

UNITED NUCLEAR CORPORATION
CHURCH ROCK URANIUM MILL
McKINLEY COUNTY, NEW MEXICO

DESIGN
OF
TAILINGS DISPOSAL SYSTEM

September 1974

Prepared By
KAISER ENGINEERS
Division of Henry J. Kaiser Co.

3. DISCUSSION

3.1 Design Criteria

The following criteria were used in design of the tailings disposal system.

3.1.1 Life

The life of the mine supplying ore to the mill will be 15 years.

3.1.2 Ore Input Rates

The mill will process 2,000 tpd of ore for the first two years and 1,000 tpd for the remaining 13 years.

3.1.3 Particle Size of Tailings

Tailings will consist of material with the following gradation:

<u>Sieve Size</u>	<u>Percent Retained</u>
No. 28	3%
No. 200	80%

3.1.4 Mine Backfill

After the third year of mill operation, 50% of tailings material retained on the No. 200 sieve will be recovered from the tailing and used in the mine for backfilling.

3.1.5 Tailings Slurry Characteristics (55% solids)

	<u>Sp. Grav.</u>	<u>TSM</u>	<u>GPM</u>
Dry Solids	2.7	166.67	216.91
Solution	1.01	136.36	540.05
Pulp	--	303.03	786.96

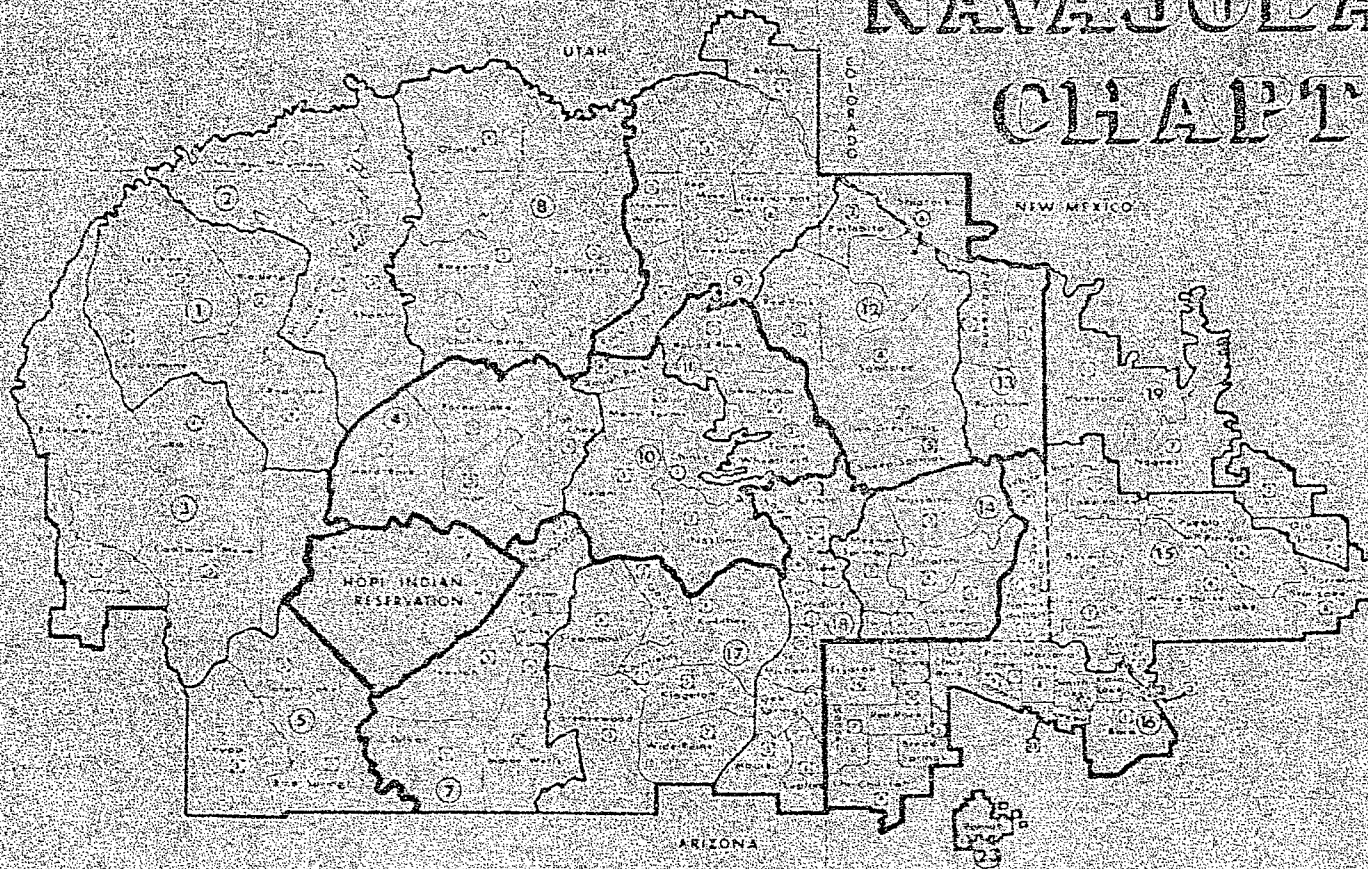
3.1.6 Recycled Liquid

A minimum 125 gpm of tailings liquid will be pumped from the tailings pond to the No. 6 counter current decant thickener at the mill.

3.1.7 Dry Density of Tailings

The average dry density of tailings deposited in place in the pond is estimated to be 60 lbs. per cu. ft.

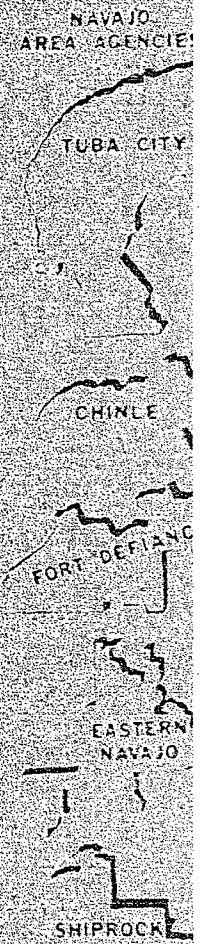
NAVAJOLAND CHAPTERS



ESTIMATED POPULATION APRIL 1, 1973

District 1 Total 4,808	District 5 Total 3,300	District 10 Total 40,127	District 14 Total 6,404	District 16 Total 14,504	District 17 Total 8,207
1 Coppermine 1260	1 Bird Springs 973	1 Chinle 4,199	1 Cayote Canyon 1,191	1 Buro 804	1 Cornfields 1037
2 Kaibito 1048	2 Leupp 1497	2 Many Farms 1,629	2 Mexican Springs 1,404	2 Breed Springs 974	2 Ganado 964
3 Tlecsee 411	3 Tsaloni Lake 1,980	3 Nardin 713	3 Tlecsee 1,400	3 Casamero Lake 890	3 Greasewood 11,579
4 Red Lake 2,044	District 7 Total 8,355	4 Rough Rock 809	4 Tobaith 1,317	4 Ch. Ch. - J. J. 1,521	4 Kinlichee 1,673
	1 B. Kan 144	5 Tsaloni 1,767	5 Twin Lakes 400	5 Church Rock 1,560	5 Klageleh 1,419
District 2 Total 3,752	2 Indian Wells 977	District 11 Total 2,711	District 15 Total 7,993	6 Tvaibito 908	6 Steamboat 1,518
1 Mohopai House 1725	3 Tlecsee 89	1 Lukachukai 1,101	1 Bezanji 775	7 Monvelto 751	7 Wide Ruins 1,013
2 Navajo Mountain 1,800	4 Low Mountain 1,011	2 Round Rock 1,033	2 Crownpoint 806	8 Mariano Lake 809	
3 Shonto 232	5 Yeeho 1,260	3 Tsaloni, Wheelfield 1,533	3 Lake Valley 527	9 Pinedale 1,460	District 19 Total 3,300
	6 White Lake 1077	District 12 Total 17,260	4 Little Water 851	10 Red Rock 1,691	1 Crystal 1,311
District 3 Total 3,993	District 8 Total 6,277	1 Aneth 1,525	5 Nahodishgah 601	11 Rock Springs 815	2 Fort Defiance 1,000
1 Sodawa 175	1 Chilkimbeto 953	2 Be Labito 807	6 Pueblo Pintado 889	12 Smith Lake 711	3 Houck 1,189
2 Cameron 1,407	2 Rimshosho 719	3 Red Rock 1,131	7 Grand Canyon 879	13 Thoresau 1,185	4 Luplon 1,189
3 Coashine 183	3 Kavento 1,155	4 Sanatsee 7,291	8 Torreon - Star Lake 1,400	14 Tvaibito 871	5 Oak Springs 805
4 Tuba City 2,330	4 Oljato 1,538	5 Sheep Springs 1,365	9 White Horse Lake 804		6 Red Lake 683
District 4 Total 6,657	District 9 Total 8,651	6 Shiprock 6,501	10 White Rock 171		7 St. Michaels 881
1 Forest Lake 1,620	1 Mexican Water 830	7 Two Grey Hills 2,448			8 Sawmill 1,616
2 Horn Rock 7,196	2 Red Mesa 1,458	District 13 Total 3,540			District 19 Total 3,300
3 Pinedo 3,352	3 Rock Point 1,391	1 Burnham 1,154			1 Mexican 2,140
4 Ah-Chaa 1,729	4 Sweetwater 1,437	2 Fraitham 804			2 Nageezi 1,160
	5 Tsal. Nos. Pos. 1,637	3 Nahodishgah 1,503			3 Ojo Encino 731

Office Of Information & Statistics - June 14, 1973



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No. 200	80%

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3.1.5 Tailings Slurry Characteristics (55% Solids)

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