19 JUN 90  RAINBOW TUNNEL
AL AND I DRILLED A NINE FOOT ROUND. AL IS TAKING HIS LONGHOLE DRILL HOME SO I SET UP BOB HAUCK'S DRILL. IT DRILLS GOOD BUT HAS NO STEEL HOLDER THAT MAKES COLLARING DIFFICULT. DRILLED SOME SHORT TEST HOLES TOWARD THE SOUTH. I WAS CHECKING FOR THE PRESENCE OF A STOPER, DID NOT FIND ONE.

20 JUN 90  RAINBOW TUNNEL
LOADED AND FIRED, BROKED GOOD. AL MUDDLED OUT AND WE SET UP TWO DRILLS.

21 JUN 90  RAINBOW TUNNEL
AL AND I DRILLED A NINE FOOT ROUND IN THE CROSS CUT. HIT BLACK ORE AT THE END OF THE HOLES. FRED KIRK ADAPTED A STEEL HOLDER FROM AN OLD DRILL SO IT WOULD FIT ON THE LONG HOLE DRILL. PUT IN A SIX FOOT
Rock bolt outside the portal so Fred could anchor a square set to the wall.

22 Jun 90  Adit and 700 level loaded and fired. Looked good but mucking revealed that the bottom seven holes rooted about five feet. Al drilled a reliever and we reshot. Broke good, I went to 700 and fired three strip holes in 1250 stope, set up a 53" in the Rainbow cross cut and drilled four test holes; was looking for a stope, did not find one. The cross cut is now into the H/W of the west vein with a good exposure of black ore.
24 Jun 90 Rainbow Tunnel
Drilled a nine foot drift round.
The face is now 53' from east rib. That's 25' advance this week.
Got $300 for drift work.

25 Jun 90 Rainbow Tunnel
Al loaded and fired. Broke good.
Al mucked out and we set up two drills. I drilled two test holes.
Drilled nine feet west and found no ore. Drilled south and found no stopes.

26 Jun 90 Rainbow Tunnel
Al and I drilled a 42 hole strip round in the south rib of the cross cut.
27 JUN 90 1000 LEVEL

SET UP A "53" IN THE WEST VEIN FOOTWALL DRIFT AND DRILLED TWO STRIP HOLES IN THE FLUOBORITE AREA. DRILLED ONE SHORT HOLE AND USED A WEDGE PIN TO KNOCK OFF A NICE SLAB. BROUGHT OUT A PAIL OF GOOD STUFF. SAW THAT THE FILL IN 1020 STOPE BELOW THE LEVEL IS S UBSIDING. THE HYDRAULIC FILL ABOVE THE LEVEL IS HANGING OVER THE HOLES. THE WATER IS ABOUT 30' BELOW THE LEVEL. TRIED THE AIR LIFTER. IT NOW BLOWS WATER UP TO 700 LEVEL.

AND DRILLED SIX 13' STRIP HOLES. ALSO DRILLED ROCK HOLE TO 18' DEEP IN ROOM 154. 4 ARES. WEST END OF ROOM IS 67' FROM EAST. 26' M. 700 LEVEL.
28 Jun 90 Rainbow Tunnel
Loaded and fired the strip round in the cross cut. Drilled eight more holes to widen the area and expose the brown ore better. Fired again. It broke good. Zincite showed up in the brown ore.

29 Jun 90 Rainbow Tunnel
Drilled a six hole strip in one corner of the cross cut. Drilled test holes to locate ore and avoid stopes. Used the drill to knock down a lot of loose.

30 Jun 90 Rainbow Tunnel
Scaled and bolted in the new Rainbow room. 16 bolts. West end of room is 62' from east rib of tunnel. Got $300 for drift work.
2 JULY 90  RAINBOW TUNNEL
LOADED AND FIRED. BROKE GOOD.
WE NOW HAVE A VERY NICE
EXPOSURE OF WEST VEIN ORE.
AFTER BOB MUCKED OUT I
SCALED AND BOLTED 15 BOLTS.
WE SPREAD FILL MATERIAL ON
THE FLOOR TO LEVEL IT.

5 JUL 90  RAINBOW TUNNEL
DRILLED TWO 3½" CENTER HOLES IN
A DEMONSTRATION DRIFT ROUND,
SCALED AND BOLTED IN AN AREA
WHERE MANY SLIPS CUT THE TUNNEL.
NINE BOLTS. CLEANED UP AN EIMCO
BUCKET OF MUCK THAT WAS SCALED
DOWN.
6 JUL 90  RAINBOW TUNNEL
WITH THE ASSISTANCE OF CHET L. I PUT IN 16 BOLTS OVER THE NEW PORTAL. DRILLED EIGHT BURN HOLE IN THE DEMONSTRATION ROUND. WENT TO 700 TO LOOK FOR FRANKLINITE AND SMYTHEITE(?).

7 JUL 90  1000 LEVEL
RODE TO 1000 WITH THE LEVEL CLEAN-OUT CREW. UNLOADED THE EIMCO BUCKET AND CHANGED OVER TO THE EIMCO CARRIER - UNLOADED THE EIMCO - INSTALLED THE BUCKET - STARTED MUCKING. IMMEDIATELY HAD A FLAT TIRE. WAITED FOR BOB TO SEND A TIRE DOWN. FINISHED MUCKING. WENT TO 970 STOPE. LOADED MINING GEAR IN ONE CAR AND FILLED TWO CARS WITH ORE. PUSHED THEM TO THE STATION. SENT UP
MINING GEAR, 1.5 ORE CARS AND 1.5 CARS OF ORE. I WENT TO THE EAST VEIN AND PULLED OUT TWO CAMEL BACK CARS.

8 JUL 90 1000 LEVEL
SENT UP ABOUT TWO TONS OF ORE FROM 970 STOPE. SENT UP 5.5 ORE CARS INCLUDING A NICE OLD END DUMP THAT WE DUG OUT FROM A PILE OF FILL WAY UP NORTH IN THE EAST VEIN. SENT UP THE BATTERY CHARGER.

9 JUL 90 1000 LEVEL
SET UP A DRILL IN THE MOTOR SHANTY AND DRILLED TWO STRIP HOLES. MOVED ALL DRILLING GEAR UP TO 900 LEVEL. DISMANTLED AIR AND WATER PIPES AND TOOK THE PIECES TO 900 LEVEL. BROUGHT ROLLER CONVEYOR FROM MAGAZINE TO THE ADIT.
10 JUL 90  RAINBOW TUNNEL
FINISHED THE DEMONSTRATION DRIFT
ROUND. THEN I DRAGGED THE DRILL
UP THE DRIFT, USING IT TO KNOCK
DOWN LOOSE ROCK. INSTALLED
SEVEN BOLTS AROUND THE BIG-
FAULT ZONE.

11 JUL 90  900 LEVEL
MADE CONNECTIONS AND ADDED WATER
PIPES TO GET DRILL WATER TO THE
800 N. TO 900 N. AREA IN THE WEST VEIN
FOOTWALL DRIFT. DRILLED A STRIP IN
THE PHLOGOPITE-TURRITE OCCURANCE
AT 900N. STARTED A STRIP IN THE
WEST VEIN PILLAR AT 800N. RAN OUT
OF DRILL WATER. CAME UP TO THE ADIT
AND HOOKED CITY WATER UP TO THE
SHAFT WATER PIPE. WENT DOWN INTO
1360 PILLAR AND SAW THE THE FILL IN
1280 STOP HAS DROPPED BELOW THE HOLE
IN THE NORTH KIS.
12 JUL 90  900 LEVEL
FINISHED THE STRIP IN THE PILLAR AT 8:00 A.M. MOVED GEAR OUT OF THAT AREA. MADE CONNECTIONS AND ADDED PIPES TO GET AIR AND WATER BACK TO 780 PILLAR IN THE KEEL. DRILLED FOUR STRIP HOLES.

13 JUL 90  900-1000  19 YAM 13
WALKED DOWN TO 900. DRILLED TWO STRIP HOLES IN 800 X-CUT. WENT TO 1000 LEVEL AND HELPED LOAD THE EIMCO ON THE CARRIER. SENT IT UP TO 900 LEVEL. THE BLASTER CAME DOWN AND WE FIRED TWO STRIPS ON 1000 LEVEL (FLUORITE AREA AND MOTOR SHANTY BRECCIA) AND THREE STRIPS ON 900 LEVEL (ACTINOLITE XLS IN 800 X-CUT, WILLEMITE VEIN IN 780 PILLAR AND RED ORE IN 820 WEST PILLAR).
14 JUL 90  900 LEVEL - 1000 LEVEL
Walked down to 900. Washed walls in 800 X-cut. Took hoses to 800 W.
Pillar store and washed muck pile. Very nice zincite band. Went to 1000 and carried a cart full of fluo-
borite out to the station. A work crew came down after lunch and we did a final clean-out of the level. Water is five feet below the level. Moved air lifter set-up to 900 level.

15 JUL 90  900 LEVEL
Set up air supply for air lifter on 900 station. Had to scrounge a 4" section of air pipe. Went to 800 X-cut, drilled holes and used wedge pins to detach a nice slab from the actinolite occurrence.
18 JUL 90  900 LEVEL
DRILLED SHORT HOLES AND WEDGED PIECES OFF IN 800 X-CUT. DRILLED TWO NINE FOOT STRIP HOLES IN 780 PILLAR. CAME UP AT NOON.

19 JUL 90  900 LEVEL
DRILLED FOUR NINE FOOT STRIP HOLES IN 800 X-CUT. DRILLED SHORT HOLES AND WEDGED PIECES OFF IN 800 X-CUT. WENT TO 1000 LEVEL AT 9 AM. THE WATER WAS TWO INCHES DEEP ON THE SHAFT STATION. CARRIED A WEDGE PIN AND A 2" PIPE PATCH UP TO 900.

20 JUL 90  900 LEVEL
DRILLED FOUR NINE FOOT STRIP HOLES IN 800 X-CUT. MOVED TOOLS, STEELS, ETC. OUT OF THE WAY. DISMANTLED AND REMOVED AIR & WATER LINES IN THE BLAST AREA. WASHED DRIFT WALLS IN THE OLD SHAFT AREA.
Scaled loose in 1260 Pillar. Sat in Pillar 820 West stop and listened to the rock cracking.

21 Jul 90  
900 Level

Helped Bob get a slusher out of the Pillar between 1110 and 1250. Washed drift walls. Found good Realgar near 1010 South chute.

22 Jul 90  
900 Level

Drilled five nine foot strip holes in 1110 stop. Three in zincite ore and two in footwall calc-silicate. Drilled two nine foot strip holes at 1050 N. X 900 W. This is the H.W. of 1010 stop and will expose wollastonite and Realgar. Drilled three nine foot and two five foot strip holes in west vein. This location appears to be 820 Pillar. Having trouble with old water hoses. They can't take the pressure. Walked down
To 1000 level at noon. Water is about two feet above floor of station. Came up a little less than two feet in three days.

24 Jul 90 800 Level
Walked down to 700, picked up two water hoses and took them to 800 level. Washed walls in 740 X-cut. Noticed vein of mcgovernite. Fill in hanging wall end of 720 stope is subsiding. Walked back up, spending time on each level.

25 Jul 90 900 Level
The Blaster came and we fired 22 strip holes on 900 level. Started washing the results after lunch.

# 531
The realgar is great. It is the stuff that palache had, only better. The strip farthest west in 800 X-cut revealed a large pocket lined with stilbite. The strip in 780 pillar
REVEALED A VEIN OF ONE INCH MCGOVERNITE ROSETTES. THIS IS THE SINGLE BEST SPECIMEN DAY I EVER HAD IN THE MINE.

26 JUL 90 900 LEVEL
WASHED STRIP MUCK IN 820 P. NICE ORE BUT NO SPECIMENS. WASHED STRIP MUCK AT UVITE LOCATION. NO XLS. SORTED OUT MUCK AT REALGAR LOCATION. CARRIED OUT THREE PAILS. WASHED STRIP MUCK IN 1190 STORE. VERY NICE BANDED ZINCITE ORE. GOT TWO MEDIocre SECONDARY WILLEMITES.
WASHED MUCK IN 780 PILLAR. SORTED OUT # 530, 529 MUCK. GOT SOME NICE MCGOVERNITES. SCALED AND WEDGED DOWN LOOSE AND GOT MORE MCGOVERNITE. TWO PAILS OF PIECES CAME OUT. GOT TWO CHABAZITE SPECIMENS FROM THE EASTERN MOST STRIP IN 800 X-CUT.
27 Jul 90  900 Level

Used Eimco to clean up strip muck at the Realgar location; washed muck again and found more nice pieces. Cleaned up muck in 1110 stope. Got some Apatite and Mica XLS. Cleared up strip muck in 800 x-cut. Set up drill to work on Stilbite pocket. Will need some short steels. Brought out two pails of McGovernite. This could be the original find location. (North drift 900 Level of Palache)

28 Jul 90  900 Level

Walked down to 900 with Gary Grenier. We worked on the Stilbite pocket in 800 x-cut. Slow going due to hardness of the rock. Carried out research pieces from the Realgar location. Mineral dividend.
30 JUL 90  900 LEVEL
Worked on stilbite pocket in 800 X-CUT. Got one piece. Found another nice mcgovernite in 780 Pillar.

31 JUL 90  900 LEVEL
Worked on stilbite pockets in 800 X-CUT. Got three small pieces. Had the able help of Steve Sanford. Paul Moore came down at lunch for a tour and he collected two mcgovernite samples and some ore samples from 780 Pillar.

1 AUG 90  900 LEVEL
Worked on stilbite pockets in 800 X-CUT. Got one major piece and many small pieces. Got another pail of arsenides. Saw that fill is disappearing from 1240 stope on 700 Level.
3 Aug 90  9:00 Level
worked on Stilbite pockets in 800 x-cut. Cleaned them out. Got some nice pieces. (# 532) Drilled six strip holes to see if any more pockets are above. Drilled two strip holes where the Actinolite was. Drilled four strip holes in 780 pillar.

5 Aug 90  9:00 Level
Drilled two strip holes in the Realgar location. Drilled a strip hole for Erythrite. Drilled two strip holes in the Fluorborite location. Washed the ribs in 1040 x-cut.

6 Aug 90  7:00 - 8:00
Drilled three strip holes in 1250 store. Washed walls in 740 x-cut, 800 level. Came up at noon.
7 Aug 90  800-900 Levels

8 Aug 90  800 Level
Washed walls in East Vein F/W Drift and 1230 X-Cut and Old Shaft Station, went into 740 Pillar East Vein Section. Got some hose mending supplies. Zin cite is still visible in South End. Checked out abandoned South End of 1250 Stope just above 800 Level. Found an oxidized sulphide vein in the H/W.
10 Aug 90  700-800-900 Levels
Washed walls in 1040 X-cut on 800 level from 1 PM to 5 PM. The Blaster arrived at 7 PM with a box of powder. We fired strip holes in 1250 store on 700 level, 780 pillar, 800 X-cut, 1040 X-cut and West Vein F/W drift on 900 level.

11 Aug 90  700-900 Levels
Washed strip muck. 1250 store on 700 not very exciting. Walked down to 900 level. Fluorobrite location produced some nice pieces. 1040 X-cut produced some nice erythrite and excellent realgar and arsenic. Got two pails. 800 X-cut produced some additional stilbite and one chabazite. 780 pillar produced more mcgovernite.
12 Aug 90  900 Level
Collected a pile of mcgovernite in 780 pillar. Sorted out four
pails of realgar in 1040 x-cut
and used the ejmco to take big
pieces to the cage. Cleaned out
the strip muck. Sorted out a
pail of erythrite. Brought it all
up on the cage.

15 Aug 90  800 - 900 Levels
Washed walls in 1040 x-cut on 800,
went to 900 and drilled out pieces
and drilled strip holes in 780 pillar
and 800 x-cut.

17 Aug 90  800-900 Levels
Washed walls in the abandoned
south end of 1250 stope, just above
800 level. Brought up some copper
alteration pieces. Mucked out
800 x-cut on 900 level. Fired the
18 Aug 90  900 Level
The hole in 780 pillar was ineffective. Installed a water outlet in the line south of 1110 stope. Washed east vein drift ribs in that area. Saw a few possibilities. Worked on extending the water pipe north from 1220 x-cut in the east vein footwall drift.

21 Aug 90  900 Level
Extended the water pipe to the north end of 1250 stope and washed walls in that area. Drilled a strip in the east vein drift south of 1110 stope. Began a strip in 1110 stope. Broke the water needle.
22 Aug 90  900 Level
Washed walls in Brown Willemite Zone and East Vein North of 1250 Stope. Repaired the water needle on my "53". Finished strip holes in 1110 Stope. Sorted out two pails of Fluoroborite. Picked up a few McGovernites and a few scraps of arsenic. Got a mineral dividend of $625.

24 Aug 90  800-900 Levels
Washed walls in 1250 Stope. Washed ribs near 1250 North Chute. There is a nice Rhodonite vein here. Saw that Fill in 720 Stope has really gone down. Water is now 74 rungs below 900 Station. Checked out 720 Stope on 900 Level. Sand is gone but there are huge blocks hanging at the level. The blaster arrived at 5:30 pm and we fired thirteen strip holes.
25 Aug 90  900 Level

Examined results of last nights blasting. The south corner of 1110 stope produced zincite and willemite. The drift south of 1110 stope produced some garnet xls. The hanging wall end of 800 x-cut produced, as expected, salmon calcite. A surprise was nice fluorescent barite. (In franklinite zone) the stilbite area produced more stilbite, lots of chabazite, two heulandites? and one natrolite? 780 pillar produced more mcgovernite. Got #570 mineral dividend.

26 Aug 90  900 Level

Checked out 800 x-cut and got more barite. Also got more chabazite and stilbite. Set up the drill in 780 pillar and drilled some wedge pin holes. Mucked out 800 x-cut with the eimco. Need a five foot steel. The water is 71 rungs below the station.
29 AUG 90 900 LEVEL
DRILLED THREE STRIP HOLES IN 780 PILLAR. DRILLED THREE HOLES IN 800 Y-CUT FOR STILBITE. DRILLED THREE HOLES FOR BARITE, WATER IS 66.5 RUNGS BELOW THE STATION. GOT $550 MINERAL DIVIDEND.

31 AUG 90 900 LEVEL
CAME IN AT 4AM TO WAIT FOR THE BLASTER. HE ARRIVED AT 6AM AND WE FIRED STRIP HOLES ON 900 LEVEL.

1 SEP 90 900 LEVEL
CHECKED OUT RESULTS OF STRIP HOLES. 1110 STOPE PRODUCED SOME TYPICAL ORE. THE STILBITE POCKETS PINCHED OUT. THE BARITE AREA PRODUCED THREE PAILS OF NICE PIECES. 780 PILLAR PRODUCED MORE MCGOVERNITE FROM THE SLIP THE I HAVE BEEN CHASING. A VERTICAL SHEAR