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Mining District File Summary Sheet

DISTRICT	Ravenswood
DIST_NO	3810
COUNTY If different from written on document	Lander
TITLE If not obvious	Geology, Mineral Deposits, and Exploration Considerations, Atigun Prospect, Shoshone Range, Lander County, Nevada
AUTHOR	MacKevett, Jr., E.
DATE OF DOC(S)	1981
MULTI_DIST Y / (N?) Additional Dist_Nos:	
QUAD_NAME	Vignus Butte NW 7½'
P_M_C_NAME (mine, claim & company names)	Atigun Prospect; Atigun claims; Atigun No. 1
COMMODITY If not obvious	Gold; silver; antimony
NOTES	Property report; geology; assays; geologic map 19 p. 1 oversized plate

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

SS: PD 12/16/08
Initials Date

DB: _____
Initials Date

SCANNED: _____
Initials Date

Revised: 1/22/08

~~Prof. Paper 170~~

ATIGUN
LANDERCO
Nz

~~Distributions and roles of some minor elements in the intrusive rocks in the Baker Mountain area, Alaska.~~

~~E. M. MacKevett Jr.~~

~~Tables to accompany Geology of the McCarthy C-5 quad.~~

~~MacKevett~~

~~LG 74 receipts~~

ATIGUN

ATIGUN

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GEOLOGY, MINERAL DEPOSITS, AND EXPLORATION CONSIDERATIONS, ATIGUN PROSPECT, SHOSHONE RANGE, LANDER COUNTY, NEVADA

By E.M. MacKevett Jr.
Geologist, Los Osos, California
November 4, 1981

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GEOLOGY, MINERAL DEPOSITS, AND EXPLORATION CONSIDERATIONS ATIGUN PROSPECT, SHOSHONE RANGE, LANDER COUNTY, NEVADA

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SUMMARY

The recent availability of analytical results for samples from the Atigun prospect that were fire assayed for gold and silver provides sufficient information for conclusions relevant to exploring the property. Briefly, my conclusions are that drilling in the Roberts Mountain window distal from the steep fault (labeled main fault in figure 2) that marks the western boundary of the window is a real long shot, and that any contemplated exploration should focus on probing (by drilling) the deeper parts of the mineralized zone near the boundary (main) fault. Rationale for these opinions are discussed in the last section of this report.

INTRODUCTION

The crucial analyses, i.e. fire assays for gold and silver, have been completed for the Atigun samples, and even though some other analyses are pending, we now have sufficient field and analytical data for meaningful considerations of the prospect. I won't delve into such factors as ownership, location, and accessibility as they are adequately covered in material previously submitted to Mapco Minerals by Rob Foster. The present report is based on approximately 4½ days of fieldwork in the area, analytical results of samples collected during this and earlier field examinations, consulting the rather skimpy pertinent geologic literature, and on discussions with geologists familiar with the region, particularly Rob Foster.

Except for parts of the volcanic terrane, outcrops at the prospect are poor to fair, and contacts were partly delineated on the basis of float distribution. Bedrock is proximal to the surface throughout almost the entire mapped area as is apparent from near-surface probing with a pick and from examining geologic relations in cuts and trenches.

GEOLOGY

The Atigun claims include the western part of a sizeable window beneath the Roberts Mountain thrust, which regionally juxtaposes upper plate, dominantly deep marine siliceous sedimentary rocks over lower plate (eastern facies) sedimentary rocks that typically constitute carbonate-rich shelf deposits. The oldest rocks mapped (fig. 1) consist of layered dark-gray chert that is intricately laced with quartz stringers and veinlets. This unit, which contains small amounts of greenstone semischist-- possibly altered dikes-- is referable to the Ordovician Valmy Formation. Unequivocal Valmy is exposed west of a steep, northward-striking fault that marks the western limit of the Roberts Mountain window at the prospect (fig. 1)-- this is the main fault of figure 2. Two chert-rich sequences are exposed within the Roberts Mountains terrane east of the main fault (fig. 1). These sequences are lithologically very similar to the Valmy and almost assuredly are fault-bounded inliers or klippen of that formation. However, because of the remote chance that they may represent a cherty phase of the Roberts Mountain they are shown as Ov? in figure 1. (this age and assignment dilemna probably could be resolved by studying the radiolaria that may be preserved in the chert). The Silurian-Devonian Roberts Mountain Formation is represented by a thin-bedded sequence of calcareous shale and siltstone that locally is intercalated with silty limestone. Most rocks of this unit are light brown or light gray.

The Paleozoic rocks were moderately deformed during two or three deformational episodes and subsequently unconformably overlain by Tertiary volcanic rocks of subaerial derivation, which underlie much of the mapped area. These rocks typically are silica rich and tuffaceous and appear to be mainly rhyolite crystal tuff. Quaternary sufficial deposits, mainly comprising alluvium and colluvium, mantle parts of the valleys.

Regional thrusting along the Roberts Mountain thrust that juxtaposed western facies over eastern facies Great Basin sequences-- in this case the Valmy over the Roberts Mountain-- took place during the Antler orogeny (Late Devonian and Mississippian). Post-Antler Paleozoic and Mesozoic deformational activity most likely also occurred in the prospect region. The steep, northward-striking faults throughout the region reflect Cenozoic basin and range faulting.

MINERAL DEPOSITS

Economic interest in the area is fomented by the fact that rocks exposed in the window beneath the Roberts Mountain thrust belong to the Roberts Mountain Formation, the premier host for finely disseminated "Carlin-type" gold deposits. The prime exploration targets are extensive horizons within the Roberts Mountain that hold large tonnage, low-grade deposits of disseminated gold.

Except for a small amount of gold in one of Rob's earlier samples from the central part of the claim block, the only recognized mineralized zones are at the Atigun no. 1 prospect (fig. 2, table 1). At this prospect a shattered zone characterized by quartz that has replaced now silicified apparently Roberts Mountain rocks has been thrust over a similar quartz-flooded zone with relicts of chert, probably Valmy. The entire assemblage is bounded on the west by a steep basin and range fault-- termed main fault in figure 2. The shear zone along the main fault locally contains abundant quartz fragments. The shattered quartz-flooded zones are as much

as 6 feet thick (fig. 2). I interpret-- and this is open to question-- the mineralization as being derived from late Mesozoic or Tertiary igneous activity subsequent to structural readjustments near the Valmy-Roberts Mountain contact, but preceding the advent of major basin and range faulting. Cretaceous granitic rocks are known in nearby parts of the Shoshone Range, and Tertiary igneous activity is well documented regionally.

In actuality the Atigun no. 1 is an antimony-silver prospect. The quartz contains scattered, but uncommon, relicts of stibnite and more widespread yellow secondary antimony minerals. Analyses of two selected samples revealed greater than 1 percent antimony, as much as 2.41 oz/ton silver and 0.011 oz/ton gold, and an array of minor elements, including some that typically are associated with "Carlin-type" deposits (table 1). Only one of my channel or chip samples yielded detectable gold, and only two revealed silver (table 2).

CONCLUSIONS AND RECOMMENDATIONS

The pros and cons regarding the merits of additional exploration at the property are as follows:

Pros

1) The claim block is in a favorable geologic setting for "Carlin-type" gold deposits
2) The claims haven't been thoroughly explored-- they are undrilled, and deeper zones of the Roberts Mountain remain unknown and unprobed
3) Recent gold exploration history contains several examples of discovering viable gold deposits in the deeper reaches of antimony deposits-- including at least one such deposit in the Toiyabe Range southeast of the Atigun
4) Access and logistics are good
5) The minor element content of the two samples that were spectrographically analyzed is similar in some respects to that of "Carlin-type" ore

Cons

1) Overall, analytical results were disappointing, with precious metals generally being undetected-- this is particularly true for samples away from the no. 1 prospect

2) The Roberts Mountain at the prospect is folded and to some extent faulted and most likely several horizons of the formation were tested by the surface sampling, almost entirely with negative results. This diminishes, but doesn"t preclude, the liklihood of discovering a favorable ore-bearing horizon

3) The greater part of the Roberts Mountain window lies east of the claim block where large tracts have been explored-- reportedly including some diamond drilling-- with generally unfavorable results

4) Although minor amounts of vein quartz float were noted in the Roberts Mountain terrane at several localities the only large concentration of quartz is at the no. 1 prospect, and, even there, its distribution and attendant mineralization appear to be spotty

In my opinion, the best exploration bet at the Atigun involves investigating the mineralized quartz zones of the Atigun no. 1 at depth. The exact nature of these zones is not known. My preferred interpretation is that they reflect deposition from upward-migrating, silica-rich solutions along zones of structural weakness-- in this case minor eastward-dipping thrusts. Conceivably, the antimony-silver mineralization may merge into gold dominated mineralization, with or without abundant quartz, in the deeper, down-dip reaches of the mineralized zones. An alternative interpretation is that the quartz-rich zones represent deposition from solutions that were dammed along the eastern wall of the main fault during early stages of basin and range faulting. If this is the case the zones may extend to depths in the proximity of the fault, although their distribution is likely to be erratic and possibly they are blowouts of local extent. Major activity on the main fault post-dated mineralization as the shear zone along the fault contains fragmented and comminuted vein quartz and is not cut by quartz veins.

The no. 1 prospect and its environs could be best tested and explored by diamond drilling. A program consisting of two vertical holes east of, but proximal to, the main fault, two similar holes collared in the cleared area about 50 feet east of the fault, and another two or three holes 100 to 200 feet east of the Allen barite mine road should ascertain whether or not the prospect has merit and is worthy of additional exploration. Additional surficial exploration to determine the along strike extents of the quartz zones would be a worthwhile prelude to drilling.

TABLE I. SAMPLE DATA FOR ATIGUN CLAIMS (Except no. 1 prospect)

(values given in ppm except for gold and silver which are in Troy ounces/ton)
(gold and silver analyses by fire assay unless designated otherwise)
(sample locations shown on accompanying map, (fig. 1))

Sample no.	Type	Media	Au	Ag	As	Ba	Hg	Sb
This investigation								
A13-1	Grab (float)	Mineralized RM	< .005	<.01	10	No analyses	0.18	1
A13-2	"	"	<.005	<.01	130	"	0.03	5
A14	Grab	"	"	"	160	"	0.03	15
A28-1	Chip, 50 ft. long, 2 ft intervals	Ov chert laced with quartz	"	"	20	"	0.02	60
A28-2	Composite grab	50 ft. wide section of brown-Ov semischist	"	"	40	"	0.09	85
A29-1	"	6 ft thick section of red RM shale	"	"	40	"	0.03	18
A29-2	Composite grab, northernmost 100 ft of cut	Mainly silty RM limestone	"	"	10	"	0.08	14
A29-3	Composite grab, southernmost 75 ft of cut	RM, silty ls and shale	"	"	10	"	0.07	8
A30-1	Composite grab	RM, limy sh, 6 ft thick	"	"	50	"	0.08	20
A30-2	"	RM, silty ls, 10 ft thick	"	"	30	"	0.07	10
A30-3	"	Chert laced with quartz	"	"	60	"	0.04	24
A31	Grab (float)	Quartz vein, 1-2 ft thick	"	"	30	"	0.04	5
Previous samples								
615								
616								
715								

TABLE 2. SAMPLE DESCRIPTIONS AND ANALYSES, ATIGUN No. 1 PROSPECT

(values given in ppm except for gold and silver which are in Troy ounces/ton)

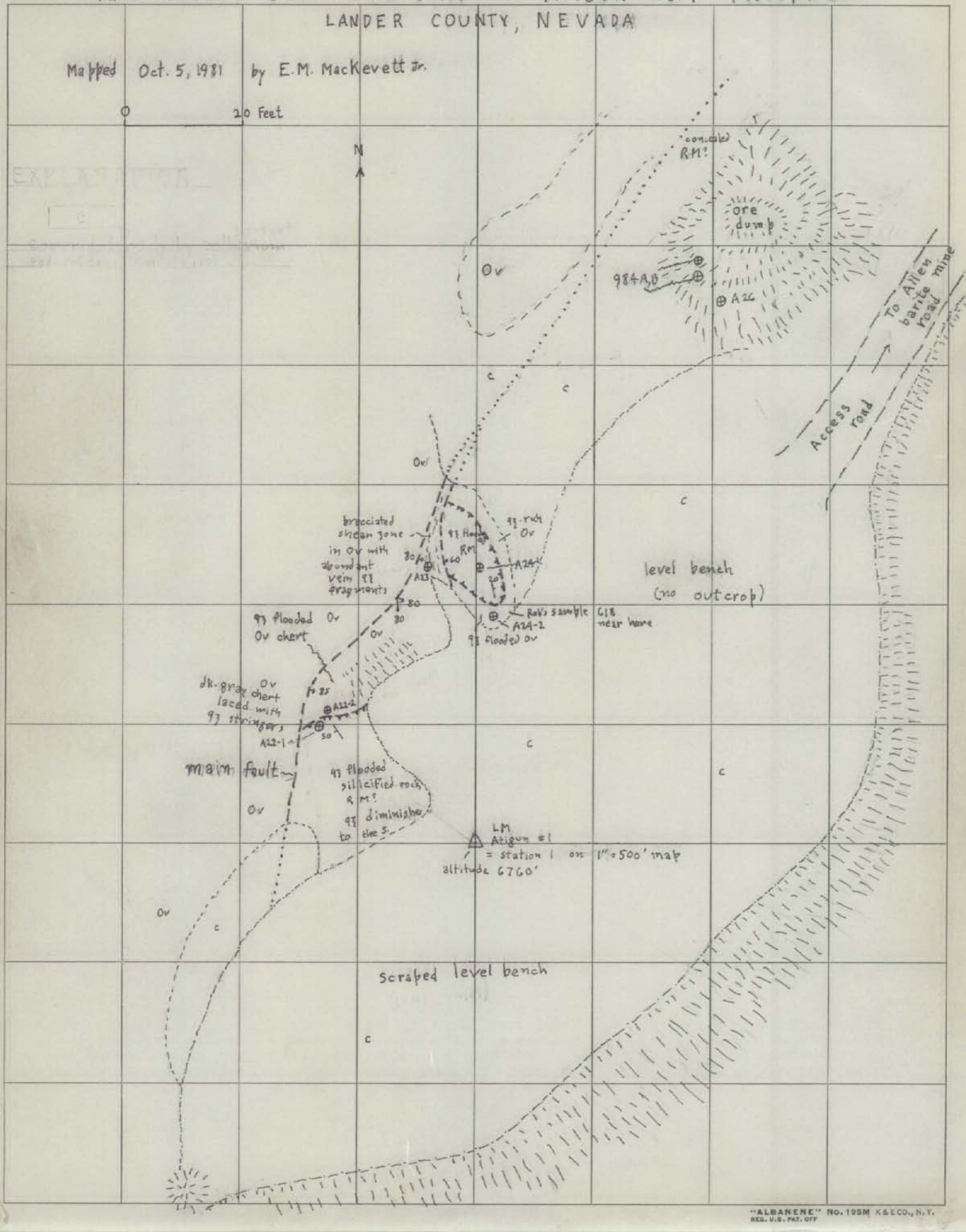
(gold and silver analyses by fire assay unless designated otherwise)

Sample no.	Type	Media	Au	Ag	As	Ba	Hg	Sb
This examination								
A22-1	Channel, 2 ft long	Vein quartz with relicts of RM	<.005	<.01	20	No analyses	0.02	180
A22-2	"	Vein quartz with relicts of Valmy Fm	"	"	30	"	0.02	380
A23	Grab	Shear zone	"	"	40	"	0.04	310
A24-1	Channel, 3 ft long	Quartz-flooded RM?	0.005	1.50	40	"	0.20	123000
A24-2	Chip, 6 ft long at 2 inch intervals	Quartz-flooded Valmy Fm	<.005	?	30	"	0.02	1850
A26	Grab	Quartz vein from dump	"	0.13	30	"	0.08	44500
Previous samples								
618		Quartz-rich zone in Valmy						
984A	Selected grab	Quartz vein from dump	0.011	2.41	300	500		>10,000
984B	"	Quartz vein with Sb oxides, from dump	0.005	0.39	200	300		>10,000

sample locations shown on accompanying map (fig. 2)

FIGURE 2

PLANIMETRIC GEOLOGIC MAP OF ATIGUN No. 1 PROSPECT



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EXPLANATION (to accompany geologic map of Atigun no.1)

C — Largely colluvium and bulldozed debris — QUATERNARY

RM — Probable Roberts Mountain Formation
Silicified siltstone and limestone that have been extensively cut and replaced by vein quartz leaving only relicts of original rock — DEVONIAN AND SILURIAN

Ov — Upper plate Valmy Formation
West of main fault typically dark-gray chert laced with quartz stringers and veinlets; east of fault dominantly vein quartz with minor remnants of chert — ORDOVICIAN

Contact, approximately located

Steep fault showing dip, dotted where concealed

80

Steep fault showing plunge of slickensides

80

Thrust fault, sawteeth on upper plate

50

Strike and dip of bedding

Boundary of bulldozed bench

⊕ A23

Sample location and number

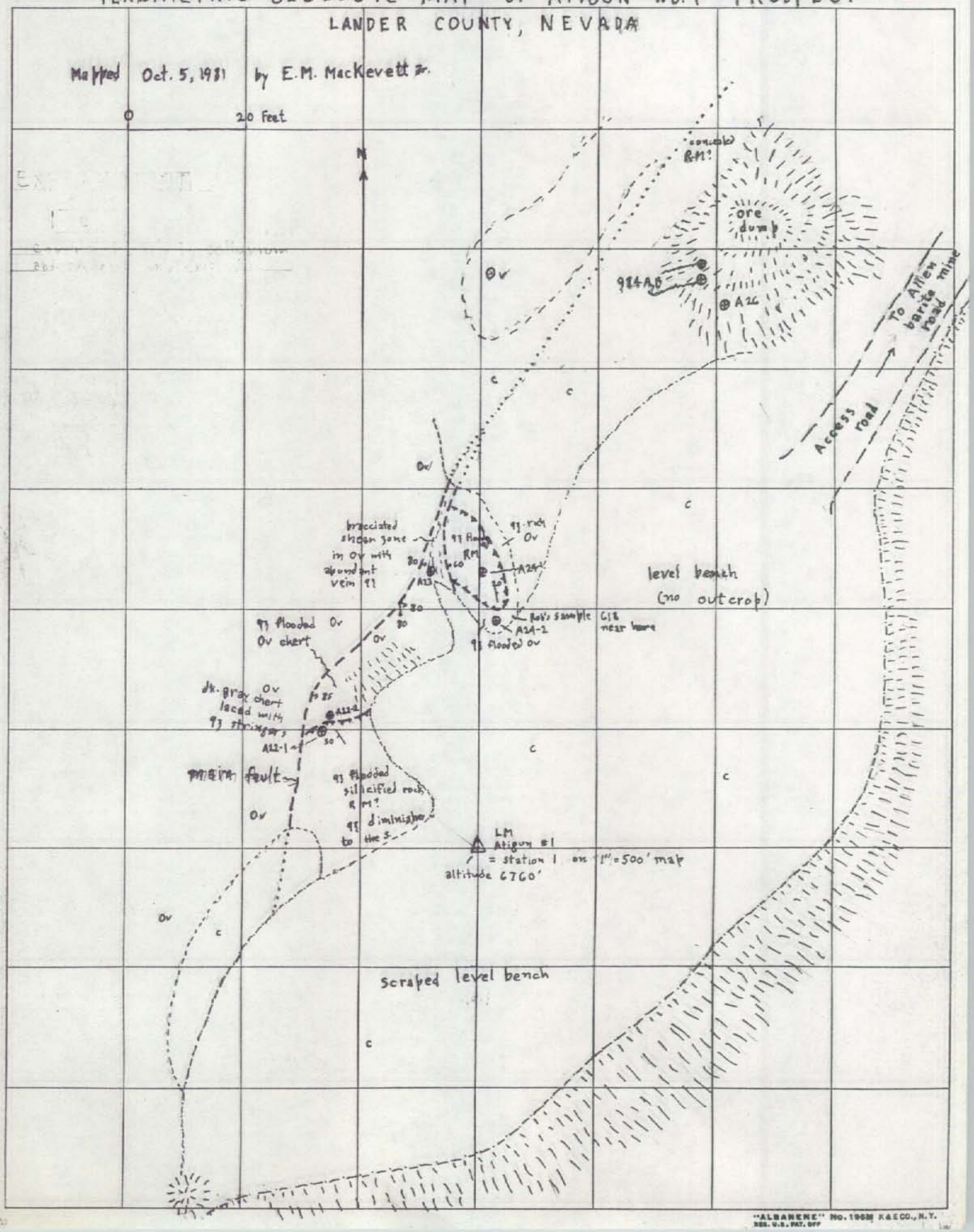
Sample descriptions and available analytical results given in accompanying table. (table 2)

PLANIMETRIC GEOLOGIC MAP OF ATIGUN No. 1 PROSPECT

LANDER COUNTY, NEVADA

Mapped Oct. 5, 1981 by E.M. MacKevett Jr.

0 20 Feet



EXPLANATION (to accompany geologic map of Atigun no.1)

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Largely colluvium and bulldozed debris

RM — DEVONIAN AND SILURIAN

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Silicified siltstone and limestone that have been extensively cut and replaced by vein quartz leaving only relicts of original rock

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sample locations shown on accompanying map

EXPLANATION

Q

Quaternary surficial deposits, mainly colluvium and alluvium

Tv

Tertiary subaerial volcanic rocks, mainly rhyolitic tuff

RM

Devonian and Silurian Roberts Mountain Formation, mainly calcareous shale and siltstone and silty limestone

Ov

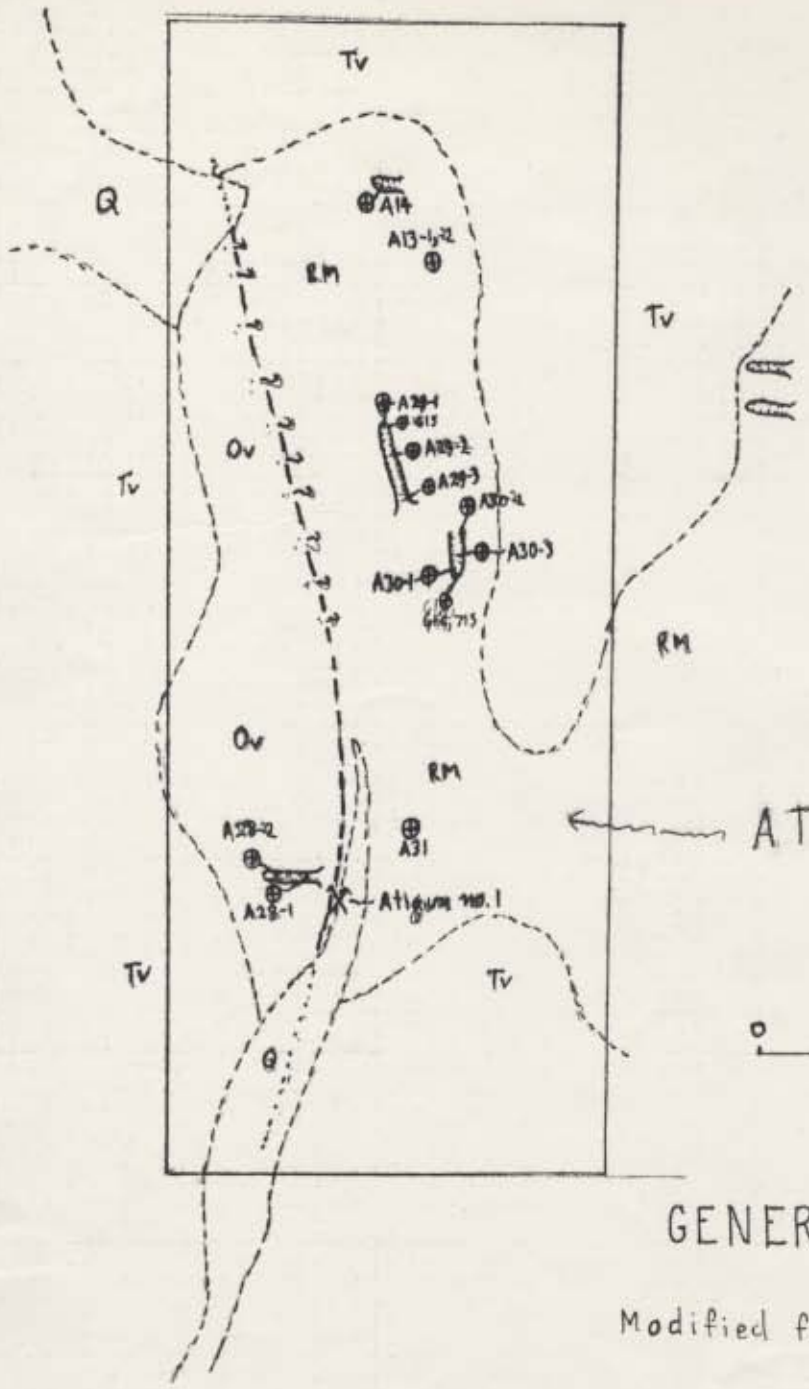
Ordovician (upper plate) Valmy Formation, mainly dark-gray chert laced with quartz stringers

Contact, approximately located

Steep, fault, ? where location is doubtful, dotted where concealed

⊕ A31

Location and number of sample, sample data given in accompanying table



GENERALIZED GEOLOGIC MAP OF ATIGUN CLAIMS

Modified from a map by E.M. MacKevett Jr., Oct. 1981

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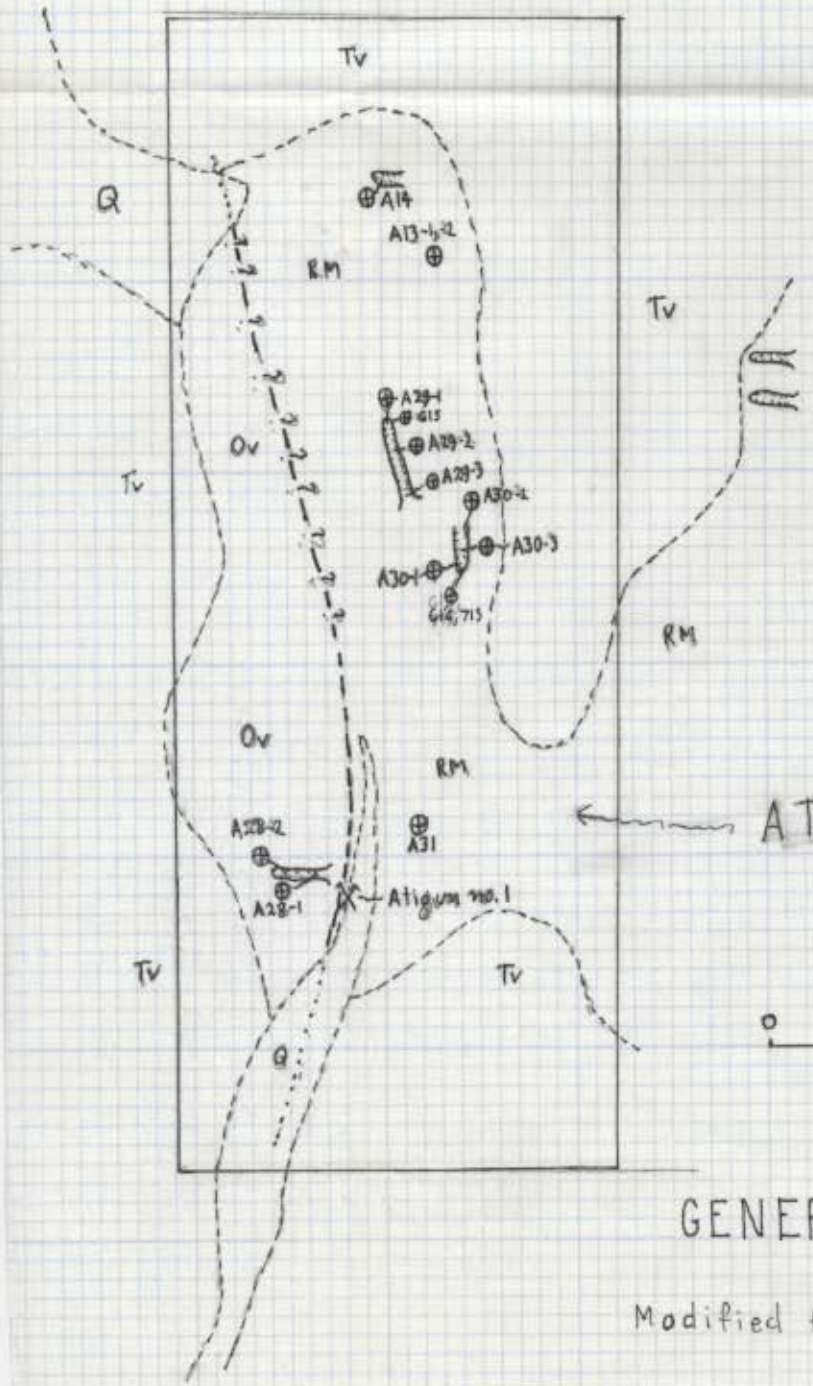

GENERALIZED GEOLOGIC MAP OF ATIGUN CLAIMS

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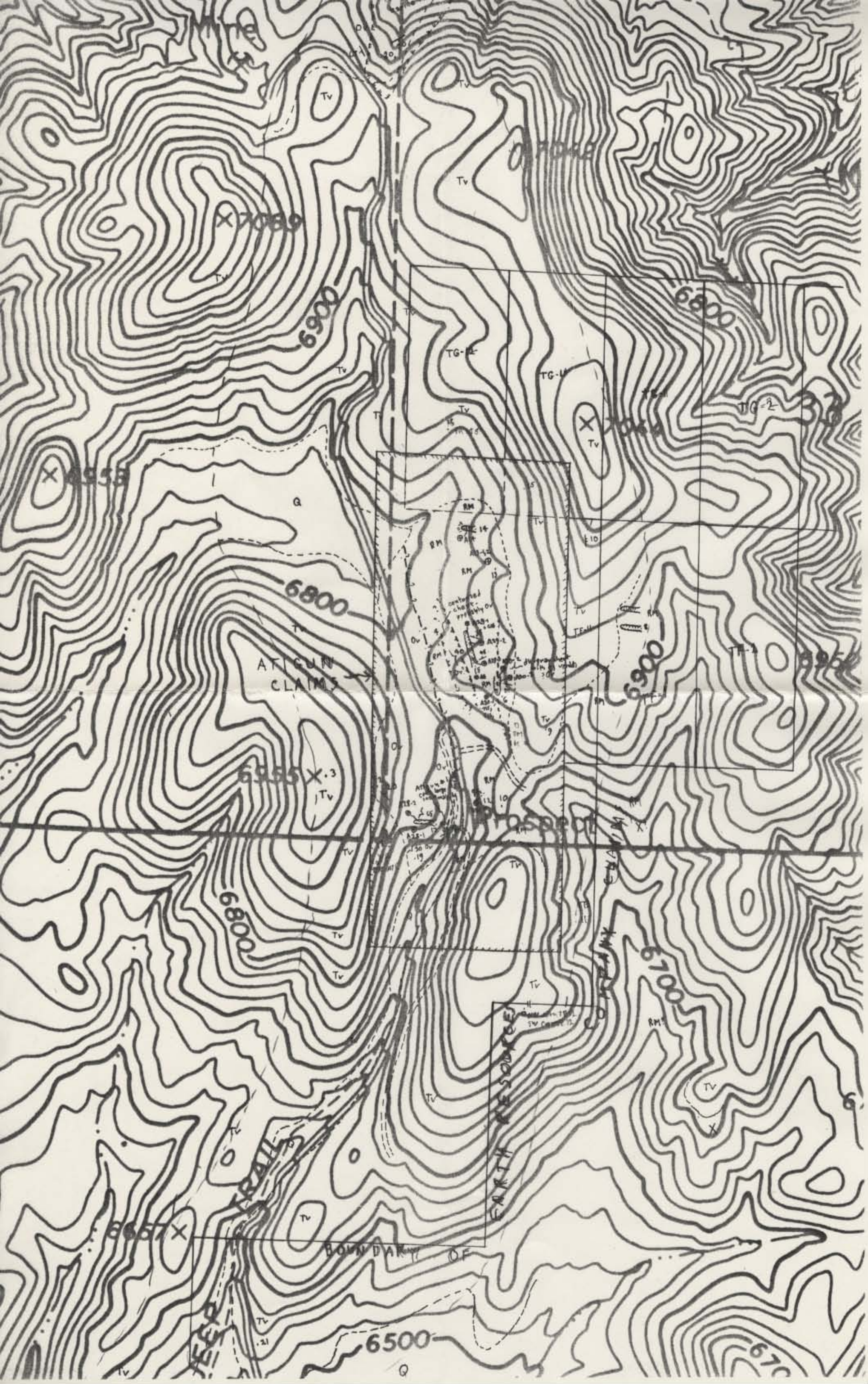
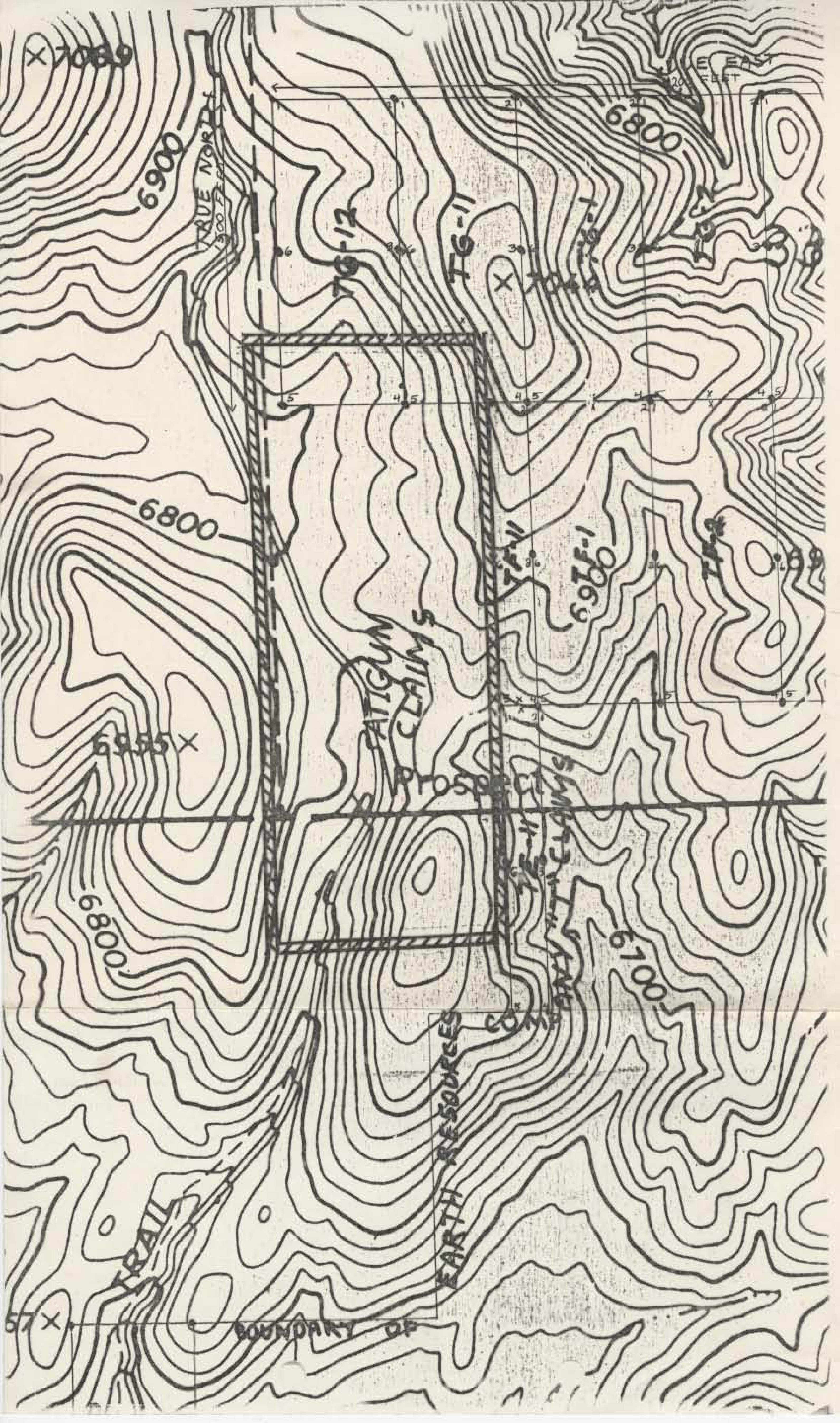

Tv
6900
6800
6500
TG-1
TG-2
TG-3
TG-4
AT GUN
CLAIMS
BOUNDARY OF
PROSPECT
CLAIM
Q



7089
6900
TRUE NORTH
6800
DUE EAST
TG-12
TG-11
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6800
6955
ATIGUN CLAIMS
PROSPECT
6700
TRAIL
BOUNDARY OF EARTH RESOURCES COMPANY CLAIMS