

PROJECT PLAN FOR FIELD VOLCANISM

Prepared for

**Nuclear Regulatory Commission
Contract NRC-02-93-005**

Prepared by

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UNCONTROLLED

CENTER FOR NUCLEAR WASTE REGULATORY ANALYSES

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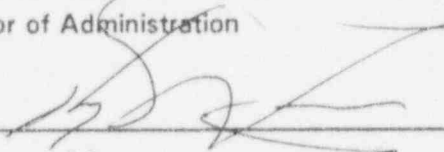
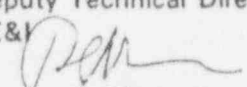
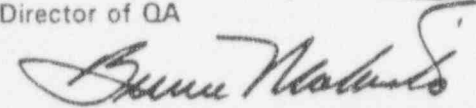
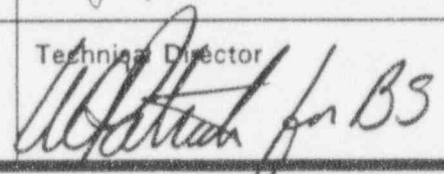
Title: PROJECT PLAN FOR FIELD VOLCANISM

EFFECTIVITY

Revision 0 of this document became effective on March 5, 1993.
This document consists of the pages and changes listed below.

<u>Page No.</u>	<u>Change No.</u>	<u>Date Effective</u>
Title Page	6	03/15/94
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Supersedes: Revision 0, Change 5 - December 1993

Director of Administration 	Date: 3/4/94	Deputy Technical Director for SE&I 	Date: 3/12/94
Director of QA 	Date: 3/12/94	Technical Director 	Date: 3/12/94

interpretive aspects of the project. At this time, it is anticipated that this project will extend through FY96. Project developments may require changes to the schedule as work progresses.

Deliverables for this project are listed in Table 3-1. The first three digits of the milestone number denote the project and task number; the next three digits identify the specific milestone within the task. Upon approval, these milestones and deliverables will be incorporated into the integrated CNWRA Schedule (see WSE&I Operation Plan).

Table 3-1. List of deliverables and completion dates

Milestone Number	Milestone Type	Deliverable Description	Completion Date
141001	Intermediate	Site Selection Review	07/15/93
145001	Intermediate	Semi-Annual Report 1994-1	08/12/93
145002	Intermediate	Semi-Annual Report 1994-2	2/15/94
145003	Intermediate	Semi-Annual Report 1995-1	08/12/95
145004	Intermediate	Semi-Annual Report 1995-2	02/00/96
145005	Intermediate	Semi-Annual Report 1996-1	08/00/96
145006	Intermediate	Semi-Annual Report 1996-2	02/00/97
142001	Major	Eruption Dynamics - Topical Report	02/09/96
143001	Major	Volatiles and Hydrothermal Systems - Topical Report	09/13/96
144001	Major	Geophysics Review - Topical Report	05/01/94

Table A-1. Field volcanism estimated spending plan, FY94

	1	2	3	4	5	6	7	8	9	10	11	12	13	Total
Center PI-4	459	306	459	459	306	459	306	306	459	306	459	306	459	5,053
Center PI-3	464	504	387	659	426	465	465	465	504	465	387	504	465	6,159
Center PI-2	2,040	2,103	2,072	2,567	2,103	2,072	2,041	2,072	2,072	2,072	2,072	2,103	2,041	27,434
Center PI-1	977	980	1,023	1,215	980	1,002	1,002	980	980	980	1,023	980	980	13,102
Center Tech	592	592	582	752	582	592	592	592	592	592	592	592	592	7,824
Center Clerical	319	308	318	401	308	318	318	308	318	318	318	308	318	4,181
Center Labor	4,851	4,793	4,842	6,053	4,706	4,908	4,724	4,724	4,826	4,734	4,842	4,793	4,856	63,751
Center Burden	2,121	2,095	2,116	2,645	2,056	2,145	2,064	2,064	2,153	2,069	2,116	2,095	2,122	27,861
Center Overhead	4,670	4,615	4,662	5,827	4,531	4,726	4,548	4,548	4,742	4,558	4,662	4,615	4,675	61,379
SwRI PI-4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SwRI PI-3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SwRI PI-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SwRI PI-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SwRI Tech	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SwRI Labor	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SwRI Burden	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SwRI Overhead	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ADP Services	936	72	936	96	936	72	936	72	936	72	936	72	936	7,008
Machine Shop	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Material/Supply	4,967	4,967	4,988	6,233	4,967	4,988	4,967	4,967	4,967	4,966	4,988	4,967	4,987	66,079
Quality Assur.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Report Services	377	378	377	472	377	377	378	377	378	377	377	378	377	5,000
Tphone & Tgram	106	106	106	132	106	106	106	107	106	104	106	106	106	1,401
Travel	0	7,720	4,675	9,986	2,246	5,474	11,135	5,474	2,246	9,986	4,675	7,720	0	71,337
Consultants	3,972	3,885	4,006	4,800	3,972	3,972	3,919	3,885	3,919	3,885	4,006	3,885	3,972	52,086
Clar Prem Pay	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Temporary Svcs	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Est exd. CFC, Fee	22,020	28,651	26,708	36,252	23,915	26,768	32,797	25,238	24,993	30,770	25,708	28,651	22,031	355,902
Center CFC	306	302	305	381	297	309	298	298	310	298	305	302	306	4,018
SwRI CFC	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tot Estimate Cost	22,326	28,953	27,013	36,633	24,212	27,077	33,095	26,535	24,703	31,069	27,013	28,953	22,337	359,920
Fee	1,762	2,292	2,137	2,900	1,913	2,141	2,788	2,230	2,073	2,615	2,270	2,435	1,873	29,430
Tot Cost with Fee	24,088	31,245	29,150	39,534	26,126	29,219	35,883	28,765	26,776	33,684	29,283	31,388	24,210	389,351
% Completion	6.19%	8.02%	7.49%	10.15%	6.71%	7.50%	9.22%	7.39%	6.98%	8.65%	7.52%	8.06%	6.22%	100.00%
Cumulative Cost	24,088	55,333	84,483	124,016	150,142	179,360	215,243	244,008	270,785	304,469	333,752	365,140	389,351	
Cumul Completion	6.19%	14.21%	21.70%	31.85%	38.56%	46.07%	55.28%	62.67%	69.55%	78.20%	85.72%	93.78%	100.00%	

A-2

A-3

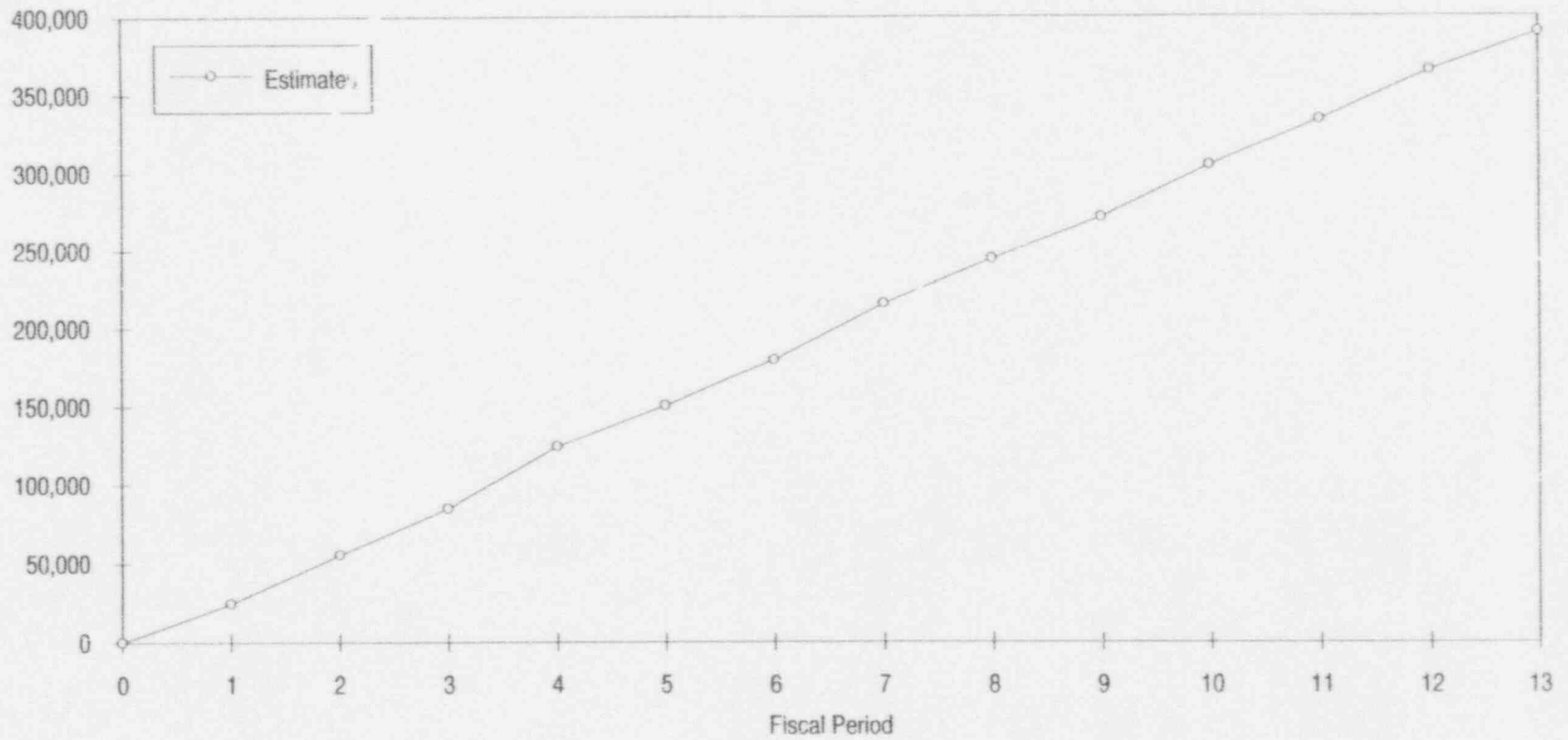


Figure A-1. Field volcanism estimated spending plan, FY94

Table A-2. Field volcanism estimated labor plan, FY94

	1	2	3	4	5	6	7	8	9	10	11	12	13	Total
Center Labor	9	6	9	9	6	6	6	6	9	6	9	6	9	99
Center P1-4	12	13	10	17	11	12	12	12	13	12	10	13	12	158
Center P1-3	66	68	67	83	68	67	66	67	67	67	67	68	66	887
Center P1-2	46	46	48	57	46	47	47	46	46	46	46	46	46	615
Center P1-1	59	59	58	75	56	58	59	59	59	59	58	58	59	780
Center Tech	31	30	31	39	30	31	31	30	31	31	31	30	31	407
Center Chemical	223	222	223	280	219	225	221	220	225	221	223	222	223	2,947
Total Center Labor														
SwRI Labor	1	2	3	4	5	6	7	8	9	10	11	12	13	Total
SwRI P1-4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SwRI P1-3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SwRI P1-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SwRI P1-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SwRI Tech	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total SwRI Labor	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table A-3. Field volcanism Task 2 estimated spending plan, FY94

	1	2	3	4	5	6	7	8	9	10	11	12	13	Total
Center PI-4	153	102	153	153	102	153	102	102	153	102	153	102	153	1,684
Center PI-3	77	77	36	116	77	36	77	77	77	77	36	77	77	929
Center PI-2	402	402	433	526	402	433	402	433	402	433	433	402	433	5,475
Center PI-1	446	448	469	554	448	469	448	448	448	469	469	448	448	5,987
Center Tech	281	281	281	351	281	281	281	281	281	281	281	281	281	3,721
Center Clerical	319	308	318	401	308	318	318	308	318	318	318	308	318	4,181
Center Labor	1,679	1,618	1,693	2,101	1,618	1,693	1,628	1,618	1,679	1,659	1,693	1,618	1,679	21,977
Center Burden	794	707	740	918	707	740	712	707	734	725	740	707	734	9,604
Center Overhead	1,616	1,558	1,630	2,023	1,558	1,630	1,568	1,558	1,617	1,598	1,630	1,558	1,617	21,159
SwRI PI-4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SwRI PI-3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SwRI PI-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SwRI PI-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SwRI Tech	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SwRI Labor	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SwRI Burden	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SwRI Overhead	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ADP Services	468	36	468	48	468	36	468	36	468	36	468	36	468	3,504
Medicine Shop	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Materials/Supply	2,758	2,758	2,759	3,447	2,758	2,759	2,758	2,758	2,758	2,758	2,759	2,758	2,758	36,546
Quality Assur.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Report Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Telephone & Tigram	30	31	30	38	30	30	30	31	30	30	30	31	30	401
Travel	0	2,246	0	2,923	2,246	0	1,618	0	2,246	2,923	0	2,246	0	16,448
Consultants	1,498	1,411	1,498	1,759	1,498	1,411	1,498	1,411	1,445	1,411	1,498	1,411	1,498	19,247
Over Prem Pay	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Temporary Svcs	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Est excl. CFC, Fee	8,783	10,365	8,618	13,256	10,983	8,299	10,280	8,119	10,977	11,140	8,818	10,365	8,784	128,887
Center CFC	106	102	107	132	102	107	103	102	106	105	107	102	106	1,365
SwRI CFC	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tot Estimate Cost	8,889	10,467	8,924	13,389	10,985	8,405	10,382	8,221	11,083	11,245	9,924	10,467	8,880	130,272
Fee	703	829	705	1,061	871	664	874	660	933	947	750	881	747	10,654
Tot Cost with Fee	9,591	11,296	9,630	14,449	11,856	9,069	11,256	8,911	12,016	12,191	9,674	11,348	9,637	140,925
% Completion	6.82%	8.02%	6.89%	10.25%	8.41%	6.44%	7.99%	6.32%	8.53%	8.65%	6.86%	8.05%	6.84%	100.00%
Cumulative Cost	9,591	20,837	30,517	44,966	56,822	66,861	77,145	86,059	96,075	110,266	119,940	131,288	140,925	
Cumulative Completion	6.82%	14.82%	21.65%	31.91%	40.32%	46.76%	54.74%	61.07%	69.59%	78.24%	85.11%	93.16%	100.00%	

Table A-4. Field volcanism Task 3 estimated spending plan, FY94

	1	2	3	4	5	6	7	8	9	10	11	12	13	Total
Center PI-4	153	102	153	153	102	153	102	102	153	102	153	102	153	1,684
Center PI-3	155	194	116	271	155	155	155	194	155	194	116	194	155	2,208
Center PI-2	1,391	1,423	1,392	1,732	1,423	1,392	1,392	1,423	1,392	1,392	1,392	1,423	1,392	18,557
Center PI-1	361	362	362	448	362	362	362	362	362	362	362	362	362	4,793
Center Tech	251	251	241	301	241	251	251	251	251	251	241	251	251	3,300
Center Chemical	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Center Labor	2,310	2,332	2,264	2,925	2,263	2,313	2,262	2,332	2,313	2,301	2,264	2,332	2,313	30,542
Center Burden	1,010	1,019	988	1,278	988	1,011	988	1,019	1,011	1,006	988	1,019	1,011	13,347
Center Overhead	2,224	2,245	2,180	2,816	2,198	2,227	2,178	2,245	2,227	2,215	2,180	2,245	2,227	28,406
SwRI PI-4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SwRI PI-3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SwRI PI-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SwRI PI-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SwRI Tech	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SwRI Labor	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SwRI Burden	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SwRI Overhead	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AOP Services	468	36	468	48	468	36	468	36	468	36	468	36	468	3,504
Machine Shop	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Material/Supply	2,063	2,063	2,063	2,578	2,063	2,063	2,063	2,063	2,063	2,062	2,063	2,063	2,063	27,333
Quality Assur.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Report Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Telephone & Tigram	57	56	57	71	56	57	56	57	57	56	57	56	57	750
Travel	0	5,474	4,675	7,063	0	5,474	9,517	5,474	0	7,063	4,675	5,474	0	54,889
Consultants	2,474	2,474	2,506	3,049	2,474	2,561	2,421	2,474	2,474	2,474	2,508	2,474	2,474	32,839
Clerk/Print Pay	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Temporary Svcs	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Est. excl. CFC, Fee	10,836	15,696	15,205	19,828	10,539	15,742	19,953	15,699	10,613	17,212	15,205	15,696	10,613	192,610
Center CFC	146	147	143	184	144	146	143	147	146	145	143	147	146	1,925
SwRI CFC	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tot Estimate Cost	10,752	15,845	15,347	20,012	10,683	15,997	20,096	15,846	10,758	17,357	15,347	15,845	10,758	194,536
Fee	849	1,256	1,216	1,586	843	1,259	1,686	1,304	902	1,463	1,292	1,334	902	15,334
Tot Cost with Fee	11,600	17,101	16,564	21,599	11,526	17,147	21,782	17,151	11,660	18,820	16,640	17,180	11,660	210,469
% Completion	5.52%	8.13%	7.87%	10.26%	5.48%	8.15%	10.38%	8.16%	5.54%	8.94%	7.91%	8.16%	5.54%	100.00%
Cumulative Cost	11,600	28,701	45,265	66,863	78,390	95,536	117,328	134,509	146,169	164,989	181,629	198,809	210,469	
Cumul Completion	5.52%	13.64%	21.51%	31.77%	37.25%	45.39%	55.75%	63.91%	69.45%	78.39%	86.30%	94.46%	100.00%	

Table A-5. Field volcanism Task 5 estimated spending plan, FY94

	1	2	3	4	5	5	7	8	9	10	11	12	13	Total
Center PI-4	153	102	153	102	102	153	102	102	153	102	153	102	153	1,684
Center PI-3	232	232	232	271	194	271	232	194	271	194	232	232	232	3,021
Center PI-2	247	278	247	309	278	247	247	247	278	247	247	278	247	3,402
Center PI-1	170	170	170	213	170	170	152	170	170	170	152	170	170	2,322
Center Tech	60	60	60	60	60	60	60	60	60	60	60	60	60	802
Center Clerks'	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Center Labor	862	844	865	1,027	805	932	834	774	933	774	865	844	864	11,232
Center Burden	377	369	387	449	352	364	364	338	408	338	387	369	377	4,909
Center Overhead	830	812	852	969	775	869	803	745	866	745	852	812	830	10,614
SwRI PI-4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SwRI PI-3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SwRI PI-2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SwRI PI-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SwRI Tech	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SwRI Labor	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SwRI Burden	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SwRI Overhead	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ADP Services	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Machine Shop	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Material/Supply	166	166	166	208	166	166	166	166	166	166	166	166	166	2,200
Quality Assur	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Report Services	377	378	377	472	377	377	378	377	378	377	377	378	377	5,000
Telephone & Tigram	19	19	19	23	19	19	19	19	19	19	19	19	19	250
Travel	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Consultants	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Car Prem Pay	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Temporary Socs	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Est. excl. CFC, Fee	2,631	2,587	2,696	3,167	2,450	2,728	2,564	2,419	2,803	2,418	2,686	2,387	2,635	34,405
Center CFC	54	53	56	65	51	57	53	49	59	49	56	53	54	708
SwRI CFC	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tot. Estimate Cool	2,685	2,641	2,742	3,232	2,544	2,784	2,617	2,468	2,862	2,467	2,742	2,641	2,689	35,112
Fee	210	207	215	253	199	218	218	206	238	206	228	220	224	2,842
Tot. Cost with Fee	2,896	2,848	2,956	3,486	2,744	3,003	2,835	2,674	3,100	2,672	2,970	2,860	2,913	37,956
% Completion	7.65%	7.50%	7.70%	8.18%	7.23%	7.91%	7.47%	7.04%	8.17%	7.04%	7.82%	7.54%	7.67%	100.00%
Cumulative Cool	2,896	5,744	8,710	12,195	14,939	17,932	20,766	23,440	26,540	29,212	32,182	35,043	37,956	
Cumulative Completion	7.65%	15.13%	22.92%	32.10%	39.33%	47.24%	54.71%	61.76%	69.92%	76.96%	84.79%	92.33%	100.00%	