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Aerial Reconnaissance

October 26, 1977

Airplane: Cessna 182 modified -
JDL private plane.

Pilot: JDL, Passengers: J.E.
Kinnison and L. C. Arnold
Avra Valley Airport, take-off
9:50 AM.

Weather is good, sky clear and
visibility is good.

*Draft from aerial direction
John Kinnison recording*

NOTES ON AERIAL RECONNAISSANCE

Take-off and fly toward the small ^{quartzite} portside outcrop drilled by Quintana Minerals and others on the southwest flank of the Tortalita Mountains. Directly over the outcrop now. No outcrops other than the two previously known can be seen as we pass by. From this aerial view about 1000 feet above ground, the dip of the quartzite bed on the main southwest hill gives the impression of a 50 - 60 degree dip to the southeast.

Swing course North toward the Owlhead Buttes. Passing the Owlhead Buttes on our right, the volcanics appear to dip northwest 25 degrees.

Set course toward Desert Peak and toward the very tiny outcrop of sandstone with a symbol of a tunnel on the topographic map, which from a previous ground inspection ~~I recall~~ to be a sandstone with a small digging on an inclined showing of copper dipping about 10 ~~or 15~~ degrees to the north; according to my ~~own~~ ^{My Notes show} notes. We have now made a low pass over the hill and have located the workings. The hill is only 300 feet long and perhaps 30 feet high -- and being surrounded brush is almost invisible from the ground at any distance away from it, and is difficult to easily locate from the air. The dip determined from the aerial view is uncertain. It appears to be a low angle conforming to my previous notes. I had recalled a small ^{vein}basalt on the north end of the hill but cannot distinguish this from the air. My former notes indicated ~~that~~ the copper to occur as 2 foot thick layer following the bedding of the sandstone, and occurred as chrysocolla.

We have headed northwest and are now over Desert Peak, which is a prominent granitic outlyer east of I-10 in the vicinity of Red Rock. The rock appears to be similar to the ^{gneiss} ~~gneiss~~ of the Tortalita Mountains. Clark Arnold has noted a set of dikes trending both north and east crossing the hill, with considerable quartz veining. Traversing the Owlhead Buttes now, granite appears on the west side, possible fault relationships although not certain, some gougy looking areas present. To the southwest of the Owlhead Buttes there is a considerable amount of ~~bulldozer trenching~~ ^a in the granite.

REgarding dip on Owlhead Buttes from ~~the~~ ^a distance to the south it looks shallow, about 25 degrees -- but flying in and around them we see evidence of very steep dips with some reversals; dips on the northern most butte would be about 60 degrees to the east. This is the best dip seen ^{while} flying right over the buttes. JDL notes

impression of rolling or contortion in the dips. Granite appears also on the east side of the buttes, thus they are encircled by granite. ^{This} That strongly suggests a flat fault beneath the buttes, since they have at least some dip, and apparently much of it is high angle. About 500 feet west of the house built on the slope of the southern butte, there is a digging right along the contact. This is a trench or benching right along the contact, ^{and might be} ~~like they were~~ ^{worth} checking for field evidence of faulting. A ^{small} hill north of Owlhead ^{and} north of the graded road from the ^{Florence Hwy} Oracle Road to I-10 -- the first ^{small} low outlier in this area appears to dip about 15 degrees east. Prior visits to these hills by me show them to be an acid ^{and} ~~indicate~~ ^{and} dacite. Numerous roads scattered through the area relate to possible claim staking or drilling for placer magnetite in the early 1960s. An additional note: ~~on~~ The main graded road referred to above is the one which leaves the Florence Highway near the old ^{Owl} Powell Head or midway station, now destroyed, and travels across country and emerges north of Red Rock at I-10.

East side of the Durham Hills, considerable amount of mining excavation has been done in a grey looking rock -- ~~but granitic host~~. This may have been a fluxing operation. Located just north of a rather nice large old house. An area about 1000 feet long by 500 feet wide appears to be composed of volcanics and lies low down on the south or southeast side of the workings. Another potential flat fault with volcanics ^{over} or granite. No contacts appear to be exposed and the volcanics are at the same level ^{virtually} as the granite. This area is located northerly or northwesterly across a small valley from the ^{quartz copper} ~~core stopper~~ veins which I ^{have} ~~had~~ sampled some time back at the north end of the Suizo Mountains. *Most likely grayish granite.*

Have located basalt outcrop over granite just south of the Gila River and east of Florence. Shaft in top of hill and ^{adit} on northeast side driving southwest. ^{Dip} It appears to be almost flat. There ^{seem to} ~~were~~ several other basalt exposures which ^{were} ~~were~~ not ^{be} ~~shown~~ on the old Kinnison-Blucher Asarco map of 1959. *on this recording*

The flight has continued over Red Hills. No notes were taken. Now passing South Butte on the south side. North Butte and South Butte at 11:00. Dips ^{are} easterly about 10 degrees -- LCA states that lithologies are different however. North Butte looks like it is capped by dacite and underlain by water layed stratified tuffs. *In the Gila*

The north part of South Butte appears to overlain by dacite, etc. ^{Getting} ~~now~~ ^{drainage} ~~view~~ now, looking at North Butte. The top may be capped by dacite overlying water lain tuffaceous units. Notation: probably corelates to the "rock peak" conglomerate. Have passed the pioneer prospect, can see the old drill roads leading to the 1913 drill sites. Alteration feeds out before reaching the Gila River on south. Buckeye area lies midway between Hells Peak and the Pioneer prospect. Red color white tail, with copper content, dipping north. *Kinnison-Blucher Reports*

Time 10:33 AM, have circled all around the Mitchell Butte, Walnut Creek area and other places along the Gila which LCA wished to see, and have set course southerly for return. LCA made such notes as were appropriate. Located the ^{SPINE} ~~Steins~~ syncline showing on the north side of Mitchell Butte - not as pronounced as I had remembered it. Over the drive-in site at Mammoth, we can see no evidence of an old drill site. The drive-in itself has been torn down and any evidence of a drill pad probably no longer exists. On course toward limestone quarry on the east

side of the Tortalita Mountains. Quarry lies mostly on the ^{South}~~North~~west side of a northwest trending ridge of limestone which is dipping south or southwest. The strike could be more west than northwest. The intrusive contact which I remember on the ground could be manifested by a lighter colored rock ^{zone} beneath the quarry ^{marble} barrow cuts, and would seem to form a westerly trending ~~rose~~ more as though it were intrusive rather than bottomed on a fault because it extended up into the hilly part of the Tortalitas. Evidence for a flat fault from the air is not conclusive.

ADDENDUM TO RECORDING: Circled over the area of grey brecciated ^{gneiss} ~~rice~~ on the Burk ^{Hart} claims ~~of~~ the west pediment, extending along the central part of the west flank of the Tortalitas. The brecciated nature is clearly evident from the air and I had also seen it from the ground and seems to match nicely with a possible flat fault beneath Owlhead Butte ~~and~~ lying to the north ^{and} with the Rillito Hills project drilled by Quintana to the south, which did pass into a flat fault as shown by drilling.

This is the end of this addendum. No more recordation. ^{this date} We have landed at Avra Valley.

John Kinnison
Recording

N O T E S

John Kinnison recording, aerial reconnaissance, take off from Avra Valley airfield at 12:15 p.m., Wednesday, May 24, 1972. Hudgin Air Service, Cherokee 180, Pilot--Stan McGue. Weather condition--sky very clear, no clouds, there is some smog, no wind.

Main objective is the area around and south of Ajo. Have set course which will carry us past the south end of the Waterman mountains. Have flown the gap between the south end of the Watermans and the north end of the Roskruge mountains. The area is underlain by bedrock on a low-lying pediment with a few roads but easy four-wheel access. Rock may be Silver-Bell formation--or possibly Cretaceous sediments. On course toward the Comobabi range. Crossing the center of the valley--the Santa Rose mountains are at two o'clock on my right. Kitt Peak on the left at 11. Bearing generally southwest^{erly}. Viewing the north Comobabi mountains at two o'clock and about three miles off, the yellow range appears granitic with a red-brown hue^{or} color tones. There is no evidence of old workings, however. Spotty grey color exists throughout--possible interpretation is that the color is due to weathering of a ^{ferruginous} ~~thermally~~ ^{rich} ~~thermally~~ ridge granite. Crossed the Ajo road some miles to the northwest of Sells at 12:43p.m. Set course northwest to fly over the Quijotoa range. Having crossed the Quijotoa mountains, the low hills south of the highway at about the point of the old Covered Wells store show the most obvious color tones, reddish and light brown. These are probably a continuation of a pyritization seen along road cuts. The color anomaly extends westerly parallel and to an extent across the highway for perhaps a mile and a half west of Covered Wells.

Passing over the old Gunsite mine--the color in the granite is about the same as that remarked earlier when passing the Comobabi range, reddish brown. Set course for the Ajo smelter.

1:08 p.m.: Bearing directly toward the Ajo open pit. Arkensaw mountain is almost completely stripped off--I should say it is stripped off completely. Swing north to make a loop and head south down Gibson Arroyo. A road from town goes up

the northeast side of Camelback mountains. Down Gibson Arroyo to the south is our heading--Cornelia quartz monzonite, a granite mass, on my right. The locomotive fan-conglomerate contact is in view in front of us. There are some miscellaneous bulldozer diggings within a thousand feet of that contact. These also lie west of the Gibson Arroyo road. Having made the loop, are heading toward Ajo peak. No drills have been sighted during this loop south of the pit. Correction, one drill is east of the Gibson Arroyo road on the southwest flank of the high peak southwest of the pit. In an area what I believe is gray andesite. I have years ago seen some copper oxides in this vicinity. Flying up the Gibson Arroyo to the north. The scattered bulldozer work terminates going north about where the canyon constricts and the road is down its side, flying southeast toward Locomotive rock. Passing over the area of fanglomerate and volcanics interfingered--I see the old Bureau of Mines drill sites where they drilled for oxide. Pediment exposures through here are rather spotty, but do exist. Following the road to Growler Pass. See what could be a possible drill site at the end of the road which runs east from the Growler-Pass road--^{lying} a line to the northeast of the basalt tip of the old John the Baptist site. On my right are two isolated outcrops, which I recall are limestone--one has a ^{quarry} glory on its top. At two o'clock on my right the peak I believe called Scar-face mountain--of volcanics.

Numerous roads go in and circle some limestone ridges or a principal ridge east of Scarface mountain. Growler Pass is showing up on my right at three o'clock. The granite of laramide age which spans the pass is just barely visible as a grey-colored tone. The ridge to the south of the pass is capped by basalt with much ^{Talus} tailless streaming down the hill. A light patch of ^{ground?} ^{on} of this basalt area at its east flank could be outcrop, but I am not sure. This would be lying just north of the major wash that drains through Bates well. Running southeasterly along the east flank of the volcanic ridges consisting of basalt, principally along the east, ^a and perhaps older but in any event stratified ^{and} in layered volcanics on the west. The ^{actual} stream ^{from} the valley of the Ajo is immediately on my left

and we are passing some basalt outliers below us and to my right. One of these-- with a somewhat conical point--has on its west side a light-colored area which might be outcrop. It is basically a very light-colored soil and outcrop of let us say granite is not certain. There are also at least one small patch to the south of this outlier which otherwise is surrounded by grey alluvium. This could be outcrop. The light-colored soil heads backward to the west along a drainage and is certainly worth checking. We are circling low, a few patches of almost yellow color are seen from very low-level circles--some of this may be grass, but it also may represent--a feature worth field checking. I cannot identify it further.

|| A pass even lower confirms the identification of a yellowish grass. Heading south again and across a desert road which trends off into some craggy volcanics, which I guess is the Dripping Spring range. Correction: the ^{the} Porto Blanco mountains. It appears that this road connects with what is probably a park-service road on one of their drives, possibly the one to Dripping Springs. Approaching a small red patch at the base of the north ^{frontal} ~~funnel~~ face of the ^{the} Porto Blanco range south of the park-service road. We are circling that patch, low--it appears to be an elongated area and is more likely volcanics than bedrock, but there is some joint patterns suggestive of granite. The volcanics dip east on the east flank of the ^{the} Porto Blanco. Probably basement lying beneath.

1:43p.m. Crossing a powerline road, which lies a couple of miles west of the Sonoita highway. Traveling north parallel and west of the highway. The ridge of volcanics which strikes northwesterly and cuts across the highway is seen to be bedded volcanics and a yellow tuff. Some reddish sections under the tuff may be scoria or oxidized basalt. The south side of the ridge, northwest of the highway, shows some signs of volcanic beds--rather gentle dip. Viewed at from the west, the beds look as if so they dip about 20°. No explanation for the structural anomaly found by Asarco drilling is apparent.

Circle Copper mountain, and I see no sign of activity. A number of bulldozer trenches have been cut on the east side of Copper Mountain--just as ^{Bill Knapp} had stated.

for sampling purposes.

Reconnaissance for major purposes ended and setting course for Tucson.

Time, 2:48 p.m.

Along the flight home, on the flats west of Quijotoa mountains and south of the Ajo road, by a dirt road going south to an Indian village, there was a basalt *hill* with a white, ~~scraped~~ ^{the} area at its face. Flew over it low and could not determine that mineralization was involved.

Final note, circling the area south of Growler pass, I could not see an obvious outcrop anywhere in the vicinity of the old Asarco megnetometer anomalies. Recommend additional ground check in any event.

Last recordation for this date, we are now returning to Avra Valley field.

AERIAL RECONNAISSANCE

April 28, 1971

John Kinnison recording. Take off--1:06 p.m. from Hudgin Field at the main airport. Pilot--Stan McGue. Weather--clear, no clouds, no wind. Plane--Cherokee 180 Arrow.

The objective of this flight is to reconnoiter Copper Creek and the area near Klondike, and to check out the rock outcrops northwest of Superior which is owned by Jay Fuller. Set course from the airport toward Mammoth. Passing Mammoth 1:35 p.m.; have made a detour off to Camp Grant Wash and we are now back on course toward Copper Creek.

Flying over the main altered zone at Copper Creek. The drill sites seem to be confined to the north and south walls of the main canyon. Several pickups are noted. One drill is located on the south slope of the canyon opposite the old Child's-Aldwinkler workings. This appears to be a Joy 22 operated by Boyle Brothers because of the yellow color. No other drills are seen. We will circle and go northeasterly over the volcanic bluffs which lie northeast of the Copper Creek altered zone on the crest of the Galiuro Mountains. Time 1:45 p.m.

Approaching the east side of the Galiuro Mountains. The Gila conglomerate is seen to be faulted against the volcanics which make up the main range. Along this fault I would judge that a red coloration marks iron staining in a fault zone. The conglomerate beds are slightly tilted adjacent to this fault. Question--could this be a fault slice of mineralized pre-ore rock? The reddest portion is near a ranch at the mouth of a large canyon which drains into an area near Klondike. This wash actually drains directly into the little town of Klondike and passes just north of the general store there.

We are over the Quinn mine area. I see what is probably the so-called K volcanic beds which Lindvall mapped on the northerly tongue of bedrock which runs down one of the gulleys. Quinn mine workings are apparent, outcrop is distinctly limited to the canyon and gravel covers the remainder of the hill. To the southeast

across the ridge (where bedrock crops out on the ridge as a resistant rib) it appears fresh and unaltered. In the main wash to the south of the Quinn--the volcanics are clearly exposed--again restricted principally to the gulley while the top of the spurs are covered with detrital materials. There are no prospects in the vicinity of this gulley south of the Quinn. The pre-Cambrian rocks lying east beneath the volcanics rise to sharp jagged peaks--I have not yet seen any signs of prospects or diggings. The rocks appear mineralized. Crossing a mountain pass in the crest of the range north-east to the Quinn. Good overlook to the southeast along the east side of this range--I do not see mineralization colors or prospect workings. End of the reconnaissance in the Quinn area. We are now setting a course for the town of Superior.

Additional note--the range we just flew over was the Santa Teresa Mountains.
Time 1:55 p.m.

Reached Superior 2:15 p.m. At 2:18 p.m. turned up at Reevis Trail Canyon. Have turned up Woodcamp Canyon and are passing Peachville Mountain on our right. The pyritic zone in schist is before us--rather obvious from the air as to limits. It appears to die out on the southeast about as Holt, Inc., has mapped it. The higher ridges northwest of the Rockhouse altered zone appears to be in great part in dacite--although the immediate peak at the end of the switchback road is still igneous. The alteration zone northwest of Rockhouse appears to swing northwesterly across the nose of the hill with all the switchbacks on it. Thus, at the upper switchbacks where I took some samples in granite on the field examination the zone was being passed out off on its northeast side. There is some suggestion that the pyritic zone continues northwest across the ridge into Reevis Trail Canyon. The color tones are rather subtle, however. There is some color, possibly in a granite, in the headwaters of Reevis Trail Canyon. No roads going to that latter area but the wash appears to be wide and probably accessible. Large boulders would be the only hindrance. Conclusion is that Fuller's altered zone does not change in character to the northwest beyond his claims--and that it ends within his claims on the southeast. Observations on the ground, therefore, are not improved

by this air reconnaissance. The strongest zone is Red Hill, strongly red, and also a smaller zone with slightly less red at the beginning of the switchback slope north of Rockhouse.

Time 2:37 p.m. Have left the Rockhouse altered zone and are heading west toward the highway path in the direction of Florence Junction.

West of Superior the railroad goes out to the west and at Hewitt Canyon some miles west of Superior it takes a sharp bend southwest. Hewitt Canyon forks just north of this bend in the railroad and another canyon running up more northeasterly of Hewitt Canyon runs on the east side of a prominent bluff. Just south of this canyon or southeast rather--there is a small open pit with some bulldozers and other equipment in a red zone in what appears to be Pinal schist. The ground looks somewhat altered but I see no prospect diggings in the ordinary sense. I do not know whether they are mining for soil, or clay, or whether it is a mineral prospecting outfit. There is a trailer there and a fair amount of equipment. The road into it is reached from the railroad bend nearest to Hewitt Canyon. No other diggings are seen in the general area in any direction in the schist. On the west side of Hewitt Canyon and west of the very prominent bluff just mentioned--there are some large areas of rather patchy dark-red colors surrounded by lighter grey. I see one little area which may be a prospect working. In general there are, however, no workings or other diggings. It is uncertain whether the rock is volcanic or schist, but I rather suspect that it is part of the volcanic sequence. Perhaps this should be field checked when convenient. We are circling the edge of the colored zone on the south right near Hewitt Canyon to go back over what might be diggings on the immediate west bank of Hewitt Canyon. On further close-ground inspection, this area appears most definitely to be the Pinal schist rather than volcanics. We are now circling over the workings or whatever on the immediate west bank right down the wash of Hewitt Canyon. There appears to be an old mine digging. There is some feeble sign of mineralization in this area--the area is schist--and it has a considerable amount of patchy red color. Time 2:50 p.m. Conclusion--field

check is warranted.

Flew west, out past the little dam which lies north of the Florence Junction-Superior Road--turned over Florence Junction and are preparing to return to Tucson. Time--2:53 p.m.

Final note on the area west of Superior in the Pinal schist--this should probably be given a relatively low priority rating for field check.

Landed at Hudgin Strip at 3:30 p.m.

JEK/bl
4-30-71

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NOTES ON RECONNAISSANCE FLIGHT

Leaving Hudgin's Air Service at the downtown strip, Stan McGue--Pilot, Plane--Cherokee, John Kinnison recording, Friday--April 2, 1971, Time--1:04 p.m. Correction: Plane--Cherokee 180.

Set course for Winkelman. On our way up to Winkelman, we are passing the Black Hills at 1:30 p.m. A red-color zone lies north of the underground gasline. Located southeast of Camp Grant Wash and southwest of the intersection of Camp Grant and Putnam Washes--approximately three miles (this location is very approximate, as I had only an AMS sheet to go by). The area should be field-checked. The rock appears to be granite. A few bulldozer cuts appear on the northwest edge of the colored area.

Over the gypsum workings on the southwest point of the San Carlos strip. 1:35 p.m. Fly northeastward across the bluffs fronting the San Pedro. Post-ore volcanics. The ^{red}strata beneath the volcanics is the limestone section. No mineralization or mine workings noted. Turn north with Depression Canyon on our east. Passing over Saddle Mountain.

Saddle Mountain appears as a post-ore volcanic cap. Underlying it appears tilted Paleozoic limestone.

Fly over the junction of the Gila and Ash Creek. We had followed the Ash Creek out on its south side from Saddle Mountain. Now over the junction of Deer Creek and the Gila. Striking northeasterly from the Gila and between Ash Creek and Deer Creek there are strands of nearly vertical color streaking which I believe are Paleozoic limestones--tilted on ^{incl}ash. Course following on Deer Creek northeast. A few workings are seen scattered about on the south side of the questionable limestone section--possibly along an igneous and limestone contact. Workings appear to be on a vein or bed striking northeast. There are some brown tones straddling a dirt road heading out of Ash Creek striking more northeasterly than Ash Creek does. This is probably an area of granitic intrusive. Very few prospects are present--although there is a road or two ^{lying} lining up through this area and there maybe diggings which I do not see from the altitude of 6,800'. Checking the geologic county map, I see that only one small area of limestone is shown. An alternative to my above impression of a limestone section steeply

tilted is of the color-streaking represents fingers of a granitic intrusive or a series of dikes. Perhaps this is the more probable explanation. The color-tones-- light brown and muted--lie principally on the Ash Creek side of the divide rather than on the Deer Creek side.

Following Deer Creek northeasterly into Reed Basin. The granitic mass just on the southwest side of the Reed Basin is evident from the air--there are no colors of alterations exposed there. Perhaps a minor amount of tan tones on the northerly lobe of the granite. About two miles up, a canyon mostly east from where the Gila takes over from the highway. This area shows possible bedded control of mineralization over a wide area in rock of questionable type. A second possibility is that this represents brown colors of the K-seals in contact above the Paleozoic section. (recording interrupted)

Checking with the geologic county map this seems to be the probable answer. No prospects were seen in this last area. Time 1:48 p.m.

Turning eastward into Granite Basin--or Porphyry Basin as some maps show it--it would appear to be totally unaltered rock. It has been shown by the U.S.G.S. as largely a ^{sill} cell. This would appear to be a correct interpretation for the south contact appears to be ^{sill} cell-like beneath bluffs of limestone dipping south. To the north of Granite Basin, the limestone section also dips south, possibly beneath the ^{sill} cell.

The above concludes the reconnaissance of the San Carlos mineral strip west, offered by Charles Sewell.

Set course for Christmas Mine. Time 2:03 p.m. Approaching the Christmas Mine. The open-pit is cut in the side of a semi-circular ridge facing a canyon--the old Christmas shaft is on the northeast and the pit is on the northeast slope of this ridge, lying southwest of the shaft and across the canyon from it. The configuration of the pit is rather long and somewhat narrow. The strike/northerly or northwesterly perhaps. Circle Troy Basin. No particular outstanding colors in the granite in Troy Basin. South of Troy Basin and the ridge with the rattlesnake workings, I thought I saw the old round-top group belonging to Clarence Via. Additional note: this does appear to be that area--I never knew exactly where it was before. Course set now for the highway heading up over the Pinal ^{mts} and to Globe. Time 2:15 p.m.

Cross over the Saddle ⁱⁿ and the Pinal Mountains along the dirt road heading into Globe from the south through Six Shooter Canyon. Circle the old Dominion--no drilling *Checked also SW on O.P. strike into north Globe area aluminum. No drilling.* noticed. ~~Correction:~~ Miami. Passing the smelters. Heading directly into downtown Miami. See one drill rig south of the main drag in the center of town. Flying parallel to the Miami fault and crossing the Miami open pits. Tailings, smelter and shop on my right. Also this area is covered by tailing ponds--however, north of these ponds in the area of Gila conglomerate there is not any particular evidence of close-spaced drillings. Circle south and we pass over the country club. Made the circle again south of the smelter and around by the east edge of the open-pit. Still no drill sites per se seen. Conclusion is that most of the drilling was done in tailing-pond areas or else adjacent to existing road ways and that some have been filled in. Time: 2:38 p.m.

Leaving Miami Mine area and set course southwest for Ray-Kelvin area.

South of Ray, I have located the area submitted just south of the Gila River by the Tipperary Company. Drill roads criss-cross several ridges that run down into the point where the Gila turns from flowing northwesterly to west. There is some red and brown coloration of the hills in this area--not too pronounced. Time: 2:53 p.m.

Set course for Tucson.

Returned to Hudgin's Airfield 3:27 p.m.

JEK/bl
4-4-71

ROUGH DRAFT

Leave Freeway Airport at 1:40 p.m., Thursday, December 10, 1970. Pilot--Stan McGue, Hudgin's Air Charter. Weather clear except for smog and haze, wind is even.

We are headed toward the Dixie group of claims, southwest of Buckeye along the railroad track, approximately north of the railroad station of Harqual and Gillespie, in west of the highway between Gila Bend and Buckeye.

We have reached the area of the Dixie mine, just south of the Olava Caliente road. Numerous diggings at the Dixie, bulldozer scrapings, in what appears to be very discolored volcanics. A few long ribs of what could be dikes or possibly sediments of some kind. Circle slowly four peaks--probably the peaks described as the locus of breccia pipes by Scott Hazen. Bedrock does appear to be of some sort of granitic rock or gneiss, perhaps traversed by a series of dikes and locally capped by either flows or rock grains derived from volcanics. There seems to be some general grain to the north or perhaps northwest. It would appear that volcanics cap the bedrock in the little valley along its eastern flank--these volcanics dipping about 30° east. The area is not particularly brushy--as it was described by Scott Hazen. No striking color anomalies are seen, for the colors of the volcanics seem to mask the bedrock color tones.

I am going to circle the area south of the railroad and directly south of where the Dixie group is. See a camper in the vicinity by a pond--possibly duck hunters. This reconnaissance is now through.

We take the railroad and cut out of it and in toward Gillespie dam to pick up the northend of the Buckeye hills. Have just passed Gillespie dam and taken a road out from nearly where the dam is. In the first low foothills there are some muted red colors of a rather small area--granite rock fresh surrounds it. Continuing on across the little valley along the northern Buckeye hills and about south of Power's Butte, there are some other small red spots--probably alterations, and one 800-foot quartz plug. The red and brown color spots--probably mineralization--concentrated in the ^{are}

general vicinity of the two shafts shown on the Buckeye quad in the lower left corner, appear to be two rather narrow zones say, about 500 feet wide each, trending northeast. As the Buckeye hills roll out onto the flats into lower knolls, there are some scattered colors visible. There is one quarry in what appears to be a felsic ~~plug~~ or quartz dike somewhat southeast of Power's Butte, maybe a mile. A little red color tone in this vicinity. Circling over the quarry--it is probably silica. A bright red color zone just to the east of the newer highway connecting Buckeye and Gila Bend has been plotted on the Buckeye 15-minute quadrangle. There are north-striking strands of more intense color, with darker material in between. The wall rock appears to be a combination of granite with some gneiss. Zone appears pyritic and there are no diggings seen in it. Correction on the workings. Some approximately half or three quarters of a mile ^{FURTHER} east is an open-cut operation with a small shovel. South of that operation, there are a number of small prospect pits in granite--no visible alterations surrounding them. The area does not seem to hold much potential due to the restricted size of alteration and pyritic-red appearance--however, it should be field checked when convenient. This concludes the reconnaissance in this area and our course is set toward Tucson.

Returned to Freeway Airport at 3:35 p.m.

JEK/bl

J. E. K.

NOV 11 1970

Tuesday, November 10, 1970, leaving Freeway Airport at 11:10 a.m., for reconnaissance in the North Silver Bell hills and in the Sasco hills area.

Notes on flight: Weather is overcast with clouds, but some sun. Very calm--no wind. Plane from Hudgin Air Service is Cherokee 180, Pilot is Stan Mague. Flight course set directly toward Ragged Top peak from the Freeway Airport.

Above the Sasco smelter site, the gradually-sloping plane, open to the valley towards Eloy, looks to be principally alluvial. The power line, which crosses at Sasco going west and which Mel See and I traversed recently, is distinctly alluvial. The color anomaly, which I thought I saw, does not lie in the area immediately west of the Sasco hills, nor does it appear to lie between those hills and the El Paso gas-line road. Following south along the gas-line road and somewhat north of Ragged Top, the colors of low volcanic hills are present. Some mottled areas of brownish tone are probably granite on the north slope of Ragged top, where the old Silver Bell county road cuts through. Low hills of granite, east of the gas-line road and west of the volcanics of the South Sasco hills, are mottled with reddish and orange and brown colors. This may be the area which appeared altered on a previous flight. Another circle. There is considerable reddish streaking beginning at the junction of the old Silver Bell county road, where it crosses the El Paso gas-line road in the area east of Ragged Top. This is probably the vicinity where Mel See and I saw some weak laminae seams in granite on our recent trip down the gas-line road. East-west trending color zones are particularly evident east of the gas-line in an area north of the house with the

water tank on the hill, which lies southeast of Ragged Top. The house and the water tank being just west of the gas-line road. We are now passing this vicinity slowly and at a lower elevation. It distinctly looks like it could be alteration patches. Differentiation of this from volcanics is, however, questionable.

The zone is strongest in an area about 2000 feet northerly and extends easterly perhaps 3000'. Other spots of alteration are noted on to the north. This region of very low-lying terrain is undoubtedly the color anomaly which we attempted to locate a few days ago, unsuccessfully. It should be further field checked. East of the house with the water tank, at a conical hill known as Red hill, we are circling at low elevation and slow speed. It is jointed granite perhaps, without evident alteration. Viewed from the south, the hill has a weak orange tone--yellow-orange. There are several cleared areas, about a thousand feet west of the gas-line road in the vicinity of the ^{new} AS&R claims. ^(SBE group) These do not look like drill sites, unless conceivably they have been filled in. One drill is set up just to the east of the gas line, about 400'. Medium-size rotary. This location is about a half mile north of the Avra Valley-Silver Bell road. Another drill setup about three-quarters of a mile north of the junction of the Avra road and the gas-line road. This appears to be a Joy 22. Correction, it may be a Joy rig, because of the orange color, but it is using typical rotary mud sumps in dirt.

At 11:50 a. m. , returning now to Freeway Airport.

Note in addition: (Tuesday, November 10, 1970.)

Flying over the old pueblo, the pits certainly seem to be on alignment suggesting a strong structural control of the better mineralization. On the south side of the ridge, just south of the main workings, there is an east-trending color anomaly. Traversed the valley toward the gap, west of ~~Gap~~^{Cat} mountain and north of the ^{py}pyritic color anomaly of the Silver Pass mine. Other colors do not seem diagnostic one way or the other. Continued on and circled Saginaw hill--there is no sign of activity at this time.

We are now returning toward Freeway Airport at 12:10 p. m.

JEK/bl

ROUGH DRAFT

Sunday, October 18, 1970, leaving Freeway Airport at 8:45 a. m. for reconnaissance over the Gunnery Range. We are heading first toward the area near Aztec on the Gila Bend highway.

Hudgin Air Charter Service; Pilot: Stan McGue; Cherokee 180, unretractable.

9:12 a. m. , crossed the highway from Casa Grande to Covered Wells across the Santa Rosa wash, on a bearing which will lead us across the Copperosity Hills. The water well, or what is probably a water well, about 1-1/2 miles west of Santa Rosa wash and about a mile or two miles south of the Greenback road is still set up. Detoured over the Greenback mine, the colors are very muted, a little bit of red and principally dull orange. The fresh granite on the south is plainly visible. To the west, the altered color merges and mixes with post-ore volcanics; no alteration is seen continuing to the west of the volcanic ridges. Very low-lying basalt outcrops northeast and north of Kaka.

Course set westerly from Kaka traverse post-ore volcanics, flat-lying, many incised mesas, capped by a flow layer. No pre-ore outcrop can be seen. Where the gas-line road turns southwest into Ajo, there is considerable red and yellow color, probably in the post-ore volcanics. Some vertical sheating is present. On course to the Crater range, the sharp southern boundary is visible, the north boundary slopes off gradually. The low outlayers west of the Saucedo mountains before reaching the plain crossed by the Ajo-Gila Bend road appear to be volcanic. Elevation of flight has been 8000'. No pre-mineral rock seen. The Crater range has a very sharp south-westerly boundary, particularly where crossed by the Ajo-Gila Bend highway. Almost has to be fault controlled.

2.

Farther along the front to the northwest, still on the southwest side, there is more erosional indentation, but it is still remarkably uniform; the spurs come out to about the same imaginary line marking the front of the range. Two outcrops in the middle of the valley between Childs mountain on the south and Crater range on the north appear also volcanic. We are in direct line with them now and approaching. Main drainage along the southwest front of the Crater range lies right by and to the north of the east outcrop, then angles northerly away from the western outcrop. The AMS sheet shows the Okie well on the southeast point of the western outcrop. The wash is known as the ten-mile wash. Possible pre-ore outcrops form outliers and form an indentation into the Crater range, somewhat north and northeast across the range from Okie well.

Point 1, these are marked Cretaceous intrusive on the county geologic map.

Correction of previous recording of location. Okie well is not the western-most isolated outcrop between Crater range and Childs mountain, instead on the AMS sheet the western-most outcrop is just below the word "wash" at Tamil wash. Apparently, the Okie well hills lie north of Growler mountains. This further means that the eastern-most outcrop is unidentified topographically on the AMS sheet. The eastern-most outcrop first referred to as south of the Crater range, north of Childs mountain.

Now crossing the southeand of the Aguila mountains, the eastern outliers do not show any alteration color. One of them conceivably could be schist. The range itself is made of a southern part formed of light-colored volcanics, the northern part is a low plateau of flat, black basalt. Northern half of the Aguila mountains, the northeastern half with a black basalt cap appears, as seen on the

3.

western bluffs, to be underlain by a thick, light grey unit, possibly a tuff. Dip of the basalt is 10° or 15° northeast. The San Cristobal valley shows beginnings of drifting sands, forming insipient dunes.

Course is northwest along the west flank of the Aztec mountains. The southwest flank shows small, dark outliers forming out to a line which somewhat suggests fault control and insipient faint maroon coloring exists on some small knolls lying two miles south of the main north ridge of the Aztec group of mountains.

Point 2, an open cut is dug in the north side of the extreme west tip of the north ridge of the Aztec mountains. The rock is dark, probably schist. Rock right at the open cut is slightly lighter in color but no real mineralization evidence is seen. There is some bulldozer scraping 2000' to the northeast on the flats, between the open cut and another little spur.

Point 3, possible quartz vein or plugs south of the farms at Aztec on the foot of the north range.

Point 4, appears to strike approximately west.

Now over the open cut on the large quartz area marked with a copper-mine symbol on the AMS sheet. It must be 2000' in diameter, more extensive than I previously thought. It is definitely limited on the south and does not cross the range. The cut is Point 5.

One small, light tan area at Point 6, west edge of the southwesterly or the southern small hills of the Aztec group. No diggings at Point 6. May be just an intrusive or it might even be alluvial blown dust.

The southeast tip of the Aztec mountains, tiny low hills, shows small spots which could be quartz plugs not over 200' in diameter. There are small

4.

hills, not over 100' high, strung out to the east of the Aztec mountains. They appear to be grey schist. Still further southeast, a small group of darker hills, again probably metamorphic, similar to the Aztec mountains. They are somewhat more prominent, rising to say 250'.

Point 7, much desert varnish coating these hills. They could questionably be basalt, but they do not look right for that. There is too much jointing and structure in them. Metamorphic is the most probable type.

Now following the road southwest out of Sentinel, we have crisscrossed the Sentinel plain, seeing principally volcanics. North of Point 7 there were some probable pre-ore rocks prior to crossing the main gulley. Sentinel plain is all flat-lying, low-lying basalt. Located the mine symbol south of Sentinel. It appears to be an old shack of some kind and on the north edge of some volcanic hills, not a mineral mass.

Passing Point 9, north of the Crater range, a very low-lying outlier appears to be a circular outcrop of basalt. Passing the east flank of Point 1, north of the Crater range, appears to be pre-ore rock, but the type is questionable. Very shattered and jointed, very possibly granite. No mineralizations seen.

Point 10, low on the slope beneath a basalt spur appears to be either a tuff or a pre-mineral granite. Granite probably. Light tan in color, slight orangish or light tan zone, just under the basalt is suggestive of weak alteration. Can't be sure.

Flying south on the west side of Childs mountain toward the gap near salt well west of Ajo. Outcrop in the valley between Childs mountain and Growler mountain, Point 11, basalt. An elongated low, west-trending ridge. Circle the

5.

area, containing copper mineralization with quartz veins, south of salt well, west of Ajo, at the gap between Childs mountain and the Little Ajo mountains.

Vissible alteration, quarter mile wide, appears to fade out before it actually makes into the alluvium. But some portion of it may extend westerly under alluvium.

Additional workings appear on the main ridge to the north by the main wash. Passing a little north of the east side of Childs mountain and across the highway where it passes the Crater range. North of there, turned northwest following drainage patterns toward white-colored ridges in the skyline.

Approaching Point 12, an area in the northern part of the Crater range, northwest of the highway pass, south of the main drainage around the north side. Light colored with some zones or strands of dark brown to orange may well be a volcanic tuff or some volcanic alteration phenomena. No evidence of workings at all.

Point 13, elongated west-trending ridge north of the Crater range at the north tip just north of the main wash along the front of the range. Very light colored, basement rock, possibly granite or gneiss. Pegmatic dikes? Flanked on the northeast by low hills--a chain of volcanics. Thus this pre-ore outcrop is either an original pre-volcanic high or is a fault block. The eastern contact with the volcanics suggests a fault.

6.

Time 11:25 a.m. Approaching black gap. White hills to the north northwest. South flank of the White hills appears to be schist. No workings or alteration are seen. The mine symbol marked "copper" on the AMS sheet, about four miles west of the White hills and two miles southwest of Luke Airforce No. 11, appears to be a storage area, sunk in alluvium. One mile west of the White hills, Point 14, bulldozer trenching in an area of about 1000', or maybe 2000'. No visible mineralization however.

West of the Squaw Tits, about a half mile, discolored zone in granite begins to show up and extends on to the ridge of granite which runs north westerly across the Gila Bend highway. No diggings immediately evident, and it may not be mineralization, but merely a weathering phenomena.

Turning east, from a point in the northern Javalina mountains paralleling a little alluvial basin on its south edge. Point of turning east was about a half mile northwest of Raleigh well.

We have arrived at the Javalina mine, as it is known. The road comes in from the north and ends here. Schist shows a little streaking out toward the west, but is very unnoticeable. The road leading out follows a rolling knoll of alluvium parallel to other long alluvial fingers, sloping outward in this little basin. Cut banks in the alluvium expose rather well indurated flat-lying conglomerate.

Circle at the southeast point of the volcanic ridge north of the alluvial valley and following a faint track south up another alluvial slope. The road dies as the schist bedrock is approached. No color zones are apparent as we cross from alluvium to bedrock. We have traced a well-graded dirt road from the vicinity of the Javaline mine where it crosses the basin north of the Javalina mine, back out to the old station of Big Horn.

Supplemental Note

Check out those granite outcrop areas north of ragged-top mountain, north across the gas line road, west of the Sasco hills. They just looked too much like alteration. Ought to be checked again.

AMERICAN SMELTING AND REFINING COMPANY
Tucson Arizona

June 16, 1967

J. E. K

JUN 19 1967

TO: J. H. COURTRIGHT
FROM: JOHN E. KINNISON

AIR RECONNAISSANCE
SALOME TO PAINTED ROCK
MOUNTAINS, JUNE 4, 1967

On June 4, I made the subject flight and returned to Salome, using a Comanche 250, bottom wing plane. The pilot was John Hickey of Koenig Aviation, Casa Grande.

Left Salome 2:05 PM, returned 3:15 PM.
Flying time one hour, ten minutes. Es-
timated one hour plane time round trip
Casa Grande to Salome:

Weather: Bumpy at Salome and Harquahala
plain; smoother over Painted Rock Mountains,

Visibility: Very good. High clouds, sun
muted.

Geology

1. Southwest end of the Harquahala Mountains south of Salome appears to be made of banded schists (or sediments). Many small diggings and roads appear on the southwest slope. A rather extensive yellow-tan color zone, 1500' wide and one mile long -- estimated.
2. Flying southeast toward the Gila Bend Mountains over the Harquahala plain, I noted extensive development of pediments away from the principal mountains. The valley area is only locally incised by streams. Many red color zones appear on the pediments, and are probably alteration zones. They strike northwest. Some of this color may derive from weathered volcanics, however. The Eagletail Mountains on the west are gently dipping layered volcanics.
3. Flew south along the east side of the Painted Rock Mountains. Altitude reduced to 1000' above ground elevation. The red colored hill, which I recently sampled for silver (Painted Rock Prospect), is clearly visible. The steeply dipping beds of silicified shale could not be distinguished, and the rocks appear as a massive unit.

June 16, 1967

4. Flew over the gap in the center of the Painted Rock Mountains, where the county geologic map shows a laramide granite intrusive into the layered volcanics which form the main mountain range. The rock appears gray in contrast to the brown color of the volcanics. Its color and weathering characteristics suggest that it is a granitic rock. The contact is irregular and appears to be an intrusive contact. This irregularity could have been formed if the volcanics were deposited against an older granite ridge. The extent of granite (estimated) is about 3 by 2 miles, trending W-NW. No alteration seen.

5. Circled the south side of the range and flew north along the west side. An isolated group of diggings, with roads leading to the different workings, is in the volcanics of the Painted Rock Mountains. The roads appear to be in good condition. Location: 6 miles north of Gila Bend-Yuma highway.

6. North of No. 5 above, in a group of hills detached from the western escarpment of Painted Rock volcanic group, is an extensive group of diggings--Rawley Mine as shown on the Dendora Ranch 15' quad. Many roads lead to the different workings over an extent of 3/4 mile wide and maybe a little more than a mile in a northerly direction. The rock in this area is red and looks like the Painted Rock Prospect on the east side of the mountains. The topographic map shows more prospects continuing north, but I didn't see these. Most of the working are in the "red Rock" and are lower in elevation than the layered volcanics of the main range. I saw one digging, with a road to it, clearly up in the volcanic sequence.

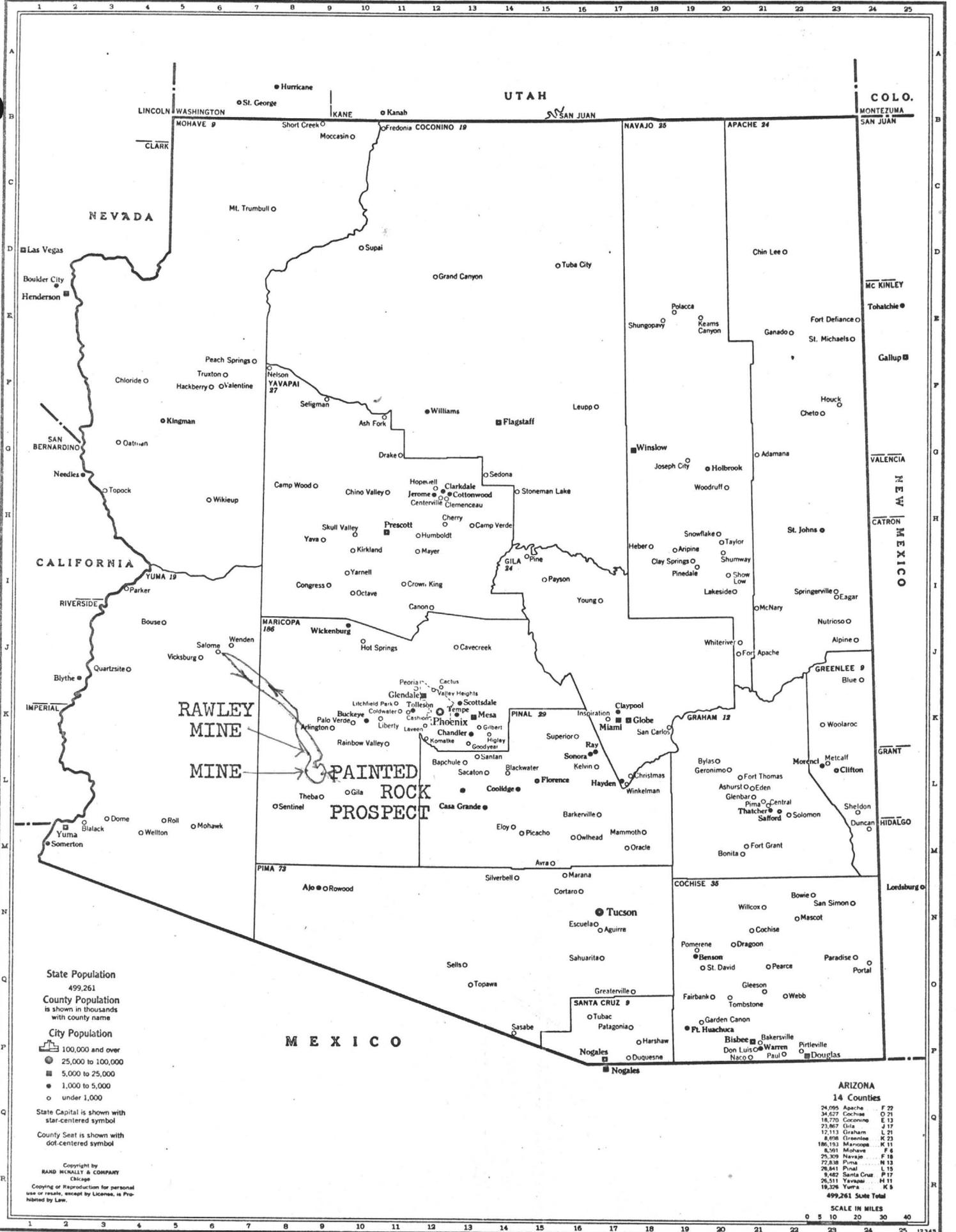
Conclusion

The Rawley Mine area is on a projection of the silicified beds of the Painted Rock Prospect, and should be field checked. The age of the volcanics versus the granite should be determined.

The above comments derive from notes made upon my return to Salome.

JOHN E. KINNISON

JEK/mcg
Attachment



State Population
499,261

County Population
is shown in thousands
with county name

City Population

- 100,000 and over
- 25,000 to 100,000
- 5,000 to 25,000
- 1,000 to 5,000
- under 1,000

State Capital is shown with
star-centered symbol

County Seat is shown with
dot-centered symbol

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ARIZONA
14 Counties

24,095	Apache	F 22
34,627	Cochise	O 21
18,770	Cocconino	E 13
23,867	Gila	J 17
12,113	Graham	L 21
8,908	Greenlee	K 23
186,193	Maricopa	K 11
8,591	Mohave	F 6
25,309	Navajo	F 18
72,838	Pima	N 13
28,841	Pinal	L 15
9,482	Santa Cruz	P 17
26,511	Yavapai	H 11
18,326	Yuma	K 5
499,261	State Total	

SCALE IN MILES
0 5 10 20 30 40

JEN

AMERICAN SMELTING AND REFINING COMPANY
Tucson Arizona

November 23, 1962

FILE MEMORANDUM

AIR RECONNAISSANCE
West of Phoenix - Casa Grande

On a flight (A.A.) to Los Angeles in April, 1962, I saw a bright red area in the early morning sun (8:30 AM) in a basin rimmed by post-ore(?) volcanic ridges, about 50 miles west or southwest of Phoenix. The following described flight was to locate this spot and make a general reconnaissance in the process.

Took off from Tucson Municipal Airport at 10:35 AM, Nov. 16, 1962, Comanche-250 chartered from Hudgin Air Service. This is a bottom-wing plane, well powered, with good front and right hand visibility. Refer to Army map service Tucson, Ajo, and Phoenix map sheets for geographic names. The new Arizona Bureau of Mines geologic maps of individual counties will be abbreviated ABM.

Day bright and clear north of Tucson. No wind. Maintained 4500 feet altitude through most of trip. Smog appeared heavy at Picacho Peak and grew very bad west of Phoenix, obscuring distant views.

Flew over east side Tucson Mt., over Conzten Pass and then over the hills known as Picacho de Calera where the limestone quarry is. The volcanics of the Tucson Mt. present varied colors of tan and red-brown. Passed on by the west side of Picacho Peak - could see what may be stratification in the lower rim of the peak. Various shades of colors in the low hills west of the peak. ABM shows mine symbol here but did not see any workings. Flew NW and passed over south end of Casa Grande Mtns. No alt. colors or bedrock outliers on the south or west.

Turned west and passed south of Stanfield. Table Top Mt. to the south. Antelope Pk. to the south is capped by basalt(?). Flying about $\frac{1}{4}$ mile south of highway.

Crossed VeKoi valley 11:20 AM. Flew west and passed about 4 miles north of the White Hills - grey to white colored. (I have been in VeKoi Wash near the White Hills and saw no altered float, on a previous auto recon.) There appears to be a breach in the super-highway fence, north of the White Hills, which may afford access to this general area south of the road.

Continued west nearly to Squaw Tits Pk., then turned north and passed a railroad track where it cuts through the Maricopa Mts. Crossed diagonally across Maricopa Mts. about along W line of R 2W. Flew gap between Sierra Estrella and Eagle Mt. This route all in grey colored granitics. Passed over Buckeye. Turned NW to SE edge of White Tank Mts., then flew west along their south edge, along a main graded road. There are muted brown color tones in the south foothills and pediment(?), and scattered prospect holes. This area should be field checked. There are numerous dirt roads in the area.

Flew west above a paved road, which changes to graded dirt about N. of Palo Verde. Continued to where Luke AF 7 airport appeared a mile to the south. Turned NW flying above dirt road which follows NE flank of Palo Verde hills, which appear

low hill
Reef

Basalt

Road

Hwy

Also?

This Pt about here

Casa

Hwy

Grande

Big Pool

Red at
base of lava

Wash

Groisy

lava flow

Dirt Rd

SAND TANK MTNS

to be basalt buttes, as shown by ABM. Flew on past north side of Saddle Mtn. where the road crosses a pass between the ragged peaks of Saddle Mtn. on the south and some low hills on the north. In this pass on both sides appear various small mine diggings, and the area for about 3/4 miles diameter is red colored. This area is shown as schist by ABM. The red color most likely is an altered zone and should be field checked. (Courtright 3/4/54 mentions flying over the Palo Verde mine in schist, which may be the same location, but no red colors were noted in the rock.) Saddle Mtn. is a bedded volcanic series, tilted slightly and eroded to craggy peaks, of which one in the center is the highest point -- about 3000 feet elev. Volcanics weather grey, purple, and red.

Flew west to the central east side of the Eagle Tail Mtn of bedded volcanics, where a prominent spire arises from the bajada slope, which appears to be a volcanic rock. Turned N-20-E and flew into a pass in the Big Horn Mtn in T 4N, R 9W, through the pass and turned and flew SE along the NE flank of the ridge which forms the SW portion of the Bighorns. ABM shows this whole region as principally "Cretaceous volcanics". The Bighorn peaks to the south of flight line are gently dipping, highly colored volcanics, and to the north are rolling hills and buttes of volcanics. Along flight line I noted some possible alteration in what might be a large basement window, in the NW 1/4 of T 3N, R 8W. The Army map series shows a prospect symbol in the area, but I did not see the diggings. This should probably be field checked. Turned SW along pass north of Burnt Mt., which is a basalt remnant with a long "tail" running out to near the road to Salome. Turned SE and flew back toward Saddle Mtn, and there turned south and flew over top of high peak. Turned E. and flew over Palo Verde hills and then back to Buckeye.

There turned SW along SPRR track to station called "Crag". About 3 miles further SW along the track, on the N. side where the RR bends more SW, is a low butte of black basalt, marked with elev. 1590 on Army map series. Just to NW of this butte is a lower ridge with a slight but prominent erosional scarp circling its SW edge, and with a very red color. To the west and south lie the Gila Bend Mtns. About 5 miles south is the high peak of Signal Mt. Signal Mt. is a series of nearly flat volcanics eroded to scarps and peaks. In a basin between the RR and Signal Mt, and about a mile east of a station named "Harqual", is the area which I saw on the Los Angeles flight. The colors are not as pronounced as they were in the early morning, but red and brown tones are clearly evident over a large area. ABM shows schist to crop out in this area, and maps the volcanics of Signal Mt. as "Cretaceous". This area should be field checked. Turned SE, Webb Mtns. on the east. Three mines are shown on the map in that area - Harcan, Buckeye Copper, and Idazona. ABM shows schist and gneiss. Continued due S., opposite Woolsey Peak, a large flat-topped basalt butte. Turned E. and flew over Peak. Low on W. side is a small patch of tan-colored rock, possibly a basement window.

Turned NE and flew north of Gillespie Dam on the Gila River. Flew E. along north side of Buckeye Hills. Beginning at about the center of T 2S, R 5W, and extending N 70°E into the NW corner of T 2S, R 4W, is a belt of spotty, subdued brown alteration(?) colors in the otherwise grey granite. A few mine diggings are present. This belt appears to be about 4 miles long and 1 1/2 miles wide. It should possibly be field checked -- unless this is the area of the "Holt Columbite placer", which has already been checked.

Continued N 70°E, crossed new highway to Gila Bend which runs south, one mile west of west line of R 3W. About 1 1/2 or 2 miles east of highway is a narrow zone

November 23, 1962

of bright red alteration, striking north, and appears to be about $1\frac{1}{2}$ or 2 miles long. This is about along the E. contact of "Laramide granite" shown on ABM. (I recently drove along this highway and looked at the fresh granite in road cuts -- it is similar to coarse-grained Coolidge granite, but the biotite is more "leafy"). This area deserves field checking.

Flew on across north end of Eagle Mtn, across low hills and valley and then across N. end Sierra Estrella and turned east along the G. & S.R. Base line for about 6 miles, then curved SE into gap in Salt River Mts, where "Laramide granite" is shown ABM. Flew south across gap. Apparently fresh grey granite with strong jointing. Came out over International Truck testing road work (I have previously been along east margin of this testing ground, and saw fresh gneiss -- no alt. float).

Flew SE to Sacaton Mts. Followed Hwy 387 (Phoenix to Casa Grande) where it cuts SE across Sacaton Mtns, and saw scattered outcrops NE of the Hwy, far out from the Mtn, and muted brown and tan colors.

(I field checked this area the following day -- the area is north of the Sacaton Hills and north of where Blucher stopped his map. For about 3 miles there is a pediment cut on granite with very small scattered outcrops level with the surface. I doubt that more than 10 feet of soil anywhere covers bed-rock. The pediment extends north to the first big canal which crosses approximately the center of T 4S. The colors seen from the air result from the contrast of white coarse-grained granite (Coolidge?), fresh monzonite dikes which are brown, and tan soil.)

Flew around the south edge of mountains and passed the small altered outcrop at Sacaton from the north and east. It is notable that this outcrop is not colored when viewed from the air. First flew over at about 2000 feet above surface, then circled at 400 feet above surface. Hill is barely visible as a grey blob. Time a little past 1 PM. The hill is mildly to bright yellow when viewed from the ground level, even at 3 to 4 miles distant, depending on light conditions; and it was this color which first attracted Blucher and me to it. It would not have been recognized in air reconnaissance.

Flew directly back to Tucson, landing at 1:45 PM.

Att: Map
JEK/kw
cc: KERichard, w/att.
JHCourtright, "

JOHN E. KINNISON

AMERICAN SMELTING AND REFINING COMPANY
Tucson Arizona
November 23, 1962

FILE MEMORANDUM

Summary of Overlap of
Air Reconnaissance
(Courtright & Richard
3/3-4/54 - Western Ariz)
(Kinnison 11/16/62)

Overlap Coverage: SW flank Gila Bend Mtns. Woolsey Peak to the east. Flew W. over Clanton Hills. No alteration noted. 3/11/54

: Flew northerly from Gila Bend around SE end of Gila Bend Mtns. Flew along NE flank Gila Bend Mtns(?) -- not specifically stated. Continued W or NW over Cemetary Ridge. Circled and flew SE along SW flank Eagle Tail Mtns. Circled SE end of Eagle Tail Mtns and flew NW along NE face. Saw grey colors of pre-Cambrian windows under volcanics.... Flew SE along SW flank Big Horn Mtns. "Passed over Palo Verde Mine; appears to be small prospect in schist. Continued over Palo Verde hills, basalt flows; over Gila River and turned west over Buckeye hills. Circled right over Stripped Mountain Holt Columbite Placer prospect."

JOHN E. KINNISON

JEK/kw
cc: KERichard
JHCourtright

Flight line in Purple. Circles indicate alteration(?)

Air Reconnaissance Route

11/16/62 - J. E. Kinnison

