Mining District File Summary Sheet 60002452

DISTRICT	Manhattan
DIST_NO	2960
COUNTY If different from written on document	Nye
TITLE If not obvious	Hughes Series Administrative Records - Mill Planning Papers
AUTHOR	Bunker, L.; Hall, G.; Anderson, A.
DATE OF DOC(S)	1970
MULTI_DIST Y / (N?) Additional Dist_Nos:	
QUAD_NAME	Manhattan 7½'
P_M_C_NAME (mine, claim & company names)	Virginia; Skookum; Little Gray; Crescent; St. George; Squirrel; Stray Dog; Union No. 9; Gold Wedge; Big Four; Hazel Fraction; Jumping Jack; Joker Fraction; Last Chance; Big Pine; May Flower; Reilly Fraction; Carson; Pine Nut; Jackson
COMMODITY If not obvious	Gold; silver
NOTES	Correspondence; handwritten notes; claim map; property summary; geology; production; placer; flow sketch 24 p.

Keep docs at about 250 pages if no oversized maps attached
(for every 1 oversized page (>11x17) with text reduce
the amount of pages by ~25)

Revised: 1/22/08

SS: DD 12/22/08
Initials Date

DB:
Initials Date

SCANNED: MT 1/11/10
Initials Date

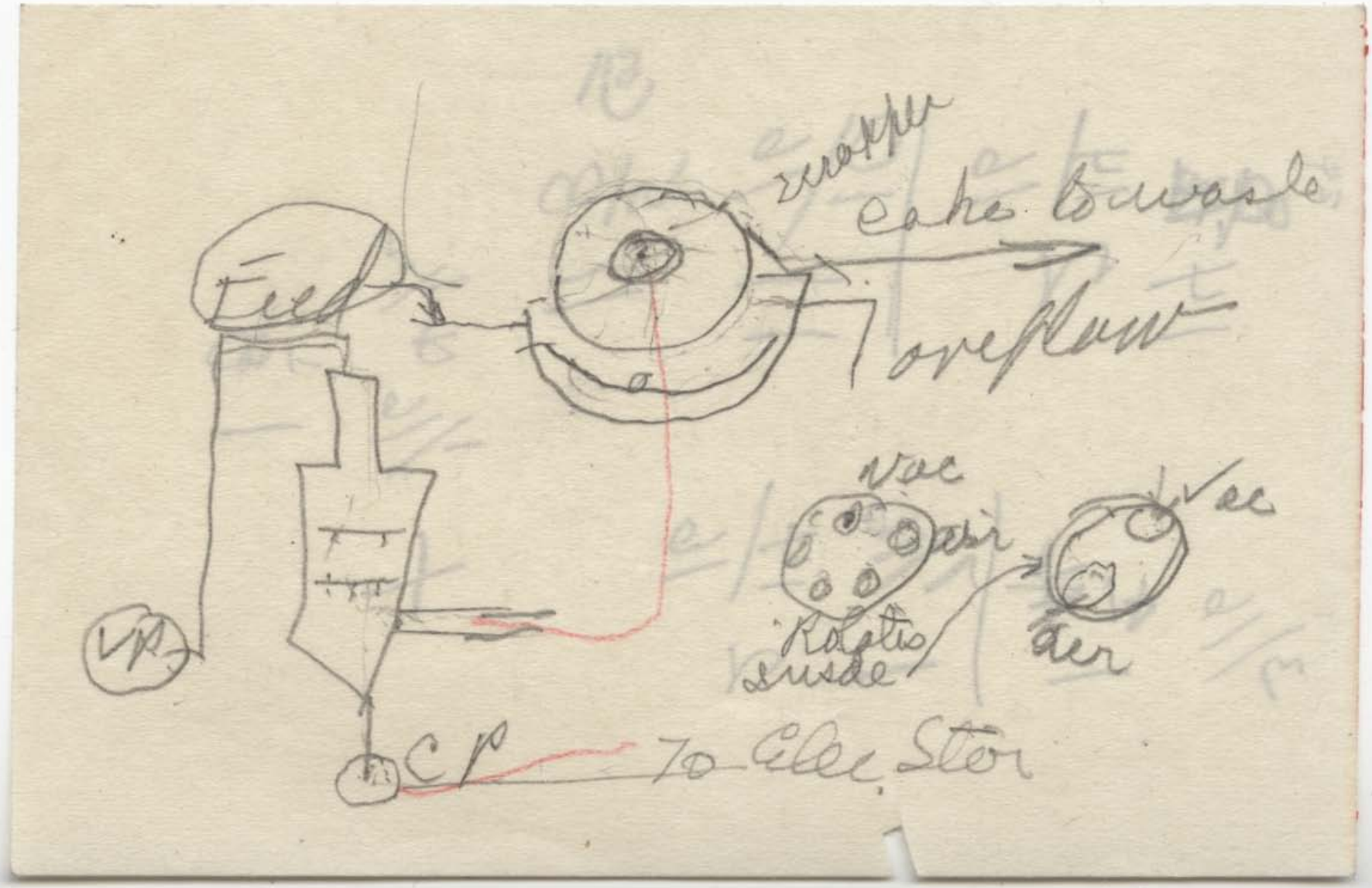
QA: PB 1-15-10

Mill Planning 14

HUGHES SERIES
ADMINISTRATIVE RECORDS
MILL PLANNING PAPERS 14

Manhattan

60002452 202960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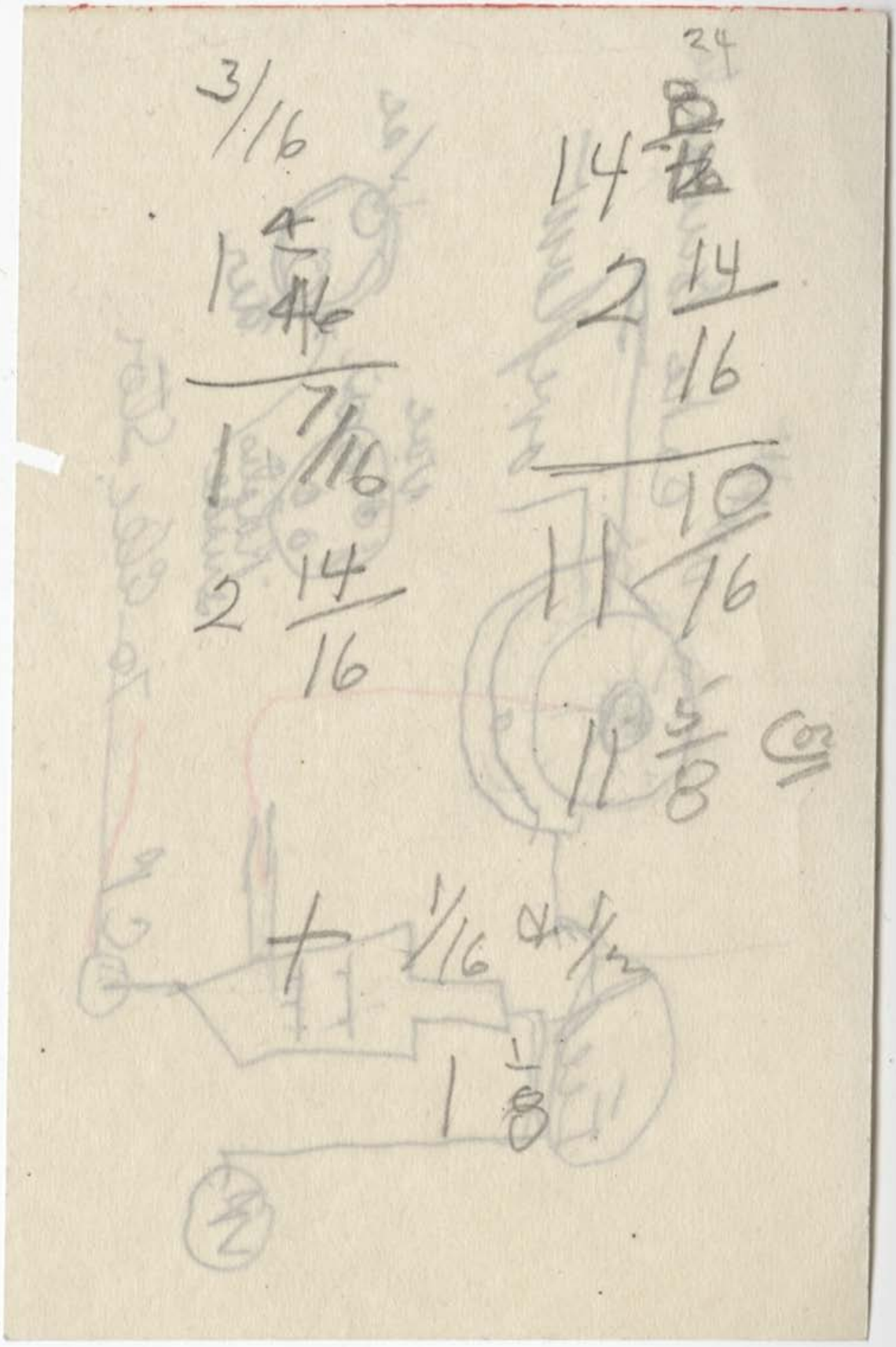
VP
CP
To Elec. Stor
Vac
Vcc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1 4/16
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11 5/8
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1/2
1 1/8

60002452 2960

MEMORANDUM

TO: Mr. A. J. Anderson
Mining Division

FROM: L. Bunker

DATE: September 4, 1970

SUBJECT: Manhattan Mining District

Report:

Gold, Placer Gold, Silver, Arsenic, Rhyolite Pebbles.

Location: The Manhattan District is at Manhattan in the S. part of the Toquima Range. Manhattan is 45 miles by road North of Tonopah. It is situated in Manhattan Canyon the the West side of the range at an altitude of 6,905 ft.; while Bald Mt. to the North reaches a height of 9,275 ft. The old Belmont District adjoins the Manhattan District on the Northeast.

History: Manhattan was discovered by John C. Humphrey in 1905 and a rush of prospectors into the district occurred that summer and again the following winter. Placer mining was inaugurated the following year, and was of particular importance from 1909 to 1915. In 1916, rich ore was found upon the lower levels of the Hite Caps Mine and led to another boom. In 1912, the Associated Mlg. Co. treated the ore of the White Caps Mine in a 75-ton mill which it had erected; shutting down the mine and mill when the oxidized ore was exhausted. In 1915, the White Caps M. Co., took over the White Caps mine and the Associated Mill; and in 1917, reconstructed the mill, adding a roasting furnace. Considerable difficulty has been experienced in devising a milling system adapted to the base arsenical ores of the White Caps Mine.

Production: From 1906 to 1921, the Manhattan District produced 375,292 tons of ore containing $4,112,607. in gold and 76,855 ozs. silver, valued in all at $4,160,921, according to Mineral Resources of the U.S. Geol. Survey.

Geology: The country rocks of the Manhattan District consist of Paleozoic dediments cut by Cretaceous granodiorite on the South and capped by Tertiary eruptives on the North. The Paleozoic rocks are mainly schists with included lenses of quartzite and beds of limestone. They have been compressed into close folds in part overturned toward the North, according to Feguson, and the principal anticline has been cut off obliquely by a reverse fault. The beds are further disturbed by a large number of small normal faults belonging to two series. The Tertiary eruptives consist mainly of rhyolite breccias but include lake bed deposits and andesite.

Memo to: A.J. Anderson
Re: Manhattan Mining District

Placers: Placer gold has been mined from patches of old gravel on the sides of the gulch, from deep gulch gravels, and from the surface wash and shallow stream gravels near the lode outcrops. The gold is usually arborescent and but slightly abraded while the larger pieces contain quartz. The particles decrease in size and increase in fineness down in the gulch. The gold is accompanied by barite and magnetite and by minor amounts of psilomelane, cinnabar, limonite, pyrite, and fluorite.

The above description of the Manhattan Mining District is an excerpt from the book; Mining District and Mineral Resources of Nevada by Francis Church Lincoln.

Respectfully,

Lorin Bunker

Lorin Bunker

LB/sst

P.S. Attached is a map of Group 26 of the Hughes Tool Company claims in the Manhattan Mining District.

MEMORANDUM

TO: Mr. A. J. Anderson
Mining Division

FROM: George Hall

DATE: August 6, 1970

SUBJECT: Pilot Plant Electrolytic Cell

Report: In accord with your instructions, the pilot plant electrolytic cell is comprised of five identical cells each having six anode and five cathode compartments.

As required, the cells are designed to operate individually or in banks of two, three, four or five.

Anode cells contain 12" x 12" x 1/8" thick stainless steel #312 plates. Cathode cells contain 12" x 14" x 1/8" thick lead and antimony plates. 10 micron membranes, spaced 1 1/4" inches on center, separate the cell compartments.

Watertight integrity between cell compartments has been achieved by placing membranes in plastic frames, the edges of which are mechanically sealed against a medium grade of compressible rubber. The seal between the plastic frame and the rubber is controlled across the bottom by pressure from a lead weight on top of the frame. On the sides pressure is applied by a spline, manually inserted between the side of the membrane holder and the rubber seal. By varying the thickness of the pressure spline any desired pressure closing of the joint between the membrane holder and the compressible rubber seal can be made.

The design of the membrane holder provides a positive locking action by forcing the plastic membrane frame against the inner side (closest to the tanks center) of the plastic extrusion which acts as the membrane guide. When the pressure spline is in place this provides a watertight lock. The guides for both the membrane and the anode and cathode plates are designed so that pressure from the pressure spline cannot force open the end of the extrusion.

Aeration tubes descend to the cell bottom in spaces next to the tank walls. These are then carried across the cell bottom where pressurized air is released thru tube perforations so as to agitate the electrolytic fluid on both sides of the respective plates. The tube then ascends to the top of the tank where it rejoins the air circulation system, first passing thru a regulatory valve by which the rate of flow of air up the sides of each plate is controlled.

The circulation of electrolytic fluid is under complete controll and can be directed to each cell in series or to any anode or cathode compartment of each cell. To place any cell or compartment in or out of service, requires only valve action and does not involve the moving or dismantling of any part of the plant.

Anode and cathode plates are hung by copper holders on cross members supported by positive and negative bus bars on both sides of the cells. Bus bars are insulated and cross bars and plate holders can be similarly insulated if desirable. Splash in the flow of electrolytic fluid between cells and compartments has been controlled by tubes and these have been designed so that they do not interfere with placing or removing a cell from the series.

In general, all parts have been designed to be identical to speed manufacture and all materials and extrusions are standard.

After you have instructed the shop foreman for the manufacturer as to how you want the cells made, it might save time to let me work with him until he clearly understands the drawing.

Respectfully,

George Hall

George Hall

GH/sst

GROUP NO 26 - MANHATTAN MINING DISTRICT

Mining Cont

Ores - Sampling & Estimation
Nonmetallic mineral
Mining Machinery
Mining Industry & finance
Mining Geology
Mining Engineering

QE 8
G 96
v2
Kaplan Stuart R
A guide to information Source in mining minerals and geoscience New York International Publishers 1965

TN 24
N 358
Stoddard Carl Kerby
Mineral resources of Storey and Lyon County Nev
Reno, University of Nevada

TJ 745
~~Ihlseng M C~~
~~Manual of Mining~~ 1892

TN 145
L45
1964
Lewis Robert Strong
Revised by Leo D Clark
Elements of Mining
New York J Wiley 1964

TN 145
S8
Mine Plant Design
Slade Wm W

QE 5
N44
Nelson Archibald
Dictionary of applied geology: Mining & civil engineering 1967

Systems analysis T57.6 .A13 Eng Lib.

Surveying

- area Measurement
- Cartography
- Geodesy
- Hydrographic Surveying
- Photographic Surveying
- Route Surveying
- Triangulation

TA545 B58 1965 Bouchard Harry
Rev by Francis H. Moffitt
International Textbook Co

TA545 D236 1967 Davis Raymond Earl
Elementary Plane Surveying
Comprehensive Elementary Vol Col.

Metallurgy

- alloys
- Cementation (metallurgy)
- Chemical Engineering
- Chemistry Tech
- Electrometallurgy
- Hydro "
- Metals Heat-Treatment
- " Sintering
- " Powdered
- Non ferrous
- Precious

TN665 D47 Dennis Wm Herbert
Extractive Metallurgy

TN665 F7 Elementary Metallurgy
Frier, Wm T.

TN664 R5 Rinebach Richard
How to find metallurgical
Information 1936

Mining

- Mine Survey
- Mine Valuation
- Prospecting
- Mine Examination
- " Installation

[duplicated and OK if wanted]

TN273 S7 Intro to mine Survey
Staley Wm Wheeler 1967
Stanford Univ Press 2nd Ed

TN9 T5 Thrush Paul W
a Dictionary of mining
mineral and related terms
1968
Wash US Bureau of Mines
for sale from Supt of Documents
US Govt Printing office Wash DC

Mineralogy

QE363 M27 Mason, Brian Harold
Elements of mineralogy 1968
W H Freeman SF

Chas Breuning 75 Industrial St SF
824 4300
Have component - will mail complete Cats.

Dietrich Post 599 2nd St
444 2913
Have component - will mail cat

Kenffel Esser 2675 Folsom St SF
282 8309
Have catalogue

Lely Co 330 Corey Way SF
871 8409
Will send Catalogue

Reproduction Equip 2037 Edison St SL
~~Bdwy~~
569 1450
Has sent cat

~~Gha Brunning~~ 750 Industrial SF
624-4300
101 S San Bruno
~~Eco palace~~
Delight offset 2400 Broadway (45)
Cert Copy fung printer
Clearprint
Dietrich Post Co 1531 ~~Webster~~ 444-2913
Ditto Corp
599 2nd St

~~Keuffel & Esser~~

Lietz Co 330 Corey Way So SF
871-0484

* Reproduction Equip.
Blue Ray 2037 Edison Av SL
569 1450

Berkley Blue Print 845 6090
1798 Univ Av

Techni Print Inc 893 3963
164 Grand Av

Calif Book Co LTD
2310 Telegraph Av
843 1744

Dataprint Corp
RotoLite
1411 Minnesota 648 2000

~~Dielyzen~~ Eugene Co
870 Miller Rd Burlingame
697 0600

~~K & E~~
2675 Folsom 282 8309

Dietrich Post ~~142 Minna~~
~~362 3400~~
Office
599 2nd St

Graphic Reproduction 392 3150
465 Natoma
781 5935

BluRay
2037 Edison San Leandro
569 1450

For Purchase

Elementary Plane Surveying 4th ed. 1967
Raymond E Davis
Joe W Kelly.
McGraw Hill Book Co
San Francisco.

—

an Outline of Metallurgical Practice 1952
sponsored by Amer Smelting & Refining Co.
Carle R Hayward
Van Nostrand Co Inc
Toronto - New York - London

—

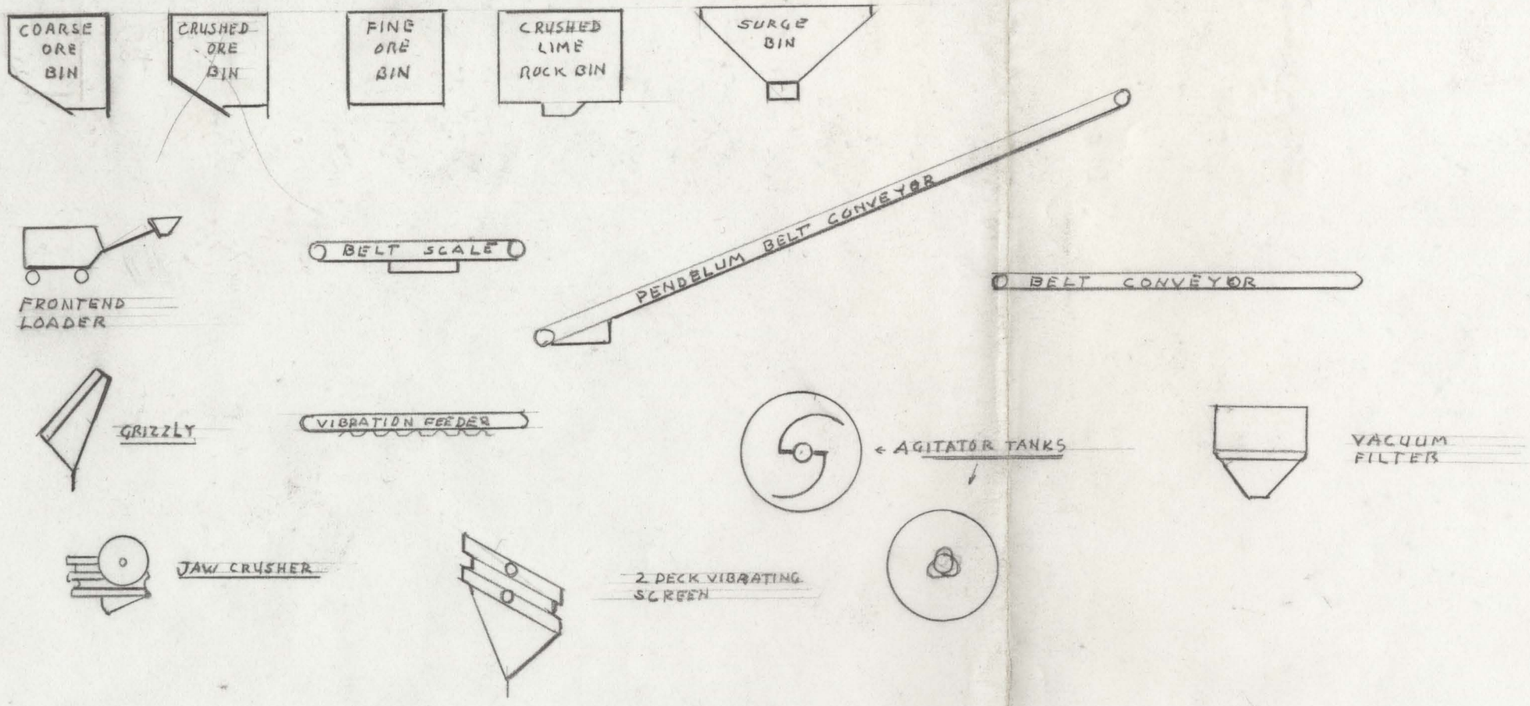
Elements of Mining 1964
Robert S Lewis Univ of Utah.
George B Clark Univ of Missouri
John Wiley & Sons Inc.
New York

?

Mine Plant Design 1949 2nd Ed.
W W Staley U of Utah
McGraw Hill Book Co Inc

Standard Drafting Symbols
Isometric Projection
Blocks Diagrams
Isometric Perspective
Milling Flo Charts

Environmental
Design
Mbarstein
Hall
2nd


COARSE ORE BIN
CRUSHED ORE BIN
FINE ORE BIN
CRUSHED LIME ROCK BIN
SURGE BIN
FRONTEND LOADER
BELT SCALE
PENDELUM BELT CONVEYOR
BELT CONVEYOR
GRIZZLY
VIBRATION FEEDER
AGITATOR TANKS
VACUUM FILTER
JAW CRUSHER
2 DECK VIBRATING SCREEN

G Grizzly

H

I

J Jig mineral 50
coal

K

L

M Mill ball
Rod
attrition 46
Differential 46

Mixing Drum

N Modulizer

O

P Pump SRL
Concentrate

Q

R

S Screen Rotary
Vibrating
Stationary
Sink 46
Float 46
Spiral 44 trommel
separator Electrostatic 46
Magnetic 46

Sampler

Scrubber attrition
Trommel
Tower E 353

T Tank cyclone
Spiral Rake

Tables wilfley
Frame
sorting

Thickener 46

Tower oxidization
scrubbing E 353

U

V

W Weighlometer 4c

Waterspray

X

Y

Z

Incoming

Claim - Supplied Reference ~~Assigned~~ Classification
Group + Claims No
Pat & Unpatented
owned · Proposed Claims Rac

To Filing Listes

- Group Listing Named
- Alphabetical Rollodex Listing
- Patented Claims Listing
- Unpatented Claims Listing

To Information Record

Claims Information Master Book

- Mineral Survey Map Book
- Legal & Recorded Document File
- Patented Claims Ledger + Card File

Destruct Claims

Maps - Proof of Labor w/ work was done
Composite Map
Drill Hole here on Sept 1980
Depth of Hole + Size
Results Core Drill or Blade
assays

Location
Stakes
Landmarks

Call in w/ Proposed Claim File
Pat has Master Card System
re/ negotiation - Letter offers
infer owner area Claim names patent

Mineral List
Book Keeping System
Computer No.
Voucher Code

To Maps

Group Number Filing Drawers

- Contiguous Claims
- Group Claims

Classified System

- Legal Description
- Mineral Survey File
- Property Taxes amt & Paid
- Proof of Labor - Unpatented
- Claims History
- Maps

A agitator precipitation 40

D Dryer Rotary 46

B Bin
- Coarse 
- Fine 
- Surge 

E Elevator
- Chain
- Bucket

C Conveyor
- Belt
- Screw
- Radial

F Feeder
- Screw
- apron 46
- adj. Stroke
- Reagent
- variable speed

Classifier 46
- Crossflow 50
- Spiral - counter current
- Cyclone
- Rake
- Hydro

Flotation Machine 50
- Sub A

Cyclone
- cone
- Gyratory

Crusher
- Cone
- Jaw
- Secondary 46
- Roll

Filter
- Leaf
- Disc 58
- Pan
- Drum
- Plate
- Fluorspar

Conditioner 46

Cells
- Electrolytic E 243
- autoxidation

Columns - Ion Exchange E 251
E 288

CLAIMS

ALPHABETICAL LISTING - ROLLODEX

GROUP LISTING MANUAL

MAP FILING - GROUP NUMBERED DRAWERS

MINERAL SURVEY MAP BOOK

LEGAL & RECORDED DOCUMENT FILE CARD SYSTEM

CLAIMS INFORMATION MASTER RECORD BOOK

PATENTED CLAIMS LEDGER & REF CARD FILE

- Legal Docs
- Mineral Survey
- Prop Taxes & Dues
- Unpatd Prop & Labor
- Claims History
- Maps

CLAIM — OWNED — GROUP & CLAIMS NUMBER — PATENTED / UNPATENTED

PROPOSED — NEW

ESCROWED GROUP & CLAIMS NUMBER

170 566
220
3.46

4 Flow Diagrams

Sheet 1 1 Pilot Plant

Sheet 2 1 Grinding thru DSM Screen + agitation then as is except for Electrolytic cell as in Pilot Plant

1 Sheet 2

1

Special Design Electrolytic Cell

The claims filing system contains all classified Claim information. The primary key is the Claim name and Group number

The classification of information covers:

Group No ____ Claim name ____

1. Patented or Unpatented
2. Legal ~~description~~ and Recorded Document
3. Mineral Survey
4. Property Taxes Record
5. Claims History
6. Maps.

The foregoing classifications will cover, the previous owner Rights Acquisition, legal status, financial and tax information Physical status, Location, adjacent claims, type of mineral, survey, and all related info. Fraction & Exclusions

The filing system is used by taking Group Number & Claim Name either to the ~~the~~ Master Group Listing Manual or the Alphabetical Claim Listing Rolledex File under either G L M or A C L a ~~mark~~ composite card number is given.

The composite card is the reference key to all information and give direction to the proper ledger index or file cabinet where classified information is kept

Bibliography.

B1867 319, 419
R1868 99-100
R1871 182-3
SMN1866 58
SMN1867-8 60-2
SMN1869-70 88-9
SMN1871-2 108
SMN1873-4 78
SMN1875-6 109
SMN1877-8 87-8
MR1905 272
MR1906 299
MR1907 I 372
MR1908 I 497, 724-5, Tungsten
MR1909 I 421
MR1910 I 525, 529
MR1914 I 700
MR1916 I 491
MR1917 I 287.
MR1918 I 250
MR1919 I 403-4
MR1920 I 329
MR1921 I 389

USGS Tonopah topographic map.

Hill507 282. Thompson & West 523, 525.
WeedMH 1153 Brohilco S. Corp. 1209-9 Goldfield Blue Bell M. Co.
1240 Lodi Ms. Co.

~~MAMMOTH see LODI~~

MANHATTAN

Gold, Placer Gold, Silver, Arsenic, Rhyolite Pebbles

Location. The Manhattan District is at Manhattan in the S. part of the Toquima Range. Manhattan is 45 m. by road N. of Tonopah ~~which is on the T. & C. R. R.~~ It is situated in Manhattan Canyon on the W. side of the range at an altitude of 6,905 ft.; while Bald Mt. to the N. reaches a height of 9,275 ft.. The old Belmont District adjoins the Manhattan District on the N. E.

History. Manhattan was discovered by John C. Humphrey in 1905 and a rush of prospectors into the district occurred that summer and again the following winter. Placer mining was inaugurated the following year, and was of particular importance from 1909 to 1915. In 1916, rich ore was found upon the lower levels of the White Caps Mine and led to another boom. In 1912, the Associated Mlg. Co. treated the ore of the White Caps Mine in a 75-ton mill which it had erected; shutting down the mine and mill when the oxidized ore was exhausted. In 1915, the White Caps M. Co., took over the White Caps mine and the Associated Mill; and in 1917, reconstructed the mill, adding a roasting furnace. ~~Litigation with the Manhattan Glory was settled in 1918; but~~ considerable difficulty has been experienced in devising a milling system adapted to the base arsenical ores of the White Caps Mine. ~~Since 1914, artificial pebbles for tube mills have been manufactured in the district from silicified rhyolite.~~

Production. From 1906 to 1921, the Manhattan District produced 375,292 tons of ore containing $4,112,607 in gold and 76,855 ozs. silver, valued in all at $4,160,921, according to Mineral Resources of the U. S. Geol. Survey.

Geology. The country rocks of the Manhattan District consist of Paleozoic sediments cut by Cretaceous granodiorite on the S. and capped by Tertiary eruptives on the N. The Paleozoic rocks are mainly schists with included lenses of quartzite and beds of limestone. They have been compressed into close folds in part overturned toward the N., according to Ferguson, and the principal anticline has been cut off obliquely by a reverse fault. The beds are further disturbed by a large number of small normal faults belonging to two series. The Tertiary eruptives consist mainly of rhyolite breccias but include lake bed deposits and andesite.

Veins. The ore deposits of the Manhattan District include veins in the Tertiary eruptives, veins in the Paleozoic sediments, stockworks in the