

**PROJECT PLAN FOR REGIONAL  
HYDROGEOLOGIC PROCESSES OF THE  
DEATH VALLEY REGION**

*Prepared for*

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

*Prepared by*

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**Revision 1  
Change 3**

**March 1994**

**UNCONTROLLED**

**CENTER FOR NUCLEAR WASTE  
REGULATORY ANALYSES**

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Title: PROJECT PLAN FOR REGIONAL HYDROGEOLOGIC PROCESSES OF THE DEATH VALLEY REGION

**EFFECTIVITY**

Revision 1 of this document became effective on July 30, 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	3	03/15/94
ii	3	03/15/94
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A-1	1	09/25/93
A-2 -A-7	3	03/15/94
A-8 -A-15	1	09/25/93

Supersedes: Revision 1, Change 2 - December 1993

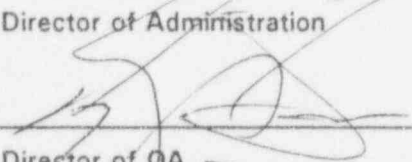
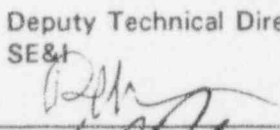
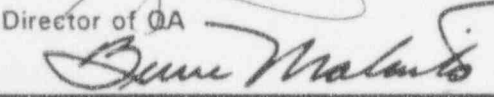
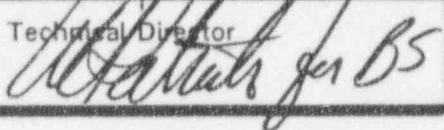
Director of Administration 	Date: 3/14/94	Deputy Technical Director for SE&I 	Date: 3/12/94
Director of QA 	Date: 3/12/94	Technical Director 	Date: 3/12/94

Table A-1. Regional Hydrogeologic Processes of the Death Valley Region Estimated Spending Plan, FY94

	1	2	3	4	5	6	7	8	9	10	11	12	13	Total
Center PI-4	306	306	0	306	306	306	204	357	255	357	204	408	306	3,624
Center PI-3	1,269	1,278	1,317	1,511	1,317	1,278	814	775	814	814	814	814	814	13,627
Center PI-2	3,175	3,155	3,340	4,021	3,340	3,217	3,279	3,310	3,310	3,310	3,279	3,279	3,371	43,364
Center PI-1	1,618	1,598	1,620	1,992	1,620	1,620	448	533	533	533	533	533	533	13,701
Center Tech	0	0	0	0	0	0	341	341	341	341	341	247	361	2,407
Center Chemical	164	144	164	185	164	144	185	185	185	185	185	205	205	2,300
Center Labor	6,533	6,482	6,441	8,005	6,748	6,565	5,270	5,500	5,437	5,539	5,355	5,580	5,580	79,044
Center Burden	2,854	2,832	2,815	3,498	2,949	2,869	2,303	2,404	2,378	2,421	2,340	2,438	2,443	34,541
Center Overhead	8,289	8,240	8,202	7,707	6,497	6,320	5,074	5,296	5,235	5,333	5,156	5,372	5,362	76,102
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	412	416	416	526	416	416	1,247	1,247	1,247	1,247	1,247	1,247	1,302	11,385
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	412	416	416	526	416	416	1,247	1,247	1,247	1,247	1,247	1,247	1,302	11,385
SwRI Burden	180	182	182	230	182	182	545	545	545	545	545	545	569	4,975
SwRI Overhead	687	693	693	878	693	693	2,079	2,079	2,079	2,079	2,079	2,079	2,171	18,978
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	1,584	1,596	1,584	1,902	1,584	1,585	1,586	1,585	1,585	1,585	1,584	1,586	1,584	21,000
Quality Assur.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Report Services	377	378	377	473	378	378	377	378	377	378	377	378	377	5,000
Telephone & Togram	38	38	38	46	38	38	38	38	38	38	38	38	38	500
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
Clear Prem Pay	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Temporary Stics	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Est excl. CFC, Fee	18,955	18,847	18,747	23,345	19,480	19,045	18,518	19,071	18,918	19,162	18,720	19,262	19,457	251,527
Center CFC	412	409	406	505	425	414	332	347	343	349	338	352	352	4,962
SwRI CFC	47	47	47	60	47	47	142	142	142	142	142	142	149	1,298
Tot Estimate Cost	19,414	19,302	19,201	23,909	19,953	19,506	18,992	19,560	19,403	19,653	19,200	19,756	19,958	257,807
Fee	1,516	1,508	1,500	1,868	1,508	1,524	1,574	1,621	1,608	1,629	1,581	1,637	1,654	20,787
Tot Cost with Fee	20,930	20,810	20,701	25,777	21,511	21,030	20,566	21,181	21,011	21,282	20,791	21,393	21,612	278,594
% Completion	7.51%	7.47%	7.43%	9.25%	7.72%	7.55%	7.38%	7.50%	7.54%	7.64%	7.46%	7.58%	7.76%	100.00%
Cumulative Cost	20,930	41,740	62,441	88,218	109,729	130,759	151,325	172,505	193,516	214,798	235,589	256,982	278,594	
Quanal Completion	7.51%	14.98%	22.41%	31.67%	39.39%	46.94%	54.32%	61.92%	69.46%	77.10%	84.56%	92.24%	100.00%	

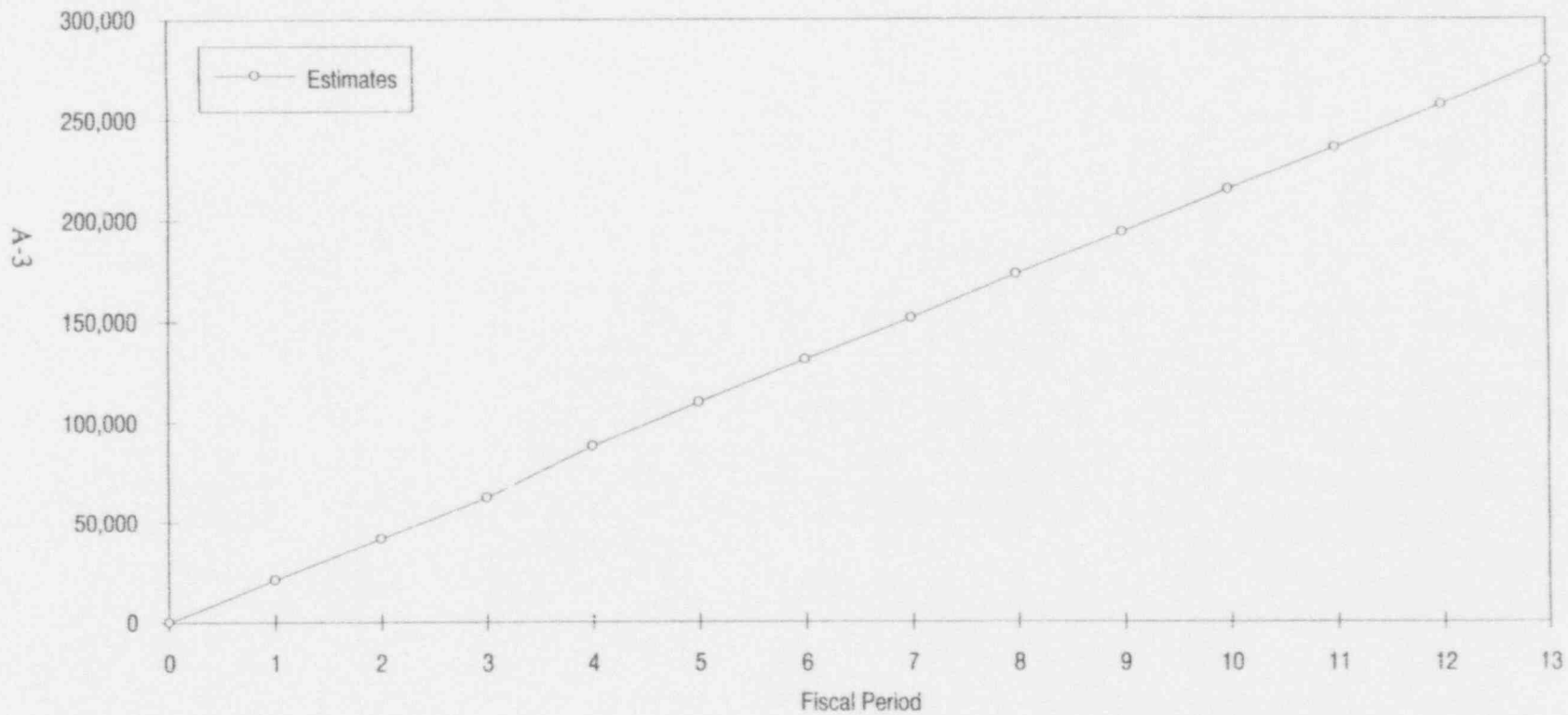


Figure A-1. Regional Hydrogeologic Processes of the Death Valley Region Estimated Spending Plan, FY94

Table A-2. Regional Hydrogeologic Processes of the Death Valley Region Estimated Labor Plan, FY94

Center Labor	1	2	3	4	5	6	7	8	9	10	11	12	13	Total
Center PI-4	6	6	0	6	6	6	4	7	5	7	4	8	6	71
Center PI-3	34	33	34	39	34	33	21	20	21	21	21	21	21	353
Center PI-2	108	102	108	130	108	104	106	107	107	107	106	106	109	1,408
Center PI-1	76	75	76	93	76	76	21	25	25	25	25	25	25	643
Center Tech	0	0	0	0	0	0	34	34	34	34	34	34	36	240
Center Clerical	16	14	16	18	16	14	18	18	18	18	18	20	20	224
<b>Total Center Labor</b>	<b>240</b>	<b>230</b>	<b>234</b>	<b>296</b>	<b>240</b>	<b>233</b>	<b>204</b>	<b>211</b>	<b>210</b>	<b>212</b>	<b>206</b>	<b>214</b>	<b>217</b>	<b>2,939</b>

SwRI Labor	1	2	3	4	5	6	7	8	9	10	11	12	13	Total
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	15	15	15	19	15	15	45	45	45	45	45	45	47	411
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
<b>Total SwRI Labor</b>	<b>15</b>	<b>15</b>	<b>15</b>	<b>19</b>	<b>15</b>	<b>15</b>	<b>45</b>	<b>45</b>	<b>45</b>	<b>45</b>	<b>45</b>	<b>45</b>	<b>47</b>	<b>411</b>

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Table A-3. Regional Hydrogeologic Processes of the Death Valley Region Task 1 Estimated Spending Plan, FY94

	1	2	3	4	5	6	7	8	9	10	11	12	13	Total
Center PI-4	102	102	0	102	102	102	51	51	51	51	51	102	102	970
Center PI-3	557	542	581	620	581	542	581	581	581	581	581	581	504	7,414
Center PI-2	1,149	1,113	1,206	1,423	1,206	1,144	1,063	1,113	1,113	1,113	1,113	1,113	1,175	15,068
Center PI-1	893	874	895	1,087	895	895	448	533	533	533	533	533	533	9,183
Center Tech	0	0	0	0	0	0	341	341	341	341	341	341	361	2,407
Center Clerical	82	72	82	92	82	72	92	92	92	92	92	103	103	1,150
Center Labor	2,783	2,704	2,765	3,324	2,867	2,756	2,596	2,712	2,712	2,712	2,712	2,773	2,778	36,191
Center Burden	1,216	1,181	1,208	1,453	1,253	1,204	1,134	1,185	1,185	1,185	1,185	1,212	1,214	15,815
Center Overhead	2,680	2,503	2,662	3,200	2,760	2,653	2,499	2,611	2,611	2,611	2,611	2,670	2,674	34,045
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	412	416	416	526	416	416	1,247	1,247	1,247	1,247	1,247	1,247	1,302	11,385
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	412	416	416	526	416	416	1,247	1,247	1,247	1,247	1,247	1,247	1,302	11,385
SwRI Burden	180	182	182	230	182	182	545	545	545	545	545	545	569	4,975
SwRI Overhead	687	693	693	878	693	693	2,079	2,079	2,079	2,079	2,079	2,079	2,171	18,978
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	1,132	1,132	1,132	1,415	1,132	1,132	1,133	1,132	1,132	1,132	1,132	1,132	1,132	15,000
Quality Assur.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Report Services	151	151	151	189	150	151	151	151	151	151	151	151	151	2,000
Tphone & Tgram	19	19	19	23	19	19	19	19	19	18	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 Svcs	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Est excl. CFC, Fee	9,261	9,080	9,226	11,238	9,470	9,205	11,402	11,680	11,680	11,679	11,680	11,827	12,010	139,441
Center CFC	175	170	174	210	181	174	164	171	171	171	171	175	175	2,281
SwRI CFC	47	47	47	60	47	47	142	142	142	142	142	142	149	1,298
Tot Estimate Cost	9,483	9,298	9,448	11,507	9,699	9,426	11,708	11,993	11,993	11,992	11,993	12,144	12,334	143,020
Fee	741	726	738	899	758	736	969	993	993	993	993	1,005	1,021	11,565
Tot Cost with Fee	10,224	10,024	10,186	12,407	10,456	10,163	12,677	12,986	12,986	12,985	12,986	13,150	13,354	154,585
% Completion	7.59%	6.48%	6.59%	8.03%	6.76%	6.57%	8.20%	8.40%	8.40%	8.40%	8.40%	8.51%	8.64%	100.00%
Cumulative Cost	10,224	20,248	30,434	42,841	53,297	63,460	76,137	89,124	102,110	115,095	128,081	141,231	154,585	
Cumul Completion	7.59%	13.10%	19.69%	27.71%	34.48%	41.05%	49.25%	57.65%	66.05%	74.45%	82.85%	91.36%	100.00%	

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Table A-4. Regional Hydrogeologic Processes of the Death Valley Region Task 2 Estimated Spending Plan, FY94

	1	2	3	4	5	6	7	8	9	10	11	12	13	Total
Center P1-4	102	102	0	102	102	102	102	153	102	153	102	153	153	1,429
Center P1-3	712	736	736	661	736	736	232	194	232	232	232	232	310	6,213
Center P1-2	1,759	1,825	1,887	2,320	1,887	1,856	1,856	1,856	1,856	1,856	1,825	1,825	1,918	24,563
Center P1-1	725	725	725	866	725	725	0	0	0	0	0	0	0	4,518
Center Tech	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Center Chemical	82	72	82	82	82	72	0	0	0	0	0	0	0	483
Center Labor	3,420	3,459	3,429	4,300	3,532	3,490	2,190	2,203	2,190	2,241	2,159	2,210	2,381	37,206
Center Burden	1,494	1,512	1,499	1,879	1,543	1,525	957	963	957	979	944	966	1,040	16,259
Center Overhead	3,292	3,331	3,302	4,140	3,400	3,360	2,109	2,121	2,109	2,168	2,079	2,128	2,292	35,821
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
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	377	378	377	472	377	377	378	377	378	377	377	378	377	5,000
Quality Assur.	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Report Services	151	151	151	189	150	151	151	151	151	151	151	151	151	2,000
Telephone & Tgram	19	19	19	23	19	19	19	19	19	18	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
Clear 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	8,753	8,850	8,777	11,054	9,021	8,923	5,804	5,833	5,804	5,925	5,729	5,853	6,260	96,536
Center CFC	216	216	216	271	223	220	138	139	138	141	136	139	150	2,345
SwRI CFC	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tot Estimate Cost	8,969	9,068	8,993	11,275	9,244	9,143	5,942	5,972	5,942	6,066	5,865	5,992	6,410	98,882
Fee	700	708	702	890	722	714	463	466	463	504	467	467	532	7,929
Tot Cost with Fee	9,669	9,776	9,695	12,155	9,965	9,857	6,406	6,467	6,406	6,570	6,332	6,460	6,942	106,810
% Completion	7.45%	9.15%	9.08%	11.38%	9.33%	9.23%	6.03%	6.06%	6.03%	6.15%	5.36%	6.06%	6.50%	100.00%
Cumulative Cost	9,669	19,445	29,140	41,296	51,261	61,118	67,554	74,021	80,457	87,026	93,379	99,868	106,810	106,810
Cost Completion	7.45%	18.21%	27.28%	38.66%	47.99%	57.22%	63.25%	68.30%	75.33%	81.43%	87.42%	93.50%	100.00%	100.00%

Table A-5. Regional Hydrogeologic Processes of the Death Valley Region Task 6 Estimated Spending Plan, FY94

	1	2	3	4	5	6	7	8	9	10	11	12	13	Total
Center PI-4	102	102	0	102	102	102	51	153	102	153	51	153	51	1,225
Center PI-3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Center PI-2	227	217	247	278	247	217	340	340	340	340	340	340	278	3,753
Center PI-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Center Tech	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Center Clerical	0	0	0	0	0	0	92	92	92	92	92	103	103	668
Center Labor	330	319	247	380	350	319	484	586	535	586	484	586	432	5,646
Center Burden	144	139	108	166	153	108	256	256	234	256	211	260	189	2,467
Center Overhead	317	307	238	366	337	307	466	564	515	564	466	574	416	5,436
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
Miscel/Supply	75	76	75	95	75	76	75	76	75	76	75	76	75	1,000
Quality Assur	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Report Services	75	76	75	95	75	76	75	76	75	76	75	76	75	1,000
Telephone & Tgram	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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 Perm 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	941	917	744	1,103	989	917	1,311	1,558	1,433	1,558	1,311	1,562	1,187	15,549
Center CFC	21	20	16	24	22	20	30	37	34	37	30	36	27	356
SwRI CFC	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tot Estimate Cost	962	937	759	1,127	1,011	937	1,341	1,595	1,467	1,595	1,341	1,600	1,214	15,905
Fee	75	73	60	86	79	73	111	132	122	132	111	135	101	1,293
Tot Cost with Fee	1,037	1,010	819	1,215	1,090	1,010	1,453	1,727	1,589	1,727	1,453	1,734	1,315	17,199
% Completion	7.96%	5.87%	4.76%	7.07%	6.34%	5.87%	8.45%	10.04%	9.24%	10.04%	8.45%	10.20%	7.65%	100.00%
Cumulative Cost	1,037	2,047	2,866	4,081	5,171	6,181	7,634	9,361	10,949	12,677	14,129	15,894	17,199	
Cumulative Completion	7.96%	11.80%	16.56%	23.73%	30.07%	35.94%	44.38%	54.43%	63.66%	73.71%	82.15%	92.35%	100.00%	