

16-4 WINZE — AMONG A NUMBER OF WINZES IN THE LOWELL-SACRAMENTO MINES, 16-4 WINZE WAS THE MOST IMPORTANT. IT WAS LOCATED ON THE EDGE OF THE MORNING STAR CLAIM NEXT TO THE HARDSCRABBLE CLAIM. IT HAD TWO COMPARTMENTS, ONE FOR HOISTING AND ANOTHER FOR PIPES AND MANWAY. THE WINZE WAS 300 FT FEET DEEP WITH LEVELS ON THE 1500, 1600, 1700, AND 1800 LEVEL. INTERESTING, IT HAD FELIX BLACK CAT LIVING AT THE WINZE . A FEW HOUSE CATS TOOK UP RESIDENCE, BUT FELIX WAS THE BEST KNOWN. THIS WINZE WAS DEVELOPED BECAUSE THE ENGINEERS EXPECTED TO LOSE THE SACRAMENTO SHAFT DUE TO THE MINING OF THE SACRAMENTO PIT. THE WINZE WAS TO HELP DEVELOP THE DALLAS SHAFT AS THE NEW MAIN HOISTING SHAFT. THIS BECAME UNNECESSARY AS THE SACRAMENTO SHAFT DID NOT DEVELOP PROBLEMS AND THEN THE CALUMET & ARIZONA MINING COMPANY MERGED WITH PHELPS DODGE AND THE JUNCTION SHAFT BECAME THE MAIN HOISTING SHAFT FOR THE NEXT FEW DECADES. IT WAS ALSO CALLED THE SACRAMENTO WINZE.

18-2 WINZE — A WINZE FROM THE 1800 LEVEL SACRAMENTO MINE TO THE 1900 LEVEL SACRAMENTO. NOTE THAT THE 1900 LEVEL, BELOW THE BOTTOM OF THE MAIN SHAFT. THIS WINZE WAS SUNK TO EXPLORE A REGION FAR AWAY FROM THE ANY MAIN SHAFT ON THE HARDSCRABBLE CLAIM WITHOUT THE EXPENSE OF DEVELOPING A LEVEL FROM THE SHAFT.

“26 & 2” — THE WORK SCHEDULE IN THE LAVENDER PIT DURING THE VIETNAM WAR PERIOD. TWENTY SIX DAYS ON WORK AND TWO DAYS OFF.

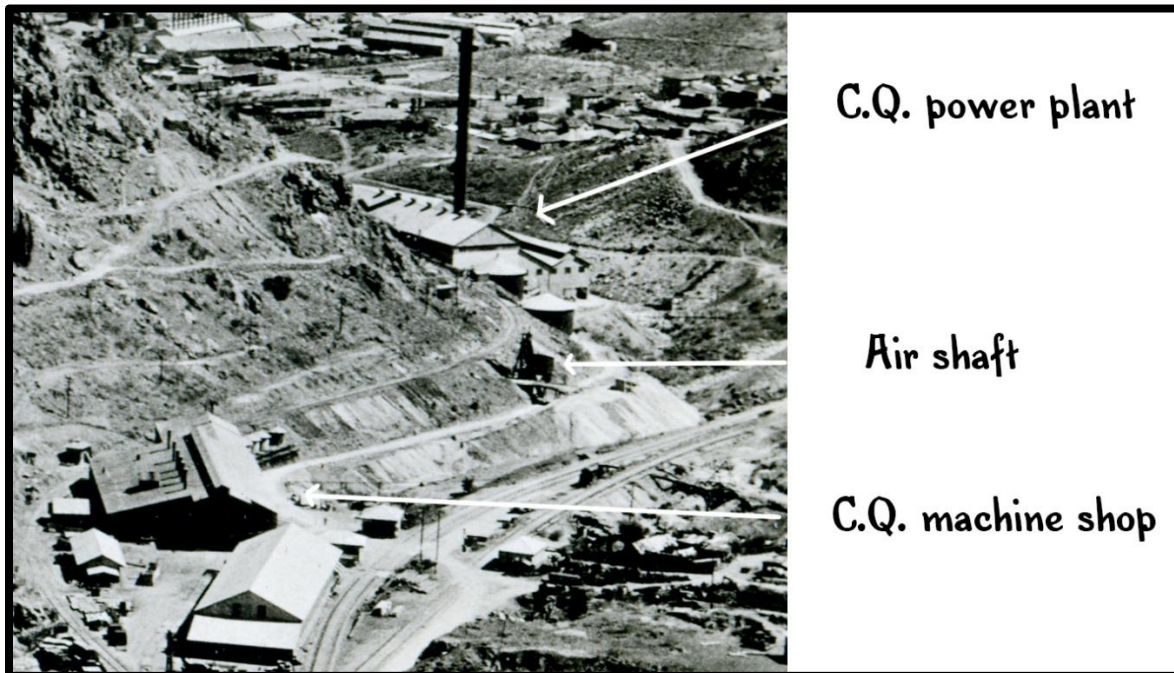
1000 INTERMEDIATE — A SUBLEVEL ABOVE THE 1000 LEVEL OF THE LOWELL MINE FROM #3 RAISE IN #1015 CROSSCUT TO AN UNNUMBERED RAISE NEAR #2 RAISE IN THE GALENA CLAIM



AEROFLOAT— SODIUM DI-CRESYL-DI-THIO-PHOSPHATE $C_{14}H_{14}NaO_2PS_2$, COMMERCIALY KNOWN AS AEROFLOAT. THIS CHEMICAL WAS USED IN THE LAVENDER PIT CONCENTRATOR DURING THE FLOTATION PROCESS TO PREFERENTIALLY COLLECT COPPER SULFIDE PARTICLES IN THE GROUND ORE BEING CONCENTRATED. THIS CHEMICAL MAKES THE COPPER SULFIDE PARTICLES HYDROPHOBIC. THIS ALLOWS AND THEM TO ADHERE TO THE BUBBLES IN THE

FROTH , WHILE LEAVING A SIGNIFICANT PORTION OF THE WASTE MINERALS LIKE PYRITE TO SINK AND BECOME PART OF THE TAILINGS. AEROFLOAT IN MANY CASES WAS BETTER AT REDUCING THE AMOUNT OF PYRITE THAT WOULD COULD PART OF THE CONCENTRATE THAN XANTHATES.

AIR SHAFT — 1.) A SHAFT SUNK TO PROVIDE VENTILATION OR EXHAUST FIRE GASES. TECHNICALLY, MANY OF THESE WERE ACTUALLY, RAISES. THE OAKLAND SHAFT WAS AN AIR-SHAFT. 2.) A SHAFT SUNK ON SACRAMENTO HILL BETWEEN THE COPPER QUEEN MACHINE SHOP AND THE POWER HOUSE. IT DOWN TO THE 200 LEVEL IN 1912. IT HAD STATIONS ON THE 100 , 200 ON ONE AT ABOUT THE 25 FT. LEVELS. ALTHOUGH, IT WAS ORIGINALLY FOR VENTILATING THE WORKINGS EXPLORING SACRAMENTO HILL IT UNEXPECTEDLY DISCOVERED A SULFIDE OREBODY. THIS OREBODY WAS KNOWN AS THE AIR-SHAFT OREBODY.



AIR SHAFT ON SACRAMENTO HILL C-1915

AIR SHAFT OREBODY — AN OREBODY THAT WAS DISCOVERED BY AN AIR SHAFT SUNK ON SACRAMENTO HILL. THE OREBODY WAS ABOUT 800 FT X 200 FT. IN SIZE AND CONSISTED OF CHALCOCITE WITH PYRITE, BORNITE AND CHALCOPYRITE.

ALCATRAZ — NICKNAME FOR THE HOT, WET LOWER LEVELS OF THE CAMPBELL MINE

ALCATRAZ COUNTRY— PART OF THE 1800 LEVEL JUNCTION MINE THAT WAS DISTANCE FROM THE SHAFT. LEGENDS STATE IT WAS NAMED FOR THE ALCATRAZ CLAIM, BUT THE ALCATRAZ CLAIM WAS THOUSANDS OF FEET BEYOND ANY JUNCTION, BRIGGS OR COLE MINE WORKINGS AND WAS LOCATED NEAR THE COPPER QUEEN CONCENTRATOR IN DON LUIS. THIS MAKES IT UNLIKELY TO BE THE REASON.

ARC GATE — A CURVED STEEL CHUTE DOOR. MINERS USED TO COMMENT THAT THE FRICTION OF THE ROCK FLOWING THROUGH THE CURVED SHAPE OF THE GATE WOULD HELP CLOSE THE GATE.

ATLANTA SLICE— A STOPE IN THE CZAR MINE ON THE 200 LEVEL LOCATED NEAR 3-19 RAISE IN 2-227 DRIFT

AUTOMATIC STOPER — A SELF-ROTATING STOPER



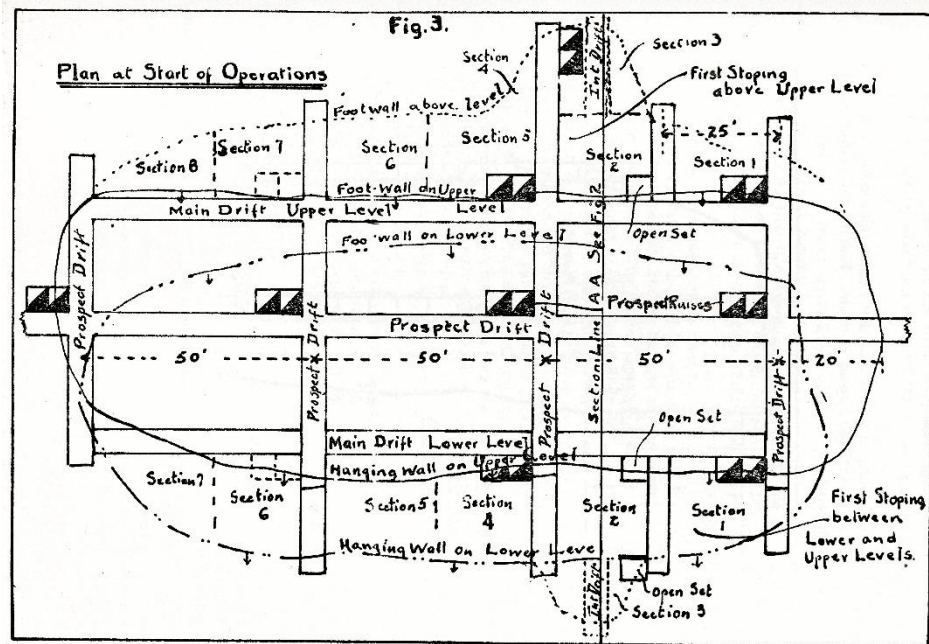
BACK SWITCH — A RAIL SWITCH WITH SWITCH POINTS POINTING OPPOSITE OF MOST RAIL SWITCHES. NORMALLY, UNDERGROUND THE POINTS OF A SWITCH ARE DIRECTED TOWARDS THE SURFACE ENTRANCE IN A TUNNEL OR ADIT. IN A MINE SERVICED BY A SHAFT THE SWITCH POINTS FACE TOWARDS THE SHAFT STATION. THIS WAS IMPORTANT BECAUSE A MINER COULD USE THE SWITCH POINTS TO FIND THE WAY OUT OF AN AREA IF HE BECAME DISORIENTED. BACK SWITCHES WERE RARE AND POINTED AWAY FROM THE MINE ENTRANCE OR SHAFT STATION. THERE WAS A BACK SWITCH ON THE 2200 LEVEL JUNCTION NOT FAR OFF THE SHAFT STATION. ONE NEW MINER CAME ACROSS THE 2200 BACK SWITCH AND WAS UNAWARE IT WAS A BACK SWITCH AND FOUND HIMSELF LOST AND BACK NEAR THE DENN SHAFT.

BAXTER #10 RAISE — LOCATED ON THE 300 LEVEL IN THE BAXTER CLAIM. ON THE EDGE OF #14 STOPE

“BLACK DRIFT” — A DRIFT ON THE 700 LEVEL OF THE NIGHTHAWK MINE. WHY IT WAS CALLED THE BLACK DRIFT IS PRESENTLY UNKNOWN.

BLIND CROSSCUT — A DEAD END CROSSCUT

BLOCK-OUT — DETERMINE THE BOUNDARIES OF AN OREBODY. IN THE EARLIER DAYS THIS WAS DONE LARGELY WITH DRIFTS AND RAISES. LATER, DIAMOND DRILL HOLES HELPED



BLOCK-OUT A TRAINING DOCUMENT SHOWING HOW TO BLOCK-OUT AN OREBODY

BODIE RAISE — ON THE 400 LEVEL OF THE HOLBROOK MINE NEAR THE
HOLBROOK#1 SHAFT IN #417 CROSSCUT

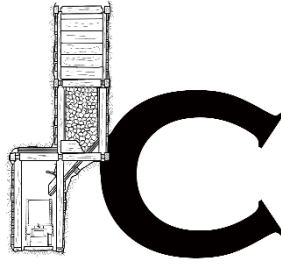
BODIE #1 RAISE — ON THE 400 LEVEL OF THE HOLBROOK MINE NEAR THE
HOLBROOK#1 SHAFT IN #414 CROSSCUT

BODIE STOPE — A STOPE IN THE HOLBROOK MINE CLOSE TO THE HOLBROOK #1 SHAFT. THIS STOPE CAVED IN DURING 1904 AND CEASED OPERATIONS IN THE SHAFT FOR A TIME. THE EVENTUAL LOSS OF THE HOLBROOK #1 SHAFT WAS AT LEAST PARTIALLY DUE TO THIS STOPE CAVING.

BREASTING — SEE “BREASTING IT UP”

“BREASTING IT UP” — A MULE PUSHING A MINE CAR. THE MULE WOULD PUT ITS COLLAR UP AGAINST THE CAR AND PUSH IT. THIS WAS OFTEN DONE TO PUSH A CAR UNDER A CHUTE.

BULLDOZING LEVEL — THIS WAS THE 400 LEVEL (93FT ABOVE THE 500 LEVEL) OF THE SACRAMENTO MINE AND WAS UNDERNEATH THE SACRAMENTO PIT. IT WAS ON THIS LEVEL THE BULLDOZING CHAMBERS WERE LOCATED. THIS LEVEL WAS APPROXIMATELY 145 FT. BELOW THE BOTTOM OF THE SACRAMENTO PIT. SEE ALSO BULLDOZING CHAMBER.



CAGE RIDER — AN UNCOMMON TERM FOR CAGER. SEE CAGER

CAT SKINNER — A BULLDOZER OPERATOR

CAVE MATERIAL— CALCITE AND OR ARAGONITE CAVE TYPE FORMATIONS. THESE WERE COMMONLY DISCOVERED DURING MINING, PARTICULARLY IN THE WESTERN PART OF THE DISTRICT.



CAVE MATERIAL, "BALLPARK" STOPE 7TH LEVEL SOUTHWEST MINE

CAVING BLOCK — THE SPECIFIC SECTION OF THE ORE BEING BLOCK CAVED.

CAVING SYSTEM — THE BLOCK CAVING MINING METHOD

CENTRAL SHAFT — UNCOMMON TERM THAT REFERS TO THE MAIN HOISTING SHAFT. IN BISBEE THIS MOST COMMONLY APPLIES TO THE SACRAMENTO SHAFT.

CHAIRS — SEE LANDING CHAIRS

CHIP — ANOTHER TERM FOR BRASS. SEE BRASS

CHRIST MOON RAISE— A RAISE NEAR #158 CROSSCUT ON THE 100 LEVEL OF THE CZAR MINE

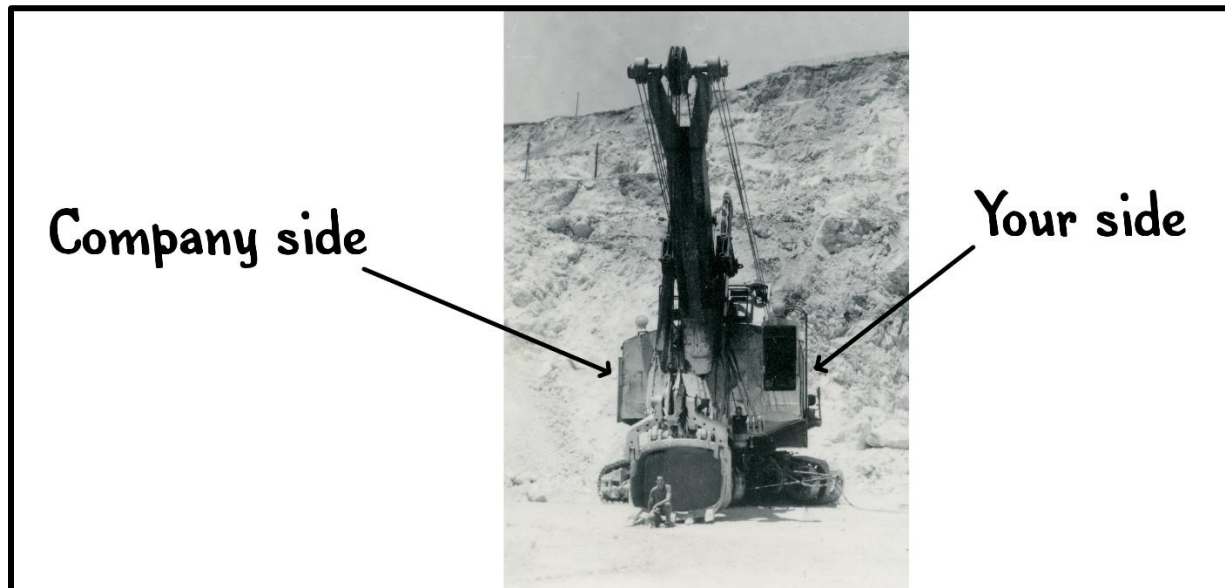
CLEAN ORE— ORE WITH LITTLE WASTE ROCK OR IMPURITIES.

“COFFEE GRINDER” — A NICKNAME FOR A SMALL LOCOMOTIVE USED TO TRANSPORT TIMBER TRUCKS OF SUPPLIES FROM THE GARDNER MINE WHICH IN THE 1920’S WAS A SUPPLY SHAFT TO THE SACRAMENTO MINE

COGSWELL STOPE — SEE NEPTUNE STOPE

“COMMANDMENTS OF THE BOOK” — SAFETY RULES

“COMPANY” SIDE— THE SIDE OF AN ELECTRIC SHOVEL OPPOSITE OF THE OPERATOR’S CAB. WHEN A POTENTIALLY DANGEROUS SITUATION LIKE LARGE LOOSE BOULDERS HANGING ON A BENCH OCCURRED THE SHOVEL OPERATOR WOULD PUT THE “COMPANY SIDE” OF THE SHOVEL IN THE AREA OF DANGER. THIS WAY THE OPERATOR WOULD BE MORE PROTECTED. SEE ALSO “YOUR” SIDE.



COMPANY SIDE AND YOUR SIDE OF AN ELECTRIC SHOVEL IN THE LAVENDER PIT C-1968

CONCRETE TIMBER — POSTS OF REINFORCED CONCRETE WERE TRIED IN 1909, AS A CHEAPER LONGER LASTING ALTERNATIVE TO WOOD TIMBER. THE CONCRETE DRIFT SETS WERE CAST IN 6” X 8” INDIVIDUAL PIECES. CAPS WERE ABOUT 4’8” LONG AND POSTS 7’6”. THE CAPS WEIGHED 350 POUNDS AND THE POST WERE HEAVIER. IT WAS DETERMINED THAT ALTHOUGH IN SOME CASES CONCRETE WAS CHEAPER THESE SETS COULD NOT BE USED IN HEAVY GROUND, SINCE CONCRETE SETS DESIGNED TO SUPPORT HEAVY GROUND WOULD BE TOO HEAVY TO INSTALL. CONCRETE WAS USED TO LINE SHAFTS LIKE THE SACRAMENTO,

CAMPBELL AND JUNCTION MINES AND ALSO AREAS LIKE PUMP STATIONS. THE FRAMES FOR FIRE DOORS WERE ALSO CONCRETE.

COPPER RIVER — WATER WAS BEING SPRAYED INTO THE FIRE COUNTRY (BURNING STOPES) ON THE 1100. THIS EXTREMELY RICH COPPER WATER WAS DIVERTED TO THE PRECIPITATION PLANT ON THE 1300 LEVEL OF THE LOWELL MINE.

COPPER TUBE — A 20 FOOT OR GREATER LONG COPPER PIPE THAT WAS USED TO SLIDE 1 1/4" X 8 IN CARTRIDGES OF DYNAMITE INTO THE TOE HOLES IN THE SACRAMENTO PIT. COPPER PIPE WAS USED AS IT IS NON-SPARKING.

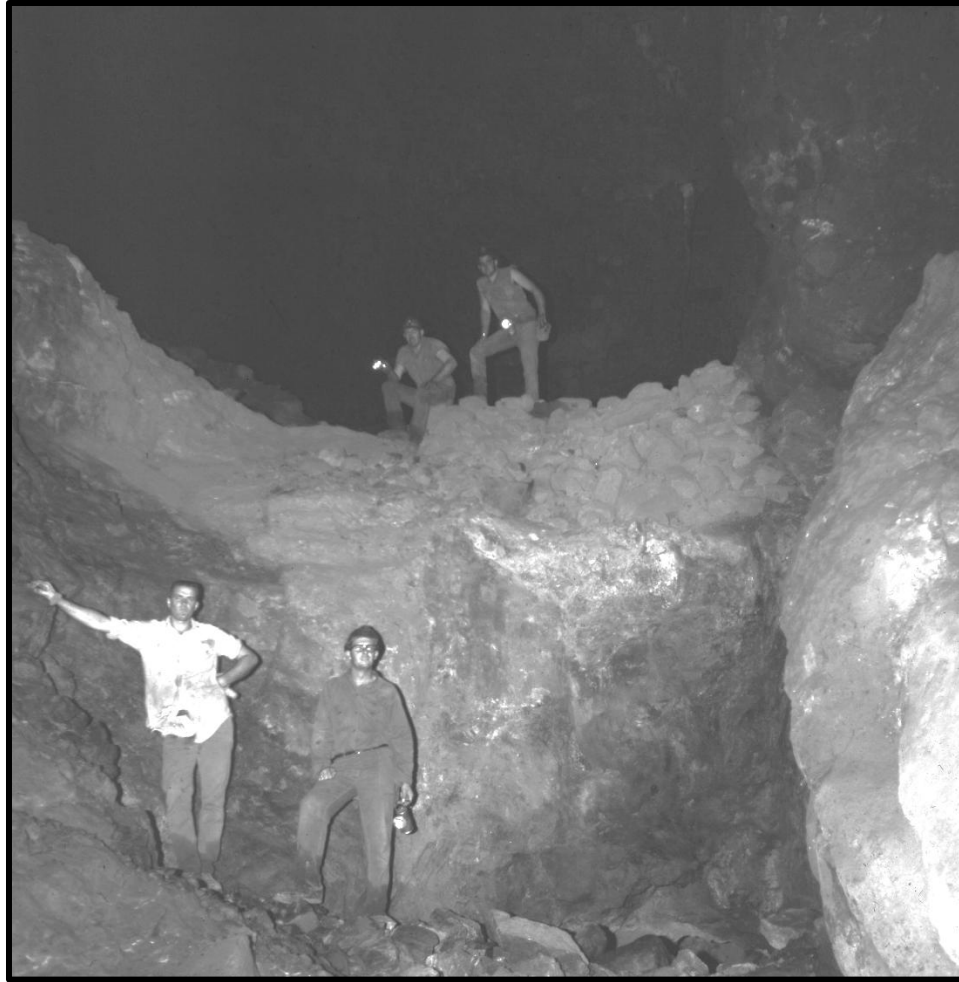


COPPER TUBE BEING USED IN THE SACRAMENTO PIT C-1919

CRATER — 1.) SEE MILL HOLE 2.) A THICK, HEAVY, BLACK, LUBRICANT USED ON THE ELECTRIC SHOVELS.

CREOSOTED TIMBER — FOR A SHORT TIME IN 1909, CREOSOTE WAS APPLIED IN DIFFERENT AMOUNTS TO TIMBER AS AN EXPERIMENT TO PRESERVE TIMBER. PART OF THE SACRAMENTO AND DALLAS SHAFTS WERE TIMBERED WITH CREOSOTED TIMBER IT WAS NEVER GENERALLY ADOPTED. THIS WAS LIKELY DUE TO THE DANGERS OF BURNING OF CREOSOTE.

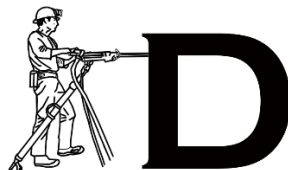
CUPRITE STOPE — A STOPE IN THE HIGGINS MINE NEAR THE PROPERTY LINE WITH PHELPS DODGE ON THE TUNNEL LEVEL. THIS STOPE CONTAINED LARGE AMOUNTS OF CUPRITE, WILLEMITE AND NATIVE COPPER



CUPRITE STOPE IN THE HIGGINS MINE C-1965

CYCLE — THE SEQUENCE OF WORK DURING A MINERS SHIFT. A MINER EXPECTED TO ARRIVE AT THE WORKING AREA WITH THE OPPOSITES SHIFTS BLASTED MUCK ON THE GROUND. THEY FIRST BARRED DOWN ANY LOOSE ROCK, THEN THEY BOOMED OUT TEMPORARY TIMBER, THIS WAS FOLLOWED BY MUCKING OUT THE BLASTED ROCK, THEY WOULD DRILL OUT A ROUND AND FINALLY LOAD THE ROUND AND BLAST AS THEY LEFT TO GO OFF SHIFT. THE OPPOSITE SHIFT WOULD REPEAT THIS.

CZAR SLICE — A TOP SLICE IN THE CZAR MINE.



DAN W. RAISES— THESE ARE LOCATED ON THE 400 LEVEL OF THE HOLBROOK MINE ON THE NEPTUNE CLAIM. THERE ARE FIVE RAISES IN TOTAL LABELED DANW.#1- DAN W.#5. INITIALLY, IT APPEARED THESE WERE WINZES, BUT THE SYMBOLS INDICATE THEY ARE RAISES.

THIS GROUP OF RAISES WERE MINED OUT BY THE HOLBROOK EXTENSION OF THE LAVENDER PIT

DETERMINATIONS— ASSAY TO DETERMINE THE METAL VALUE IN THE ORE

DEAD HEAD — BOSS

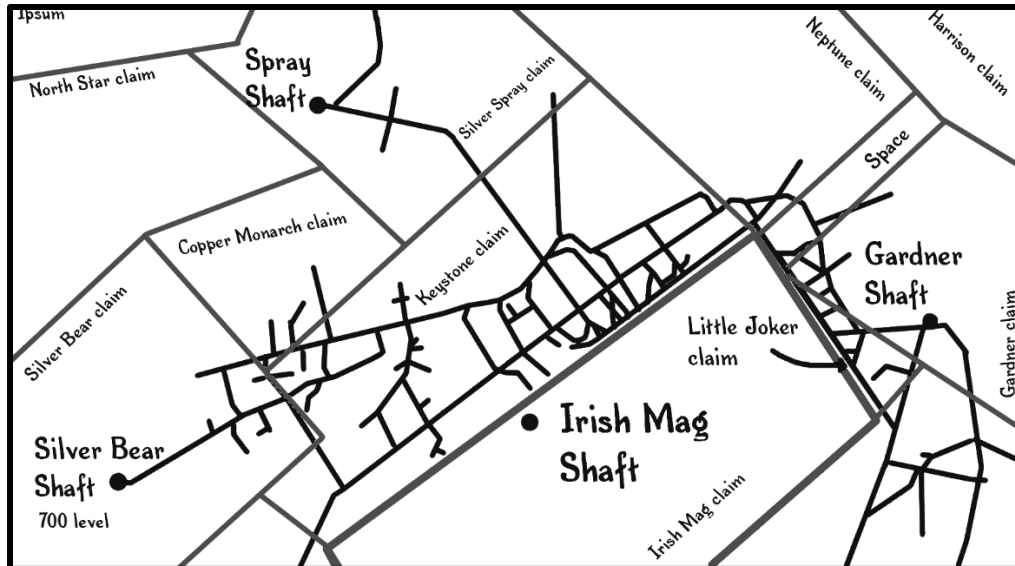
DIAMOND TIP — A TYPE OF CARBIDE LAMP TIP . IT CONSISTED OF A “LAVA” TIP WITH METAL CASING SOLD BY UNIVERSAL LAMP COMPANY. THEY MADE THE POPULAR, AUTOLITE CAP LAMP. SEE ALSO LAVA TIP



DIAMOND TIP , IN A WELL-USED IN AN AUTOLITE CARBIDE CAP LAMP

DISPOSITION TICKET — A TICKET GIVEN TO THE BRAKEMAN ON THE TRAINS LEAVING THE SACRAMENTO PIT. THIS TICKET INDICATED WHETHER THE TRAIN SHOULD BE SENT TO THE WASTE DUMPS, LEACH DUMPS OR TO THE MILL. THE ORE IN THE SACRAMENTO PIT COULD NOT BE DETERMINED VISUALLY. EACH TRAIN WAS SAMPLED AND ASSAYED BEFORE LEAVING THE PIT. OFTEN THE ASSAYS WOULD NOT BE COMPLETED IN TIME SO THE TRAIN WOULD BE HELD AT A MAIN RAIL SWITCH IN LOWELL UNTIL THE ASSAY WAS COMPLETED. THE TRAINS WERE NOT ALLOWED TO DUMP WITHOUT A DISPOSITION TICKET.

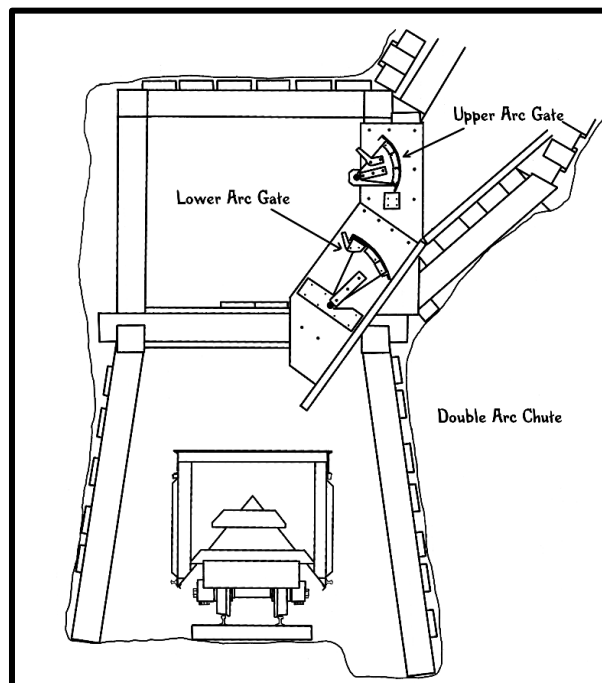
DIXIE COUNTRY — STOPES ON THE 700 & 800 LEVELS OF THE SILVER BEAR MINE. THE STOPES WERE LOCATED ON THE SILVER BEAR AND KEYSTONE CLAIMS AND INCLUDED 7-29 STOPE ON THE 700 LEVEL AND 8-25 STOPE ON THE 800 LEVEL.



DIXIE COUNTRY ON THE KEYSTONE & SILVER BEAR COUNTRY (7-29 STOPE AREA)

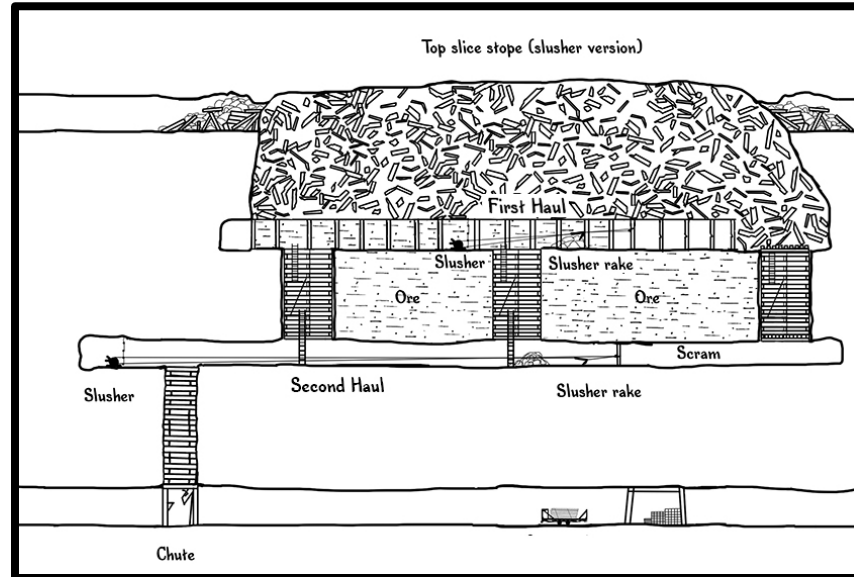
DOUGLAS RAISE — ON THE 100 LEVEL OF THE CZAR MINE NEAR THE SULLIVAN RAISE. THIS RAISE IS LIKELY VERY OLD AS THE CROSSCUTS AROUND THE RAISE ARE NOT NUMBERED AND THE RAISE ITSELF WAS GIVEN A NAME RATHER THAN A NUMBER.

DOUBLE ARC GATE — LARGER CHUTES, SUCH AS THOSE USED IN IN THE BLOCK CAVE AND IN THE SACRAMENTO GLORY-HOLES USED TWO CHUTE GATES, AN UPPER AND A LOWER. THE UPPER OR HIGHER GATE WAS USED TO CONTROL THE RATE OF FLOW OF MUCK FROM CHUTE AND THE LOWER GATE WAS USED TO STOP THE FLOW OF MUCK.



DOUBLE ARC GATE

DOUBLE MUCKING — TWO SLUSHERS WORKING TOGETHER TO REMOVE MUCK FROM A STOPE. TYPICALLY, THE FIRST SLUSHER MOVES THE BROKEN MUCK OUT OF THE MINING FACE INTO A RAISE THAT LEADS TO A SCRAM. THE SECOND SLUSHER MOVES THE ROCK FROM THE BOTTOM OF RAISE ALONG THE SCRAM INTO A RAISE WITH A CHUTE ON THE LEVEL. ALTERNATIVELY, TWO SLUSHERS CAN BE WORKING TOGETHER ON THE SAME FLOOR ONE MUCKING FROM THE FACE TO A SPECIFIC POINT WHERE ANOTHER SLUSHER WOULD MOVE THE ROCK INTO THE CHUTE.



DOUBLE MUCKING IN A TOP SLICE STOPE

DOWFROTH 250 — POLYPROPYLENE GLYCOL METHYL ETHER ($\text{CH}_4\text{O} \cdot (\text{C}_3\text{H}_6\text{O})_N$) A CHEMICAL USED IN THE FLOTATION CELLS AT THE LAVENDER PIT CONCENTRATOR. DOWFROTH 250 HELPED THE SOLUTION CREATE A FOAM OF SMALL BUBBLES. IT ALSO REDUCED WATER TENSION THIS ALLOWED THE TINY AND CHEMICALLY INDUCED HYDROPHOBIC COPPER SULFIDE PARTICLES TO CLING TO THE BUBBLES AND BE SEPARATED FROM THE PARTICLES OF WASTE ROCK.

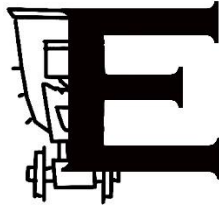
“DOWN IN THE HOLE” — IN THE MINE

“ DRESS IT OUT”— CLEANUP THE AREA IN ORDER TO INSTALL TIMBER.

DRILLINGS — THE CUTTINGS FROM DRILLING A HOLE. IN THE LAVENDER PIT, THESE CUTTINGS WERE SAMPLED FOR METAL CONTENT AND WERE USED AS STEMMING IN THE BLAST HOLES.

DRIVER — SEE MULE DRIVER

“DYNAMITE WITH A FUSE LIT” — A PHRASE INDICATING SOMEONE WAS ILL-TEMPERED

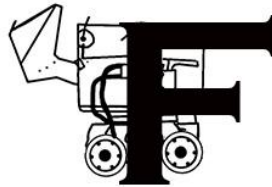


ELECTRIC SHOTS— BLAST HOLES DETONATED BY AN ELECTRIC BLASTING CAP

“END OF THE WORLD” — BOLSA QUARTZITE. WHEN THIS ROCK UNIT WAS FOUND THE MINE WORKING RAISE OR DRIFT WAS STOPPED BECAUSE NO ORE WOULD BE FOUND IN IT. THIS EXPRESSION WAS USED LIKE “THE DRIFT HAD HIT THE END OF THE WORLD”

EXPANDER — EXPANSION STYLE ROCK BOLT SHELL

EXTRACTION DRIFT — THE SMALL DRIFTS WITH CHUTES THAT WENT UNDERNEATH STOPEs AND WERE USED TO REMOVE ORE FROM THE STOPE.



FISH-TAIL TIP — THESE ARE CARBIDE LAMP BURNERS. THERE ARE TWO BASIC TYPES. THE LAVA BURNERS HAD WINGS AND TWO HOLES TO FEED IN ACETYLENE AND FOUR HOLES TO ALLOW IN AIR. THIS TYPE TIP WAS USED IN LAMPS LIKE THE “LITTLE GIANT”, “COPPER QUEEN” AND THE “UNCLE SAM” THE OTHER TYPE OF FISH TAIL TIP WERE HOMEMADE BURNERS MADE FROM POINTED ENDS OF DAMAGED WATER NEEDLES FROM ROCK DRILLS. A MINER WOULD CUT A 1/2”-3/4” PIECE OF INCLUDING THE POINTED END FROM THE WATER NEEDLE. A THIN WIRE IS RUN THROUGH THE PIECE AND THEN THE UN-POINTED END WAS FLATTENED WITH A HAMMER OR AX. THE WIRE WAS THEN REMOVED CREATING THE HOLE FOR THE ACETYLENE TO TRAVEL THROUGH. A SAW BLADE WAS USED TO CLEAN UP THE HOLE AND CREATED THE FISH-TAIL. THESE TIPS WERE COMMONLY USED, BUT IF THEY DID NOT FIT PERFECTLY INTO THE LAMP. THIS WOULD RESULT IN TWO FLAMES BURNING A STRONG FLAME FROM THE FISH-TAIL AND THEN A TINY SECONDARY FLAME WHERE THE TIP SEATED INTO THE LAMP.

FLOATATION— AN OLDER SPELLING OF FLOTATION SEE FLOTATION

“FRYING PAN”— 1950’S TERM FOR No 7 DUMP



FISH-TAIL TIP(S) THREE MADE FROM WATER NEEDLES AND A LAVA FISH-TAIL TIPS

FIRE— TO DETONATE A BLAST



GARDENER WASTE RAISE — A RAISE FROM THE SURFACE TO THE 800 LEVEL AND WAS USED DROP WASTE ROCK FROM THE SURFACE UNDERGROUND FOR BACKFILLING STOPES. THE LOCATION OF THE RAISE MAKES IT LIKELY IT WAS USED TO FILL STOPES IN BOTH THE GARDNER AND SACRAMENTO MINES.

GASKET — COLLAR FOR MULE

“GET ITS CLOTHES ON” — PUT A HARNESS ON THE MULE FOR PULLING MINE CARS.

GLORYHOLES — 3).USED TO DESCRIBE STOPES, POSSIBLY A CORNISH TERM

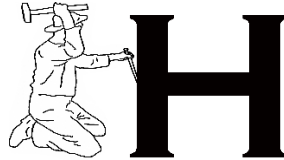
“GOLD STOPE” — A STOPE ON THE 200 LEVEL OF THE WHITE TAIL DEER MINE. THIS STOPE CONTAINED GOLD AND SILVER VALUES AND WAS INITIALLY THE ONLY STOPE ON THE 200 LEVEL OF THE WHITETAIL DEER MINE.

“GONE WHERE ALL THE GOOD MINERS GO.” — INDICATES THE MINER HAS DIED.

“GO RAW.” — DRIVE THE MINE WORKING WITHOUT TIMBER

“GO TIMBER.” — DRIVE THE WORKING WITH TIMBER

GREENSANDS — THE TAILINGS FROM THE SHATTUCK-DENN MILL LOCATED NEAR THE DENN MINE. THESE TAILINGS HAD A GREENISH TINGE. THIS TAILING DAM WAS RECLAIMED IN THE LATE 1990S



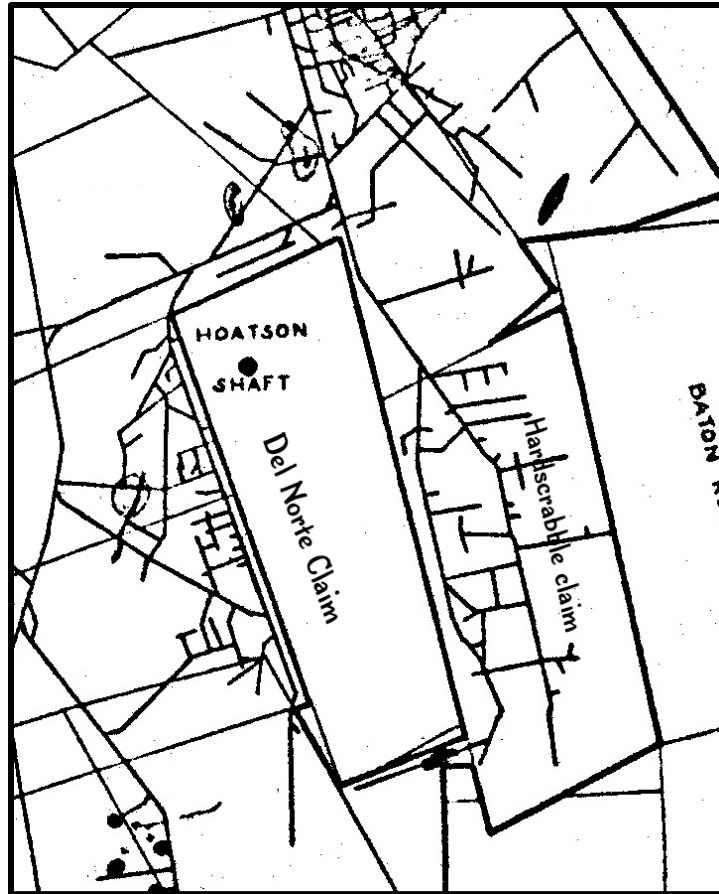
H₂O CHANNEL — SEE WATER COURSE

HAYES#1 RAISE — A RAISE ON THE 300 LEVEL IN #346 CROSSCUT

HAYES #2 RAISE — A RAISE ON THE 300 LEVEL IN A CROSSCUT OFF #333 CROSSCUT

HANGAR BOLT — SEE SHAFT HANGER

HARDSCRABBLE MINE — ACTUALLY JUST A CLAIM AND NOT A MINE. IT WAS NEXT TO AND EAST OF TO THE DEL NORTE CLAIM. THE HARDSCRABBLE WHICH THE HOATSON MINE. THE HOATSON SHAFT WAS LOCATED ON SINGLE CLAIM THAT BELONGED TO THE C&A WAS ALMOST ENTIRELY SURROUNDED BY THE COPPER QUEEN PROPERTIES ONLY A NARROW FRACTION OF THE BENGAL CLAIM THAT WAS ALSO OWNED BY THE CALUMET & ARIZONA CONNECTED TO THE CLAIM. THIS RESULTED IN THE HARDSCRABBLE WAS INCONVENIENT TO MINE. THE LOWELL WAS THE CLOSEST SHAFT OWNED COPPER QUEEN LOCATED , BUT THE LOWELL WORKINGS HAD TO GO COMPLETELY THIS AROUND THE DEL NORTE CLAIM. THE SACRAMENTO WAS DISTANT AND WAS CLOSE TO 1/2 MILE AWAY. CLAIM WAS HEAVILY MINED BETWEEN 1400-1900 LEVELS MINED FROM THE SACRAMENTO AND LOWELL MINES.



HARDSCRABBLE "MINE" CLAIM ON THE 1400 LEVEL

HENTUCK RAISE — A SINGLE COMPARTMENT RAISE ON THE 300 LEVEL OF THE HAYES SHAFT IN 198 CROSSCUT. LIKELY, A VERY EARLY RAISE

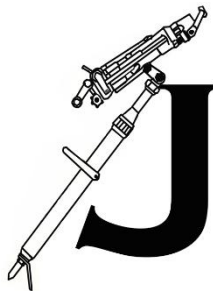
HIGHBALL DRIFT — MAIN HAULAGE DRIFT. HIGHBALL INDICATES TRAVELING AT A FAST SPEED. IN REALITY, CONDITIONS UNDERGROUND AND SAFETY LIMITED THE SPEED OF THE TRAINS

HOUSE — ENCLOSED STRUCTURE ON AN ELECTRIC OR STEAM SHOVEL.

HOISTING WORKS — THE BUILDINGS AND EQUIPMENT USE TO RAISE AND LOWER, MEN SUPPLIES AND ORE OUT OF A SHAFT. THIS INCLUDED THE HEADFRAME, HOIST, BOILERS, HOIST HOUSE AND BOILER ROOM.



IVES RAISE— A RAISE ON THE 300 LEVEL BETWEEN THE HOLBROOK#2 SHAFT AND THE HAYES SHAFT IN 332 CROSSCUT.



“JEWEL” TIP — A TYPE OF CARBIDE LAMP TIP . IT CONSISTED OF A “LAVA” TIP WITH METAL CASING SOLD BY JUSTRITE MANUFACTURING COMPANY. SEE ALSO LAVA TIP



JEWEL TIP(S)

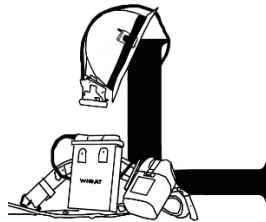
JOHN SMITH STOPE— A STOPE IN THE COPPER QUEEN — CZAR MINE IN 1885. THIS IS ONE OF THE EARLIEST OREBODIES MINED AFTER THE MAIN COPPER QUEEN OREBODY WAS EXHAUSTED.

“JUMP THE TRACK”– DERAIL

JUNCTION TERRITORY – THE AREA TYPICALLY THOUGHT OF AS BELONG TO THE JUNCTION MINE. THIS TERM BECAME MORE COMMON AFTER THE JUNCTION MINE OFFICIALLY WAS SHUT DOWN IN 1958 AND WORK IN THE AREA WAS COMPLETED FROM THE CAMPBELL MINE



KAUFMANN RAISE– LOCATED ON THE 400 LEVEL HOLBROOK MINE IN A SMALL CROSSCUT OFF 420 CROSSCUT NEAR 83-4 RAISE

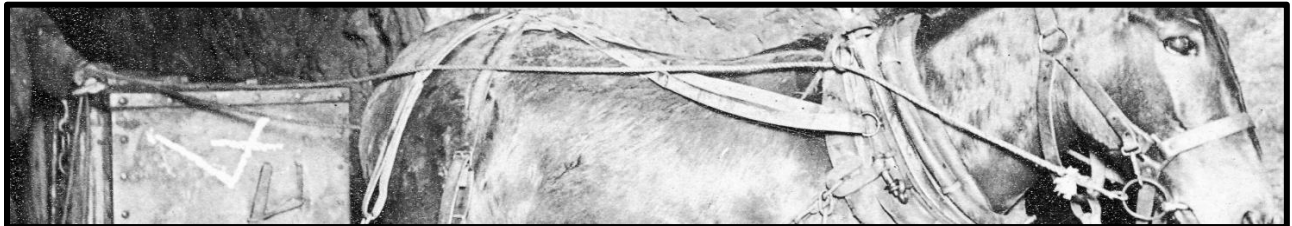


LAVA TIP– A CARBIDE LAMP BURNER , THESE BURNERS MANUFACTURED FROM STEATITE A TYPE OF TALC MIXED WITH A BINDER LIKE CLAY. IT WAS THEN FIRED TO HARDEN IT. AFTER THIS IT WAS KNOWN AS “LAVA”. THIS IS RATHER ERRONEOUS AS STEATITE IS A METAMORPHIC ROCK AND NOT VOLCANIC. IT WAS THEN FORMED INTO A SMALL “LAVA” TIP WITH A HOLE FOR THE ACETYLENE TO PASS THROUGH. SOMETIMES AIR HOLES WERE ADDED TO CREATE A STRONGER CLEANER BURN. THESE TIPS WERE HELD IN WITH COMPRESSION BY A NUT. METALS LIKE IRON OR BRASS WERE NOT SUITABLE FOR BURNERS. THE TEMPERATURE OF THE BURNING ACETYLENE CAUSES THE HOLE IN THE TIP TO OXIDIZE AND ERODE. STEATITE (“LAVA”) DOES NOT ERODE AND HAS EXTREMELY LIMITED EXPANSION AND CONTRACTION UPON HEATING AND COOLING.



LAVA TIP(S)

LINES — THE REINS TO DRIVE A MULE. A ROPES GOING FROM EACH SIDE OF THE BIT IN THE MULES MOUTH, THROUGH A METAL RING ON THE COLLAR AND TO THE MULE DRIVER.



LINES ON A MULE C-1910

LINE UP ROOM — A ROOM NEAR THE CHANGEROOM THAT CONTAINED A CHALKBOARD WITH THE HAUL TRUCK AND SHOVEL NUMBERS OPERATING IN THE LAVENDER PIT NEAR SHOVEL NUMBERS IT WAS INDICATED WHETHER THEY WERE GOING TO BE LOADING WASTE ORE, OR LEACH MATERIAL. ALSO, IT INDICATED WHO WAS OPERATING THE MACHINE. THE HAUL TRUCKS ASSIGNED TO THESE SHOVELS COULD SEE WHERE THEY WERE GOING TO DUMP THEIR ROCK.

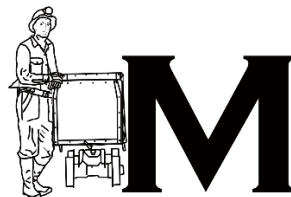
LOADING HARNESS — THE SET OF STRAPS AND FITTINGS USED TO SECURE A MULE FOR HOISTING OR LOWERING IN A CAGE



LOADING HARNESS SECURING A MULE THAT HAS BEEN LOWERED UNDERGROUND

LOWELL AIR SHAFT— THIS SHAFT EXTENDED FROM THE SURFACE TO THE 900 LEVEL AND PROVIDED ESSENTIAL VENTILATION.

LOWER ARC GATE— LARGER CHUTES, SUCH AS THOSE USED IN IN THE BLOCK CAVE AND IN THE SACRAMENTO GLORY-HOLES USED TWO CHUTE GATES AN UPPER AND A LOWER. THE LOWER GATE WAS USED TO STOP THE FLOW OF MUCK FROM THE CHUTE.. THE CHUTE HANDLE WAS LOCATED IN THE CENTER OF THE LOWER GATE. SEE ALSO DOUBLE ARC GATE



MACHINE SHOP BENCH — A BENCH IN THE SACRAMENTO PIT THAT WAS AT THE SAME ELEVATION THE COPPER QUEEN MACHINE SHOP HAD BEEN ORIGINALLY LOCATED. THE MACHINE SHOP WAS DEMOLISHED BEFORE THE SACRAMENTO PIT MINED THROUGH THIS AREA. IT WAS BETTER KNOWN AS 5360N BENCH.

MAIN LINE — THE CENTRAL CROSSCUT TO BRING THE SUPPLIES AND ORE OUT OF A MINING AREA. THE EXTRACTION CROSSCUTS WOULD HAVE CONNECTED TO THIS CROSSCUT.

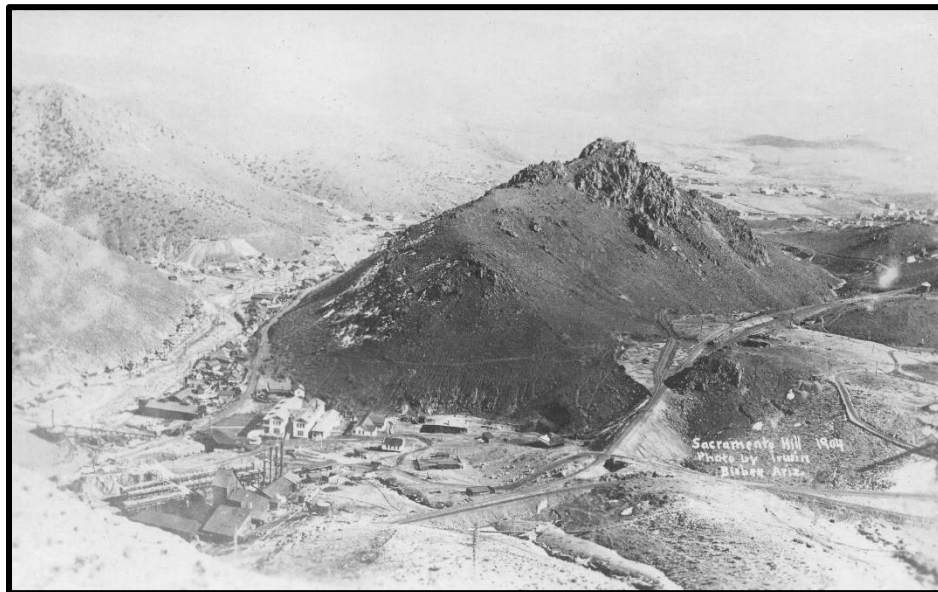
“MAKE IT SING”— A PHRASE INDICATING TO TIGHTEN A TIMBER WITH WEDGES OR LESS COMMONLY A ROOF BOLT WITH A DRIVING DOLLY.

MILL HOLE — A RAISE THAT IS BEING DEVELOPED BY GLORY-HOLE MINE. THEY EVENTUALLY FORM LARGE CRATERS AS THE WALLS OF THE RAISE ARE BLASTED INTO THE RAISE.

MILLING PIT— SEE MILL HOLE

MINING CYCLE — SEE CYCLE

“MOTHER OF BISBEE” — SACRAMENTO HILL. THIS TERM ALLUDES TO THAT SACRAMENTO HILL WAS AN IMPORTANT PART OF THE PORPHYRY INTRUSION THAT ALONG WITH HYDROTHERMAL MINERALIZATION FORMED THE COPPER DEPOSITS IN BISBEE



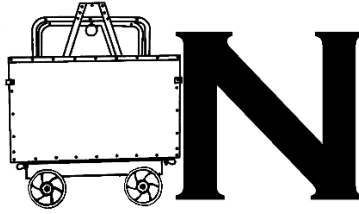
“MOTHER OF BISBEE” SACRAMENTO HILL

MOURNERS BENCH — THIS A TERM FOR THE BENCH IN FRONT OF COPPER QUEEN GENERAL OFFICE WHERE OLD RETIRED MINERS HUNG OUT DURING THE DAY.

MUD SLOSHER — CHURN DRILL

MULES — 1.) A TERM FOR CARMAN BEFORE ACTUAL MULES WERE INTRODUCED UNDERGROUND 2.) THE OFFSPRING OFF A MULE AND A DONKEY THAT WERE USED IN ANIMAL HAULAGE TO PULL TRAINS OF UP TO FIVE “A” STYLE MINE CARS. THEY WERE ALSO TRAINED TO PUSH CARS WITH THEIR COLLAR UNDER CHUTES FOR LOADING.

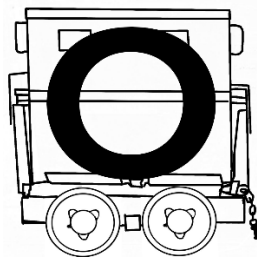
“MY ROOM” — A POSSESSIVE TERM FOR THE SMALL SECTION OF A STOPE A MINER WAS ASSIGNED TO WORK IN.



NEPTUNE SLICE — A TOP-SLICE STOPE MINED AROUND 1914 AND WAS CLOSE ENOUGH TO THE SURFACE THAT IT WAS EXPECTED TO REQUIRE REGULAR BACKFILLING TO PREVENT EXTENSIVE DAMAGE TO THE SURFACE.

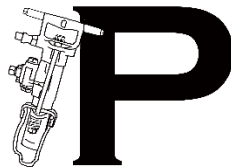
NEPTUNE STOPE — LOCATED BETWEEN THE 200 AND 300 LEVELS OF THE HOLBROOK #1 SHAFT AND WAS ABOUT 700 FEET FROM THE SHAFT. THE PRIMARY ORE WAS GRANULAR PYRITE WITH CHALCOCITE. ALSO CALLED THE COGSWELL STOPE.

NEPTUNE #1 RAISE— LOCATED ON THE 300 LEVEL OF THE HOLBROOK MINE IN THE NEPTUNE CLAIM NEAR #56 RAISE.



“ON THE BEAN” — FOCUSED AND ON THE JOB

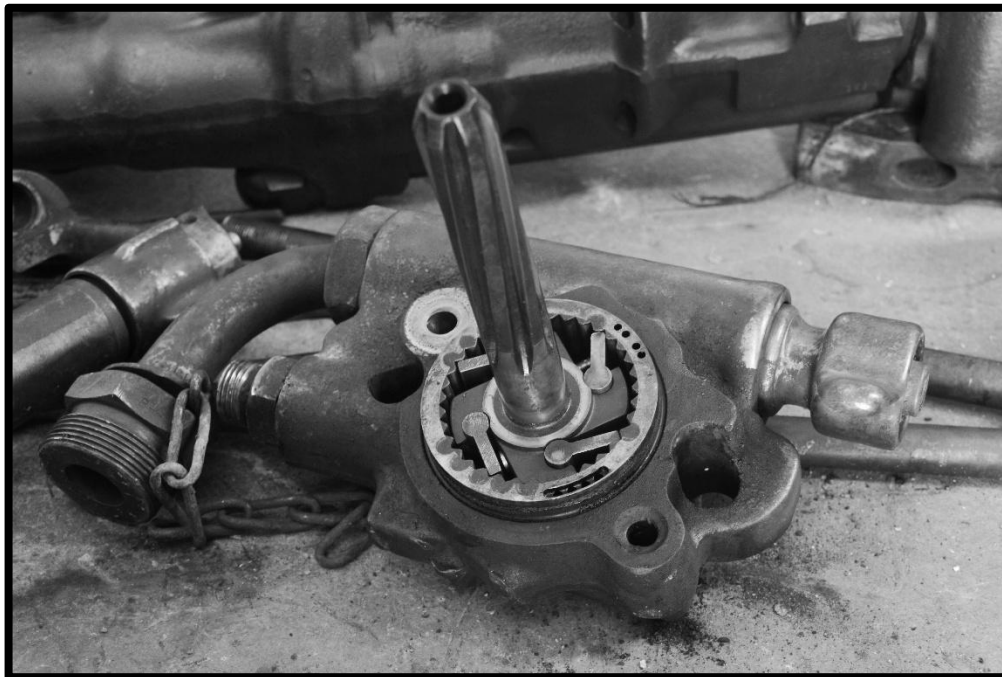
OVERHAND — WHEN MINING IS STARTED AT THE BOTTOM OF THE SECTION ORE BEING MINED AND CONTINUES UPWARD. NORMALLY, SOME TYPE OF STAGING IS REQUIRED SO THE MINERS HAVE ACCESS TO THE BACK (CEILING) BEING MINED. THIS CAN BE FORMED FROM TIMBER, BROKEN ORE OR WASTE BACKFILLING. SHRINKAGE AND INCLINE CUT AND FILL STOPES WERE MINED OVERHAND SQUARE SET STOPES WERE MOST OFTEN, BUT NOT ALWAYS OVERHAND .



PAWLS — CASE HARDENED STEEL CLIPS HELD IN THE RIFLE BAR BY SPRINGS. THESE CLIPS LOCK INTO TEETH ON THE DRILLS ROTATOR RING AND ALLOW THE DRILL TO ROTATE THE DRILL PARTS AND DRILL STEEL IN A CLOCKWISE MOTION. IF THE DRILL TRIES TO MOVE IN A COUNTERCLOCKWISE MOTION, THE PAWLS FOLD IN AND CANNOT ENGAGE THE TEETH AND COUNTER CLOCKWISE MOTION IS PREVENTED.



PAWLS LOOSE AND FITTED INTO THE RIFLE BAR. NOTE THE WEAR MARKS FROM THE SPRINGS ON THE LOOSE PAWLS . ALSO. THE SPRINGS AND BE SEEN ON THE RIFLE BAR WHERE THE MISSING PAWLS SHOULD BE PLACED. THE ROCK DRILL IS A GARDNER DENVER S63F



PAWLS SET IN A RIFLE BAR INSIDE THE ROTATOR RING ON THE BACKHEAD OF A GARDNER DENVER S63F ROCK DRILL

PEASE RAISE — A SINGLE COMPARTMENT RAISE ON THE 300 LEVEL OF THE HAYES SHAFT ABOUT 15FT SOUTH OF 82-10 RAISE. LIKELY, A VERY EARLY RAISE

POST MINING CAVE — AN UNCOMMON PHRASE INDICATING THE AREA CAVED-IN OR WAS CAVING IN AFTER THE MINING IN THAT SECTION OF THE MINE CEASED.

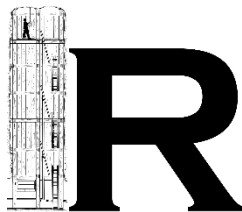
PRIMER — IN BISBEE , IN THE UNDERGROUND MINES THIS WAS THE STICK OF DYNAMITE THAN CONTAINS THE BLASTING CAP. TYPICALLY, ONLY ONE STICK OF DYNAMITE HAD A BLASTING CAP. THE OTHER STICKS OF DYNAMITE IN THE HOLE WERE DETONATED BY THIS “ PRIMER” STICK OF DYNAMITE DETONATING. THE SACRAMENTO PIT USED 12 ½ POUND PACKAGES OF DYNAMITE WITH AN ELECTRIC BLASTING CAP AS THE PRIMER. IN THE LAVENDER PIT, TNT BOOSTERS WERE USED AS PRIMERS. TWO PRIMERS WERE OFTEN USED IN OPEN PIT BLASTING.

PRIMARY BLAST — THE INITIAL BLAST INTENDED TO BREAK UP THE MAJORITY OF IN A GIVEN AREA INTO PIECES OF DESIRED SIZE. ANY BOULDERS TOO LARGE FOR HANDLING OR PROCESSING ARE SET ASIDE TO BE BLASTED AGAIN IN A SECONDARY BLAST.

PRESTRIPPING — THE REMOVAL OF THE OVERLYING WASTE ROCK BEFORE MINING OF THE ORE CAN BEGIN.

PROSPECT SHAFT — A SHAFT SUNK TO EXPLORE A SECTION OF GROUND FOR ORE. ALBEIT, MANY OF THESE WERE BE DUAL PURPOSE AND SERVED ALSO AS A VENTILATION SHAFTS.

PULL — 1.) TO SUCCESSFUL BREAK THE ROCK WITH A BLAST. 2.) TO REMOVE ROCK FROM A CHUTE



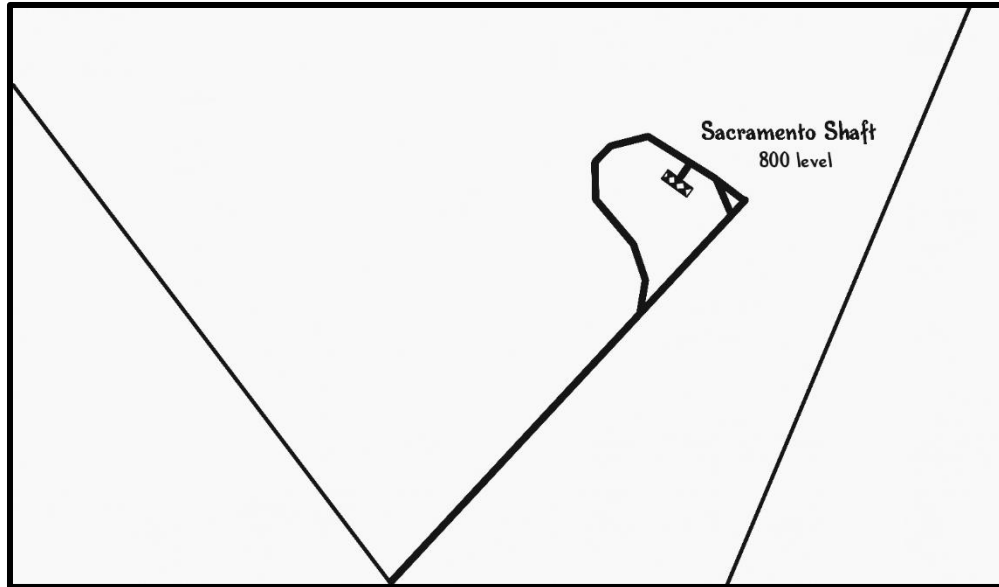
REPORT — SOUND OF A SINGLE BLAST HOLE DETONATING

ROTARY STOPER — A SELF-ROTATING STOPER

RUCKER #2 RAISE— ON THE 300 LEVEL IN THE RUCKER CLAIM NEAR 77-4 RAISE AND NOT FAR FROM THE CZAR SHAFT

RUCKER SLICE — A STOPE IN THE CZAR MINE

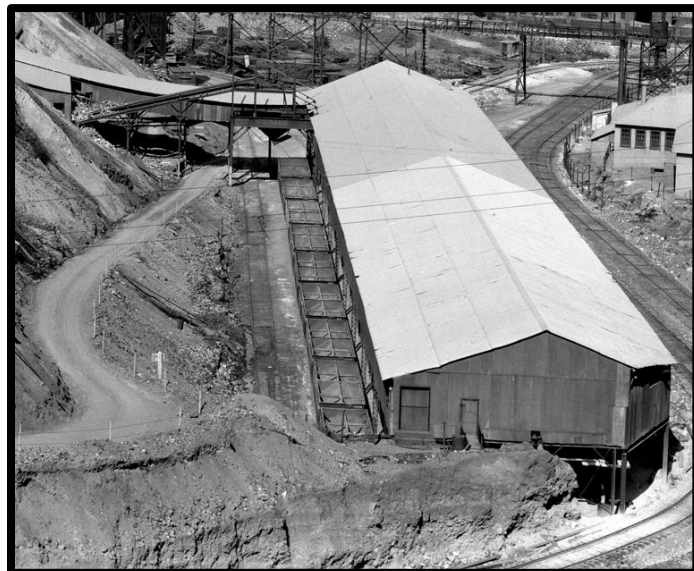
RUNAROUND— A HAULAGE TUNNEL DRIVEN AS A LOOP TO ALLOW FOR RAPID LOADING OF TRAINS AT MAJOR CHUTES AND A QUICK RETURN TO THE SHAFT POCKET OR IN CASE OF THE QUEEN TUNNEL A RETURN TO THE SURFACE. THEY WERE ALSO USED AROUND MAJOR SHAFT STATIONS TO HELP MOVE SUPPLIES AND FOR TRAINS DUMPING INTO A SHAFT POCKET.



RUNAROUND ON THE 800 LEVEL



SACRAMENTO LOADING SHED— A LONG CORRUGATED METAL BUILDING THAT COVERED THE AUTOMATIC LOADING CONVEYOR OVER THE RAILCARS. THE ORE BEING LOADED IN THESE CARS WAS FROM THE SACRAMENTO SHAFT.



**SACRAMENTO LOADING SHED
C-1922**

SACRAMENTO SLICE — A TOP SLICE STOPE IN THE SACRAMENTO MINE. THERE A FEW OF THESE IN THE SACRAMENTO.

SACRAMENTO WASTE SHAFT— A RAISE DEVELOPED TO DROP WASTE ROCK INTO THE SACRAMENTO / GARDNER MINE AREA TO BE USED AS BACKFILL. THERE IS A POSSIBILITY THIS IS THE SAME AS THE GARDNER WASTE RAISE.

SACRAMENTO WINZE — CAN BE APPLIED TO A NUMBER OF WINZES IN THE SACRAMENTO MINE, BUT NORMALLY REFERS TO 16-4 WINZE. SEE ALSO 16-4 WINZE

SALT TABLETS— SODIUM CHLORIDE TABLETS WERE GIVEN TO MINERS WORKING IN HOT AREAS IN AN EFFORT TO REPLACE SALTS LOST BY PERSPIRATION. IN SOME AREAS THE COMBINATION OF HIGH HUMIDITY AND HIGH TEMPERATURE HAD THE MINERS WORKING 20 MINUTES ON FOLLOWED BY 20 MINUTES RESTING.

“SCHOOL OF MINES”— THE SOUTHWEST MINE AND UPPER PARTS OF THE CZAR MINE WERE CONVERTED TO A TRAINING AREA IN THE 1920’S. HERE ALL NEW UNDERGROUND EMPLOYEES REGARDLESS OF THEIR PREVIOUS EXPERIENCE LEARNED TO MINE THE “BISBEE WAY”. AFTER A MINIMUM OF TWO WEEKS , THE EMPLOYEE WOULD BE SENT TO OTHER MINES OR WOULD REMAIN IN THE SOUTHWEST/CZAR MINE AREA. NOTE, THAT EVEN THOUGH THAT PART OF THE MINE WAS DESIGNATED AS A SCHOOL, ACTUAL MINING WAS OCCURRING DURING THE SCHOOLING.

SCOOP— AN UNCOMMON TERM FOR A SHOVEL.

SCOOPMOBILE — A TYPE OF ARTICULATED RUBBER-TIRED LOADER.

“SHORE IT UP”— TO SECURE AN AREA WITH SUPPORTING TIMBER

“SINGLE SHIFT”— WORKING IN AREA WHERE THERE IS NO OPPOSITE SHIFT WORKING IN THE SAME AREA. THIS WAS CONSIDERED VERY DESIRABLE TO MINING CREW.

SEARCH LEVEL— AN UNCOMMON TERM INDICATING THE LEVEL AT THAT TIME WAS PRIMARILY BEING USED TO EXPLORE FOR ORE.

SECONDARY BLAST — IN AN OPEN PIT MINE BLASTING BOULDERS LEFT OVER FROM THE PRIMARY THAT WERE TOO LARGE TO DIRECTLY SEND TO THE CRUSHER. THESE BOULDERS WERE SET ASIDE AND DRILLED AND BLASTED LATER. THIS WAS CALLED A SECONDARY BLAST.

SERVICE — FOR A MOTOR CREW TO DELIVER EMPTY MINE CARS TO A CROSSCUT AND HAUL AWAY LOADED MINE CARS.

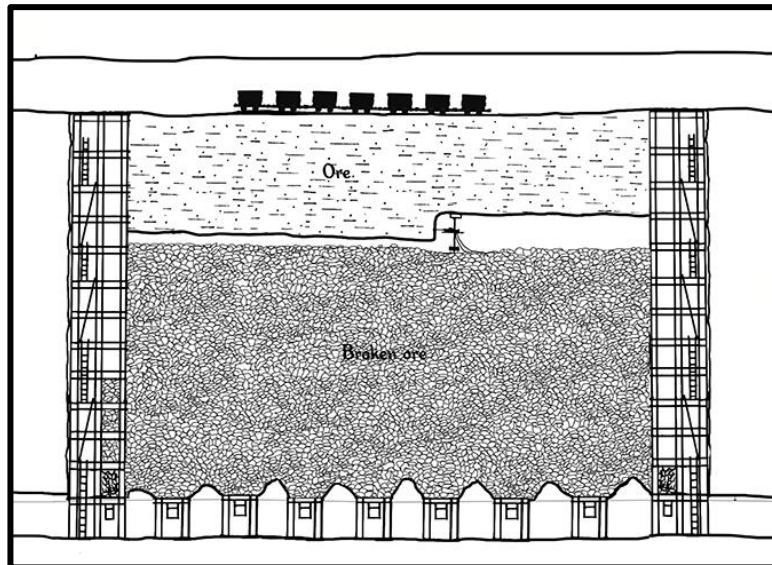
“SET THE FUSE” — IGNITE THE FUSE FOR A BLAST.

SHOT — 1.) THE DETONATION OF A SINGLE BLAST HOLE, SUCH AS WHEN A MINER WOULD COUNT THEIR SHOTS TO DETERMINE IF A HOLE MISFIRED. 2.) BLASTED (PAST TENSE) SUCH AS IN, “I SHOT A ROUND.”

SHOVEL RUNNER — SHOVEL OPERATOR

SHRINK STOPE — SEE SHRINKAGE STOPE

SHRINKAGE STOPE — A TYPE OF MINING METHOD WHERE TWO RAISES ARE DRIVEN THROUGH THE ORE BEING MINED AT EACH END OF THE BLOCK SELECTED TO MINE. BETWEEN THESE TWO RAISES, OTHER RAISES TO BECOME CHUTES ARE DRIVEN CLOSELY SPACED UP INTO THE ORE A SHORT WAY. THEN HORIZONTAL CUTS ARE MADE FROM ONE OF THE MAIN RAISES TO THE NEXT. AS THIS CUT IS BEING MADE THE TOPS OF THE INTERMEDIATE RAISES ARE INTERCEPTED. MOST OF THE BLASTED ORE IS ALLOWED TO REMAIN WHERE IT FELL. THIS BROKEN ORE WILL SERVE AS THE STAGING FOR THE MINERS TO WORK FROM. THE HORIZONTAL CUTS CONTINUE AND THE BROKEN ORE IS REMOVED USING THE INTERMEDIATE RAISES ONLY ENOUGH OR IS REMOVED TO PROVIDE WORKING ROOM FOR THE MINERS. AFTER THE STOPE WAS COMPLETED, ALL THE ORE WAS DRAWN OUT THROUGH THIS TECHNIQUE SAW LIMITED USE. THERE WAS A SHRINK STOPE ON THE 1100 LOWELL MINE AND A COUPLE IN THE GARDNER MINE. MOST OF SHRINKAGE STOPES WERE BOUNDARY STOPES IN THE BLOCK CAVE OF THE SACRAMENTO MINE. SHRINKAGE STOPING REQUIRES HARD GROUND WHERE WASTE ROCK CANNOT COLLAPSE INTO THE ORE AND CAUSE DILUTION. THESE CONDITIONS WERE UNCOMMON IN BISBEE.



SHRINKAGE STOPE (IN SECTION)

SILVER BEAR PROSPECT SHAFT— AN EARLY TERM FOR THE SILVER BEAR SHAFT BEING SUNK IN 1912.

SILVER SPRAY RAISE— A RAISE ON THE 300 LEVEL NEAR #3 WINZE ABOUT HALFWAY BETWEEN THE HAYES AND SPRAY SHAFTS.

SING — A RINGING SOUND WHEN A TIMBER HAS BEEN TIGHTENED WITH WEDGES. THIS SOUND INDICATED TO A MINER THE TIMBER WAS PERFECTLY TIGHTENED.

SLUFFING — ROCK PEELING AWAY FROM THE WALLS OF A MINE WORKING.

SKETCH — SLANG FOR A MINE MAP OR DIAGRAM

“SKIN A MULE” — TO DRIVE A MULE

SLICE — SHORT FOR TOP SLICE

SOUTHWEST COUNTRY — THE AREA THAT LATER WOULD BECOME THE SOUTHWEST MINE. THIS TIME WAS USED BEFORE THE SOUTHWEST MINE WAS DESIGNATED AS SUCH AND WAS CONSIDERED PART OF THE CZAR MINE AND EVEN CALLED THE WEST ATLANTA MINE.

SPARE LAMP — A MINER’S LAMP KEPT AT THE LAMP HOUSE TO BE ASSIGNED TO A MINER WHOSE LAMP IS BROKEN OR UNDER REPAIR.

SPONGY GROUND — SOFT GROUND THAT WOULD ABSORB SOME OF THE FORCE OF A BLAST

SPOON — A ROUND POINTED SHOVEL, LESS COMMONLY USED TERM.

STARTER — STARTER STEEL, SEE STARTER STEEL

STICK — 1.) A CARTRIDGE OF DYNAMITE 2.) A LAMP STICK

STICKER — ANOTHER TERM FOR A BAND AID

STINGER — THESE WERE TWO AIR CYLINDERS ATTACHED AT THE TOP WITH A HORIZONTAL BAR. IN THE MIDDLE OF THE BAR WAS A SHORT POINTED STEEL POST. A MINER WOULD PUT A SMALL BLOCK ON THE POINTED POST THEN TURN ON THE AIR. THE CYLINDERS WOULD EXTEND AND WOULD SECURE THE JUMBO AGAINST THE BACK/CEILING



STINGER ON A JUMBO

STEEL TIMBERING — STEEL SETS WERE TRIED IN MAY 1909 INSIDE 3-161 XC ON THE 300 LEVEL HOLBROOK MINE. THE AREA SELECTED WAS HEAVY GROUND WHERE 12’X12” WOOD HAD FAILED IN ONE MONTH. IT WAS DETERMINED STEEL TIMBER COULD SAVE 3 CARLOADS OF MUCK PER SET DUE TO THEIR SMALLER SIZE. 8”, 6” AND 4” BEAMS WERE TESTED. UNFORTUNATELY, THESE SETS TENDED TO FAIL IN LESS TIME THAN REGULAR TIMBER

SETS AND WITH THEIR HIGH COST WERE DEEMED UNUSABLE. A 6" STEEL SET COST IN 1909 , \$18.00 AND A 12"X12" TIMBER SET COST \$5.50. STEEL SETS WERE USED LATER ON IN SHAFT STATIONS AND OTHER AREAS. WHEN THE SHATTUCK SHAFT WAS RETIMBERED IN THE MID-1970S IT WAS TIMBERED WITH STEEL. TODAY, MUCH OF THE TIMBERING AT THE COMPLETED AT THE QUEEN MINE TOUR IN AREAS UNSEEN BY THE TOURISTS ARE COMPLETED WITH STEEL . THESE AREAS ARE IN LIGHT GROUND AND TIMBER ROTTING IS THE BIGGEST CONCERN. THIS IS LARGELY DUE TO THE FACT THAT SKILLED TIMBERMEN ARE BECOMING EXTREMELY DIFFICULT TO FIND AND WILL BECOME EVEN MORE SO OVER TIME. THE PLAN IS THAT THE STEEL TIMBER IN THESE LOCATIONS WILL LAST DECADES WITH LIMITED HIGH SKILLED REPAIR.



STEEL TIMBERING IN THE BACK OF THE 2966 LEVEL STATION CAMPBELL MINE

“STRING OF CARS” — A TRAIN OF MINE CARS

STRIPPED RAISE — A RAISE IN WHICH THE TIMBER HAS BEEN REMOVED . SEE ALSO RAW RAISE

SUBWAY — A SHORT ADIT FROM THE SURFACE USED TO BRING IN SUPPLIES AND MEN TO THE SHAFT FOR HOISTING. THE DALLAS, SHATTUCK, AND SACRAMENTO AMONG OTHER MINES. THE SUBWAY AT THE HOATSON SHAFT WAS A LITTLE DIFFERENT AND WAS A CONCRETE TUNNEL UNDERNEATH THE EL PASO & SOUTHWESTERN RAILROAD TRACKS. THIS WAS USED TO HAUL WASTE ROCK TO THE WASTE DUMPS.

SUBWAY STATION — THE SHAFT STATION AT WHICH A SUBWAY INTERCEPTS THE SHAFT. THE SUBWAY STATION MOST OFTEN MENTIONED IS THE SHAFT STATION 71 FT. BELOW THE COLLAR OF THE SACRAMENTO SHAFT. THE ENTIRE LENGTH OF THE SUBWAY WAS WELL LIT AND HAD BEEN WHITE WASHED. MINERS WENT INTO THE SUBWAY TO THE SUBWAY STATION TO GET THE CAGE TO GO TO THERE WORKING LEVEL.

SULLIVAN RAISE — ON THE 100 LEVEL OF THE CZAR MINE NEAR THE DOUGLAS RAISE. THIS RAISE IS LIKELY VERY OLD AS THE CROSSCUTS AROUND THE RAISE ARE NOT NUMBERED AND THE RAISE ITSELF WAS GIVEN A NAME RATHER THAN A NUMBER.

“SULFUR” — THE DUST FROM THE SULFIDE ORE. THIS DUST CAN HAVE A SULFUR-LIKE SMELL AND DOES CONTAIN SIGNIFICANT SULFUR, BUT IS CHEMICALLY COMBINED WITH METALS LIKE COPPER AND IRON. LIKE MANY FINE POWDERS, THIS DUST WAS EXPLOSIVE AND COULD EXPLODE DURING A REGULAR BLAST. THE RESULTING EXPLOSION WAS STRONGER WITH A LOUDER SOUND AND MORE POWERFUL CONCUSSION THAN A NORMAL BLAST.

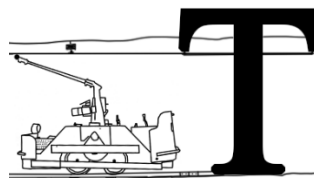
SUN-RAY BURNER — A TYPE OF CARBIDE LAMP TIP . IT CONSISTED OF A “LAVA” TIP WITH METAL CASING SOLD BY DEWAR MANUFACTURING COMPANY. SEE ALSO LAVA TIP



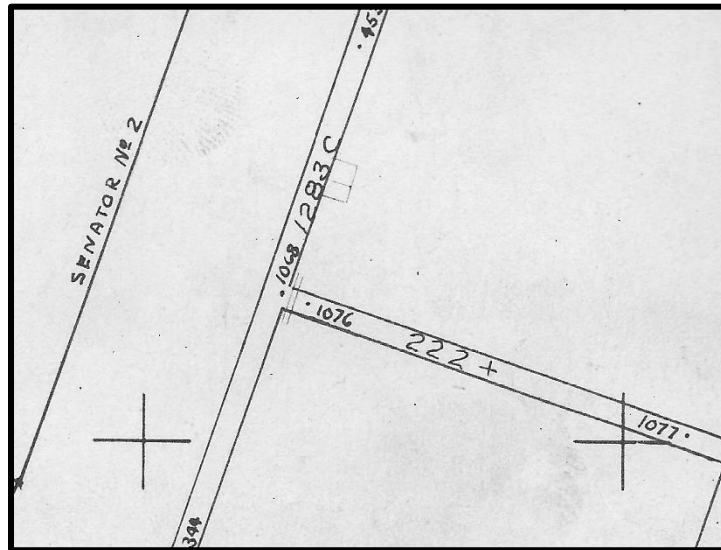
SUN-RAY BURNER(S)

SWELL UP — SEE SWELLING GROUND

SWITCH ENGINE — SLOW, BUT POWERFUL PULLING AND PUSHING LOCOMOTIVES . THESE WERE USED IN THE SACRAMENTO PIT OPERATIONS.



“T” — AN INTERSECTION OR MEETING OF DRIFTS OR CROSSCUTS THAT FORMS THE SHAPE OF A LETTER “T” . THIS WAS TERM WAS USED TO GIVE A LOCATION, SUCH AS “ THE POWDER MAGAZINE IS ABOUT 200’FT. PAST THE “T.””



“T” INTERSECTION ON THE 1200 LEVEL OF THE LOWELL MINE

TARGET — A LARGE CIRCLE OFTEN, WHITE IN COLOR PAINTED ON AN AIR DOORS TO INCREASE THEIR VISIBILITY FOR THE MOTORMEN, IN THE DARK CROSSCUTS. SOME AIR DOORS HAD TWO TARGETS PAINTED ON THEM.



TARGET ON AN AIR DOOR.
CAMPBELL MINE C-1938

TEMPORARY STULL — A PIECE OF TIMBER INSTALLED TO PROVIDE SHORT TERM SUPPORT OF GROUND OR OTHER TIMBER.



TEMPORARY STULL (S) TWO
TEMPORARY STULLS
SUPPORTING SEGMENT SETS
AT THE 3RD LEVEL
SOUTHWEST SHAFT STATION

“THE BIG SULPHIDE STOPE”— LOCATED ON THE 950 LEVEL OF THE IRISH MAG SHAFT AND 650 FEET SOUTHEAST OF THE SHAFT STATION.

“THE PIT”— 1.) THE LAVENDER PIT 2.) AN OLD TERM FOR THE COPPER QUEEN OPEN CUT/GLORYHOLE

“THROW THE BELLS”— RING THE CALL OR SHAFT BELLS

TIMBER BUTCHER — A TIMBERMAN

TIME OUT— A PART OF THE JOB THAT DID NOT COUNT AS EXTRA WORK ON A BONUS CONTRACT. PUTTING IN ROOF BOLTS OFTEN WAS A TIME OUT. TIMBER ON THE OTHER HAND MINERS WERE ALLOWED TIME TO INSTALL. FOR EXAMPLE, IN AN UNTIMBERED CROSSCUT A MINER WAS EXPECTED TO ADVANCE 2.25 FT. PER MAN PER 8 HOUR SHIFT. THIS IS WHETHER ROCK BOLTS WERE NEEDED OR NOT. IN A TIMBERED CROSSCUT THEY WERE EXPECTED TO ONLY

ADVANCE 1.91 FT. PER MAN PER SHIFT. THE TIME NEEDED FOR ADVANCING .34 FT WAS GIVEN TO THE MINERS TO SET UP TIMBER.

TOMMY KNOCKERS — THIS WAS NOT A PARTICULARLY COMMON TERM IN BISBEE. ONE CORNISH MINER EXPLAINED TOMMY KNOCKERS AS “SPIRITS OF DEAD MINERS” THAT EXPLAINED THE NOISES OF GROUND MOVING, TIMBER TAKING WEIGHT AND RATS MOVING BEHIND TIMBER .

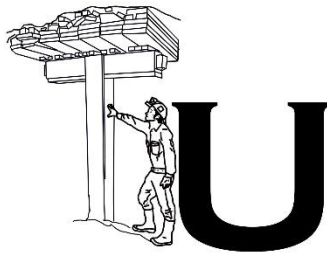
TOOTH — SEE SHOVEL TOOTH

“TOP OF THE SLICE” — THE HIGHEST PART OF A TOP SLICE STOPE.

TRAVERTINE — CALCITE AND/ OR ARAGONITE THAT FORMED IN CAVE-LIKE CONDITION THAT WAS EXPOSED BY MINING.

TRIM — USING THE BUCKET ON A STEAM OR ELECTRIC SHOVEL TO REMOVE LOOSE AND UNSAFE MATERIAL FROM THE WALL OF THE BENCH. IN THE SACRAMENTO PIT THE ORIGINAL BENCH HEIGHT OF 60 FT WAS REDUCED TO 45 FEET AND FINALLY TO 30 FEET BECAUSE THE SHOVELS COULD NOT EFFECTIVELY CLEAN UP (TRIM) BENCHES HIGHER THAN 30 FEET.

TRIPOD — A STEEL THREE LEGGED STAND WITH A SADDLE FOR A LEYNER/ DRIFTER DRILL. THEY OFTEN HAD HEAVY RECTANGULAR WEIGHTS TO HELP SECURE THE DRILL. THESE WERE CONSISTENTLY USED IN THE SACRAMENTO PIT.



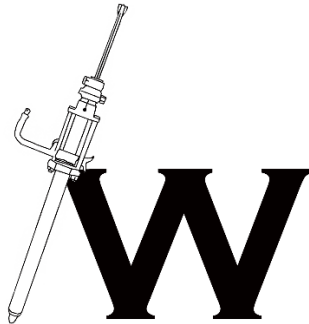
UNDERGROUND LAKE — THE LEGENDARY SOURCE OF THE WATERS THAT FLOODED THE JUNCTION MINE ON AUGUST 30, 1941 THERE WAS ACTUALLY NO REAL LAKE BUT RATHER SOLUTION ENLARGED FAULTS/WATERCOURSES WHICH HAD SMALL OPEN SPACES THAT STORED MILLIONS OF GALLONS OF WATER. THIS WAS INTERCEPTED BY 12 CROSSCUT ON THE 2700 LEVEL. WHEN THE AREA WAS PUMPED OUT AND EXAMINE NO SIGNIFICANT LARGE OPENINGS TO STORE WATER WERE FOUND.

UNDERHAND — WHEN A SECTION OF ORE IS BEING MINED FROM THE TOP DOWNWARDS. TOP SLICE AND MITCHELL SLICE STOPES WERE MINED UNDERHAND. SOME SQUARE SET STOPES WERE MINED UNDERHAND, PARTICULARLY IN THE BRIGGS MINE.

UPPER ARC GATE— LARGER CHUTES, SUCH AS THOSE USED IN IN THE BLOCK CAVE AND IN THE SACRAMENTO GLORY-HOLES USED TWO CHUTE GATES AN UPPER AND A LOWER. THE UPPER OR HIGHER GATE WAS USED TO CONTROL THE RATE OF FLOW OF MUCK FROM CHUTE. TWO CHUTE HANDLES WERE LOCATED ON THE SIDES OF THE GATE. SEE ALSO DOUBLE ARC GATE



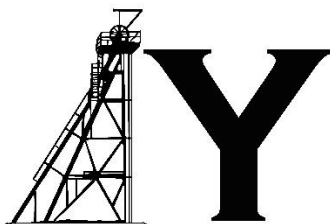
VERTICAL TRANSFER— A VERTICAL RAISE THAT IS USED TO DROP/TRANSFER ORE FROM ONE POINT TO A LOWER POINT.



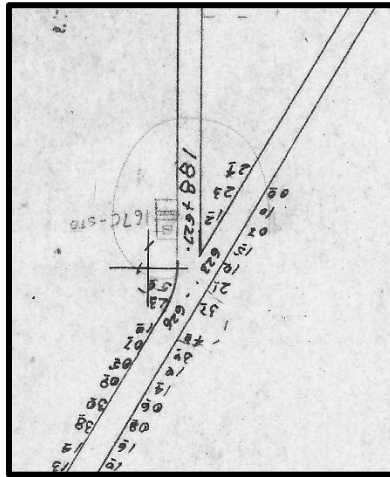
WHEELS — SHEAVES ON THE END OF THE BOOMS ON AN ELECTRIC SHOVEL



WHEELS OF A ELECTRIC SHOVEL PEAKING ABOVE A BENCH IN THE LAVENDER PIT



“Y” —AN INTERSECTION OR MEETING OF DRIFTS OR CROSSCUTS THAT FORMS THE SHAPE OF A LETTER “Y” . THIS WAS TERM WAS USED TO GIVE A LOCATION, SUCH AS “ I LEFT THE TIMBER TRUCK DOWN AT THE “Y.””



“Y” INTERSECTION ON THE 1300 LEVEL COLE MINE



“Y” INTERSECTION 5TH LEVEL SOUTHWEST MINE

YELLOW IRON — PYRITE

“YOUR” SIDE — THE SIDE OF AN ELECTRIC SHOVEL WHERE THE OPERATOR’S CAB WAS LOCATED. AS THE OPERATOR WAS SOMEWHAT VULNERABLE IN THIS AREA, WHEN WORKING IN DANGEROUS AREAS THE OPPOSITE SIDE BETTER KNOWN AS THE COMPANY SIDE FACED THE DANGER. SEE ALSO “COMPANY” SIDE



XANTHATE— POTASSIUM ETHYL XANTHATE $C_3H_5KOS_2$ A CHEMICAL USED IN THE FLOTATION PROCESS AT THE COPPER QUEEN CONCENTRATOR FOR THE SACRAMENTO PIT. THIS CHEMICAL WAS USED TO PREFERENTIALLY COLLECT COPPER SULFIDE PARTICLES IN THE GROUND ORE BY MAKING THEM HYDROPHOBIC. THIS ALLOWS THEM TO ADHERE TO THE BUBBLES (FROTH) AND BE CONCENTRATED, WHILE LEAVING A SIGNIFICANT PORTION OF THE WASTE MINERALS LIKE PYRITE AS PART OF THE TAILINGS

ABBREVIATIONS

BLKY — BLOCKY

BLDR — BOULDER

CARB — CARBAMITE

CON — CONCENTRATE

DW-33 — A PLUGGER TYPE DRILL MANUFACTURED BY SULLIVAN MACHINERY COMPANY

IRREG — IRREGULAR

NEP — NEPTUNE

QZT — QUARTZ

R.H.-36 — A PLUGGER TYPE DRILL MANUFACTURED IN THE 1920S BY COCHISE ROCK DRILL MANUFACTURING COMPANY.

T-3 — A DRIFTER TYPE DRILL MANUFACTURED BY SULLIVAN MACHINERY COMPANY

TPD— TONS PER DAY

