments.

G. To be used for calibration, standardization and analytical measurements as a participant in U.S. EPA's Quality Assurance Program pursuant to the Safe Drinking Water Act and for analysis of the wipe samples obtained from the licensed customers.

H. To be used as a component of Bio Ion 20 mass spectrometer incidental to routine maintenance as customer service.

I. To be used incidental to customer decontamination services.

J. To be used as a component in Shimadzu Gas Chromatograph PR Model GC-Mini2, Serial Number 60458 AK

RADIOACTIVE MATERIAL LICENSE

License Number: 5363-01

Amendment Number: 15

LICENSE CONDITIONS

10. Radioactive material shall be used only at the following locations:

    (a) **448 Commerce Way**, Livermore, CA (use of Items E., F., and G. no storage of radioactive waste)

    (b) Temporary job sites at customers' facilities in areas not under exclusive (see Condition 23) federal jurisdiction throughout the State of California.

11. This license is subject to an annual fee for sources of radioactive material authorized to be possessed at any one time as specified in Items 6, 7, 8 and 9 of this license. The annual fee for this license is required by and computed in accordance with Title 17, California Code of Regulations, Sections 30230-30232 and is also subject to an annual cost-of-living adjustment pursuant to Section 100425 of the California Health and Safety Code.

12. Radioactive material shall be used by, or under the supervision of, the following individuals:

    (g) Donald K. Wadsworth, M.S.
    (a) Thomas J. Dias
    (b) Shawn A. Cavalieri
    (c) Kenneth C. Lamson
    (d) Willie W. Bremer
    (e) Judy Wadsworth
    (f) Dan M. Spicuzza
    (h) Todd Eastman
    (i) William Haney
    (j) Mark Donald
    (k) Dennis Divoky
    (l) Anshu Priya Doshi
    (m) Michael Sheaffer

13. Except as specifically provided otherwise by this license, the licensee shall possess and use radioactive material described in Items 6, 7, 8 and 9 of this license in accordance with the statements, representations, and procedures contained in the documents listed below. The Department's regulations shall govern unless the statements, representations, and procedures in the licensee's application and correspondence are more restrictive than the regulations.

    (a) The renewal application dated December 1, 1996, signed by Donald K. Wadsworth with attachments thereto as modified by the letter received on October 8, 1997 signed by Donald K. Wadsworth with attachments thereto.

    (b) The letter dated August 25, 1998 signed by Donald K. Wadsworth, M.S.H.P. with attachments thereto, regarding leak testing procedures under this license and as a customer service.

    (c) **The letters, both dated February 2, 2000, both with attachments, signed by Donald K. Wadsworth, M.S.H.P., regarding decommissioning and relocation of facility.**

14. (a) The Radiation Safety Officer in this program shall be Donald K. Wadsworth.
    (b) The Alternate Radiation Safety Officer in this program shall be Kenneth Lamson.

15. Sealed sources possessed under this license shall be tested for leakage and/or contamination as required by Title 17, California Code of Regulations, Section 30275 (c).

16. Quantitative analytical assays for the purpose of tests for leakage and/or contamination of sealed sources shall be performed only by persons specifically authorized to perform that service.

17. The following individuals are authorized to collect wipe test samples of sealed sources possessed under this license using leak test kits acceptable to the California Department of Health Services:

    (a) The Radiation Safety Officer
    (b) Qualified individuals designated in writing by the Radiation Safety Officer

RADIOACTIVE MATERIAL LICENSE

License Number: 5363-01

Amendment Number: 15

18. The licensee is authorized to perform tests for leakage and/or contamination of sealed sources. The following tests may be performed for sources possessed under this license and as a customer service:

    (a) Collection of wipe test samples from sealed sources and devices containing sealed sources.

    (b) Analysis of materials collected by the licensee as stated in (a) above and material returned by customers from leak test kits listed in (b) above for the amount of radioactivity. Reports to customers of analysis shall be in microcuries.

19. Records of leak test results shall be kept in units of microcuries and maintained for inspection. Records may be disposed of following Department inspection. Any leak test revealing the presence of 0.005 microcuries or more of removable radioactive material shall be reported to the Department of Health Services, Radiologic Health Branch, 601 N. 7th Street, P.O. Box 942732 – MS 178, Sacramento, CA 94234-7320, within five days of the test. This report shall include a description of the defective source or device, the results of the test, and the corrective action taken.

20. The licensee shall conduct a physical inventory every six months to account for all sealed sources and/or devices received and possessed under the license. Records of the inventories shall be maintained for inspection, and may be disposed of following Department inspection.

21. The licensee is authorized to calibrate radiation detection instruments (count rate instruments only) as a customer service/for his own use. Each calibration of a radiation detection instrument shall include not less than 2 points other than zero (separated by 50 percent of full scale) for each scale of the instrument certified by the licensee.

22. The licensee is authorized to provide radioactive decontamination as a customer service pursuant to Subitem I. of this license provided that:

    (a) The total quantity of radioactive material handled at any one customer's site and the level of radioactive contamination does not exceed the limits specified in the table below:

Radionuclide	Total Activity	Contamination Levels ($uCi/100cm^2$)	
		Alpha	Beta/Gamma
Any source material and beta/gamma emitter, except Sr-90 and Pb-210	10 mCi	10E-1	10E-1
Sr-90 and Pb-210 and any alpha emitter, except source material	1 mCi	10E-2	10E-2
Any special nuclear material	0.1 grams	10E-2	10E-2

    (b) A report is rendered to the customer with a copy to the Department within 30 days of the initiation of decontamination. This report shall include:

        (1) A complete description of the facility or object contaminated.

        (2) A specification of the nature of the radioactive contamination by nuclide or emission and levels initially observed.

        (3) Final levels observed on completion of decontamination.

        (4) If decontamination is not complete, a statement of progress to date of report.

    (c) Decontamination shall be under the supervision of a health physicist who is eligible for certification by the American Board of Health Physics and who shall sign the decontamination reports.

    (d) Radioactive wastes generated pursuant to activities conducted under this license shall not be transferred to this licensee, unless the nuclides and forms are authorized for possession under this license.

RADIOACTIVE MATERIAL LICENSE

License Number: 5363-01

Amendment Number: 15

23. Before radioactive materials may be used at a temporary job site at any federal facility, the jurisdictional status of the job site must be determined. If the jurisdictional status is unknown, the federal agency should be contacted to determine if the job site is under exclusive federal jurisdiction. A response shall be obtained in writing or a record made of the name and title of the person at the federal agency who provided the determination and the date that it was provided. Authorization for use of radioactive materials at the job sites under exclusive federal jurisdiction shall be obtained either by:

    (a) Filing an NRC Form-241 in accordance with the Code of Federal Regulations, Title 10, Part 150.20 (b), "Recognition of Agreement State Licenses", or

    (b) By applying for a specific NRC license.

    Before radioactive material can be used at a temporary job site in another State, authorization shall be obtained from the State if it is an Agreement State, or from the NRC for any non-Agreement State, either by filing for reciprocity or applying for a specific license.

For the State Department of Health Services

Date: March 29, 2000 By: _____

Radiologic Health Branch
P.O. Box 942732-MS 178, Sacramento, CA 94234-7320