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 3,000 tpd of ore for the first two years and 4,000 tpd for the remaining 13 years.

3.1.3 Particle Size of Tailings

Tailings will consist of material with the following gradation:

Sieve Size	Percent Retained
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)

	Sp. Grav.	TPH	GPM
Dry Solids	2.7	166.67	246.91
Solution	1.01	136.36	540.05
Pulp	--	303.03	786.96

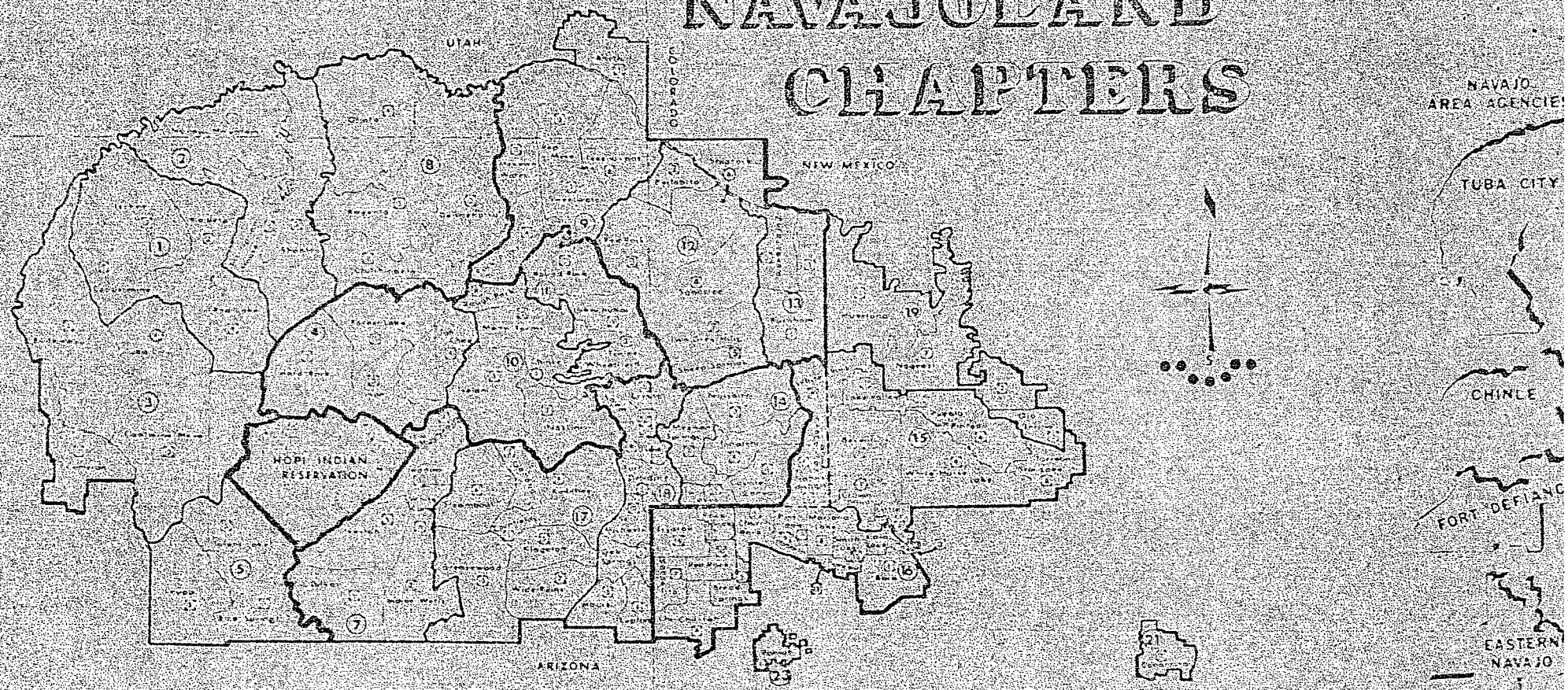
3.1.6 Recycled Liquid

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 4,809
1 Coppermine 1,260
2 Kaibeto 1,048
3 Leche'e 433
4 Red Lake 2,068

District 2 Total 3,752
1 Kayenta-Black Mesa 1,713
2 Navajo Mountain 1,020
3 Shonto 1,019

District 3 Total 5,993
1 Bodaway 175
2 Cameron 1,457
3 Coalmine 181
4 Tuba City 3,180

District 4 Total 9,057
1 Forest Lake 1,480
2 Hard Rock 2,196
3 Pinon 2,352
4 Whitecone 1,729

District 5 Total 3,300
1 Bird Springs 973
2 Leupp 1,497
3 Tolani Lake 1,080

District 7 Total 4,355
1 Dilkon 1,144
2 Indian Wells 922
3 Jeddito 89
4 Low Mountain 1,011
5 Teesto 1,160
6 White Cone 1,027

District 8 Total 6,893
1 Chilchinbeto 955
2 Dennehotso 2,169
3 Kayenta 2,[illegible]
4 Oljato 1,538

District 9 Total 6,651
1 Mexican Water 830
2 Red Mesa 1,456
3 Rock Point 1,391
4 Sweetwater 1,437
5 Tsaile-Naz Pos 1,637

District 10 Total 10,127
1 Chinle 4,195
2 Many Farms 1,539
3 Nazlini 1,713
4 Rough Rock 803
5 Tsaile 1,797

District 11 Total 2,711
1 Lukachukai 1,103
2 Round Rock 1,055
3 Tsaile-Wheatfield 1,553

District 12 Total 17,260
1 Ganado 1,535
2 Bel Iabito 907
3 Red Rock 2,751
4 Sanostee 2,207
5 Sheep Springs 1,365
6 Shiprock 6,501
7 Two Grey Hills 2,448

District 13 Total 3,563
1 Burnham 1,154
2 Fruitland 904
3 Nenahnezad 1,505

District 14 Total 6,404
1 Coyote Canyon 1,191
2 Mexican Springs 1,104
3 Tes Nez Chitti 1,450
4 Tohatchi 1,167
5 Twin Lakes 1,400

District 15 Total 7,953
1 Becenti 1,[illegible]
2 Crownpoint 806
3 Lake Valley 527
4 Little Water 851
5 Nahodishgish 501
6 Pueblo Pinedo 889
7 Standing Rock 870
8 Torreon-Star Lake 1,606
9 White Horse Lake 904
10 White Rock 773

District 16 Total 4,504
1 Baca 504
2 Bread Springs 974
3 Casamero Lake 690
4 Chi-Chi-Jah 1,551
5 Church Rock 1,360
6 Iyanbito 998
7 Manuelito 752
8 Mariano Lake 809
9 Pinedale 1,360
10 Red Rock 1,691
11 Rock Springs 511
12 Smith Lake 711
13 Thoreau 1,165
14 Tsayatoh 971

District 17 Total 8,[illegible]
1 Cornfields 1,017
2 Ganado 954
3 Greasewood 1,129
4 Kinlichee 1,675
5 Klagetoh 1,419
6 Steamboat 1,138
7 Wide Ruins 1,013

District 18 Total 9,[illegible]
1 Crystal [illegible]
2 Fort Defiance [illegible]
3 Houck [illegible]
4 Lupton [illegible]
5 Oak Springs 805
6 Red Lake 60[illegible]
7 St. Michaels 882
8 Sawmill 1,[illegible]

District 19 Total 3,460
Window Rock 2,149
2 Nagezi 96
3 Ojo Encino 7[illegible]

District 21 Total 1,[illegible]
1 Canoncito [illegible]

District 22 Total 995
1 Alamo 995

District 23 Total 1,407
1 Ramah 1,407

Office Of Information & Statistics – June 15, 1973

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