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INVESTIGATION INTO THE REPROCESSING OF ELSA TAILINGS

for

UNITED KENO HILL MINES LIMITED
ELSA, YUKON

by

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Canada

Yukon
Government

Exploration and Geological Services
Indian and Northern Affairs Canada
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UNITED KENO HILL MINES LIMITED

INVESTIGATION

INTO THE

REPROCESSING OF ELSA TAILING

ELSA, YUKON

G.HAWTHORN, P.ENG

MARCH, 1996

ABSTRACT

This project was undertaken to evaluate the potential to economically recover additional metal values from the 4.6 million tons of Keno Hill flotation tailing which grades 3 - 4 oz/t Ag, 0.8 % lead, and 0.9 % Zn.

The study determined that the higher grade portion of the tailing, containing some 1.0 million tons at 5.35 oz/t Ag, responds well to cyanide heap leaching with a silver recovery of 50 - 60 %. The testing data suggests that heap leaching is economically feasible at the current silver price of $ US 5.50 / ounce and a currency exchange rate of 1.35 in favour of the US dollar.

The response to gravity and flotation concentration was poor.

THIS PROJECT WAS FUNDED BY UKHM (50 %), DEPARTMENT OF INDIAN AND NORTHERN AFFAIRS (35 %), AND GOVERNMENT OF YUKON (15 %).

TABLE OF CONTENTS

1.0 INTRODUCTION

Since the commencement of mining and processing at Elsa in about 1920 until the mine suspended operation in January 1989, approximately 5.3 million tons of ore were processed, creating approximately 4.6 million tons of plant tailing grading 3 - 4 oz/t Ag, 0.8 % lead, and 0.9 % Zn. Essentially all of this tailing is located in the adjacent McQuesten River valley bottom, with the exception of an uncertain but small quantity which was eroded by Porcupine Creek, and a small quantity which was used as underground backfill.

During the periods 1952-1967, and 1979-1982, the flotation tailing was cyanided to recover about 50 % of the contained silver. The cyanidation plant did not have sufficient capacity to process all of the 2.3 million tons of flotation tailing which was produced during these periods. This writer estimates that approximately 80 % of the available feed to the cyanidation circuit, representing some 1.8 million tons, was actually leached.

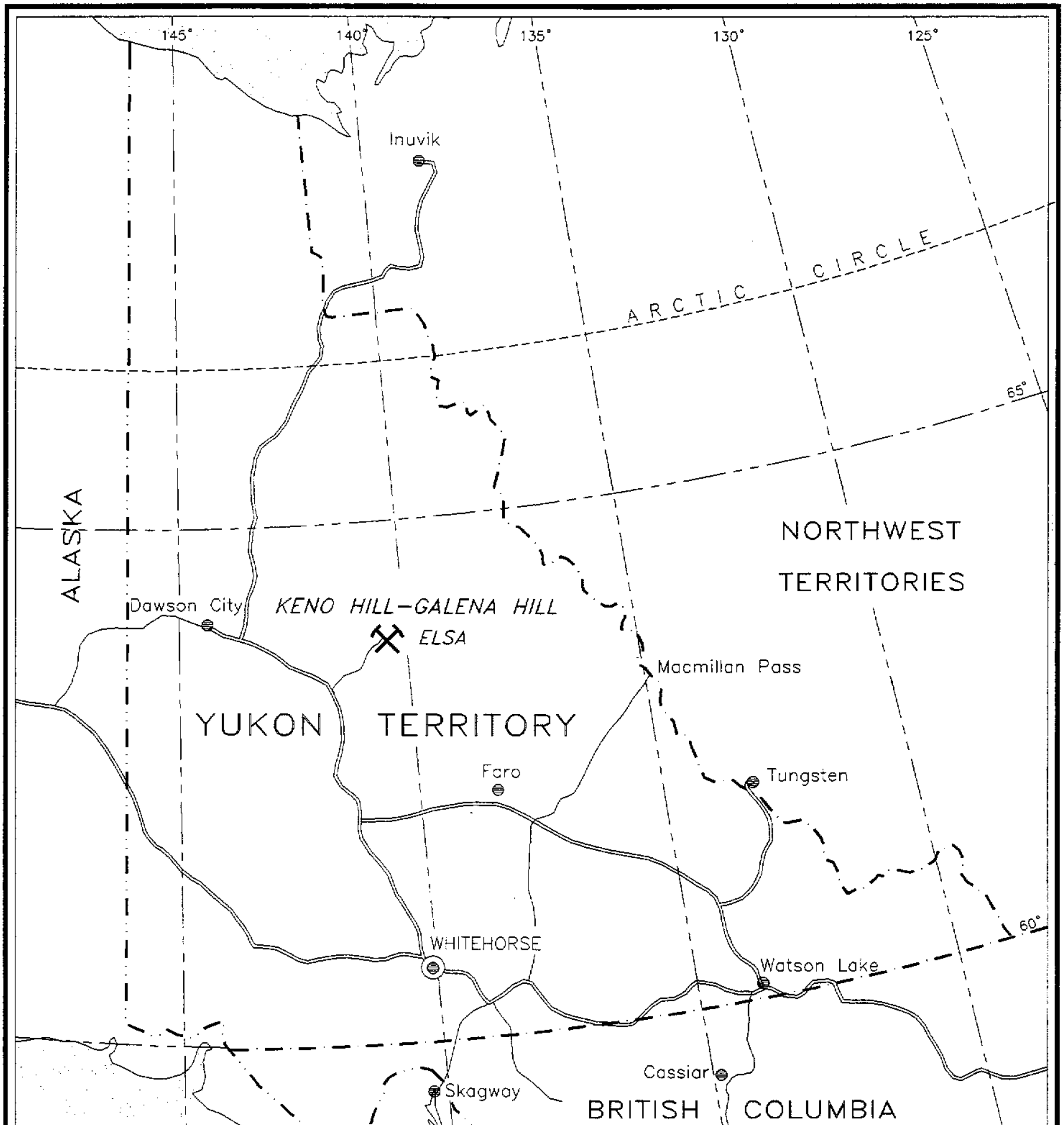
The operating data suggests that during the entire operating period, the plant tailing was piped a relatively short distance from the mill, at about 500 meters, and discharged onto the gently sloping sidehill from which it flowed as much as 1 kilometre to the valley bottom. The discharging tailing formed an alluvial fan, with the meandering flow seeking the line of least resistance. As a result of this expedient practice, there is no opportunity to identify areas of elevated metal concentration based upon either chronology or the operation of the cyanidation circuit.

An internal report (Watson et al, 1988) produced silver isotherms from tailing pond drilling data which was collected in 1970 and 1987/88. This indicated that the portion of the tailing which lies in the valley bottom is of a low silver grade, at 1.91 oz/t Ag. The balance of the material, representing somewhat less than 50 % of the inventory, grades 4.45 oz/t Ag.

The Watson report included analyses for: Pb, Zn, Fe, Cd, and NSPb. The data indicated that about 65 % of the lead is oxidized. There is no comparable data for zinc.

The current study was specifically intended to identify possible opportunities for additional recovery of metals from the tailing. For purposes of completion, the report describes the environmental quality of the tailing, since it has a potential to influence the desire and ability to reprocess the tailing.

Early in the study, after completing a literature review and the "preliminary" laboratory tests, it became apparent that the only process option which may be economically feasible for tailing retreatment is cyanide heap leaching for silver recovery.



145°
140°
135°
130°
125°
Inuvik
ARCTIC CIRCLE
65°
ALASKA
NORTHWEST
TERRITORIES
Dawson City
KENO HILL–GALENA HILL
ELSA
Macmillan Pass
YUKON TERRITORY
Faro
Tungsten
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WHITEHORSE
Watson Lake
Cassiar
Skagway
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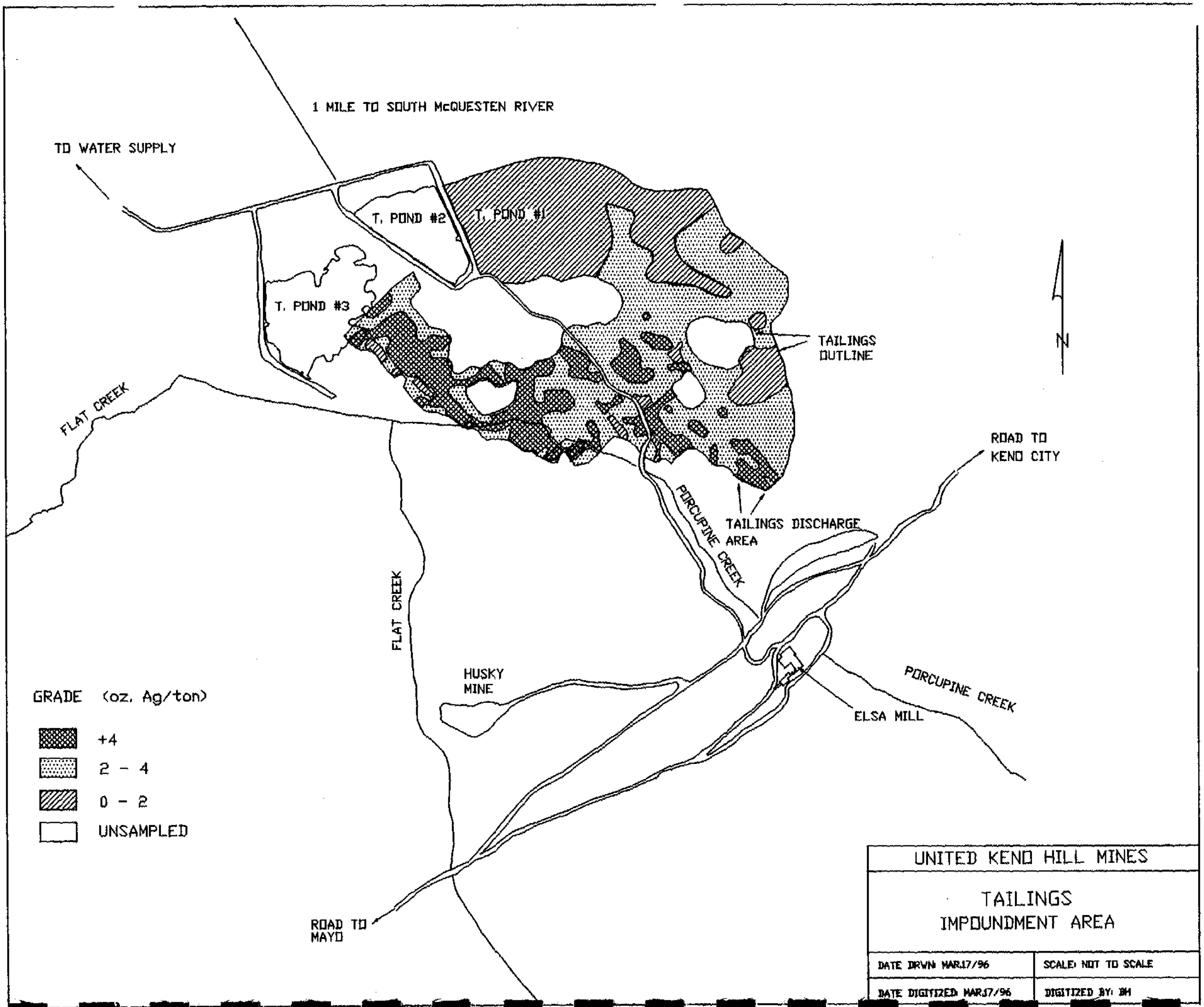
1 MILE TO SOUTH McQUESTEN RIVER
TO WATER SUPPLY
T. POND #1
T. POND #2
T. POND #3
TAILINGS OUTLINE
N
FLAT CREEK
PORCUPINE CREEK
TAILINGS DISCHARGE AREA
ROAD TO KENO CITY
FLAT CREEK
HUSKY MINE
PORCUPINE CREEK
ELSA MILL
GRADE (oz. Ag/ton)
+4
2 - 4
0 - 2
UNSAMPLED
ROAD TO MAYO
UNITED KENO HILL MINES
TAILINGS IMPOUNDMENT AREA
DATE DRWN: MAR.17/96
SCALE: NOT TO SCALE
DATE DIGITIZED: MAR.17/96
DIGITIZED BY: BH

Both flotation and gravity concentration were evaluated. Although some encouragement was provided in previous testing, the current investigators are of the opinion that, from a global perspective, lead and zinc cannot be economically recovered using contemporary technology. This has occurred principally because of high levels of oxidation of both the lead (at 65 - 100 %) and zinc (at 37 - 64 % based upon limited data). The data suggests that the majority of the oxidation occurred prior to mining with perhaps a small increment subsequent to processing.

Because of this, the intended program was substantially diminished, and was subsequently limited to the investigation of cyanide heap leaching.

2.0 HISTORICAL REVIEW

During the 1980's, UKHM conducted two internal studies (Watson et al, and Lockstein) to determine the characteristics of the tailing and to identify the distribution of metal values.

The following data is from the Watson report.

Source	Tons	Ag oz/t	Ag Ounces
1987/88 Drilling	1,699,405	4.45	7,562,352
1970 Drilling	2,156,175	1.91	4,118,294
1950 Terraced	15,500	10.70	165,850
New Discharge	70,000	5.50	385,000
Under 2 nd Pond	108,590	4.63	502,772
Total	4,049,670	3.14	12,734,268
Production reports	4,049,670	3.98	16,117,687

Note that the above data indicates a lower silver grade from the field sampling than from the production reports. There is no adequate explanation for this discrepancy. Both the silver grade and the available tonnages will be confirmed by UKHM prior to any production decision.

Also from the Watson report, the following metal analyses were obtained.

Source	Ag oz/t	Pb %	NSPb %	Zn %	Fe %	Cd %
1987/88 Drilling	4.45	1.06	0.84	1.27	12.03	0.03
1970 Drilling	1.91	0.50	0.39	0.55	5.20	0.01
Total	3.03	0.75	0.49	0.87	8.21	0.01

There is an error in the tabulation of the NSPb data, which indicates that for the 1987/88 drilling program the lead was 78 % oxidized. The correct value is about 65 %.

During the 60 year mine life which is represented by the impounded tailing, ores from 35 mines were processed at the same millsite. Although all of these ores were exploited for their silver, lead, and zinc content, there was considerable variation in the metallic mineralogy.

In addition to clean sulphide ores from underground mining, several of the mines had open pit production of partially oxidized ores. The metallic mineralogy consisted of galena (lead sulphide), sphalerite (zinc sulphide), and pyrite (iron sulphide) as the dominant metallic sulphides, with the "oxides" represented by cerussite (lead carbonate) and minor anglesite (lead sulphate). The oxide zinc minerals included hemimorphite and smithsonite.

Silver was represented by several minerals: major electrum (native silver), argentite (silver sulphide), and to a lesser extent as solid solution in anglesite and limonite/manganite. The poor response of the silver in the flotation tailing to cyanidation, with a 50 % recovery, is principally explained by solid solutions. The silver manganese minerals are particularly resistant to direct cyanidation, but after treatment with sulphurous acid, leach very well with silver recoveries exceeding 90 %.

The mining of open pit ores was accelerated during the last 10 years of operation due to a shortage of higher grade and more readily processed sulphide ores from underground mining.

In the last full year of operation, for example, 25 % of the lead in the mill feed was present as oxides, mainly as cerussite.

By the early 1980's, the recovery of zinc was no longer practised, so the operators had no incentive to determine the mineral distribution of zinc in the plant feed or tailing.

The presence of oxidized lead became an important consideration, so in the later years the metallurgical statement included oxide lead analyses, presented as NSPb (non-sulphide lead).

For the current study, samples were collected from the accumulated tailing, and were analyzed for oxide lead and zinc using the acetic acid soluble procedure. These analyses (see Sveinson) indicated that 80 - 100 % of the lead is oxidized as is 37 - 64 % of the zinc.

From a processing perspective, the common sulphide minerals galena and sphalerite respond well to flotation, with typical flotation recoveries of + 90 %. Cerussite, after activation with sodium sulphide, responds to flotation, but not as well as the primary sulphides. By way of comparison with the typical 1950's tailing, when the ores were all of the clean sulphide type, and 1988, the lead grade in the plant tailing increased from 0.6 % Pb to 1.2 % Pb.

Anglesite, a much less common "oxide" lead mineral, actually a lead sulphate will not float, but it has the potential to respond to gravity concentration.

A comparison of zinc mineralogy and process metallurgy is more challenging since for the last 8 years of operation a separate zinc concentrate was not produced because there was insufficient zinc in the ore to justify operation of the zinc flotation circuit. During the 1950's the zinc feed grade was about 8 %, but by the late 1970's had decreased to < 1 %, and in 1988 was 1.2 %. A review of the site data did not reveal any oxide zinc analyses, but undoubtedly the proportion of oxide zinc did increase at the same time as did the content of oxide lead. This is apparent from the current study (Sveinson) which included analysis of both oxide lead and zinc. Note that unlike some of the lead oxide minerals which, after sulphidization, respond to flotation, the zinc oxide minerals will not float.

When the above knowledge is combined with the fact that some 50 % of the ore was cyanided, and there appears to have been only a single point at which tailing was discharged into a meandering and frequently self-eroded alluvial fan, it becomes quite apparent that the settled tailing lacks homogeneity. This is indeed the case, although the 1988 report and the current investigation do indicate several perhaps useful features of the accumulated tailing, as follows:

(1) From a silver grade perspective there are two readily identified areas, as follows:

   (a) a low grade silver area, in the valley bottom which contains about 50 % of the total tailing. This material is elevated in slimes content by virtue of the ease of hydraulic transportation of mineral slimes. This lower area is underlain by organics, ie. muskeg, which is not trafficable. The 1970 drilling program (Watson) indicated 2.2 million tons grading 1.9 oz/t Ag.

   (b) a higher grade area which is represented by the alluvial fan on the gentle side slope of the valley. This material is both coarser and of higher grade than the slimes. The 1987/88 drilling program identified 1.7 million tonnes grading 4.45 oz/t Ag.

3.0 GRAVITY CONCENTRATION

3.1 UKHM - 1988

Gravity Concentration - Test 1

Product	Wt %	oz/t - Assays - % Ag	Pb	S	Distribution - % Ag	Pb	S
Mozely conc	0.4	103	10.2	37	11	3	10
Table conc	9.5	14	2.2	9	36	18	57
Tails	90.5	2.7	1.1	0.7	64	82	43
Feed	100.0	3.8	1.2	1.5	100	100	100

Gravity Concentration - Test 2

Product	Wt %	oz/t - Assays - % Ag	Pb	Distribution - % Ag	Pb
Mozely conc	0.5	213	7.0	25	3
Knelson conc	1.9	67	3.0	28	5
Tails	98.1	3.3	1.2	72	95
Feed	100.0	4.5	1.2	100	100

The Mozely concentrate has been separated from the balance of the statement, since it represents the incremental effect of cleaning the rougher concentrate.

A comparison of the two test results is somewhat challenging, since the calculated feed grade between the two tests is not in good agreement. The data, however, offers encouragement in the possible utilization of gravity concentration either alone or with subsequent flotation to produce a marketable concentrate.

3.3 Keno Hill - 1995

A 68 kg sample from the higher grade portion of the Keno Hill tailing, grading 2.4 oz/t Ag, was collected at site Z-8 (see Watson) and was subjected in entirety to centrifugal concentration using both Falcon and Knelson concentrators (see Sveinson).

The feed sample was first passed through a model B-6 (6") Falcon concentrator. The concentrate was advanced through 3 cleaning stages, the first of which was the same Falcon B-6, which was replaced by a smaller 3" Knelson concentrator for the subsequent cleaning stages.

As shown in Sveinson's Materials Balances, the results were very poor. The rougher concentrate contained 4 % of the feed weight at essentially the same grade as the feed. Since these results were not known until the products had been assayed, this low grade rougher concentrate was cleaned through 3 stages. The 3 rd cleaner concentrate contained approximately 20 % sulphides and graded only 7 oz/t Ag. Less than 0.5 % of the silver, lead, and zinc were recovered in this product.

This poor result does not emphatically condemn gravity concentration, but it does not encourage the retreatment of tailing using gravity concentration.

4.0 FLOTATION CONCENTRATION

4.1 Lakefield Research - 1994

Two flotation tests evaluated sequential flotation to produce four rougher concentrates, with intermediate slimes removal. Only the first rougher concentrate was cleaned. The test utilized very long rougher flotation times, totalling + 60 minutes.

Flotation Concentration - Test 3

		oz/t - Assays - %			Distribution - %		
Product	Wt %	Ag	Pb	Zn	Ag	Pb	Zn
Cleaner conc	4.8	25	2.0	2.6	32	8	18
Rougher conc 1	10.2	16	2.3	1.9	43	21	28
" " 2	3.8	16	5.1	3.9	16	17	21
" " 3	0.7	7	3.3	1.0	1	2	1
" " 4	1.3	8	3.6	1.2	3	4	2
Total rough conc	16.0				63	44	52
Slimes	23.0	3.2	1.9	0.6	19	37	21
Tails	61.0	1.1	0.4	0.3	18	20	27
Feed	100.0	3.8	1.2	0.7	100	100	100

In test 4, the feed was reground from 63 % - 200 mesh, to 80 % - 200 mesh. The results were only marginally better. Note that by virtue of a lower ratio of concentration than was achieved in the gravity concentration tests, the concentrate grade, at 25 oz/t Ag, was very low. The concentrate analysis suggests a high slimes content.

Although the reported silver recoveries were "acceptable" for tailing retreatment, the grades of the cleaned flotation concentrates were only equivalent to the average ore grade and were much lower than could be marketed.

The data suggests that gravity concentration alone (see Section 3.2) or with secondary flotation may be more favourable than flotation alone, since gravity concentration appears to be superior in its ability to discard gangue slimes than is flotation.

The sum total of this investigation perhaps suggests potential processing options, but it certainly has not come close to achieving technical or financial success.

5.0 CYANIDATION

5.1 Existing Cyanidation Plant

The Keno Hill plantsite includes a nominal 400 tpd tailing cyanidation plant which is attached to the flotation concentrator. This plant has been idle since about 1982.

Although the plant is reasonably intact, and probably could be placed back into operation, it is improbable that this could be justified for the cyanidation of tailing from the proposed mining of ores from the Bellekeno or Silver King mines.

The plant equipment is mainly of an obsolete design, but a few components could potentially be used if retreatment of the tailing is economically viable.

5.2 Agitation Cyanidation

There is considerable operating and laboratory data to indicate that about 50 % of the silver which is contained in the flotation tailing is amenable to direct cyanidation.

Undoubtedly, the long term volatility of the silver price constrained the economic ability to reprocess all of the flotation tailing subsequent to the construction of this plant in 1952.

Based upon this knowledge, there was no necessity to undertake further evaluations of agitation leaching, so the focus of the current study was directed to heap leaching, which is less costly to operate than is agitation cyanidation.

5.3 Heap Leaching

Heap leaching was investigated by Candorado Operating Company Ltd, which for several years has operated a tailing heap leaching operation at Hedley, B.C. for the recovery of gold.

The testing, which included both bottle roll and column leaching, determined that the tailing can be leached using cyanide heap leaching as effectively as can be achieved using the more costly agitation leaching procedure.

The testing determined that the material benefits from agglomeration with cement using fine waste or low grade ore as a nucleus. The use of nucleation is uncommon, but the higher grade portion of the Elsa tailing is essentially devoid of slimes, and does not agglomerate adequately using economical additions of cement. Testing to date suggests that agglomeration is effective at a weight ratio of 3:2 tailing to fine rock.

At this time Candorado has proposed to continue the testing on a 150 ton sample, at the Hedley site, to determine the final Design Criteria.

Analysis of the testing data by Candorado has indicated that the higher grade portion of the tailing can be economically processed at a rate of 1,500 mtd, with mining and leaching limited to an anticipated 6 month summer season. This is consistent with Watson's report which identified a higher grade portion comprising 1.0 million tons grading 5.35 oz/t Ag. At the proposed processing rate, it will require 4 years to process this inventory. If economics remain favourable, Candorado would continue to process some portion of the remaining accessible 0.7 million tons of higher grade material, at + 3 oz/t Ag.

6.0 CONCLUSIONS

6.1 Environmental

From an environmental perspective, there is no incentive to reprocess the tailing to minimize future environmental concerns. The annual requirements for liming of the tailing pond supernatant can be met with a modest, few ton, addition of lime to the supernatant during the summer, only.

The year-round discharge from the Bellekeno and Galkeno 800 portals contain significantly more zinc and are being continuously limed, for which there is an operating crew on site.

Although there is evidence from water analyses of the solid tailing surface moisture (see Sveinson) that zinc is being leached from the tailing, there is no indication that this is caused by acid generation, and there is no indication that relocating the tailing will diminish the rate of solubilization of the zinc.

6.2 Reprocessing of Accumulated Tailing

6.2.1 Silver Recovery

From a technical perspective, additional silver can be recovered from the approximate 50 % of the tailing which has not already been leached with sodium cyanide. From a practical perspective, however, the flotation and cyanidation tailing have been commingled and only that portion of the tailing which has deposited between the tailing discharge point and the valley bottom is potentially of sufficient grade and is sufficiently accessible to be worthy of economic consideration.

The use of a single discharge point for the tailing slurry, on the upper flank of the valley, has resulted in an elevated silver grade in the alluvial fan which has developed above the valley bottom. The coarser and higher specific gravity portion of the tailing settled in this area, and the much finer, lower specific gravity, and lower grade "slimes" flowed to the valley bottom where they overly muskeg which is not trafficable.

The coarser portion of the tailing, at a maximum depth of about 15 feet (4.9 meters) overlies the original soil which, by virtue of the shallow side slope has not been eroded, and which is trafficable.

This suggests that from a technical perspective the coarse tailing, representing some 1.7 million tonnes grading 4.45 oz/t Ag, can be excavated and transported to a heap leaching site where it can be percolation leached with cyanide.

At the current silver price of $ US 5.50 / oz, the economics of heap leaching is encouraging. However, to avoid deflecting the primary focus of UKHM's attention from proposed underground mining of ores from the Bellekeno and Silver King deposits, UKHM may defer any tailing retreatment "production" decision until the mining and processing operation has been established once again. This decision does not diminish the feasibility of tailing retreatment at the current silver price, but from UKHM's perspective, the economics of retreatment are very modest compared with that of ore processing.

At this time the testing has not been sufficiently advanced to entertain any Environmental Permitting.

6.2.2 Base Metal Recovery

Although some of the laboratory testing has offered encouragement for economical recovery of lead from the plant tailing, the results have not been sufficiently consistent to suggest that retreatment of the tailing for base metal recovery is economically viable.

To a varying extent, lead and zinc are present in the accumulated tailing as oxides which have both derived from open pit operations and to a much lesser extent from oxidation within the tailing pond.

When the mine is back in operation, it is UKHM's intention to evaluate gravity concentration of the ongoing plant tailing in an attempt to improve the plant recovery.

In all probability, the proposed study will indicate that little or no improvement can be made as long as only fresh sulphides are being processed. However, once oxide ores are introduced into the plant feed, as may occur after establishing sustainable mining and processing of Bellekeno and Silver King ores, the technical and financial opportunities for processing beyond flotation will increase considerably.

Perhaps this investigation will indicate further processing economies with respect to the ongoing future operation, but it is improbable that it will indicate any economic potential for the retreatment of the existing plant tailing for base metal recovery using contemporary process technology.

G.Hawthorn, P.Eng

(g-0493)

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APPENDIX A

Scoping Testwork

on the

RECOVERY OF SILVER, LEAD, AND ZINC

on tailing material

from United Keno Hill Mines Limited

Sandy Sveinson

December 27, 1995

TABLE OF CONTENTS

INTRODUCTION

The following report summarizes the results of scoping testwork conducted on two tailing samples as requested by Linda Broughton, P.Eng., for United Keno Hill Mines Limited. The testwork included gravity separation and flotation tests to investigate the recovery of silver, lead, and zinc.

SUMMARY

1. Head Analysis

Representative head samples prepared from the two different tailing samples returned the following analyses:

TABLE 1 HEAD SAMPLE ANALYSES

	Sample #1a (Tailing Sample # 1)	Sample #1b (Tailing Sample # 1)	Sample # 2 (Tailing Sample # 2)
Silver (oz/ton)	3.03	3.85	2.45
Lead % (total lead)	0.65	0.84	0.48
Lead Oxide %	0.65	0.67	0.48
Zinc % (total zinc)	0.44	0.51	0.59
Zinc Oxide %	0.28	0.25	0.22
Iron %	9.2	9.6	8.2

It is significant to note that the oxide lead ranges from 80 -100% of the total lead, while the zinc oxide ranges from 37 - 64% of the total zinc.

In addition, semi-quantitative ICP scans were conducted on representative samples. Analyses were conducted on whole ore samples and on water from 25% solid solutions.

The results of the ICP analyses are presented in Tables 2 and 3 on the following page. The 25% solids solution represents approximately a 17:1 dilution ratio based on a moisture content of 15% in the tailings material. The concentration of heavy metals such as manganese and zinc, therefore, indicate significant leaching from the tailing.

TABLE 2
ICP ANALYSES FROM WHOLE ORE SAMPLES

Element	Sample #1	Sample #2
	ppm	ppm
Ag	72	55
Al	1,800	2,300
As	1,195	886
B	185	189
Ba	61	356
Be	< 1	< 1
Bi	< 3	< 3
Ca	2,500	3,700
Cd	46	65
Co	2	2
Cr	165	234
Cu	98	130
Fe	79,300	70,000
Hg	< 3	< 3
La	< 2	< 2
Mg	2,300	2,300
Mn	30,968	27,671
Mo	8	8
Na	100	100
Ni	14	16
P	324	312
Pb	5,575	3,959
Sb	74	55
Sr	5	11
Ti	100	100
V	3	4
W	36	15
Zn	3,953	4,941

TABLE 3
ICP ANALYSES FROM 25% SOLIDS SOLUTION

Element	Sample #1	Sample #2
	ppm	ppm
Ag	0.121	0.012
Al	1.300	1.840
As	0.590	0.260
Au	0.870	0.070
B	3.030	1.680
Ba	0.395	0.084
Be	0.008	0.004
Bi	< .05	< .05
Ca	259.800	512.700
Cd	2.910	0.792
Co	0.040	0.005
Cr	0.061	< .005
Cu	0.158	0.013
Fe	2.210	0.130
Hg	< .02	< .02
K	n/a	n/a
La	0.008	0.005
Mg	113.100	39.500
Mn	617.000	70.910
Mo	0.019	0.003
Na	21.000	5.000
Ni	0.047	0.008
P	1.260	0.680
Pb	0.150	0.170
Sb	< .02	< .02
Si	3.470	1.540
Sr	0.033	0.409
Ti	0.016	0.003
V	0.013	0.002
W	< .02	< .02
Zn	129.000	15.440

2. Gravity Separation Testwork

A single test was conducted on a 68.4 kilogram sample of tailing sample #2. A Falcon batch concentrator (6 inch) was used for the primary separation, followed by a Knelson batch concentrator (3 inch) to obtain the final concentrate.

The results are presented in Table 4.

TABLE 4 GRAVITY SEPARATION TEST ONE

FALCON/KNELSON CONCENTRATORS

Product	Weight (g)	Weight %	Assays g/t, %								Distribution %							
			Ag	Fe	Pb (total)	Pb (oxide	Zn (total)	Zn (oxide)	S (total)	Sulfides	Ag	Fe	Pb (total)	Pb (oxide	Zn (total)	Zn (oxide)	S (total)	Sulfides
2nd Knelson Conc	76	0.1	252.0	25.0	1.32	0.85	1.14	0.22	11.40	10.90	0.3	0.3	0.2	0.2	0.2	0.1	0.7	0.8
2nd Knelson Cl. Tails	96	0.1	117.0	16.8	0.86	0.56	0.83	0.23	5.10	4.80	0.2	0.2	0.2	0.2	0.2	0.1	0.4	0.4
1st Knelson Cl. Conc	172	0.2	176.6	20.4	1.06	0.69	0.97	0.23	7.88	7.49	0.5	0.5	0.4	0.4	0.4	0.2	1.0	1.2
1st Knelson Cl. Tails	584	0.8	94.6	15.5	0.90	0.66	0.84	0.25	2.50	2.23	0.9	1.3	1.3	1.3	1.1	0.8	1.1	1.2
Falcon Cl. Conc	736	1.0	113.7	16.5	0.94	0.67	0.87	0.24	3.76	3.46	1.4	1.7	1.6	1.7	1.4	1.0	2.1	2.4
Falcon Cl. Tails	1,986	2.6	75.4	10.7	0.47	0.31	0.63	0.19	2.28	2.14	2.5	3.0	2.2	2.1	2.7	2.1	3.5	4.0
Total Falcon Ro. Conc	2,722	3.6	85.8	12.3	0.60	0.41	0.69	0.20	2.68	2.50	3.8	4.8	3.9	3.8	4.0	3.1	5.6	6.4
Falcon Ro. Tails	65,278	86.8	80.9	9.3	0.56	0.40	0.60	0.24	1.68	1.34	86.9	85.9	87.1	88.2	84.3	87.6	83.7	82.7
Total Falcon Feed	68,000	90.4	81.1	9.4	0.56	0.40	0.60	0.24	1.72	1.39	90.7	90.7	90.9	92.0	88.4	90.7	89.3	89.1
Oversize Solids	7,190	9.6	78.2	9.1	0.53	0.33	0.75	0.23	1.95	1.60	9.3	9.3	9.1	8.0	11.6	9.3	10.7	10.9
Calculated Feed	75,190	100.0	80.8	9.4	0.56	0.39	0.62	0.24	1.74	1.41	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.00
Assay			79.5	10.1	0.55	0.39	0.68	0.22	1.96	1.69								

3. Flotation Testwork

The first two flotation tests were conducted as baseline tests on the two tailing samples, under identical conditions. The pH of the pulp was not adjusted. The tailing was not conditioned prior to flotation. The first rougher concentrate was collected with air flow only to the flotation cell. A second rougher concentrate was collected after the addition of frother. Potassium amyl xanthate (PAX) and frother were added and a third rougher concentrate was collected. The fourth rougher concentrate was collected after the addition of 300 g/t copper sulfate. The fifth and final rougher concentrate was collected after sulfidizing with 1000 g/t NaHS. Additions of frother and collector were added as required in the fourth and fifth rougher stages. Each of the rougher concentrates was then cleaned separately, with no further addition of reagents. A sample of the final rougher tailing was collected and wet screened at 325 mesh. The +325 mesh material was later dry screened.

Results of Tests One and Two are summarized in Tables 5 and 6. The results of the +325 mesh screen fraction analyses are presented in the section entitled Details of Tests.

The assay results indicating 100% lead oxides in both samples and 64% (sample #1) and 37% (sample #2) zinc oxides, help explain the poor recoveries of silver, lead, and zinc.

Flotation Tests Three and Four were conducted on tailing sample #1. In Test Three, the tailing material was first re-ground for 30 seconds. The material was then conditioned for one minute with 250 g/t copper sulfate. Two stage additions of Aerophine 3418A and frother were used to collect a bulk rougher concentrate, which was cleaned. Sulfidizing was carried out with stage additions of NaHS (three stages of 200 g/t, followed by two stages of 1000 g/t) to collect a second rougher concentrate.

In Test Four, the tailing material was reground for 5 minutes. The material was then conditioned for one minute with 250 g/t copper sulfate. Two stage additions of Aerophine 3418A and frother were added to collect a bulk rougher concentrate, which was cleaned. Sulfidizing was carried out with stage additions of NaHS (two stages of 200 g/t, followed by two stages of 1000 g/t) to collect a second rougher concentrate.

The results of Tests Three and Four are summarized in Tables 7 and 8.

Again, the high percent of lead oxides (80%) and zinc oxides (49%) obviously contributed to the poor metal recoveries. The five minute re-grind in Test Four appeared to contribute to improvement in recoveries.

TABLE 5 FLOTATION TEST ONE

SAMPLE # 2

Product	Weight (g)	Wt. %	Assays, oz/t, %				% Distribution			
			Ag	Pb	Zn	Fe	Ag	Pb	Zn	Fe
Ro. Conc-1	6.6	0.8	7.47	1.40	1.70	11.00	2.3	2.0	2.2	1.0
Cl. Conc-2	2.1	0.2	19.50	0.42	17.60	25.10	1.9	0.2	7.4	0.7
Cl. Tail-2	27.0	3.1	11.40	0.87	4.50	21.20	14.5	5.2	24.3	8.0
Ro. Conc-2	29.1	3.4	11.98	0.84	5.45	21.48	16.4	5.4	31.7	8.8
Cl. Conc-3	2.8	0.3	11.70	0.62	8.90	27.30	1.5	0.4	5.0	1.1
Cl. Tail-3	17.6	2.0	6.53	1.11	1.50	11.80	5.4	4.3	5.3	2.9
Ro. Conc-3	20.4	2.4	7.24	1.04	2.52	13.93	7.0	4.7	10.3	4.0
Cl. Conc-4	1.2	0.1	8.63	1.37	1.55	10.60	0.5	0.4	0.4	0.2
Cl. Tail-4	17.3	2.0	5.72	1.21	1.05	10.10	4.7	4.6	3.6	2.4
Ro. Conc-4	18.5	2.2	5.91	1.22	1.08	10.13	5.1	5.0	4.0	2.6
Total Ro. Conc.	74.6	8.7	8.78	1.04	3.23	15.67	30.8	17.0	48.2	16.4
Ro. Tails	785.8	91.3	1.87	0.48	0.33	7.60	69.2	83.0	51.8	83.6
Head (calc)	860.4	100.0	2.47	0.53	0.58	8.30	100.0	100.0	100.0	100.0
Head (assay)			2.45	0.48	0.59	8.20				

Head (assay)	% PbO	0.48
	% ZnO	0.22
% Moisture	12.0%	

TABLE 6 FLOTATION TEST TWO

SAMPLE # 1

Product	Weight (g)	Wt. %	Assays, oz/t, %				% Distribution			
			Ag	Pb	Zn	Fe	Ag	Pb	Zn	Fe
Ro. Conc-1	4.7	0.6	7.12	1.09	0.77	13.20	1.2	0.8	1.0	0.8
Cl. Conc-2	2.0	0.2	7.82	1.38	1.03	17.20	0.5	0.4	0.5	0.4
Cl. Tail-2	21.2	2.5	5.83	1.19	0.84	15.20	4.0	3.9	4.6	3.9
Ro. Conc-2	23.2	2.8	6.00	1.21	0.86	15.37	4.5	4.3	5.1	4.3
Cl. Conc-3	3.8	0.5	20.90	0.62	1.85	32.20	2.6	0.4	1.8	1.5
Cl. Tail-3	34.1	4.1	10.60	1.08	1.91	3.30	11.7	5.7	16.9	1.4
Ro. Conc-3	37.9	4.5	11.63	1.03	1.90	6.20	14.3	6.0	18.7	2.8
Cl. Conc-4	0.9	0.1	11.20	1.14	4.28	16.90	0.3	0.2	1.0	0.2
Cl. Tail-4	19.2	2.3	7.70	1.16	1.65	16.00	4.8	3.4	8.2	3.7
Ro. Conc-4	20.1	2.4	7.86	1.16	1.77	16.04	5.1	3.6	9.2	3.9
Cl. Conc-5	0.8	0.1	5.27	1.10	0.77	13.20	0.1	0.1	0.2	0.1
Cl. Tail-5	14.5	1.7	5.25	1.10	0.78	13.90	2.5	2.5	2.9	2.4
Ro. Conc-5	15.3	1.8	5.25	1.10	0.78	13.86	2.6	2.6	3.1	2.5
Total Ro. Conc.	101.2	12.1	8.44	1.11	1.42	11.78	27.7	17.3	37.1	14.3
Ro. Tails	736.3	87.9	3.03	0.73	0.33	9.70	72.3	82.7	62.9	85.7
Head (calc)	837.5	100.0	3.68	0.78	0.46	9.95	100.0	100.0	100.0	100.0
Head (assay)			3.03	0.65	0.44	9.20				

Head (assay) % PbO 0.65
% ZnO 0.28
% Moisture 14.3%

TABLE 7 FLOTATION TEST THREE

SAMPLE # 1

Product	Weight (g)	Wt. %	Assays, oz/t, %				% Distribution			
			Ag	Pb	Zn	Fe	Ag	Pb	Zn	Fe
Cl. Conc-1	12.8	1.3	17.40	1.29	5.00	24.90	5.2	2.0	13.7	3.2
Cl. Tail-1	41.8	4.4	7.70	1.34	1.50	19.30	7.5	6.7	13.5	8.2
Ro. Conc-1	54.6	5.7	9.97	1.33	2.32	20.61	12.7	8.7	27.2	11.4
Ro. Conc-2	64.4	6.8	6.90	1.52	0.99	16.60	10.4	11.7	13.7	10.8
Total Ro. Conc	119.0	12.5	8.31	1.43	1.60	18.44	23.1	20.3	40.9	22.2
Ro. Tails	834.1	87.5	3.95	0.80	0.33	9.20	76.9	79.7	59.1	77.8
Head (calc)	953.1	100.0	4.49	0.88	0.49	10.35	100.0	100.0	100.0	100.0
Head (assay)			3.85	0.84	0.51	9.60				

Head (assay)	% PbO	0.67
	% ZnO	0.25

TABLE 8 FLOTATION TEST FOUR

SAMPLE # 1

Product	Weight (g)	Wt. %	Assays, oz/t, %				% Distribution			
			Ag	Pb	Zn	Fe	Ag	Pb	Zn	Fe
Cl. Conc-1	10.7	1.1	32.10	1.13	6.00	26.30	8.4	1.4	12.0	2.7
Cl. Tail-1	50.0	5.2	8.85	1.25	1.47	18.90	11.0	7.4	13.9	9.3
Ro. Conc-1	60.7	6.3	12.81	1.22	2.24	20.04	19.5	8.8	25.9	12.0
Ro. Conc-2	80.8	8.5	7.10	1.35	1.00	14.80	14.4	12.9	15.4	11.8
Total Ro. Conc	141.5	14.8	9.55	1.29	1.53	17.05	33.8	21.7	41.2	23.8
Ro. Tails	814.5	85.2	3.25	0.81	0.38	9.50	66.2	78.3	58.8	76.3
Head (calc)	956.0	100.0	4.18	0.88	0.55	10.62	100.0	100.0	100.0	100.0
Head (assay)			4.10	0.89	0.51	9.80				

4. Discussion and Recommendations

Gravity separation using a Falcon concentrator followed by a Knelson concentrator resulted in a recovery of 4% of the silver. Earlier gravity testwork conducted by Lakefield Research (October 1994) indicated higher recoveries of silver using a Knelson concentrator with cleaning on a Mozley separator. It is recommended that further tests be conducted using a Knelson concentrator to determine if silver recovery can be improved.

The dry screen analyses of the +325 mesh wet screen material from the flotation tests indicate significant metal losses in the fine fractions.

Flotation tests resulted in up to 31% silver recovery. However, the assays of the samples returned values of 80% - 100% lead oxides and 37% - 64% zinc oxides, indicating that flotation of this material is unlikely to be a viable option for metal recovery.

SAMPLE PREPARATION

Five pails of tailing material from United Keno Hill were received at the Department of Mining and Mineral Processing lab at the University of British Columbia in October 1995. The sample material consisted of tailing from two different sample sites as shown in Figure 1. The initial total weights of the samples were as follows:

Sample #1	58.4 kilograms
Sample #2	39.6 kilograms

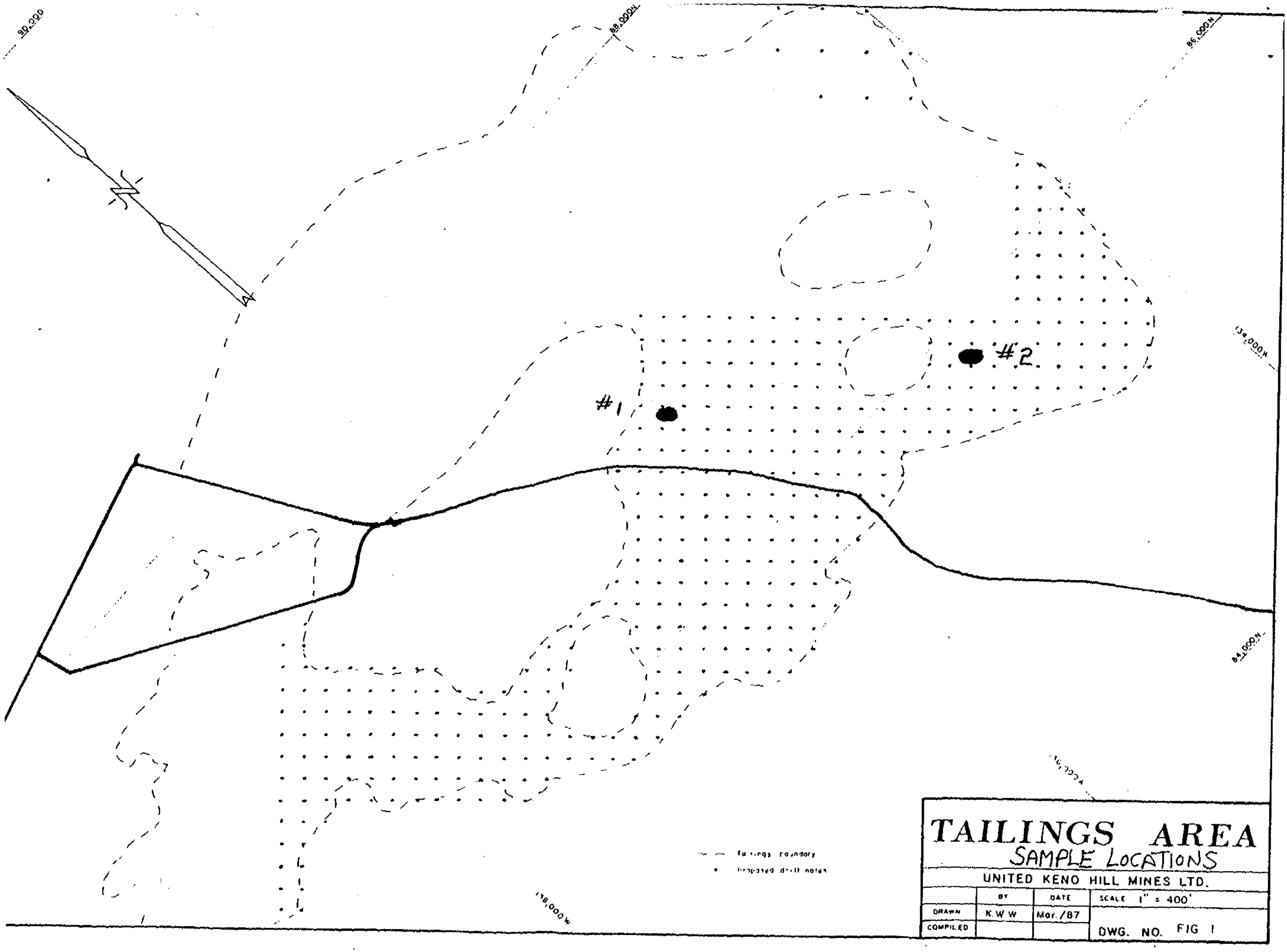
A further four pails of tailing material (sample #2), weighing 68.4 kilograms, were shipped directly to Process Research Associates lab in Vancouver, where the gravity separation test was conducted.

The material shipped to UBC was screened and split using cone and quartering followed by riffling to obtain test charges of approximately 1 and 2.5 kilogram sizes.

Moisture analysis of the two samples determined the moisture content of the samples to be 14.3% and 12% respectively for Sample #1 and #2. Due to the high moisture content, the material was dried prior to screen analysis. The screen analyses of the two samples are presented in the following section.

Screen fractions were conducted on both samples and the results are summarized in the next section.

Representative head samples were removed for ICP analyses of whole ore. As well, a 25% solids solution was made up from a sample of each material. The slurry was shaken for 10 minutes and the material was then allowed to settle. A sample of the water was then decanted off for ICP analysis.



TAILINGS AREA

SAMPLE LOCATIONS

UNITED KENO HILL MINES LTD.

	BY	DATE	SCALE 1" = 400'
DRAWN	K.W.W.	Mar./87	
COMPILED			DWG. NO. FIG 1

DETAILS OF TESTS

Screen Analyses

1. Head Samples

Procedure: The material was screened for 20 minutes using a Ro-Tap machine. Screen fractions were individually weighed.

Feed: 250 grams of tailing material

Results and graphs of the screen analyses are presented in Tables 9 and 10.

2. Dry Screen Analyses from +325 Mesh Wet Screening of Rougher Tailings in Flotation Tests One and Two

Procedure: The +325 mesh material from wet screening of rougher tailings was dried and screened for 25 minutes using a Ro-Tap machine. Screen fractions were weighed.

Results and graphs of the screen analyses for Flotation Tests One and Two are presented in Tables 11 - 14.

TABLE 9

SAMPLE #1 **SCREEN ANALYSIS**

Size		Weight	%	Cumulative	
Mesh	Microns	(g)	Retained	% Retained	% Passing
65	250	37.0	15.9	15.9	84.1
100	149	37.4	16.1	32.0	68.0
140	105	39.0	16.8	48.8	51.2
200	74	38.7	16.6	65.4	34.6
270	53	26.2	11.3	76.7	23.3
325	44	11.9	5.1	81.8	18.2
400	37	15.6	6.7	88.5	11.5
Pan	-37	26.7	11.5	100.0	
Total		232.5	100.0		

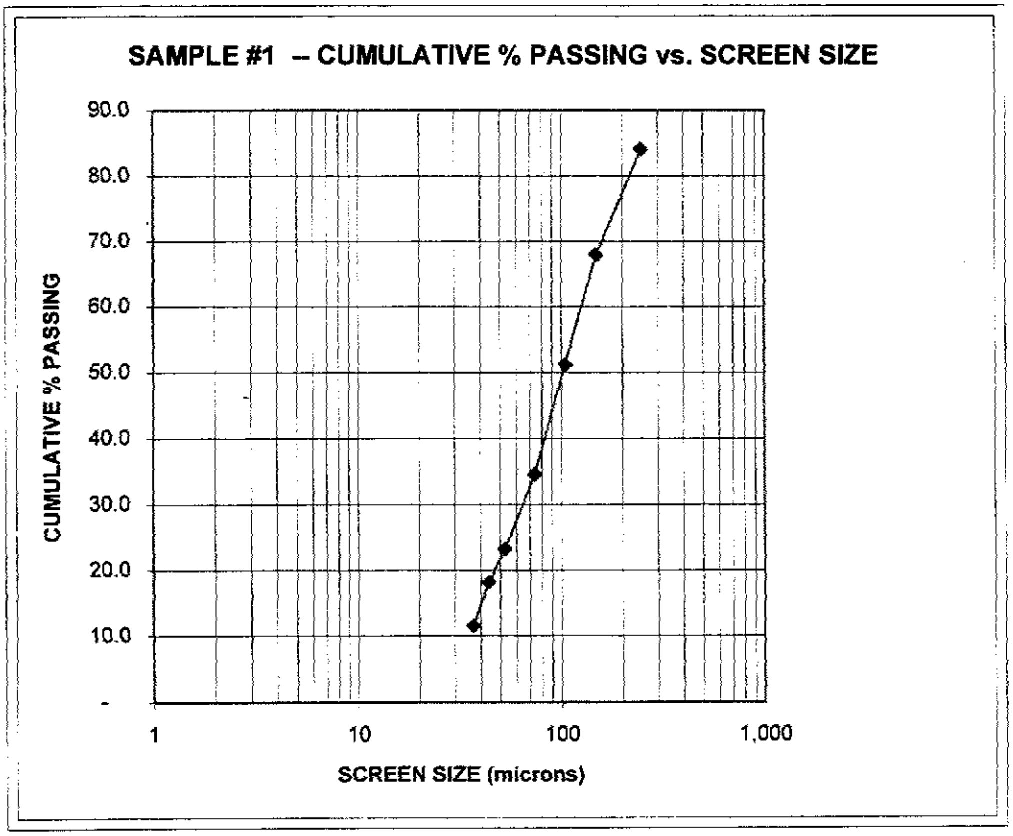


TABLE 10

SAMPLE #2 **SCREEN ANALYSIS**

Size		Weight	%	Cumulative	
Mesh	Microns	(g)	Retained	% Retained	% Passing
65	250	48.4	18.4	18.4	81.6
100	149	35.0	13.3	31.7	68.3
140	105	32.0	12.1	43.8	56.2
200	74	42.7	16.2	60.0	40.0
270	53	46.6	17.7	77.7	22.3
325	44	11.5	4.4	82.0	18.0
400	37	11.6	4.4	86.5	13.5
Pan	-37	35.7	13.5	100.0	
Total		263.5	100.0		

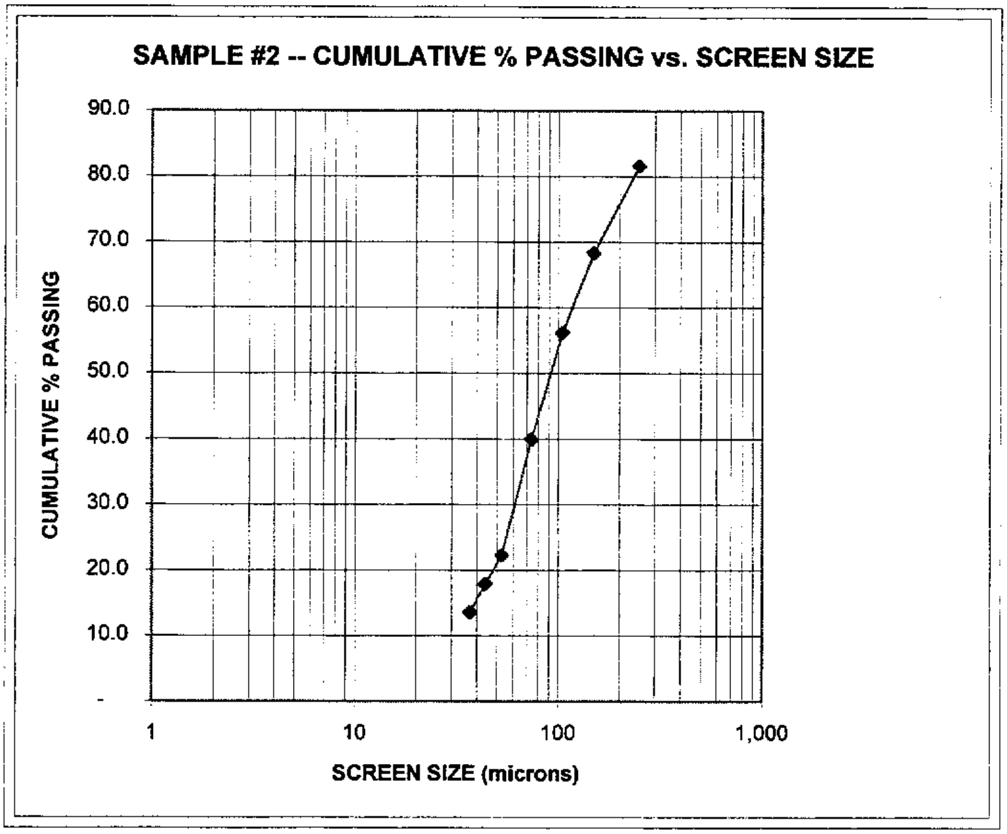


TABLE 11 SCREEN ANALYSIS

TEST ONE SAMPLE #2 ROUGHER TAILING
+ 325 MESH

Size		Weight	%	Cumulative	
Mesh	Microns	(g)	Retained	% Retained	% Passing
65	250	7.4	7.9	7.9	92.1
100	149	12.7	13.6	21.6	78.4
140	105	11.8	12.7	34.2	65.8
200	74	20.0	21.5	55.7	44.3
270	53	11.1	11.9	67.6	32.4
325	44	13.3	14.3	81.9	18.1
Pan	-44	16.9	18.1	100.0	
Total		93.2	100.0		

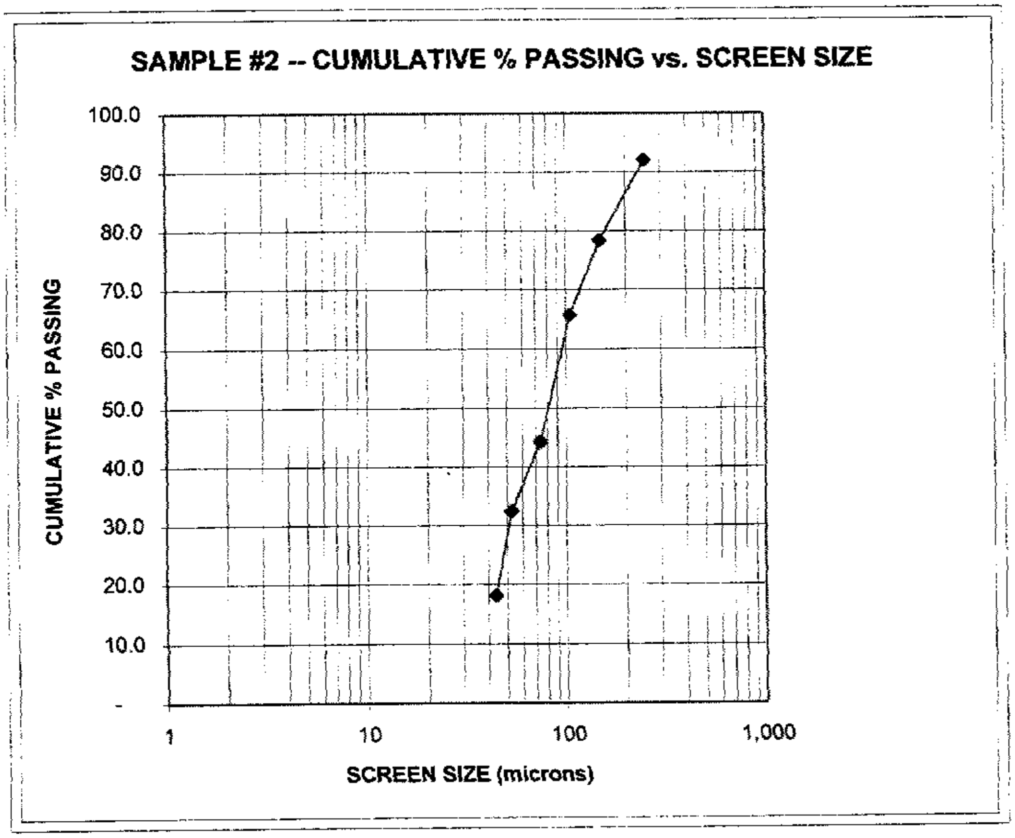


TABLE 12

TEST ONE **SAMPLE #2** **SIZE FRACTION ANALYSIS ROUGHER TAILING FROM +325 MESH WET SCREEN FRACTION**

Product	Weight (g)	Weight %	Assays oz/t, %				% Distribution			
			Ag	Pb	Zn	Fe	Ag	Pb	Zn	Fe
65 Mesh	7.4	7.9	0.70	0.13	0.08	3.40	4.7	3.8	2.9	4.2
100 Mesh	12.7	13.6	0.93	0.16	0.40	4.70	10.7	8.1	25.3	10.0
150 Mesh	11.8	12.7	1.28	0.23	0.32	6.60	13.8	10.8	18.9	13.1
200 Mesh	20.0	21.5	1.28	0.24	0.10	6.60	23.3	19.1	10.0	22.2
270 Mesh	11.1	11.9	0.93	0.26	0.11	6.90	9.4	11.5	6.1	12.8
325 Mesh	13.3	14.3	1.52	0.30	0.16	6.90	18.4	15.9	10.6	15.4
Minus 325	16.9	18.1	1.28	0.46	0.31	7.90	19.6	30.8	26.1	22.3
	93.2	100.0	1.18	0.27	0.21	6.40	100.0	100.0	100.0	100.0

TABLE 13 SCREEN ANALYSIS

TEST TWO **SAMPLE #1** **ROUGHER TAILING + 325 MESH**

Size		Weight	%	Cumulative	
Mesh	Microns	(g)	Retained	% Retained	% Passing
60.0	250	0.9	0.9	0.9	99.1
100.0	149	6.2	6.1	7.0	93.0
150.0	105	12.9	12.7	19.7	80.3
200.0	74	19.6	19.3	39.0	61.0
270.0	53	17.3	17.0	56.0	44.0
325.0	44	20.9	20.6	76.6	23.4
Pan	-44	23.8	23.4	100.0	
Total		101.6	100.0		

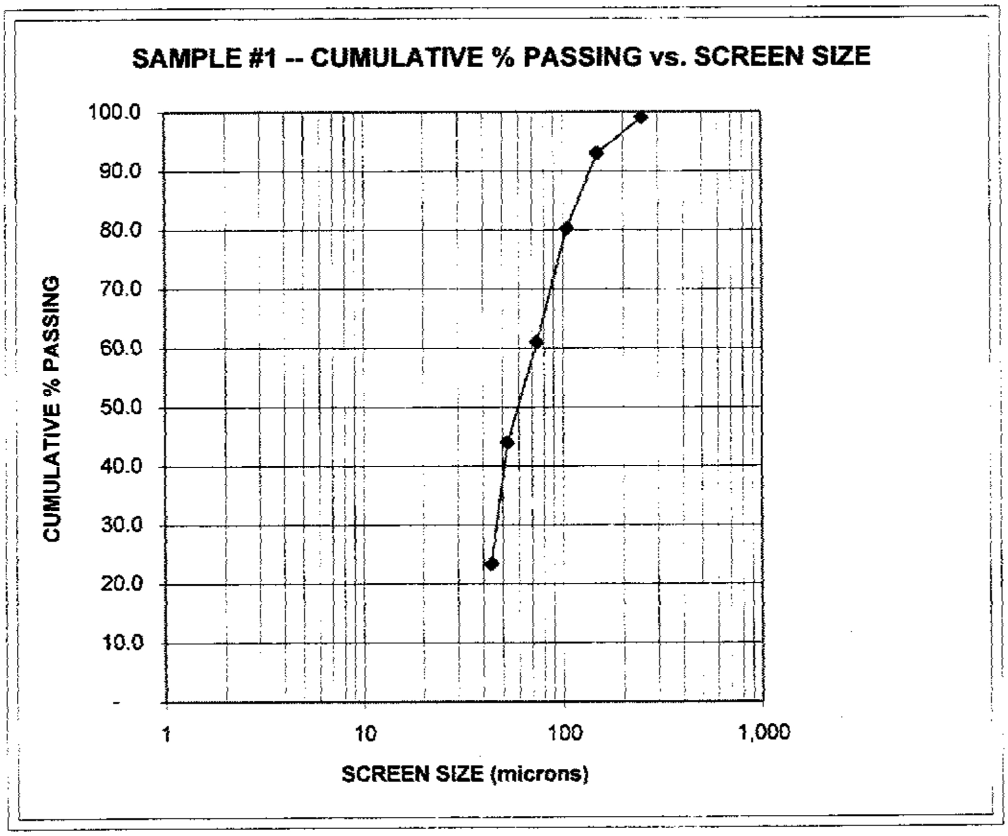


TABLE 14

TEST TWO **SAMPLE #1** **SIZE FRACTION ANALYSIS ROUGHER TAILING FROM +325 MESH WET SCREEN FRACTION**

Product	Weight	Weight	Assays oz/t, %				% Distribution			
	(g)	%	Ag	Pb	Zn	Fe	Ag	Pb	Zn	Fe
65 Mesh	0.9	0.9	2.80	0.74	0.33	7.40	1.0	1.1	1.5	0.8
100 Mesh	6.2	6.1	1.40	0.28	0.10	3.30	3.4	2.8	3.1	2.4
140 Mesh	12.9	12.7	1.98	0.28	0.10	5.50	10.0	5.9	6.6	8.4
200 Mesh	19.6	19.3	2.45	0.38	0.14	7.70	18.8	12.1	13.9	17.8
270 Mesh	17.3	17.0	2.92	0.49	0.16	8.40	19.7	13.8	14.0	17.1
325 Mesh	20.9	20.6	2.57	0.68	0.22	8.90	21.0	23.2	23.4	22.0
Minus 325	23.8	23.4	2.80	1.06	0.31	11.20	26.0	41.1	37.4	31.4
	101.6	100.0	2.52	0.60	0.19	8.33	100.0	100.0	100.0	100.0

Gravity Separation Test

November 2, 1995

Purpose: To investigate the recovery of silver and lead by gravity separation.

Procedure: The material was concentrated in three passes using a B6 Falcon concentrator, followed by two passes in a Knelson concentrator (3 inch). On the initial pass through the Falcon concentrator, oversize material was screened off. All products were dried and weighed and submitted for assay.

Feed: 68.4 kilograms of Sample #2 tailing material

Results of the gravity separation materials balance are summarized in Table 15.

TABLE 15 GRAVITY SEPARATION TEST ONE

FALCON/KNELSON CONCENTRATORS

Product	Weight (g)	Weight %	Assays g/t, % Ag	Fe	Pb (total)	Pb (oxide	Zn (total)	Zn (oxide	S (total)	Sulfides
2nd Knelson Conc	76	0.1	252.0	25.0	1.32	0.85	1.14	0.22	11.40	10.90
2nd Knelson Cl. Tails	96	0.1	117.0	16.8	0.86	0.56	0.83	0.23	5.10	4.80
1st Knelson Cl. Conc	172	0.2	176.6	20.4	1.06	0.69	0.97	0.23	7.88	7.49
1st Knelson Cl. Tails	584	0.8	94.6	15.5	0.90	0.66	0.84	0.25	2.50	2.23
Falcon Cl. Conc	736	1.0	113.7	16.5	0.94	0.67	0.87	0.24	3.76	3.46
Falcon Cl. Tails	1,986	2.6	75.4	10.7	0.47	0.31	0.63	0.19	2.28	2.14
Total Falcon Ro. Conc	2,722	3.6	85.8	12.3	0.60	0.41	0.69	0.20	2.68	2.50
Falcon Ro. Tails	65,278	86.8	80.9	9.3	0.56	0.40	0.60	0.24	1.68	1.34
Total Falcon Feed	68,000	90.4	81.1	9.4	0.56	0.40	0.60	0.24	1.72	1.39
Oversize Solids	7,190	9.6	78.2	9.1	0.53	0.33	0.75	0.23	1.95	1.60
Calculated Feed	75,190	100.0	80.8	9.4	0.56	0.39	0.62	0.24	1.74	1.41
Assay			79.5	10.1	0.55	0.39	0.68	0.22	1.96	1.69

Product	Distribution % Ag	Fe	Pb (total)	Pb (oxide	Zn (total)	Zn (oxide	S (total)	Sulfides
2nd Knelson Conc	0.3	0.3	0.2	0.2	0.2	0.1	0.7	0.8
2nd Knelson Cl. Tails	0.2	0.2	0.2	0.2	0.2	0.1	0.4	0.4
1st Knelson Cl. Conc	0.5	0.5	0.4	0.4	0.4	0.2	1.0	1.2
1st Knelson Cl. Tails	0.9	1.3	1.3	1.3	1.1	0.8	1.1	1.2
Falcon Cl. Conc	1.4	1.7	1.6	1.7	1.4	1.0	2.1	2.4
Falcon Cl. Tails	2.5	3.0	2.2	2.1	2.7	2.1	3.5	4.0
Total Falcon Ro. Conc	3.8	4.8	3.9	3.8	4.0	3.1	5.6	6.4
Falcon Ro. Tails	86.9	85.9	87.1	88.2	84.3	87.6	83.7	82.7
Total Falcon Feed	90.7	90.7	90.9	92.0	88.4	90.7	89.3	89.1
Oversize Solids	9.3	9.3	9.1	8.0	11.6	9.3	10.7	10.9
Calculated Feed Assay	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.00

Flotation Test One

Sample #2

November 16, 1995

Purpose: To investigate recovery of silver, lead and zinc from a tailing sample.

Procedure: Tailing material was floated in a 2 litre Agitair cell. Agitation speed was set between 700 - 800 rpm. and air flow was set between 10 - 15 litres/min. All rougher concentrates were individually cleaned. A sample from the final rougher tailing was wet screened at 325 mesh and the +325 mesh material was dry screened for fractional analysis. All products were filtered, dried, weighed, and submitted for assay.

Feed: 1 kilogram of Sample #2 tailing material

Stage	Reagent Addition, g/t				Time, minutes			
	CuS04	PAX	NaHS	Dowfroth 250 (drop)	Grind	Condition	Froth Flotation	pH
Ro. Conc. 1	-	-	-	1	-	-	3	6.5
Ro. Conc. 2	-	50	-	1	-	-	3	6.5
Ro. Conc. 3	300	25	-	2	-	-	4	6.6
Ro. Conc. 4	-	25	1000	1	-	-	5	6.5
Cl. Conc. 2							3	6.5
Cl. Conc. 3							3.5	6.5
Cl. Conc. 4							4	6.5
Totals	300	100	1000	5			25.5	

Flotation Test Two

Sample #1

November 16, 1995

Purpose: To investigate recovery of silver, lead and zinc from a tailing sample.

Procedure: Tailing material was floated in a 2 litre Agitair cell. Agitation speed was set between 700 - 800 rpm. and air flow was set between 10 - 15 litres/min. All rougher concentrates were individually cleaned. A sample from the final rougher tailing was wet screened at 325 mesh and the +325 mesh material was dry screened for fractional analysis. All products were filtered, dried, weighed, and submitted for assay.

Feed: 1 kilogram of Sample #2 tailing material

Stage	Reagent Addition, g/t				Time, minutes			
	CuS04	PAX	NaHS	Dowfroth 250 (drop)	Grind	Condition	Froth Flotation	pH
Ro. Conc. 1	-	-	-	-	-	-	2.5	6
Ro. Conc. 2	-	-	-	1	-	-	4	6
Ro. Conc. 3	-	50	-	1	-	-	4.5	6.2
Ro. Conc. 4	300	25	-	1	-	-	5	6.2
Ro. Conc. 5	-	25	1000	1	-	-	3.5	6.2
Cl. Conc. 2							2.5	6.2
Cl. Conc. 3							2.5	6.2
Cl. Conc. 4							2	6.2
Cl. Conc. 5							2	6.2
Totals	300	100	1000	4			28.5	

Flotation Test Three

Sample #1

November 23, 1995

Purpose: To investigate recovery of silver, lead and zinc from a tailing sample, using a 30 second re-grind prior to flotation.

Procedure: Tailing material was reground in a rod mill for 30 seconds. The slurry was then floated in a 2 litre Agitair cell. Agitation speed was set between 700 - 800 rpm. and air flow was set between 10 - 15 litres/min. The material was conditioned for one minute with copper sulfate. Stage additions of collector and frother were used to collect a first rougher concentrate. Sulfidizing was done in stages to collect a second rougher concentrate. The first rougher concentrate was cleaned. All products were filtered, dried, weighed, and submitted for assay.

Feed: 1 kilogram of Sample #1 tailing material

Stage	Reagent Addition, g/t				Time, minutes			
	CuS04	3418A	NaHS	Dowfroth 250 (drop)	Grind	Condition	Froth Flotation	pH
					0.5			
Ro. Conc. 1	250	50	-	3	-	1	5	7.4
Ro. Conc. 2	-	50	2600	3	-	-	8	7.1
Cl. Conc. 2							3	7
Totals	250	100	2600	6	0.5	1	16	

Flotation Test Four

Sample #1

November 27, 1995

Purpose: To investigate recovery of silver, lead and zinc from a tailing sample, using a 5 minute re-grind prior to flotation.

Procedure: Tailing material was reground in a rod mill for 5 minutes. The slurry was then floated in a 2 litre Agitair cell. Agitation speed was set between 700 - 800 rpm. and air flow was set between 10 - 15 litres/min. The material was conditioned for one minute with copper sulfate. Stage additions of collector and frother were used to collect a first rougher concentrate. Sulfidizing was done in stages to collect a second rougher concentrate. The first rougher concentrate was cleaned. All products were filtered, dried, weighed, and submitted for assay.

Feed: 1 kilogram of Sample #1 tailing material

Stage	Reagent Addition, g/t				Time, minutes			
	CuS04	3418A	NaHS	Dowfroth 250 (drop)	Grind	Condition	Froth Flotation	pH
					5			
Ro. Conc. 1	250	50	-	3	-	1	4	8
Ro. Conc. 2	-	50	2400	3	-	-	8	7.4
Cl. Conc. 2							2	7.4
Totals	250	100	2400	6	5	1	14	

APPENDIX B

UNITED KENO HILL MINES LIMITED

1987 - 1988

TAILINGS DRILLING PROGRAM

by

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Chief Geologist

and

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Project Geologist

April 30, 1988

INTRODUCTION

A program to drill the higher grade, non cyanided portion of the Elsa mill tailings was initiated in 1987. The lower grade, east end portion of the tailings had been previously drilled in 1970. Airphoto investigation revealed that the Treadwell-Yukon tailings and the early, higher grade U.K.H.M. tailings were all deposited on the west side of the tailings pond. A program to test these tailings areas was proposed in early 1987.

The drill program was conducted in two stages. In August and September, 1987, the tailings were fully delineated, a 100 foot by 100 foot grid established and the dry portion of the tailings was drilled. The second stage, involved drilling of the wet tailings areas in February, after they had been frozen. A total of 5,396 feet of drilling in 379 holes was completed. The drilling was done under contract, rotary drilling with a Schramm drill and a duocone bit.

SUMMARY and CONCLUSIONS

Appendix A contains tables showing overall results of the 1987/88 drill program. In addition to these, are tables showing the U.K.H.M. and Treadwell-Yukon mill discharge figures and a table showing the total estimate of all drilled tailings areas. The grade and depth distribution of the tailings are shown in Figures 1 and 2.

The 1987/88 program delineated 1.7 million tons of tails at a grade of 4.45 oz Ag/ton. Table 1 shows the drill results along with estimated of the total tailings area.

Table 1

Source	Tons	Grade (oz Ag/t)	Ounces Ag
1987/88 Drilling	1,699,405	4.45	7,562,352
1970 Drilling	2,156,175	1.91	4,118,294
1950 Terraced	15,500	10.70	165,850
New Discharge	70,000	5.50	385,000
Under 2nd Pond	108,590	4.63	502,772
TOTAL TAILINGS	4,049,670	3.14	12,734,268
Mill Discharge	4,049,670	3.98	16,117,687

The drill results indicate a grade 0.84 oz Ag/ton lower than the mill discharge figure. This may be due to inaccuracies in the drill grade calculations or may also represent leaching of the contained silver in the tailings ponds.

An initial estimate of selective mining potential indicates 1.0 million tons at a grade of 5.35 oz Ag/ton.

Calculation Parameters

Appendix B contains tables showing the results from each drill hole. A 5 foot sample interval was used since it was anticipated that an exact tailings-overburden contact would be difficult to determine in the field. In all holes, a field estimate of the contact location was made. Two numbers were generated based on this contact location. The first number is a straight average with the second number being a bias weight average. An example of how the number were calculated is to take a hole with a field estimated tailings depth of 18 feet. The straight average would be the silver assay over 20 feet applied to a tailings depth of 18 feet (i.e. 4 oz Ag/t/20' = 4 oz Ag/t/18'). With the bias weight average, the final assay number is corrected back to the actual tailings depth assuming overburden to have a silver value of 0. In our example, if the last sample interval was 4 oz Ag/t/5' this would be corrected to 6.67 oz Ag/t/3' for a total hole average of 4.45 oz Ag/t/18'. This number was then averaged with the straight average number to produce a composite average (A+B/2 column on the calculation tables) which was used in all final calculations (i.e. (4 + 4.45)/2 = 4.2 oz Ag/t/18'). Values for Pb, Zn, Fe, Cd, & NSPb were all calculated in the same manner as silver.

Since the overall drill grade average is lower than the mill discharge figure it can be assumed that drill average represents a conservative minimum grade.

APPENDIX A

Summary Sheets

Area: 1987/88 Drilling U.K.H.M. TAILINGS SAMPLING PROGRAM Mar/88

Area No.	Area (sq ft)	Tails Depth (ft)	Volume (cu ft)	Tons	Grade (oz Ag/ton) Ag	Pb	Zn	Fe	Cd	NSPb
1	289,250	14.2	4,107,350	205,368	4.63	1.13	0.58	11.71		
2	360,000	13.5	4,860,000	243,000	6.50	1.24	0.53	10.76		
3	90,250	11.0	992,750	49,638	5.69	1.15	0.32	8.11	0.01	0.81
4	246,250	5.6	1,379,000	68,950	3.97	1.05	0.74	11.81	0.03	0.80
5	272,500	14.3	3,896,750	194,838	3.41	1.07	0.87	12.93	0.02	0.60
6	267,500	13.7	3,664,750	183,238	3.87	1.02	0.79	11.50	0.02	0.80
7	67,750	14.9	1,009,475	50,474	5.74	1.24	0.50	10.57		
8	264,000	12.7	3,352,800	167,640	4.89	1.23	0.91	13.30	0.03	0.85
9	144,250	10.3	1,485,775	74,289	3.71	0.69	0.35	7.65	0.01	0.50
10	222,250	11.6	2,578,100	128,905	3.61	0.91	1.00	14.23	0.02	0.59
11	142,250	4.4	625,900	31,295	3.90	0.82	0.67	14.67	0.02	0.48
12	214,750	6.2	1,331,450	66,573	3.57	0.93	0.84	13.60	0.02	0.52
13	392,000	12.0	4,704,000	235,200	3.80	0.96	4.75	12.96	0.02	0.61
			0	0						
	2,973,000	12.3	33,988,100	1,699,405	4.45	1.06	1.27	12.03	0.03	0.84

NOTE: A tonnage factor of 20 cu ft/ton was used.

Area: TOTAL U.K.H.M. TAILINGS SAMPLING PROGRAM Mar/88

Area No.	Area (sq ft)	Tails Depth (ft)	Volume (cu ft)	Tons	Grade (oz Ag/ton) Ag	Pb	Zn	Fe	Cd	NSPb
1	289,250	14.2	4,107,350	205,368	4.63	1.13	0.58	11.71		
2	360,000	13.5	4,860,000	243,000	6.50	1.24	0.53	10.76		
3	90,250	11.0	992,750	49,638	5.69	1.15	0.32	8.11	0.01	0.81
4	246,250	5.6	1,379,000	68,950	3.97	1.05	0.74	11.81	0.03	0.80
5	272,500	14.3	3,896,750	194,838	3.41	1.07	0.87	12.93	0.02	0.60
6	267,500	13.7	3,664,750	183,238	3.87	1.02	0.79	11.50	0.02	0.80
7	67,750	14.9	1,009,475	50,474	5.74	1.24	0.50	10.57		
8	264,000	12.7	3,352,800	167,640	4.89	1.23	0.91	13.30	0.03	0.85
9	144,250	10.3	1,485,775	74,289	3.71	0.69	0.35	7.65	0.01	0.50
10	222,250	11.6	2,578,100	128,905	3.61	0.91	1.00	14.23	0.02	0.59
11	142,250	4.4	625,900	31,295	3.90	0.82	0.67	14.67	0.02	0.48
12	214,750	6.2	1,331,450	66,573	3.57	0.93	0.84	13.60	0.02	0.52
13	392,000	12.0	4,704,000	235,200	3.80	0.96	4.75	12.96	0.02	0.61
1970	3,885,000	11	43,123,500	2,156,175	1.91	0.50	0.55	5.20	0.01	0.39
	6,858,000	11.6	77,111,600	3,855,580	3.03	0.75	0.87	8.21	0.01	0.49

NOTE: A tonnage factor of 20 cu ft/ton was used.

T.Y. & U.K.H.M. - Mill Tailings Discharge

SOURCE	YEAR	TONS	GRADE (oz Ag/t)	OUNCES AG
T.Y	1936-41	226,220	14.69	3,323,172
U.K.H.M.	1947	18,572	12.16	225,836
U.K.H.M.	1948	31,954	10.62	339,351
U.K.H.M.	1949	23,438	9.41	220,552
U.K.H.M.	1950	62,964	10.76	677,493
U.K.H.M.	1951	73,794	11.76	867,817
U.K.H.M.	1952	84,247	8.17	688,298
U.K.H.M.	1953	120,826	4.67	564,257
U.K.H.M.	1954	137,849	2.68	369,435
U.K.H.M.	1955	123,978	2.35	291,348
U.K.H.M.	1956	117,885	3.06	360,728
U.K.H.M.	1957	128,974	3.75	483,652
U.K.H.M.	1958	63,900	5.18	331,002
U.K.H.M.	1958	80,000 C	2.65	212,000
U.K.H.M.	1959	142,000 C	2.37	336,540
U.K.H.M.	1960	149,000 C	2.74	408,260
U.K.H.M.	1961	159,000 C	2.63	418,170
U.K.H.M.	1962	159,000 C	2.89	459,510
U.K.H.M.	1963	158,000 C	1.86	293,880
U.K.H.M.	1964	193,000 C	1.68	324,240
U.K.H.M.	1965	120,000 C	1.51	181,200
U.K.H.M.	1966	96,700 C	1.40	135,380
U.K.H.M.	1967	35,008	3.66	128,129
U.K.H.M.	1967	51,619 C	1.31	67,621
U.K.H.M.	1968	50,400	2.86	144,144
U.K.H.M.	1969	74,378	1.42	105,617
U.K.H.M.	1970	80,111	1.43	114,559
U.K.H.M.	1971	81,480	1.11	90,443
U.K.H.M.	1972	72,209	1.75	126,366
U.K.H.M.	1973	86,633	2.13	184,528
U.K.H.M.	1974	85,866	2.10	180,319
U.K.H.M.	1975	84,024	2.19	184,013
U.K.H.M.	1976	70,675	2.54	179,515
U.K.H.M.	1977	84,677	3.93	332,781
U.K.H.M.	1978	82,407	4.03	332,100
U.K.H.M.	1979	117,200	3.46 *	405,512
U.K.H.M.	1980	82,500	3.23 *	266,475
U.K.H.M.	1981	63,033	4.38 *	276,085
U.K.H.M.	1982	51,586	3.45 *	177,972
U.K.H.M.	1983	30,232	3.42	103,393
U.K.H.M.	1984	67,286	2.69	180,999
U.K.H.M.	1985	68,812	3.85	264,926
U.K.H.M.	1986	75,769	4.32	327,322
U.K.H.M.	1987	82,464	5.24	432,111
TOTAL TAILINGS:		4,049,670	3.98	16,117,051
Treadwell-Yukon =		226,220	14.69	3,323,172
U.K.H.M. Tails =		3,823,450	3.35	12,793,879

C = Cyanided tailings
* = Poorly documented

COMPARISON OF DRILLED TAILINGS TO MILL DISCHARGE FIGURES

SOURCE	TONS	GRADE (oz Ag/t)	OUNCES AG	
1970 Drilling	2,156,175	1.91	4,118,294	
1987/88 Drilling	1,699,405	4.45	7,562,352	
1950 Terraced	15,500	10.70	165,850	
New Discharge	70,000	5.50	385,000	estimated
Under 2nd Pond	108,590	4.63	502,772	estimated
			0	
TOTAL TAILINGS:	4,049,670	3.14	12,734,268	
Mill Discharge	4,049,670	3.98	16,117,687	
Difference	0	-0.84	(3,383,418)	

APPENDIX B

Calculation Sheets

AREA 1 U.K.H.M. TAILINGS SAMPLING PROGRAM Mar/88

Hole No.	Area (sq ft)	Tails Depth (ft)	Volume (cu ft)	Tons	Grade (oz Ag/ton) Avg	Bias	A+B/2	Pb	Zn	Fe	Cd	NSPb
E40	2,500	10	25,000	1,250	2.21	2.21	2.21	0.78	0.48	11.09	0.00	0.00
E39	5,000	10	50,000	2,500	6.17	6.17	6.17	1.58	0.47	11.59	0.00	0.00
E38	3,750	10	37,500	1,875	2.67	2.67	2.67	0.83	0.45	9.65	0.00	0.00
F40	5,000	10	50,000	2,500	3.11	3.11	3.11	0.98	0.42	10.28	0.00	0.00
F39	10,000	13	130,000	6,500	5.29	6.05	5.67	1.19	0.35	9.15	0.00	0.00
F38	10,000	15	150,000	7,500	1.78	1.78	1.78	0.57	0.48	10.25	0.00	0.00
F37	6,750	9	60,750	3,038	0.95	1.04	1.00	0.18	0.14	4.75	0.00	0.00
F36	5,000	13	65,000	3,250	0.76	0.90	0.83	0.26	0.16	5.37	0.00	0.00
G40	5,000	14	70,000	3,500	3.11	3.39	3.25	1.14	0.51	11.44	0.00	0.00
G39	10,000	12	120,000	6,000	3.44	3.77	3.60	0.85	0.76	14.21	0.00	0.00
G38	10,000	12	120,000	6,000	4.88	5.95	5.42	1.33	0.56	11.69	0.00	0.00
G37	10,000	12	120,000	6,000	3.16	3.76	3.46	0.76	0.32	10.43	0.00	0.00
G36	10,000	15	150,000	7,500	4.72	4.72	4.72	1.17	0.58	8.27	0.00	0.00
H40	5,000	15	75,000	3,750	6.61	6.61	6.61	1.95	0.61	14.48	0.00	0.00
H39	10,000	14	140,000	7,000	3.48	3.70	3.59	1.11	0.67	12.87	0.00	0.00
H38	10,000	17	170,000	8,500	7.59	8.89	8.24	1.90	0.58	12.09	0.00	0.00
H37	10,000	18	180,000	9,000	4.91	5.39	5.15	1.15	0.52	11.42	0.00	0.00
H36	10,000	20	200,000	10,000	3.83	3.83	3.83	0.97	1.08	16.82	0.00	0.00
I40	5,000	18	90,000	4,500	4.45	4.94	4.70	1.29	0.62	12.74	0.00	0.00
I39	10,000	17	170,000	8,500	2.88	3.26	3.07	0.89	0.74	13.87	0.00	0.00
I38	10,000	17	170,000	8,500	8.73	10.42	9.58	2.33	0.66	13.64	0.00	0.00
I37	10,000	17	170,000	8,500	5.53	6.59	6.06	1.11	0.41	9.09	0.00	0.00
I36	10,000	19	190,000	9,500	8.29	8.76	8.52	1.50	0.58	10.66	0.00	0.00
J40	5,000	19	95,000	4,750	6.19	6.46	6.32	1.49	0.41	10.95	0.00	0.00
J39	10,000	15	150,000	7,500	3.85	3.85	3.85	1.02	0.72	13.33	0.00	0.00
J38	10,000	17	170,000	8,500	4.97	6.08	5.52	1.41	0.71	14.59	0.00	0.00
J37	10,000	19	190,000	9,500	4.37	4.57	4.47	0.97	0.63	12.61	0.00	0.00
J36	10,000	18	180,000	9,000	6.07	6.91	6.49	1.26	0.56	12.68	0.00	0.00
K40	5,000	5	25,000	1,250	1.53	1.53	1.53	0.73	0.62	11.20	0.00	0.00
K39	10,000	8	80,000	4,000	1.78	2.00	1.89	0.50	0.52	11.09	0.00	0.00
K38	10,000	12	120,000	6,000	1.43	1.75	1.59	0.76	0.54	11.06	0.00	0.00
K37	10,000	8	80,000	4,000	2.08	2.19	2.13	0.67	0.49	11.20	0.00	0.00
K36	10,000	15	150,000	7,500	2.88	4.30	3.59	1.22	0.76	15.17	0.00	0.00
L40	5,000	12	60,000	3,000	1.85	2.03	1.94	0.72	0.38	6.76	0.00	0.00
L39	6,250	10	62,500	3,125	1.20	1.90	1.55	0.50	0.21	4.67	0.00	0.00
L38	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L37	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L36	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M40	2,500	12	30,000	1,500	2.52	2.84	2.68	1.02	0.47	9.22	0.00	0.00
M39	2,500	8	20,000	1,000	2.40	2.76	2.58	0.98	0.27	5.20	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	289,250	14.2	4,115,750	205,788	4.37	4.89	4.63	1.13	0.58	11.71	0.00	0.00

NOTE: A tonnage factor of 20 cu ft/ton was used.
Final grade is the A+B/2 column - see report for details

AREA 2 U.K.H.M. TAILINGS SAMPLING PROGRAM Mar/88

Hole No.	Area (sq ft)	Tails Depth (ft)	Volume (cu ft)	Tons	Grade (oz Ag/ton) Avg	Bias	A+B/2	Pb	Zn	Fe	Cd	NSPb
F29	3,750	11	41,250	2,063	2.84	3.61	3.23	0.60	0.35	8.47	0.00	0.00
F30	5,000	10	50,000	2,500	4.45	4.45	4.45	1.04	0.53	11.86	0.00	0.00
F31	5,000	8	40,000	2,000	1.91	2.17	2.04	0.38	0.20	6.30	0.00	0.00
F32	5,000	4	20,000	1,000	1.59	3.09	2.34	0.40	0.32	9.58	0.00	0.00
F33	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
F34	5,000	8	40,000	2,000	0.82	1.01	0.92	0.12	0.09	3.87	0.00	0.00
F35	5,000	12	60,000	3,000	1.80	2.24	2.02	0.61	0.46	9.58	0.00	0.00
G29	10,000	12	120,000	6,000	5.50	8.29	6.89	1.38	0.64	14.86	0.00	0.00
G30	10,000	12	120,000	6,000	1.33	1.52	1.42	0.39	0.12	5.28	0.00	0.00
G31	10,000	13	130,000	6,500	1.81	1.97	1.89	0.55	0.26	8.44	0.00	0.00
G32	10,000	9	90,000	4,500	1.54	2.31	1.92	0.52	0.19	6.29	0.00	0.00
G33	10,000	18	180,000	9,000	8.89	10.14	9.51	1.85	0.53	13.03	0.00	0.00
G34	10,000	18	180,000	9,000	11.41	12.83	12.12	2.30	0.70	12.33	0.00	0.00
G35	10,000	19	190,000	9,500	10.97	11.54	11.26	2.17	0.82	15.12	0.00	0.00
H29	10,000	13	130,000	6,500	4.17	4.54	4.35	0.83	0.29	7.48	0.00	0.00
H30	10,000	15	150,000	7,500	5.86	5.86	5.86	0.93	0.33	9.21	0.00	0.00
H31	10,000	13	130,000	6,500	8.86	10.15	9.50	1.97	0.65	10.92	0.00	0.00
H32	10,000	12	120,000	6,000	9.55	12.24	10.90	2.69	0.71	15.41	0.00	0.00
H33	10,000	20	200,000	10,000	8.99	8.99	8.99	1.25	0.33	8.68	0.00	0.00
H34	10,000	20	200,000	10,000	10.19	10.19	10.19	1.50	0.59	10.52	0.00	0.00
H35	10,000	15	150,000	7,500	6.31	6.31	6.31	1.25	0.50	9.89	0.00	0.00
I29	10,000	12	120,000	6,000	3.46	3.80	3.63	0.65	0.36	8.73	0.00	0.00
I30	10,000	14	140,000	7,000	7.57	8.11	7.84	1.65	0.50	11.37	0.00	0.00
I31	10,000	13	130,000	6,500	7.49	8.30	7.90	1.42	0.51	10.01	0.00	0.00
I32	10,000	14	140,000	7,000	5.13	5.52	5.32	0.73	0.41	7.38	0.00	0.00
I33	10,000	19	190,000	9,500	9.29	9.87	9.58	1.31	0.56	10.32	0.00	0.00
I34	10,000	19	190,000	9,500	7.11	7.51	7.31	1.24	0.62	10.07	0.00	0.00
I35	10,000	18	180,000	9,000	9.38	10.54	9.96	1.64	0.63	11.16	0.00	0.00
J29	10,000	8	80,000	4,000	3.03	4.91	3.97	0.81	0.84	12.85	0.00	0.00
J30	10,000	11	110,000	5,500	2.28	2.28	2.28	0.57	0.43	7.55	0.00	0.00
J31	10,000	8	80,000	4,000	5.29	10.72	8.00	1.81	0.90	16.39	0.00	0.00
J32	10,000	12	120,000	6,000	4.83	5.94	5.38	1.27	0.70	13.61	0.00	0.00
J33	10,000	18	180,000	9,000	3.11	3.44	3.27	0.84	0.77	15.33	0.00	0.00
J34	10,000	18	180,000	9,000	5.08	5.84	5.46	1.12	0.58	12.46	0.00	0.00
J35	10,000	19	190,000	9,500	3.13	3.13	3.13	0.63	0.28	6.55	0.00	0.00
K29	5,000	4	20,000	1,000	0.80	1.00	0.90	0.11	0.07	3.42	0.00	0.00
K30	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
K31	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
K32	5,000	4	20,000	1,000	1.12	1.40	1.26	0.63	0.23	5.58	0.00	0.00
K33	10,000	10	100,000	5,000	6.27	6.27	6.27	1.30	0.62	12.70	0.00	0.00
K34	10,000	15	150,000	7,500	7.33	7.33	7.33	1.56	0.53	11.85	0.00	0.00
K35	10,000	12	120,000	6,000	2.49	3.17	2.83	0.88	0.78	14.49	0.00	0.00
L29	3,750	6	22,500	1,125	2.89	4.23	3.56	0.83	0.98	14.88	0.00	0.00
L33	3,750	3	11,250	563	3.20	5.33	4.27	0.85	0.55	11.73	0.00	0.00
L34	3,750	8	30,000	1,500	2.14	2.24	2.19	0.65	0.42	7.82	0.00	0.00
L35	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	360,000	13.5	4,845,000	242,250	6.15	6.85	6.50	1.24	0.53	10.76	0.00	0.00

NOTE: A tonnage factor of 20 cu ft/ton was used
Final grade is the A+B/2 column - see report for details

AREA 3 U.K.H.M. TAILINGS SAMPLING PROGRAM Mar/88

Hole No.	Area (sq ft)	Tails Depth (ft)	Volume (cu ft)	Tons	Grade (oz Ag/ton) Avg	Bias	A+B/2	Pb	Zn	Fe	Cd	NSPb
G28	5,000	11	55,000	2,750	1.76	3.65	2.71	0.67	0.32	9.86	0.00	0.00
H25	4,000	5	20,000	1,000	0.60	0.60	0.60	0.10	0.02	2.86	0.00	0.00
H26	6,000	15	90,000	4,500	18.01	18.01	18.01	4.65	0.73	13.97	0.00	0.00
H27	6,750	14	94,500	4,725	6.87	7.36	7.11	1.06	0.55	10.53	0.00	0.00
H28	10,000	13	130,000	6,500	6.18	7.08	6.63	1.19	0.24	7.40	0.00	0.00
I24	6,500	6	39,000	1,950	7.23	10.07	8.65	1.80	0.30	9.14	0.00	0.00
I25	6,000	14	84,000	4,200	3.66	3.35	3.75	0.59	0.28	5.76	0.00	0.00
I26	5,000	12	60,000	3,000	2.39	4.50	3.44	0.56	0.14	6.33	0.00	0.00
I27	6,250	10	62,500	3,125	3.59	3.59	3.59	0.78	0.30	7.38	0.00	0.00
I28	10,000	9	90,000	4,500	2.71	2.86	2.78	0.50	0.26	8.45	0.00	0.00
J23	4,000	13	52,000	2,600	4.18	5.25	4.72	0.92	0.45	8.96	0.01	0.68
J24	5,000	13	65,000	3,250	2.83	3.09	2.96	0.56	0.19	5.62	0.00	0.00
J28	6,250	12	75,000	3,750	0.49	0.59	0.54	0.04	0.03	3.23	0.00	0.00
K23	4,500	8	36,000	1,800	6.21	7.01	6.61	1.22	0.44	9.44	0.01	0.85
L23	5,000	8	40,000	2,000	6.68	7.70	7.19	1.27	0.36	9.66	0.01	0.94
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	-0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	90,250	11.0	993,000	49,650	5.35	6.04	5.69	1.15	0.32	8.11	0.01	0.81

NOTE: A tonnage factor of 20 cu ft/ton was used.
Final grade is the A+B/2 column - see report for details

AREA 4 U.K.H.M. TAILINGS SAMPLING PROGRAM Mar/88

Hole No.	Area (sq ft)	Tails Depth (ft)	Volume (cu ft)	Tons	Grade (oz Ag/ton) Avg	Bias	A+B/2	Pb	Zn	Fe	Cd	NSPb
K28	5,000	7	35,000	1,750	5.11	6.02	5.57	1.22	0.42	10.99	0.00	0.00
L27	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L28	6,250	6	37,500	1,875	4.38	5.49	4.94	0.95	0.27	7.66	0.00	0.00
M23	10,000	6	60,000	3,000	4.64	7.42	6.03	1.24	0.93	17.00	0.03	0.76
M24	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M26	3,750	2	7,500	375	17.74	44.35	31.05	3.52	0.96	22.47	0.00	0.00
M27	10,000	6	60,000	3,000	3.89	4.32	4.10	0.92	0.27	7.78	0.00	0.00
M28	6,250	2	12,500	625	2.26	5.65	3.96	0.94	0.21	8.02	0.00	0.00
M29	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
N23	10,000	4	40,000	2,000	5.10	6.38	5.74	1.05	0.61	9.82	0.02	0.61
N24	5,000	3	15,000	750	3.44	5.73	4.59	1.35	0.87	15.24	0.03	0.87
N26	6,250	2	12,500	625	0.44	1.10	0.77	0.18	0.05	6.89	0.00	0.00
N27	10,000	12	120,000	6,000	2.38	2.92	2.65	0.46	0.16	5.33	0.00	0.00
N28	4,000	4	16,000	800	3.18	3.98	3.58	0.70	0.18	6.79	0.00	0.00
O23	10,000	4	40,000	2,000	2.78	3.48	3.13	0.86	0.68	14.90	0.02	0.50
O24	10,000	5	50,000	2,500	6.74	6.74	6.74	1.40	0.71	14.24	0.02	0.60
O25	10,000	2	20,000	1,000	2.32	5.80	4.06	1.56	1.47	17.64	0.05	0.58
O26	6,250	2	12,500	625	5.61	14.03	9.82	1.75	0.56	14.88	0.02	0.91
O27	3,750	2	7,500	375	0.46	1.15	0.80	0.04	0.02	4.97	0.00	0.00
P23	10,000	12	120,000	6,000	0.43	0.63	0.53	0.05	0.04	2.98	0.00	0.00
P24	10,000	3	30,000	1,500	2.66	4.43	3.55	1.28	1.27	14.05	0.03	0.68
P25	6,250	1	6,250	313	2.01	10.05	6.03	2.31	1.68	27.34	0.06	0.90
P26	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Q23	10,000	12	120,000	6,000	3.44	4.25	3.85	1.37	0.92	14.05	0.03	0.94
Q24	10,000	3	30,000	1,500	4.28	7.13	5.71	1.65	2.03	24.11	0.03	0.76
Q25	3,750	1	3,750	188	1.47	7.35	4.41	5.33	2.22	28.08	0.06	2.46
R23	10,000	10	100,000	5,000	2.98	2.98	2.98	0.83	0.74	8.33	0.00	0.00
R24	8,000	4	32,000	1,600	3.66	4.58	4.12	1.33	1.24	15.05	0.03	0.87
S23	10,000	7	70,000	3,500	3.31	4.32	3.81	1.39	1.09	14.13	0.03	0.96
S24	8,000	6	48,000	2,400	2.98	4.62	3.80	1.37	1.00	15.51	0.04	0.99
T23	10,000	7	70,000	3,500	3.81	5.03	4.42	1.39	1.30	15.12	0.04	0.94
T24	10,000	6	60,000	3,000	3.81	5.58	4.70	1.25	1.14	16.27	0.04	0.70
U23	10,000	7	70,000	3,500	3.46	4.46	3.96	1.07	0.95	15.06	0.04	0.78
U24	10,000	7	70,000	3,500	3.13	4.09	3.61	1.13	0.86	13.23	0.03	0.73
U25	3,750	3	11,250	563	1.44	2.40	1.92	0.51	0.44	7.44	0.01	0.27
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	246,250	5.6	1,387,250	69,362	3.34	4.59	3.97	1.05	0.74	11.81	0.03	0.30

NOTE: A tonnage factor of 20 cu ft/ton was used
Final grade is the A+B/2 column - see report for details

AREA 5 U.K.H.M. TAILINGS SAMPLING PROGRAM Mar/88

Hole No.	Area (sq ft)	Tails Depth (ft)	Volume (cu ft)	Tons	Grade (oz Ag/ton) Avg	Bias	A+B/2	Pb	Zn	Fe	Cd	NSPb
V20	10,000	10	100,000	5,000	2.66	2.66	2.66	0.96	0.72	13.48	0.02	0.70
V21	10,000	10	100,000	5,000	3.04	3.04	3.04	0.97	0.98	15.27	0.02	0.65
V22	10,000	17	170,000	8,500	2.80	3.31	3.06	0.89	1.00	15.00	0.02	0.60
V23	10,000	10	100,000	5,000	2.81	2.81	2.81	0.86	0.92	13.52	0.02	0.57
V24	10,000	5	50,000	2,500	3.90	3.90	3.90	0.92	0.88	14.86	0.02	0.44
V25	3,750	4	15,000	750	2.90	3.63	3.26	0.68	0.30	9.83	0.01	0.37
W20	10,000	10	100,000	5,000	4.42	4.81	4.61	1.28	0.64	12.68	0.00	0.00
W21	10,000	15	150,000	7,500	1.86	1.86	1.86	0.67	0.46	8.77	0.00	0.00
W22	10,000	15	150,000	7,500	3.44	3.44	3.44	0.79	0.69	13.72	0.00	0.00
W23	10,000	11	110,000	5,500	3.21	4.41	3.81	1.37	1.08	13.66	0.00	0.00
W24	6,250	10	62,500	3,125	3.30	3.30	3.30	0.91	0.53	12.30	0.00	0.00
X20	10,000	20	200,000	10,000	4.94	4.94	4.94	1.33	1.30	15.93	0.00	0.00
X21	10,000	20	200,000	10,000	3.00	3.00	3.00	1.33	0.92	12.05	0.00	0.00
X22	10,000	15	150,000	7,500	2.50	2.50	2.50	1.13	0.45	9.16	0.00	0.00
X23	10,000	13	130,000	6,500	2.42	2.76	2.59	1.18	0.54	9.37	0.00	0.00
X24	3,750	3	11,250	563	2.15	3.58	2.87	1.19	0.52	9.60	0.00	0.00
Y20	10,000	15	150,000	7,500	6.18	6.18	6.18	1.57	1.04	15.64	0.00	0.00
Y21	10,000	17	170,000	8,500	3.91	4.69	4.30	1.30	1.17	17.43	0.00	0.00
Y22	10,000	18	180,000	9,000	3.41	3.97	3.69	1.08	0.71	11.56	0.00	0.00
Y23	6,250	13	81,250	4,063	2.26	2.47	2.37	0.90	0.58	9.62	0.00	0.00
Y24	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Z20	10,000	15	150,000	7,500	3.68	3.68	3.68	1.10	1.02	13.71	0.00	0.00
Z21	10,000	18	180,000	9,000	3.02	3.48	3.25	0.93	1.08	13.18	0.00	0.00
Z22	10,000	18	180,000	9,000	3.73	3.89	3.81	1.04	0.89	11.86	0.00	0.00
Z23	5,000	20	100,000	5,000	2.68	2.68	2.68	0.86	0.59	9.15	0.00	0.00
Z24	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AA20	10,000	14	140,000	7,000	5.19	5.58	5.38	1.48	1.21	15.37	0.00	0.00
AA21	10,000	19	190,000	9,500	1.92	2.05	1.98	0.86	0.75	10.88	0.00	0.00
AA22	10,000	14	140,000	7,000	2.27	2.44	2.36	1.02	0.89	12.55	0.00	0.00
AA23	6,250	13	81,250	4,063	2.18	2.51	2.35	0.83	0.98	12.19	0.00	0.00
AA24	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
AB20	5,000	18	90,000	4,500	3.66	4.04	3.85	0.85	0.89	14.22	0.00	0.00
AB21	5,000	17	85,000	4,250	3.41	4.20	3.80	1.04	1.01	16.18	0.00	0.00
AB22	5,000	18	90,000	4,500	2.31	2.63	2.47	0.98	0.80	13.12	0.00	0.00
AB23	5,000	14	70,000	3,500	3.32	3.41	3.37	0.93	0.69	10.43	0.00	0.00
AB24	1,250	8	10,000	500	5.26	6.53	5.89	1.53	0.99	12.42	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	272,500	14.3	3,886,250	194,313	3.29	3.54	3.41	1.07	0.87	12.93	0.02	0.60

NOTE: A tonnage factor of 20 cu ft/ton was used.
Final grade is the A+B/2 column - see report for details

AREA 6 U.K.H.M. TAILINGS SAMPLING PROGRAM Mar/88

Hole No.	Area (sq ft)	Tails Depth (ft)	Volume (cu ft)	Tons	Grade (oz Ag/ton) Avg	Bias	A+B/2	Pb	Zn	Fe	Cd	NSPb
V15	6,500	10	65,000	3,250	1.29	1.29	1.29	0.26	0.27	5.70	0.00	0.00
V16	6,000	19	114,000	5,700	1.72	1.87	1.79	0.35	0.29	6.75	0.00	0.00
V17	10,000	10	100,000	5,000	3.20	3.20	3.20	1.00	0.78	10.61	0.02	0.72
V18	10,000	10	100,000	5,000	2.80	2.80	2.80	1.14	0.82	11.34	0.02	0.79
V19	10,000	5	50,000	2,500	3.54	3.54	3.54	1.34	0.94	14.08	0.02	0.96
W15	10,000	10	100,000	5,000	0.83	0.83	0.83	0.21	0.18	4.20	0.00	0.00
W16	10,000	15	150,000	7,500	4.16	4.16	4.16	0.97	0.68	13.82	0.00	0.00
W17	10,000	15	150,000	7,500	3.23	3.23	3.23	0.66	0.44	7.65	0.00	0.00
W18	10,000	15	150,000	7,500	5.19	5.19	5.19	1.36	1.11	13.18	0.00	0.00
W19	10,000	19	190,000	9,500	4.81	5.11	4.96	1.24	0.92	13.48	0.00	0.00
X15	10,000	13	130,000	6,500	3.71	4.13	3.92	1.10	0.95	13.95	0.00	0.00
X16	10,000	13	130,000	6,500	2.09	2.20	2.15	0.47	0.26	5.55	0.00	0.00
X17	10,000	15	150,000	7,500	5.76	5.76	5.76	1.24	0.82	11.85	0.00	0.00
X18	10,000	15	150,000	7,500	4.90	4.90	4.90	1.31	1.06	14.62	0.00	0.00
X19	10,000	20	200,000	10,000	7.14	7.14	7.14	1.66	1.01	13.66	0.00	0.00
Y16	10,000	15	150,000	7,500	2.62	2.62	2.62	0.95	0.58	9.43	0.00	0.00
Y17	10,000	11	110,000	5,500	4.20	4.34	4.27	0.89	0.72	8.19	0.00	0.00
Y18	10,000	15	150,000	7,500	3.19	3.19	3.19	1.19	0.77	12.84	0.00	0.00
Y19	10,000	15	150,000	7,500	5.83	5.83	5.83	1.29	1.06	13.68	0.00	0.00
Z16	10,000	13	130,000	6,500	3.17	3.76	3.46	1.05	0.89	11.16	0.00	0.00
Z17	10,000	13	130,000	6,500	2.79	3.15	2.97	0.84	0.76	11.42	0.00	0.00
Z18	10,000	13	130,000	6,500	2.69	3.16	2.93	1.07	0.97	13.72	0.00	0.00
Z19	10,000	15	150,000	7,500	1.92	1.92	1.92	0.73	0.56	8.84	0.00	0.00
AA17	10,000	12	120,000	6,000	2.27	2.51	2.39	0.62	0.89	12.05	0.00	0.00
AA18	10,000	15	150,000	7,500	2.76	2.76	2.76	1.03	0.77	11.07	0.00	0.00
AA19	10,000	15	150,000	7,500	5.41	5.41	5.41	1.38	1.31	16.03	0.00	0.00
AB17	5,000	8	40,000	2,000	1.64	1.71	1.67	0.38	0.24	6.26	0.00	0.00
AB18	5,000	16	80,000	4,000	5.66	7.60	6.63	1.39	0.94	13.82	0.00	0.00
AB19	5,000	17	85,000	4,250	5.27	6.53	5.90	1.25	1.06	15.02	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	267,500	13.7	3,654,000	182,700	3.78	3.95	3.87	1.02	0.79	11.50	0.02	0.80

NOTE: A tonnage factor of 20 cu ft/ton was used
Final grade is the A+B/2 column - see report for details

AREA 7 | U.K.H.M. TAILINGS SAMPLING PROGRAM | Mar/88

Hole No.	Area (sq ft)	Tails Depth (ft)	Volume (cu ft)	Tons	Grade (oz Ag/ton) Avg	Bias	A+B/2	Pb	Zn	Fe	Cd	NSPb
I23	2,000	15	30,000	1,500	2.75	2.75	2.75	0.57	0.25	6.15	0.00	0.00
J22	4,000	10	40,000	2,000	1.74	1.74	1.74	0.26	0.09	4.21	0.00	0.00
K20	3,750	15	56,250	2,813	4.17	4.17	4.17	0.71	0.13	6.73	0.00	0.00
K21	5,750	15	86,250	4,313	5.36	5.36	5.36	1.40	0.51	11.97	0.00	0.00
K22	4,500	18	81,000	4,050	3.28	3.56	3.42	0.77	0.32	8.03	0.00	0.00
L19	6,250	15	93,750	4,688	5.02	5.02	5.02	0.98	0.33	8.15	0.00	0.00
L20	10,000	15	150,000	7,500	6.42	6.42	6.42	1.15	0.34	11.69	0.00	0.00
L21	4,000	15	60,000	3,000	8.82	8.82	8.82	1.73	0.39	9.60	0.00	0.00
L22	5,000	15	75,000	3,750	6.66	6.66	6.66	1.66	0.41	10.02	0.00	0.00
M19	12,500	15	187,500	9,375	5.29	5.29	5.29	1.24	0.71	12.93	0.00	0.00
M20	10,000	15	150,000	7,500	8.10	8.10	8.10	1.31	0.95	13.29	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	67,750	14.9	1,009,750	50,488	5.73	5.75	5.74	1.24	0.50	10.57	0.00	0.00

NOTE: A tonnage factor of 20 cu ft/ton was used.
Final grade is the A+B/2 column - see report for details

AREA 8 U.K.H.M. TAILINGS SAMPLING PROGRAM Mar/88

Hole No.	Area (sq ft)	Tails Depth (ft)	Volume (cu ft)	Tons	Grade (oz Ag/ton) Avg	Bias	A+B/2	Pb	Zn	Fe	Cd	NSPb
M21	10,000	7	70,000	3,500	10.59	14.74	12.67	2.79	0.85	17.86	0.02	1.36
M22	10,000	7	70,000	3,500	9.85	16.00	12.92	2.32	0.82	15.44	0.02	1.44
N20	12,500	18	225,000	11,250	3.67	4.08	3.88	0.95	0.59	14.22	0.00	0.00
N21	10,000	12	120,000	6,000	3.46	4.58	4.02	1.05	0.85	15.42	0.02	0.56
N22	10,000	7	70,000	3,500	4.82	7.19	6.01	1.21	1.01	15.92	0.02	0.74
O20	10,000	10	100,000	5,000	2.00	3.97	2.98	0.51	0.37	8.64	0.00	0.00
O21	10,000	12	120,000	6,000	5.35	6.95	6.15	1.23	0.99	15.74	0.02	0.73
O22	10,000	18	180,000	9,000	3.57	1.98	2.77	0.68	0.62	10.23	0.02	0.46
P20	10,000	15	150,000	7,500	5.47	5.47	5.47	1.21	0.52	9.82	0.02	0.85
P21	10,000	18	180,000	9,000	6.72	7.59	7.15	1.45	0.67	10.70	0.03	0.90
P22	10,000	19	190,000	9,500	8.69	9.28	8.98	1.77	0.75	12.10	0.02	1.28
Q20	10,000	15	150,000	7,500	3.97	3.97	3.97	1.28	0.87	13.83	0.02	1.03
Q21	10,000	19	190,000	9,500	6.90	7.37	7.13	1.46	1.00	13.21	0.03	0.93
Q22	10,000	17	170,000	8,500	3.61	4.11	3.86	1.21	1.01	13.76	0.03	0.82
R20	10,000	13	130,000	6,500	2.75	3.22	2.98	1.04	1.19	16.43	0.03	0.73
R21	10,000	15	150,000	7,500	2.95	2.95	2.95	0.87	1.05	13.87	0.03	0.49
R22	10,000	13	130,000	6,500	2.35	2.62	2.48	1.15	0.95	13.53	0.03	0.86
S20	12,500	15	187,500	9,375	3.46	3.46	3.46	1.04	1.14	13.74	0.03	0.69
S21	10,000	18	180,000	9,000	3.27	3.67	3.47	1.04	1.13	12.31	0.03	0.65
S22	10,000	6	60,000	3,000	3.18	5.37	4.27	1.37	1.12	14.66	0.04	1.04
T21	15,000	7	105,000	5,250	3.86	4.85	4.36	1.34	1.26	14.52	0.04	0.96
T22	10,000	7	70,000	3,500	3.39	4.51	3.95	1.21	1.15	14.34	0.03	0.38
U19	5,500	18	99,000	4,950	3.14	3.66	3.40	1.13	0.80	11.13	0.02	0.84
U20	8,500	12	102,000	5,100	4.78	5.74	5.26	1.53	1.46	14.64	0.04	1.17
U21	10,000	8	80,000	4,000	3.08	3.81	3.45	1.31	0.80	12.60	0.03	0.89
U22	10,000	8	80,000	4,000	3.72	4.63	4.17	1.07	1.38	14.15	0.05	0.80
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	264,000	12.7	3,358,500	167,925	4.53	5.25	4.89	1.23	0.91	13.30	0.03	0.85

NOTE: A tonnage factor of 20 cu ft/ton was used.
Final grade is the A+B/2 column - see report for details

AREA 9 U.K.H.M. TAILINGS SAMPLING PROGRAM Mar/88

Hole No.	Area (sq ft)	Tails Depth (ft)	Volume (cu ft)	Tons	Grade (oz Ag/ton) Avg	Bias	A+B/2	Pb	Zn	Fe	Cd	NSPb
K16	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
K17	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
K18	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L16	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
L17	2,500	8	20,000	1,000	7.30	9.15	8.23	1.81	0.78	16.56	0.02	0.95
L18	5,000	10	50,000	2,500	3.84	3.84	3.84	1.03	0.79	12.04	0.02	0.78
M16	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
M17	6,000	7	42,000	2,100	6.63	9.10	7.87	1.55	0.51	13.10	0.02	0.93
M18	10,000	10	100,000	5,000	4.79	4.79	4.79	0.62	0.10	5.17	0.00	0.00
N15	2,500	2	5,000	250	1.38	3.45	2.42	0.56	0.16	7.35	0.00	0.00
N16	7,000	8	56,000	2,800	6.68	7.56	7.12	1.39	0.68	14.08	0.02	0.52
N17	10,000	10	100,000	5,000	1.77	1.77	1.77	0.19	0.06	3.36	0.01	0.13
N18	12,500	10	125,000	6,250	3.23	3.23	3.23	0.43	0.17	4.35	0.01	0.33
O15	5,000	5	25,000	1,250	1.99	1.99	1.99	0.28	0.03	2.91	0.00	0.00
O16	10,000	12	120,000	6,000	8.31	9.39	8.85	1.51	0.61	11.59	0.02	1.13
O17	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
O18	10,000	5	50,000	2,500	1.14	1.14	1.14	0.13	0.13	3.46	0.01	0.08
O19	12,500	20	250,000	12,500	3.59	3.59	3.59	0.72	0.32	7.14	0.00	0.00
P15	5,000	9	45,000	2,250	4.75	5.19	4.97	1.27	1.06	13.72	0.02	0.96
P16	10,000	8	80,000	4,000	2.76	3.63	3.20	0.76	0.59	9.37	0.02	0.43
P17	10,000	6	60,000	3,000	0.98	1.65	1.32	0.15	0.12	4.02	0.01	0.05
P18	10,000	13	130,000	6,500	2.46	2.79	2.62	0.49	0.45	8.89	0.01	0.29
P19	10,000	15	150,000	7,500	1.07	1.07	1.07	0.23	0.15	4.71	0.00	0.00
Q15	6,250	13	81,250	4,063	2.89	3.12	3.00	0.78	0.40	9.73	0.01	0.49
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	144,250	10.3	1,489,250	74,463	3.54	3.89	3.71	0.69	0.35	7.65	0.01	0.50

NOTE: A tonnage factor of 20 cu ft/ton was used.
Final grade is the A+B/2 column - see report for details

AREA 10 U.K.H.M. TAILINGS SAMPLING PROGRAM Mar/88

Hole No.	Area (sq ft)	Tails Depth (ft)	Volume (cu ft)	Tons	Grade (oz Ag/ton) Avg	Bias	A+B/2	Pb	Zn	Fe	Cd	NSPb
Q16	10,000	9	90,000	4,500	4.48	5.19	4.84	1.12	0.68	13.61	0.02	0.71
Q17	10,000	10	100,000	5,000	4.42	4.42	4.42	0.99	0.59	12.97	0.02	0.73
Q18	10,000	12	120,000	6,000	1.94	2.47	2.20	0.55	0.80	13.06	0.02	0.40
Q19	10,000	15	150,000	7,500	3.72	3.72	3.72	0.83	0.82	15.41	0.02	0.60
R15	6,250	7	43,750	2,188	2.17	3.17	2.67	0.58	0.98	16.69	0.02	0.46
R16	10,000	9	90,000	4,500	3.36	3.69	3.53	0.73	0.77	13.95	0.02	0.66
R17	10,000	13	130,000	6,500	3.22	3.74	3.48	0.72	0.91	15.91	0.03	0.38
R18	10,000	16	160,000	8,000	2.81	3.56	3.19	0.86	1.26	17.64	0.03	0.52
R19	10,000	19	190,000	9,500	3.42	3.56	3.49	0.98	1.07	14.61	0.02	0.47
S15	10,000	9	90,000	4,500	1.06	1.11	1.08	0.34	0.53	8.33	0.01	0.29
S16	10,000	5	50,000	2,500	1.76	1.76	1.76	0.70	0.63	11.21	0.02	0.50
S17	10,000	13	130,000	6,500	3.78	4.25	4.02	1.08	1.31	15.65	0.04	0.61
S18	10,000	13	130,000	6,500	3.72	4.35	4.04	1.26	1.30	14.11	0.03	0.78
S19	12,500	17	212,500	10,625	3.60	4.21	3.90	1.13	1.39	14.92	0.03	0.63
T15	10,000	7	70,000	3,500	4.09	4.63	4.36	0.85	1.04	17.69	0.02	0.54
T16	10,000	7	70,000	3,500	3.25	3.89	3.57	0.78	1.49	17.11	0.03	0.46
T17	10,000	7	70,000	3,500	3.20	4.90	4.05	0.97	1.41	19.97	0.04	0.62
T18	15,000	13	195,000	9,750	3.46	3.92	3.69	0.81	1.19	14.30	0.03	0.59
U15	10,000	7	70,000	3,500	3.45	4.20	3.82	0.97	0.93	17.21	0.02	0.59
U16	10,000	10	100,000	5,000	2.66	2.66	2.66	0.54	0.49	7.03	0.01	0.41
U17	10,000	15	150,000	7,500	5.03	5.03	5.03	1.12	0.37	11.45	0.02	0.78
U18	8,500	19	161,500	8,075	3.76	3.93	3.84	1.26	0.86	12.14	0.02	0.95
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	222,250	11.6	2,572,750	128,638	3.40	3.82	3.61	0.91	1.00	14.23	0.02	0.59

NOTE: A tonnage factor of 20 cu ft/ton was used.
Final grade is the A+B/2 column - see report for details

AREA 11			U.X.H.M. TAILINGS SAMPLING PROGRAM									Mar/88
Hole No.	Area (sq ft)	Tails Depth (ft)	Volume (cu ft)	Tons	Grade (oz Ag/ton) Avg	Bias	A+B/2	Pb	Zn	Fe	Cd	NSPb
S14	5,000	10	50,000	2,500	1.82	1.82	1.82	0.39	0.36	8.60	0.01	0.47
S10	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
T9	0	0	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
T10	3,750	3	11,250	563	1.04	1.73	1.39	0.27	0.15	6.48	0.01	0.11
T11	5,000	3	15,000	750	1.54	2.57	2.05	0.47	0.32	7.97	0.01	0.27
T12	5,500	5	27,500	1,375	2.03	2.03	2.03	0.50	0.45	8.48	0.00	0.28
T13	7,000	7	49,000	2,450	4.20	4.80	4.50	0.89	1.12	17.59	0.02	0.57
T14	10,000	7	70,000	3,500	3.21	3.64	3.43	0.69	0.95	20.70	0.03	0.31
U9	3,750	3	11,250	563	1.68	2.80	2.24	0.53	0.27	9.09	0.01	0.20
U10	10,000	7	70,000	3,500	2.98	4.17	3.58	0.93	0.50	13.40	0.01	0.34
U11	10,000	6	60,000	3,000	1.08	1.72	1.40	0.16	0.25	7.95	0.00	0.00
U12	9,000	5	45,000	2,250	1.33	1.33	1.33	0.25	0.41	8.84	0.00	0.00
U13	7,000	7	49,000	2,450	7.61	8.57	8.09	1.53	1.31	19.11	0.00	0.00
U14	10,000	6	60,000	3,000	6.52	7.08	6.79	1.27	0.58	12.21	0.00	0.94
V9	6,250	4	25,000	1,250	3.52	4.40	3.96	1.05	0.62	15.71	0.02	0.43
V10	10,000	3	30,000	1,500	3.57	5.95	4.76	0.91	0.63	17.04	0.01	0.45
V11	10,000	1	10,000	500	2.13	10.65	6.39	1.56	1.14	28.20	0.06	0.42
V12	10,000	2	20,000	1,000	2.50	6.25	4.38	1.40	0.86	22.51	0.02	0.61
V13	10,000	1	10,000	500	3.10	15.50	9.30	2.31	1.62	49.86	0.06	1.02
V14	10,000	1	10,000	500	2.26	11.30	6.78	1.20	0.84	25.32	0.06	0.60
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	142,250	4.4	623,000	31,150	3.29	4.52	3.90	0.82	0.67	14.67	0.02	0.48

NOTE: A tonnage factor of 20 cu ft/ton was used
Final grade is the A+B/2 column - see report for details

AREA 12 U.K.H.M. TAILINGS SAMPLING PROGRAM Mar/88

Hole No.	Area (sq ft)	Tails Depth (ft)	Volume (cu ft)	Tons	Grade (oz Ag/ton) Avg	Bias	A+B/2	Pb	Zn	Fe	Cd	NSPb
W9	6,250	2	12,500	625	3.00	7.50	5.25	1.44	0.95	18.55	0.02	0.45
W10	10,000	6	60,000	3,000	3.24	4.95	4.10	1.27	0.73	12.63	0.01	0.53
W11	10,000	6	60,000	3,000	2.76	4.25	3.50	1.00	0.67	13.17	0.01	0.42
W12	10,000	2	20,000	1,000	1.90	4.75	3.33	1.23	1.47	16.80	0.04	0.26
W13	10,000	2	20,000	1,000	1.48	3.70	2.59	0.84	0.77	14.40	0.04	0.23
W14	10,000	1	10,000	500	2.61	13.05	7.83	1.89	1.59	35.19	0.06	0.90
X6	3,000	3	9,000	450	4.42	7.37	5.89	1.39	0.71	18.05	0.03	0.53
X7	5,000	3	15,000	750	1.89	3.15	2.52	0.47	0.76	13.01	0.03	0.19
X8	6,250	8	50,000	2,500	2.74	3.28	3.01	0.72	0.76	11.67	0.02	0.42
X9	10,000	9	90,000	4,500	2.36	2.62	2.49	0.70	0.89	13.07	0.02	0.52
X10	10,000	10	100,000	5,000	2.22	2.22	2.22	0.81	0.67	10.45	0.02	0.55
X11	10,000	10	100,000	5,000	3.46	3.46	3.46	0.83	0.83	13.45	0.02	0.60
X12	10,000	9	90,000	4,500	2.07	2.31	2.19	0.79	0.96	11.46	0.02	0.32
X13	10,000	5	50,000	2,500	1.62	1.62	1.62	0.52	0.37	7.33	0.02	0.08
X14	10,000	2	20,000	1,000	2.76	6.90	4.83	1.45	1.07	17.22	0.04	0.77
Y9	10,000	7	70,000	3,500	5.79	8.22	7.01	1.54	1.34	24.57	0.03	0.93
Y10	10,000	11	110,000	5,500	6.04	7.73	6.88	1.10	1.73	22.01	0.03	0.64
Y11	8,000	6	48,000	2,400	2.79	4.95	3.87	1.30	1.02	14.44	0.01	0.67
Y12	6,500	6	39,000	1,950	2.52	3.74	3.13	1.12	0.76	10.79	0.03	0.58
Y13	6,000	4	24,000	1,200	2.38	2.98	2.68	0.70	0.41	8.53	0.01	0.26
Y14	6,250	1	6,250	313	2.94	14.70	8.82	3.09	1.53	32.67	0.06	1.38
Y15	10,000	11	110,000	5,500	1.97	2.32	2.14	0.75	0.45	11.68	0.00	0.00
Z15	5,000	6	30,000	1,500	0.81	0.87	0.84	0.25	0.14	5.42	0.00	0.00
AA15	5,000	6	30,000	1,500	1.63	2.83	2.23	1.20	0.81	11.92	0.00	0.00
AA16	10,000	11	110,000	5,500	4.10	5.42	4.76	0.84	0.55	10.48	0.00	0.00
AB15	2,500	1	2,500	125	2.20	11.00	6.60	1.68	1.08	23.52	0.00	0.00
AB16	5,000	8	40,000	2,000	1.45	1.63	1.54	0.56	0.42	8.69	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	214,750	6.2	1,326,250	66,312	3.00	4.13	3.57	0.93	0.84	13.60	0.02	0.52

NOTE: A tonnage factor of 20 cu ft/ton was used
Final grade is the A+B/2 column - see report for details

AREA 13 U.K.H.M. TAILINGS SAMPLING PROGRAM Mar/88

Hole No.	Area (sq ft)	Tails Depth (ft)	Volume (cu ft)	Tons	Grade (oz Ag/ton) Avg	Bias	A+B/2	Pb	Zn	Fe	Cd	NSPb
Y3	5,000	2	10,000	500	6.56	16.40	11.48	2.07	1.26	30.52	0.04	1.45
Y4	5,000	1	5,000	250	0.41	2.05	1.23	0.15	0.18	9.78	0.03	0.12
Y5	7,000	6	42,000	2,100	3.08	4.62	3.85	0.98	1.53	16.93	0.03	0.52
Y6	10,000	8	80,000	4,000	2.96	3.90	3.43	0.69	0.64	13.77	0.02	0.51
Y7	10,000	8	80,000	4,000	4.44	5.53	4.99	0.92	1.05	17.62	0.02	0.59
Y8	10,000	10	100,000	5,000	3.87	3.87	3.87	0.74	0.84	13.96	0.02	0.55
Z1	3,000	6	18,000	900	3.07	5.84	4.46	0.86	0.94	13.83	0.02	0.37
Z2	7,000	12	84,000	4,200	3.67	4.68	4.18	0.78	1.25	12.25	0.02	0.41
Z3	10,000	17	170,000	8,500	4.19	5.05	4.62	1.12	1.66	15.11	0.03	0.69
Z4	10,000	17	170,000	8,500	5.04	5.72	5.38	0.98	1.27	15.83	0.02	0.61
Z5	10,000	16	160,000	8,000	3.27	4.37	3.82	0.89	1.67	14.07	0.03	0.49
Z6	10,000	15	150,000	7,500	2.84	2.84	2.84	0.82	1.12	11.26	0.03	0.51
Z7	10,000	12	120,000	6,000	2.47	3.12	2.79	0.91	1.08	11.17	0.03	0.61
Z8	10,000	15	150,000	7,500	2.93	2.93	2.93	0.88	0.80	10.98	0.02	0.50
Z9	10,000	13	130,000	6,500	2.87	3.32	3.10	0.94	0.88	11.31	0.02	0.64
Z10	10,000	9	90,000	4,500	2.60	2.90	2.75	0.98	0.75	11.07	0.03	0.66
Z11	7,000	8	56,000	2,800	3.12	3.94	3.53	1.02	0.94	13.23	0.01	0.48
AA1	5,000	2	10,000	500	2.23	5.58	3.90	1.12	0.80	13.09	0.04	0.39
AA2	10,000	4	40,000	2,000	3.80	4.75	4.28	0.86	0.83	12.92	0.02	0.38
AA3	10,000	15	150,000	7,500	3.69	3.69	3.69	1.15	0.79	10.38	0.02	0.65
AA4	10,000	18	180,000	9,000	3.70	4.06	3.88	0.97	1.04	15.36	0.02	0.57
AA5	10,000	17	170,000	8,500	3.74	4.37	4.06	0.99	1.15	16.13	0.03	0.61
AA6	10,000	18	180,000	9,000	4.03	4.44	4.23	1.12	1.51	15.36	0.03	0.65
AA7	10,000	14	140,000	7,000	3.19	3.46	3.33	0.79	1.09	12.82	0.02	0.46
AA8	10,000	14	140,000	7,000	3.16	3.45	3.31	0.81	0.97	12.06	0.02	0.45
AA9	10,000	12	120,000	6,000	2.73	3.47	3.10	1.03	0.87	11.57	0.02	0.59
AA10	10,000	12	120,000	6,000	2.82	3.64	3.23	0.95	148.07	11.59	0.02	0.55
AA11	8,000	7	56,000	2,800	2.37	3.17	2.77	1.13	0.66	10.83	0.02	0.56
AB1	5,000	1	5,000	250	1.74	8.70	5.22	0.30	0.60	11.70	0.03	0.15
AB2	10,000	13	130,000	6,500	5.75	6.38	6.07	1.41	1.03	15.35	0.02	0.98
AB3	10,000	10	100,000	5,000	7.31	7.31	7.31	1.40	0.63	10.52	0.02	0.93
AB4	10,000	11	110,000	5,500	8.25	12.22	10.23	2.40	0.86	11.77	0.02	1.58
AB5	10,000	14	140,000	7,000	4.31	4.70	4.50	1.10	1.15	15.50	0.02	0.80
AB6	10,000	13	130,000	6,500	2.96	3.44	3.20	0.70	0.74	11.83	0.01	0.50
AB7	10,000	14	140,000	7,000	3.13	3.42	3.27	1.05	0.83	11.47	0.01	0.78
AB8	10,000	14	140,000	7,000	2.73	2.93	2.83	0.79	0.73	12.00	0.01	0.58
AB9	10,000	13	130,000	6,500	4.09	4.57	4.33	0.88	0.82	12.15	0.01	0.56
AB10	10,000	11	110,000	5,500	2.42	3.35	2.88	0.92	1.02	13.61	0.02	0.55
AB11	10,000	5	50,000	2,500	1.52	1.52	1.52	0.64	0.53	7.32	0.02	0.34
AC6	10,000	15	150,000	7,500	2.49	2.49	2.49	0.83	0.75	10.91	0.02	0.64
AC7	10,000	15	150,000	7,500	2.42	2.42	2.42	0.67	0.79	11.59	0.02	0.49
AD6	10,000	15	150,000	7,500	2.68	2.68	2.68	0.66	0.95	13.35	0.02	0.46
AD7	10,000	15	150,000	7,500	2.14	2.14	2.14	0.55	0.86	11.86	0.02	0.40
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	392,000	12.0	4,706,000	235,300	3.52	4.08	3.80	0.96	4.75	12.96	0.02	0.61

NOTE: A tonnage factor of 20 cu ft/ton was used
Final grade is the A+B/2 column - see report for details

Area: 1970 DRILLING (1) U.K.H.M. TAILINGS SAMPLING PROGRAM

Area No.	Area (sq ft)	Tails Depth (ft)	Volume (cu ft)	Tons	Grade (oz Ag/ton) Ag	Pb	Zn	Fe
BA2	50,000	10.0	500,000	25,000	1.00			
BA3	30,000	15.0	450,000	22,500	1.70			
BA4	30,000	20.0	600,000	30,000	1.70			
BB1	60,000	10.0	600,000	30,000	1.80			
BB2	40,000	10.0	400,000	20,000	1.40			
BB3	40,000	10.0	400,000	20,000	1.60			
BB4	40,000	10.0	400,000	20,000	1.10			
BB5	50,000	10.0	500,000	25,000	1.70			
BC1	40,000	10.0	400,000	20,000	1.90			
BC2	40,000	10.0	400,000	20,000	1.50			
BC3	40,000	10.0	400,000	20,000	1.50			
BC4	40,000	15.0	600,000	30,000	1.80			
BC5	60,000	15.0	900,000	45,000	1.90			
BD1	40,000	5.0	200,000	10,000	1.50			
BD2	40,000	10.0	400,000	20,000	1.20			
BD3	40,000	10.0	400,000	20,000	1.40			
BD4	40,000	10.0	400,000	20,000	1.60			
BD5	40,000	10.0	400,000	20,000	1.50			
BD6	50,000	10.0	500,000	25,000	1.80			
BE1	40,000	10.0	400,000	20,000	1.20			
BE2	40,000	10.0	400,000	20,000	1.20			
BE3	40,000	10.0	400,000	20,000	1.50			
BE4	40,000	10.0	400,000	20,000	1.40			
BE5	40,000	10.0	400,000	20,000	1.70			
BE6	50,000	10.0	500,000	25,000	1.90			
BF1	30,000	5.0	150,000	7,500	1.50			
BF2	40,000	10.0	400,000	20,000	1.20			
BF3	40,000	10.0	400,000	20,000	1.50			
BF4	40,000	10.0	400,000	20,000	1.50			
BF5	40,000	10.0	400,000	20,000	2.30			
BF6	60,000	10.0	600,000	30,000	1.70			
BG2	45,000	5.0	225,000	11,250	1.20			
BG3	40,000	10.0	400,000	20,000	1.40			
BG4	40,000	10.0	400,000	20,000	1.70			
BG5	40,000	10.0	400,000	20,000	1.80			
BG6	40,000	10.0	400,000	20,000	1.80			
BG7	50,000	10.0	500,000	25,000	2.30			
BH2	20,000	5.0	100,000	5,000	1.60			
BH3	40,000	5.0	200,000	10,000	1.60			
BH4	40,000	10.0	400,000	20,000	2.00			
BH5	40,000	10.0	400,000	20,000	2.10			
BH6	40,000	10.0	400,000	20,000	2.60			
BH7	40,000	10.0	400,000	20,000	3.20			
BH8	40,000	10.0	400,000	20,000	3.00			
BH9	30,000	10.0	300,000	15,000	3.70			
	1,855,000	10.6	18,625,000	931,250	1.75	0.00	0.00	0.00

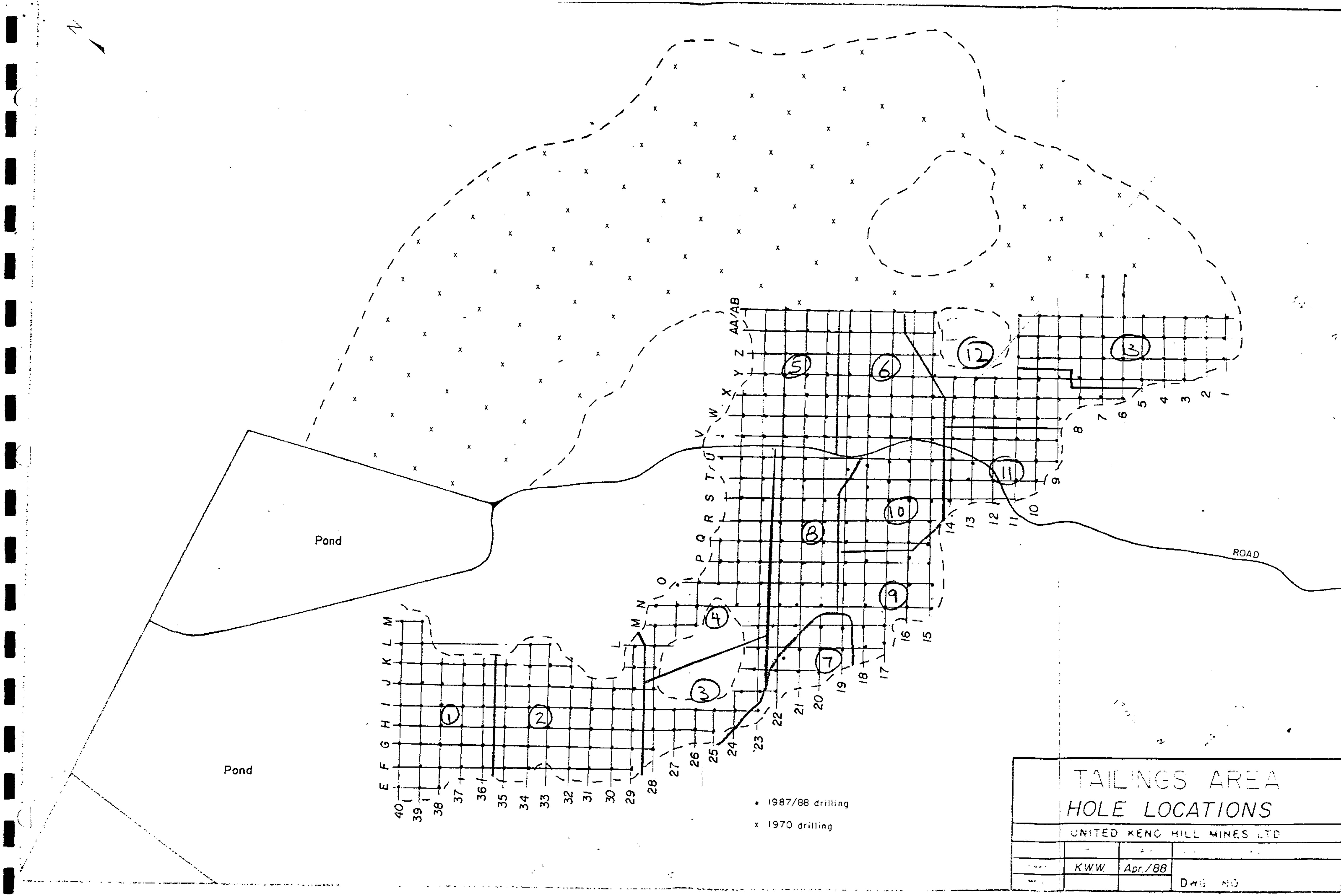
NOTE: A tonnage factor of 20 cu ft/ton was used.

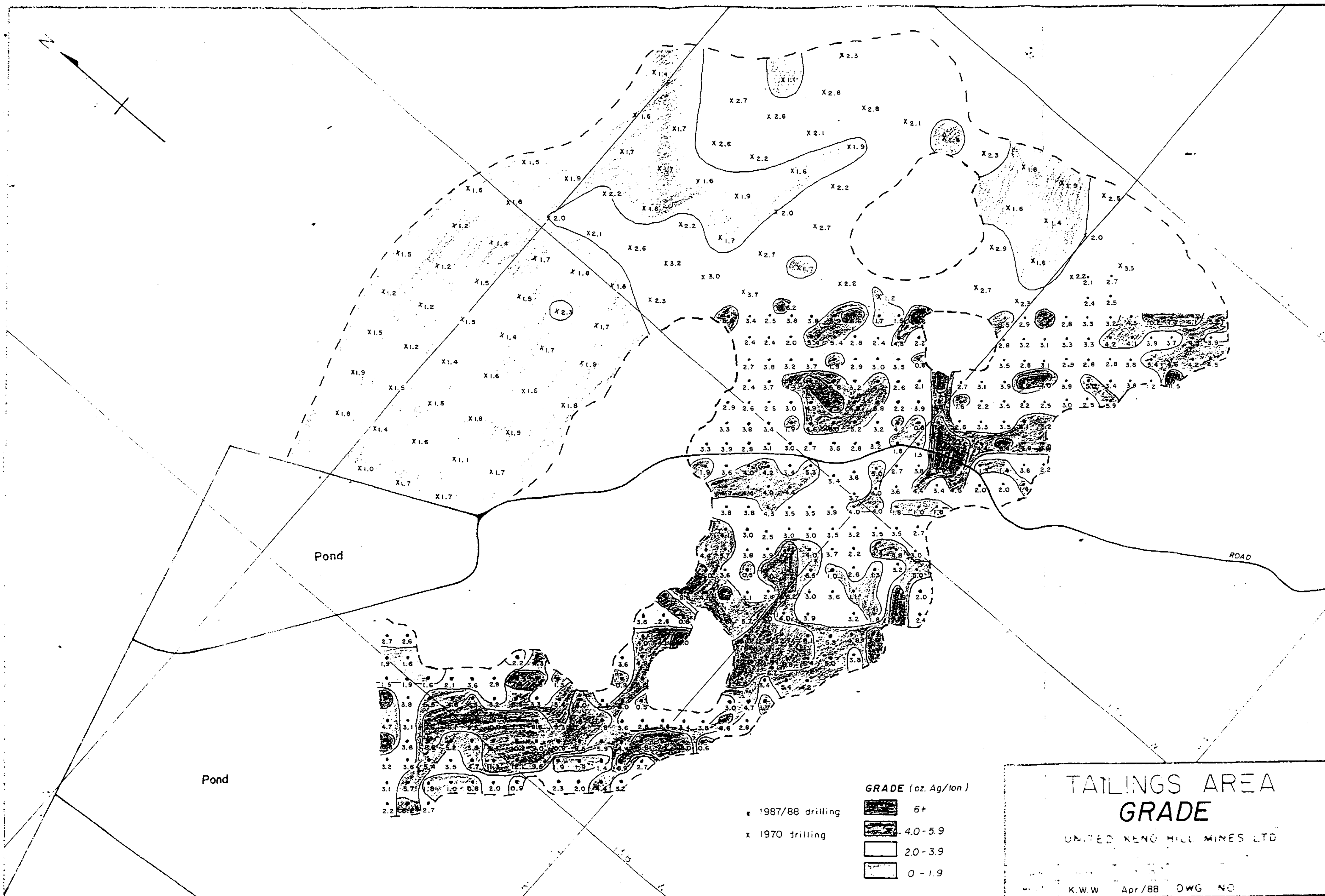
Area: 1970 DRILLING: TOTAL

U.K.H.M. TAILINGS SAMPLING PROGRAM

Area No.	Area (sq ft)	Tails Depth (ft)	Volume (cu ft)	Tons	Grade (oz Ag/ton) Ag	Pb	Zn	Fe
1	1,855,000	10.6	19,682,849	984,142	1.75			
BI3	30,000	10.0	300,000	15,000	1.50			
BI4	50,000	10.0	500,000	25,000	1.90			
BI5	50,000	10.0	500,000	25,000	2.20			
BI6	40,000	10.0	400,000	20,000	1.80			
BI7	40,000	15.0	600,000	30,000	2.20			
BI8	40,000	10.0	400,000	20,000	1.70			
BI9	40,000	15.0	600,000	30,000	2.70			
BI10	40,000	10.0	400,000	20,000	1.70			
BI11	45,000	10.0	450,000	22,500	2.20			
BI12	40,000	10.0	400,000	20,000	1.20			
BJ5	50,000	10.0	500,000	25,000	1.70			
BJ6	40,000	10.0	400,000	20,000	1.70			
BJ7	40,000	10.0	400,000	20,000	1.60			
BJ8	40,000	15.0	600,000	30,000	1.90			
BJ9	40,000	15.0	600,000	30,000	2.00			
BJ10	50,000	10.0	500,000	25,000	2.70			
BJ14	40,000	10.0	400,000	20,000	2.70			
BJ15	20,000	10.0	200,000	10,000	2.30			
BK5	40,000	10.0	400,000	20,000	1.60			
BK6	50,000	10.0	500,000	25,000	1.70			
BK7	40,000	10.0	400,000	20,000	2.60			
BK8	40,000	10.0	400,000	20,000	2.20			
BK9	40,000	10.0	400,000	20,000	1.60			
BK10	45,000	10.0	450,000	22,500	2.20			
BK14	40,000	10.0	400,000	20,000	2.90			
BK15	40,000	10.0	400,000	20,000	1.60			
BK16	40,000	15.0	600,000	30,000	2.20			
BL5	50,000	10.0	500,000	25,000	1.40			
BL7	70,000	10.0	700,000	35,000	2.70			
BL8	40,000	10.0	400,000	20,000	2.60			
BL9	40,000	10.0	400,000	20,000	2.10			
BL10	50,000	15.0	750,000	37,500	1.90			
BL14	50,000	15.0	750,000	37,500	1.60			
BL15	40,000	15.0	600,000	30,000	1.40			
BL16	60,000	15.0	900,000	45,000	2.00			
BM8	50,000	5.0	250,000	12,500	1.10			
BM9	40,000	10.0	400,000	20,000	2.80			
BM10	70,000	10.0	700,000	35,000	2.80			
BM11	80,000	15.0	1,200,000	60,000	2.10			
BM12	60,000	10.0	600,000	30,000	1.80			
BM13	40,000	10.0	400,000	20,000	2.30			
BM14	40,000	10.0	400,000	20,000	1.60			
BM15	30,000	10.0	300,000	15,000	1.90			
BM16	60,000	10.0	600,000	30,000	2.50			
BN9	50,000	5.0	250,000	12,500	2.30			
	3,885,000	11.1	41,882,849	2,094,142	1.91	0.00	0.00	0.00

NOTE: A tonnage factor of 20 cu ft/ton was used.

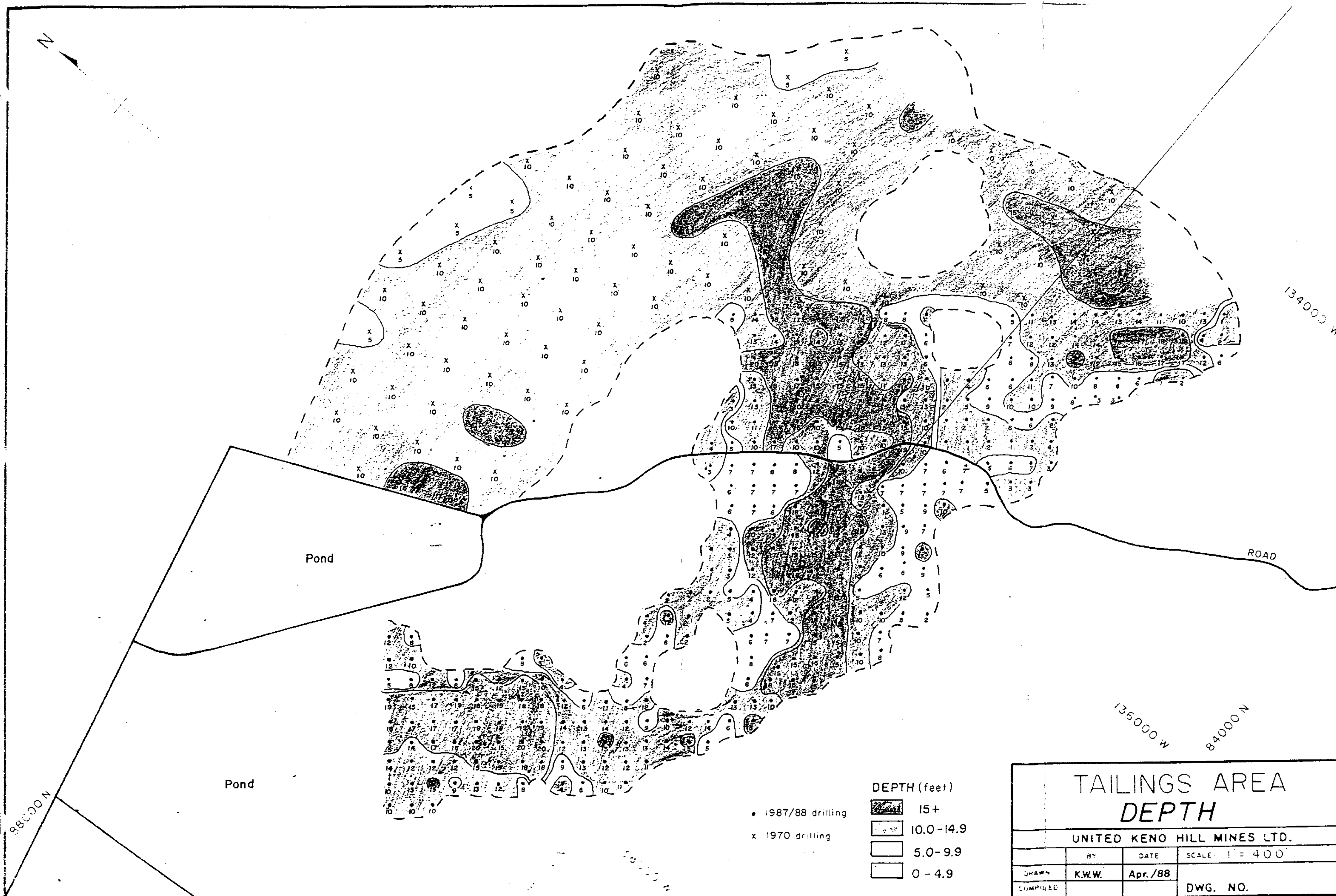

N
ROAD
Pond
Pond
• 1987/88 drilling
x 1970 drilling
TAILINGS AREA
HOLE LOCATIONS
UNITED KENO HILL MINES LTD
K.W.W.
Apr./88
DWG NO



TAILINGS AREA
GRADE

UNITED KENO HILL MINES LTD

K.W.W. Apr/88 DWG NO



N
134000 W
136000 W
84000 N
88000 N
ROAD
Pond
Pond
• 1987/88 drilling
x 1970 drilling
DEPTH (feet)
15+
10.0-14.9
5.0-9.9
0-4.9
TAILINGS AREA
DEPTH
UNITED KENO HILL MINES LTD.
BY
DATE
SCALE 1" = 400'
DRAWN K.W.W. Apr./88
COMPILED
DWG. NO.