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GOLD BAR DISTRICT

Review of Atlas's Exploration Programs:

**Creation of a Geological-Concept Model,
and
Recommended Exploration Strategy**

Prepared for:

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1.1 BACKGROUND AND OBJECTIVES

During late January, 1995 Atlas Corporation (Atlas) requested Mineral Resources Development, Inc. (MRDI) initiate an on-going review of Atlas's exploration programs in the Gold Bar district, within the area of the Roberts Mountains, Eureka, Nevada. This report presents the findings from the introductory visit, which was intended to familiarize MRDI with the regional and local geological setting and ore-controls, from which MRDI formulated a geological-concept model and exploration strategy comprising a number of specific recommendations.

The introductory visit was completed by MRDI nominees, Borden Putnam, Chief Geologist, Rolland Reid, Principal Consulting Structural Geologist, and Frank Fritz, Principal Consulting Geophysicist. The visit consisted of a thorough briefing by Atlas geologists Frank Fenne, G.McN. French, D.A. Maus, T.D. Rennebaum and Terry Jennings, two short visits to the Gold Bar pit, and structural geometric analysis of data MRDI compiled from several of the open pits in the claim block.

1.2 ABOUT THIS REPORT

As this introductory MRDI review period was brief, this report makes use of Atlas's original diagrams. In those, where references might be found to cross sections, the reader is referred to the source documents for the figures (*i.e.*, Fenne et al., 1994, and Atlas, 1994). Project descriptions herein are restricted to those salient geological features which characterize the ore-controls at the prospect, and are included to acquaint the reader with the local setting with respect to the herein described geological-concept model (see Section 3.4). For the most part, the descriptions of the Atlas exploration prospects focusses upon MRDI's review, findings and recommendations.

Also, in places throughout this report, abbreviated references are included describing senses of faulting displacements, *i.e.*: "RL" for right-lateral, "LL" for left lateral.

2.1 CONCLUSIONS

The Atlas Gold Bar district property position offers many opportunities for the discovery of additional resources. Atlas has stated to MRDI its preference to make these discoveries within the Gold Bar sub-district, comprising the area of proximity to the existing mill complex, and thereby minimize costs relating to ore haulage. MRDI judges this desire may be successfully achieved in the very near-term by focussed exploration within the Gold Bar extensions, those areas of pediment situated both to the northwest and southeast along strike of the interpreted feeder-fault. The existing drilling in these areas is presently at too wide of a spacing, and of insufficient depth. And, the available geological, geochemical and geophysical data indicate this to be a very likely scenario.

The Satellite sub-district appears to offer significant opportunity for discovery, but these resources will be distant from the mill, are often metallurgically challenging, and in the past have tended to pose difficult mining situations due to the extreme terrain conditions which slow permitting of needed disturbance, and complicate mining, waste disposal, and the citing of infrastructure (leach pads, etc.).

Overall, MRDI judges the opportunity for continued discovery in the Gold Bar district to be good to excellent (Table 2.1). However, the existing exploration and mine databases are supported by a paucity of angled drilling, a situation which may be compromising geological interpretation and understanding, and effective target/prospect evaluations. It is MRDI's opinion that all Gold Bar district occurrences are dominated, and characterized by a high degree of high-angle structural control, and that stratigraphic controls, where present, are subordinate and not overall common (nor economically significant) in the existing data.

Atlas's exploration model has historically been biased by a focus on stratabound styles to mineralization, which may not be the complete story. More angled drilling is needed in exploring this district, oriented to cross-cut the important ENE- and NE-trending structures (*vis a vis* Cabin Creek). The lack of a sufficient proportion of angled drilling during exploration may have lead, in certain instances, to:

- Incorrect or incomplete geological interpretations.
- Overstating of mineralized tonnages (by drilling down-structure); or conversely, understating the amount of mineralized material (by drilling parallel to, but between structures).
- Inadequate drill testing of certain prospects.
- Non-representative geological modelling of deposits for mine planning purposes.

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Table 2.1 Gold Bar District Exploration Targets, and MRDI Judged Priority

Target-type	Name	MRDI Judged Priority	Ranking
Gold Bar Extensions	Northwest	Very High	#1
	Southeast	Very High	#2
	Data Review	Very High	#3
Range Front Area	Rutabaga	Low	#13
	Pediment Area: North Kobeh Valley	Moderate	#8
Upper-plate Corridor		Moderate to Low	#7
Satellite Area	Benmark	Low	#10
	NW Gold Ridge	High	#4
	Pot Canyon	Moderate	#6
	South French Trail	Moderate	#5
	Wall	Low to Moderate	#11
Satellite-SE Area	Cabin Creek	Moderate	#9
	Hunter	Low to Moderate	#12
Deep Targets		Low	#14

MRDI recommends that future drilling campaigns in the Gold Bar district be comprised of a mix of angled and vertical drill holes, and that the predominance of these be angled, and oriented as needed to cross-cut at high-angle the NNW- and the ENE-trending feeder-faults.

2.1.1 Gold Bar Sub-district

Gold Bar Extensions, Northwest and Southeast

From very brief inspection, it is readily apparent that the drilling on the margin of Gold Bar open pit, along strike, is insufficient to have allowed the determination that the area is explored, and barren.

One of the most promising exploration opportunities available to Atlas is the postulated northwest and southeast extensions to the Gold Bar deposit at shallow depth in the sub-surface. These areas are inadequately tested by wide-spaced drill holes (200 to +400 ft). The Gold Bar deposit was, on average, less than 75 ft wide, and was localized along a NNW-trending, steeply-dipping feeder-structure which likely projects beyond the limits of the open pit, into other sites of mineralization developed along strike. These projections are essentially un-tested.

The two highest priority target areas are on the projections of the Gold Bar feeder structure, as follows:

- To the northwest, the nearest holes are shallow (~350 ft), and are all vertical. The spacing of drill holes here needs to be tightened-up to a nominal 80 ft, equilateral (offset) grid, and should be angled.
- To the southwest along strike, the nearest drilling is shallow (~350 ft) and are vertical. The spacing of drill holes needs to be tightened-up to a nominal 80 ft, equilateral (offset) grid, and angled toward the west to intersect the NNW-trending ore-controlling structure at high-angle.

In MRDI's opinion the Gold Bar Extension targets offer the best opportunity for discovery of additional resources in the very near-term. These are judged to be very high priority geologically, and also are in close proximity to the existing mill.

Tailings Pond

The Tailings Pond prospect is supported by limited drilling which has verified the existence of a sub-surface block of carbonate rocks, which are weakly mineralized. More drilling is needed here, but which may impose upon the present position of the tailings pond.

Gold Bar Structural Geology and Blast Hole Data

The Gold Bar open pit has not been adequately mapped, and this should be done to provide important information on the ore-controls. There is a great deal of faulting exposed in the walls of the pit, and mapping could be easily and quickly done to collect and compile this data. This mapping data should then be integrated with compiled blast hole assays for a few key benches to better relate the mapped structure with the mined grades. The blast holes provide useful close-spaced information of grade continuity and reveal trends to mineralization. This knowledge could be critical in formulating a coherent picture of the ore-controls, specifically with respect to which set of structures are most closely tied to gold.

2.1.2 Satellite Sub-district

In the Satellite sub-district extensive exposures of favorable carbonate host rocks have provided a number of discoveries. The potential for the discovery of additional resources in the Satellite sub-district is judged by MRDI to be high, and there is much available data from which existing targets can be refined and prioritized, and possibly new targets recognized. However, the existing discoveries have been of limited size and are all structurally complex (a character shared with all Gold Bar district deposits) which increases opportunity for ore-loss/dilution-gain, and are further complicated by highly variable and complex metallurgical recoveries.

The walls of the Gold Canyon open pit (idled) contains abundant thick intercepts of above average-grade material which was left behind during mining. This is particularly true in the walls on the eastern portion of the pit, where the ENE-trending feeder-structure for this mineralization exits the pit walls and trends toward the important Northwest Ridge Prospect. Reportedly, the high-grade material in the east wall of the Gold Canyon pit is (in places) metallurgically difficult, thus this was not mined. It is MRDI's opinion that drilling along the walls of the pit is at too wide spacing, insufficient in number, and is not angled to cross the feeder structure, and therefore is overall insufficient to determine the position of pit walls. Also, the metallurgical data, as presented on the sections, leave question on the representativeness of the metallurgical determinations. This should be reviewed.

Also, MRDI believes that the following targets within the Satellite area offer the greatest potential for success: Northwest Gold Ridge, South French Trail, and Cabin Creek. The remainder of the targets offer additional potential, but based upon the available data appear to rank below these.

2.1.3 Regional Geological Setting

Structure

The evidence in hand suggests a structural hypothesis involving regional deformation of Oligocene age in a field of horizontal NNE-directed compression with horizontal extension at right angles to the NNE axis. Various structures developed including strike-slip faults, thrust to high-angle reverse

the Gold Bar district detailing the type and sequence of work needing to be done, while working with the Atlas staff to improve the routine recording of the needed information.

Exploration

Because feeder-faults all dip vertically (NNW- and ENE-trends) and appear to be largely of post-tilting age, drilling for deep targets may be oriented vertically except for instances where it is desired to drill across a possible feeder structure or intersection. The high-priority plan for drilling along strike from the Gold Bar pit is well-conceived, as is the plan to explore along strike from the Tailings Pond.

The Satellite area pits are oriented along WNW'erly trends, apparently controlled by feeder-arch intersections. The rocks in the Gold Bar pit are arched in the same trend. Therefore, projected feeder trend intersections with the Gold Bar trend extension to the east under cover may constitute attractive drill targets. Geophysics surveys designed to study basin-fill depths over the Gold Bar trend would be a logical first step.

Secondary targets are intersections in the Bartine Member below the Goldstone and Gold Canyon pits, as the Fenne report noted.

Recommended structural mapping program

Fracture-control of access for, and migration of mineralizing solutions and fracture-offset of mineralized rocks are important aspects of the present day a distribution of ore bodies. These structural matters have not been dealt with in such detail as have stratigraphic features, also important of course. Knowledge of the type of fracture and its orientation are important in mapping, construction of cross-sections and in the design of drill programs. Attitudes of mapped faults can in many instances be calculated from topographic relations, and Atlas has not done this systematically.

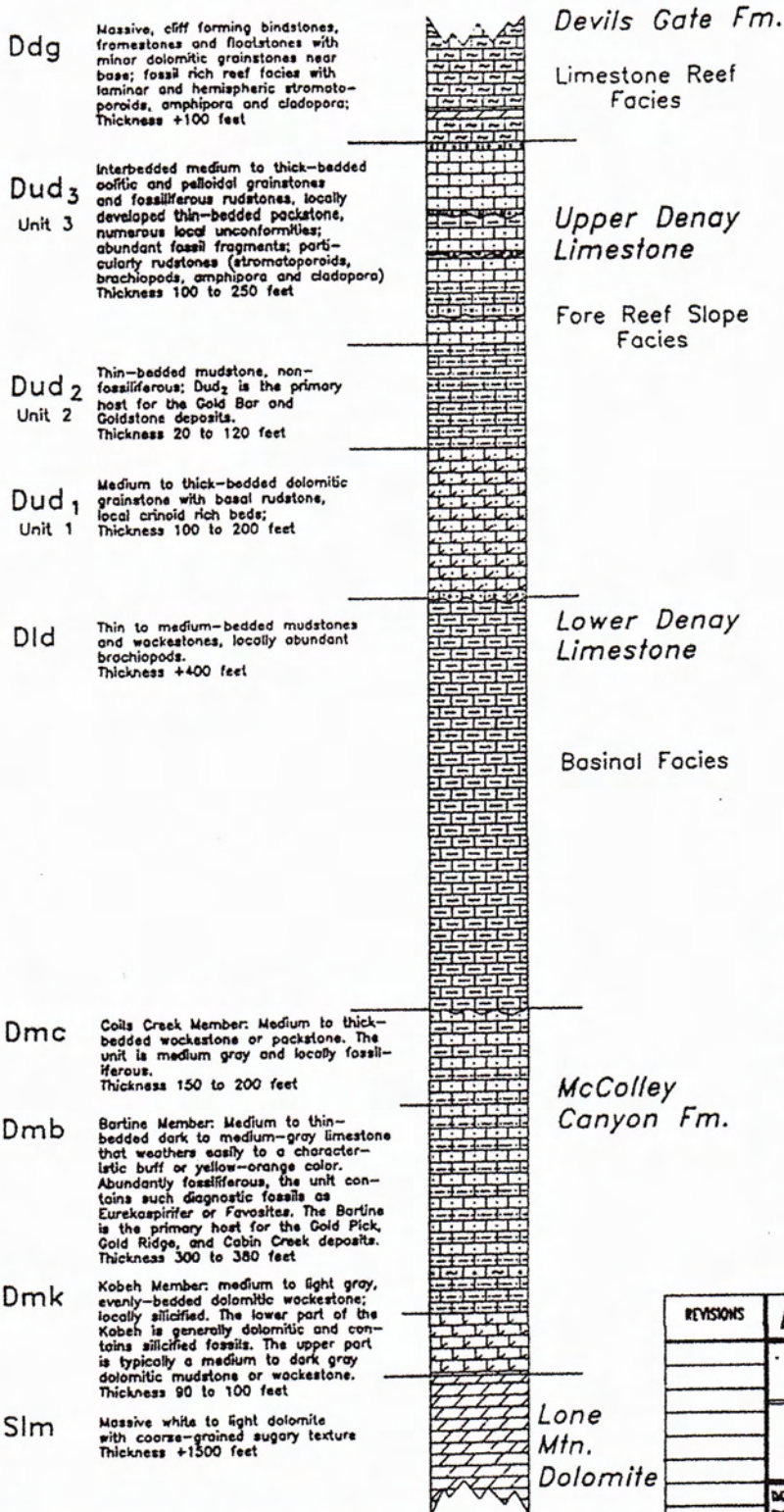
Part of drill targeting depends on determining slip-line orientation in fractures during mineralization, and the resulting ore distribution. Slip-line determination in turn depends on detailed mapping and careful attention to fracture features including slickenlines, grooving, shear steps, drag folds, Riedel shears, extension fractures (and alteration/mineralization in them) as well as possible overprinting of different generations of such features, all combined with structural geometry. Knowledge of the type of fault [*e.g.*, strike-slip (dextral or sinistral), normal or high-angle reverse, thrust or low-angle normal] is critical to accurate cross-section preparation and therefore to good ore search. So far as possible, then, such matters should be involved in the ore-search programs.

2.2.4 Geophysics

- Gravity: In total, several hundred gravity stations are available in the Public Domain for the area of interest around Gold Bar, and these should be compiled and integrated

GOLD BAR CLAIM BLOCK

Stratigraphic Section - Lower Plate Carbonate Rocks



- DOLOMITIC LIMESTONE
- DOLOMITE
- FRAMESTONE, BINDSTONE and BAFFLESTONE
- RUDSTONE
- GRAINSTONE
- OOLITIC GRAINSTONE
- PACKSTONE
- WACKESTONE and MUDSTONE

REVISIONS	Atlas Precious Metals, Inc.
	GOLD BAR CLAIM BLOCK
	Stratigraphic Section
	Figure 3.3
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Goldstone Area

Strikes and dips on bedding and faults were measured from Atlas's maps of the Goldstone area. Faults and related fractures were again separated into three categories according to shallow, intermediate, and steep dips. A random sample of 50 attitudes from the bedding orientations was studied in pi and beta diagrams. From that analysis and from the map patterns, it was found that the rocks are deformed in a gentle upright arch that plunges 25° toward N25E; few effects of the easterly-trending arching are present in the compiled data. The reason for the trend difference is not known.

The steep faults were studied in pi and beta diagrams. From that analysis, two moderately diffuse clusters emerged (see Appendix B, Figure 10), one at approximately N15W and the other at about N45E. The northeasterly-trending set are probably extension fractures, and the other set a single, dextral-shear set. The conjugate shear set does not appear to have developed.

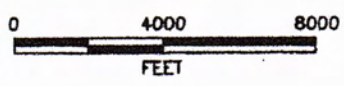
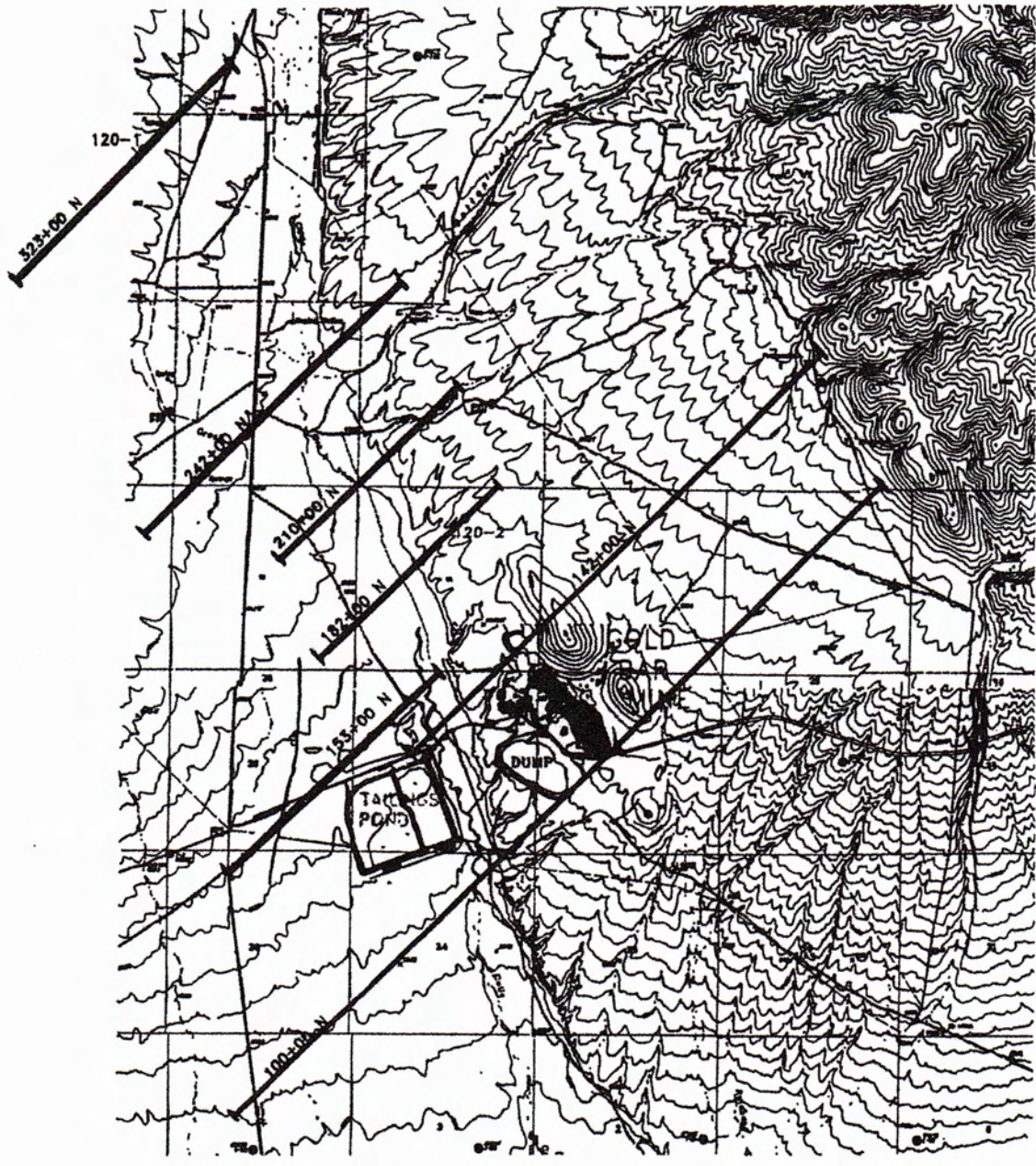
The intermediate faults were studied in pi and beta diagrams. From that analysis, one dominant, somewhat diffuse set emerged, oriented near N15E, 60NW (see Appendix B, Figure 11). This set appears to comprise late-stage normal faults.

Compiling the shallow faults (see Appendix B, Figure 12) reveals that a single set dominates the pattern, oriented near N15W, 35NE. If these are thrust faults of syn-mineral age, they would have formed during second-order strain related to sinistral strike-slip faults that are not exposed, oriented in ENE.

Gold Canyon Area

Strikes and dips on bedding were measured from Atlas's maps of the Gold Canyon area. Two sets of bedding attitudes exist, reflecting mild plunge reversals along the fold trend. Fault attitudes are virtually non-existent, but the map patterns suggest dominant northeast-trending faults of steep dip.

A random sample of 46 attitudes from the principal bedding orientations was studied in pi and beta diagrams. From that analysis and from the map patterns, it was found that the rocks are deformed in a gentle upright arch that plunges 8° toward S84E. This structure forms about 80 percent of the total folded structure; the beta analysis shows that the folds are of cylindrical type. The remaining part of the structure consists of folds that plunge about 8 degrees toward N84W. This reversal of plunge is perhaps caused by mild cross-arching like that observed at Goldstone.



Atlas Precious Metals Inc.	
GOLD BAR PEDIMENT Figure 4.1	
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Presently, Atlas has a geochemical database which comprises soil samples collected at claim corners (presenting an irregular grid) covering the area. For these samples, the geochemical data includes Au plus three of four associated indicator trace-elements. Geological mapping is limited to early reconnaissance-level data collection, and is reportedly of variable quality.

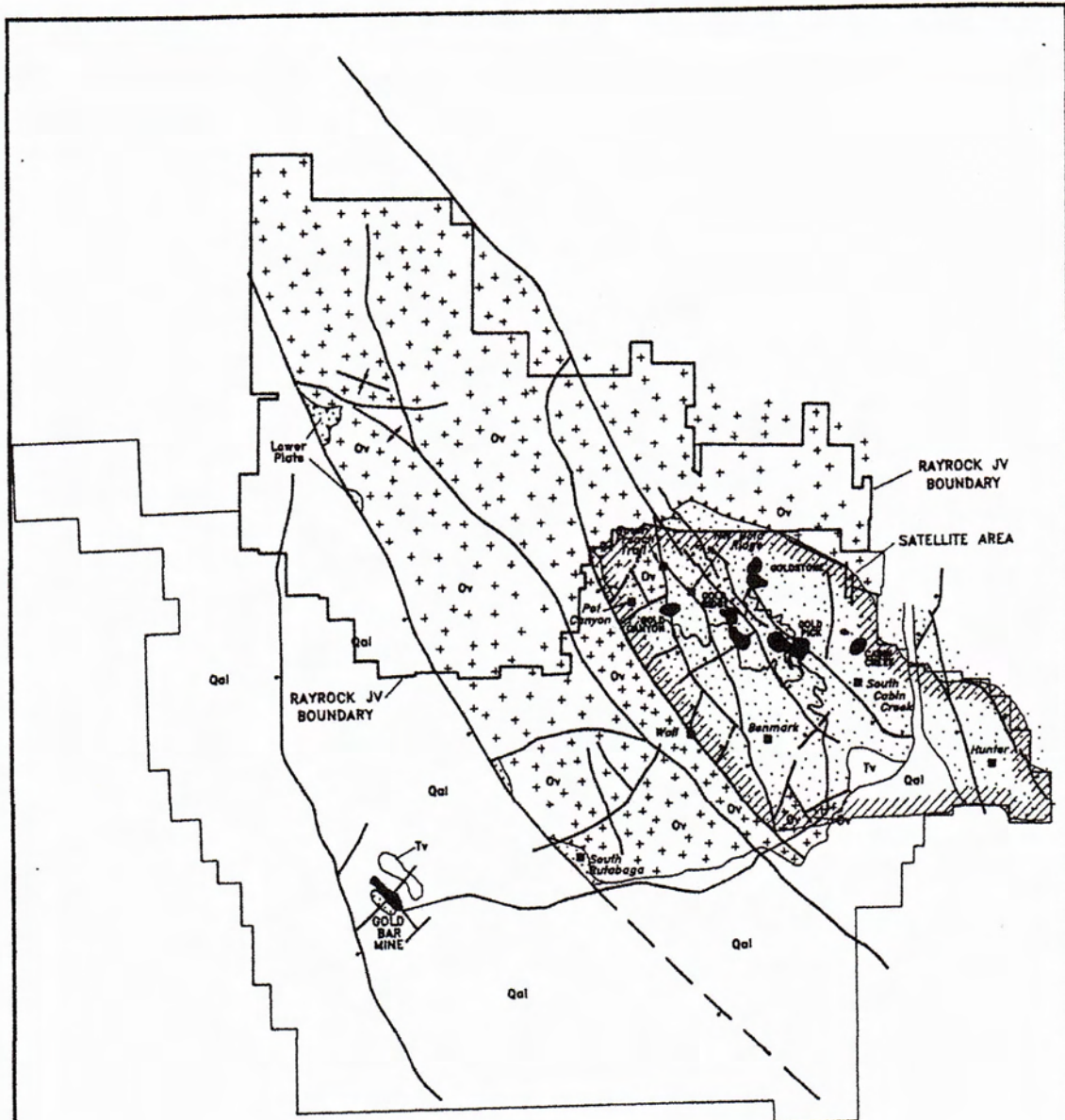
MRDI believes that in-light of the other target opportunities presently available to Atlas, the Upper-plate Corridor provides targets of low- to moderate-priority. However, MRDI recommends that Atlas compile the existing claim-corner soil geochemical data, and contemplate more complete or in-fill soil coverage on a regular grid on anomalous areas and/or throughout the region. Atlas is considering a stream-sediment sampling program which has merits, but MRDI believes an orientation program should first be done over non-disturbed portions of the Tonkin Springs district to validate this approach. The Vinini stratigraphy needs to be deciphered, if possible (see Section 4.3), particularly with respect to the occurrence of intercalated Tonkin-like receptive limestone (and other) facies. Reportedly, favorable facies (Webb ?) may have been deposited and presently exist between the upper- and lower-plates in limited areas. This should be investigated, and its implication on Gold Bar district exploration evaluated.

5.5 SATELLITE SUB-DISTRICT AREA

The Satellite sub-district (Figure 5.7) comprises an area of complexly faulted exposures of lower-plate carbonate rocks including the Nevada Formation and stratigraphically up through the Devils Gate Limestone. Mapping by the U.S. Geological survey (Murphy, et al, 1978) reveals the region to be characterized by a braided, "horse tail" pattern of prominent NNW-trending high-angle (RL strike-slip) faults, which juxtapose the lower-plate units against themselves, and against upper-plate rocks as well. This large area of exposure of lower-plate rocks, in aggregate, forms a fenster, or window through upper-plate rocks which is severely broken-up, but which mapping suggests once formed a broad, west-northwest-trending arch, or dome. The high-angle faulting separates elongate north-south structural blocks that have a consistent pattern of east-dipping, repeated stratigraphic section. It is within these fault blocks where the Satellite deposits have been discovered and mined.

The Satellite sub-district is bounded by NNW-trending faults. The western-most of the striated pattern of faults projects northward into the Tonkin Springs district, aligning with a possible east-bounding range-front fault there, and this may implicate exploration concepts in the Satellite sub-district. The eastern-most "bounding" of the faults is less distinct, but forms the topographic feature along Roberts Creek, and which separates this area from the extreme interior region of the Roberts Mountains.

There are a number of prospective target areas recognized by Atlas within the Satellite area, and more are likely to be found through continued reconnaissance. The targets which have been explored, to varying degrees, by Atlas, will be discussed here in alphabetical order, an order which does not relate to their MRDI judged priority or ranking.



EXPLANATION

- Tertiary Volcanic Rocks and Pediment
- Upper Plate Rocks
- Lower Plate Rocks



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12/8/94 PKF	GOLD BAR CLAIM BLOCK Satellite Area Exploration
	Figure 5.7
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5.5.1 Benchmark

The Benchmark target area (Figures 5.7 and 5.8) comprises outcrops of Devils Gate Limestones and klippe (thrust slabs) of Vinini. Alteration and silicification are noted along the Devils Gate - Vinini thrust contact, and jasperoids are developed along high-angle structures cutting the Devils Gate. Prospect pits are present throughout the area, and soil sampling has returned anomalous geochemistry from the areas of noted silicification. The targets pursued by Atlas include the thrust contact, and the Denay limestone believed to underlie the Devils Gate.

This target has higher-than-typical gold grades from samples of the Devils Gate, which suggests that a significant occurrence may be present within the favorable facies of the underlying Denay. This target concept is not yet validated, but could be by a series of 300 to 400 ft, angled drill holes which probe both for the target facies, and test the high-angle feeder structures. MRDI judges this target to be important, because it is situated well south of the remainder of the Satellite area prospects, but it is low priority.

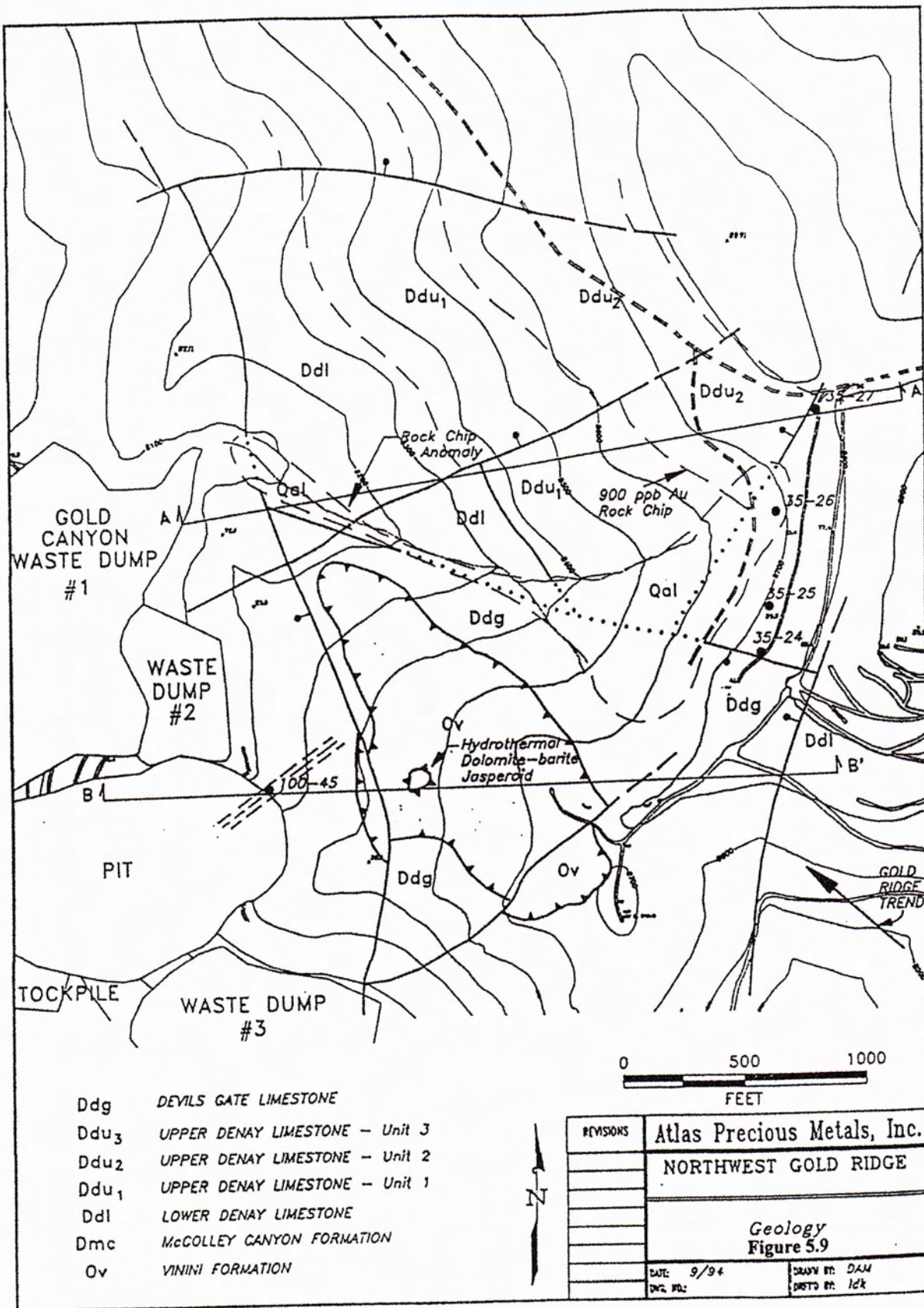
5.5.2 Northwest Gold Ridge

The Northwest Gold Ridge target (Figures 5.7 and 5.9) comprises a concept-test developed on the postulated intersection of the important ENE-trending Gold Canyon feeder-structure, with the NNW-trending feeder projected from Gold Ridge. In the target area, thick soils blind most of the geology, but float samples of jasperoid return anomalous gold and associated trace-element geochemistry. The geology, where mapped, consists of the Dud₁, Dud₂ and the Lower Denay. Atlas's target here is both the Dud₂ and the Bartine Member, postulated at shallow depth.

From MRDI's review of the target concept, the ENE-projection of the important Gold Canyon feeder-structure is of paramount importance here, and outweighs Atlas's postulated intersection thesis, as the projection of the NNW structure into this area from Gold Ridge appears tenuous (there may be another NNW-trending structure of consequence here). The ENE feeder-structure at Gold Canyon controlled all ore there, is steeply dipping to the north, and needs to be tested over its entire projected length by drill holes oriented southward at high-angle. In fact, from review of the Gold Canyon cross sections, it appears that the pod of mineralization localized along the ENE-trending feeder-structure is open-ended to the east, contiguous with this target. MRDI judges this to be a very important target area, and high-priority.

5.5.3 Pot Canyon

The Pot Canyon target (Figures 5.7 and 5.10) comprises favorable lower-plate Nevada (Dud₂ and Dud₃) facies which are mineralized along prominent ENE-trending and NE-trending faults. Stratigraphically, the Dud₃, which has a facies very similar to the Dud₂, is atypically thick here, or the Dud₂ is unusually thick, and the Dud₃, thin. The mineralization is interpreted to be controlled by the intersection of the Dud₃/Dud₂ contact, with the NE-trending fault set (which also breaches the fold). Soil geochemistry over the target is subtle, with gold anomalies only on the order of 20 ppb.



A total of 40 drill holes (3 by Atlas) provides a polygonal estimate computed by Atlas for a geological resource of 1.2 Mst grading 0.024 oz/st Au (27,850 ounces).

The prospect provides a structural geological setting very analogous to the Cabin Creek prospect. The map pattern of the geology reveals a "jostled" look not reflected in offsets of bedding contacts, suggesting that low-angle faulting may have played a role in ore-control, particularly internal to the ore-envelope. Atlas's exploration model was biased by a focus on stratabound style to mineralization, which may not be the complete story. Angled drilling is needed oriented to the south to cross-cut the important ENE- and NE-trending structures (vis a vis Cabin Creek). MRDI judges this target of moderate priority, but notes that tonnages are likely to remain limited.

5.5.4 South French Trail

The South French Trail target (Figures 5.7 and 5.11) lies at the postulated intersection of the prominent NNW-trending high-angle fault trending out of Gold Canyon, with an ENE-trending fault projected from the Pot Canyon prospect. A coherent gold anomaly is revealed in soil geochemical data, which coincides with the structural intersection mapped at surface. This anomaly dies to the west where the favorable stratigraphy (and the ENE-trending fault ?) appear covered by Vinini. Drilling has thus far encountered mineralized Dud_1 and Dud_2 associated with zones of decalcification and some silicification.

The available geological information suggests that mineralization is developed dominantly within Dud_2 in proximity to the NNW-trending feeder-structure. However, all drilling has been vertical, which may be limiting the correctness of geological interpretation on the ore controls. MRDI recommends that the target be re-drilled using angled holes oriented to crosscut the NNW-trending feeder at high angle. In addition, angled drilling also needs to be directed to test the strike-extent of the important ENE-trending cross-fault, along which the soil geochemical anomaly is elongated. MRDI judges this target to be of moderate priority, which may be immediately improved with the new information provided by the angled drilling.

5.5.5 Wall

The Wall target (Figures 5.7 and 5.12) concept integrates the favorable host rock facies of the Dud_2 unit with high-angle feeder-faults along NNW-trends, and emphasizes their intersection with faults on ENE-trends. The prominent NNW-trending "Wall" fault (RL strike-slip) in the target area creates the Wall cliff geomorphic feature, which hosts a well developed jasperoid and juxtaposes Vinini against Devils Gate (Ddg) rocks. The exposures of Ddg have been drilled to test for the presence of the target Dud_2 at shallow depth beneath the Ddg.

ATLAS has focussed work within an area slightly to the south of the Wall jasperoid, and believes more success would be realized with improved mapping in certain portions of the prospect. To date, the limited drilling results generally validate the target concept; however, ENE-trending cross-faulting has not been located within the area of focus, and the assays of drill samples are

