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PRELIMINARY EVALUATION OF THE VULTURE MINE PLACER POTENTIAL MARICOPA COUNTY, ARIZONA

by

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Date: January 23, 1985

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1. INTRODUCTION

This author was retained by DMEA, headquartered in Scottsdale, Arizona, on a fee-paid consulting retainer basis to investigate the placer potential of the Vulture Mine area. The object of this preliminary testing program was to determine the presence of placer gold in these alluvials and whether economic concentrations could exist adjacent to the Vulture Mine. This field investigation encompassed the period of December 3rd to December 20th 1984.

The Vulture Mine is located approximately 16 miles southwest from Wickenberg. The property is easily accessed by a well graded and partially paved road from Wickenberg located in the extreme northern portion of Maricopa County, Arizona. Vegetation in the area consists of cactus and assorted desert brush which flourishes at this 200 foot elevation. Stream gulleys can contain water only after severe rain storms and consequently the Vulture Mine water is obtained form deep wells at a reported pumping rate of 75 gpm.

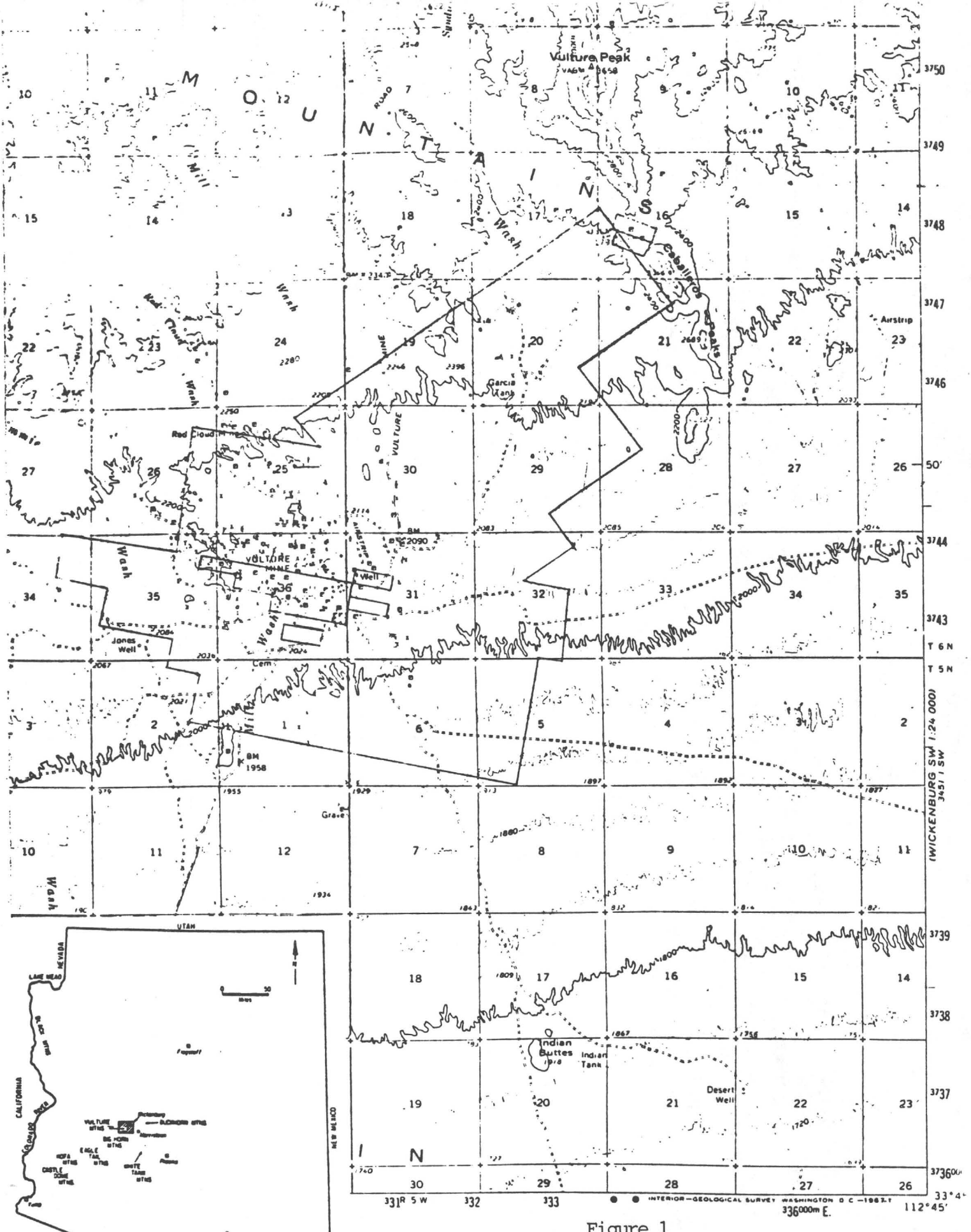


Figure 1
Location of Vulture Mine in SE portion. Vulture Mountain Quadrangle, Maricopa County, Arizona.

2. SAMPLING

Reconnaissance evaluation of a number of potential alluvial channels is best facilitated by excavating a sequence of sample points along strategically placed "fences." Hand excavated channels within back hoe trenches provides large volume geological samples for mechanical upgrading. The following described each phase of this operation.

2-1 Each "fence" of back hoe trench sites were selected after reviewing local geology, available maps and enlarged air photograph of the Vulture Mine area. A back hoe equipped with bucket rippers and capable of an effective excavating depth of 20 feet was used to provide samples at approximately 200 foot intervals along five (5) "fences" illustrated in Figures 3 through 7. Many trenches did not reach maximum depth penetration as either bedrock or dense caliche formation effectively halted practical excavation. Photograph 1 illustrates the excavator that was used on this project.

2-2 Hand excavated channels were cut the full depth or at selected intervals in strategic trenches. The typical cross sectional dimensions were 1.5 feet x 1.0 feet, however changes in this standard procedure were dictated by specific geological conditions. Channel lengths were also adjusted to geological criterion illustrated in mapped channel profiles located in Appendix I. Statistical summary of channel sample data as follows:

17 trenches sampled

7 sampled trenches reached bedrock

39 channels excavated

6.9 cubic feet average channel volume

20.3 feet maximum sampled depth

13.4 feet average sampled depth

PHOTOGRAPH 1

Excavator used in trench digging. Note twin ripper teeth on 7/8 cu yd bucket

PHOTOGRAPH 2

Sampling plant consisting of upper Denver Gold Saver and lower E-Z Panner for fines recovery

2-3 Excavated channel samples were weighed prior to mechanical processing. Individual sample data is located in Table I, with the following averages for the project:

849 pounds/sample

123.8 pounds/cu. ft. bulk density (assuming 0% moisture)

1.67 tons/cu. yd.

The processing plant utilized consisted of a two stage process (photograph 2). A "Denver Gold Saver" emulsified, classified at 5/16 inch and provided a "rougher" concentrate. The 5/16 inch tails from this unit were classified in an E-Z Panner at 20 mesh providing the "cleaner" concentrate. The E-Z Panner typically recovered virtually all the black sand and fine gold in each sample. The E-Z Panner was used initially as the primary recovery plant in samples 1-1-1 through 1-1-3 screening at 8 mesh.

Concentrate from both units were combined and hand panned producing an 85% black sand concentrate containing all the free gold. Rejects from this process were screened at 10 mesh producing the tails samples found in Table I. Black sand concentrates averaged 805.6 grams or approximately 4.18 Pounds/ton of the feed weight.

2-4 Visual gold grain counts were performed on each black sand concentrate prior to laboratory submittal. Three samples for each processed channel were submitted to Jacobs Assay Laboratory, Tucson for analysis. The black sand concentrate was submitted for amalgamation and subsequent fire assay processing with total gold reported in milligrams. Prior to amalgamation, all nuggets ($>$ 1.5 mm) were weighed individually with their weights located in Appendix II. Detailed amalgamation procedure is located in Appendix III. The concentrate residue was fire assayed using a two (2) assay ton sample. The tails samples were each analyzed using a

two (2) assay ton fire assay charge. Results are listed in Table 1.

Select five (5) foot interval samples from previously drilled exploration reverse circulation holes were hand panned and the resulting black sand concentrates submitted to Jacobs Assay Laboratory for total fire assaying. Analytical results, together with visual gold notations, are located in Table II.

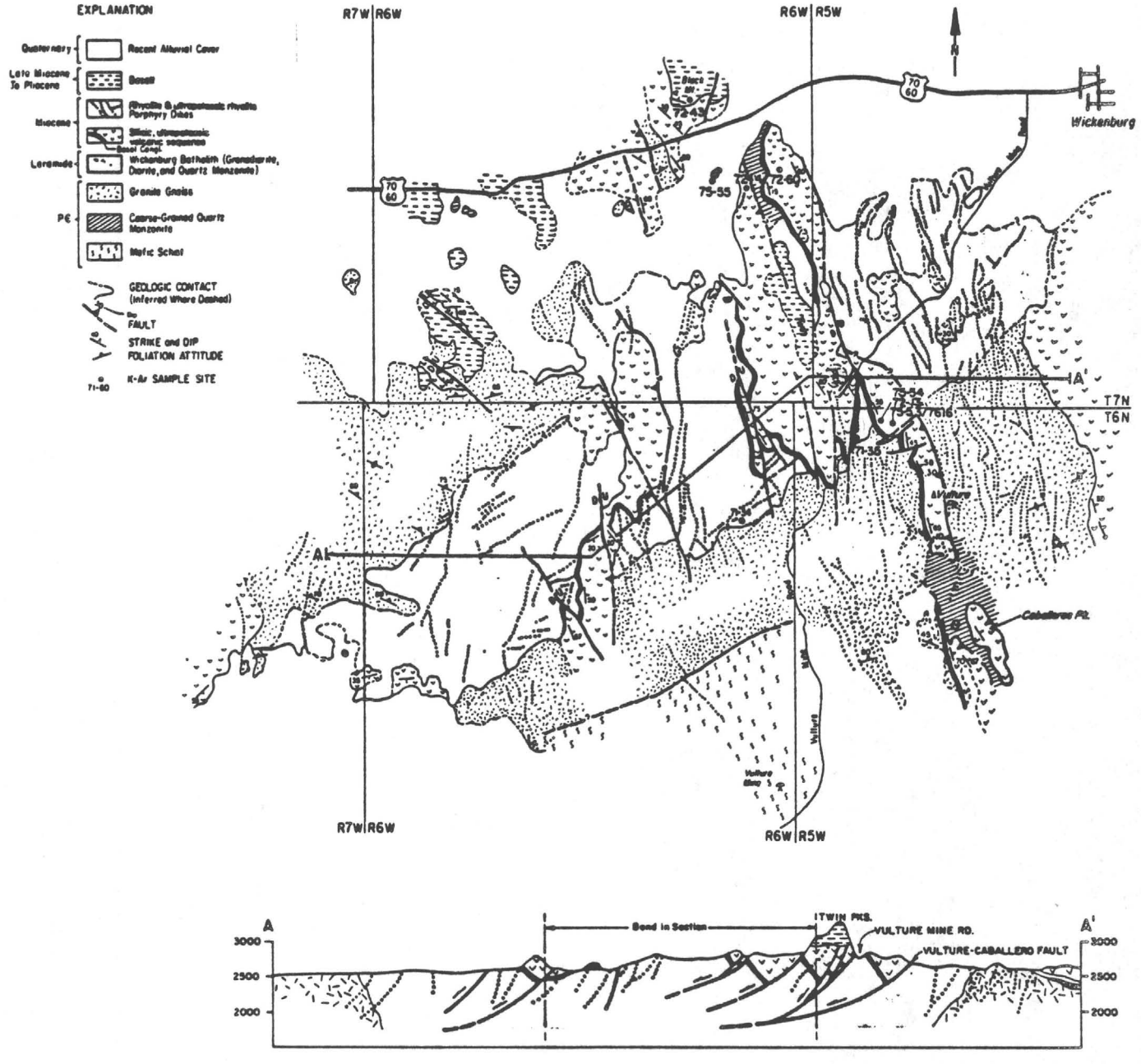


Figure 2
Generalized geologic map and cross section of the Vulture Mts. Precambrian rocks exhibit crude northeast pattern. Erosional unconformity exists below Miocene acid volcanics and Mio-Pliocene basalts. (After Rehrig, Shafigullah & Damon; 1980)

3. GEOLOGY

3-1 Regional bedrock geology has been mapped by a variety of individuals. The most recent by Rehrig, Shafigullah and Damon (Arizona Geol. Soc. Digest. Col. XII, 1980) is found in Figure 2. They have summarized the geology of the Vulture Mountain area as:

> "Geologic mapping and geochronologic studies in the Vulture Mountains near Wickenberg, Arizona, have lead to the recognition of a large, northeast-trending batholith of 68.4 m.y. age that intrudes complex gneissic and granitic rocks of probably Precambrian age. Overlying the denuded crystalline terrain is a sequence of late Oligocene to Miocene (26 to 16 m.y.) volcanic rocks (vitrophyres, ash-flow tuffs, welded tuffs, breccios, agglomerates and lava flows) that vary locally. ---------
> Overlying this volcanic sequence in angular unconformity is a thin section of basal conglomerate and basalt lava flows dated at 13.5 m.y."

Tertiary sedimentation commenced in the Eocene coinciding with the Laramide orogeny. The landscape became increasingly higher in relief producing ever increasing percentages of clastic sediments, including gravels deposited in tectonic basins. This ±30 m.y. sedimentation phase was terminated with the deposition of the Oligocene-Miocene acid volcanism. A second phase of clastic sedimentation ensured, which was subsequently covered by basic volcanism. Miocene and Pliocene sedimentation occurred within closed basins and produced essentially evaporite and carbonate sequences. Interbedded fine grained clastic sediments were deposited

adjacent to basin margins. The development of external drainage in the Pliocene greatly diminished evaporite-carbonate deposition which evolved into well-defined fluvial systems, without ponding, in the Pleistocene. It is believed that these established drainage systems prevailed to the Recent.

3-2 The above brief and generalized chronologic Tertiary cyclic tectonics, volcanism and sedimentation had a pronounced influence on the auriferous fluvial channels exposed during this current placer evaluation program. The well-developed regional southerly trending drainage system (Figure 1) in the Vulture Mountain area probably existed for a considerable geologic period.

Detailed geologic mapping in 1984 by Noranda Exploration (unpublished map and summary report) revealed a complex sequence of east-west trending north dipping meta-sediments and volcanics dislocated by major north-northwest and north-south trending fault zones (Talmadge and Schoolhouse Faults, respectively). These intersecting structures undoubtedly greatly influence the courses of the fluvial channels in the Vulture Mine area. In fact, the position of known placers greatly assisted in locating underground structures in the Vulture Mine (E&M. J. Vol. III No. 7, 1921).

Trench mapping during this placer evaluation-sampling program indicated general bedrock slopes to the south with coincident fluvial paleocurrent directions revealing gradients of 5 to 10 percent. Mapped east-west striking north dipping (110°31°) reverse faults within the fluvial sediments (Photograph 6) suggests that minor essentially bedding plane dislocations also influenced fluvial sedimentation.

Sedimentological evaluation of all fluvial sequences exposed in trenches suggest these channels occupy a relatively high profile position within the regional sedimentation pattern. Semi-angular clasts (rounding 3-5) appear locally derived and occur as moderately to well sorted and packed gravels in narrow high energy multiple sedimentation pulses. Individual channel width to depth ratios suggest a relative diminishing fluvial energy upward in these relatively unconsolidated clastic units. This correlates with the graded sequences seen in many locations. The grossly unsorted nature of the uppermost sediments suggests progressively less humid conditions later in the sedimentation pattern as reflected by the present arid climate.

The following detailed trench "fence" descriptions attempt to elaborate on local variances within the above generalized sedimentation pattern.

3-3 Southeastern Placers

This series of southwest-northwest trenches (Trenches 13, 1, 2 and 14) seen in Figure 3 represent mature fluvial systems typified by well-defined bedding outlining moderate energy systems deposited on irregular bedrock surfaces (Photographs 4, 5 and 6). Detailed channel sample mapping (Appendix I) well illustrates the transition from unsorted alluvium to broad low-moderate energy broad channel development to higher energy scour features near bedrock (Trenches 1, 2 and 14). Trench 13 represents a higher elevation or late phase system consisting of small sorted scour channels marginal to the main fluvial system in Trenches 1 and 2.

3-4 Southern Placers

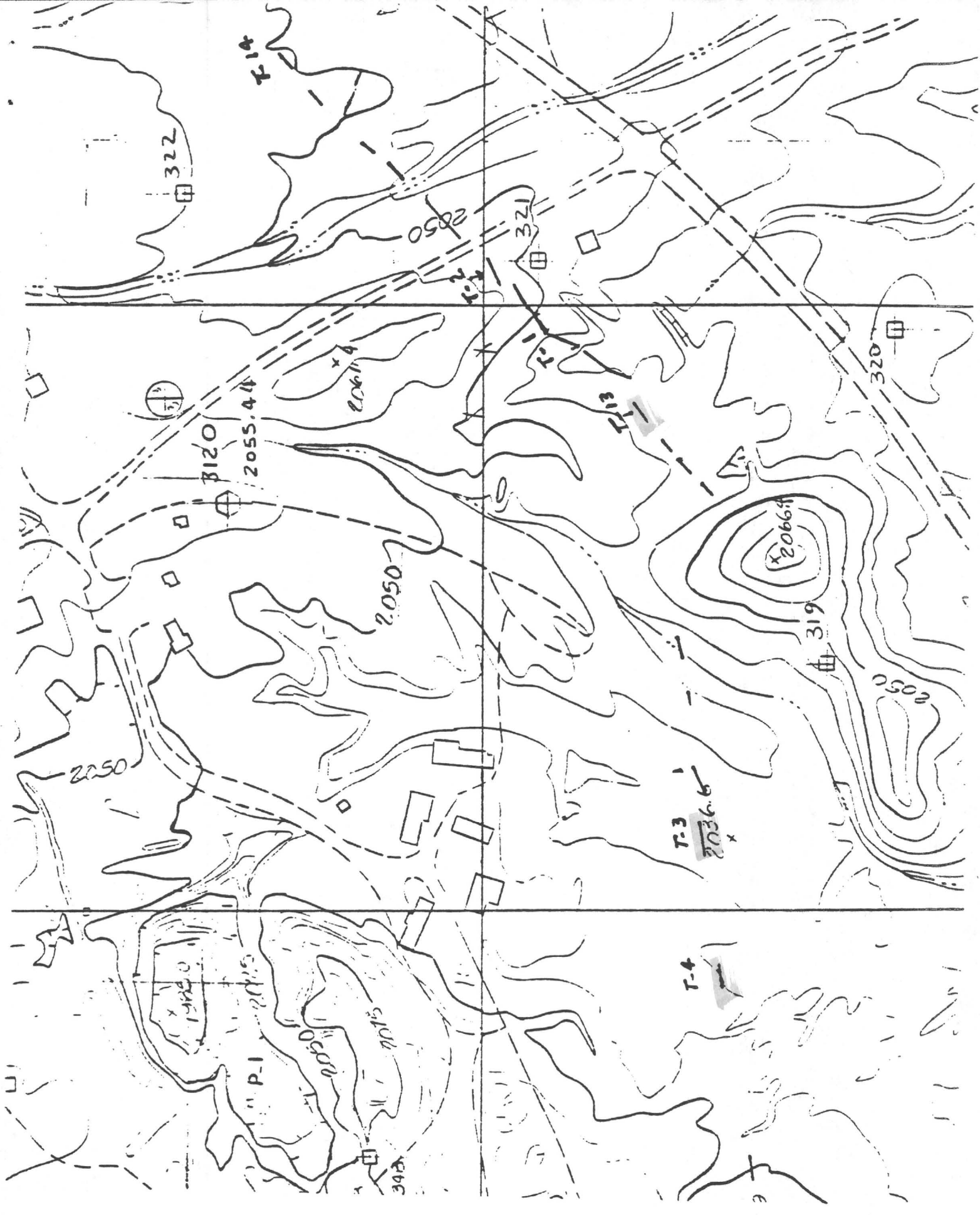


Figure 3
Vulture Mine Placer Project showing locations of sampled trenches in Southern and Southeastern placer areas.

PHOTOGRAPH 3

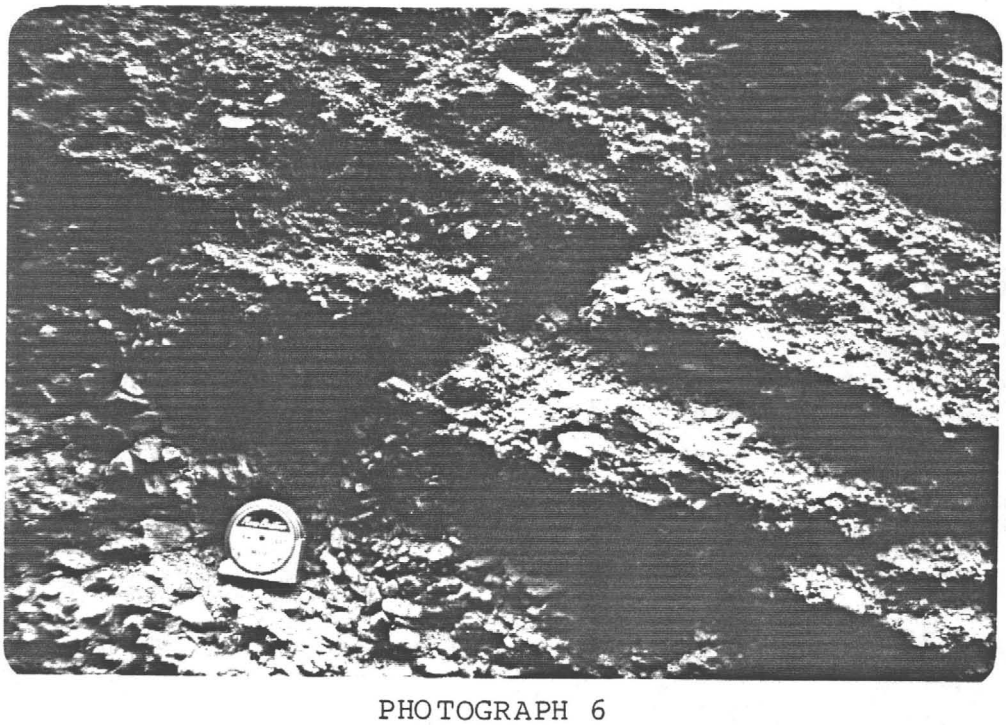
Careful attention to final clean-up in channels

PHOTOGRAPH 4

Bedrock pinnacle within fluvial sediments in Trench

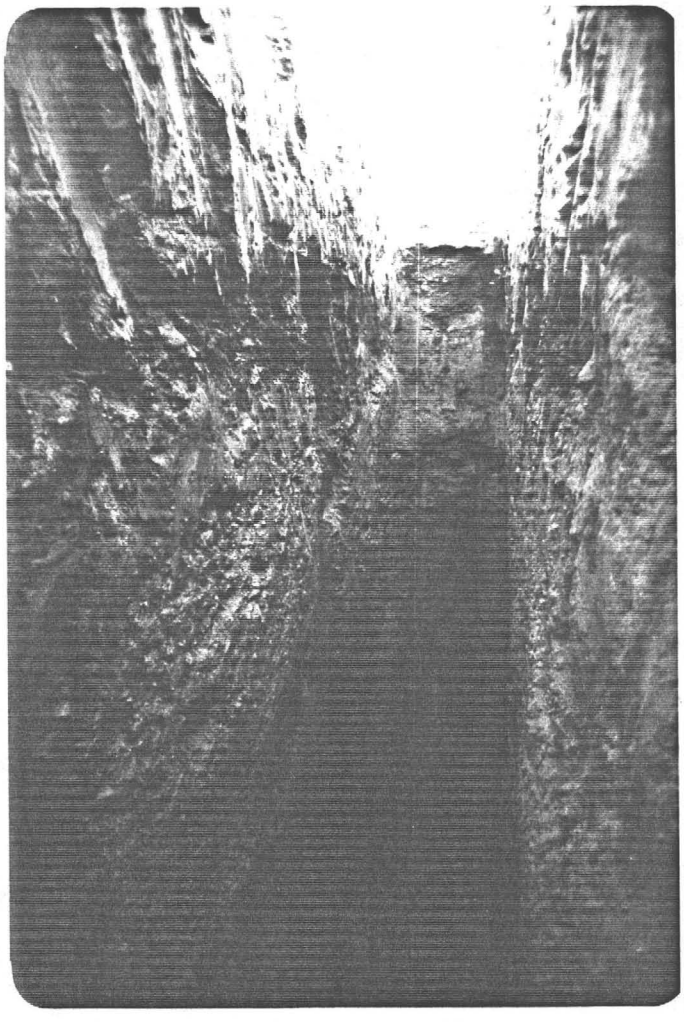
PHOTOGRAPH 5

Full wall channel in 20-foot trench. Yellow ribbons mark channel limits



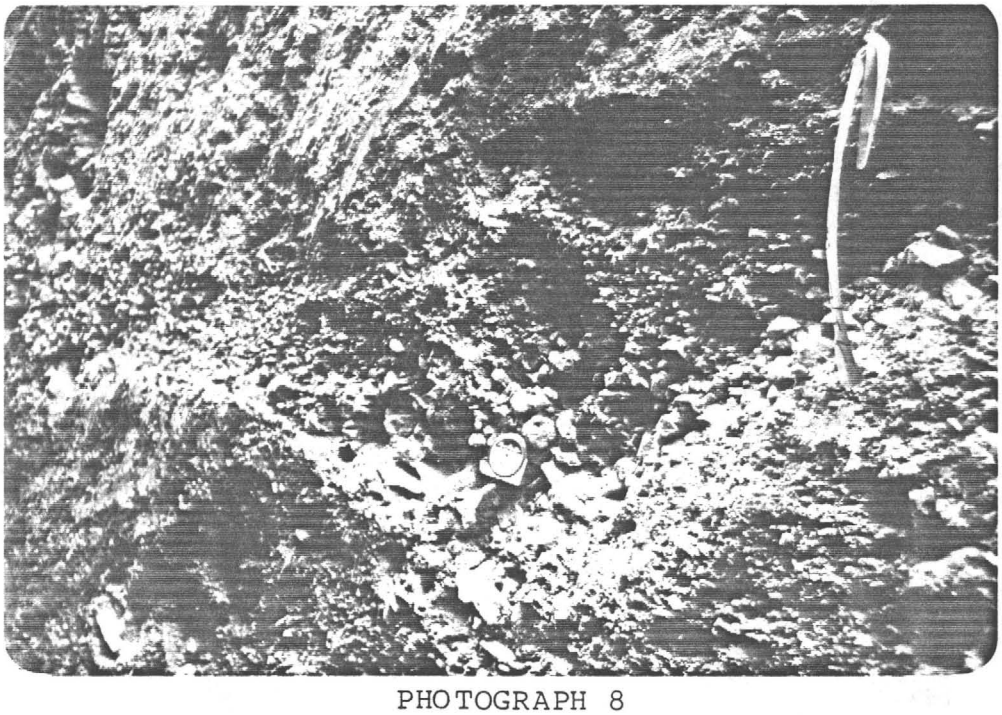
PHOTOGRAPH 6

Low angle small scale reverse faulting displacing bedded and sorted fluvial sediments in Trench 1



PHOTOGRAPH 7

Trench 4 illustrating yellow mine tailings overlying scour bedding with increasing conglomerate percentage downward



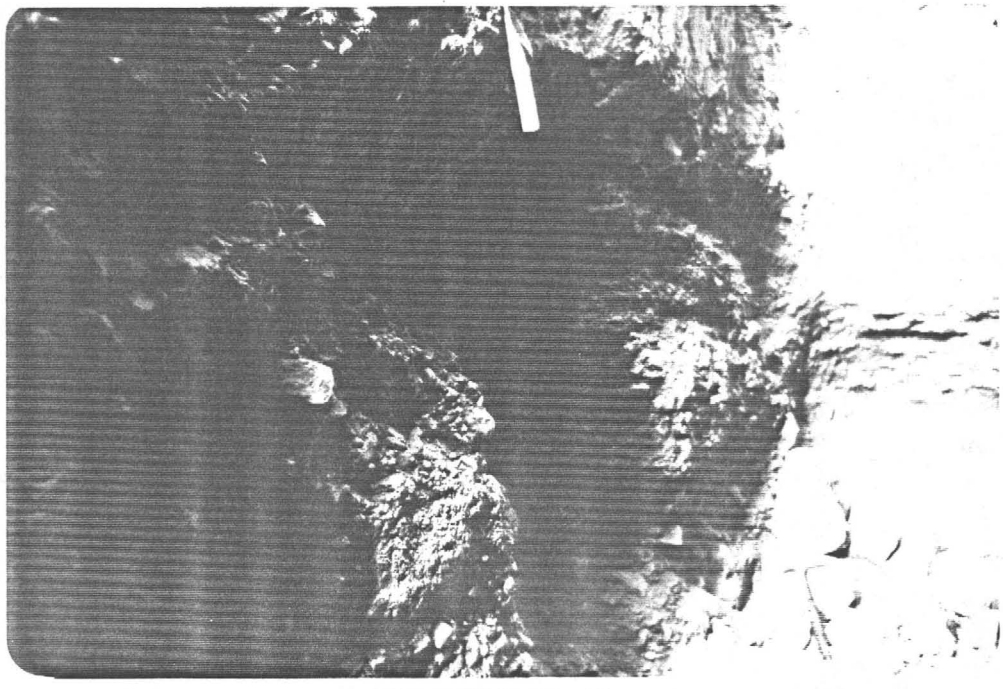
PHOTOGRAPH 8

High energy well sorted channel adjacent to sample 3-1-2

Figure 4
Vulture Mine Tailing Area showing tailings isopachs based on drill holes and proposed pre-tailings erosion surface channel axies

PHOTOGRAPH 9

Sample 3-1-2 illustrating moderately sorted and
and graded fluvial conglomerate overlying bedrock



PHOTOGRAPH 10

Base of Trench 7 illustrating semi-angular pebbles within
a small pebble-grit unconsolidated fluvial sequence

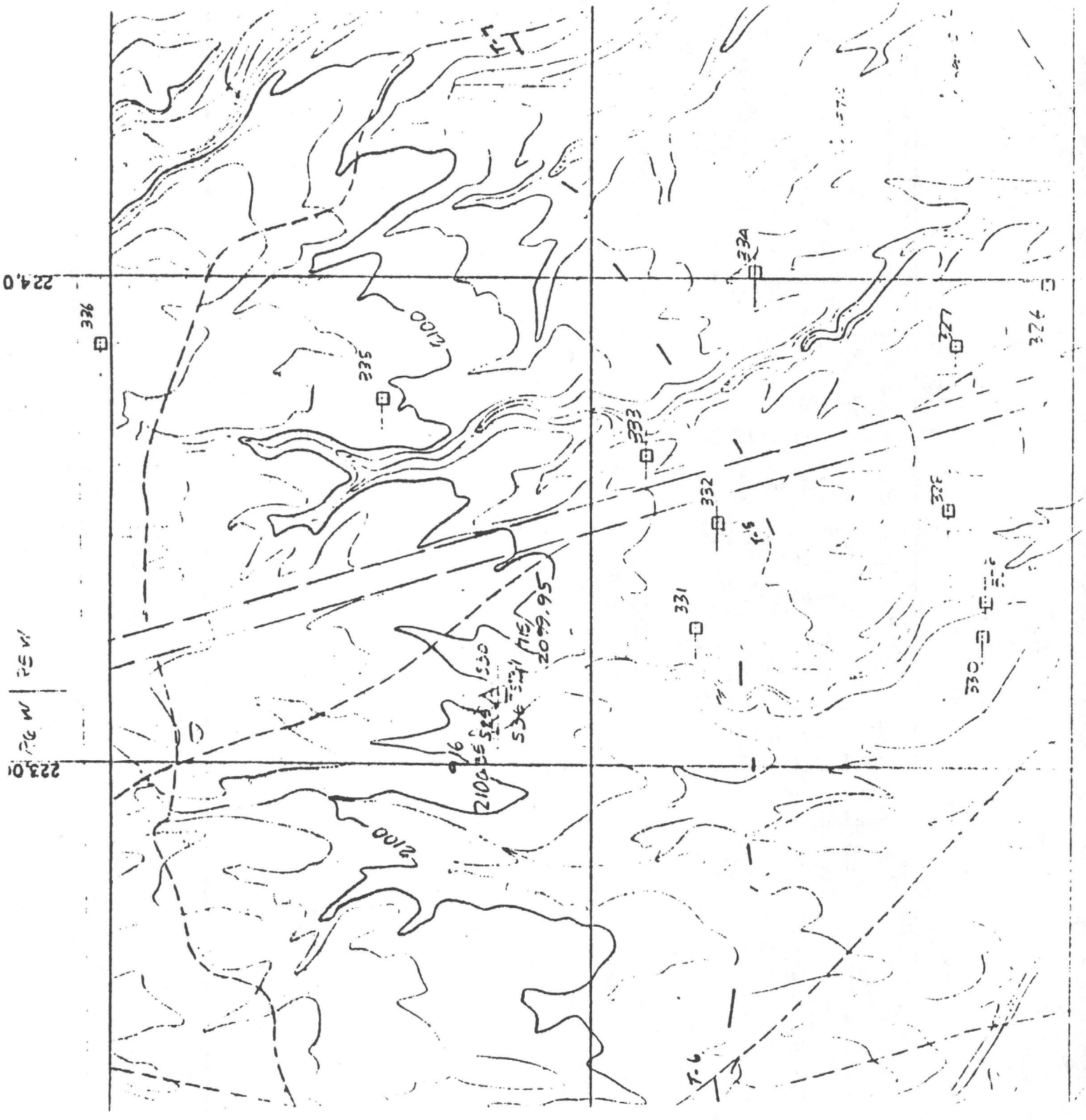


Figure 5
Vulture Mine-Placer Project showing sampled trenches in Eastern placer air strip area.

A series of east-west trenches underlying existing mine tailings reveal sequences of high energy fluvial activity partially exposed in Trenches 3 and 4 (Figure 3 and Appendix I). Graded bedding is very evident in this area with moderately rounded cobbles located close to bedrock as generally poorly sorted gravels (photographs 4 and 5). Well sorted and packed scour channels occur at various levels within the basal 50% of this sequence (photograph 7). Bedrock exposed in Trench 3 (Photograph 8) would indicate irregular scouring activity probably controlled by both bedrock lithology and structure.

Contouring overlying mine tailings from drill records (Figure 4) suggests a north-south and northwest-southeast erosion surface channel network centered on the Vulture Mine outcrop system. Angular quartz pebbles in the placer gravels indicate a very local source. Trench bottom bedrock exposures reveal a westward 13:1 bedrock slope from Trench 3 to Trench 4, suggesting the main drainage axis possibly correlates with a larger paleo drainage system as indicated in Figure 4.

3-5 Eastern Placer

A series of east-west trenches in the Air Strip area disclose relatively deep fluvial channels which must be deeply incised into bedrock as Trenches 5, 6, and 7 (Figure 5) failed to reach bedrock, although schistose bedrock is exposed in shallow flanking trenches. Graded bedding is definitely seen in Trenches 5 and 7 where multiple well-sorted and bedded clastic sediments become progressively coarser grained at depth. The 15:1 width to depth ratio for Trench 5 reveals a moderate fluvial energy system corresponding to a well-developed rhythmic bedded

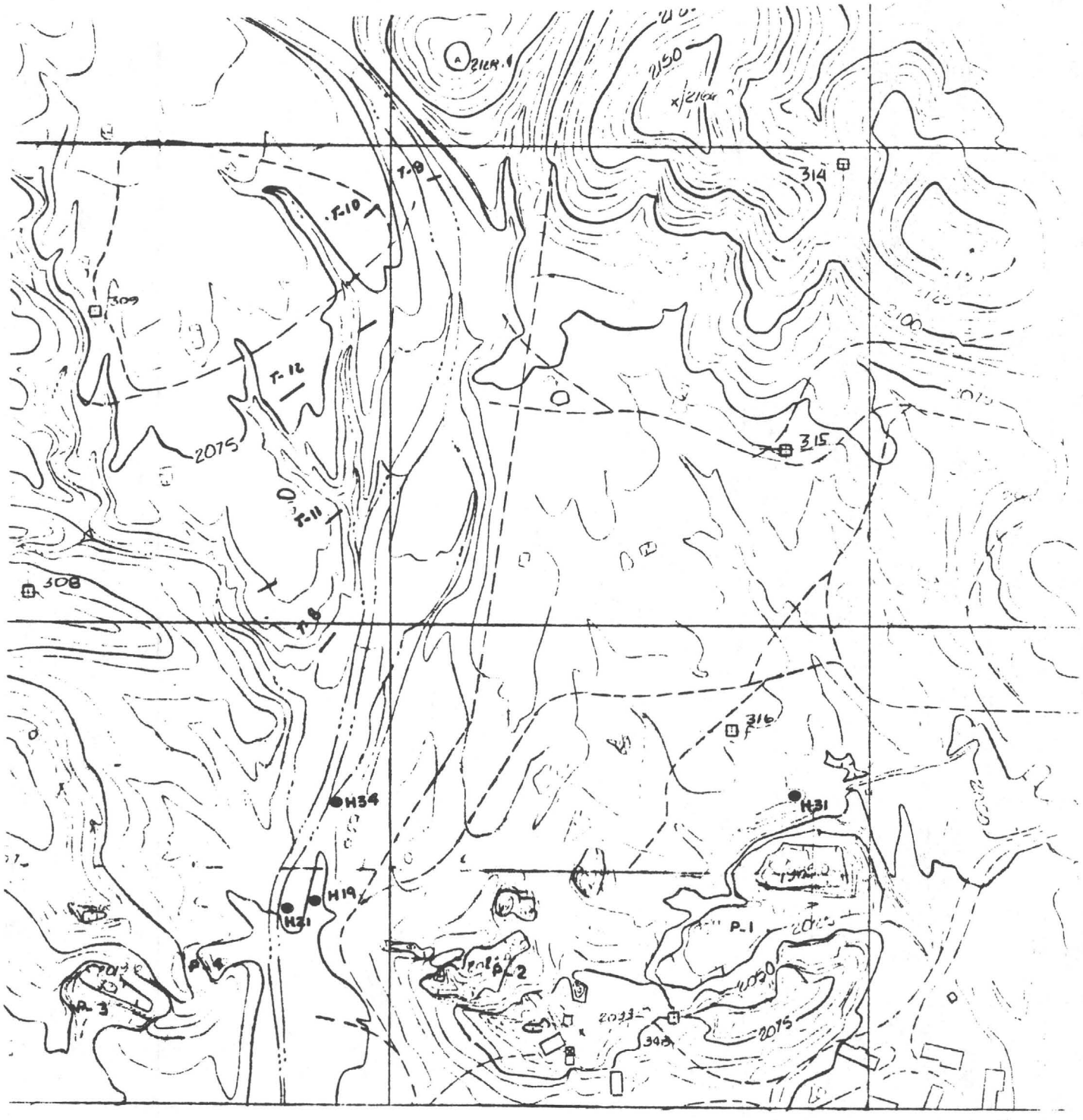
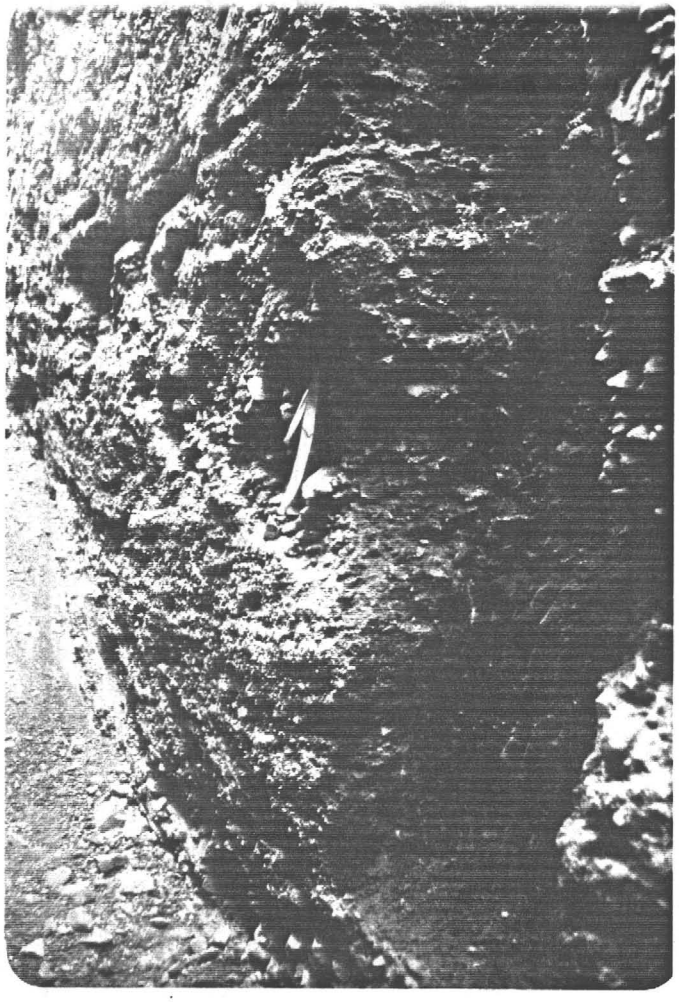


Figure 6
Vulture Mine Placer Project location of northern area sampled trenches and drill holes, T-9 sampled trench, .H34 sampled drill hole



PHOTOGRAPH 11

Sample 11-1-4 illustrating the upper well sorted fluvial channel overlying well bedded poorer sorted small pebble conglomerate

PHOTOGRAPH 12

Samples 12-1-2 and 12-1-3 illustrating graded moderate energy fluviate channel development

sedimentation pattern containing well-packed robust gravels at the bottom. A well-sorted fine grained sand overlies well-bedded and graded coarse fluvial gravels in Trench 7 (Appendix I and Photograph 10). The exposed alluvial section in Trench 6 suggests these low energy sediments occupy a relatively high level fluvial sequence relative to the more basal sections in Trenches 5 and 7.

3-6 Northern Placer

A total of five (5) trenches (Figure 6) were sampled in an area of broad but dissected alluvium north of the Vulture Mine. Four (4) of these excavations reached bedrock (Appendix I) and one (Trench 9 - not mapped) was cut in a gully containing active stream wash. All mapped trenches revealed progressively increasing fluvial sedimentation with depth reflected as graded bedding, increased sorting and packing. Relatively dense caliche was encountered cementing near surface rubble.

Mapping Trench 8 revealed a bedrock relief of at least two (2) feet overlain by a well-packed poorly sorted conglomerate containing metamorphic, igneous and conglomerate clasts. Trench 9 revealed a well-packed graded sequence with sub-rounded pebbles to 6 cms lying on a schistose bedrock. A similar coarse robust clastic sequence was evident on bedrock in Trench 12 (photograph 10). However, multiple scour channels containing small pebbles and grits were evident in the middle sections suggesting a change from relatively high energy robust fluvial action to overlying lower energy pulsating sedimentation. Although Trench 11 bottomed on hard caliche (false bedrock?), graded bedding with well-packed and sorted gravel lenses are very prevalent and suggest a modest energy

fluvial system (photograph 11).

3-7 Southwestern Placer

Trenching in this area was severely restricted by a thick layer of near surface hard caliche cemented cobble wash. Two trenches reached maximum practical excavation depth (Figure 7 and Appendix I) and will be discussed at length.

Trench 15 intersected multiple gravel horizons depicting pulsating fluvial sedimentation depositing rather thin pebble horizons followed by low energy weakly bedded pebbly sands. The igneous (dioritic) clasts are better rounded than the metamorphics probably reflecting durability factors rather than variable transport distance. Clast rounding is markedly better in the sampled portion than in the near-surface unsorted gravels.

The fluvial section exposed in Trench 16 contrasts greatly with Trench 15, as the clasts are nearly 100% porphyritic quartz diorite and more angular. A scattering of the greenish metamorphic clasts were seen in the excavation. The very uneven bedrock is essentially this same igneous rock, suggesting a very local source for this sediment. A relatively steep paleocurrent gradient (approximately 11%) coincides with the multiple narrow cut and fill high energy channel development.

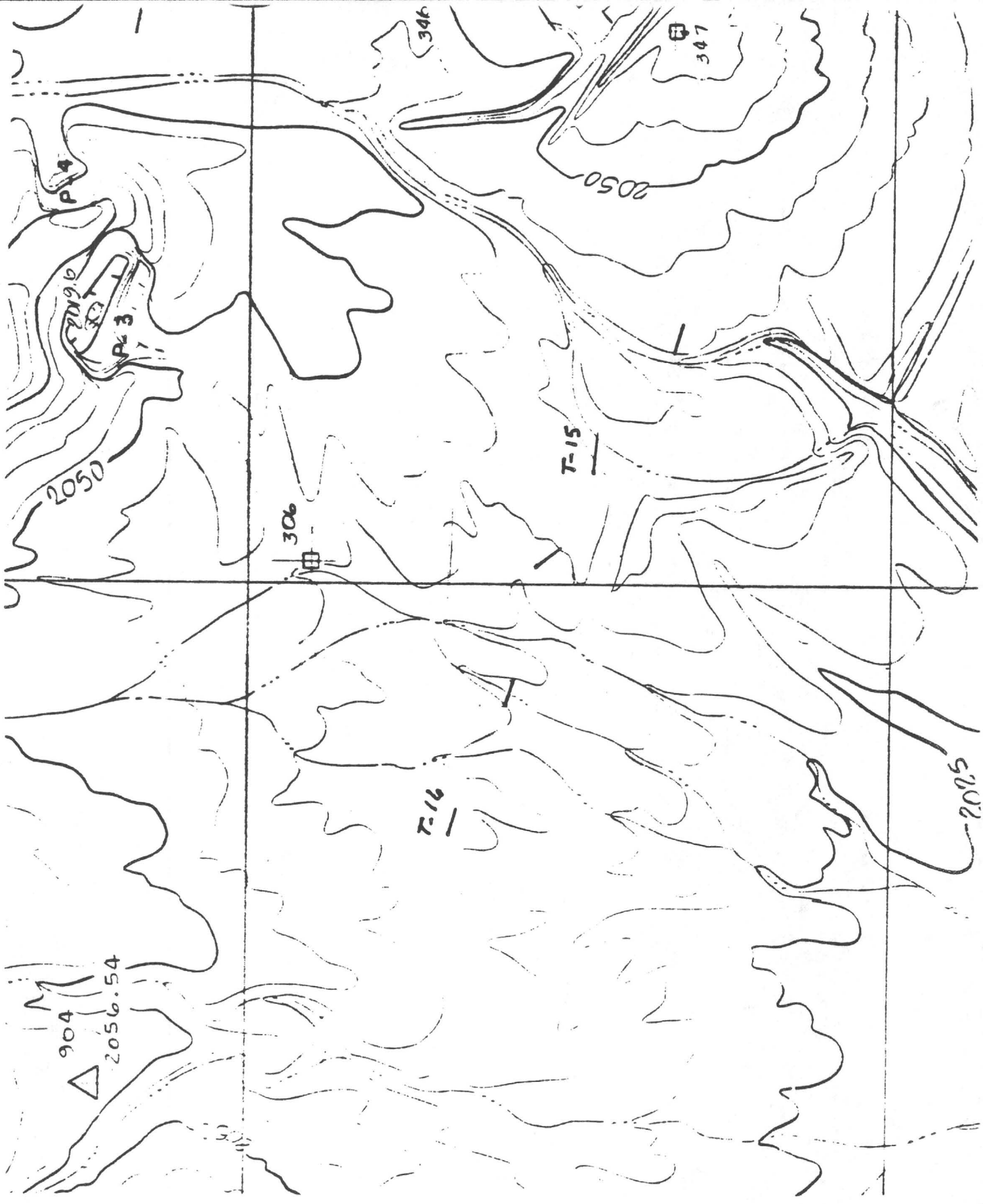


Figure 7
Vulture Mine Placer Project
Showing sampled trenches in southwest area.

VULTURE MINE PLACER SAMPLE DATA TABLE I

Sample No.	Depth Below Surface	Sample Wt. (lb.)	Sample Vol. (ft3)	Con. Wt. (g)	T. F. lb/cu.ft	Gold Nugget	Particle #1	Size Distribution #2	#3	Distribution Fines	Amalgamation Au mg.	Amalgamation Tails OPT	Plant Tails +10# Au	Plant Tails -10# Au	Placer Grade mg/cu.yd
1-1-1	1.5'-7.5'	909	12.00	927	75.75	----------	----------	----------	----------	----------	6.734	.005	.009	.001	15.15
1-1-2	7.5'-11.5'	730	8.00	673	91.25	----------	----------	----------	1	9	2.780	.007	.002	.002	9.38
1-1-3	11.5'-16.0'	1431	9.00	4635	159.00	----------	----------	----------	----------	14	13.140	.002	.001	.001	39.44
1-2-1	3.0'-7.5'	805	9.00	503	89.44	----------	----------	----------	----------	6	0.835	.010	.003	.002	2.51
1-2-2	7.5'-12.0'	718	8.00	399	89.75	----------	----------	----------	----------	11	3.210	.014	.002	.001	10.83
2-1-1	2.0'-6.5'	973	6.75	722	89.75	----------	----------	----------	----------	3	0.765	.002	.003	.002	3.86
2-1-2	6.5'-12.5'	1897	9.00	1126	144.15	----------	----------	2	----------	12	9.220	.004	.001	.002	27.66
3-1-1	6.0'-11.5'	1082	8.75	1643	123.66	----------	----------	----------	----------	3	1.990	.013	Tr	Tr	6.14
3-1-2	11.5'-16.5'	1069	6.50	553	164.46	2	1	15	----------	13	451.100	.023	.002	.002	1874.22
3-2-1	11.3'-16.5'	955	7.75	612	123.23	1	3	----------	2	23	107.310	.033	.005	.001	373.85
4-1-1	2.0'-7.2'	753	7.75	424	97.16	----------	----------	----------	----------	16	3.410	.045	Tr	Tr	11.88
4-1-2	7.2'-11.3'	747	6.25	413	119.52	----------	1	16	10	20	20.180	.013	.002	.001	87.18
4-2-1	7.3'-11.3'	757	6.00	468	126.17	----------	----------	5	7	51	11.950	.050	Tr	.0029	53.78
5-1-1	1.0'-4.0'	367	4.50	271	81.56	----------	----------	----------	----------	----------	0.040	.010	Tr	.001	0.24
5-1-2	4.0'-11.0'	1417	10.50	780	134.95	----------	----------	----------	----------	7	0.153	.037	Tr	Tr	0.65
5-1-3	11.0'-17.0'	1268	9.00	931	140.89	----------	----------	----------	----------	----------	0.062	.003	.001	Tr	0.19
6-1-1	0 -6.0'	840	9.00	1337	93.33	----------	----------	----------	1	6	0.140	.010	.001	.001	0.42
6-1-2	6.0'-11.0'	871	7.50	637	116.13	----------	----------	----------	----------	4	0.580	.011	Tr	Tr	2.09
7-1-1	1.0'-6.0'	283	3.75	70	75.47	----------	----------	----------	----------	----------	0.030	.528/.583R	.002	Tr	0.22
7-1-2	6.0'-10.25'	273	3.19	86	85.58	----------	----------	----------	----------	2	0.063	.096/.091R	.005	.002	0.53
7-1-3	10.25'-15.0'	849	7.00	949	121.14	----------	----------	2	----------	9	0.022	.005	.002	.002	0.08
8-1-1	0 -4.0'	667	4.00	349	166.75	----------	----------	----------	----------	2	0.026	.006	.002	.002	0.10
8-1-2	4.0'-8.0'	777	4.00	755	194.25	----------	----------	----------	----------	9	0.468	.006	.003	.002	3.16
8-1-3	8.0'-13.0'	701	4.83	461	145.13	----------	----------	----------	1	19	14.530	.020	.001	.004	81.22
9-1-1	0 -4.5'	771	6.50	1124	118.62	----------	1	1	----------	4	18.020	.031	.001	.001	74.85
10-1-1	0 -4.33'	971	6.50	824	141.08	----------	----------	----------	1	18	11.054	.014	.002	.008R	45.92
11-1-1	3.0'-6.7'	413	4.13	199	100.00	----------	----------	----------	----------	1	0.413	.006	.001	.002	2.70
11-1-2	6.7'-12.0'	973	8.00	784	121.63	----------	----------	----------	----------	6	3.180	.009	.002	.001	10.73
11-1-3	12.0'-16.3'	874	6.50	867	134.46	----------	----------	1	1	12	0.835	.002	Tr	.001	3.47
11-1-4	16.3'-20.3'	756	6.00	385	126.00	----------	----------	1	3	8	5.553	.014	.001	.004	24.99
12-1-1	4.0'-8.0'	796	6.00	587	132.67	----------	----------	----------	1	3	0.434	.006	Tr	Tr	1.95
12-1-2	8.0'-12.0'	828	6.00	569	138.00	----------	----------	----------	----------	10	1.430	.002	.001	.002	6.44
12-1-3	12.0'-15.5'	799	5.25	591	152.19	----------	----------	----------	2	8	0.838	.004	.001	.001	4.31
13-1-1	0 -4.9'	568	4.79	289	118.58	1	2	4	10	59	66.650	.663/.467R	.002	.003	375.69
14-1-1	9.0'-15.0'	1026	9.00	1195	114.00	----------	----------	----------	----------	16	2.455	.003	.004	.001	7.37
15-1-1	8.0'-11.7'	620	5.50	2480	112.73	----------	----------	----------	----------	----------	0.179	.005	.001	Tr	0.88
15-1-2	11.7'-16.0'	990	6.50	1350	152.31	----------	----------	----------	----------	8	14.300	.002	Tr	.001	59.40
16-1-1	7.0'-11.0'	623	6.00	247	103.83	----------	----------	----------	1	24	1.800	.014	.001	.001	8.10
16-1-2	11.0'-17.0'	1029	9.00	204	114.33	----------	2	1	20	133	74.160	1.028/1.133R	.002	Tr	222.48

4. RESULTS

Evaluation of placer deposits is frequently haunted by the well-known particle sparsity effect. Sample processing efficiency can be yet another critical concern in determining the economic viability of a property. Sedimentological aspects of placer geology frequently explains the seemingly random and high gold distribution found in many placers. The following discusses each aspect in some detail striving to rationalize area evaluation.

4-1 Sample processing consistency can be considered good when viewing the linear relationship between concentrate weight vrs. sample weight in Figure 8 indicating a consistent relationship in recovery efficiency. Two samples (1-1-3 and 15-1-1) deviate from this well-defined trend, both of which contained abnormally high concentrate weights but low gold values.

4-2 Bulk density calculations (Table I and Appendix I) indicate that the gravel becomes more dense with depth reflecting compaction/packing density coinciding with the general increased fluviate sedimentation energy at depth. Minor amounts of caliche apparently only subtly effect bulk density levels, with the exception of Trench 12. The high bulk densities in Trench 8 are attributed to the well lithified nature of these sediments. It is interesting to note the sample that contained very high concentrate weights also correlates with a high bulk density (e.g. 1-1-3:4635 gms; 159.00 lb/cu. ft.) respectively.

4-3 Assay results are found in Table I and Appendix III along with general amalgamation-assaying procedures. Silver is not reported for the amalgamation step due to the pre-amalgamation (nitric acid) treatment of

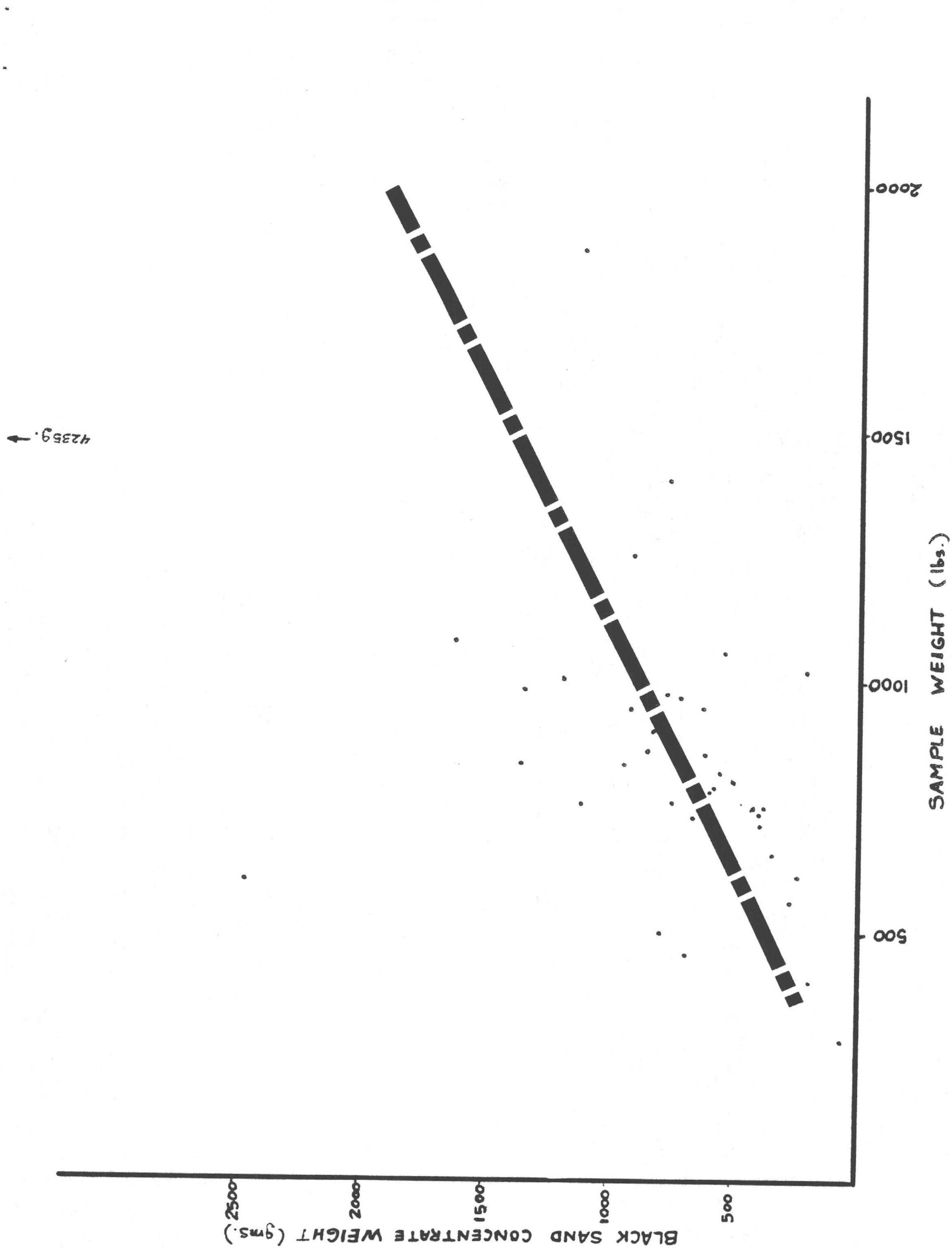

4235g.
500
1000
1500
2000
SAMPLE WEIGHT (lbs.)
2500
2000
1500
1000
500
BLACK SAND CONCENTRATE WEIGHT (gms.)

FIGURE 8

the concentrates. Silver results for all fire assays are found in Appendix III, however are not reported in Table I due to their relatively low values. Each "fence" area will be discussed individually similar to Chapter 3 striving to evaluate economic significance to the large volume essentially geochemical samples.

4-3-1 Southeastern Placers

A total of four (4) channels were cut in three (3) trenches accounting for eight (8) large volume samples in this ±240-foot-wide channel. Trench 14 is considered to occur in a parallel but separate fluvial system. Geologic mapping (Appendix I) has indicated general increased fluvial energy with depth correlating with a commensurate increase in gold content. Samples 1-2-2 and 13-1-1 consist of multiple high energy fluvial channels deposited on bedrock marginal to the main channel. The disparity in gold content (1-2-2, 10.83 mg/cuyd vrs. 13-1-1, 375.69 mg/cuyd) relates partially to the probable reworking of gold in the younger (13-1-1) channel relative to the main channel. A very interesting and significant feature is the grade increase factors for 1-2 and 2-1 which should be located over this main channel axies. Should this significant multiplier continue (4.3:1 for 1-2 and 9.04:1 for 2-1). Then this channel could contain economic gold values for a significant portion of its several 1,000 foot strike length.

The one sample in Trench 14 (14-1-1) signifies that this auriferous low energy fluvial sedimentation constitutes background level values for upper profile sediments.

4-3-2 Southern Placers

Underlying the existing Vulture Mine tailings is a probable network of juvenile fluvial channels at least partially derived from the Vulture Mine outcrop system. Numerous references refer to the very bold pre-mining outcrop character of the Vulture Mine vein. Calculations indicate that the 45° dipping vein would liberate 13,575 ounces per vertical foot of erosion (e.g. 1,000' long x 32' wide x sec 45° x 0.30 opt Au) a large part of which would have been transported southward in the paleo drainage system.

Two trenches penetrated the mine tailings revealing a moderate-high energy fluvial system containing very encouraging gold concentrations which correlate with sedimentation characteristics and provenance area. Values are tabulated for Trenches 3 and 4 (Table I and Appendix I) and will be discussed in detail below:

	Total	Nugget	Residual	% Total
3-1-2	1843.8 mg/cuyd	859.86 mg/cu yd	983.94 mg/cuyd	53.4
3-2-1	373.85 mg/cuyd	314.06 mg/cuyd	59.79 mg/cuyd	16.0
Ave.	1123.83 mg/cuyd	586.96mg/cuyd	521.87 mg/cuyd	46.4

It becomes apparent from the above calculations (3-2-1 is a duplicate sample from opposite side of the trench from 3-1-2) that the 521.87 mg/cuyd average without nuggets is an attractive and probable economic placer grade with an approximate 1:1 strip ratio (tails negated). Nuggets will be a significant and real contribution to grade.

Trench 4 is approximately 170 feet west and within the same fluvial system as Trench 3 (Figure 3 and 4). Sample values from adjacent duplicate

samples are compared below:

4-1-2	87.18 mg/cuyd	
4-2-1	53.78 mg/cuyd	No nuggets recovered
Ave.	70.48 mg/cuyd	

Careful inspection of geologic mapping in Appendix I will reveal that these samples did not reach bedrock. Also, a concentration ratio of 1:7.3 between 4-1-1 and 4-1-2 indicates very significant accumulation of gold with depth suggesting continuing concentration ratios downwards with 3-1-2 and 3-2-1 level values likely on bedrock.

A random bulk sample from Trench 3 spoils was processed in the existing plant (Photograph 2). The magnetic fraction was removed and the resultant concentrate submitted for a geochemical scan. This analysis (Appendix IV) confirmed the presence of unoxidized galena seen in Trench 3 and 4 concentrates. A whitish-blue fluorescent mineral, tentatively identified as scheelite, is probably barite and zircon based on these analysis. The significance of this analysis again suggests the Vulture Mine outcrop is the primary provenance area for this placer as galena was one of the prime ore minerals obtained from the Vulture Mine. This concentrate also contained significant quantities of metallic gold ranging in size from 3 mm to -150 mesh.

4-3-3 Eastern Placers

Geological mapping in this area (refer to Chapter 3-5) indicates that well-incised fluvial systems of moderate energy level occur in the three sampled trenches. Channel mapping (Appendix I) reveal graded bedding culminating in well-developed gravels at the base of Trenches 5 and 7.

Values reported for these samples are the lowest for all placers

sampled in the Vulture Mine area and a concentration ratio increase with depth is not evident. The gold grains recovered are very small and dispersed.

4-3-4 Northern Placer

These five (5) trenches and four (4) drill holes (Table II) effectively sampled the fluvial profile immediately north of the Vulture Mine. Significant gold increases with depth were registered for Trench 8 and to a less extent in Trench 11. Particulate gold seen in these samples (refer Gold Particle Size Distribution, Table I) reveals that the particulate gold is almost universally fine grained and very juvenile with angular flat and wire forms predominating. Some of these gold grains were sufficiently thin to overcome surface tension/specific gravity relationships and floated during the concentrate clean-up operation.

Gold recovered in Trench 9, which was excavated to bedrock in active stream wash, revealed two larger gold grains that were moderately well rounded and coated with iron and calcium. The accompanying small grains were similar to the gold recovered in the adjacent Trench 10 which was excavated in well-packed older gravels lying directly on bedrock. The conclusion from the above reveals that the coarser gold in Trench 9 was derived from a more distant source than the small angular grains which are more characteristic of this immediate area.

Select drill cuttings from previously drilled reverse circulation holes were hand panned and the black sand concentrate fire assayed. Scattered very small angular gold grains were visible in some samples (Table II). However, value levels were very low and further indicates the

TABLE II

VULTURE MINE PLACER SAMPLES
DRILL CUTTINGS

Hole No.	Location	Conc(g)	Au (mg)	Ag	Comments
H19 0-5	26,418N/20,846E	7.0	.012	.30	
5-10		2.0	Tr	.20	
10-15		45.0	.110	.20	
15-20		18.0	.02	.25	1 Au grain
H21 0-5	26,418N/20,783E	NA	.017	NA	
5-10		NA	.058	NA	
H31 5-10	16,666N/21,840E	NA	.081	NA	
10-15		5.0	.124	.35	
15-20		1.5	.050	1.85	1 Au grain
H34 10-15	26,633N/20,880E	NA	.026	NA	
15-20		40.0	.005	.35	2 Au grains

local provenance area for these sediments contained only fine-grained free gold. The seemingly high silver values in the concentrates could benefit "hard rock" geochemical prospecting.

4-3-5 Southwestern Placer

The geological contrast between the two deep trenches in this area (Chapter 3-7) is further enhanced by their value distribution noted in Table I. It becomes readily apparent that the angular and platy juvenile character of the recovered gold is entirely compatible with the host semi-angular dioritic sediments. This suggests a very local source -- either the Vulture Mine workings or some other provenance location -- for these values.

Value concentration ratios with depth are impressive for both trenches and indicates a fairly active sedimentation history for these southerly trending paleo channels. The steep paleocurrent gradient and multiple robust gravel formation (Appendix I) also attests to a vigorous sedimentation environment supplied from an adjacent provenance zone. The amalgamation tail assays would indicate that very fine grained gold is still contained within some heavy mineral.

5. CONCLUSIONS

The wide range of fluvial sedimentation seen during this reconnaissance evaluation of the Vulture Mine property generally consists of well incised linear channels developed relatively high on the fluvial paleoslope. These drainage patterns were probably formed at the close of the Pliocene and reached their present state of maturity during the Pleistocene humid climatic cycle. These alluvial systems degenerated with increasing aridity to the present day narrow incised gullys that are not appreciably reworking the eroding older gravels. Gold distribution profiles adequately reflect this sedimentological pattern with the very high value concentration ratios and coarser gold distribution favoring bedrock locations. Placer gold particle distribution and related values obtained from these 39 channel samples strongly suggest the Vulture Mine outcrop system was the dominant provenance area for the resulting alluvials. The measured southerly paleocurrent direction suggests the important placer concentrations will be located south of the Vulture Mine -- which is, in fact, the case. Significant quantities of fine grained angular gold in the Northern Placer area (Chs. 3-6 and 4-3-4) indicates that a secondary provenance is very likely north of the Vulture Mine.

This geological-sedimentological evaluation combined with careful sampling has revealed a significant placer potential for the Vulture Mine measuring in the 100,000's cubic yard range within the trenched areas. Specific areas containing potential economic gold values (say +200 mg/cu yd) or important geochemical concentrations will be defined based on geological deduction, value distribution and inferred economic considerations.

6. RECOMMENDATIONS

Specific areas of interest lie south and adjacent to the Vulture Mine outcrop system. Each area will be discussed briefly in order of importance striving to formulate objective economic decision making goals based on reconnaissance sampling.

6-1 Southern Placers

Channel samples in two (2) trenches revealed very attractive economic grades on bedrock (3-1-2 and 3-2-1 avg 112.3:83 mg (cu yd) and highly anomolous values (4-1-2 and 4-2-1; ave 70.48 mg/cu yd) in mid level gravels. Figures 3 and 4 indicates a pre-tailings erosion basin containing an inferred area of 15.2 acres supplied by Vulture Mine outcrop material as indicated by geologic observations and abundant galena in plant concentrates (Appendix IV).

= 662,112 ft²

Approximately 46.4% of the average value from Trench 3 bedrock channels (e.g. 521.87 mg/cu yd) are contained within the -1.5 mm gold particle size. These channels were approximately five (5) feet long, indicating a 1:1 strip ratio discounting overlying potentially economic mine tails.

The inferred volume of 120,000 cubic yards combined with a conservative grade of 500 mg/cubic yard based on these preliminary sampling results, indicates this area could provide economic grade gravel to a modest size placer plant. Reconnaissance drilling would be warranted to substantiate this preliminary geologic conclusion and could expand reserves

in a southerly direction.

6-2 Southwest Placer

The relatively isolated position of Trench 16 and its differing sedimentological-geological characteristics compared to other fluvial systems precludes definite grade-volume estimations. However, the approximate 2:1 overburden to "ore" strip ratio is a positive feature along with the abundance of fine gold particles facilitating probable higher confidence level grade determinations (e.g. subdued particle sparsity effect). In essence, this area must be considered a second priority but important placer drilling target.

6-3 Southeastern Placer

This third priority selection is based on its southerly drainage position relative to the Vulture Mine and the potentially economic grade channel in Trench 13 indicating that economic bedrock concentrations could exist in this area. The numerous intersecting trenches suggest a channel width ±240 feet and approximate maximum depth of 30 feet (never reached by the back hoe). Considering the basal five (5) feet could be economic (5:1 strip ratio) then this channel could produce say 45,000 cubic yards per linear 1,000 feet. Select drilling is required to confirm the above geologic prediction.

The above three (3) prioritized placer drilling targets could, in their entirety, produce an attractive modest (say 150 cuyd/hr.) placer operation. Obviously, the southern placer area has the highest probability of producing an economic placer on its own merits. The overlying possibly economic mine tailings must also be considered in the economic feasibility

study for this small area. A modest drilling program could very well expand the economic scope for this historic property to the position of a modest placer gold producer for a substantial period.

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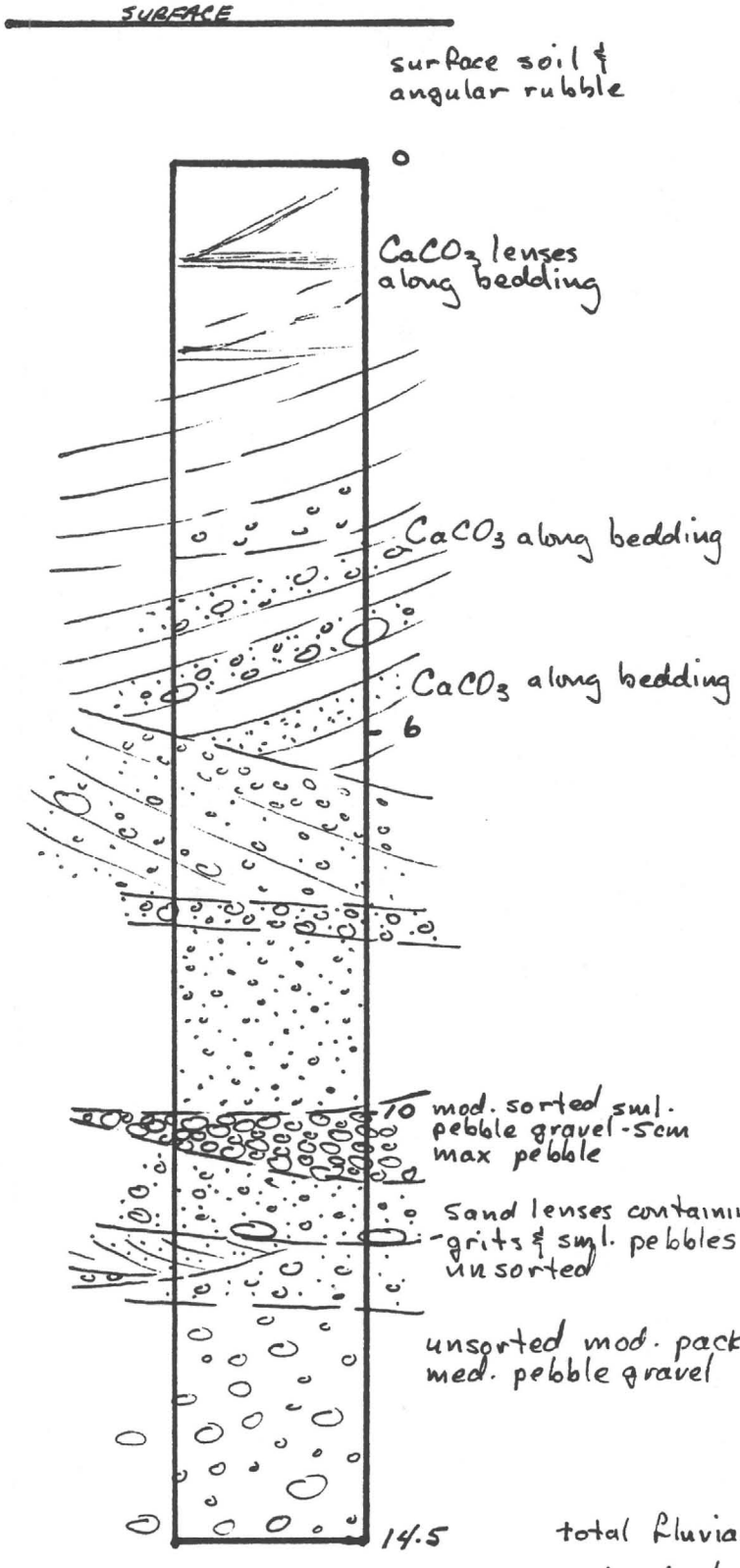
Consulting Geologist
AIPG No. 4455

APPENDIX I

VULTURE MINE PLACER PROJECT
TRENCH 1
CHANNEL 1



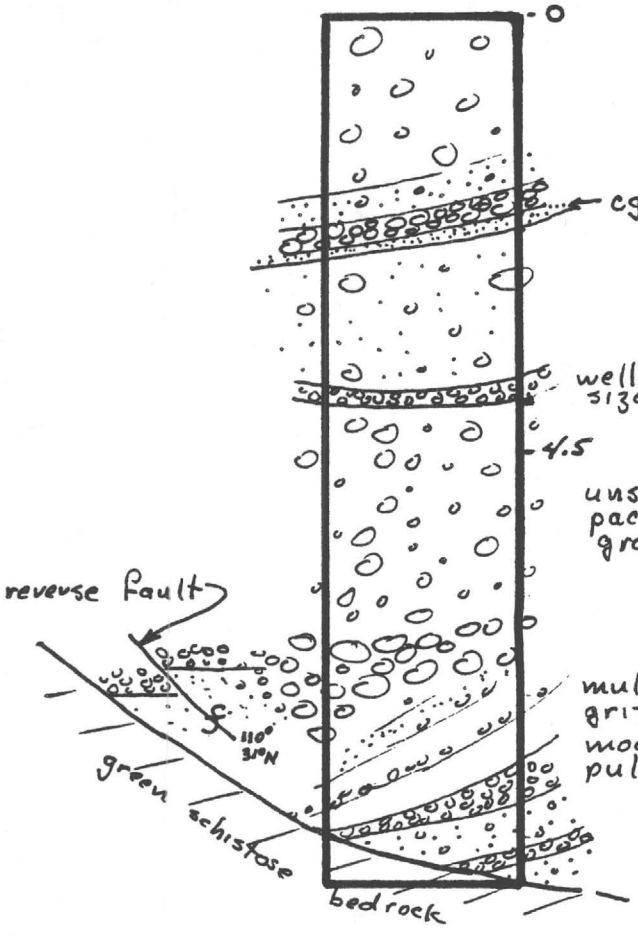
1-1-1: 15.15 mg/cuyd
75.75 lb/cuft

1-1-2: 9.38 mg/cuyd
91.25 lb/cuft

1-1-3: 39.44 mg/cuyd
159.0 lb/cuft

total fluvial sequence graded, most individual sed. phases mod-well sorted; clasts semi-angular, rounding 3-4; 70% clasts green schistose metamorphics to 35cms, 28% clasts igneous & 2% clasts basalt

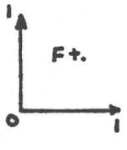
VULTURE MINE PLACER PROJECT TRENCH 1 CHANNEL 2



1-2-1: 2.51 mg/cuyd
89.4 lb/cu ft

1-2-2: 10.83 mg/cuyd
89.75 lb./cu ft

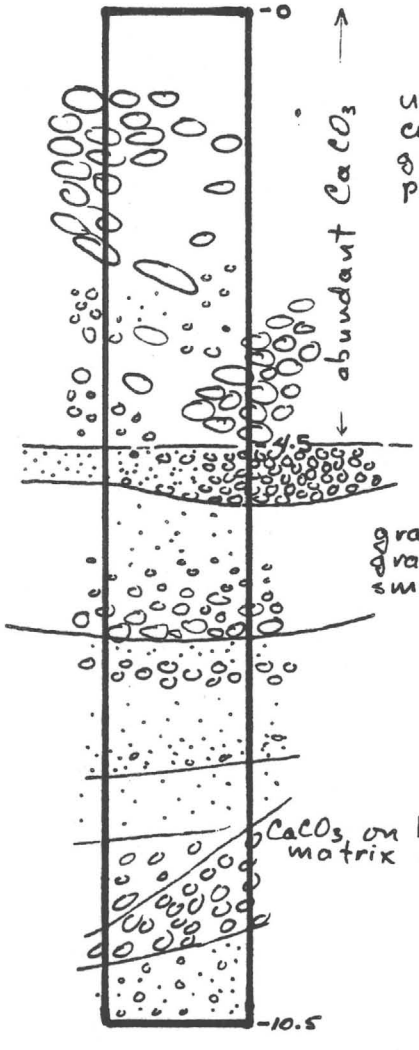
similar fluvial sequence to channel 1. bedrock influence on sedimentation very evident, clastic matrix coarse grained, semi-consolidated containing only minor clay; scour troughs 185° azm.



VULTURE MINE PLACER PROJECT TRENCH 2 CHANNEL 1

SURFACE

soil & surface rubble



unsorted large pebble-cobble gravel in coarse grained sand-grit-small pebble matrix

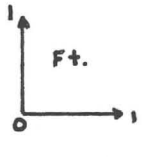
2-1-1: 3.06 mg/cuyd
89.75 lb/cu ft.

graded sequence from coarse grained sand to well sorted small-medium pebble gravel

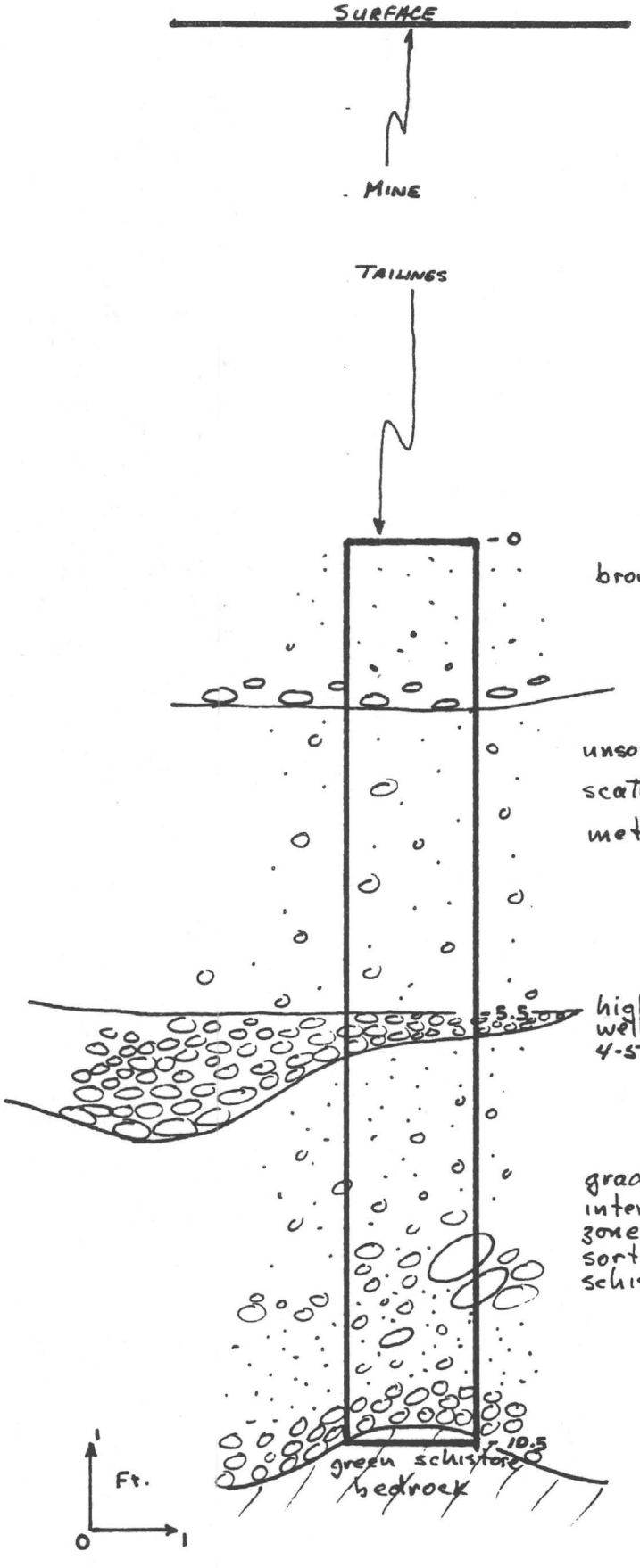
2-1-2: 27.66 mg/cuyd
144.15 lb/cu ft

$CaCO_3$ on bedding planes & minor matrix cement.

contains lower energy fluvial sedimentation than Trench 1 seen as smaller pebbles & lower angle trough scours



VULTURE MINE PLACER PROJECT TRENCH 3 CHANNEL 1



brown sandy soil

unsorted sand containing scattered sub-angular metamorphic clasts

3-1-1/6.14 mg/cuyd
lb/cu ft
123.66

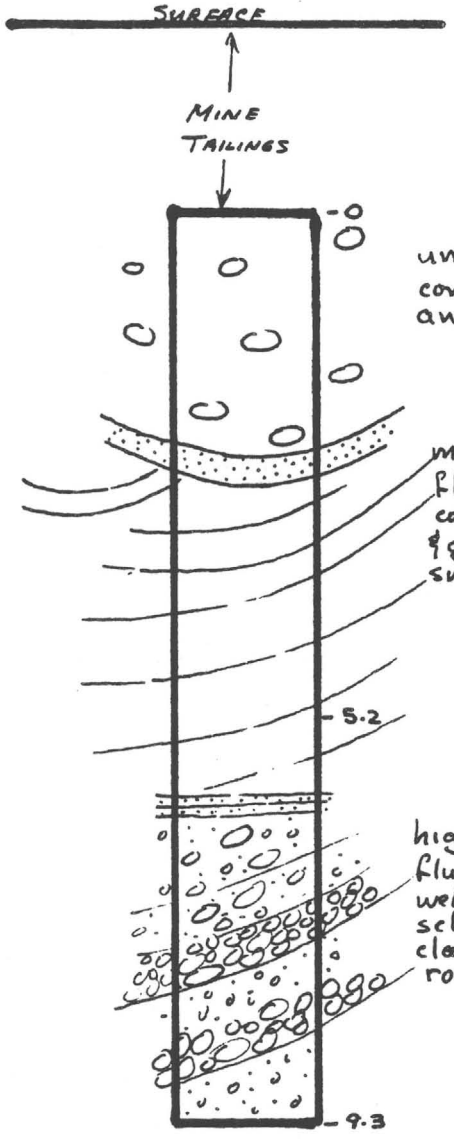
high energy fluvial channel well sorted & packed, rounding 4-5, channel axies 195° 040°S.

graded coarse pebbly sand w/ intermediate cobbles & pebble zone, basal well packed & sorted gravel on smooth schistose bedrock

3-1-2: 1874.22 mg/cuyo
164.46 lb/cu ft

[NOTE: adjacent sample
3-2-1: 373.85 mg/cuyd
123.23 lb/cu ft.

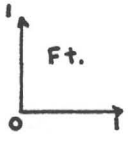
VULTURE MINE PLACER PROJECT TRENCH 4 CHANNEL 1



4-1-1: 11.88 mg/cuyd
97.16 lb/cu ft.

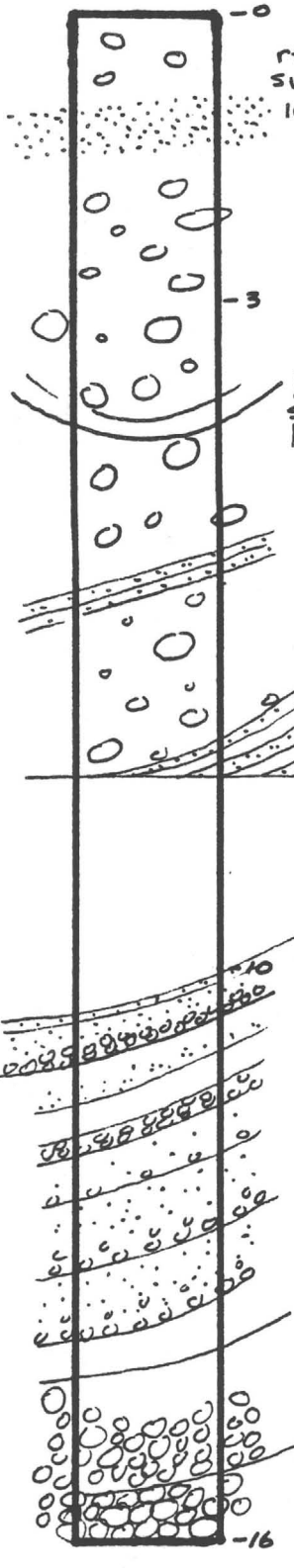
4-1-2: 87.18 mg/cuyd
119.52 lb/cuft

NOTE: adjacent sample
4-2-1: 53.78 mg/cuyd
126.17 lb/cuft



VULTURE MINE PLACER PROJECT TRENCH 5 CHANNEL 1

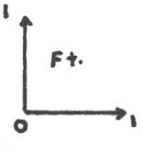
SURFACE



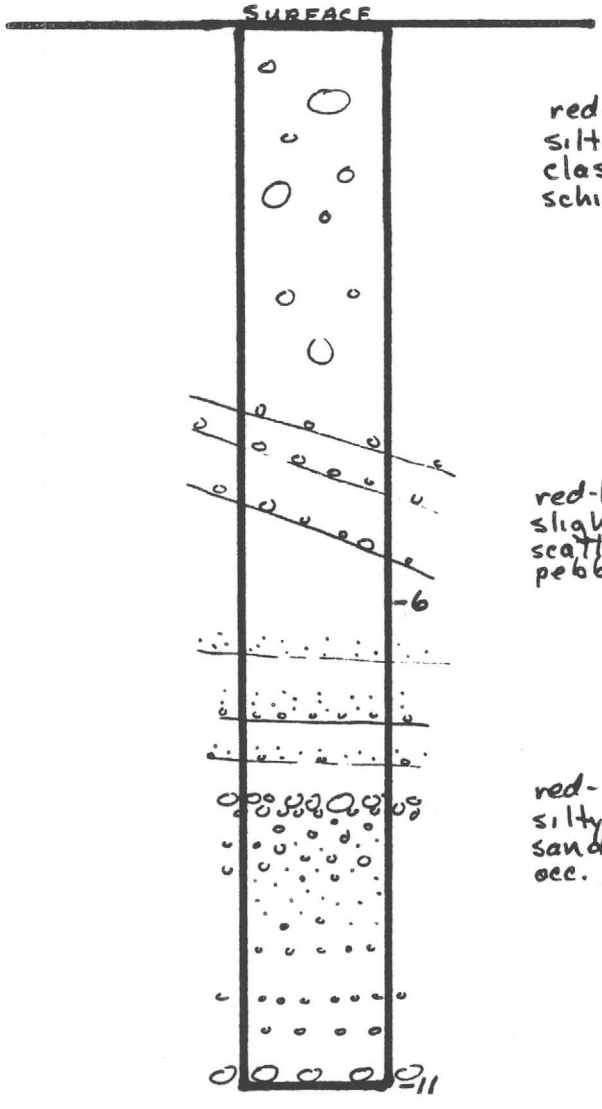
5-1-1: 0.24 mg/cuyd
81.56 lb/cu ft

5-1-2: 0.65 mg/cuyd
134.95 lb/cu ft

5-1-3: 0.062 mg/cuyd
140.89 lb/cu ft.



VULTURE MINE PLACER PROJECT TRENCH 6 CHANNEL 1



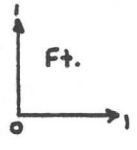
red-brown soil, silt & sand scattered clasts basalt, diorite & schistose metamorphic

6-1-1: 0.42 mg/cuyd
93.3 lb/cu ft

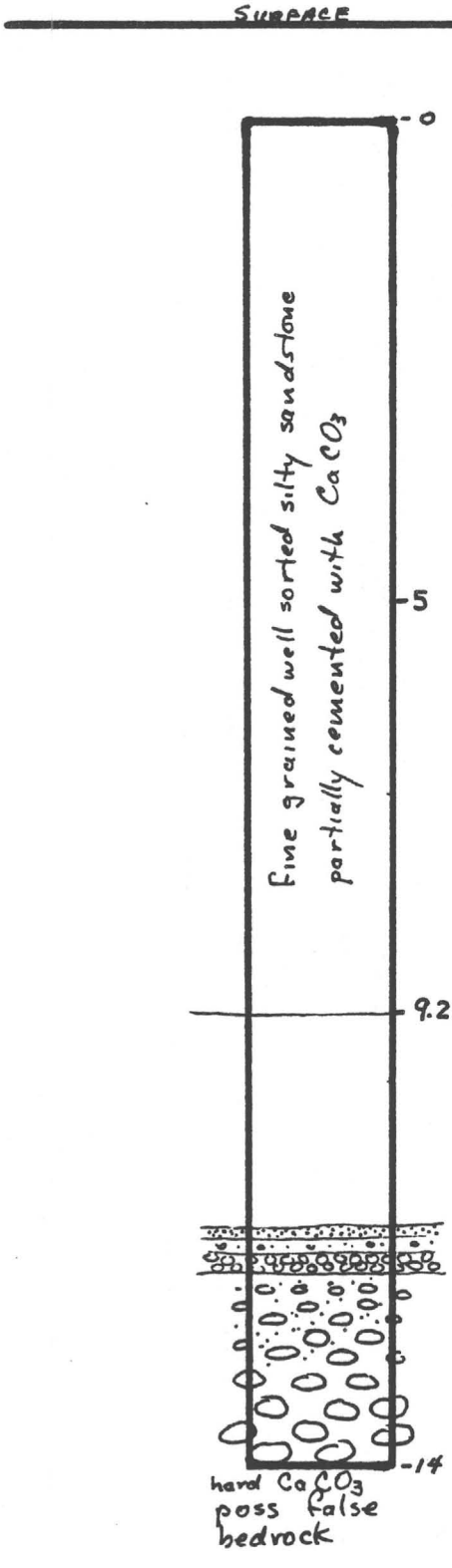
red-brown sand slightly winnowed scattered clasts/ pebble

red-brown slightly silty coarse grained sand & grit containing occ. pebble zone

6-1-2: 2.09 mg/cuyd
116.13 lb/cu ft.



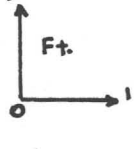
VULTURE MINE PLACER PROJECT
TRENCH 7
CHANNEL 1



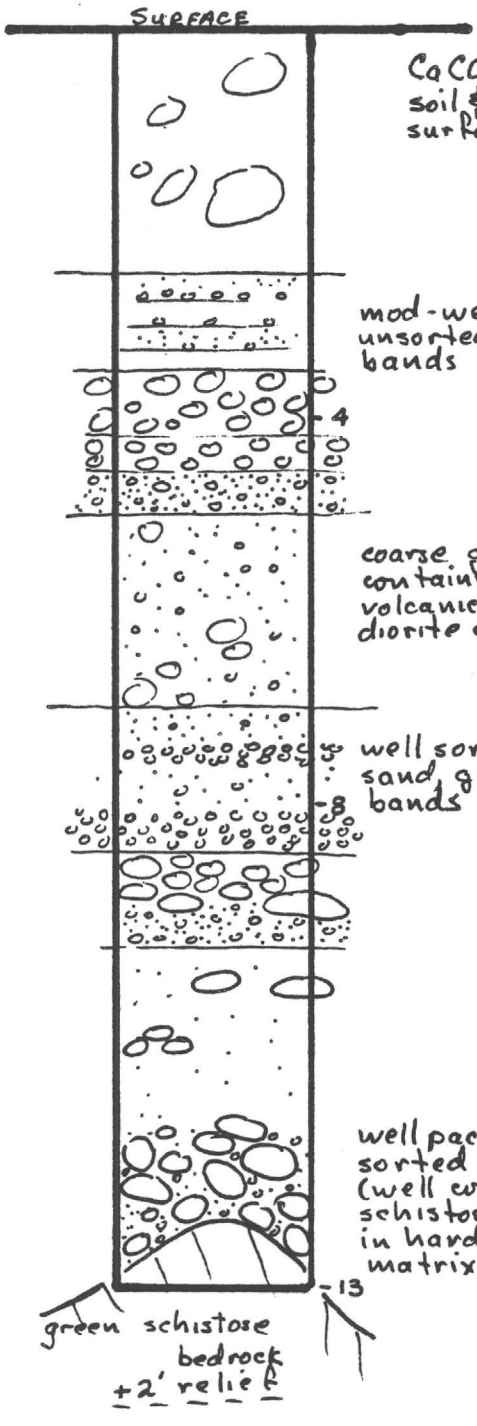
7-1-1: 0.22 mg/cuyd
75.47 lb/cu ft

7-1-2: 0.53 mg/cuyd
85.58 lb/cu ft

7-1-3: 0.08 mg/cuyd
121.14 lb./cu ft



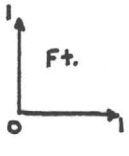
VULTURE MINE PLACER PROJECT TRENCH 8 CHANNEL 1



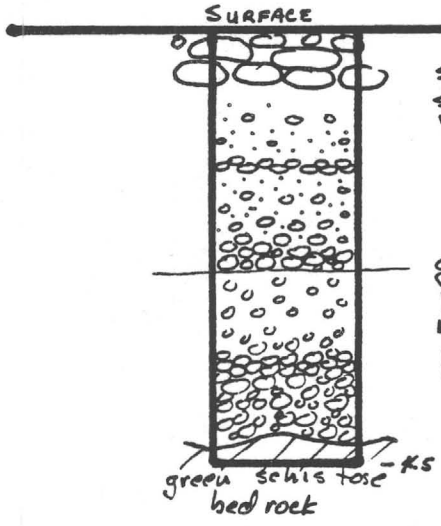
8-1-1: 3.16 mg/cuyd
166.75 lb/cu ft

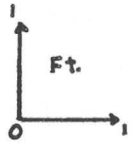
8-1-2: 0.18 mg/cuyd
194.25 lb/cu ft

8-1-3: 81.22 mg/cuyd
145.13 lb/cu ft



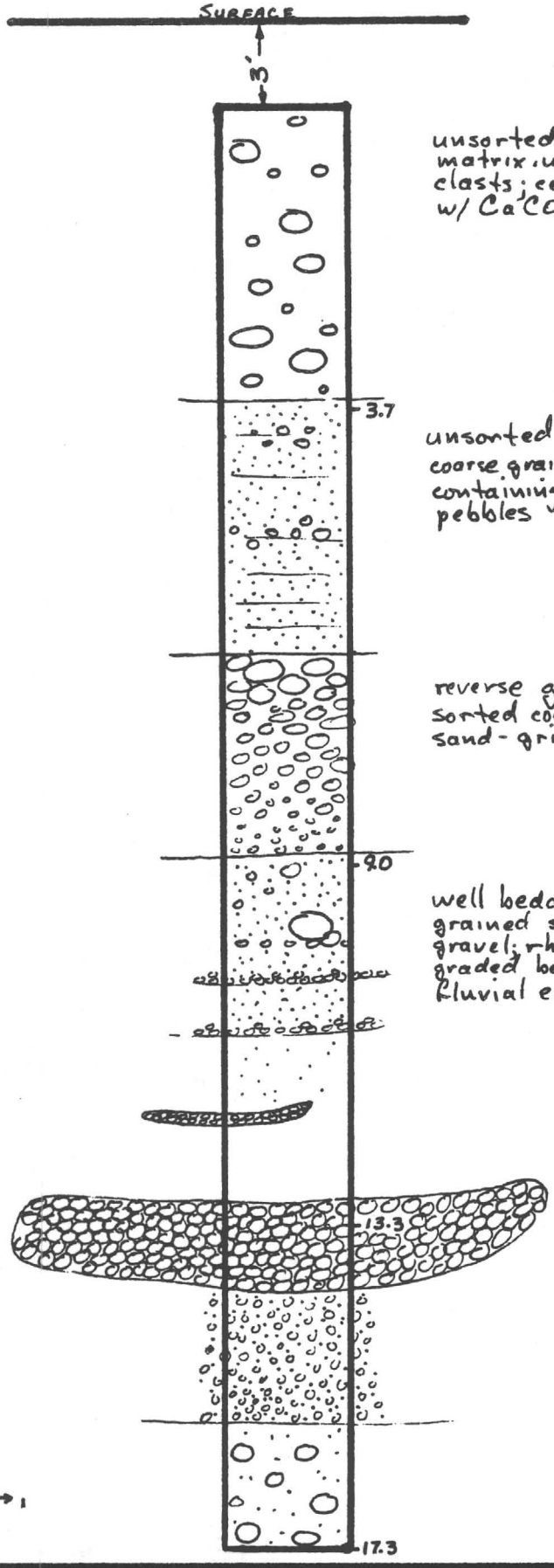
VULTURE MINE PLACER PROJECT
TRENCH 10
CHANNEL 1





10-1-1 : 45.92 mg/cuyd
141.08 lb/cuft

Vulture Mine Placer Project
Trench 11
Channel 1



unsorted sand matrix, unsorted clasts; cemented w/ $CaCO_3$

11-1-1: 2.70 mg/cuyd
100.0 lb/cuft

unsorted, mod-bedded coarse grained sand & grit containing scattered small pebbles

11-1-2: 10.73 mg/cuyd
121.63 lb/cuft

reverse grading, poorly sorted coarse grained sand-grit matrix

well bedded series coarse grained sand, small pebble gravel; rhythmic sedimentation & graded bedding in low energy fluvial environment

11-1-3: 3.47 mg/cuyd
134.46 lb/cuft

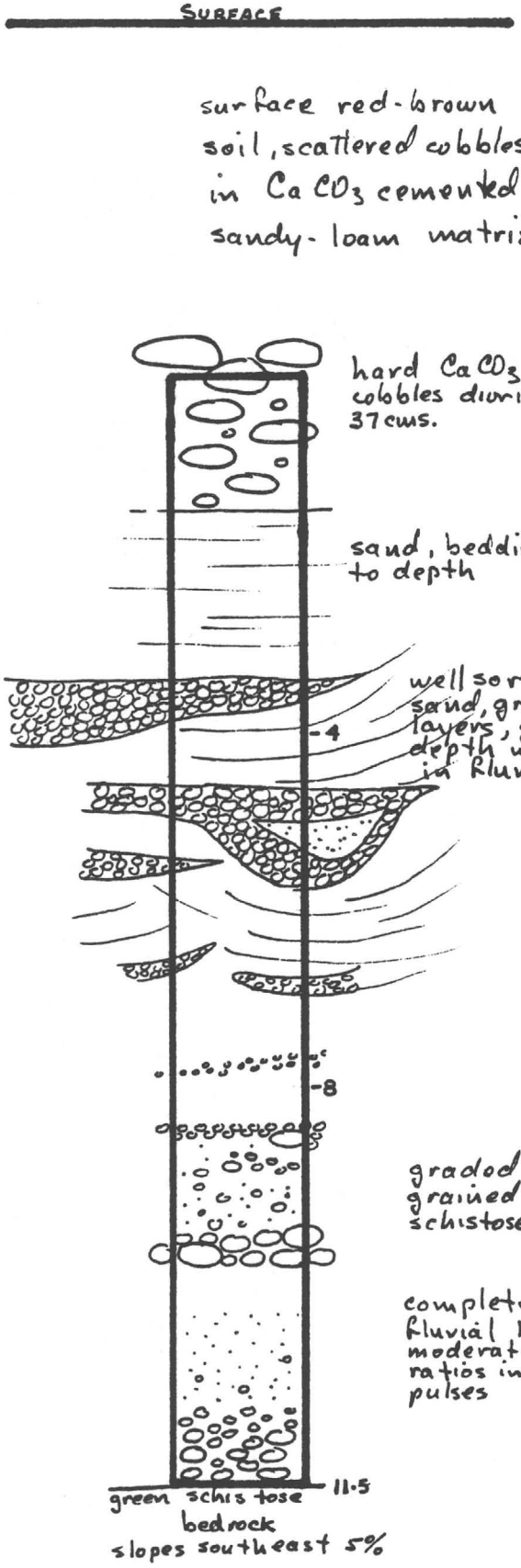
very well packed & sorted high energy fluvial channel; clasts to 8cms, semi-angular (Rounding 3)

11-1-4:
24.99 mg/cuyd
126.0 lb/cuft

mod. sorted sand-grit-sml. pebble sediment, loosly cons.

poorly packed & sorted sandy gravel; highly $CaCO_3$ cemented.

VULTURE MINE PLACER PROJECT TRENCH 12 CHANNEL 1

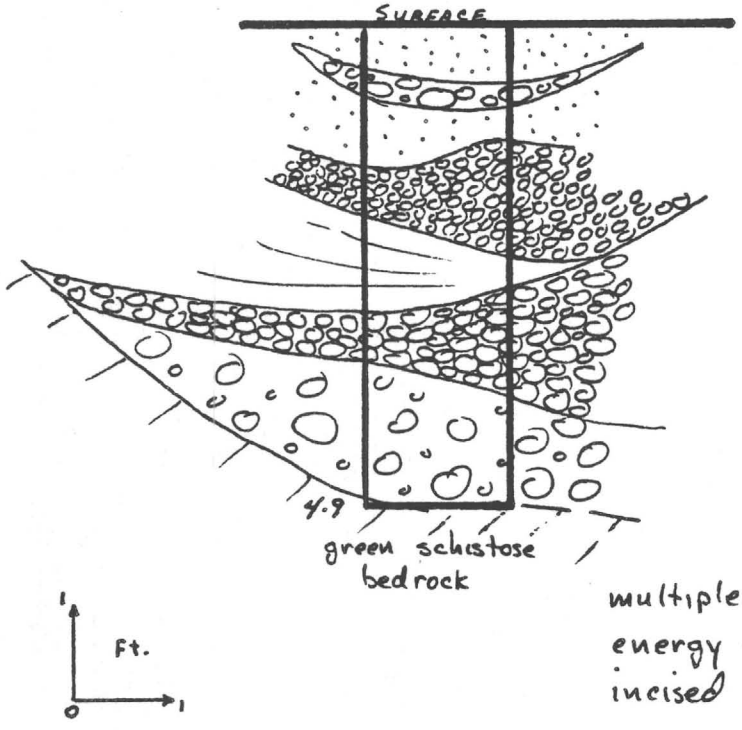


12-1-1: 1.95 mg/cuyd
132.67 lb/cuft

12-1-2: 6.44 mg/cuyd
138.0 lb/cuft

12-1-3: 4.31 mg/cuyd
152.19 lb/cuft

VULTURE MINE PLACER PROJECT TRENCH 13 CHANNEL 1



minor $CaCO_3$ cement in sand matrix

well packed & sorted small pebble gravel, high energy scour channel. clasts semi-angular (Rounding 3-4)

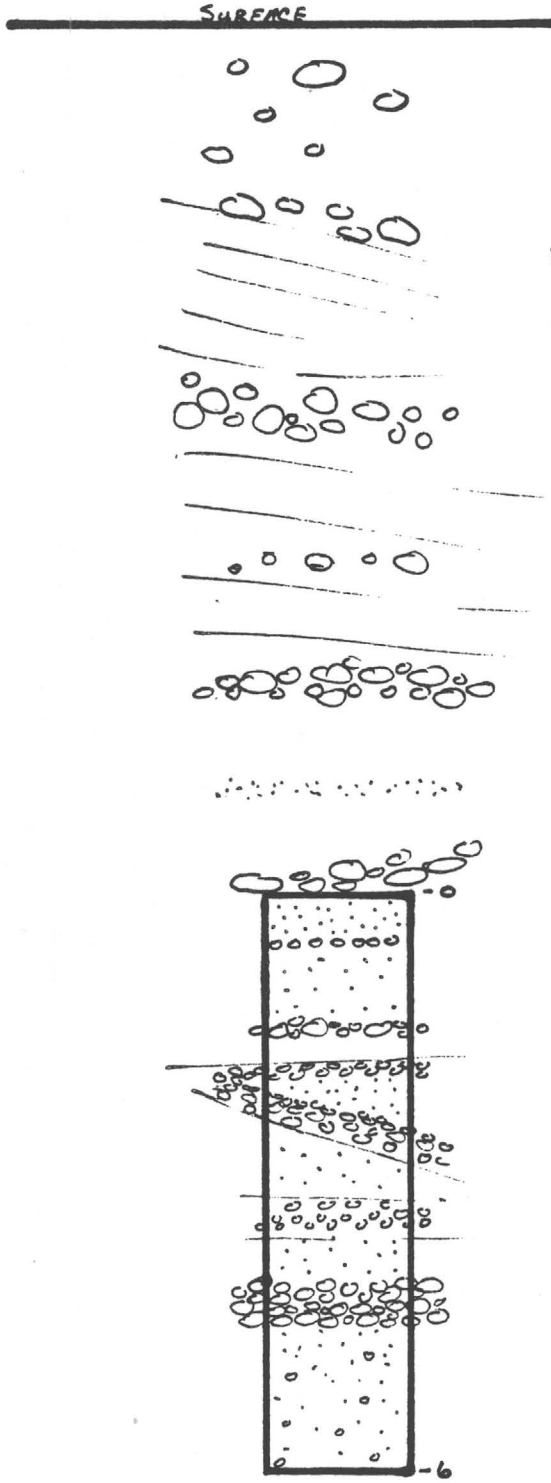
moderatly sorted, well packed small pebble gravel (2cm. avg.)

poorly packed & sorted coorse sand containing 10cm schistose clasts

13-1-1:
375.69 mg/cuy
118.58 lb/cu ft

multiple fluvial pulses high energy and lap onto well incised bedrock channel contour

VULTURE MINE PLACER PROJECT TRENCH 14 CHANNEL 1

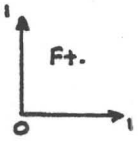


Sequence of poorly bedded & sorted coarse grained sand, grit & pebbly sand units

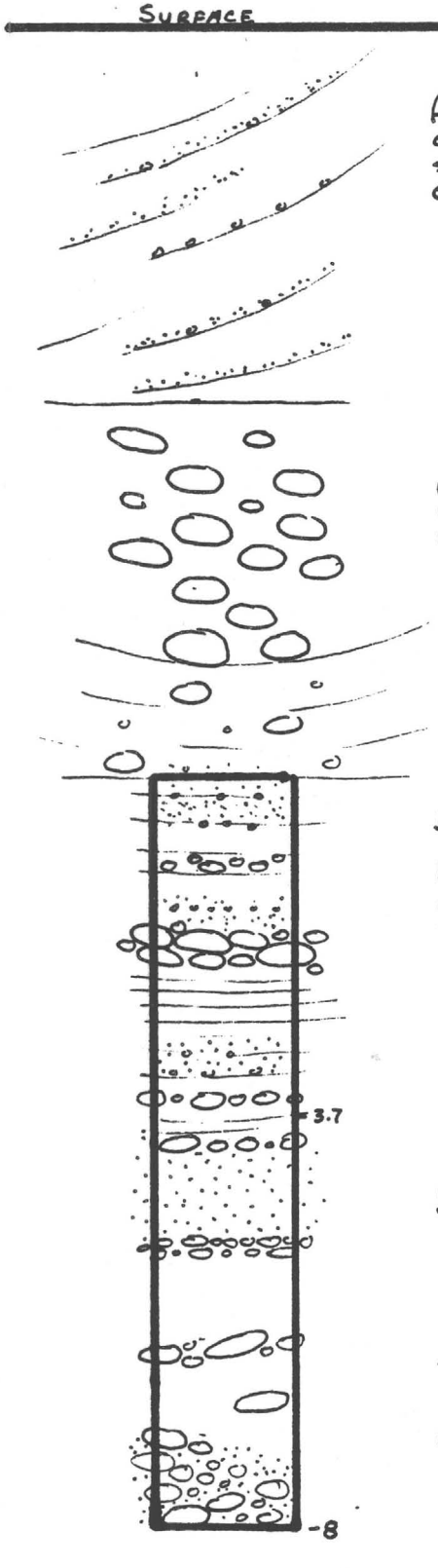
cyclic fluvial low-moderate energy sed. pulses in wide channel environment

14-1-1: 7.37 mg/cuyd
114.0 lb/cu ft

gravel lenses mod. packed & sorted, clasts semi-angular (Rounding 3) in gritty sand matrix; sequence largely unconsolidated.



VULTURE MINE PLACER PROJECT
TRENCH 15
CHANNEL 1



fine grained sands containing lenses grits & small pebbles, highly cemented with $CaCO_3$

unsorted unconsolidated weak bedded cobble unit; schistose metamorphics to 15cms. semi-angular (Rounding 3)

zone of rythmic graded low energy fluvial sediments, basal gravel mod-well packed diorite (Rounding 5) schistose metamorphic (Rounding 4)

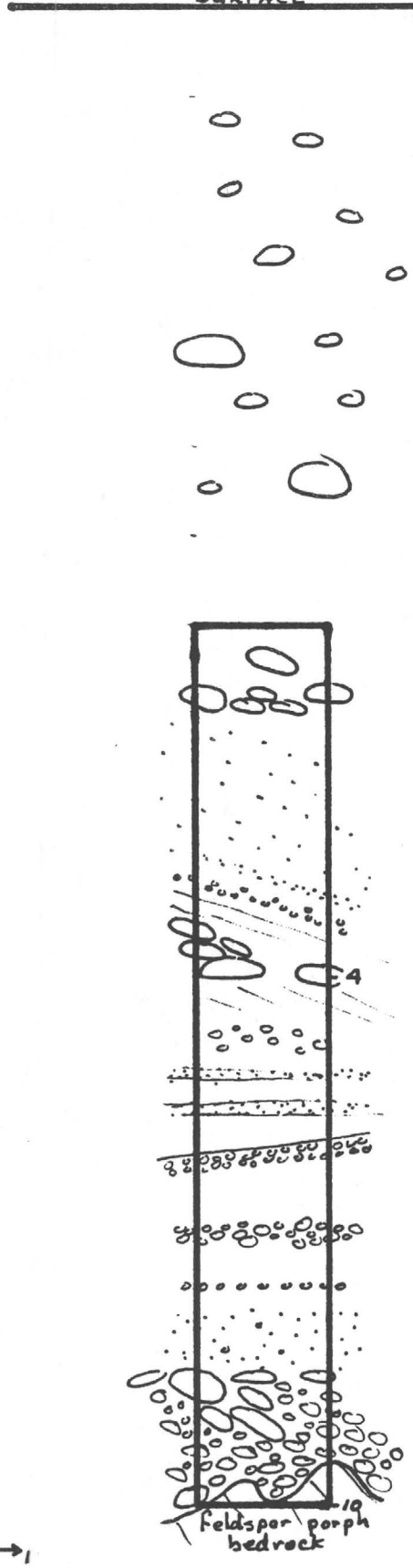
15-1-1: 0.88 mg/cuyd
112.73 lb/cu ft

moderatly sorted coarse grained sand-grit

15-1-2: 59.4 mg/cuyd
152.31 lb/cu ft.

cobble-pebble clasts to 15cms, semi-rounded (Rounding 5-6) in coarse grained sand matrix suggesting low-moderate level fluvial energy

VULTURE MINE PLACER PROJECT TRENCH 16 CHANNEL 1



redish sandy soil

highly $CaCO_3$ cemented unsorted coarse grained sand containing highly weathered dioritic clasts to 23 cms.

16-1-1: 8.10 mg/cuyd
103.83 lb/cu ft

graded sequence, several fluvial cycles of increasing grain size; alternating coarse grained sand bodies with grit and small pebble lenses clasts 100% diorite

16-1-2: 222.48 mg/cuyd
114.33 lb/cu ft.

basal section unsorted pebble-cobble gravel composed 100% dioritic identical to bedrock; very local source for the semi-angular (Rounding 4) clasts; bedding gradients 11% suggests high energy environment.

APPENDIX II

APPENDIX II

INDIVIDUAL NUGGET WEIGHTS

Sample No.	Mg. Weight	Size	Shape
3-1-2	277.0	5 mm	Eliptical spongy
		2.5 mm	Eliptical spongy
	Total----------	1.5 mm	"X" moderately round
3-2-1	79.05	4x2 mm	Sub-rounded, spongy
	6.99		
	4.297		
13-1-1	37.06 mg	4x3 mm	Irregular spongy & wire
	19.326 mg	1x4 mm	Wire-Irregular
	4.756		#1 Color equal dimensional & flat
	2.306		#1 color equal dimensional and flat
	1.960		#1 color equal dimensional and flat

APPENDIX III

ESTABLISHED 1880

1435 SOUTH 10TH AVENUE

JACOBS ASSAY OFFICE

REGISTERED ASSAYERS

PHONE 622-0813 1435 SOUTH 10TH AVE.

TUCSON, ARIZONA 85713

James M. Prudden
Consulting Geologist
4809 Quail Point Rd.
Salt Lake City, Utah 84124

1/11/85

"Sample Processing Procedures"
DMEA PLACER PROJECT

Dear Jim:

As-per to our phone conversation yesterday concerning our procedures to our processing the DMEA'S placer project.

(1) Blacks and Concentrates, will be dried, weighed and submitted to a 4 hour ball mill type grind, any visable gold will first be extracted and weighed prior to milling. An equal amount of water will be added and a slight amount of conc. nitric acid,to help remove any Fe,Ca, and native Hg amalgam (pH checked). After 4 hours have passed, sample is removed and Sodium Hydroxide is added to neturalize pH. Sample is then bottle rolled with Hg (1 gram Hg to 5 grams ore) at approx. 30 RPM for a period of 8 hours. Amalgam is then removed, and the residue is dried and Fire Assayed for Gold & Silver reported Au & Ag oz./ton. Amalgamated material is then subjected to a nitric acid digestion until dissolved, remaining gold is cupelled, weighed and saved.

(2) Black sand concentrates when designated will, be first dried,weighed, and the entire sample fire assayed for gold & silver. Results reported in total mg. of gold and total mg of silver.

(3) Tailing samples whrn designated, will be fire assayed, using a two (2) assay ton charge (58.33 grams). Results will be reported in troy oz/2000 lb.ton.

We hope this procedure meets with your approval.

Respectfully,

MICHAEL G. JACOBS
REGISTERED ASSAYER-OWNER

JACOBS ASSAY OFFICE
1435 So. 10th Avenue
Tucson, Arizona 85713
602-622-0813

DMEA LTD.

PRELIMINARY TESTS

SAMPLE NO. 1/1/0-6 conc as received.

Weight as received 927 gr. ~~kbxx~~ ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.217 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.005			Wt. g	
SILVER oz/T	XXXXXXX	<0.05			Oz/T gold	
TOTAL mg Gold	6.734	0.1589			Oz/T silver	
TOTAL mg silver	XXX	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 97.69

silver = N/A

927/29.166 = 31.78 A.T.

6.8929/31.78 = .2169 OZ/TON Au

927 grams milled 4 hours
8 hours agitated w/195 gr. Hg.

Free sodium cyanide lb/Ton
Solution = _____
Ore = _____

Lime lb/Ton
Solution = _____
Ore = _____

Percent recovery

gold = _____

silver = _____

pH _____

Registered Assayer
Michael G. Jacobs

JACOBS ASSAY OFFICE
1435 So. 10th Avenue
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602-622-0813

DMEA LTD.

PRELIMINARY TESTS

SAMPLE NO. 1/1/6-10 conc. as received.
Weight as received 673 gr. ~~lbs~~ ; Size, all minus 3/8 inches
HEAD ASSAY: Gold 0.127 (calc) oz/T, Silver N/A oz/T
GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time
→ Iron ____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.007			Wt. g	
SILVER oz/T	XXXXXXX	0.05			Oz/T gold	
TOTAL mg Gold	2.780	0.161			Oz/T silver	
TOTAL mg silver	N/A	1.15			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery
gold = 94.53
silver = N/A

673/29.166 = 23.07 A.T.
2.941/23.07 = .127

673 grams milled 4 hours
8 hours agitated w/135 gr.Hg.

Free sodium cyanide lb/Ton
Solution =
Ore =

Lime lb/Ton
Solution =
Ore =

Percent recovery
gold =
silver =

pH

Registered Assayer
Michael G. Jacobs

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1435 So. 10th Avenue
Tucson, Arizona 85713
602-622-0813

DMEA LTD.

PRELIMINARY TESTS

SAMPLE NO. 1/1/10'-14'5" conc as received.

Weight as received 4635 gr. ~~lbs~~ XXX ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.085 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 9 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron ____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.002			Wt. g	
SILVER oz/T	XXXXXXX	0.05			Oz/T gold	
TOTAL mg Gold	13.145	0.318			Oz/T silver	
TOTAL mg silver	N/A	7.95			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 97.64

silver = N/A

4635/29.166 = 158.92

13.463/158.92 = 0.085

4635 grams milled 4 hours
8 hour agitated w/930 gr.Hg.

Free sodium cyanide lb/Ton
Solution = ____

Ore = ____

Lime lb/Ton
Solution = ____

Ore = ____

Percent recovery

gold = ____

silver = ____

pH ____

Registered Assayer
Michael G. Jacobs

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Tucson, Arizona 85713
602-622-0813

DMEA LTT.

PRELIMINARY TESTS

SAMPLE NO. 1/2/1 (4'-8') as received.

Weight as received 503 gr. ~~lbs~~ ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.058 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.010			Wt. g	
SILVER oz/T	XXXXXXX	0.05			Oz/T gold	
TOTAL mg Gold	0.835	0.173			Oz/T silver	
TOTAL mg silver	N/A				Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 82.84

silver = N/A

503/29.166 = 17.25
1.008/17.25 = 0.058

503 grams milled 4 hours
8 hours agitated w/100 gr.Hg.

Free sodium cyanide lb/Ton
Solution = _____
Ore = _____

Lime lb/Ton
Solution = _____
Ore = _____

Percent recovery

gold = _____

silver = _____

pH _____

Registered Assayer
Michael G. Jacobs

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Tucson, Arizona 85713
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DMEA LTT.

PRELIMINARY TESTS

SAMPLE NO. 1/2/2 conc. as received.

Weight as received 399 gr. ~~lbsxx~~; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.249 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXXX mg; SILVER/200 grams XXXx

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.014			Wt. g	
SILVER oz/T	XXXXXXX	0.05			Oz/T gold	
TOTAL mg Gold	3.210	0.192			Oz/T silver	
TOTAL mg silver	N/A	0.68			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = _____

silver = N/A

399/29.166 = 13.68 A.T.

3.402/13.68 = 0.249

399 grams milled 4 hours
8 hours agitated w/80 gr.Hg.

Free sodium cyanide lb/Ton
Solution = _____

Ore = _____

Lime lb/Ton
Solution = _____

Ore = _____

Percent recovery

gold = _____

silver = _____

pH _____

Registered Assayer
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DMEA LTD.

PRELIMINARY TESTS

SAMPLE NO. 2/1/1 conc. as received.

Weight as received 722 gr. ~~lbs~~ ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.033 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.002			Wt. g	
SILVER oz/T	XXXXXXX	0.05			Oz/T gold	
TOTAL mg Gold	0.765	0.050			Oz/T silver	
TOTAL mg silver	N/A	1.24			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = _____

silver = _____

722/29.166 = 24.75

.815/24.75 = .033

722 grams milled 4 hours
8 hours agitated w/145 grams Hg.

Free sodium cyanide lb/Ton
Solution = _____

Ore = _____

Lime lb/Ton
Solution = _____

Ore = _____

Percent recovery

gold = _____

silver = _____

pH _____

Registered Assayer
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DMEA LTD.

PRELIMINARY TESTS

SAMPLE NO. 2/1/2 conc. as received.

Weight as received 1126 gr. ~~lbs~~ ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.243 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron ____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.004			Wt. g	
SILVER oz/T	XXXXXXX	0.05			Oz/T gold	
TOTAL mg Gold	9.22	0.154			Oz/T silver	
TOTAL mg silver	N/A	1.93			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 98.36

silver = N/A

1126/29.166 = 38.61 A.T.

9.374/38.61 = 0.243

1126 grams milled 4 hours
8 hours agitated w/225 gr.Hg.

Free sodium cyanide lb/Ton
Solution =

Ore =

Lime lb/Ton
Solution =

Ore =

Percent recovery

gold =

silver =

pH

Registered Assayer
Michael G. Jacobs

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Tucson, Arizona 85713
602-622-0813

DMEA LTD.

PRELIMINARY TESTS

SAMPLE NO. 3/1/1 conc as received.

Weight as received 1643 gr. ~~lbs~~ ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.048 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.013			Wt. g	
SILVER oz/T	XXXXXXX	<0.05			Oz/T gold	
TOTAL mg Gold	1.990	0.732			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 73.11

silver = N/A

1643/29.166 = 56.33
2.722/56.33 = 0.048

1643 grams milled 4 hours
8 hours agitated w/330 gr.Hg.

Free sodium cyanide
lb/Ton
Solution =

Ore =

Lime lb/Ton
Solution =

Ore =

Percent recovery

gold =

silver =

pH

Registered Assayer
Michael G. Jacobs

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PRELIMINARY TESTS

SAMPLE NO. 3/1/2 conc as received.

Weight as received 553 gr. XXXX ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 12.897 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron ____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.023			Wt. g	
SILVER oz/T	XXXXXXX	<0.05			Oz/T gold	
TOTAL mg Gold	244.10	0.436			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 99.82

silver = N/A

553/29.166 = 18.96 A.T.
244.536/18.96 = 12.897 OZ/TON Au

553 grams milled 4 hours
8 hours agitated w/110 gr.Hg.

Note:
207.0 Mg free gold weighed prior to amalgamating.

244.10
207.00
451.10

Free sodium cyanide lb/Ton
Solution = ____

Ore = ____

Lime lb/Ton
Solution = ____

Ore = ____

Percent recovery

gold = ____

silver = ____

pH ____

Registered Assayer
Michael G. Jacobs

JACOBS ASSAY OFFICE
1435 So. 10th Avenue
Tucson, Arizona 85713
602-622-0813

DMEA LTD.

PRELIMINARY TESTS

SAMPLE NO. 3/2/1 conc. as received.

Weight as received 612 gr. ~~xlbs~~ ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 5.15 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron ____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.033			Wt. g	
SILVER oz/T	XXXXXXX	0.05			Oz/T gold	
TOTAL mg Gold	107.31	0.692			Oz/T silver	
TOTAL mg silver	N/A	1.05			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 99.36

silver = N/A

Free sodium cyanide lb/Ton
Solution =

Ore =

Lime lb/Ton
Solution =

Ore =

Percent recovery

gold =

silver =

pH

612/29.166 = 20.98 A.T.

108.00/20.98 = 5.15

612 grams milled 4 hours
8 hours agitated w/125 gr.Hg.

Note:
Mg. of free gold wts. 79.05
6.799
4.297
90.146

Registered Assayer
Michael G. Jacobs

JACOBS ASSAY OFFICE
1435 So. 10th Avenue
Tucson, Arizona 85713
602-622-0813

DMEA LTD.

PRELIMINARY TESTS

SAMPLE NO. ~~4/1/1 conc.~~ as received.

Weight as received ~~424 gr.~~ XXX lbs ; Size, all minus ~~3/8~~ inches

HEAD ASSAY: Gold ~~0.279 (calc)~~ oz/T, Silver ~~N/A~~ oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron ____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.045			Wt. g	
SILVER oz/T	XXXXXXX	<0.05			Oz/T gold	
TOTAL mg Gold	~~3.410~~	~~0.654~~			Oz/T silver	
TOTAL mg silver	~~N/A~~	~~N/A~~			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = ~~83.91~~

silver = ~~N/A~~

424/29.166 = 14.54

4.064/14.54 = .279 OZ/TON Au

429 grams milled 4 hours
8 hours agitated w/85 gr.Hg.

Free sodium cyanide lb/Ton
Solution = ____

Ore = ____

Lime lb/Ton
Solution = ____

Ore = ____

Percent recovery

gold = ____

silver = ____

pH ____

Registered Assayer
Michael G. Jacobs

JACOBS ASSAY OFFICE
1435 So. 10th Avenue
Tucson, Arizona 85713
602-622-0813

. DMEA LTD.

PRELIMINARY TESTS

SAMPLE NO. ~~4/1/2 conc.~~ as received.

Weight as received ~~413 gr. lbs~~ XXX ; Size, all minus 3/8 inches

HEAD ASSAY: Gold ~~1.438(calc)~~ oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron ____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.013			Wt. g	
SILVER oz/T	XXXXXXX	<0.05			Oz/T gold	
TOTAL mg Gold	20.180	0.184			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 99.09

silver = N/A

413/29.166 = 14.16 A.T.

20.364/14.16 = 1.438 OZ/TON Au

413 grams milled 4 hours
8 hours agitated w/85 gr.Hg.

Free sodium cyanide lb/Ton
Solution =

Ore =

Lime lb/Ton
Solution =

Ore =

Percent recovery

gold =

silver =

pH

Registered Assayer
Michael G. Jacobs

DMEA LTD.

JACOBS ASSAY OFFICE
1435 So. 10th Avenue
Tucson, Arizona 85713
602-622-0813

PRELIMINARY TESTS

SAMPLE NO. 4/2/1 conc. as received.

Weight as received 468 gr. ~~XXXX~~ ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.795 (calc)z/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron ____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.050			Wt. g	
SILVER oz/T	XXXXXXX	<.05			Oz/T gold	
TOTAL mg Gold	11.95	0.803			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 93.70

silver = N/A

468/29.166 = 16.05 A.T.

12.753/16.05 = .795 oz/ton

468 gr. milled 4 hours
8 hours agitated w/95 gr.Hg.

Free sodium cyanide lb/Ton
Solution = ____

Ore = ____

Lime lb/Ton
Solution = ____

Ore = ____

Percent recovery

gold = ____

silver = ____

pH ____

Registered Assayer
Michael G. Jacobs

JACOBS ASSAY OFFICE
1435 So. 10th Avenue
Tucson, Arizona 85713
602-622-0813

DMEA LTD.

PRELIMINARY TESTS

SAMPLE NO. 5/1/1 conc. as received.

Weight as received 271 gr. ~~xxx~~ ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.014 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.010			Wt. g	
SILVER oz/T	XXXXXXX	0.10			Oz/T gold	
TOTAL mg Gold	0.040	0.093			Oz/T silver	
TOTAL mg silver	N/A	0.93			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 30.08 %

silver = N/A

271/29.166 = 9.29

0.133/9.29 = 0.014 OZ/TON Au

271 grams milled 4 hours
8 hours agitated w/55 gr.Hg.

Free sodium cyanide lb/Ton
Solution = _____
Ore = _____

Lime lb/Ton
Solution = _____
Ore = _____

Percent recovery
gold = _____
silver = _____

pH _____

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PRELIMINARY TESTS

SAMPLE NO. 5/1/2 conc. as received.

Weight as received 780 gr. ~~lbs~~ ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.013 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	.007			Wt. g	
SILVER oz/T	XXXXXXX	0.10			Oz/T gold	
TOTAL mg Gold	0.153	0.187			Oz/T silver	
TOTAL mg silver	N/A	2.67			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 45.00%

silver = N/A

780/29.166 26.74

.340/26.74 .013

780 grams milled 4 hours
8 hours agitated w/155 gr.Hg.

Free sodium cyanide lb/Ton
Solution = _____

Ore = _____

Lime lb/Ton
Solution = _____

Ore = _____

Percent recovery

gold = _____

silver = _____

pH _____

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PRELIMINARY TESTS

SAMPLE NO. 5/1/3 conc. as received.
Weight as received 931 gr. ~~lbs~~ ; Size, all minus 3/8 inches
HEAD ASSAY: Gold 0.005 (calc) oz/T, Silver N/A oz/T
GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time
→ Iron ____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.003			Wt. g	
SILVER oz/T	XXXXXXX	<0.05			Oz/T gold	
TOTAL mg Gold	0.062	0.096			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery
gold = 39.24
silver = N/A

Free sodium cyanide lb/Ton
Solution =
Ore =

Lime lb/Ton
Solution =
Ore =

Percent recovery
gold =
silver =

pH

931/29.166 = 31.92
0.158/31.92 = .005 OZ/TON Au
931 grams milled 4 hours
8 hours agitated w/185 gr.Hg.

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PRELIMINARY TESTS

SAMPLE NO. 6/1/1 conc. as received.

Weight as received 1337 gr. ~~xxx~~ ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.013 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.010			Wt. g	
SILVER oz/T	XXXXXXX	0.05			Oz/T gold	
TOTAL mg Gold	0.140	0.458			Oz/T silver	
TOTAL mg silver	N/A	2.292			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 23.41

silver = N/A

1337/29.166 = 45.84

.598/45.84 = 0.013 OZ/TON Au

1337 grams milled 4 hours
8 hours agitated w/270 gr.Hg.

Free sodium cyanide lb/Ton
Solution = _____

Ore = _____

Lime lb/Ton
Solution = _____

Ore = _____

Percent recovery

gold = _____

silver = _____

pH _____

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PRELIMINARY TESTS

SAMPLE NO. 6/1/2 conc. as received.

Weight as received 637 gr. ~~XXX~~ ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.038 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.011			Wt. g	
SILVER oz/T	XXXXXXX	0.05			Oz/T gold	
TOTAL mg Gold	0.580	0.240			Oz/T silver	
TOTAL mg silver	N/A	1.09			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 70.73

silver = N/A

637/29.166 = 21.84 A.T.

0.820/21.84 = .038 oz/ton

637 gr. milled 4 hours
8 hours agitated w/130 gr.Hg.

Free sodium cyanide
lb/Ton
Solution = _____

Ore = _____

Lime lb/Ton
Solution = _____

Ore = _____

Percent recovery

gold = _____

silver = _____

pH _____

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PRELIMINARY TESTS

SAMPLE NO. 7/1/1 conc. as received.

Weight as received 70 grams ~~XXX~~ ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.540 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron ____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.528			Wt. g	
SILVER oz/T	XXXXXXX	<.05			Oz/T gold	
TOTAL mg Gold	0.030	1.267			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 2.31

silver = N/A

70/29.166 = 2.40 A.T.
1.297/2.40 = 0.540 oz/ton

70 grams milled 4 hours
8 hours agitated w/15 gr.Hg.

Free sodium cyanide lb/Ton
Solution = ____

Ore = ____

Lime lb/Ton
Solution = ____

Ore = ____

Percent recovery

gold = ____

silver = ____

pH ____

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PRELIMINARY TESTS

SAMPLE NO. 7/1/2 5'-9'-3"conc as received.

Weight as received 86 grams ~~lbs~~ ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.117 (calc.) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.096			Wt. g	
SILVER oz/T	XXXXXXX	0.05			Oz/T gold	
TOTAL mg Gold	0.063	0.283			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 11.73

silver = N/A

86/29.166 = 2.949 A.T.
0.346/2.949 = 0.117 oz/ton

86 grams milled 4 hours
8 hours agitated w/20 gr.Hg.

Free sodium cyanide lb/Ton
Solution = _____

Ore = _____

Lime lb/Ton
Solution = _____

Ore = _____

Percent recovery

gold = _____

silver = _____

pH _____

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PRELIMINARY TESTS

SAMPLE NO. 7/1/3 9'-3"-14'-3" conc received.
Weight as received 949 grams ~~XXX~~ ; Size, all minus 3/8 inches
HEAD ASSAY: Gold 0.006 (calc) oz/T, Silver N/A oz/T
GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron ____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.005			Wt. g	
SILVER oz/T	XXXXXXX	0.05			Oz/T gold	
TOTAL mg Gold	0.022	0.163			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 11.89

silver = N/A

949/29.166 = 32.53 A.T.
0.185/32.53 = 0.006 oz/ton

949 grams milled 4 hours
8 hours agitated w/190 gr.Hg.

Free sodium cyanide lb/Ton
Solution =

Ore =

Lime lb/Ton
Solution =

Ore =

Percent recovery

gold =

silver =

pH

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PRELIMINARY TESTS

SAMPLE NO. 8/1/1 0-4' conc. as received.
Weight as received 349 grams ~~XXX~~ ; Size, all minus 3/8 inches
HEAD ASSAY: Gold 0.008 (calc) oz/T, Silver N/A oz/T
GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time
→ Iron ____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.006			Wt. g	
SILVER oz/T	XXXXXXX	<.05			Oz/T gold	
TOTAL mg Gold	0.026	0.072			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 26.53

silver = N/A

349 gr/29.166 = 11.97 A.T.
0.098/11.97 = 0.008 oz./ton

349 grams milled 4 hours
8 hours agitated w/70 gr.Hg.

Free sodium cyanide lb/Ton
Solution = ____
Ore = ____

Lime lb/Ton
Solution = ____
Ore = ____

Percent recovery
gold = ____
silver = ____

pH ____

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PRELIMINARY TESTS

SAMPLE NO. 8/1/2 4'-8' conc. as received.

Weight as received 755 grams XXXX ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.024 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron ____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.006			Wt. g	
SILVER oz/T	XXXXXXX	<.05			Oz/T gold	
TOTAL mg Gold	0.468	0.155			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 75.12

silver = N/A

755/29.166 = 25.89 A.T.

0.623/25.89 = 0.024 oz/ton

755 grams milled 4 hours
8 hours agitated w/150 gr.Hg.

Free sodium cyanide lb/Ton
Solution = ____

Ore = ____

Lime lb/Ton
Solution = ____

Ore = ____

Percent recovery

gold = ____

silver = ____

pH ____

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PRELIMINARY TESTS

SAMPLE NO. 8/1/3 8'-12'-10" conc. as received.

Weight as received 461 grams ~~XXX~~ ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.939 calc. oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

→ AMALGAM
→ TAILS

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

→ SOLUTION
→ TAILS

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg
→ METALLICS
→ PULP

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.020			Wt. g	
SILVER oz/T	XXXXXXX	<.05			Oz/T gold	
TOTAL mg Gold	14.530	0.316			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 97.87

silver = N/A

461/29.166 = 15.81 A.T.

14.846/15.81 = 0.939 oz/ton

461 grams milled 4 hours
8 hours agitated w/95 gr.Hg.

Free sodium cyanide lb/Ton
Solution = _____

Ore = _____

Lime lb/Ton
Solution = _____

Ore = _____

Percent recovery

gold = _____

silver = _____

pH _____

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PRELIMINARY TESTS

SAMPLE NO. 9/1/1 0-4'-4"conc.as received.

Weight as received 1124 grams XXX ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.499 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron ____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.031			Wt. g	
SILVER oz/T	XXXXXXX	<.05			Oz/T gold	
TOTAL mg Gold	18.020	1.194			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 93.79

silver = N/A

1124/29.166 = 38.54 A.T.

19.214/38.54 = 0.499 oz/ton

1124 grams milled 4 hours
8 hours agitated w/225 gr.Hg.

Free sodium cyanide lb/Ton
Solution = ____

Ore = ____

Lime lb/Ton
Solution = ____

Ore = ____

Percent recovery

gold = ____

silver = ____

pH ____

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PRELIMINARY TESTS

SAMPLE NO. 10/1/1 conc. as received.
Weight as received 824 grams ~~XXX~~ ; Size, all minus 3/8 inches
HEAD ASSAY: Gold 0.398 (calc) oz/T, Silver N/A oz/T
GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time
→ Iron ____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.014			Wt. g	
SILVER oz/T	XXXXXXX	<.05			Oz/T gold	
TOTAL mg Gold	11.054	0.396			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery
gold = 96.54
silver = N/A

824/29.166 = 28.25 A.T.
11.45/28.25 = 0.398 oz/ton

824 grams milled 4 hours
8 hours agitated w/165gr.Hg.

Free sodium cyanide
lb/Ton
Solution =
Ore =

Lime lb/Ton
Solution =
Ore =

Percent recovery
gold =
silver =

pH

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PRELIMINARY TESTS

SAMPLE NO. 11/1/1 conc as received.

Weight as received 199 grams ~~XXX~~ ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.068 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.008			Wt. g	
SILVER oz/T	XXXXXXX	0.05			Oz/T gold	
TOTAL mg Gold	0.413	0.054			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 88.44

silver = N/A

199/29.166 = 6.82 A.T.

0.467/6.82 = 0.068 oz/ton

199 grams milled 4 hours
8 hours agitated w/40 gr.Hg.

Free sodium cyanide lb/Ton
Solution = _____

Ore = _____

Lime lb/Ton
Solution = _____

Ore = _____

Percent recovery

gold = _____

silver = _____

pH _____

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PRELIMINARY TESTS

SAMPLE NO. 11/1/2 conc. as received.

Weight as received 784 grams XXX ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.133 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron ____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.009			Wt. g	
SILVER oz/T	XXXXXXX	0.05			Oz/T gold	
TOTAL mg Gold	3.180	0.231			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 93.23

silver = N/A

784/29.166 = 25.65 A.T.
3.411/25.65 = 0.133 oz/ton

784 grams milled 4 hours
8 hours agitated w/155 gr.Hg.

Free sodium cyanide lb/Ton
Solution = ____
Ore = ____

Lime lb/Ton
Solution = ____
Ore = ____

Percent recovery

gold = ____

silver = ____

pH ____

Registered Assayer
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PRELIMINARY TESTS

SAMPLE NO. 11/1/3 conc. as received.

Weight as received 867 grams XXX ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.030 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.002			Wt. g	
SILVER oz/T	XXXXXXX	0.05			Oz/T gold	
TOTAL mg Gold	0.835	0.059			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 93.40

silver = N/A

867/29.166 = 29/73 A.T.

0.894/29.73 = 0.030 oz/ton

867 grams milled 4 hours
8 hours agitated w/175 gr.Hg.

Free sodium cyanide lb/Ton
Solution = _____

Ore = _____

Lime lb/Ton
Solution = _____

Ore = _____

Percent recovery

gold = _____

silver = _____

pH _____

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602-622-0813

DMEA LTD.

PRELIMINARY TESTS

SAMPLE NO. 11/1/4 conc. as received.

Weight as received 385 grams ~~lbs~~ ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.433 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.012			Wt. g	
SILVER oz/T	XXXXXXX	0.05			Oz/T gold	
TOTAL mg Gold	5.553	0.158			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 97.23

silver = N/A

385/29.166 = 13.20 A.T.

5.711/13.20 = 0.433 oz/ton

385 grams milled 4 hours
8 hours agitated w/80 gr.Hg.

Free sodium cyanide lb/Ton
Solution = _____
Ore = _____

Lime lb/Ton
Solution = _____
Ore = _____

Percent recovery

gold = _____

silver = _____

pH _____

Registered Assayer
Michael G. Jacobs

JACOBS ASSAY OFFICE
1435 So. 10th Avenue
Tucson, Arizona 85713
602-622-0813

DMEA LTD.

PRELIMINARY TESTS

SAMPLE NO. 12/1/1; conc. as received.

Weight as received ~~587 grams~~ XXX ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.028 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron ____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.006			Wt. g	
SILVER oz/T	XXXXXXX	0.05			Oz/T gold	
TOTAL mg Gold	0.434	0.120			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 78.34

silver = N/A

587/29.166 = 20.13 A.T.
0.554/20.13 = 0.028 oz/ton

587 grams milled 4 hours
8 hours agitated w/120gr.Hg.

Free sodium cyanide lb/Ton
Solution =

Ore =

Lime lb/Ton
Solution =

Ore =

Percent recovery

gold =

silver =

pH

Registered Assayer
Michael G. Jacobs

DMEA LTD.

JACOBS ASSAY OFFICE
1435 So. 10th Avenue
Tucson, Arizona 85713
602-622-0813

PRELIMINARY TESTS

SAMPLE NO. 12/1/2 conc. as received.
Weight as received 569 grams ~~XXXX~~ ; Size, all minus 3/8 inches
HEAD ASSAY: Gold 0.075 (calc) oz/T, Silver N/A oz/T
GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time
→ Iron ____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.002			Wt. g	
SILVER oz/T	XXXXXXX	0.05			Oz/T gold	
TOTAL mg Gold	1.430	0.039			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery
gold = 97.35
silver = N/A

Free sodium cyanide lb/Ton
Solution =
Ore =

Lime lb/Ton
Solution =
Ore =

Percent recovery
gold =
silver =

pH

569/29.166 = 19.51 A.T.
1.460/19.51 = 0.075 oz/ton

569 grams milled 4 hours
8 hours agitated w/115 gr.Hg.

Registered Assayer
Michael G. Jacobs

DMEA LTD.

JACOBS ASSAY OFFICE
1435 So. 10th Avenue
Tucson, Arizona 85713
602-622-0813

PRELIMINARY TESTS

SAMPLE NO. 12/1/3 conc. as received.

Weight as received 591 grams~~XXXX~~ ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.045 (calc)/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron ____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.004			Wt. g	
SILVER oz/T	XXXXXXX	0.05			Oz/T gold	
TOTAL mg Gold	0.838	0.081			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 91.19

silver = N/A

591/29.166 = 20/26 A.T.
0.919/20.26 = 0.045 oz/ton

591 grams milled 4 hours
8 hours agitated w/120 gr.Hg.

Free sodium cyanide lb/Ton
Solution =

Ore =

Lime lb/Ton
Solution =

Ore =

Percent recovery

gold =

silver =

pH

Registered Assayer
Michael G. Jacobs

JACOBS ASSAY OFFICE
1435 So. 10th Avenue
Tucson, Arizona 85713
602-622-0813

DMEA LTD.

PRELIMINARY TESTS

SAMPLE NO. 13/1/1 conc. as received.

Weight as received 289 grams XXX ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 7.39 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time
→ Iron ____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.663			Wt. g	
SILVER oz/T	XXXXXXX	<0.05			Oz/T gold	
TOTAL mg Gold	66.650	6.570			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 91.02

silver = N/A

289/29.166 = 9.91 A.T.
73.22/9.91 = 7.39 oz/ton

289 grams milled 4 hours
8 hours agitated w/60 gr.Hg.

Note: Sample wts.of small nuggetts.
#1--37.060 Mg.
#2--19.326 "
#3--4.756 "
#4--2.306 "
#5--1.960 "

Free sodium cyanide lb/Ton
Solution =

Ore =

Lime lb/Ton
Solution =

Ore =

Percent recovery

gold =

silver =

pH

Registered Assayer
Michael G. Jacobs

JACOBS ASSAY OFFICE
1435 So. 10th Avenue
Tucson, Arizona 85713
602-622-0813

DMEA LTD.

PRELIMINARY TESTS

SAMPLE NO. 14/1/1 conc. as received.
Weight as received 1195 grams ~~XXX~~ ; Size, all minus 3/8 inches
HEAD ASSAY: Gold 0.063 (calc.) oz/T, Silver N/A oz/T
GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time
→ Iron ___ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.003			Wt. g	
SILVER oz/T	XXXXXXX	<.05			Oz/T gold	
TOTAL mg Gold	2.455	0.123			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 95.23

silver = N/A

1195/29.166 = 40.97 A.T.
2.578/40.97 = 0.063 oz/ton

1195 grams milled 4 hours
8 hours agitated w/240 gr.Hg.

Free sodium cyanide lb/Ton
Solution =
Ore =

Lime lb/Ton
Solution =
Ore =

Percent recovery

gold =

silver =

pH

Registered Assayer
Michael G. Jacobs

DMEA LTD.

JACOBS ASSAY OFFICE
1435 So. 10th Avenue
Tucson, Arizona 85713
602-622-0813

PRELIMINARY TESTS

SAMPLE NO. 15/1/1 conc. as received.
Weight as received 2480 grams XXX ; Size, all minus 3/8 inches
HEAD ASSAY: Gold 0.007 (calc) oz/T, Silver N/A oz/T
GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

→ AMALGAM
→ TAILS

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

→ SOLUTION
→ TAILS

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron ____ mg
→ METALLICS
→ PULP

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.005			Wt. g	
SILVER oz/T	XXXXXXX	<.05			Oz/T gold	
TOTAL mg Gold	0.179	0.425			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 42.11

silver = N/A

2480/29.166 = 85.03 A.T.
0.604/85.03 = 0.007 oz/ton
2480 grams milled 4 hours
8 hours agitated w/500 grams Hg.

Free sodium cyanide lb/Ton
Solution =
Ore =

Lime lb/Ton
Solution =
Ore =

Percent recovery

gold =

silver =

pH

Registered Assayer
Michael G. Jacobs

MICHAEL G. JACOBS

JACOBS ASSAY OFFICE
1435 So. 10th Avenue
Tucson, Arizona 85713
602-622-0813

DMEA LTD.

PRELIMINARY TESTS

SAMPLE NO. 15/1/2 conc. as received.

Weight as received 1350 grams~~XXXX~~ ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.310 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.002			Wt. g	
SILVER oz/T	XXXXXXX	<.05			Oz/T gold	
TOTAL mg Gold	14.300	0.092			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 99.36

silver = N/A

1350/29.166 = 46.29 A.T.
14.392/46.29 = 0.310

1350 grams milled 4 hours
8 hours agitated w/270 gr.Hg.

Free sodium cyanide lb/Ton
Solution = _____

Ore = _____

Lime lb/Ton
Solution = _____

Ore = _____

Percent recovery

gold = _____

silver = _____

pH _____

Registered assayer
Michael G. Jacobs

MICHAEL G. JACOBS
DATE SIGNED

DMEA LTD.

JACOBS ASSAY OFFICE
1435 So. 10th Avenue
Tucson, Arizona 85713
602-622-0813

PRELIMINARY TESTS

SAMPLE NO. 16/1/1 conc. as received.

Weight as received 247 grams XXXX ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 0.226 (calc) oz/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	0.014			Wt. g	
SILVER oz/T	XXXXXXX	0.05			Oz/T gold	
TOTAL mg Gold	1.800	0.119			Oz/T silver	
TOTAL mg silver	N/A	N/A			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 93.80

silver = N/A

247/29.166 = 8.47 A.T.

1.919/8.47 = 0.226 ox/ton

247 grams milled 4 hours
8 hours agitated w/50 gr.Hg.

Free sodium cyanide lb/Ton
Solution = _____

Ore = _____

Lime lb/Ton
Solution = _____

Ore = _____

Percent recovery

gold = _____

silver = _____

pH _____

Registered Assayer
Michael G. Jacobs

JACOBS ASSAY OFFICE
1435 So. 10th Avenue
Tucson, Arizona 85713
602-622-0813

DMEA LTD.

PRELIMINARY TESTS

SAMPLE NO. 16/1/2 conc. as received.

Weight as received 204 grams ~~XXX~~ ; Size, all minus 3/8 inches

HEAD ASSAY: Gold 11.64 (calc)/T, Silver N/A oz/T

GOLD/200 grams XXX mg; SILVER/200 grams XXX

AMALGAMATION
200 grams - 100 Mesh

800 cc water
40 grams mercury
1 gram sodium hydroxide
Agitate 3 hours

CYANIDATION
200 grams - 100 Mesh

800 cc water
2 grams sodium cyanide
1,2 grams lime
Agitate 24 hours

METALLICS
200 grams - 100 Mesh

10 minute screening time

→ Iron _____ mg

	AMALGAM	TAILS	SOLUTION	TAILS	METALLICS	PULP
GOLD oz/T	XXXXXXX	1.028			Wt. g	
SILVER oz/T	XXXXXXX	0.10			Oz/T gold	
TOTAL mg Gold	74.160	7.185			Oz/T silver	
TOTAL mg silver	~~N/A~~	~~N/A~~			Wt. Gold mg	Wt. Gold mg
					Wt. silver mg	Wt. silver mg

Percent recovery

gold = 91.17

silver = N/A

204/29.166 = 6.99 A.T.

81.345/6.99 = 11.64 oz/ton

204 grams milled 4 hours

8 hours agitated w/40 gr.Hg.

Free sodium cyanide lb/Ton
Solution = _____

Ore = _____

Lime lb/Ton
Solution = _____

Ore = _____

Percent recovery

gold = _____

silver = _____

pH _____

Registered Assayer
Michael G. Jacobs

MICHAEL G. JACOBS
U. S. A.

1435 S. 10th AVE.

Jacobs Assay Office

Registered Assayers

PHONE 622-0813

TUCSON, ARIZONA 85713

Certificate No. 64278

12/28 1984

Sample Submitted By Mr. PRUDDEN

SAMPLE MARKED	GOLD Ozs. per ton ore	GOLD Value per ton ore	SILVER Ozs. per ton ore	LEAD Per Cent Wet Assay	COPPER Per Cent Wet Assay	Per Cent Wet Assay	Per Cent Wet Assay
TAILS 3/2/1 -10M	0.001	$	<0.05				
" " +10M	0.005		<0.05				
" 4/2/1 -10M	0.012		<0.05				
" " +10M	TRACE		<0.05				
" 11/1/1 -10M	0.002		<0.05				
" " +10M	0.09		<0.05				
" 11/1/2 -10M	0.001		<0.05				
" " +10M	0.002		<0.05				
" 11/1/3 -10M	0.001		<0.05				
" " +10M	TRACE		<0.05				
" 11/1/4 -10M	0.004		<0.05				
" " +10M	0.001		<0.05				
" 12/1/1 -10M	TRACE		<0.05				
" " +10M	TRACE		<0.05				
" 12/1/2 -10M	0.002		<0.05				
" " +10M	0.001		<0.05				
" 12/1/3 -10M	0.001		<0.05				
" " +10M	0.001		<0.05				
" 13/1/1 -10M	0.003		<0.05				
" " +10M	0.002		<0.05				
" 14/1/1 -10M	0.001		<0.05				
" " +10M	0.004		<0.05				
" 15/1/1 -10M	TRACE		<0.05				
" " +10M	0.001		<0.05				
" 15/1/2 -10M	0.001		<0.05				
" " +10M	TRACE		<0.05				
" 16/1/1 -10M	0.001		<0.05				
" 16/1/1 +10M	0.001		<0.05				
" 16/1/2 -10M	TRACE		<0.05				
" " +10M	0.002		<0.05				

FIRE ASSAY
2 ASSAY TON GA SAMPLE
WET SAMPLES

Charges $ 315.00

Very respectfully,

M. D. Jacobs

1435 S. 10th AVE.

Jacobs Assay Office

Registered Assayers

PHONE 622-0813

TUCSON, ARIZONA 85713

Certificate No. 64258

12/27 1984

Sample Submitted By Mr. PRUDDEN

	SAMPLE MARKED	GOLD OZS PER TON	SILVER OZS PER TON
1	tails 1/1/0 -10M	0.001	< 0.05
1	" 1/1/0 +10M	0.009	< 0.05
2	1/1/0 -10M	0.002	< 0.05
2	tails 1/1/0 +10M	0.002	< 0.05
3	" 1/1/10 -10M	0.001	< 0.05
3	" 1/1/10 +10M	0.001	0.05
4	" 1/2/2 -10M	0.001	< 0.05
4	" 1/2/2 +10M	0.002	0.05
5	" 1/2/4 -10M	0.002	< 0.05
5	" 1/2/4 +10M	0.003	< 0.05
6	" 2/1/1 -10M	0.002	0.05
6	" 2/1/1 +10M	0.003	0.05
7	" 2/1/2 -10M	0.002	0.05
7	" 2/1/2 +10M	0.001	< 0.05
8	3/1/1 -10M	TRACE	0.05
8	tails 3/1/1 +10M	TRACE	< 0.05
9	" 3/1/2 -10M	0.002	0.05
9	" 3/1/2 +10M	0.002	0.05
10	4/1/1 -10M	TRACE	0.05
10	tails 4/1/1 +10M	TRACE	0.05
11	" 4/1/2 -10M	0.001	< 0.05
11	" 4/1/2 +10M	0.002	< 0.05
12	" 5/1/1 -10M	0.001	< 0.05
12	" 5/1/1 +10M	TRACE	< 0.05
13	" 5/1/2 -10M	TRACE	< 0.05
13	" 5/1/2 +10M	TRACE	< 0.05
14	" 5/1/3 -10M	TRACE	< 0.05
14	" 5/1/3 +10M	0.001	0.05
15	" 6/1/1 -10M	0.001	0.05
15	" 6/1/1 +10M	0.001	0.05
16	" 6/1/2 -10M	TRACE	< 0.05
16	" 6/1/2 +10M	TRACE	< 0.05
17	" 7/1/1 -10M	TRACE	< 0.05
17	" 7/1/1 +10M	0.002	0.05
18	" 7/1/2 -10M	0.002	0.05
18	" 7/1/2 +10M	0.005	< 0.05
19	" 7/1/3 -10M	0.002	< 0.05
19	" 7/1/3 +10M	0.002	0.05

	SAMPLE MARKED	GOLD OZS PER TON	SILVER OZS PER TON
20	tails 8/1/1 -10M	0.002	< 0.05
20	" 8/1/1 +10M	0.002	0.05
21	" 8/1/2 -10M	0.002	0.05
21	" 8/1/2 +10M	0.003	0.05
22	" 8/1/3 -10M	0.004	< 0.05
22	" 8/1/3 +10M	0.001	< 0.05
23	" 9/1/1 -10M	0.001	0.05
23	" 9/1/1 +10M	0.001	0.05
24	" 10/1/1 -10M	0.018	0.05
24	" 10/1/1 +10M	0.002	0.05

FIRE ASSAY
2 ASSAY TON PER SAMPLE
SCREENING

Very respectfully,

Charges $ 504.00

1435 SOUTH 10TH AVENUE
TUCSON ARIZONA 85713

Jacobs Assay Office
Registered Assayers

PHONE 622-0813

Cert. # 64309

Tucson, Arizona, 17 JAN, 1985

Sample Submitted by Mr DMEA Ltd. C/o JAMES PRUDOM

Sample Marked	GOLD Ozs. per ton ore	GOLD ~~Value per ton ore~~	SILVER Ozs. per ton ore	~~COPPER Per Cent Wet Assay~~	~~LEAD Per Cent Wet Assay~~	~~Per Cent Wet Assay~~	~~Per Cent Wet Assay~~	~~Per Cent Wet Assay~~
"Gravity Tails"	0.016	—	2.50					
Amalgamation Tails	0.071	—	5.15					

Special Bulk sample — Starting wt As Rec — 5,675 grams
Entire sample CRUSED To 60 MESH - Gravity concentrated
Conc wt — 6 grams — Ball milled 4 hours, Agitated
8 hours with 3 grams Hg.
Total oz Gold Recovered = NIL

Charges $ 90.00

Very respectfully,

1435 SOUTH 10TH AVENUE
TUCSON ARIZONA 85713

Jacobs Assay Office

Registered Assayers

PHONE 622-0813

64256

Tucson, Arizona, 12/20, 1984

Sample Submitted by Mr. JAMES M. PRUDDEN

Sample Marked	GOLD Ozs. per ton ore	GOLD Value per ton ore*	SILVER Ozs. per ton ore	COPPER Per Cent Wet Assay	LEAD Per Cent Wet Assay	Per Cent Wet Assay	Per Cent Wet Assay	Per Cent Wet Assay
H-210-S	0.017	Mg Au						
H21 5-105-345 / 5-105-600	0.058	Mg Au						
H31 0-5-5-95 / 5-105-410	0.081	Mg Au						
H-34 10-15	0.026	Mg Au						
ENTIRE SAMPLE FILE ASSAYED								

Charges $ 39 00

Very respectfully, [signature]

1435 SOUTH 10TH AVENUE
TUCSON ARIZONA 85713

Jacobs Assay Office
Registered Assayers

PHONE 622-0813

Tucson, Arizona, 1/4, 19 55

64279 Sample Submitted by Mr. PRUDDEN CONC.

Sample Marked	GOLD Ozs. per ton ore	~~GOLD Value per ton ore~~	SILVER Ozs. per ton ore	~~COPPER Per cent Wet Assay~~	~~LEAD Per cent Wet Assay~~	~~Per Cent Wet Assay~~	~~Per Cent Wet Assay~~	~~Per Cent Wet Assay~~
H-19	~~					Ent. Sample (dry)		
0-5	0.012 oz		0.30 oz			7 grams		
5-10	T oz		0.20 oz			2 "		
10-15	0.110 oz		0.2 oz			45 "		
15-20	0.020 oz		0.25 oz			15 "		
H-31	~~		~~					
10-15	0.124 oz		0.35 oz			5 "		
15-20	0.050 oz		1.85 oz			1.5 "		
H-34	~~		~~					
15-20	0.005 oz		0.35 oz			40 "		
Entire sample Fire Assayed								

Charges $ 7.00

Very respectfully,

APPENDIX IV

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

REPORT OF SPECTROGRAPHIC ANALYSIS

JOB NO. UQX 023
January 10, 1985
BLACK SAND CONCENTRATE

A.F. BUDGE (MINING) LIMITED
Attn: Ms. Carole A. O'Brien
DMEA Ltd.
4203 North Brown Avenue, Suite F
Scottsdale, Arizona 85251

Analysis of 1 Black Sand Concentrate

The attached pages comprise this report of analysis. Values are reported in parts per million (ppm), except where otherwise noted, to the nearest number in the series 1, 1.5, 2, 3, 5, 7, 10, etc. within each order of magnitude. These numbers represent the approximate boundaries and midpoints of arbitrary ranges of concentration differing by the reciprocal of the cube root of ten. The 'accepted' value is considered to be within + or - 1 step of the range reported at the 68 % confidence level and within + or - 2 steps at the 95 % confidence level.

William L. Lehmbeck
Manager

cc: Jim Prudden ✓
Frank Millsaps

SKYLINE LABS, INC.
1775 W. Sahuaro Dr. • P.O. Box 50106
Tucson, Arizona 85703
(602) 622-4836

ITEM NO. SAMPLE NO.
1 = BLACK SAND CONCENTRATE

ITEM	1
ELEMENT	
Fe	>20%
Ca	1.5%
Mg	.3%
Ag	150
As	<500
B	10
Ba	2000
Be	<2
Bi	10
Cd	<50
Co	100
Cr	500
Cu	300
Ga	<10
Ge	<20
La	1000
Mn	700
Mo	2000
Nb	<20
Ni	200
Pb	>10000
Sb	<100
Sc	10
Sn	<10
Sr	<100
Ti	10000
V	500
W	50
Y	300
Zn	700
Zr	5000

Charles E. Thompson
Arizona Registered Assayer No. 9427

William L. Lehmbeck
Arizona Registered Assayer No. 9425

James A. Martin
Arizona Registered Assayer No. 11122

1435 SOUTH 10TH AVENUE
TUCSON ARIZONA 85713

Jacobs Assay Office
Registered Assayers

PHONE 622-0813

64308

Tucson, Arizona, 1/24, 1985

Sample Submitted by Mr. PRUDDEN DMEA

Sample Marked	~~GOLD Ozs. per ton ore~~	~~GOLD Value per ton ore~~	~~SILVER Ozs. per ton ore~~	~~COPPER Per cent Wet Assay~~	LEAD Per cent Wet Assay	~~Per Cent Wet Assay~~	~~Per Cent Wet Assay~~	~~Per Cent Wet Assay~~
13/1/1 conc.					0.55			
16/1/2 conc					0.08			
#9 7/1/2 conc.					0.06			

Charges $ 7.50

Very respectfully,

JAMES M. PRUDDEN
CONSULTING GEOLOGIST

4809 Quail Point Road
Salt Lake City, Utah 84124
801-272-4720

To: Budge Mining Co. 2 April 1989
From: J.M. Prudden
Subject: Weekly Progress Report; Vulture Placer Project

Activities for the week continued the systematic sampling, sample processing and geological mapping of trenches within the central tailings area. Elevation and co-ordinate survey data for this area was received during the week enabling map drafting and geological interpretation.

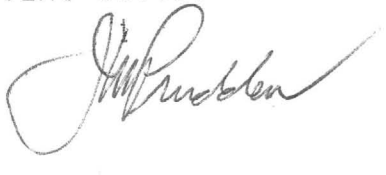
Approximately 13 tons of sample have been processed to date producing an average sample weight of 661 pounds. These samples have yielded about 2,400 gold particles ranging in size from minute >0.1 mg grains to a 6.9 gm. nugget. The individual shapes generally indicate short transport distance as evidenced by subrounded edges on grains that still retain their spongy, wire and dendritic forms. Some of these particles are coated with iron oxide.

Preliminary geological evaluation of the individual trench mapping indicates the presence of discrete fluvial channels within the tailings area. The eastern channel is relatively narrow measuring +/- 100 feet wide. High energy fluvial sedimentation in this zone has deposited cobbles and boulders, accompanied by large gold particles on an deeply incised bedrock surface. Several larger gold grains have been recovered from this channel with unofficial individual weights to 6.9 g. In contrast, significant gold concentrations in the adjacent channel to the west occur several feet above bedrock indicating a possible change in source area during sedimentation. The gold in this geological setting is small and juvenile.

A total of 10 amalgamation assays have been received to date from Dawson's Lab. They range from 0.315 to 16.783 mg. equating to $0.02 and $1.18 per cubic yard, respectively. These values are from low energy gravels obtained from the western channel. The small gold grain size in this area would suggest the possibility of mine run heap leach extraction opportunities.

Verbal communication with Mountain States R&D International revealed that few tailings assays were available for the week. However, results for three quartz-siderite veins sampled from trenches has indicated one value of 0.30 OPT gold and 0.10 OPT silver for these conformable veins.

Process plant main eccentric bearing failure reduced mechanical availability to 60% with effective utilization for this period at 43.3%. Continued systematic sampling has failed to detect particulate gold in plant tails.



JAMES M. PRUDDEN
CONSULTING GEOLOGIST

4809 Quail Point Road
Salt Lake City, Utah 84124
801-272-4720

To: Budge Mining Company 19 March 1989
From: J.M. Prudden
Subject: Progress Report; Vulture Mine Placer Project

A majority of the marked back hoe sample sites had been excivated on arrival on 6 th. March. During the course of the following two weeks some trenches required deepening to reach bed rock. Also, several long trenches have been excivated in the eastern placer area (former Trench 13). Some of the trenches on the margin of the tailings removal area failed to reach bedrock. A line of trenches (Line 22) spaced at two hundred foot intervals south of the main Vulture Mine road were also excivated.

Sampling commenced on Line 10 which is immediately south of the Vulture Mine buildings and within the tailings removal area. Logistics involving Line 22 necessitated shifting channel cutting to this southern most area. A total of 20 concentrates are presently packaged awaiting transport to Dawson's Metallurgical Laboratory for amalgamation assaying. Mountain States R&D Laboratory in Tucson has received 60 tailings plus 3 bed rock chip samples for fire assay.

Detailed trench wall geologic mapping is providing the necessary technical comparison between sedimentation and related gold deposition. This suspected positive relationship between gold and geology will guide feasibility studies and greatly assist visual grade control to minimize mining dilution.

Process plant productivity has been somewhat lower than expected mainly due to the very difficult processing characteristics of the Vulture placers. A combination of angular rock fragments and substantial percentages of caliche in the trommel oversize product necessitates re-running these tailings two and sometimes a third time to maximize recoveries. The nature of the caliche cemented matrix would suggest 1-3% gold loss for some of these troublesome samples. Statistics generated from sample processing indicate an average tonnage factor of 3,445 pounds per cubic yard and 11.2% swell factor.

A host of logistic problems, including start-up, lack of water and power, mechanical breakdowns and labor difficulties have resulted in a calculated 53% plant utilization for this 11 day operating period.

The gold recovered has been generally fine grained, although 5mg. grains have been noted. Line 10 gold is very juvenile with dendritic and wire forms common. The major concentrations in this location are associated with specific geologic units not necessarily lying on bed rock. Recovered gold from the 22 Line is subrounded and is associated with unsorted cobble gravels lying on bedrock.

JAMES M. PRUDDEN
4809 Quail Point Road
Salt Lake City, Utah 84124
(801) 272-4720

Carole A. O'Brien
A.F. Budge Limited
7340 E. Shoeman Lane
Suite 111 "B" (E)
Scotsdale, AZ 85251

31 January 1989

Dear Carole:

I enjoyed our group conversation today regarding your mining plans for the Vulture placers. Ore reserve development should commence with regular spaced sample points to provide grade and geological data for feasibility analysis. The backhoe trenches/pits should yield the necessary information within a short time with which to formulate production scheduling. This two-three month period would be utilized to design a process facility.

The following suggestions should provide the cost effective approach in producing the necessary three dimensional geological appraisal and attendant channel sampling for property evaluation. These steps are:

1. A series of backhoe trenches/pits are required to be excivated into bedrock on fences at 100 foot spacings. The excivations would be spaced at 50 foot centers along these lines. The maps that I have available do not have a scale, however former Trench #3 could be the focal point for this grid and the line would then extend westerly through Trench #4. Surveyed surface elevations for all excivations would be required with the geological mapping providing the remaining control.

2. Channel sampling techniques would be similar to previous work and the gravel processed in a suitable gravity process plant. The samples will require pre-treatment with dilute nitric acid prior to amalgamation. You might consider dispatching the concentrates to a metallurgical laboratory for total processing.

The above should be sufficient to start the project on a sound heading. When I arrive onsite there will be sufficient exposure to determine the course of further development work. This trenching could be extensive, however I believe it will be considerably less expensive than drilling. It also furnishes bulk samples on a regular grid basis for pilot scale work. Channel sampling will require two individuals with a third to operate the plant. One should be a geologist or equivalent. Although I

will be available to start this project, my availability for the month of February is limited. Evaluation of the data in March is one of the critical factors and I will devote full attention to this phase.

I would also like to offer a few passing comments for your edification. In the recommendation chapter in my 1985 report (page 34-36), I indicate that there are a total of three potential placers within the area sampled. These other two areas should be given due consideration. The possibility of placer reject material becoming heap leach product could be a distinct possibility considering that some of the tailings assays could be of sufficient value to qualify as leach material (e.g., tails 4/2/1 -10 mesh 0.012 OPT gold and 11-1-1 +10 mesh 0.09 OPT gold). The alluvial section in surface drill holes should also be assayed.

I trust the above provides the necessary direction on which to commence Vulture placer evaluation. The conference call on Friday will give you sufficient time to consider the above comments and could be discussed at that time. In conclusion Carole, I feel very positive that these placers will contribute to the Vulture cash flow.

Jim

James M. Prudden

Figure 4
Vulture Mine Tailing Area showing tailings isopachs based on
drill holes and proposed pre-tailings erosion surface channel axies

JAMES M. PRUDDEN
CONSULTING GEOLOGIST

4809 Quail Point Road
Salt Lake City, Utah 84124
801-272-4720

Dale Allen
Budge Mining
4301 N. 75 th. Street
Suite 101
Scottsdale, AZ 85251

10 April 1989

Dear Dale:

The following Vulture trench sampling can be expedited during this week while I am in Salt Lake.

1. Complete sampling trench 12 F.
2. Commence sampling the following trenches:
   a. 10 G: Trench is about 22 feet deep with bedrock at the 21.5 foot depth mark. Sampling should commence from the trench bottom utilizing the standard 5 foot sample intervals.
   b. 10 H: This trench is about 16 feet deep with the bedrock contact at 15.5 feet. Again, sampling should commence from the trench bottom using the 5 foot sample intervals.
   c. 13 B: Sampling should commence in the center of the north wall and commence from the trench bottom which is about 10 foot in depth.
   d. 13 C: Sampling should commence at the 19 foot depth at the left side of the north wall to ensure that bedrock is included in the sample. Five foot samples should be used.

I trust the above four trenches will provide sufficient work for the anticipated two-three man crew during the week. The above instructions should be clear, however I can be reached by telephone should you have any questions. I will be in contact with Dawson's during the week and will obtain all available assays.

Regards,

Jim

James M. Prudden

JAMES M. PRUDDEN
CONSULTING GEOLOGIST

4809 Quail Point Road
Salt Lake City, Utah 84124
801-272-4720

Carole A. O'Brien
Budge Mining Ltd.
4301 N. 75 th. Street
Scottsdale, AZ 85251

24 March 1989

Dear Carole:

It was a pleasure showing you some placer geology early this week. Everything is going smoothly, however I would like to process more samples. My weekly progress report is attached for your attention. Also, please find the enclosed consulting invoice for $11,140.30. You will note the $320 credit for a motor/gear box purchase.

Thank you for your interest and I will keep in touch.

Sincerely yours,

Jim

James M. Prudden

To: Budge Mining Co. 24 March 1989
From: J.M. Prudden
Subject: Weekly Progress Report; Vulture Mine Placer Project

Channel sampling for the week completed Line 22 and shifted northward to Line 12. Surveying trench locations commenced in the central placer area and will be completed early next week. Geologic mapping is progressing well in advance of sampling and map drafting can commence at the completion of property surveying.

The first 21 plant tailings assays have been received from Mountain States R&D. The following summarizes the results.

No Samples	Fraction	Assay OPT. Mean	Range
7	-1/8"	0.002	ND. 0.007
7	+1/8 -1/2"	0.002	ND. 0.007
7	+1/2	0.001	ND. 0.002

Correlating the above results with frequency of recovered gold grains in same samples indicates little relationship between assay and recovered gold; e.g., #10-15: 0.002 OPT vs 173 grains and #6.5-11.5: 0.006 OPT vs 4 grains. These samples were obtained close to the Vulture vein and could represent unliberated measurable gold levels in transported lode material. Silver assays reach 0.15 OPT. Systematic testing of plant tails during operations has failed to detect any free gold.

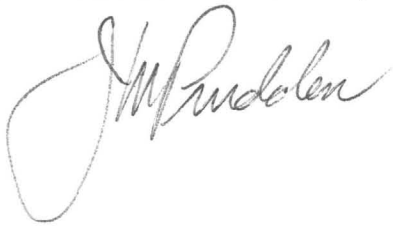
The process plant continued to operate efficiently recording 100% availability. Continuing water, power and labor problems resulted in 50% plant utilization for the week.

Recovered gold from Line 22, the southern most sampled line, consists of small grains that are moderately well rounded. The relative distribution of gold is directly associated with coarse gravels deposited on bedrock. This contrasts to the gold recovered from Line 10 where a variety of juvenile grain shapes and sizes have been encountered in upper sedimentary units probably migrating from the Vulture Lode.

Trench 12-A revealed gold grains that ranged from partially rounded nugget shapes to extremely flat grains similar in shape to elongated potato chips having a very low Corey Shape Factor (est. CSF=0.10). Gold grains to 4 mm in diameter and weighing an estimated 30 mg. have been recovered from this location. This gold is associated with cobble gravels deposited on an irregular bedrock surface.

Amalgamation assays should be available next week. However, it apparent that some intervals in Line 22 could be mineable grade. The 5-11 and 11-16 foot intervals in trench 12-A will most probably return encouraging economic values.

Sampling production to date has been well below expectations primarily due to under utilization of the process plant. The remaining estimated time required to channel the existing trenches will be about 35 days based on 85% utilization. The most cost effective approach in expediting this remaining first stage sampling would involve training a suitable Budge employee in continuing this established sampling program.



To: Budge Mining Co. 23 April 1989
From: J.M. Prudden
Subject: Weekly Progress Report; Vulture Placer Project

Activities for this two week period consist of the continuing trench mapping and sampling program, plus drafting a bedrock contour map utilizing a combination of geology and survey control. A total of 64 trenches have now been geological mapped with 24 sampled in the central tailings area. In addition, the long trenches in the eastern and northern regions have also been geologically mapped and spot sampled. A total of 45 amalgam concentrate assays have been received from Dawson's Metallurgical Laboratory. Tailings assays continue to be received from Mountain States Laboratory.

A bedrock elevation map has been plotted from trench locations and geological mapping. These contours outline two north-south paleo-channels that merge at about the 18 line. The most prominent feature is the narrower eastern channel with a steeper paleo-gradient. Meanders are evident in the broader western channel indicating a more mature (e.g., older) fluvial system.

Comparison of available gold assays with their respective channels illustrates some very interesting points. Assays for the eastern channel reveal that gold is concentrated on bedrock in association with large pebble/cobble gravels. The high grade intercept in 12-B results from one sub-rounded nugget weighing 6,868 mg. in association with several coarse gold grains totaling 318.3 mg. This impressive accumulation of gold correlates with the axis of this channel. In contrast, the channel to the west appears to have the gold concentrated in the middle of the fluvial profile. The gold is commonly small, and in some cases is very flat and floats. Trench mapping suggests the gold is associated with an unconformity that might be related to a changing fluvial environment eroding the gold from the Vulture vein. This erosional break becomes more pronounced to the south in the vicinity of the 18 line.

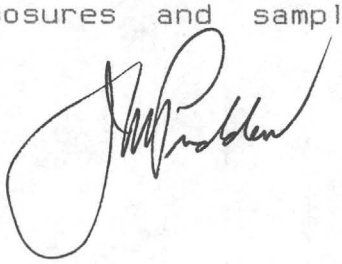
The attached table summarizes the available amalgam assays. It must be emphasized that these 45 results are obtained from 16 or 67% of the sampled trenches. Evaluation of these results can only be subjective at this point, however they provide some interesting statistics:

1) These 45 assays average 85.71 mg./BCY excluding the nugget or 827.47 mg./BCY including this large gold grain

2) Approximately 20% of these assays exceed 76 mg./BCY. The average grade for these better grade assays is 4,055.9 mg./BCY or 347.1 mg./BCY by excluding the nugget.

There are insufficient assays at this time to determine if sufficient volume and related ounces are available with which to plan an economic mining operation. However, gold grain counts for samples currently being assayed indicate that the above success ratio will continue and will probably accelerate now that the individual channels have been defined and characterized.

A backhoe should again be retained to clean partially caved trenches and also excivate additional trenches to furnish geological exposures and sampling opportunities.



1989 VULTURE MINE PLACER ASSAY RESULTS

Samp. No.	Volume cuft.	mg. Gold amalgamation	mg. Gold coarse	mg/BCY
10-A (T-66)				
0-6.5	6.5	5.000	---	20.78
6.5-11.5	5.0	16.783	---	90.63
11.5-16.5	5.0	7.437	---	40.16
16.5-21.5	5.4	0.315	---	1.58
10-B (T-65)				
10-15	5.0	4.897	---	26.44
15-20	5.0	12.239	---	66.09
20-26.5	7.6	1.013	---	3.60
10-C (T-64)				
13.9-18.9	5.0	0.942	---	5.09
18.9-23.9	5.6	9.194	---	44.33
10-D (T-63)				
2-9	7.0	6.704	---	27.86
9-14	5.0	20.082	---	108.44
12-A (T-43)				
0-5	5.0	3.253	---	17.57
5-11	6.0	3.477	47.428	229.07
11-16	5.0	20.143	---	108.77
12-B (T-50)				
1.5-5.6	4.0	1.633	---	11.02
5.6-10.6	5.0	5.363	---	28.96
10.6-15.6	5.0	27.252	6,467.77*	35,073.11
		(includes 6,868.1 mg. nugget X.9)		
12-C (T-49)				
2.5-8.5	6.0	3.394	---	15.27
8.5-13.5	5.0	13.624	---	73.57
12-D (T-48)				
5.3-10.3	5.0	4.543	---	24.53
10.3-15.3	5.0	6.265	---	33.83
15.3-20.3	5.0	2.526	---	13.64
20.3-25.3	5.0	1.594	---	8.61
12-E (T-53)				
8.8-12.8	4.0	1.340	---	9.05
12.8-17.8	5.0	4.392	---	23.72
17.8-22.8	5.0	12.013	---	64.87
22.8-27.8	5.0	2.752	---	14.86
27.8-31.0	3.25	2.215	---	18.40

12-G (T-55)				
0.8-5.8	5.0	5.460	---	29.48
5.8-10.8	5.0	68.409	---	369.41
21-B (T-9)				
10-12	1.0	9.749	---	263.22
22-A				
5-11	6.0	0.949	---	4.27
11-16.5	5.5	3.342	---	16.41
22-B				
5-11	6.0	3.319	---	14.94
11-17	6.0	17.521	---	78.84
17-22.5	5.5	36.903	---	181.16
22-C				
2-7	5.0	1.336	---	7.21
7-12	5.0	3.125	---	16.88
12-17	5.0	1.643	---	8.87
22-D				
5.3-11.3	6.0	0.248	---	1.12
11.3-16.3	5.0	0.518	---	2.80
16.3-21.3	5.0	1.647	---	8.89
22-E				
4.8-7.8	3.0	0.630	---	5.67
7.8-12.8	5.0	1.666	---	9.00
12.8-17.8	5.0	2.576	---	13.91

NOTE: Coarse gold weight calculated at 900 fine

EVALUATION OF THE VULTURE MINE

PALEOPLACERS

MARICOPA COUNTY, ARIZONA

by

James M. Prudden

Consulting Geologist

June 6, 1989

SCANNED 12/2010 NIN

INC MAP POCKET

TABLE OF CONTENTS

1. INTRODUCTION

The author was retained by A.F. Budge Ltd., based in Scottsdale, Arizona, on a fee paid consulting retainer basis to investigate the economic potential of the Vulture Mine placer deposits. The initial exploration of some of these placers is discussed in a 23 January 1985 consulting report by this author. Field investigation during 1989 encompassed the period of March 7 through May 6th.

The Vulture Mine is located some 16 miles southwest from Wickenberg situated in the extreme northern portion of Maricopa County, Arizona. This property is accessed by a well graded gravel road situated at the 2,000 foot elevation (Figure 1). South trending stream gullies contain water only during severe rain storms.

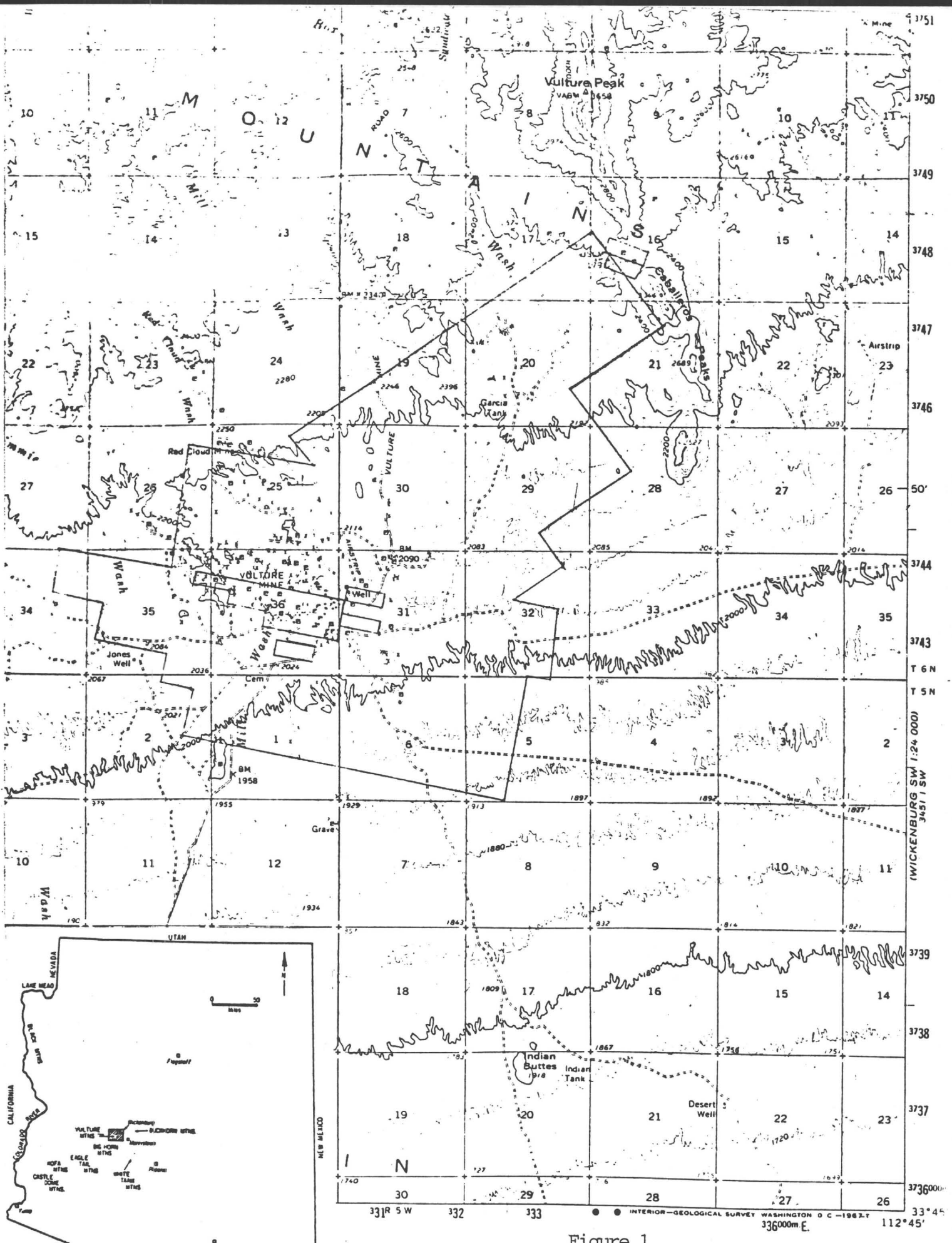


Figure 1
Location of Vulture Mine in SE portion. Vulture Mountain Quadrangle, Maricopa County, Arizona.

2. GEOLOGY

Regional bedrock geology has been covered by a variety of individuals. Rehrig (1980) discusses the Precambrian basement geology as a complex of gneissic and granitic rocks intruded by a northeast-trending 68.4 m.y. batholith. They indicate that "at least three intrusive phases are present..." for this Laramide intrusive. The generalized geologic map for the Vulture Mountain area is displayed in Figure 2.

Tertiary sedimentation commenced in the Eocene coinciding with the Laramide orogeny. The landscape became progressively higher in relief producing ever increasing percentages of sediments, including gravels, deposited in tectonic basins. This +/-30 m.y. sedimentation phase was terminated with the deposition of the Oligocene-Miocene acid volcanics. A second phase of clastic sedimentation evolved and was subsequently covered by basic volcanism dated at 13.5m.y. Miocene and Pliocene sedimentation occurred within closed basins and produced essentially evaporate and carbonate sequences. Interbedded fine grained clastic sediments were deposited adjacent to basin margins. The development of external drainage in the Pliocene greatly diminished evaporate-carbonate deposition which evolved into well-defined fluvial systems, without ponding, in the Pleistocene. It is believed that these established drainage systems prevailed to the Recent.

Tertiary tectonics, combined with climatic variables, were the dominant factor in developing and directing sedimentation. Northeast trending normal faults created the necessary structural depressions

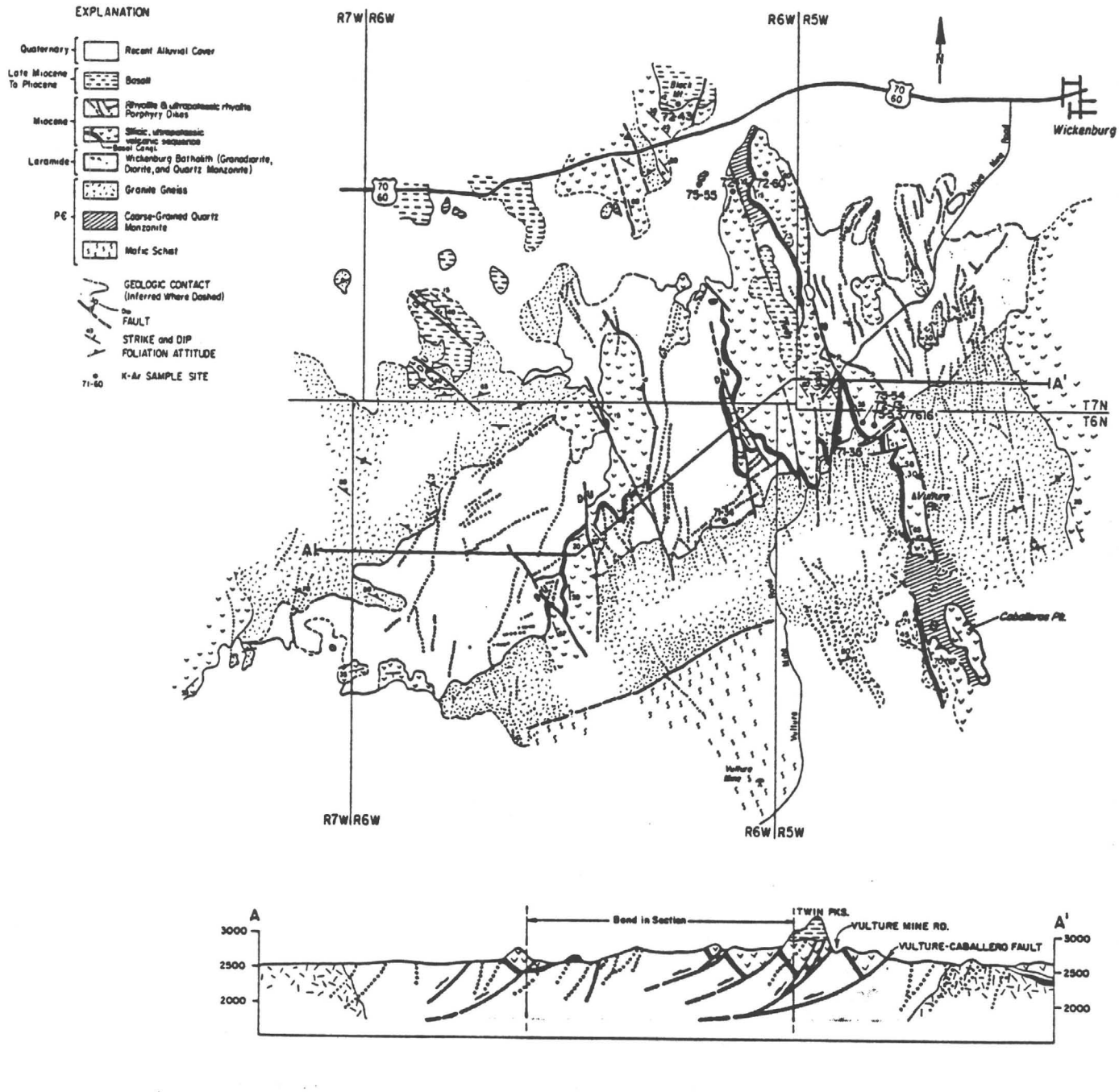


Figure 2
Generalized geologic map and cross section of the Vulture Mts. Precambrian rocks exhibit crude northeast pattern. Erosional unconformity exists below Miocene acid volcanics and Mio-Pliocene basalts. (After Rehrig, Shafigullah & Damon; 1980)

that allowed the concentration of clastic alluvium in south flowing drainage patterns. Two such drainage systems occur within the greater Vulture Mine area. The basin that is controlled by the Talmadge Fault commences 1.4 miles northwest of the mine and encompasses an area of about one square mile. Precambrian lithologies, igneous rocks and vein material from the Red Cloud Mine and other prospects supplied material for the placers. The second drainage basin lies immediately to the east and is bordered on the west by the Schoolhouse Fault. This alluvial system extends 3.6 miles to the northwest and encompasses an area of 2.2 square miles. Precambrian lithologies, intrusives and volcanics supply detritus to this alluvial system. Significant structural displacement has been measured within the Vulture Mine. Recurring fault activity is also evident by minor displacements in north dipping reverse faults within the placer gravels (Prudden, 1985). It is quite possible that this continuing fault activity changed the flow direction of some placer channels.

3. SAMPLING

Previous reconnaissance exploration (Prudden, 1985) sampled several alluvial systems that had the potential of containing significant concentrations of detrital gold. Several of these areas were targeted as worthy of further testing.

Two of these areas were selected for detailed evaluation. The alluvial channel(s) underlying the stamp mill tailings (1985, Trench area 3 and 4) was subjected to detailed backhoe girding on 50 foot by 100 foot centers. The object was to provide 'fences' with samples at 50 foot intervals. All trenches within this pattern were profile mapped and are displayed in Map 3. Backhoe depth limitations, time constraints and the presence of unmined tailings underlying projected channels prevented complete delineation of this fluvial system (map 2).

The second area selected is contiguous and east of the tailings deposits. The shallow nature of the alluvium in this region enabled continuous trench excavation on 100 foot fences (Map 1). These trenches were also geologically mapped and selectively sampled.

Sampling techniques were very similar to the previous evaluation period. Contiguous vertical channels were excavated with pneumatic hammers commencing in bedrock for much of the alluvial profile. Each 5 foot sample was collected on a tarp and placed in buckets for transport to the process plant where they were beneficiated individually with a mechanical trommel-jigging and static sluice device. The concentrates from the two screen fractions were hand cleaned and submitted for analysis. Tailings from the three screen

fractions were submitted for fire assay. Visual grain counts were conducted on the concentrates prior to lab shipment. Coarse gold was removed for separate weighing. The data from these measurements is displayed in Table 1. A limited number of geological samples were obtained to determine the relative direction for the program.

Dawson's Metallurgical Laboratory amalgamation process consisted of dilute HCl acid wash to remove iron and calcium encrustations on the gold grains, followed by amalgamation. The amalgam was roasted and the resulting gold reported in milligrams. The complete metallurgical balance technique, including three tailings assays from the respective screen products, is displayed in Table 1. The individual laboratory results are found in Appendix I and II. Particulate gold derived from geological sampling was submitted for bullion assaying to calculate non-amalgamated bulk grades.

4. PLACER CHANNELS

The sediments mapped and sampled constitute a variety of units typical of juvenile fluvial sedimentation derived from both the adjacent Vulture vein complex and also lithologies from the two northern drainage basins. The resultant stratigraphic section is a mixture of clasts from these two basic sources. Clast lithologies encountered in processing the samples consisted of basalt, quartz diorite, granite, vein quartz, pegmatite and a variety of metasediments. Pebble rounding varied from 1 to 5 depending on the transport distance and rock durability. This is also evident in the variety of gold grain shapes logged during field concentrate preparation. Variable degrees of cliche cementation occurs generally in the finer sediments near the top of the stratigraphic column.

The Hungarian Riffle configuration, formed from the east-west striking moderate north dipping metasediment bedrock, provided an ideal surface for heavy mineral concentration. This erosional feature has an observed relief of 24 inches.

The following describes the several fluvial systems that were encountered during this program, plus comments on select channels discussed previously (Prudden, 1985). Specific channels are defined geologically using a combination of mapped cross sections and bedrock contours derived from Budge Ltd. surveyed elevations (Appendix III). Provenance area and gold characteristics are correlated with the mapped geology. These channels are numbered from east to west and are found in Maps 1, 2 and 3.

4.1 Channel 1

This deeply incised narrow erosional 'gut' is confined between two prominent northerly trending bedrock highs extending from Line 11E through Lines 10E and 9E. It is very probable that bedrock faults control the direction of this channel. The geological profile at 10E+115 reveals a well incised bedrock channel containing poorly sorted and well packed subrounded medium sized clasts. The matrix is coarse grained sand and grit containing negligible silt content. Caliche development is moderate and irregular in the overlying pebbly sand units.

Tracing this channel northward through Line 9E involves correlation with a small erosional trough and adjacent bedrock graben. Sedimentation in these areas is distinctly immature in contrast to the adjacent channel 100 feet to the east.

Gold recovered from sample T10E+105 is small, elongate and semi-round in shape. This is also true for sample T9E+49, plus the fact that both samples contained one #3 color. Concentrate assays from the 1985 sampling period (Trench #13) indicates values to 0.55% lead.

4.2 Channel 2

This triangular shaped northeast trending channel is confined by prominent bedrock highs. The clasts are apparently derived from the quartz veined metasediment topographic high immediately to the south. Geological profiles indicate a width of 85 feet in Line 10E and increasing to 165 feet in Line 9E corresponding with a rather steep 1:6.6 paleogradient. The width to depth ratio increases from 8:1 to 17:1 northward coinciding with a flatter channel profile in Line 9E.

The sedimentation becomes more robust from Line 10E to Line 9E depicting a transition from medium-large pebble gravels to higher energy large pebble and boulder gravels, respectively. The gravel matrix consists of coarse sands and grits containing negligible silt content. The overlying sediments are coarse grained pebbly sands containing variable caliche development.

The gold recovered from sample T10E+369 was spongy and irregular in shape in contrast to the better rounded and nuggety grains recovered from samples T9E+280 and T9E+370. This apparent milling would tend to support the northerly paleocurrent flow direction.

4.3 Channel 3

This incompletely defined channel (Map 1) is located on the western end of Line T9E and is depicted as medium-large pebble gravels deposited on a moderately incised bedrock. The overlying pebbly sand is caliche cemented and is, in turn, overlain by a loamy sand. Gold recovered from sample T9E+467 was flat and juvenile in shape indicating short transport distance. Comparison between Maps 1 and 2 indicates that this moderate energy channel could possibly be a tributary to the adjacent southerly trending fluvial system (Channel 4).

4.4 Channel 4

Bedrock contours (Map 2) indicate that this well incised southwesterly trending channel is a tributary to the main fluvial system (Channel 5). Line 10 reveals a shallow incised bedrock profile with a flat gradient (1:35) coinciding with moderate energy basal

large pebble and cobble gravels (T-70 and T-71). Gold in these locations is dominantly small, sub-rounded and spongy-nuggety in form.

This fluvial system continues through Line 11 (T-51 and T-52), Line 12 (T-50 and T-43) and Line 13 (T-39 and T-38). The bedrock profile becomes progressively more deeply incised coinciding with a steeper paleocurrent gradient (1:14). Basal cobble and boulder concentrations are relatively common on the irregularly eroded schistose bedrock. Gold shape in the higher energy basal sediments maintains the elongate nuggety-spongy form with coarse gold relatively abundant (Table 1). The overlying lower energy fluvial sediments, in contrast, contain juvenile and flat-wire shaped gold suggestive of a more local source. The non-magnetic portion of the heavy mineral concentrate contained probable zircon and corundum grains (1985 multi-element concentrate assay revealed 5000 ppm Zr).

Channel width along this exposed +430 foot length would vary from +50 feet to possibly 150 feet or more, pending further exposure. The confluence of this rather robust and well mineralized fluvial system with Channel 5 probably occurs on Line 14 between T-30 and T-32.

4.5 Channel 5

This fluvial system has been traced in various levels of completeness from Line 10 to Line 22 for a distance of +1500 feet. Bedrock contours (Map 2) reveal a general southerly flowing pattern containing structurally controlled meanders. The northern portions of this channel (Lines 10 through 12) parallel Channel 4 and contain a rather gentle paleogradient ratio of 1:38. This segment appears to

have structurally controlled margins, especially on the western flank where very steep banks are evident.

The alluvial profile in Line 10 commences with a poorly sorted small to large pebble gravel deposited on bedrock. This unit is best developed in T-64 and thins markedly to the east where it lies on a thin grit bed. Subsequent fluvial sedimentation deposited a heterogeneous collection of thin and trough bedded, well packed multiple gravel horizons constituting a period of increased hydraulic energy. This vigorous sedimentation pulse intersected bedrock in T-63 producing multiple thin bedded pebble bands accompanied by small scour troughs and cross bedding. The third and uppermost geologic unit is a mixed assemblage of pebbly sands containing scattered gravel lenses. Complete stratigraphic exposure on Line 12 reveals better developed silty sand and grit units at the expense of the basal gravels found in Line 10. The overlying mixed and irregular fluvial pulse is correlated with the middle unit in Line 10. It intersects bedrock in T-55 and T-49 where pebble lenses and beds are truncated by a sloping bedrock.

Incomplete vertical and lateral exposure south of Line 12 involves extensive geological projections. However, the most prominent feature of this channel is the increased presence of a well developed angular unconformity correlating with the base of the middle fluvial episode defined to the north. This hiatus is best illustrated south of Line 17 where basal sediments were truncated. Associated vigorous sedimentation deposited gravels alternating from thin bedded small

pebble units to more massive and coarser gravels. Cobble accumulations occur where this unit intersects bedrock (T-5, T-8 and T-9).

Color counts from Lines 20 and 21 (Table 1) indicates a preponderance of small gold grains possessing flaky, wire and dendritic forms. There was also a general scarcity of coarser gold in this area with the exception of a grain weighing about 12 mg. encountered in T-4. The relative abundance of gold grains on these lines occurs where the middle fluvial unit intersected bedrock.

Reconnaissance Line 22 was established approximately 500 feet south and parallel to Line 21. A total of five trenches were excavated at approximately 200 foot spacings. Bedrock elevations (three of these trenches were surveyed) indicate that the center of the channel is in the vicinity of T-97. This would continue the general south-southwesterly trend of Channel 5 and also correlates with maximum cobble-boulder gravel development on bedrock. The paleogradient between these two lines would be very gentle (approximately 1:180) corresponding with large width to depth ratios. Gold recovered in these trenches was almost universally very small with some coarser grains recovered from the basal boulder unit in T-97. This gold was generally sub-rounded and flaky in shape.

4.6 Western Channel

The proposed western channel underlying the tailings area (Prudden, 1985; Chapter 3-4, Southern Placers and Figure 4) remains unsampled. However, bedrock contours indicate an inflection point on the western edge of Line 18 where the bedrock plunges westward from T-14 to some point beneath T-21 (Map 2). The sedimentation changes from

medium pebble gravels deposited on bedrock in T-14 to a considerable thickness of cobble development in T-21 (Map 3). This probable eastern channel margin correlates with the projection of this postulated 'western' channel and could trend north-northwest similar to the Line 12-14 segment of Channel 5.

A possible second bedrock inflection area occurs west of Line 16. This could be another tributary to Channel 5.

4.7 Southwestern Placer

This placer (Prudden, 1985; Ch. 3-7 and Figure 7) immediately west of the present heap leach pads remains unsampled. Work was not conducted in this area during this current evaluation period. Consequently, the geological interpretation for this rather large area remains unchanged with the basal value of 222.48 mg/BCY (Trench #16) indicating significant placer enrichment on the intrusive bedrock.

4.8 Northern Placer

A series of shallow east-west trenches were excavated for a distance of 700 feet immediately north of the Vulture outcrop system. The gravels encountered consisted generally of locally derived schistose clasts mixed with varying amounts of angular quartz vein fragments. Shallow paleochannel scours were encountered indicating the reworking of colluvial material derived from the Vulture outcrop. The material transported in these juvenile channels would be incorporated in the Channel 5 system. Gold encountered in one channel sample (98-1-B) and one backhoe bulk sample (North G.P.) was small and sub-angular. Caliche cementation of the gravels was locally intense and resulted in an estimated 70% recovery of the contained values.

Sampling in this general area (Prudden, 1985; Trench #8) revealed placer concentrations at the base of a mixed alluvial section. In this location a basal cobble gravel yielded a grade of 81.22 mg/BCY underlying ten feet of very low grade sediments.

5. RESULTS

A total of 88 samples were submitted to Dawson Metallurgical Laboratory and 84 of these represented trench channel samples (Chapter 3; Sampling). Three of the remaining samples were small volume geological excavations and are superseded by the larger and more representative channels at the same location. A backhoe excavated bulk sample constitutes the remaining sample. The assay results are found in Appendix I. Table 1 displays and summarizes the data collection.

The following discussions will be orientated towards specific sections in Chapter 4.

5.1 Channel 1

Sample T10E+105 constitutes the basal 5.4 foot alluvial portion of this +/-20 foot wide gravel filled scour. The calculated value of 81.26 mg/BCY for this channel can be related to a preponderance of small gold grains. The overlying mixed alluvial sediments were not sampled.

5.2 Channel 2

Three samples (T9E+280, T9E+370 and T10E+369) are included in the calculated average value for this triangular shaped geological unit. The wide variance in the grades is reflected by the relative abundance of coarse gold (T9E+280; 422.72 mg/BCY) and maximum clast size. Poorly packed and sorted gravel development is associated with the lowest grade sample (T10E+369; 8.02 mg/BCY). The alluvium overlying these samples was not sampled and therefore must be

classified as zero grade. The following summarizes these data:

Overburden	5.8 feet thick
Fluvial gravel	6.1 feet thick 201.43 mg/BCY avg. grade

The irregular shape of this area combined with geological data from only two lines precludes accurate volume calculations. However, by projecting the geological data 50 feet to both the north and south a geological volume of +/-4,500 BCY can be applied to this incompletely defined paleochannel.

5.3 Channel 3

The geometry of this moderate energy channel is unknown and therefor precludes volume estimation. The one sample (T9E+476) grading 108.67 mg/BCY must be considered significant. A strip ratio of about 1:1 is inferred for this geological target.

5.4 Channel 4

This well incised fluvial paleochannel has been sampled by six trenches contained within Lines 10 through 13 (T-70, T-71, T-51, T-43, T-50 and T-39). The measurable width of this system, as defined by limited sampling and geological exposure, varies from 50 feet to 110 feet. The following data summarizes the geological and sampling data found in Table 1.

Length	430 feet	
Overburden	9.77 feet thick	
	25.94 mg/BCY	Average
	12,160 BCY	Volume
Inferred ore	6.17 feet thick	
	343.64 mg/BCY	Average
	4638.72 mg/BCY	Average (inc. T-50 nugget)
	7,680 BCY	Volume

The above indicates this volume would contain an inferred 84.9 ounces or, alternatively, 1,145.5 ounces by including the T-50 nugget. Previous sampling (Prudden, 1985; Trench #3) also revealed the presence of coarse gold from the immediate vicinity of T-50. Conservative evaluation procedures would exclude nuggets. However, it is logical to assume that mine production would include coarse gold trapped by the Hungarian Riffle type bedrock configuration. Logical mine evaluation should include a 'nugget factor' in calculating measured reserves for this specific paleochannel.

5.5 Channel 5

This +1500 foot long channel is approximately 10-20% sampled with a majority of the sites located on Lines 10, 12, 20, 21 and 22. Relative gold distribution for the three stratigraphic units must be considered as a geochemical indicator with the middle fluvial pulse and associated unconformity containing the majority of the gold. This is most evident on Lines 10 (T-66 and T-65) and 12 (T-48, T-53 and T-54) where the highest grades and corresponding gold grain counts are positioned in the middle of the stratigraphic column. Higher grades and coarser gold are encountered on the margins of this auriferous geologic unit at the bedrock-sediment interface. Samples of particular note are: Line 10 :T-63 (108.44 mg/BCY), T-70 (132.48 mg/BCY); Line 12:T-49 (73.57 mg/BCY); Line 20:T-5 (558.1 mg/BCY), T-4 (152.55 mg/BCY) and Line 21: T-9 (152.55 mg/BCY).

6. CONCLUSIONS

Trench mapping in the Channel 5 system, combined with bedrock elevation contouring, has produced a geological model for this placer. Sedimentation and related contained gold appears to be time related. Potential economic concentrations of placer gold are located where this stratigraphic horizon encounters bedrock on channel margins. This would then severely reduce the possibilities of developing this fluvial system into a large scale mining operation.

Multiple 'fence' development in Channel 4 has presented good grade placer concentrations in a geologically definable system. Average grade calculation from these few samples indicates a variance range of +/-1300% depending on the recognition of the T-50 nugget. Inclusion of this large gold grain would then indicate the possibility that this feature would contain 2.7 ounces per linear foot of channel (0.2 ounces per linear foot by excluding this troublesome grain). This could provide an attractive but small mining target with Channel 2 providing additional near term plant feed.

Geological evaluation has indirectly enhanced the proposed occurrence of the 'western placer' as a tributary to Channel 5. This situation could be a repeat of Channel 4 and provide yet another attractive grade but small volume mining target.

Critical evaluation of the gold particle distribution in Channel 5 indicates that the coarser gold occurs on the sediment-bedrock contact. This relationship applies from Line 10 to Line 21 although there is a relative size decrease down this paleoslope for all samples. The ultra fine 'floatable' gold recovered on Line 22 confirms

this observation and correlates with general gold distribution patterns for placer deposits. This also implies that sampling south of Line 22 would encounter smaller gold and probable lower grades (discounting local source additions).

These placers have received much of the contained gold from the Vulture outcrop system. Contributions from small mineralized bodies, similar to the good grade quartz-siderite veins in T11E+225, constitute important additions to placer development. Conversely, accumulations of angular placer gold could provide information in locating untested lode mineralization.

Evaluation of the sampling data in Table 1 reveals that the gold particle count distribution is nearly log normal and therefore constitutes a statistically viable population. This is further highlighted by the fact that particulate gold was recovered from all samples. The average grade of these samples (454.23 mg/BCY) is heavily biased by the large nugget in T-50. Reducing this value by eliminating the nugget produces an average grade of 75.85 mg/BCY. Using a hypothetical cut-off grade of 77 mg/BCY ($1.00/BCY @ $400/oz.) it becomes evident that 22.6% of these samples exceed this value and average 268.8 mg/BCY (excluding the T-50 nugget).

The metallurgical balance technique used both in the field and laboratory indicates that the process plant tails were uniformly low. The one exception was the 0.26 OPT value from the T-5 +1/2 inch screen fraction corresponding to a large increase of vein quartz and pegmatite clasts. This anomalous sample probably represents an unexplored local vein.

The amalgamation process is very effective in extracting the contained free gold in concentrates. Geological samples from Channels 4 and 5 were used in determining the 857 fine bullion content of the placer gold.

The data generated by sample processing will provide valuable operating criterion. The average swell and tonnage factors will assist in selecting production equipment. The design of a beneficiation and recovery plant will use these data to efficiently process these gravels..

7. RECOMMENDATIONS

The various stages of exploration for these placer channels indicates that a bulk sample/pilot scale production phase can be formulated. This would involve accelerated development of the best grade channel, as indicated to date, towards the goal of comparing pilot scale production to trench sampling data. Exploration of the remaining placer deposits could proceed concurrently with this exploitation phase. Channel 4 would most closely fit this objective at it has the most samples per unit area and also contains the most continuous grades in a geologically definable unit. The grades in this 430 foot sampled length have been subjected to two conservative cutting measures 1) eliminating the nugget which decreased the grade from 4638.72 to 343.64 mg/BCY (2.7 oz./linear foot vs. 0.2 oz./ linear foot, respectively), and 2) carrying Line 11 grade at 31.52 mg/BCY even though this sample was located on the channel margin. It must be emphasized that these grades and volumes found in this text are inferred and could very well change with further sampling.

Additional areas that would justify early development would be:

- The bedrock concentrations on the margins of Channel 5. These shallow depths would be amenable to inexpensive backhoe excavation and related channel sampling.
- Delineating the good grade values in Channel 2, again with the standard backhoe procedures.

Exploration of the 'western' channel, as discussed in Chapter 4-6, could commence with the standard backhoe technique following tailings removal.

Exploration of the 'southwestern' placer would involve a drilling program that could be conducted independently from the above activities. A first stage sampling approach would require about 45 holes totaling 1,800 feet which would test the possibility of large volumes of placer gravel.

The above courses of action are entirely dependent on the availability of process water. A general rule-of-thumb for water consumption would be 30 gpm/yard hour throughput (ie. 30 BCY/hr would require 900 gpm). Evaporation, leakage and wetting would probably limit water return to about 60% suggesting make-up water requirements at the 10 gpm/yard hour throughput level for a hypothetical 30BCY processing rate. Consequently, a dependable water source at, say 1000-1200 gpm, must be assured prior to planning production, calculating operating costs and related ore grade cut off value.

James M. Prudden
Consulting Geologist

APPENDIX I

1989 VULTURE MINE PLACER ASSAY RESULTS

Samp. No.	Volume cuft.	mg. Gold amalgamation	mg. Gold coarse	mg/BCY
10-A (T-66)				
0-6.5	6.5	5.000	---	20.78
6.5-11.5	5.0	16.783	---	90.63
11.5-16.5	5.0	7.437	---	40.16
16.5-21.5	5.4	0.315	---	1.58
10-B (T-65)				
10-15	5.0	4.897	---	26.44
15-20	5.0	12.239	---	66.09
20-26.5	7.6	1.013	---	3.60
10-C (T-64)				
13.9-18.9	5.0	0.942	---	5.09
18.9-23.9	5.6	9.194	---	44.33
10-D (T-63)				
2-9	7.0	6.704	---	27.86
9-14	5.0	20.082	---	108.44
10-G (T-70)				
0-5	5.0	7.737	---	41.78
5-10	5.0	8.810	---?	47.57
10-15	5.0	2.707	---	14.62
15-20	5.0	24.349	---	132.48
10-H (T-71)				
1-6	5.0	14.979	---	80.89
6-11	5.0	2.729	---	14.74
11-16	5.0	26.444	---	142.80
11-B (T-51)				
3-9	6.0	7.004	---	31.52
12-A (T-43)				
0-5	5.0	3.253	---	17.57
5-11	6.0	3.477	45.162	218.88
11-16	5.0	20.143	---	108.77
12-B (T-50)				
1.5-5.6	4.0	1.633	---	11.02
5.6-10.6	5.0	5.363	---	28.96
10.6-15.6	5.0	27.252	6,158.75*	33,404.43
		(includes 6,868.1 mg. nugget X.857)		
12-C (T-49)				
2.5-8.5	6.0	3.394	---	15.27
8.5-13.5	5.0	13.624	---	73.57
12-D (T-48)				

5.3-10.3	5.0	4.543	---	24.53
10.3-15.3	5.0	6.265	---	33.83
15.3-20.3	5.0	2.526	---	13.64
20.3-25.3	5.0	1.594	---	8.61
12-E (T-53)				
8.8-12.8	4.0	1.340	---	9.05
12.8-17.8	5.0	4.392	---	23.72
17.8-22.8	5.0	12.013	---	64.87
22.8-27.8	5.0	2.752	---	14.86
27.8-31.0	3.25	2.215	---	18.40
12-F (T-54)				
9.2-12.2	3.0	0.981	---	8.83
12.2-17.2	5.0	4.826	---	26.06
17.2-22.2	5.0	1.699	---	9.17
22.2-28.5	6.3	2.253	---	9.66
12-G (T-55)				
0.8-5.8	5.0	5.460	---	29.48
5.8-10.8	5.0	68.409	---	369.41
13-B (T-38)				
0-5	5.0	4.592	---	24.80
5-10	5.0	0.406	---	2.19
13-C (T-39)				
0-4	2.55	0.665	---	7.04
4-9	5.0	1.896	---	10.94
9-14	5.0	2.339	---	12.63
14-19	5.0	44.008	---	237.64
20-A (T-5)				
5-10	5.0	91.834	11.518	558.10
20-B (T-4)				
8-13	5.0	4.479	---	24.19
13-18	5.0	6.809	25.018	152.55
20-C (T-10)				
5.5-10.5	5.0	8.625	---	46.58
10.5-15.5	5.0	1.783	---	9.63
15.5-22.5	7.0	6.393	---	24.66
20-D (T-17)				
4.5-9.5	5.0	1.168	---	6.28
9.5-14.5	5.0	2.922	---	15.78
14.5-19.5	5.0	3.590	---	19.39
19.5-24.5	5.0	4.117	---	22.23
24.5-29.5	5.0	5.129	---	27.70
21-A (T-8)				
2-5	3.0	1.081	---	9.73
5-10	5.0	4.868	---	26.29

21-B (T-9)				
2-7	10.0	2.192	---	5.92
7-12	10.0	99.664	---	269.09
21-B (T-9) Geological Sample				
10-12	1.0	9.749	---	263.22
22-A				
5-11	6.0	0.949	---	4.27
11-16.5	5.5	3.342	---	16.41
22-B (T-97)				
5-11	6.0	3.319	---	14.94
11-17	6.0	17.521	---	78.84
17-22.5	5.5	36.903	---	181.16
22-C (T-96)				
2-7	5.0	1.336	---	7.21
7-12	5.0	3.125	---	16.88
12-17	5.0	1.643	---	8.87
22-D (T-95)				
5.3-11.3	6.0	0.248	---	1.12
11.3-16.3	5.0	0.518	---	2.80
16.3-21.3	5.0	1.647	---	8.89
22-E				
4.8-7.8	3.0	0.630	---	5.67
7.8-12.8	5.0	1.666	---	9.00
12.8-17.8	5.0	2.576	---	13.91
T9E + 49				
4.9-9.9	5.0	2.833	---	15.30
T9E + 280				
4.5-11.6	7.1	61.503	49.655	422.72
T9E + 370				
4.5-9.0	4.5	24.097	---	144.58
T9E + 476				
5.7-10.1	4.4	17.709	---	108.67
T10E + 105				
9.6-15.0	5.4	16.251	---	81.26
T10E + 369				
8.5-15.3	6.8	2.021	---	8.02
98-1-B				
1-9.5	8.5	2.430	---	7.72
North G.P.	20.3	0.233	---	0.31

NOTE: Coarse gold weight calculated at 857 fine

DAWSON
METALLURGICAL
LABORATORIES, INC.

P.O. Box 7685
5217 Major Street
Murray, Utah 84107
Phone: 801-262-0922
Fax: 801-261-4681

A. F. Budge (Mining) Ltd.
4301 North 75th Street
Suite 101
Scottsdale, Arizona 85251-3504

Attention: Ms. Carole A. O'Brien
Mr. Dale Allen

Subject: Results of Amalgamation Testing on Gravity Concentrates from Mr. Jim Prudden. Designated our Project No. P-1654.

Gentlemen:

In accordance with arrangements made with you and Mr. Jim Prudden, acid leaching followed by amalgamation were conducted on a series of gravity concentrates received from March 22, 1989 through May 11, 1989. The results of each series of testing was faxed to you as they were completed, as well as given to Mr. Prudden. A composite of the data sheets are attached to this letter along with the assay reports from which the calculations were made.

The procedure used was as outlined in the attached letter from Mr. Prudden dated March 20, 1989, except that a hydrochloric acid solution was used in the acid pretreatment.

Our data shows the total milligrams of gold contained in each sample, together with the recovery of the gold by amalgamation. Ultimate evaluation is to be made by Mr. Prudden.

Very truly yours,

DAWSON METALLURGICAL LABORATORIES, INC.

Harmel A. Dawson
President

HAD/fg

Enclosures

JAMES M. PRUDDEN
CONSULTING GEOLOGIST

4809 Quail Point Road
Salt Lake City, Utah 84124
801-272-4720

H. Dawson
Dawson Metallurgical Lab.
P.O. Box 7685
Murray, Utah 84107

20 March 1989

Dear Bull:

A total of 20 placer concentrates from the Vulture Mine have been dispatched to your lab by UPS on the above date. I would like the following assay procedure on each of the samples:

1. Dry weight of each concentrate.

2. Wash sample for 30 minutes in dilute (10%) nitric acid, then neutralize.

3. Bottle roll sample for six hours with 50 gms. mercury and sodium hydroxide.

4. Determine the total mgs. of gold from the amalgamation.

5. Duplicate 1 A.T. fire assay on the amalgam tails. Retain remaining concentrates for further assaying.

Duplicate laboratory results should be mailed to:

J.M. Prudden
c/o A.F. Budge Mining
P.O. Box 2087
Wickenberg, AZ 85358

Dale H. Allen
Budge Mining
4301 N. 75 th. St.
Suite 101
Scottsdale, AZ 85251

Invoicing should be directed to Mr. Allen. I would appreciate comments on the above procedure and can be reached during the day at (602) 376-9056 and at (602) 684-5445 in the evenings.

Sincerely yours,

James M. Prudden

P-1654D: A. F. Budge Mining
Amalgamation Of Gravity Concentrates
Submitted By Jim Prudden 05/11/89

Sample		Weight, Grams	Gold Assay: Amalgamated, mg	Gold Assay: Amalgam Tails oz/Ton	Gold Assay: Amalgam Tails mg	Gold Assay: Calc. Total, mg	Percent Gold Recovered By Amalgamation
98-1-B	1.0 - 9.5	163.9	2.430	.038, .033	0.199	2.629	92.4
T9E +49	4.9 - 9.9	89.0	2.833	.032, .035	0.104	2.937	96.5
+280	4.5 - 11.6	193.1	61.503	.051, .046	0.321	61.824	99.5
+370	4.5 - 9.0	292.8	24.097	.042, .048	0.452	24.549	98.2
+476	5.7 - 10.1	141.9	17.709	.060, .024	0.204	17.913	98.9
T10E +105	9.6 - 15.0	484.6	16.251	.008, .009	0.150	16.401	99.1
+369	8.5 - 15.3	91.8	2.021	.010, .013	0.038	2.059	98.2
11B	3.0 - 9.0	257.9	7.004	.016, .019	0.159	7.163	97.8
20B	8.0 - 13.0	133.9	4.479	.022, .019	0.096	4.575	97.9
	13.0 - 18.0	111.0	6.809	.027, .023	0.095	6.904	98.6
20C	5.5 - 10.5	360.2	8.625	.020, .018	0.235	8.860	97.4
	10.5 - 15.5	295.7	1.783	.014, .012	0.132	1.915	93.1
	15.5 - 22.5	1292.2	6.393	.016, .013	0.620	7.013	91.2
20D	4.5 - 9.5	191.5	1.168	.010, .010	0.066	1.234	94.7
	9.5 - 14.5	203.3	2.922	.008, .007	0.056	2.978	98.1
	14.5 - 19.5	120.0	3.590	.012, .010	0.045	3.635	98.8
	19.5 - 24.5	146.3	4.117	.005, .002	0.015	4.132	99.6
	24.5 - 29.5	200.4	5.129	.008, .010	0.062	5.191	98.8

Weight only
T9E + 280 4.5-11.6 57.941 mg.
20B 13.0 - 18.0 25.018 mg.

Bullion Assay 857.314 fine gold

P-1654B: A. F. Budge Mining
Amalgamation Of Gravity Concentrates
Submitted By Jim Prudden 04/26/89

Sample	Weight, Grams	Gold Assay: Amalgamated, mg	Gold Assay: Amalgam Tails oz/Ton	Gold Assay: Amalgam Tails mg	Gold Assay: Calc. Total, mg	Percent Gold Recovered By Amalgamation
20A-5-10 One piece gold	13.440 mg					
10G: 0 - 5.0	226.6	7.737	.100, .095	.757	8.494	91.1
10G: 5.0 - 10.0	452.6	8.810	.014, .016	.233	9.043	97.4
10.0 - 15.0	207.8	2.707	.010, .015	.093	2.800	96.7
15.0 - 20.0	182.3	24.349	.022, .026	.150	24.499	99.4
10H: 1.0 - 6.0	500.5	14.979	.030, .026	.480	15.459	96.9
6.0 - 11.0	234.0	2.729	.014, .011	.104	2.833	96.3
11.0 - 16.0	82.7	26.444	.028, .030	.082	26.526	99.7
12F: 9.2 - 12.2	35.2	.981	.032, .027	.036	1.107	96.5
12.2 - 17.2	64.0	4.826	.020, .016	.040	4.866	99.2
17.2 - 27.2	83.4	1.699	.010, .008	.026	1.725	98.5
22.2 - 28.5	100.4	2.253	.010, .008	.031	2.284	98.6
13B: 0 - 5.0	147.8	4.592	.020, .124	.365	4.957	92.6
5.0 - 10.0	82.6	.406	.011, .020	.044	.450	90.2
13C: 0 - 4.0	176.3	.665	.010, .009	.060	.725	91.7
4.0 - 9.0	263.5	1.896	.008, .009	.072	1.968	96.3
9.0 - 14.6	143.9	2.339	.002, .005	.020	2.359	99.2
14.0 - 19.0	259.2	44.008	.030, .018	.213	44.221	99.5
20A: 5.0 - 10.0	210.8	91.834	.010, .028	.137	91.971	99.9
21A: 2.0 - 5.0	146.4	1.081	.014, .012	.065	1.146	94.3
5.0 - 10.0	152.8	4.868	.020, .024	.115	4.983	99.7
21B: 2.0 - 7.0	647.1	2.192	.018, .017	.399	2.591	84.6
7.0 - 12.0	999.9	99.664	.026, .025	.891	100.555	99.1

P-1654B: A. F. Budge Mining
Amalgamation Of Gravity Concentrates
Submitted By Jim Prudden 04/10/89

Sample	Weight, Grams	Gold Assay: Amalgamated, mg	Gold Assay: Amalgam Tails, oz/Ton	Gold Assay: Amalgam Tails, mg	Gold Assay: Calc. Total, mg	Percent Gold Recovered By Amalgamation
North G.P.	169.0	0.233	.010, .009	0.058	0.291	80.1
T9E: 1 + 10	59.0	1.667	.038, .019	0.058	1.725	96.6
T9E: 3 + 50	28.2	0.667	0.015	0.014	0.681	97.9
12C: 2.5 - 8.5	335.3	3.394	.022, .018	0.230	3.624	93.7
12C: 8.5 - 13.5	169.5	13.624	.016, .017	0.099	13.723	99.3
12D: 5.3 - 10.3	164.0	4.543	.014, .013	0.079	4.622	98.3
12D: 10.3 - 15.3	169.0	6.265	.020, .021	0.122	6.387	98.1
12D: 15.3 - 20.3	71.0	2.526	.028, .020	0.058	2.584	97.8
12D: 20.3 - 25.3	234.6	1.594	.012, .011	0.097	1.691	94.3
12E: 8.8 - 12.8	100.0	1.340	.008, .010	0.031	1.371	97.7
12E: 12.8 - 17.8	111.0	4.392	.014, .015	0.057	4.449	98.7
12E: 17.8 - 22.8	146.0	12.013	.014, .040	0.135	12.148	98.9
12E: 22.8 - 27.8	277.5	2.752	.005, .008	0.062	2.814	97.8
12E: 27.8 - 31.0	229.0	2.215	<.005, .007	0.047	2.262	97.9
12G: 0.8 - 5.8	235.0	5.460	.010, .013	0.093	5.553	98.3
12G: 5.8 - 10.8	290.2	68.409	.020, .006	0.129	68.538	99.8
21B: 10 - 12	37.5	9.749	.012, .016	0.018	9.767	99.8

P-1654A: A. F. Budge Mining
Amalgamation of Gravity Concentrates
Submitted by Jim Prudden 4/3/89

Sample	Weight, Grams	Gold Assay: Amalgamated, mg	Amalgam Tails oz/Ton	Amalgam Tails mg	Calc. Total mg	Percent Gold Recovered By Amalgamation
12A: 0-5	174.0	3.253	.010, .012	0.066	3.319	98.0
12A: 5-11	213.6	3.477	.011, .012	0.084	3.561	97.6
12A: 11-16	154.2	20.143	.086, .040	0.333	20.476	98.4
12B: 1.5-5.6	297.1	1.633	.007, .005	0.061	1.694	96.4
12B: 5.6-10.6	168.8	5.363	<.005, .005	0.029	5.392	99.5
12B: 10.6-15.6	220.7	27.252	.016, .014	0.114	27.366	99.6
22D: 5.3-11.3	61.7	0.248	<.005, .008	0.013	0.261	95.0
22D: 11.3-16.3	69.3	0.518	.005, .010	0.019	0.537	96.5
22E: 4.8-7.8	99.0	0.630	.020, .013	0.056	0.686	91.8
22E: 7.8-12.8	123.5	1.666	.022, .023	0.097	1.763	94.5
22E: 12.8-17.8	529.3	2.576	.022, .019	0.372	2.948	87.4

P-1654: A. F. Budge Mining
Amalgamation Of Gravity Concentrates
Submitted by Jim Prudden 3/22/89

Sample	Weight, Grams	Gold Assay: Amalgamated, mg	Gold Assay: Amalgam Tails oz/Ton	Gold Assay: Amalgam Tails mg	Gold Assay: Calc. Total mg	Percent Gold Recovered By Amalgamation
10A: 0-6.5	114.2	5.000	.036, .048	0.164	5.164	96.8
10A: 6.5-11.5	251.8	16.783	.025, .035	0.259	17.042	98.5
10A: 11.5-16.5	218.3	7.437	.006, .010	0.060	7.497	99.2
10A: 16.5-21.5	81.1	0.315	.011, .013	0.033	0.348	90.4
10B: 10-15	144.6	4.897	.022, .040	0.154	5.051	97.0
10B: 15-20	93.8	12.239	.033, .042	0.121	12.360	99.0
10B: 20-26.5	157.6	1.013	.007, .005	0.032	1.045	96.9
10C: 13.9-18.9	162.9	0.942	.007, .005	0.034	0.976	96.6
10C: 18.9-23.9	264.6	9.194	.005, .110	0.522	9.716	94.6
10D: 2-9	198.0	6.704	.035, .030	0.221	6.925	96.8
10D: 9-14	126.5	20.082	.038, .020	0.126	20.208	99.4
22A: 5-11	282.8	0.949	.010, .008	0.087	1.036	91.6
22A: 11-16	486.8	3.342	.009, .012	0.175	3.517	95.0
22B: 5-11	166.0	3.319	.008, .009	0.048	3.367	98.6
22B: 11-17	278.4	17.521	.018, .017	0.167	17.688	99.1
22B: 17-22.5	229.0	36.903	.018, .020	0.149	37.052	99.6
22C: 2-7	143.0	1.336	.011, .015	0.064	1.400	95.5
22C: 7-12	194.6	3.125	.081, .077	0.527	3.652	85.6
22C: 12-17	143.4	1.643	.008, .007	0.037	1.680	97.8
22D: 16.3-21.3	224.6	1.647	.014, .012	0.100	1.747	94.3

ASSAY REPORT SHEET

ASSAY LAB, INC.
1376 W. 8040 So. Unit #4
West Jordan, Utah 84084

Date Received _____ **Date Reported** 4-14-89

Client James Prudden

Sample Identification	Oz / Ton Au	Oz / Ton Ag	Remarks
			* Ounces per ton of 2000 lbs.
Vials of gold for weighing			
12A 5-11	52.698mg		
12B 10.6 - 15.6	318.309mg		
1 1g bead	193.616mg		
2 1g bead	18.140mg		
3 1g bead	24.862mg		
4 1g bead	23.847mg		

Donald Bianchi

APPENDIX II

Certificate of Analysis

CERTIFICATE NO. 89-125-C

PROJECT NO. 1122

DATE 3-21-89

MOUNTAIN STATES
R & D INTERNATIONAL, INC.

MSRD NO.	SAMPLE IDENTIFICATION				Au	Ag				
					Oz/T	Oz/T				
5808	0-6.5	10A	-1/8		0.005	ND				
5809	6.5-11.5	"	"		0.006	ND				
5810	11.5-16.5	"	"		0.001	ND				
5811	16.5-21.5	"	"		ND	0.05				
5812	0-6.5	"	+1/8-½		0.001	0.03				
5813	6.5-11.5	"	"		0.001	0.03				
5814	11.5-16.5	"	"		ND	0.02				
5815	16.5-21.5	"	"		ND	0.02				
5816	0-6.5	"	+½		ND	0.07				
5817	6.5-11.5	"	"		ND	0.08				
5818	11.5-16.5	"	"		ND	0.04				
5819	16.5-21.5	"	"		ND	0.09				
5820	10-15	10B	-1/8		0.002	0.15				
5821	15-20	"	"		ND	0.06				
5822	20-26.5	"	"		ND	0.07				
5823	10-15	"	+1/8-½		0.007	ND				
5824	15-20	"	"		0.004	0.06				
5825	20-26.5	"	"		ND	0.09				
5826	10-15	"	+½		0.001	0.01				
5827	15-20	"	"		0.002	0.01				

STATEMENT OF CHARGES. INVOICE WILL FOLLOW.

20	Fire Assay Au&Ag	@ $16.00	$ 320.00	___	___	@ $___	$___
20	Sample Prep	@ $ 4.00	$ 80.00	___	___	@ $___	$___
___	___	@ $___	$___	___	___	@ $___	$___
___	___	@ $___	$___	___	___	@ $___	$___

Total Charge $ 400.00

ND (None Detected)

REGISTERED ASSAYER CERTIFICATE NO. 12210 MARVIN B. SCHLOATMAN DATE SIGNED 3/21/89 Arizona U.S.A.

Marvin B. Schloatman

Registered Assayer

mard-08

Certificate of Analysis

CERTIFICATE NO. 89-126-C

PROJECT NO. 1122

DATE 3-21-89

MOUNTAIN STATES
R & D INTERNATIONAL, INC.

MSRD NO.	SAMPLE IDENTIFICATION			Au	Ag				
				Oz/T	Oz/T				
5828	20-26 10B	+½		0.001	0.01				

STATEMENT OF CHARGES. INVOICE WILL FOLLOW.

1	Fire Assay Au&Ag Sample	@ $ 16.00	: $	16.00	
1	Prep	@ $ 4.00	: $	4.00	
		@ $	: $		
		@ $	: $		

Total Charge $ 20.00

ND (None Detected)

REGISTERED ASSAYER CERTIFICATE NO. 12210 MARVIN D. SCHLOATMAN DATE SIGNED 3/21/89 Arizona U.S.A.

Marvin D. Schloatman

Registered Assayer

mard-08

Certificate of Analysis

CERTIFICATE NO. 89-270-C

PROJECT NO. 1122

DATE 3-31-89

MOUNTAIN STATES
R & D INTERNATIONAL, INC.

MSRD NO.	SAMPLE IDENTIFICATION			Au	Ag				
				Oz/T	Oz/T				
6855	13.9-18.9' +½	10C		ND	0.02				
6856	18.9-23.9' -1/8	"		ND	ND				
6857	+1/8 -½	"		ND	ND				
6858	+½	"		ND	0.02				
6859	11-17' -1/8	22C		ND	ND				
6860	+1/8 - ½	"		ND	ND				
6861	+½	"		ND	ND				
6862	2-9' -1/8	10D		0.001	ND				
6863	+1/8 - ½	"		0.002	ND				
6864	+½	"		ND	ND				
6865	9-14' -1/8	"		0.002	ND				
6866	+1/8 - ½	"		0.002	ND				
6867	+½	"		0.001	ND				

STATEMENT OF CHARGES. INVOICE WILL FOLLOW.

13	Fire Assay Au&Ag	@ $	10.00	: $	130.00		
13	Sample Prep	@ $	4.00	: $	52.00		
		@ $		: $			
		@ $		: $			

Total Charge $ 182.00

ND (None Detected)

REGISTERED ASSAYER CERTIFICATE NO. 12210 MARVIN D. SCHLOATMAN DATE SIGNED 3/31/89 Arizona U. S. A.

Marvin D. Schloatman

Registered Assayer

mard-08

Certificate of Analysis

CERTIFICATE NO. 89-007-E

PROJECT NO. 1122

DATE 5-2-89

MOUNTAIN STATES
R & D INTERNATIONAL, INC.

MSRD NO.	SAMPLE IDENTIFICATION			Au Oz/T	Ag Oz/T	Cu ppm	Pb ppm	Zn ppm	
10869	1983			ND	ND	71	17	83	
10870	1984			ND	ND	70	15	79	
10871	1985			ND	0.01	48	21	84	
10872	1986			ND	ND	28	24	85	
10873	1987			ND	ND	20	20	72	
10874	1988			ND	ND	34	7	91	
10875	1989			ND	ND	26	13	83	
10876	1990			ND	0.02	27	11	95	
10877	1991			ND	ND	38	12	86	
10878	1992			ND	ND	35	10	94	
10879	1993			ND	ND	28	14	97	
10880	Bon-1			ND	0.02				
10881	Oak-1			0.445	0.39				
10882	Oak-2			0.299	0.17				
10883	0-5.0 +½	10-G		ND	0.05				
10884	" +1/8	"		ND	ND				
10885	" -1/8	"		ND	ND				
10886	5.0-10.0 +½	"		ND	ND				
10887	" +1/8	"		ND	ND				
10888	" -1/8	"		ND	ND				

STATEMENT OF CHARGES. INVOICE WILL FOLLOW.

20	Fire Assay Au&Ag	@ $	10.00	: $	200.00		
11	Cu,Pb,Zn	@ $	5.50	: $	60.50		
20	Sample Prep	@ $	4.00	: $	80.00		
		@ $		: $			

Total Charge $ 340.50

ND (None Detected)

REGISTERED ASSAYER CERTIFICATE NO. 12210 MARVIN D. SCHLOATMAN DATE SIGNED 5/2/89 Arizona U.S.A.

Marvin D. Schloatman
Registered Assayer

msrd-08

Certificate of Analysis

CERTIFICATE NO. 89-008-E

PROJECT NO. 1122

DATE 5-2-89

MOUNTAIN STATES
R & D INTERNATIONAL, INC.

MSRD NO.	SAMPLE IDENTIFICATION			Au Oz/T	Ag Oz/T				
10889	15.0-20.0 +½	10-G		ND	ND				
10890	" +1/8	"		ND	ND				
10891	" -1/8	"		ND	0.03				
10892	6.0-11.0 +½	10-H		ND	ND				
10893	" +1/8	"		ND	DN				
10894	" -1/8	"		ND	ND				
10895	11.0-16.0 +½	"		ND	ND				
10896	" +1/8	"		ND	0.04				
10897	" -1/8	"		0.001	0.01				
10898	9.2-12.2 +½	12-F		0.007	ND				
10899	" +1/8	"		0.001	ND				
10900	" -/18	"		ND	ND				
10901	12.2-17.2 +½	"		ND	ND				
10902	" +1/8	"		0.003	0.01				
10903	" -1/8	"		0.001	0.01				
10904	17.2-22.2 +½	"		ND	ND				
10905	" +1/8	"		ND	ND				
10906	" -1/8	"		ND	ND				
10907	22.2-28.5 +½	"		ND	ND				
10908	" +1/8	"		ND	0.05				

STATEMENT OF CHARGES. INVOICE WILL FOLLOW.

20	Fire Assay Au&Ag	@ $ 10.00	: $ 200.00	___	___	@ $ ___	: $ ___
20	Sample Prep	@ $ 4.00	: $ 80.00	___	___	@ $ ___	: $ ___
___	___	@ $ ___	: $ ___	___	___	@ $ ___	: $ ___
___	___	@ $ ___	: $ ___	___	___	@ $ ___	: $ ___

Total Charge $ 280.00

ND (None Detected)

REGISTERED ASSAYER CERTIFICATE NO. 12210 MARVIN D. SCHLOATMAN DATE SIGNED 5/2/89 Arizona U.S.A.

Marvin D. Schloatman

Registered Assayer

mard-08

Certificate of Analysis

CERTIFICATE NO. 89-009-E

PROJECT NO. 1122

DATE 5-2-89

MOUNTAIN STATES
R & D INTERNATIONAL, INC.

MSRD NO.	SAMPLE IDENTIFICATION			Au	Ag				
				Oz/T	Oz/T				
10909	22.2-28.5 -1/8	12-F		ND	ND				
10910	0-5.0 +½	13-B		ND	ND				
10911	" +1/8	"		0.003	ND				
10912	" -/18	"		0.002	ND				
10913	5.0-10.0 +½	"		ND	ND				
10914	" +1/8	"		ND	ND				
10915	" -1/8	"		ND	ND				
10916	4.0-9.0 +½	13-C		ND	ND				
10917	" +1/8	"		ND	ND				
10918	" -1/8	"		ND	0.02				
10919	9.0-14.0 +½	"		ND	ND				
10920	" +1/8	"		ND	ND				
10921	" -1/8	"		ND	ND				
10922	14.0-19.0 +½	"		ND	ND				
10923	" +1/8	"		ND	ND				
10924	" -1/8	"		0.002	0.08				
10925	7.0-12.0 +½	21-B		ND	ND				
10926	" +1/8	"		ND	ND				
10927	" -1/8	"		ND	ND				

STATEMENT OF CHARGES. INVOICE WILL FOLLOW.

19	Fire Assay Au&Ag	@ $ 10.00	: $ 190.00	___	___	@ $ ___	: $ ___
19	Sample Prep	@ $ 4.00	: $ 76.00	___	___	@ $ ___	: $ ___
___	___	@ $ ___	: $ ___	___	___	@ $ ___	: $ ___
___	___	@ $ ___	: $ ___	___	___	@ $ ___	: $ ___

Total Charge $ 266.00

ND (None Detected)

REGISTERED ASSAYER CERTIFICATE NO. 12210 MARVIN D. SCHLOATMAN DATE SIGNED 5/2/89 Arizona U. S. A.

Marvin D. Schloatman

Registered Assayer

mard-08

Certificate of Analysis

CERTIFICATE NO. 89-068-E

PROJECT NO. 1122

DATE 5-5-89

MOUNTAIN STATES
R & D INTERNATIONAL, INC.

MSRD NO.	SAMPLE IDENTIFICATION			Au Oz/T	Ag Oz/T				
11988	10G-10-15 -1/8	Tail		ND	0.01				
11989	" +1/8	"		ND	0.02				
11990	" +½	"		ND	ND				
11991	10H-1.0-6.0 -1/8	"		0.001	ND				
11992	" +1/8	"		ND	0.07				
11993	" +½	"		ND	ND				
11994	11B-3.0-3.9 -1/8	"		ND	ND				
11995	" +1/8	"		ND	ND				
11996	" +½	"		ND	0.24				
11997	13C-0.-4 +1/8	"		ND	ND				
11998	" -1/8	"		ND	0.02				
11999	" +½	"		ND	ND				
12000	20A-5-10 -1/8	"		ND	0.01				
12001	" +1/8	"		ND	ND				
12002	" +½	"		0.260	0.11				
12003	20B-8.-13.0 -1/8	"		ND	ND				
12004	" +1/8	"		ND	0.10				
12005	" +½	"		ND	0.05				
12006	20B-13.-18. -1/8	"		ND	0.02				
12007	" +1/8	"		ND	0.01				

STATEMENT OF CHARGES. INVOICE WILL FOLLOW.

20	Fire Assay Au&Ag	@ $10.00	$ 200.00	___	___	@ $___	$___
20	Sample Prep	@ $ 5.00	$ 100.00	___	___	@ $___	$___
___	___	@ $___	$___	___	___	@ $___	$___
___	___	@ $___	$___	___	___	@ $___	$___

Total Charge $ 300.00

ND (None Detected)

REGISTERED ASSAYER CERTIFICATE NO. 12210 MARVIN D. SCHLOATMAN DATE SIGNED 5/8/89 ARIZONA U.S.A.

Marvin D. Schloatman
Registered Assayer

msrd-08

Certificate of Analysis

CERTIFICATE NO. 89-072-D

PROJECT NO. 1122

DATE 4-10-89

MOUNTAIN STATES
R & D INTERNATIONAL, INC.

MSRD NO.	SAMPLE IDENTIFICATION			Au	Ag				
				Oz/T	Oz/T				
7859	12B 1.5-5.5 +½	Tails		ND	ND				
7860	" +1/8-½	"		ND	0.02				
7861	" -1/8	"		ND	ND				
7862	12B 5.6-10.6 +½	"		ND	0.15				
7863	" +1/8-½	"		ND	0.06				
7864	" -1/8	"		ND	ND				
7865	12B 11.6-15.6 +½	"		0.001	0.04				
7866	" +1/8-½	"		0.001	ND				
7867	" -1/8	"		0.001	ND				

STATEMENT OF CHARGES. INVOICE WILL FOLLOW.

9	Fire Assay Au&Ag	@ $ 10.00	: $ 90.00			@ $	: $
9	Sample Prep	@ $ 4.00	: $ 36.00			@ $	: $
		@ $	: $			@ $	: $
		@ $	: $			@ $	: $

Total Charge $ 126.00

ND (None Detected)

REGISTERED ASSAYER CERTIFICATE NO. 12210 MARVIN D. SCHLOATMAN DATE SIGNED 4/10/89 Arizona U.S.A.

Marvin D. Schloatman

Registered Assayer

merd-08