Drilling Result

MINERAL EVALUATION REPORT

800139

PHASE II

BECKER HAMMER DRILLING PROJECT
DAN-DRAIN CLAIM GROUP

LOWER OTTER CREEK

SURPRISE LAKE AREA

ATLIN GOLD PLACER CAMP

NORTH WESTERN BRITISH COLUMBIA

(ATLIN MINING DIVISION)

FOR

GENIE RESOURCES LTD.
112C-255 WEST FIRST
NORTH VANCOUVER B.C.

BY

M.D. KIERANS P. Eng.

059 37' North Latitude
133 23' West Longitude

December 15, 1983 MDK

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DAN-DRAIN GROUP, BECKER HAMMER DRILLING PROJECT
OTTER CREEK
SURPRISE LAKE AREA, ATLIN GOLD PLACER CAMP,
BRITISH COLUMBIA

M.D. Kierans P. Eng. Dec. 15, 1983

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SUMMARY

The Dan-Drain Placer Claim Group of 14 claims and fractions is located on lower Otter Creek,about 20 km east of Atlin in northwestern British Columbia. Genie Resources Ltd. is in a joint venture with Sundance Gold Ltd. to explore and exploit the property.

Atlin gold placer camp, in a glaciated area, has, in general, rich and relatively narrow Tertiary gravel placers, under unfrozen glacial deposits of varying thickness. The known placer deposit of lower Otter Creek on the Drain Lease is one of such placer deposits, in a Tertiary channel to the east of the present creek bed.

The writer supervised the Phase II drilling program of 1830.5 feet of Becker hammer drilling (in 27 holes) between August 31 and October 18, 1983. As a result of that program (and the earlier Phase I project) blocks of proven, probable and possible placer ore have been assigned along the located and presumed sections of the ancient Tertiary channel.

At the Drain Lease Extension Zone or DLE zone, which is directly upstream or south of the operating Drain Lease open pit mine, drilling results, previous underground and surface mining experience, and geological inferences are combined to prove 280,000 C.Y. of pay at 0.10 oz/C.Y. Here surface stripping may add about 150,000 cubic yards of possible reserves in a possible "split" in the channel.

At 1702 Zone, located about 1500 m upstream from the DLE Zone the drill program indicated 140,000 cubic yards of probable pay material or about 11,500 ounces. There are additional sections of the old Channel, as yet undrilled, which may hold, as possible ore, 1,340,000 C.Y. or 130,000 ounces.

On Drain Lease the writer estimates that there are about 285,000 C.Y. of pay or 28,500 ounces of readily available placer gravel in various blocks of proven, probable and possible placer ore. The total reserve in proven, probable and possible categories is about 2,195,000 C.Y. containing about 208,000 ounces of gold for the whole group.

Stripping and mining of about 850,000 C.Y. of overburden and about 500,000 C.Y. of pay is recommended for the 1984 field season. In addition, continuation of Becker hammer drilling on DLE Zone, 1702 Zone and Drain Lease is recommended. The cost of the stripping, mining and drilling program is estimated at about 5.6 million dollars. The net operating profit for 1984, before taxes, is estimated at $15 million with gold at $400 US and exchange at about today's rate.

MINERAL EVALUATION REPORT
BECKER HAMMER DRILLING PROJECT, DAN-DRAIN GROUP, LOWER OTTER CREEK, SURPRISE LAKE AREA, ATLIN GOLD PLACER CAMP, BRITISH COLUMBIA.

M.D. Kierans P. Eng. December 15, 1983

INTRODUCTION

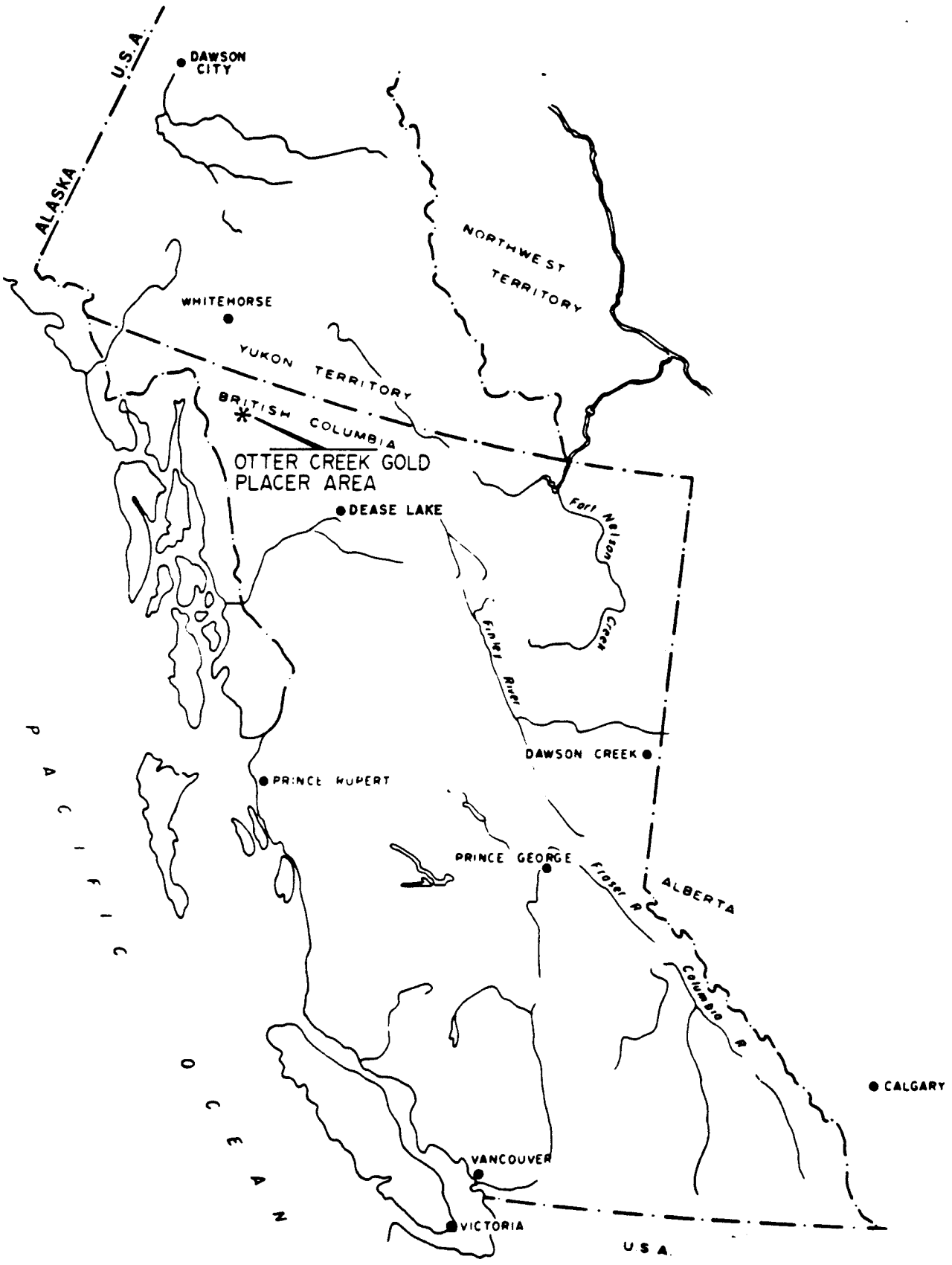
The purpose of this report is to present results of the Phase II program of Becker Hammer Drilling on the 13-claim Dan Group and contiguous Drain Lease of Lower Otter Creek, Atlin Mining Division, British Columbia. I arrived at Atlin for the Phase II program late on August 27. Drilling began August 31 and was concluded October 18. Between October 18 and November 1, 1983 I supervised sample processing and carried out some surveying and examination of other properties.

In all 1830.5 feet of drill hole were completed on the Dan-Drain Group during the above time period. Twenty seven holes were collared and 17 holes were completed to their targets. About 27% of the above footage was in abandoned holes. However, samples from these abandoned holes were, in many cases, processed and provided useful sample data.

There were 49 days from the beginning to the end of the drilling period. In addition to the footage drilled during the above period on the Dan-Drain Group, the writer supervised the drilling of 622.5 feet of Becker hammer drilling for another client on a contiguous olaim. In all 2,453 feet of hole were put down during the period August 31 to October 18. This works out to about 50 feet per day or about 5.0 feet per hour of drill shift.

During Phase I 4182.5 feet of Becker drill hole were completed on the Dan Group (as it was known at that time). In all a total of 6,635.5 feet were completed during both Phases. This footage was put down during a drilling period of 109 days. The average rate of advance was about 61 feet per day or about 6 feet per hour of drill shift.

In the Phase II program we used a new style pipe with more open air passages in the annulus between the inner and the outer pipes. In general, the design gave better and faster drilling with a slightly larger sample but there were serious problems related to pipe bending and pipe thread defects. We abandoned deep drilling with this new style pipe. For holes to depths of about 100 feet the pipe should be serviceable.

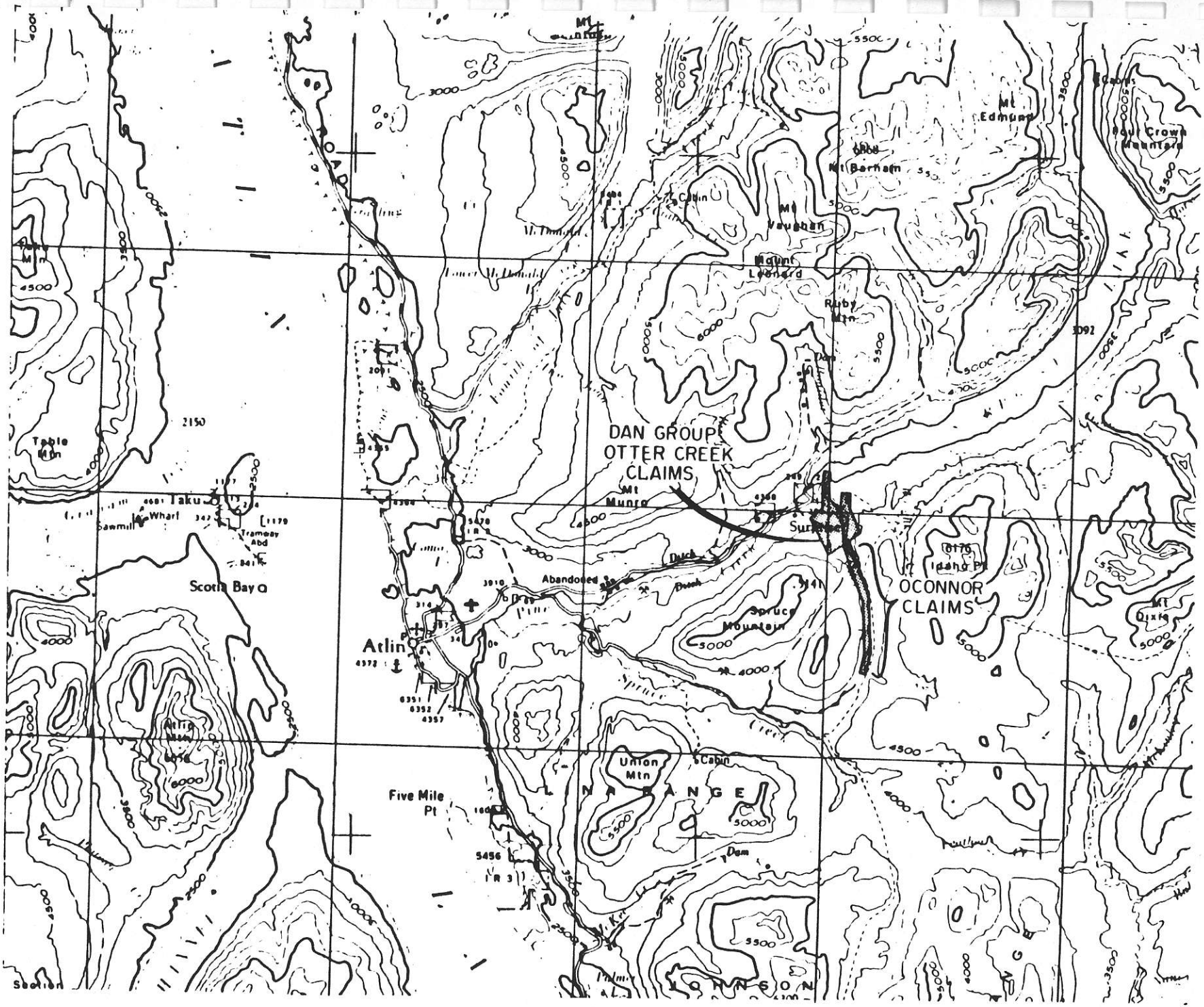


LOCATION MAP

SCALE 1" = 140 MILES APPROX

Miles 100 0 100 200 300 Miles

FIGURE 1



TOPO MAP, ATLIN AREA
SCALE 1: 250,000

FIGURE 2

We found that good old style pipe (not worn, bent or cracked pipe) if used with an improved "crowd-in" bit, furnished by the contractor for Phase II, could drill holes in excess of 160 feet through the glacial overburden of the claim group. This is an important conclusion because tracing of the old buried Tertiary channel upstream will require the drilling of holes as deep as 200 feet.

In any deep drill hole Becker Hammer project (and especially at Atlin Camp--because of boulders) the closest co-operation between a skilled and experienced driller and the geologist-supervisor at the drill is essential, if useful and reliable results are to be obtained. The driller and the geologist at the drill must work very closely together on a minute-to-minute basis on interpretation of cyclone discharge and on the selection of various drilling procedures, including the use of the percussion drill inside the drill string. Experience of all personnel with past and known behaviour and characteristics of the various strata penetrated will be vital for the success of a continuing program of drilling at Dan-Drain Group.

LOCATION, ACCESS, PHYSIOGRAPHY AND CLIMATE

The Dan-Drain placer claim group is located about 20 km east of the town of Atlin in northwestern British Columbia. Please see Figures 1, 2 and 3.

Access to most of the claims is possible using existing rough tractor and 4X4 roads along both sides of Otter Creek. In general, foot travel is not difficult through most of the open and parklike vegetation.

The physiographic history of the area was, in the writer's opinion, not satisfactorily explained in government publications studied for this and earlier reports. The highly detailed work by thia geologist, in a restricted and limited area of the camp, would not be likely to provide broad answers to general questions of epeirogeny and glaciology for Atlin Camp--and it did not. Discussion of these most important aspects of placer geology of the claims and of Otter Creek will have to be deferred till more general studies have been carried out by government, or this or other geologists.

Sluicing at Otter Creek can be carried out from about May 20 to October 1. However, these dates vary considerably from one year to the next. On the average there are about 200 frost free days per annum.

OWNERSHIP AND PROPERTY

The placer claims and leases of Dan Claim Group are listed in Appendix B. Before the end of October of this year the Drain Lease was purchased from its owners for a substantial sum of money.. This lease was incorporated in the claims holdings of the Sundance-Genie joint venture on the placer claims of Lower Otter Creek. This purchase explains the change of name for the group from Dan Group to Dan-Drain Group for this report.

Six contiguous placer claims, including the Drain, were involved in the purchase as well as various buildings, trailers, and mining equipment. I was not privy to the purchase inventory and in any case, these details are not pertinent to the purpose of this report nor need they be set out here.

Figure 3 shows the location of the Dan-Drain claim group. This plan was prepared by McElhanney Surveying and Engineering Ltd. of Vancouver. A legal survey of Dan Claim was carried out by personnel of the above firm in late August and early September of this year. This survey will be filed with the Surveyor General shortly. In July the writer staked a protection claim overlying Dan Claim. All interest in this claim was turned over to officials of Genie Resources recently by means of a witnessed Bill of Sale.

The Drain Lease contains the Drain Lease Open Pit Mine. In August of this year the writer recommended the purchase of the Mine and the Lease to officials of the Sundance-Genie joint venture.

DRILLING METHOD

The equipment used in Phase II of the Otter Creek Drilling Project was essentially the same as Phase I except that we used a truck-mounted auxiliary compressor (supplied by S.D.S Ltd. of Calgary) of 750 cfm capacity ,instead of the wheel mounted auxiliary compressor used in the earlier Phase I operations. Please see Appendix C for description of the truck-mounted Becker Drill and the drilling system.

About October 15 we moved the sampling and sluicing operations from the Rose Pit on Otter Creek to the more secure Drain Lease near Surprise Lake. We also used an additional sluice box to speed up the processing of drill samples. Because most of the bagged samples were frozen during the October period of processing we devised a simple boiler system for thawing the sample bags using a tiger torch and half of a 45 gallon drum.

LOCATION LINE SURVEY OF PLACER LEASES
ON OTTER CREEK, ATLIN MINING DISTRICT.

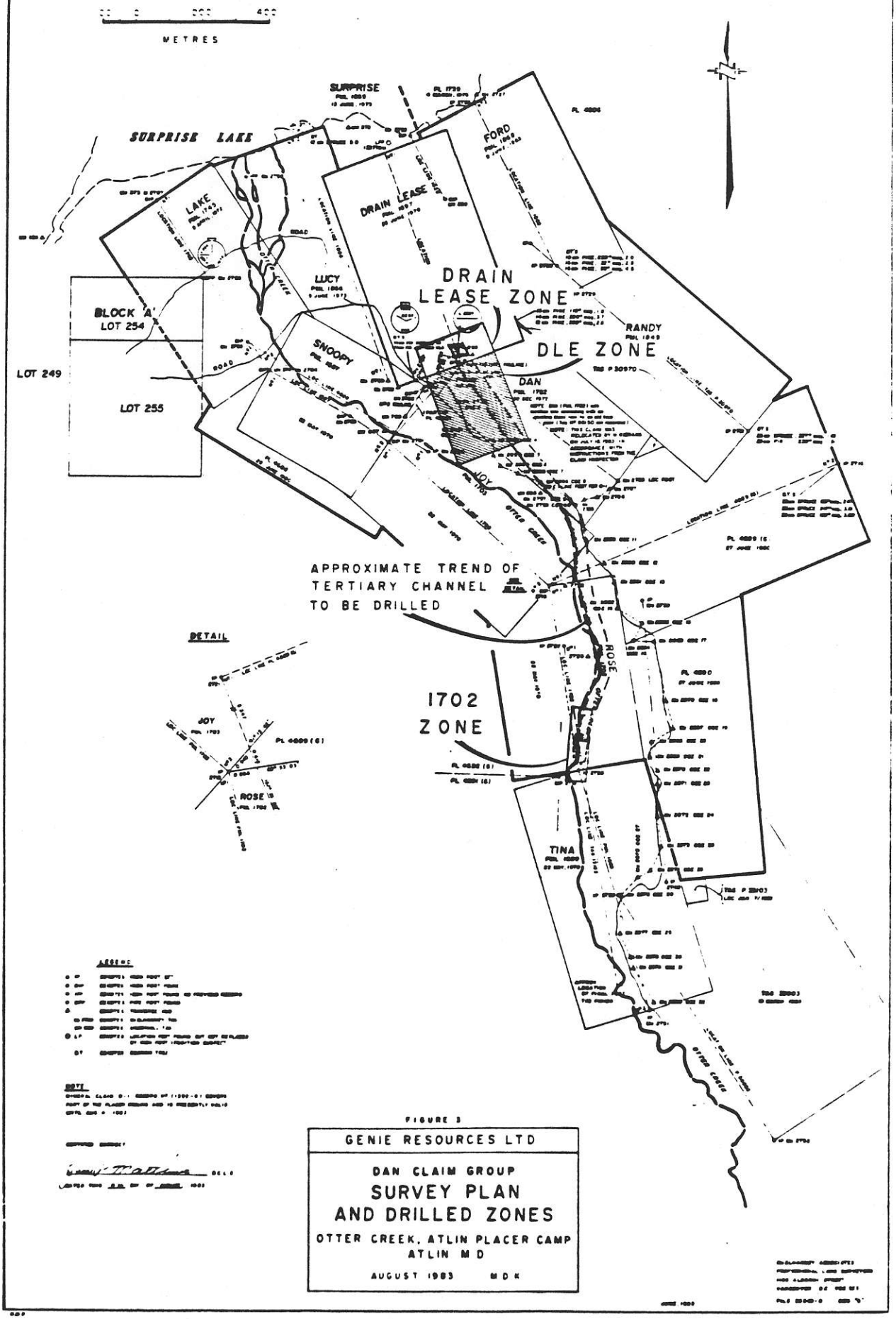


FIGURE 3

GENIE RESOURCES LTD

DAN CLAIM GROUP

SURVEY PLAN
AND DRILLED ZONES

OTTER CREEK, ATLIN PLACER CAMP
ATLIN M D

AUGUST 1983 M D K

Using both sluice boxes (of the type described in the August 17 report) we were able to process about ten samples of six feet each in one ten hour shift. But the samples were frozen, required much handling and the thawing was time consuming. Next season, during the frost free period, it should be possible to readily process about 70 feet of drill hole per shift. This amounts to about 0.8 C.Y of gravel or about 2,500 pounds of drill return material. This should mean that the sampling will stay relatively in step with drilling progress. This was not so during most of the 1983 drilling program at Otter Creek. During most of the drill program the sampling was usually far behind the drill advance. This did not affect the interpretation of results during Phase II but concurrent sample processing will be important next field season, during the Phase III program which is recommended below for the Drain Lease Extension or DLE Zone.

PHASE II DRILL PROGRAM

Three Zones were drilled on the Dan-Drain Group during the Phase II drilling program. Eighteen holes totaling 818 feet were drilled in the 1702 Zone at nine different stations. Please see Figure 5 for locations of the drill sites and Table 1 for a summary of the drilling timetable. Ten holes were drilled at the DLE Zone at 7 different stations, totaling 1012.5 feet. Please see Figure 4 for location of these drill sites. In addition one hole of 103 feet depth was drilled within the Drain Lease. Please see Figure6 for location of that hole. Field logs for all holes drilled during both Phases are on file and will be typed for submission at a later date as an addendum to this report. Appendix A gives the detailed sluicing and panning results for the drilling on both zones and at Drain Lease.

Processing of the sampling could, perhaps, have involved the use of a small cement mixer to duplicate the action of a trommel or a scrubber in a production washing plant. We did not use a cement mixer in the processing of our samples. Nor do I suggest the use of a cement mixer next year for the processing of these hammer drill samples. This procedure will mean that, if the production washing plant does use such machinery, then our sampling grade will be somewhat on the low side--which is not a bad result. This procedure also means that, depending upon financing and production strategy, the design of the production plant can be more flexible.

Detailed discussion of the drilling results in the three areas drilled in Phase II will be presented in the following sections of the report.

TABLE 1

OTTER CREEK DRILLING PROJECT, ATLIN MINING DISTRICT

SUMMARY OF BECKER HAMMER DRILL HOLES

HOLE NO.	ZONE	LINE	DATE STARTED	DATE FINISHED	COLLAR ELEV. (FEET)	TOTAL LENGTH (FEET)	REMARKS
SO83-25A	1702	3	AUGUST 31, 1983	AUGUST 31, 1983	3289.5	38	ABANDONED; BENT PIPE: BROKE SHELL
SO83-25B	1702	3	AUGUST 31, 1983	AUGUST 31, 1983	3289.0	40	ABANDONED: BENT PIPE.
SO83-25C	1702	3	AUGUST 31, 1983	SEPT. 1, 1983	3289.0	82	STOPPED ON BEDROCK. BLACK SHALE
SO83-41	1702	3	SEPT. 1, 1983	SEPT. 1, 1983	3289.0	7	ABANDONED: BENT PIPE
SO83-41A	1702	3	SEPT. 1, 1983	SEPT. 1, 1983	3289.0	74	STOPPED IN FAULT GOUGE. AND BDROCK
SO83-42	1702	4	SEPT. 2, 1983	SEPT. 2, 1983	3284.0	102	STOPPED IN WEATHERED BEDROCK
SO83-43	1702	4	SEPT. 3, 1983	SEPT. 3, 1983	3284.5	62	STOPPED ON BEDROCK.
SO83-44	1702	4	SEPT. 4, 1983	SEPT. 4, 1983	3284.0	32	ABANDONED: BENT HOLE.
SO83-44A	1702	4	SEPT. 4, 1983	SEPT. 4, 1983	3284.0	55	STOPPED ON BEDROCK.
SO83-45	1702	5	SEPT. 4, 1983	SEPT. 5, 1983	3280.5	83	STOPPED ON POSSIBLE BEDROCK.
SO83-46	1702	5	SEPT. 5, 1983	SEPT. 5, 1983	3283.0	16	ABANDONED: BENT HOLE.
SO83-46A	1702	5	SEPT. 5, 1983	SEPT. 6, 1983	3283.0	93	ABANDONED : SPLIT PIPE. BEDRK?
SO83-47	1702	5	SEPT. 6, 1983	SEPT. 7, 1983	3278.5	61	STOPPED ON BEDROCK.
SO83-48	1702	5	SEPT. 9, 1983	SEPT. 9, 1983	3278.5	30	ABANDONED: BENT HOLE.
SO83-48A	1702	5	SEPT. 9, 1983	SEPT. 9, 1983	3278.5	10	ABANDONED: BENT HOLE.
SO83-48B	1702	5	SEPT. 9, 1983	SEPT. 10, 1983	3278.5	33	STOPPED ON BEDROCK.
SO83-55	DLE	1	SEPT.17, 1983	SEPT. 17, 1983	200.0	62	ABANDONED: TROUBLE WITH NEW PIPE.
SO83-55A	DLE	1	SEPT.19, 1983	SEPT. 20, 1983	200.0	47	ABANDONED: BENT PIPE
SO83-55B	DLE	1	SEPT.20, 1983	SEPT. 21, 1983	200.0	100.5	STOPPED ON BEDROCK.
SO83-56	DLE	1	SEPT.21, 1983	SEPT. 21, 1983	197.0	101.0	STOPPED ON BEDROCK.
SO83-3G	DLE	2	SEPT.22, 1983	SEPT. 24, 1983	229.0	156.5	STOPPED ON WEATHERED BEDROCK.
SO83-15A	DLE	3	SEPT.25, 1983	SEPT. 26, 1983	255.0	131.0	STOPPED IN GRAVEL: TIGHT HOLE.
SO83-16B	DLE	4	OCT. 1, 1983	OCT. 2, 1983	256.0	103.0	STOPPED ON BEDROCK.

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TABLE 1 (CONT'D)

OTTER CREEK DRILLING PROJECT, ATLIN MINING DISTRICT

SUMMARY OF BECKER HAMMER DRILL HOLES

HOLE NO.	ZONE	LINE	DATE STARTED	DATE FINISHED	COLLAR ELEV. (FEET)	TOTAL LENGTH (FEET)	REMARKS
SO83-57	DLE	4	OCT. 2 1983	OCT.3 1983	259	42	ABANDONED: BENT HOLE.
SO83-57A	DLE	4	OCT. 3 1983	OCT.4 1983	259	112	STOPPED ON BOULDER AT 113 FEET.
SO83-58	DLE	4	OCT.13 1983	OCT.16, 1983	261	157.5	STOPPED IN PAY. TIGHT HOLE.
SO83-59	DRAIN LEASE	4	OCT.17 1983	OCT.18, 1983	3018	103	STOPPED ON BEDROCK AT 107FT. PERC.
TOTAL						1687.5	1933.5

NOTE 1: ELEVATIONS IN DRAIN LEASE AND 1702 ZONE ARE IN FEET ABOVE SURPRISE LAKE WITH 3000' AS DATUM

NOTE 2: ELEVATION S IN DLEZONE ARE IN FEET ABOVE LAKE WITH ZERO FEET AS DATUM.

DRILLING RESULTS 1702 ZONE

In this zone, as noted above, ~~eight~~een holes, totaling 818 feet were put down at nine separate drill stations. Of the above footage 21 % was in abandoned holes. Almost all of the samples collected from abandoned holes were processed. In addition, all of the samples collected--and collection began at the collar of every hole drilled in 1702 Zone--were processed. Because some of the samples were in either gougey or clayey strata this meant that sluicing of some of the samples was very slow. But the resulting information on grade of all the strata penetrated was well worth the extre effort. At the DLE zone we did not process the upper parts of the holes, because we knew from work done in Phase I that there were no significant values in the overlying glacial till and clay horizons.

Please see Table I for timetable of drilling of the holes on this zone and also Appendix A for details of the sluicing and panning results from samples collected from these holes.

We collected all of the cyclone discharge and processed all of the material discharged from the drill advance. I learned informally that at a Becker Drilling project, carried out on another property in Atlin Camp, the geologist in charge collected only a portion of the sample from each foot of drill advance. I also learned informally from conversations with the geologist in charge that he obtained some "puzzling results". This is not surprising. It must be pointed out that the volumentric ratio of gold-to-gravel, even in ground as rich as some of the better strata in 1702 zone, could be as considerably lower than 1:10,000,000. This tells us that calculated drill holes values are extremely sensitive to stray gold particles or incorrect sample volumes. By taking just part of the cyclone discharge, not only was the effective size of the drill hole reduced, but the volume (or weight) per sample was biased in some unknown manner. It is accepted practice in placer drilling that holes below 5" in size do not give reliable results. By taking only part of the cyclone discharge the sampler is, in effect, reducing the size of the drill hole. Under certain conditions of placer drilling, for example beach-placer prospects, small diameter holes may be practical and adequate. For placers with coarse gold small diameter holes are useless for grade determination. Otter Creek placer deposits are unquestionably coarse gold placers.

It is also accepted practice in gold placer drilling

that uncased holes give unreliable results. Uncased holes almost always overvalue the ground. The Becker drill advances casing with each foot drilled and the casing advance is always in step with bit advance. The Becker drill system provides, in effect, "built-in" casing and therefore avoids the pitfalls of valuing placer ground with uncased drill holes.

With a "crowd-in" bit, of the type used in Phase I and Phase II drilling at Otter Creek this year, the effective diameter of the hole is about 5 1/2 inches and the outer diameter of the hole is about 6 5/8 inches. In the writer's opinion, this is a large enough diameter for effective sampling in coarse gold ground.

Because we are relying heavily on the Becker hammer drill system in evaluating Dan-Drain Group strata, a few other general considerations should be mentioned. The writer has heard, again informally from other geologists, that the Becker drill does not lift coarse gold particles. In substantiation of this it is often mentioned that, at some unspecified location, lead shot was dropped in the hole and not recovered. I suggest that this is simply not a valid test of the Becker system. But to counter this invalid charge we did drop 92 pieces of #2 lead shot of various shapes in hole SO83-13A at about 100' depth. We recovered 92 shot pieces from the resulting two foot sample.

Also it should be mentioned that we did process some remarkable six foot samples with gold content well over two grams. Looking at these sample vials it is difficult to accept the prejudice of those who say "The Becker drill does not lift coarse gold particles". There was another most important fact which developed as our drilling progressed. We did learn to recognize strata types where gold should be expected and gold should not be expected. In all of the thousands of feet of drilling done this year at Otter Creek we could see a remarkable consistency in sampling result and strata type. Where we should have expected no gold, as for example in sandy layers, we got no gold. Where, in general, we should have expected gold, as for example in cemented pay of DLE Zone and the "B" layer of 1702 Zone (see below) we almost always got gold in significant amounts. This could hardly have been fortuitous.

Survey control for the locations of the drill holes shown in plan on Figure 5 was by tape and compass and base line using pickets. We also used control stations provided by the McElhenney survey crews. Vertical control was by a rough survey using a hand level and home made stadia rod.

A number of important conclusions were reached as a result of drilling in 1702 Zone during Phase II. Some of these were not suspected before the Phase II work. They are divided into two main categories in what follows: Geological Results and Reserve Implications.

Geological Results

1. Simple observations of the outcrop pattern near Rose Pit and creek trends showed that an altered, but resistant rock (most likely a peridotite dike), intersected the old Tertiary bedrock channel at a low angle and deflected the stream flow to the east. This deflection is indicated in Figure 5.

2. It is not known why, after glaciation, the present Otter Creek stream and valley were not similarly deflected. Possibly the vagaries of glacial outwash and deposition in some way deflected the present stream to the west along its present course.

3. There are clearly two horizons of potential pay gravel indicated by the cross sections of Figure 8 to 8B. One horizon which will be called the "B" horizon is about 30 feet thick and is about 30 to 60 feet below the surface of the creek valley. The second horizon is at bedrock or just above it in weathered bedrock and gravel (which may or may not be made up of red and orange weathered gravel fragments and pebbles). This horizon is considered to be about 12 feet thick and is made up of about 6 feet of pay gravel and about 6 feet of weathered bedrock. Within the bedrock channel of presumed Tertiary origin--due to uplift near the end of the Tertiary--there is a layer of mostly barren "water sand". The bedrock pay horizon occurs just below this "water sand" layer or strata.

4. This coarse "water sand" layer--so named by the drillers (and appropriately so)--consists of a heavily water charged layer of coarse sand of variable thickness. It varies from about 10 to 20 feet thick. Occassionally there are two layers of this "water sand".

5. The presence of the "water sand" layer is diagnostic of the presence of the U-shaped bedrock Tertiary Channel. This makes sense because water seepage into the bedrock channel has nowhere to go but downstream through this very porous layer just above the impervious bedrock or the somewhat clayey pay horizon of gravel just above bedrock. The water flow during penetration of the "water sand" was very high and resulted in very heavy samples because the air pressure forced up triple the amount of normal drill return. If no

"water sand" material is cut in a drill hole then the presumption is that there is no Tertiary channel there.

6. More study will be needed to determine the geological relations of the "B" horizon and the other gravels of the creek cross section. I suspect that there is a relation between the "B" horizon and a clayey silty brown layer within or below the "B" horizon.

7. It is of some interest that only two horizons of pay material have been found to date in drilling in the 1702 Zone of Otter Creek valley. In the Drain Lease Pit and in the DLE drilling downstream we found three pay horizons. Perhaps there is a third pay horizon just above the level of the creek valley at the base of the foreset beds seen in the hydraulicked bank on the east side of the creek valley. This possibility could explain the 5000 ounces recovered during hydraulicking operations in the 1920's in this area. In any case, there does appear to be a drilling target which should be tested during the 1984 season from the upper part of the east bank of Otter Creek valley.

Reserve Implications

1. The implications for reserve calculations for the 1702 Zone will be discussed here in only a qualitative way. For quantitative considerations please see other sections of this report below.

2. One of the major problems at 1702 Zone (and this was discussed at some length in the Phase I report of August 17) is that there is are no exposures of the pay horizons and also no mining grade determinations. It is always dangerous in placer work to assign proven grade from drill holes to sections of creek deposits that have never been mined. In addition, only part of the channel can be drilled because much of the channel is physically impossible to drill underneath the steep and the high east bank. Moreover, a bulk mining test would be expensive and require the diversion of Otter Creek.

3. One good result of the Phase II drilling is that there does appear to be a short section of the old channel which is amenable to a drill test which should provide useful drill grade results.

4. It is not possible to determine an overall grade for either the "B" horizon or the bedrock horizon from the present drill pattern. This is because of the above reasons

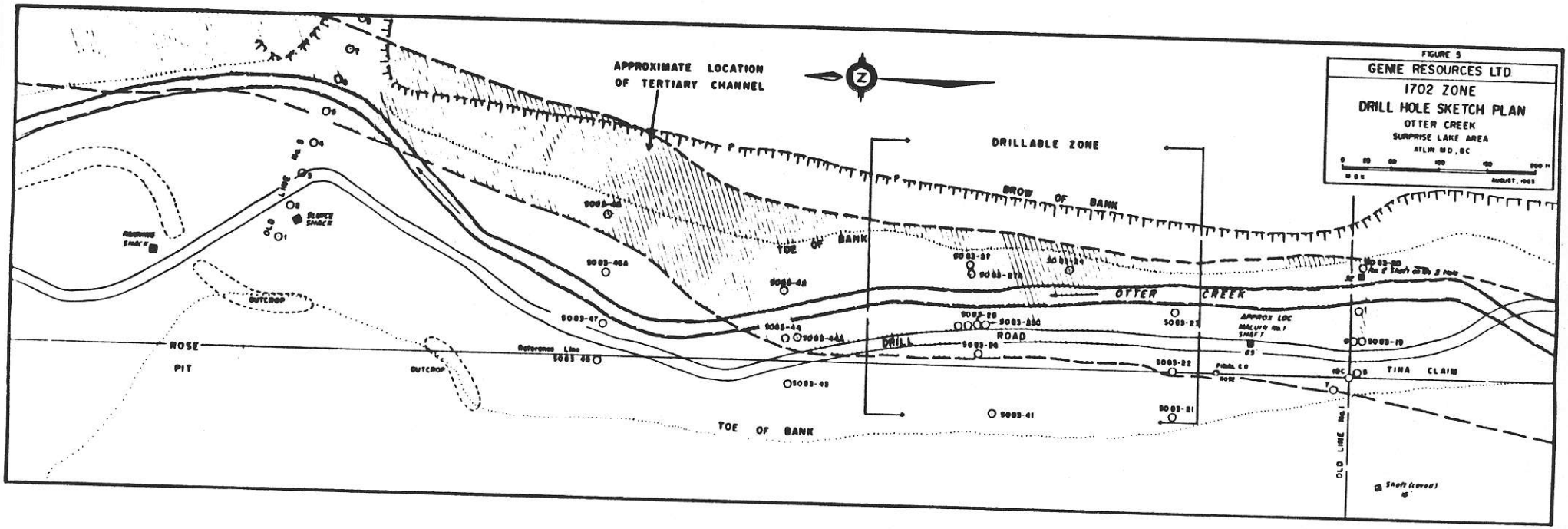


FIGURE 9
GENIE RESOURCES LTD
1702 ZONE
DRILL HOLE SKETCH PLAN
OTTER CREEK
SURPRISE LAKE AREA
ATLIN M.D., B.C.
AUGUST, 1983
APPROXIMATE LOCATION
OF TERTIARY CHANNEL
DRILLABLE ZONE
BROW OF BANK
TOE OF BANK
OTTER CREEK
ROSE
PIT
OUTCROP
OUTCROP
ROAD
DRILL
TINA CLAIM
TOE OF BANK
OLD LINE No. 1
Shaft (caved)

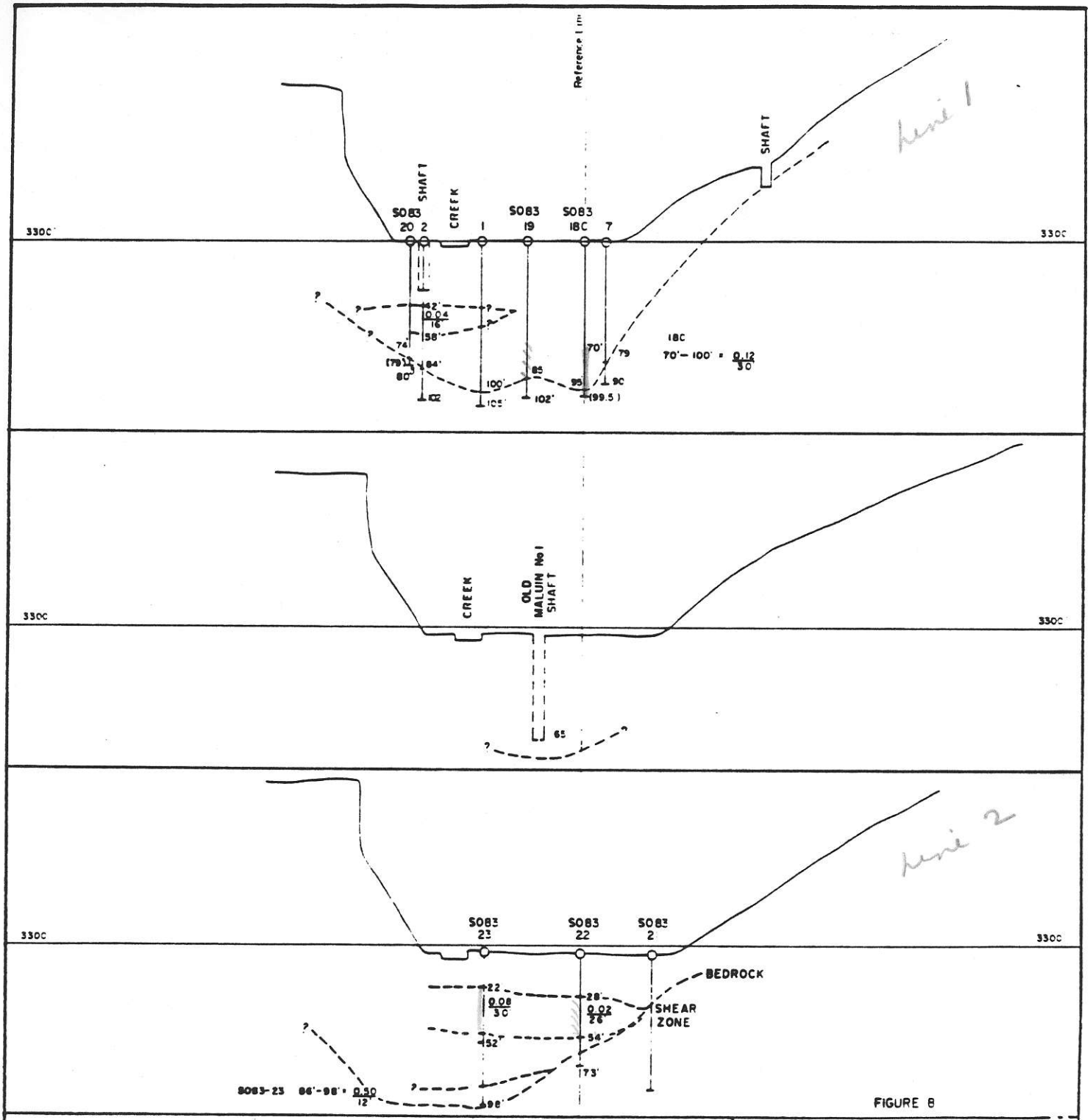


FIGURE 8

GENIE RESOURCES LTD.

1702 ZONE

OTTER CREEK, SURPRISE LAKE AREA

CROSS-SECTIONS ON NEW AND OLD DRILL HOLES

LOOKING UPSTREAM

FEET

0 50 100 150 200

M.D. AUGUST, 1982

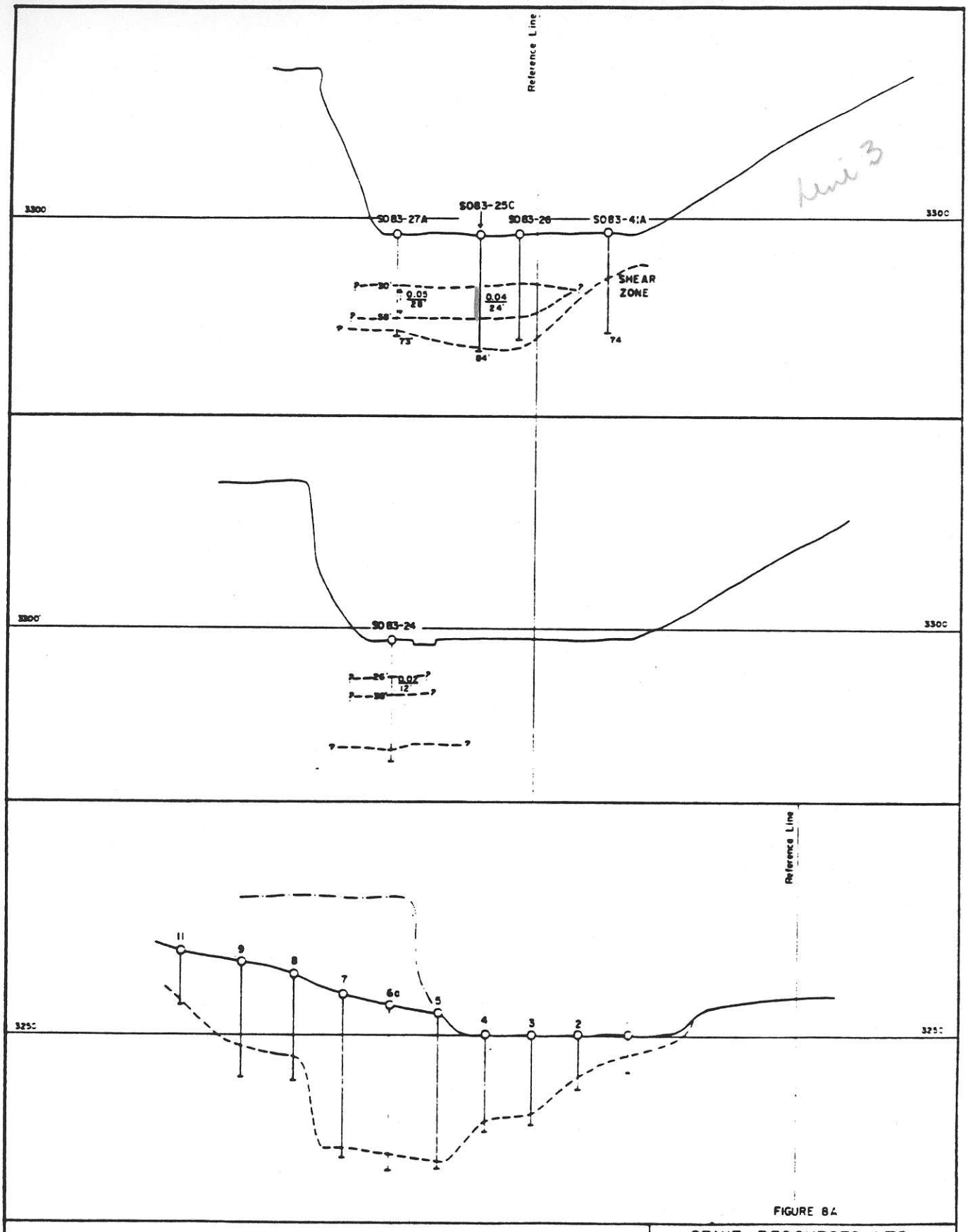


FIGURE 8A

GENIE RESOURCES LTD.

1702 ZONE
OTTER CREEK SURPRISE LAKE AREA
ATLIN M.D., B.C.

CROSS-SECTIONS
ON NEW AND OLD DRILL HOLES

LOOKING UPSTREAM

FEET
50 100 150 200

M.D.P. AUGUST, 1981

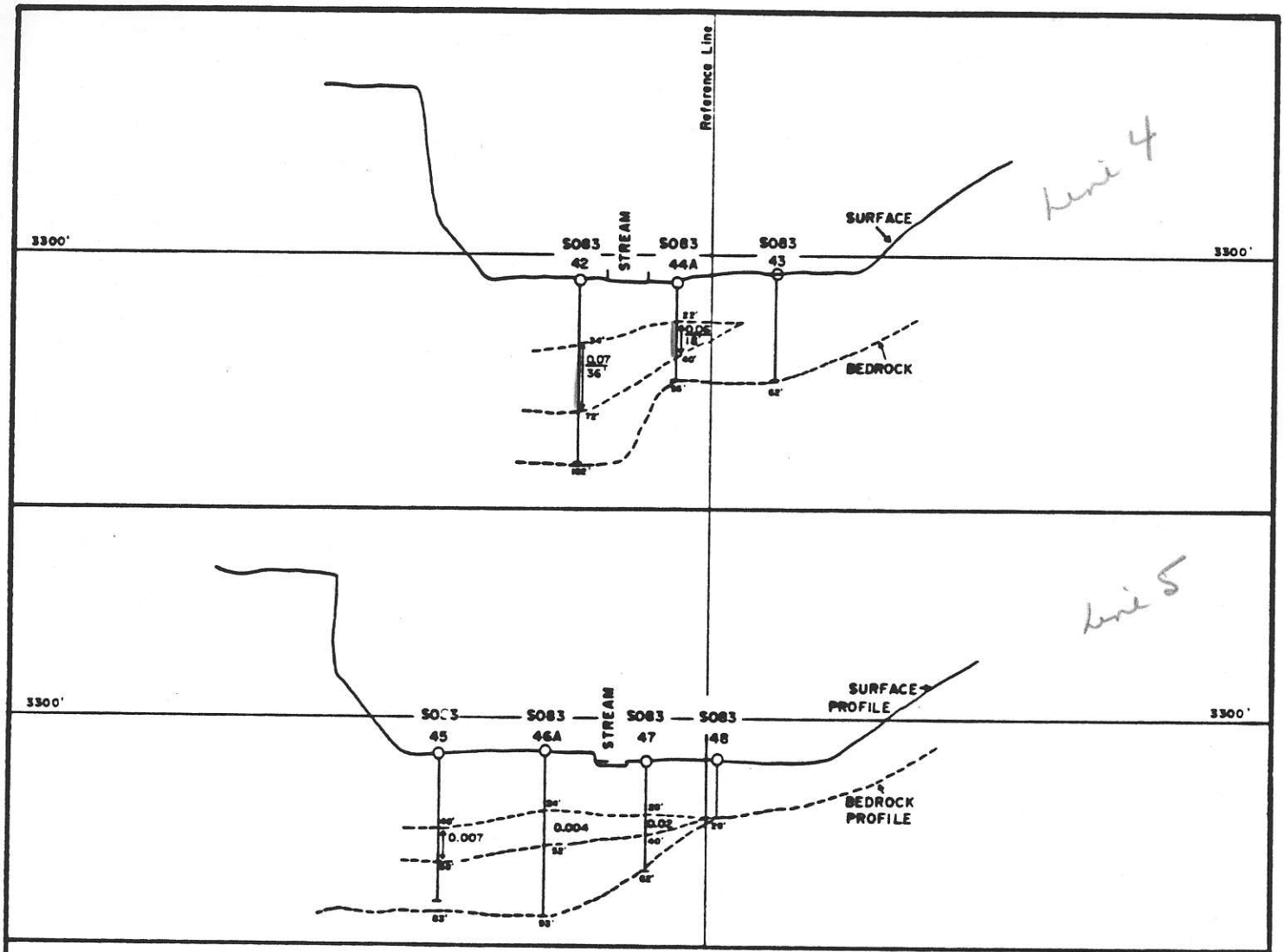


FIGURE 8B

GENIE RESOURCES LTD.

1702 ZONE

OTTER CREEK, SURPRISE LAKE AREA

- ATLIN M.D., B.C.

CROSS-SECTIONS

ON 1983 DRILL HOLES

LOOKING UPSTREAM

FEET

0 50 100 150 200

M.D.K

DECEMBER, 1983

and also because of the limitations in the number of triangles at 200 foot section lines.

5. In the three or four hundred foot section of the presumed ancient channel not under the east bank (see Figure 5) it should be possible to drill about 10 additional holes on lines 100 feet apart. If this is done then the number of triangles would be enough (minumum of 30) for a statistically valid grade determination using the triangle system. Such a program would cost about $50,000. In the writer's opinion this program would be much cheaper and involve much less risk than a program of bulk test mining prior to determination of grade from drill holes.

DRILLING RESULTS DLE ZONE

As mentioned above we drilled ten holes in this zone at seven different drill sites. A total of 1012.5 feet of Becker hammer hole were put down. About 15% of the above footage was in abandoned holes.

The main purpose of the drilling here was to verify and extend the Tertiary channel locations indicated during the Phase I drill project. Please see Figure 4 for a plan of the drill holes put down on this Zone and also Figures 7 and 7A for cross sections on the drill lines.

In general, the average grade results from deep drill holes on all lines drilled were disappointing. Also the cross-sectional area of the channel on Line 1 (closest to the Drain Lease boundary) proved to be smaller than hoped for based on the Phase I results.

As in the 1702 discussion the treatment of the results here will be qualitative--not quantitative. The quantitative results will be treated in a later section.

The discussion that follows will treat the results not necessarily in the order the holes were drilled but in sequence from Line 1 (closest to Drain Lease) southward to Line 4 (at about 800 feet from the Drain Lease).

Line 1

1. W. Sharp postulated (12) in his report on Drain Lease a "split" in the channel upstream from the Drain Lease boundary. This means a sort of island was created during the late Tertiary or early Quaternary in the ancient Otter Creek valley. I do not know on what evidence this postulated split was deduced by Sharp. There is no direct

evidence from our own work that such a split exists. However, the total cross-sectional area of the channel should not vary much in the horizontal distance between where it is last seen in the Drain Lease open pit and Line 1. Because the cross-sectional area in the "east" channel is much less than that shown in the pit one could than indirectly deduce that there should be a "west channel" to sum to the total of that shown in the pit. Fortunately, because of the way the pit was stripped on the west side, it should not be very expensive to determine, during the stripping and mining process on Dan claim next year, whether or not a split does occur. The fact is that, if there is no split, then the pit was slightly overstripped on the west side near the Drain Lease south boundary. I do not recommend a drill test.

2. Because of a very good grade intersections in holes SO83-5B and 5A near the bottom there is some additional evidence that there could be a split. Also, theugh grade in hole SO83-8 was low, there is some evidence from the appearance of the discharge and old drill hole results that the split could persist in the direction of SO83-8.

3. On Line 2 we drilled a deep hole at site #3. This hole averaged negligible grade from the start of the cemented pay horizon at about 100 feet to the bottom at 156.5. The hole bottomed in weathered shale. The bottom is almost cartainly near the center of the channel but not in the center itself.

4. Despite the poor grade result in this hole there are a number of geological points to be oonsidered here. The appearance of the cyclone discharge was identical to the appearance of the material discharged from the hole SO83-9B, which was very high grade. There was a definite sand horizon from about 128 to 142. This would not carry good values, from past experience and it did not. In the very hard pay horizon we had to use the percussion drill three times to drill ahead of the hammer bit. It is possible that this percussion drilling ahead of the string degraded the sample when we resumed hammer drilling. Finally, it has been the experience in the Drain Lease pit mining that there are good sections of poor grade and sections of bonanza grade which averaged out to very good grade material overall. In sum, the poor average grade of this hole can be discounted to some degree.

5. On line 3 we drilled a hole, SO83-15A just 50 feet to the west of the center of the channel as defined by hole SO83-13A. The average grade of the material below the clay horizon was better than that of SO83-3G on line 2. The average grade was about 0.02. See Appendix A. However we did not penetrate the complete section to bedrock because of

drilling problems related to the new style pipe. Because the total section was not penetrated the presumption is that the average grade of 0.02 oz/C.Y. could be on the low side. However, it must be mentioned that the average grade of hole S083-13A, only 50 feet to the east on this line, whioh did penetrate the complete section to bedrock was negligible. Again we may assume that the cross-section of the channel here happens to be low grade.

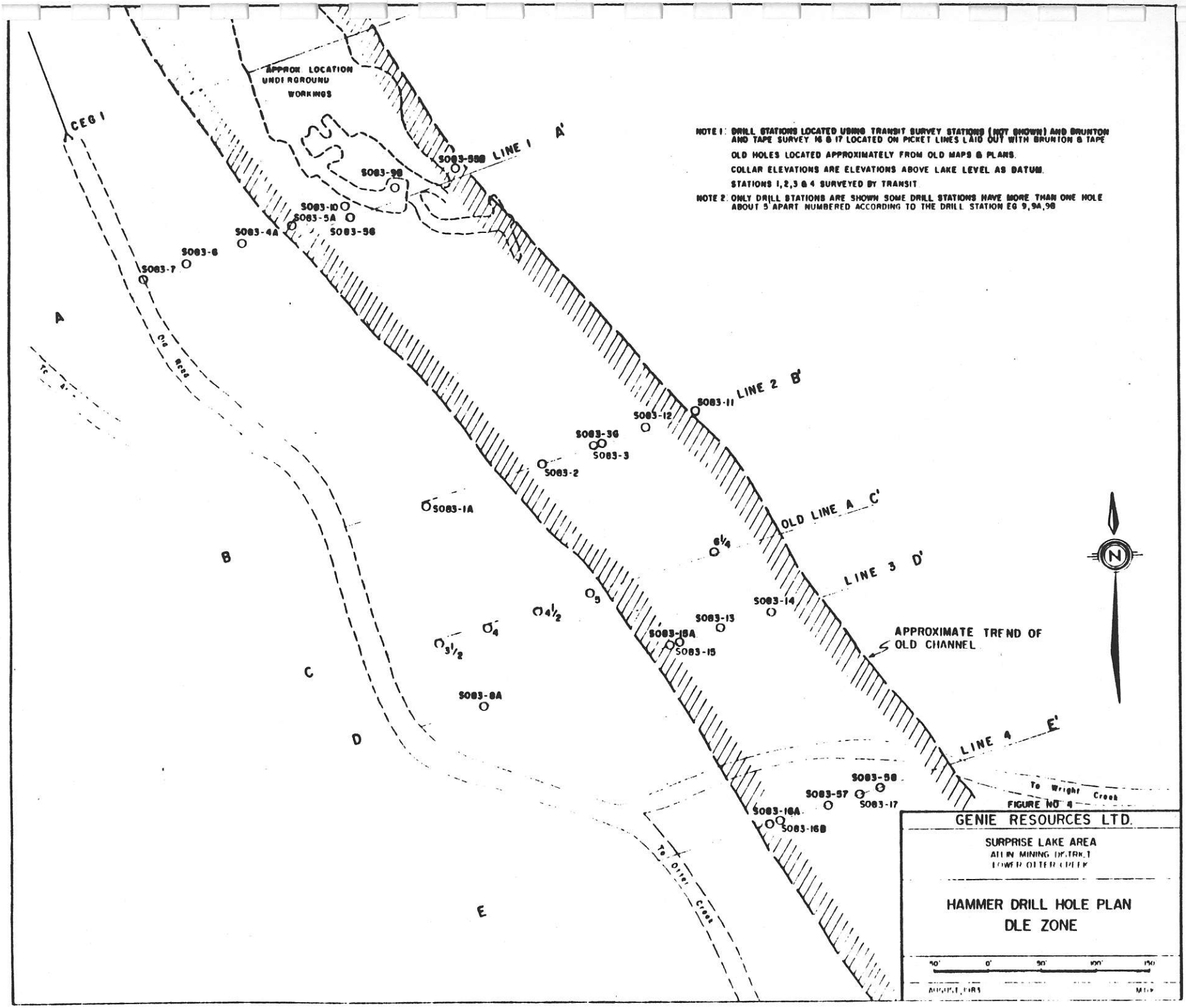
Line 4.

1. Drilling on this line has confirmed what was indicated by earlier drilling in Phase I. From results on this line, we have now proved by Phase II drilling, beyond a shadow of a doubt, that we can trace the buried channel through deep overburden by sectional drilling at 200' spacing with the Becker hammer drill.

2. The cross-section on this line shows a marked depression or trough to the east. The slope of the west side of the channel is similar to that seen in the open pit of Drain Lease. Hole S083-58 did not reach bedrock. The part of the hole above the sand layer (120'-150') and below the clay horizon averaged about 0.02 oz/C.Y. There were no values in the sand horizon. A most interesting result (and encouraging result) is that the last sample (before hole bottom) ran 0.05 oz/C.Y. The material cut here was typical cemented pay.

3. The same reasoning applies to the poor overall grade for hole S083-58 as the other deep holes of Phase II drilling. Because we did not penetrate the complete section then the lower sections could have markedly higher grade to upgrade the average to a much higher overall grade. Also we could be in a weaker part of the channel. Again, in view of the mining history of the open pit I believe that it is a justifiable procedure to discount the low overall grade in this hole.

4. A much more important consideration in determining a reserve grade from drill holes in the channel is the prohibitive cost, in time and money, to determine a statistically valid grade using the triangle system. This observation was made in the earlier report and repeated verbally meny times by the writer to the principals of the venture. To put the matter simply; we can find the channel with the drill but we cannot assign a grade from drill results alone at DLE Zone. I must repeat after the Phase II drill project has been completed what was written on page 17 of the August 17 report.



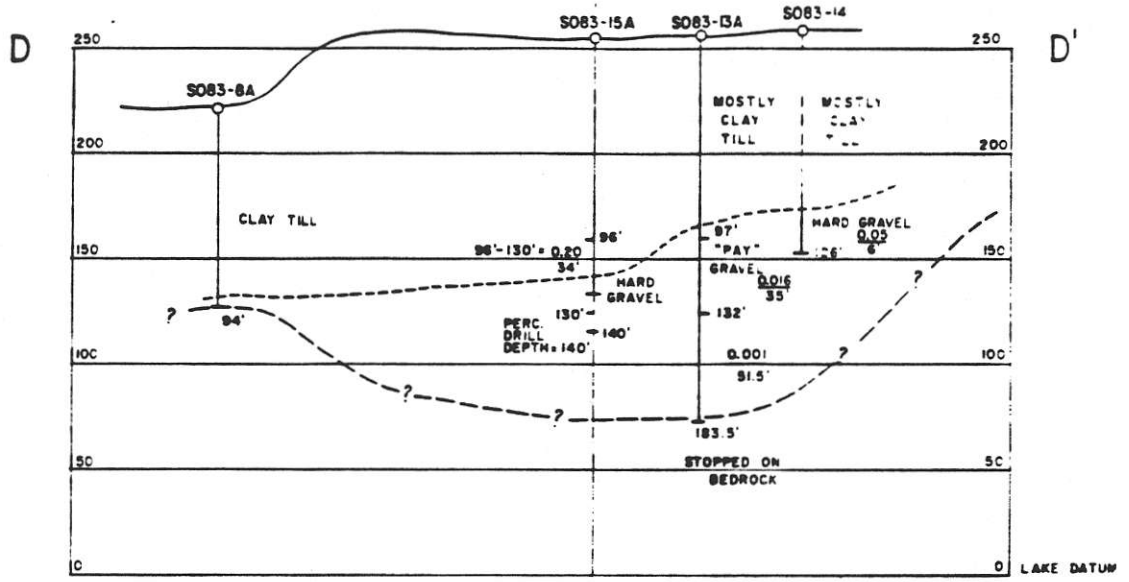
NOTE 1: DRILL STATIONS LOCATED USING TRANSIT SURVEY STATIONS (NOT SHOWN) AND BRUNTON AND TAPE SURVEY NO 8 17 LOCATED ON PICKET LINES LAID OUT WITH BRUNTON & TAPE

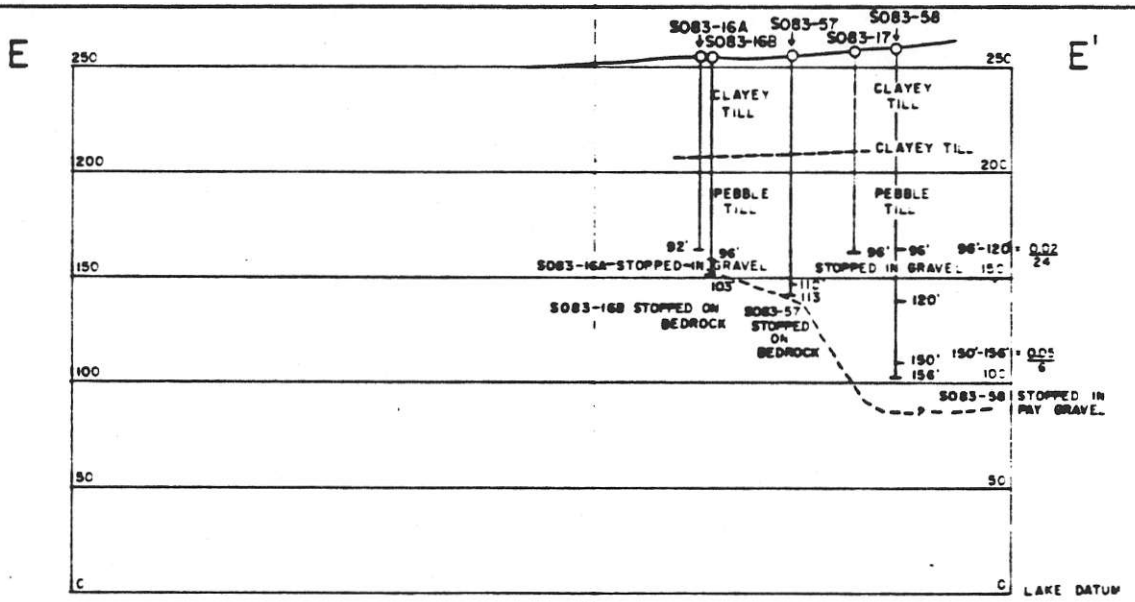
OLD HOLES LOCATED APPROXIMATELY FROM OLD MAPS & PLANS.

COLLAR ELEVATIONS ARE ELEVATIONS ABOVE LAKE LEVEL AS DATUM.

STATIONS 1,2,3 & 4 SURVEYED BY TRANSIT

NOTE 2: ONLY DRILL STATIONS ARE SHOWN SOME DRILL STATIONS HAVE MORE THAN ONE HOLE ABOUT 5' APART NUMBERED ACCORDING TO THE DRILL STATION EG 9, 9A, 9B





REFERENCE LINE

SEE NOTES FIGURE 4

FIGURE 7

GENIE RESOURCES LTD.

DLE ZONE
DAN GROUP
DRILL HOLE CROSS-SECTIONS

LOWER OTTER CREEK
SPRUCE LAKE, ATLIN M.D., B.C.
LOOKING NORTH

0' 50' 100' 150' 200'

M.C.K. AUGUST, 1983

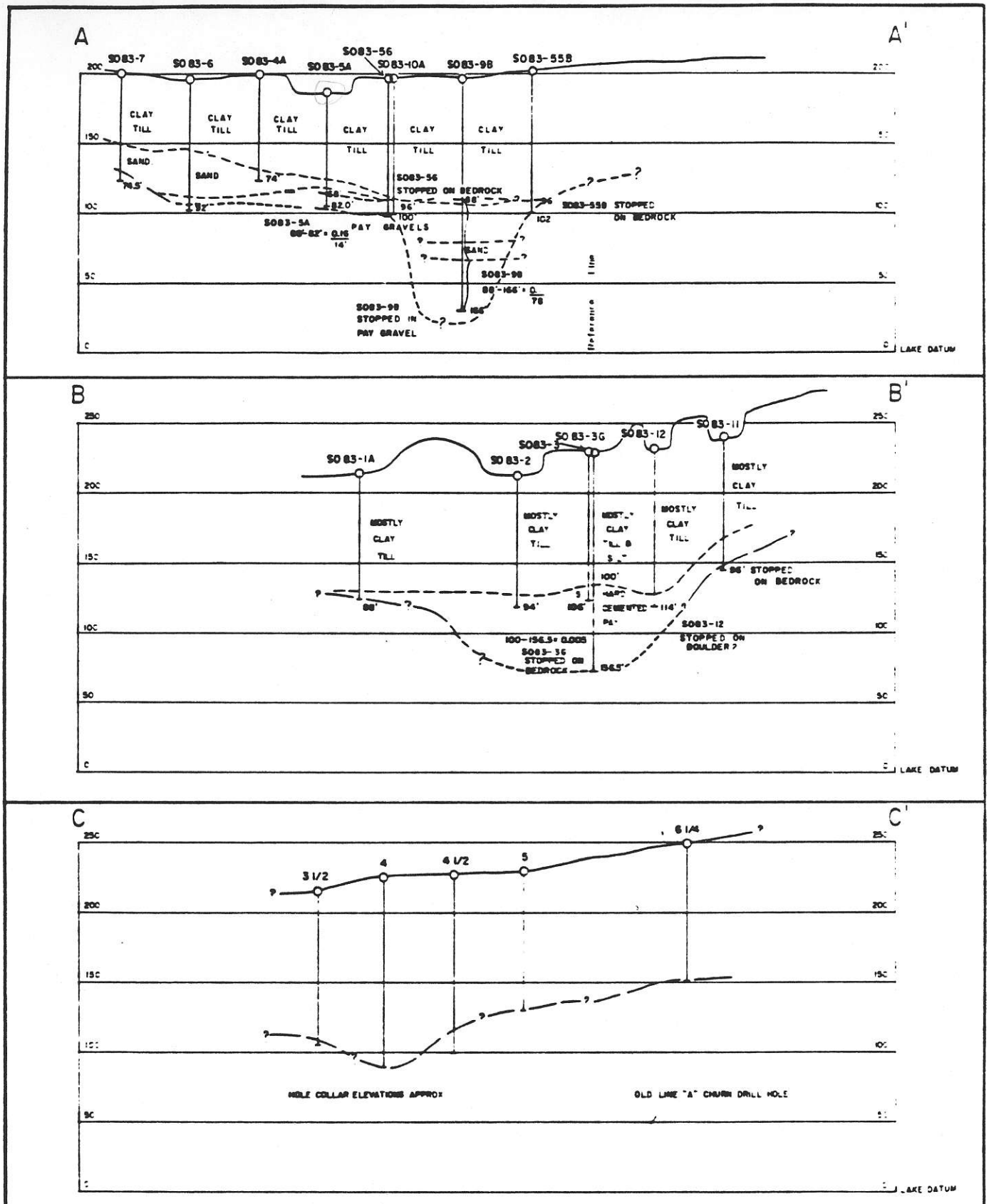


FIGURE 7.2

GENIE RESOURCES LTD.

DLE ZONE
DAN GROUP
DRILL HOLE CROSS-SECTIONS

LOWER OTTER CREEK
SPRUCE LAKE, ATLIN M.D., B.C.

FEET
0 50 100 150 200

M.D.Y. AUGUST, 1983

"It is not possible to use the drill to determine grade from the few holes that will be drilled in the central part of the channel. Grade must be assigned for the sections of the channel ahead of the production pit face using a combination of past production records, drill grades, statistical evaluations, and geological judgment."

DRILLING RESULTS DRAIN LEASE

A serious problem, which has yet to be solved, at Drain Lease is the correlation of old underground maps, from the Dailly and Sharp reports (7) and (12), with our own surveys. In an attempt to solve this problem, and it was only partially successful, the writer undertook a survey of the open pit at Drain Lease. Unfortunately, the transit- stadia loop which I had intended to run was not possible. There was a delay in forwarding the instrument from Vancouver. Instead I undertook to complete a series of linked compass-tape closed traverses within the pit. I was able to use the stadia for one day and it was used mainly to confirm some elevations and to put in some side shots from the compass- tape stations for contour plotting.

I carried elevations for all the stations of the compass-tape loops using a hand-held clinometer. The results of the survey are shown in Figure 6. Unfortately when the final plot was overlaid on a 1"=50' map prepared from air photos by McElhenney Surveying Ltd. there did appear to be a large discrepancy (about 100') in location of some important ground details. In Figure 6 I have used my plot. I have assumed that the air photo plot was of low order of accuracy and that it is not as accurate as my own plot.

There is a draw or gulch on the east side of the pit. I had thought at one time that there could be a possiblility that this represented the recent expression of an ancient pup or tributary of the old channel. This possibility appeared when I plotted old maps of underground workings on rough preliminary surveys conducted for location of Phase I drill holes.

In fact, it was my intention at one point to drill on the possible extension of such an assumed tributary. To this end I did use the D8 to put in some drill roads. When the new survey was plotted it became evident that the presumed parallelism of the underground workings to the east and the trend of the draw was more apparent than real. Therefore I abandoned the idea of drilling. There does

remain a good potential for production from the east-trending workings but this will be best done by mining development and not by exploration drilling. In other words, next year the mining layout should include stripping and mining of the area on the east side of the pit near the old east-trending workings. An estimate of the possihle ounces from this development work will be offered in later sections of the report.

A potentially far more important pay zone was indicated by the survey and as a result of conversations with the former operator of the pit. In the Sharp and Dailly report it was assumed that there wae a bedrock cut-off to the north on Drain Lease because of glacial scouring within the Pine Creek-Surprise Lake trough. Sharp shows it on one of his sections as only a few hundred feet north of the hoist room of the Old Inclined Shaft. Dailly appears to place the cut-off somewhat further north than that. It was my belief at the time that both writers were probably right in these inferences. It was because of this I was reluctant to assign any potential on Drain Lease to a northward extension of the open pit zone. However, in conversations with Gordon McIntyre, pit operator, in October I found that a Schram type drill hole had been put down by him about 400 feet north of the old Inclined Shaft and it had hit bedrock. This meant that perhaps there was no bedrock cut-off and that the pay zone extended northward to near the present lake shore.

In addition Mr. McIntyre told me that hydraulicking operations in the 1920's had found good values in the till near this Schram hole. The casing pipe had been left in the hole so it was not difficult to locate this old hole. See Figure 6. I received approval for one drill hole near this Schram hole when I proposed it to Genie officials. This hole was drilled on an old haulage road about 50 feet from the old casing pipe.

The results of this hole illustrate in a definite way that geological results of drilling can be far more important, in some cases, than high values in the gravel. The grades in most the samples processed from the gravel were negligible. However, it was apparent that the section seen far to the south in the pit wall and replicated in our drill holes near the south Drain Lease boundary was duplicated in hole SO83-58.

Another reason for low values in all the samples, except for a few good ones high up in the hole, was that we were in unsorted glacial till and the marker clay horizon above the pay zones of cemented pay for almost all of the hole. This was always barren material.

The bottom of the hole was in cemented pay material for only a few feet before the drill hit a boulder of peridotite. We drilled with the percussion drill through that boulder and hit about 2 feet of fresh shale bedrock.

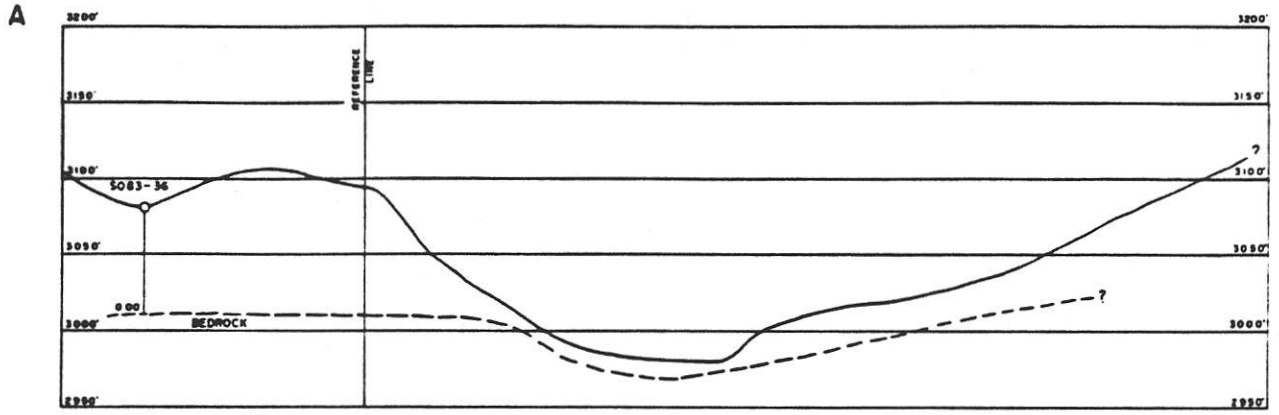
There is another principle of placer drilling illustrated by the results of this hole. It is not possible to reach definite conclusions about the potential of a possible pay zone with only one hole. A section line of more than one hole must be drillled. This principle applies espeoially if the results of a hole are negative.

By oareful fitting of old maps to the new survey of the pit it was possible to locate (within rather wide limits) Drill Line #5. There were two good holes on this line. The best hole indicated about 75' averaging about $40 per C.Y. at today's gold prices. The location of this line is shown in Figure 6. The good holes indicate a channel in cross-section about under the present haulage road on the east side of the pit.

It seems obvious that more drilling is needed on the line of SO83-59 to the east and also old Line #5 should be repeated. Experience in redrilling with the Hammer drill near old holes is that in some cases old holes were stopped in cemented pay. Obviously in these cases the drillers mistook the very hard cemented pay for bedrock. This could have happened in the drilling of old Line #5. This can be checked by redrilling the better holes. If holes were stopped in cemented pay then, both for grade estimate and mining development, this should be determined. Also the drilling of the SO83-59 line to the east must be done in order to test the possible channol north of line #5.

Please see Figures 6 and 6A for plan of the proposed drilling and for longitudinal sections relevant to the above discussion. In order to plan the mining operation for next year and not to interfere with the early mining operations in the pit it is suggested that the drilling of these lines be carried out starting in late March or early April of 1984.

If the drilling does indeed confirm the existence of the channel to the north then there is considerable potential for increased reserves on the Drain Lease, over and above the deduced reserves to the south. About 600 feet of channel would be exploitable to the north of the deepest part of the present pit. Beyond that is quesswork. There should, on theoretical grounds, be a bedrock cut-off because of glacial action within the Surprise Lake-Pine Creek



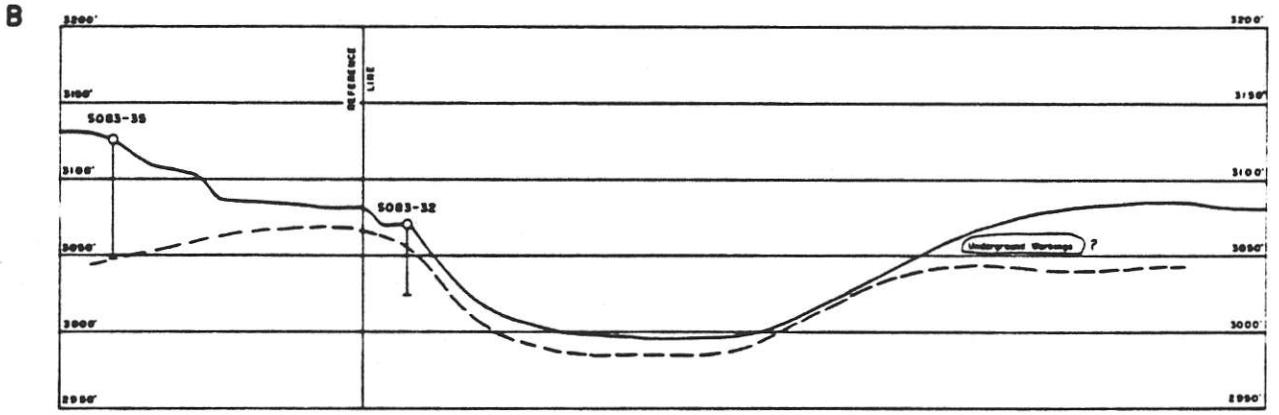


FIGURE NO 9

GENIE RESOURCES LTD.

SPRUCE LAKE AREA
ATLIN MINING DISTRICT
LOWER OTTER CREEK

CROSS SECTIONS LOOKING NORTH
DRAIN LEASE
(PML 1697)

0' 50' 100' 150'

SCALE 1:600, 1" = 50', VERTICALLY AND HORIZONTALLY

DECEMBER, 1983 M.D.K.

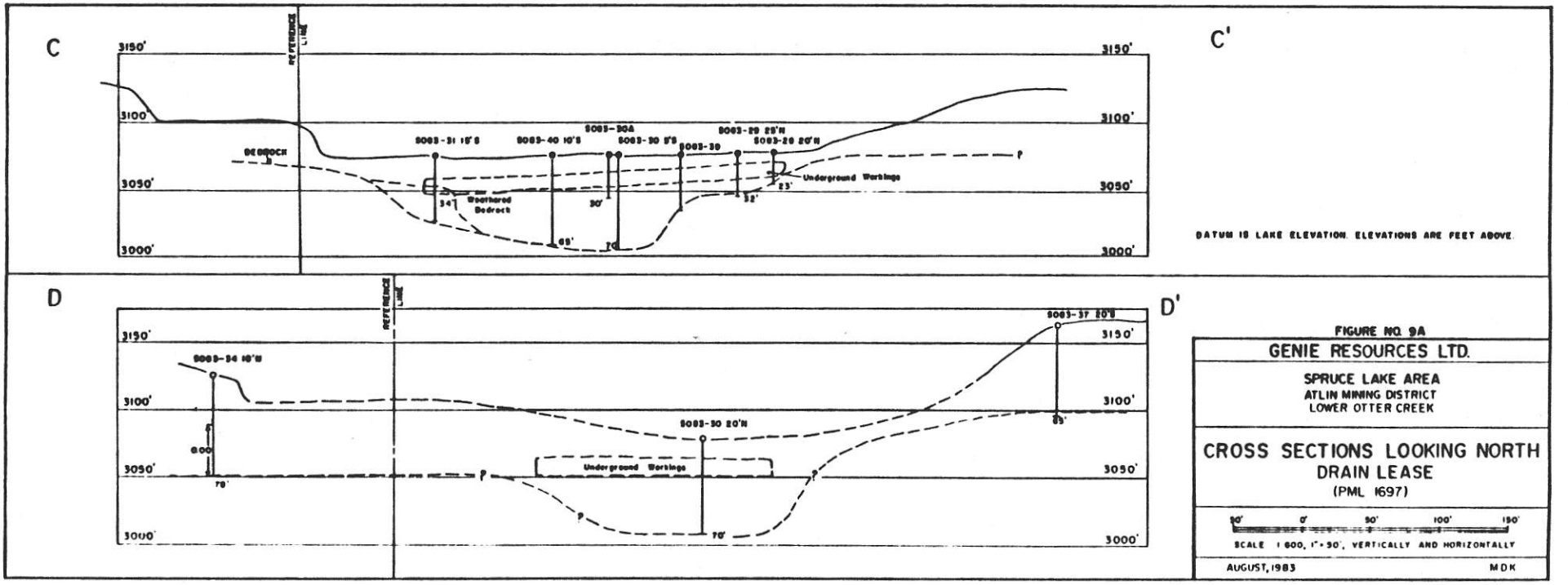


FIGURE NO. 9A

GENIE RESOURCES LTD.

SPRUCE LAKE AREA
ATLIN MINING DISTRICT
LOWER OTTER CREEK

CROSS SECTIONS LOOKING NORTH
DRAIN LEASE
(PML 1697)

50' 0' 50' 100' 150'

SCALE 1:600, 1"=50', VERTICALLY AND HORIZONTALLY

AUGUST, 1983 MDK

valley. Only drilling on a further line to the north of the SO83-59 line will establish that cut-off. It may be very close to the present Surprise Lake shore. It this is indeed so the it will provide a handsome bonus in gold ounces to the reserves for Drain Lease.

PROVEN YARDAGE AND GRADE, DAN-DRAIN LEASE

A. 1702 Zone

There are no proven yards of gold placer deposit in this zone. However, it is possible, depending upon results of the program of drilling suggested above in a limited part of the suspected trend of the Tertiary channel, that proven yardage may be assigned to 1702 Zone. In the writer's opinion, without a drill test of the type suggested above or a bulk sampling program in 1702 Zone it will not be possible to assign proven yards and ounces to the 1702 Zone.

B. DLE Zone

In what follows is presented a conservative estimate of volume of proven pay material, in that a possible "split" in the channel is not considered in the volume estimate.

The following areas of pay material are assigned as follows to the 4 lines drilled in Phases I and II:

Boundary line: This line was not drilled but the area is assigned based on the drilled area of Line 1 (see Figure 7), visual observation of the pay zone in the pit at the south end and old underground maps. In the pit about 150 feet from the boundary of Drain Lease the measured width of the mined area is over 250' across. I have assigned an area 150'X65' to this section.

Line 1: This area is reduced from the Phase I Volume estimate to 90'X80'.

Line 2: This area is set at 150'X65'

Line 3: This area is set at 150'X65'

Line 4: This area is set at 150'X65'

In my opinion these areas for the lines drilled are conservative. Simple volume calculations using the method of average end areas gives a total reserve volume of the potential pay zone as approximately 250,000 C.Y. By projection beyond Line 4 for 100' we add about 30,000 C.Y. This gives a total 280,000 C.Y. in the channel for a distance of 900' from the boundary. Because of the points mentioned above, for discounting the grade of the material as indicated by average drill hole grade it would be wise to

leave the grade of the proven reserves here at 0.10 oz/C.Y. because of the good grade in SO83-9B and mining experience in the Drain Lease on both surface and underground.

When more experience from actual mining in the Dan Tertiary channel is obtained during 1984 it may be possible to change the grade estimate and also alter the volume estimate the channel extensions to the south.

C. DRAIN LEASE

Drain Boundary

In a report dated August 25, 1983 I estimated, as of about the end of July, the proven reserves of accessible pay material at Drain Lease to be 135,000 C.Y. and the proven reserves of inaccessible pay gravel to be 60,000 C.Y. Both categories were estimated to have grade at 0.10 oz/ C.Y.. During the months of August and part of September the reserve of the accessible category was reduced by mining to about 65,000 cubic yards and the inaccessible category remained the same. Because the remaining 65,000 cubic yards in the accessible category are near the bottom of the pay horizons and because the bedrock horizon, or Bedrock Level of the old Underground miners, is richer than the other Levels one should expect higher grade than the average of 0.10 oz per cubic yard.

The proven reserves at the south end of Drain Lease are then put at a total of 125,000 C.Y. at 0.10 oz/ C.Y. of fine gold. Because the property has been purchased the distinction between accessible and inaccessible reserves no longer applies. Both categories can be mined as a unit after stripping of overburden on Dan Claim.

Drain -- North

There are no proven reserves here based on our drilling but the old holes on line # 5 are considered reliable enough to warrant a small amount of proven reserve to be assigned here. A plan length of 200 feet and width of channel of 120 feet with depth of 60 feet gives about 50,000 cubic yards of material at grade of 0.10 oz/C.Y. of raw gold for proven reserves here.

PROBABLE AND POSSIBLE RESERVES AT DAN-DRAIN LEASE

A. 1702 ZONE

There is a good probability of pay material in a block about 800'X100'X30 in the B horizone. There is a good probability of pay material in the bedrock horizon of 1702

Zone. The dimensions are 800'X12'X120'. Volume for both horizons should total 140,000 C.Y. and probable ounces in probable reserve should total 11,500. The upper horizon is assigned a grade of 0.05 and the lower one a grade of 0.15 oz/C.Y.

DLE SPLIT

Because there is a reasonable possiblity of a split in the channel it seems reasonable to assign a considerable volume of reserve to DLE zone based on this concept. 150,000 cubic yards at a grade of 0.10 oz/C.Y. are so assigned.

DLE -- 1984 Zone

The average volume per hundred foot of channel remains the same as in the August 17 report at 60,000 C.Y. per hundred feet. There are about 1900 feet between Line 4 and the 100 projection to the south and the intersection of the old channel with the present Otter Creek Valley. This means that there are about 1,150,000 C.Y. of possible pay material in the channel upstream of Line 4+100. At a grade of 0.10 oz/C.Y. this means that about 115,000 ounces are on possible reserve here.

1702 -1984 Zone

North of the Probable Block in 1702 outlined above is another block about 1000 feet long by 120 wide. Within this block are the two horizons mentioned above, the B horizon and the Bedrock horizon. There are here about 190,000 tons of possible reserves in this block. The number of possible ounces within this block is about 15,000.

Drain--East Draw

A probable block of about 10,000 C.Y. is assigned here at grade of 0.10 oz/C.Y. The dimensions of the block are 100X30X100 in feet. The ounces on probable reserve are about 1000. It is considered that for this block the reserves are conservative.

Drain North

There is a possible block here extending from a line about 200 feet north of the old Incline Shaft to about 500 feet north of this line. The dimensions of the possible block are 500X100X50' or about 100,000 C.Y. The grade is set at 0.10 oz/C.Y.

The total of proven, probable and possible reserves at Dan-Drain Group are 2,195,000 C.Y. and 208,000 ounces. This is up slightly from the August estimate of 2,050,000 C.Y. and 205,000 ounces.

The drilling of DLE-1984 block will be very important not only for locating the channel but also for, perhaps locating old enriched confluence zones. It will certainly be essential for laying out a rational mining plan.

SUMMARY OF RESERVES OF DAN-DRAIN GROUP IN C.Y. AND OUNCES

BLOCK	PROVEN	PROBABLE	POSSIBLE	OUNCES
DLE	280,000	400,000	150,000	38,000
1702		140,000		11,500
DLE-1984		70,000	1,150,000	115,000
1702-1984		270,000	190,000	15,000
DRAIN-BDY	125,000			12,500
DRAIN-EAST		10,000		1,000
DRAIN-NORTH	50,000		100,000	15,000
TOTALS	455,000 515,000	150,000 740,000	1,590,000 1,255,000	208,000

STOCK PILE

Figure 6 shows a tailings pile near the north end of the road system of the pit. This is assumed to come from underground sluicing in the 1930's. During a test in late September of the tailings pile it was shown that about 5 yards of material contained over 1 ounce of raw gold. This test is hardly a comprehensive grade determination for all of the old tailings pile. It is certainly an old pile because it is shown on Dailly's 1946 map of the hydraulic pit. If it is indeed the tailings from old underground pay material then it could be high grade, as indicated by the sluicing test in September. It is suggested that as sluicing goes on in 1984 this material be dumped into the washing plant. A rough volume calculation indicates about 15,000 C.Y. of tailings at a grade of about 0.10 oz/C.Y.

MINING PROPOSAL

The general strategy of production should include two major elements; washing plant design, and areas or zones of

production for optimum cash flow so as to return the investment to date quickly and to build up a cash reserve for extensive stripping in 1985. Stripping and pit preparation costs should be held to a minimum for the 1984 production season.

Washing Plant Design.

In line with the strategic objectives outlined above it appears that about 500,000 C.Y. from the DLE Zone (1702 Zone is not being considered for production in 1984) should be mined in 1984. Also the production zones should require minumum preparation for stripping and mining. With this in mind, it seems clear that all of 1984 production should come from the already prepared pit area and the drilled area on Dan Claim close to the southern or upstream pit boundary.

Assuming there will be about 120 production days in 1984 means that production rate should be about 4200 C.Y. per day. If there are two shifts of 10 hours per shift then the production capacity of the washing plant should be not less than 250 C.Y. per hour. It would be preferable to increase the capacity to about 400 C.Y. per hour to provide a cushion for clean-ups, emergencies and possible production delays that may have to be made up by short-term increased production.

Across Surprise Lake on Boulder Creek a very successful washing plant was in use in 1984. The material input into that washing system was not at all unlike the material from Lower Otter Creek placer gravels. The plant is unitized and includes a shaker grizzly and classifying shaker screens to about 1/2" size for input to the pulsating riffle system in two runs. At the bottom of each run there is a non-pulsating riffle section of about 15 feet of expanded metal which traps the fine gold escaping the pulsating riffles of Hungarian riffle design. The pulsating riffles can be lifted hydraulicly as one unit and so speed up the "clean-up" process. In fact, I was informed that "clean-ups were carried out every 10 hours. The "clean-up" time was not over one hour. It seems that this plant, with some modifications, would be ideal for the output of the proposed placer mine on Drain Lease and Dan Claim. It is reported that the cost of the washing plant from a U.S.A. factory would be about two hundred and fifty thousand dollars.

It should be noted that we will be using clear lake water for the washing medium instead of very turbid recirculated water from settling ponds as in so many placer operations. This should assist in recovery of fine gold

which often cannot settle in turbid water.

The large settling ponds may have to be cleaned from time to time but they have in past operations returned very clear water to the lake. Thus the operation should have limited environmental impact and avoid governmental restrictions or expensive treatment plants.

It is possible that some testing of the large amount of -6" tailings on the property can be carried out during the field season. This can be by means of backhoe and a small sluicing operation. Because of the relatively inefficient washing plant used during the Drain Lease operations it is suspected that a lot of fine gold may be in the tailings. This can be recovered at a later date.

In the washing plant design must be included a design for a "gold room" which could include amalgamation barrel, spiral mechanical panner, pulsating riffle "clean-up sluice box, etc. It will be important to reduce the "clean-up" time to a minimum. It has been reported that the Boulder Creek operation, mentioned above, has perfected a system of very rapid "clean-ups" and amalgamation procedures.

Mining Plant

It is proposed that stripping be carried out only to line 2+100 or about 500 feet from the Drain south boundary. The number of cubic yards of material to be stripped for a zone about 700 long south of the boundary was estimated in the August report at 900,000 C.Y. of overburden. This means about 130,000 C.Y. of glacial overburden must be removed for every hunderd linear feet of channel. For the proposed 500 feet of channel to be mined this year this means that about 650,000 C.Y. of glacial material will have to be stripped to just above the cemented pay and below the clay horizon.

It is proposed that an additional 200,000 C.Y. of stripping be carried out on the west side of the proposed pit extension to test the possibility of a split in the channel. There is an additonal reason for doing this and it is related to the good gold samples returned from the bottom of holes SO83-5A and 5B on line 1 to the west of the "east" channel. It is expected that gold content will warrant mining of the thin amount of pay over the bedrock here,even if there is no split in the channel.

The above means that a total of 850,000 cubic yards of stipping will be needed to expose the pay channel for mining. Last season the operators of Drain Lease Mine

estimated their stripping costs at just under $2.00/C.Y. Assuming that this cost is reasonable, as an estimate for the 1984 program, means that stripping of the Dan portion of the channel will cost about 1.7 million dollars. However, the stripping will be done concurrently, in part, with the mining so that some stripping costs could be paid from proceeds of gold sales.

There are additional stripping costs to be incurred in mining, to the north, about 150,000 proven and possible cubic yards of pay within the pit. Until drilling is carried out it will be difficult to estimate the amount of stripping in C.Y. here. However, it does seem likely that the stripping ratio will be very low and that this cost will not be high. No additional costs are added to the stripping cost estimated above for the Dan claim and Drain Boundary.

The estimated cubic yards of pay or sluicable material to be mined in 1984 are listed below by section:

1.	East Channel:	150,000
2.	Split or West Side:	75,000
3.	Drain Lease Bdy.	135,000
4.	Drain -North	150,000
TOTAL		510,000

It has been proposed that the stripping be contracted out and mining be done "in house". The stripping may be done by any method, provided that the stripped area is left so that benches, suitable for truck mining, can be started readily.

This is not the place to enter into a detailed discussion of mining method, cycle time, loading equipment etc. However, careful consideration should be given to shovel loading and large 40 C.Y. dump trucks. Waste disposal areas are an important consideration which should be included in any detailed proposed mining plan. I do not think that a mining plan for submission to government officials need go further than the 1984 operation at this time.

Mining and sluicing costs for the 1983 operation at Drain Lease were estimated at about $7.00 per ton. Scrapers were used for this work as well as a back-hoe. Truck and shovel mining and sluicing costs should not exceed this amount. This means that mining costs should total about 3.6 million dollars.

Included in the operational costs should be those of a surveying and geological mapping crew. These crews will

be responsible for correlation of mining results with drill hole data and for determining average production grade for different strata and different blocks.

At a gold price of about $400 US, exchange rate at about the same as today, and a fineness of the 800 the product of this mining operation should yield about $15,000,000 net operating profit before taxes. This profit will pay back all existing drilling costs to date, the 1984 drilling program costs, and the purchase price of Drain Lease and still leave an excellent return on the initial investment at Otter Creek.

DRILLING PROPOSAL

During the 1984 drilling season the DLE-1984 Zone should be tested completely to its interesection with the present Otter Creek Valley. About 1000 feet of drilling should be carried out in part of the 1702 Zone as discussed above in the section shown in Figure 5 as "Drillable Zone".

Ten sectional lines should be laid out for the DLE-1984 work. On these lines a minimum of 4 holes should be drilled at average depth of about 130 feet or about 520 feet per line. This means a total of about 5200 feet will be needed to find the old channel next year. In addition it is proposed two lines within the pit be drilled to test Drain North Zone. These will be about 500' per line or about 1000 feet. The total proposed drilling for 1984 is about 7000 feet. If the program is started in early April it should be possible to complete the program before the cold of late September and early October, thus speeding processing and reducing costs somewhat.

Cost of processing, including consultants fee, should be about $25 per foot of sample. Cost of drilling,including all the extra charges for diesel fuel, lodging of drillers, rental, etc. should be about $25 per foot. The cost of the program should be approximately $350,000.

Because the program will be carried out during the production season some of the cost can be paid for out of production. It is possible that some other areas in the Atlin camp may be drilled during the 1984 season. If that is done it is suggested that a geologist, under the supervision of the consultant, be hired for that purpose. or the above program be reduced in footage.

It could be considered a useful procedure, in order to gain experience in the practical capabilities of the 9" Becker drill, to drill the 1702 Zone with this machine. For

the other zones the 6 5/8" truck-mounted drill will serve quite well. If the 9" drill is used the increased volume of sample will mean that additional sampling equipment and personnel will be needed.

CONCLUSIONS

1. The drilling method used is able to locate and trace the ancient bedrock channel under, at least, one hundred feet of overburden at Lower Otter Creek on the Dan-Drain Group of placer leases.

2. A total of 208,000 ounces of gold in proven, probable and possible categories is indicated by the Phase I and Phase II programs of drilling during 1983.

3. An improved washing plant of about 400 C.Y./hour capacity should be purchased and used in the 1984 production season.

4. A program of stripping of about 850,000 cubic yards of glacial overburden at Dan-Drain Group should expose about 500,000 cubic yards of sluicable material to the south of the present pit and within and to the north of the Pit.

5. A preliminary estimate of the net operating profit from the above proposed placer mining operation is about 15 million dollars before taxes.

6. A 7,000 foot Becker hammer drill program should be carried out during 1984 field season. This program should outline the trend of the old channnel on DLE -1984 Zone. It should also determine grades in 1702 Zone and obtain geologicla data in Drain North Zone.

RECOMMENDATIONS

It is recommended that financing be arranged to carry out the mining and the drilling proposals outlined above. A detailed mining plan with cost estimate should be prepared for the zones discussed in the mining proposal. A more detailed estimate of profitability should also be prepared. These may be combined in a feasibility report.

Respectfully submitted,

M.D. Kierans

M.D. Kierans P.Eng.

CERTIFICATE

I, Martin D. Kierans, of 1503-1616 Pendrell Street, Vancouver, B.C. do hereby certify that:

1. I am a Geological Engineer.

2. I am a Resident Member of the Association of Professional Engineers of the Province of British Columbia.

3. I am a graduate in Geological Sciences of the University of British Columbia (M.A. 1952) and McGill University (B.Sc. 1949).

4. I have practiced my profession of Geological Engineer and Mine and Exploration Geologist for 31 years.

5. My knowledge of the property discussed in this report is based on short visits in 1982 and a longer two week period in March 1983 when I supervised a surveying and road clearing operation on the subject claims. I also supervised a 109-day Becker hammer drilling project on the subject claims from May 22 to October 19, 1983. It is also based on study of numerous private reports on past exploration, development and mining work on the lower part of Otter Creek (see Bibliographic References) , study of relevant government geological maps and publications and on verbal communications with some local prospectors and placer operators.

6. I have no interest in this or any other property of Genie Resources Ltd. nor in the shares of the company, nor do I expect any.

DATED December 15, 1983 at Vancouver, British Columbia.

M.D. Kierans

M.D. Kierans P.Eng.

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APPENDIX A

DRILL SAMPLE SLUICING AND PANNING RESULTS : OTTER CREEK DRILLING PROJECT

FROM FEET	TO FEET	INTERVAL FEET	CUMUL'TE INTERVAL	MOISTURE RELATIVE	SAMPLE WEIGHT LBS	GOLD WT. MILLIGMS	WT. OF GRAVEL LBS/C.Y.	ADJUSTED GOLD WT. GRAMS	ADJUSTED GOLD WT. OZ./C.Y.	FEET*GRADE	INTRVL GRADE OZ/C.Y.	FACTOR ADJUSTED GRADE OZ/C.Y.
SO83-18A												
0	7	7	7	DRY	85	.2	3500	.0082353	2.644E-4	.0018505		
7	18	11	18	DRY	51	.9	3500	.0617647	.0019826	.0218091		
18	26	8	26	DRY	94	.1	3500	.0037234	1.195E-4	9.562E-4		
26	32	6	32	DRY	100	.2	3500	.007	.0002247	.0013482		
32	38	6	38	DRY	211	1.9	3500	.0315166	.0010117	.0060701		
0	38	38	78							.0320341	8.430E-4	.0011381
SO83-19												
0	8	8	8	DRY	40	.6	3500	.0525	.0016853	.013482		
24	30	6	--	DRY	82	.2	3500	.0085366	2.740E-4	.0016441		
36	42	6	6	DRY	115	.7	3500	.0213043	6.839E-4	.0041032		
42	48	6	12	DRY	74	.1	3500	.0047297	1.518E-4	9.109E-4		
48	54	6	18	DRY	125	.1	3500	.0028	8.988E-5	5.393E-4		
54	60	6	24	DRY	283	.5	3500	.0061837	1.985E-4	.0011910		
60	66	6	30	DRY	232	4.7	3500	.0709052	.0022761	.0136563		
66	72	6	36	DRY	369	9.1	3500	.0863144	.0027707	.0166241		
72	78	6	42	DRY	96	.2	3500	.0072917	2.341E-4	.0014044		
36	78	42	42							.0384293	9.150E-4	.0012352
SO83-21												
7	14	7	7	DRY	147	1.1	3500	.0261905	8.407E-4	.0058850		
14	18	4	11	DRY	110	31	3500	.9863636	.0316623	.1266491		
18	24	6	17	DRY	244	2.5	3500	.0358607	.0011511	.0069068		
42	48	6	6	DRY	249	.1	3500	.0014056	4.512E-5	2.707E-4		
54	60	6	6	DRY	259	.1	3500	.0013514	4.338E-5	2.603E-4		
SO83-24												
0	7	7	7	DRY	90	.1	3500	.0038889	1.248E-4	8.738E-4		
14	20	6	6	DRY	181	2.3	3500	.0444751	.0014277	.0085659		
26	32	6	6	DRY	224	74.3	3500	1.160938	.0372661	.2235966		
32	38	6	12	DRY	158	3.1	3500	.0686709	.0022043	.0132260		
26	38	12	12							.2368226	.0197352	.0266425
SO83-25												
0	10	10	10	DRY	59	BL. SAND	3500	0	0	0		
10	18	8	18	DRY	127	.4	3500	.0110236	3.539E-4	.0028309		
18	24	6	24	DRY	118	11.8	3500	.3500000	.0112350	.0674100		
24	30	6	30	DRY	163	1.1	3500	.0236196	7.582E-4	.0045491		
30	36	6	36	DRY	155	1.1	3500	.0248387	7.973E-4	.0047839		
0	36	36	36							.0795739	.0022104	.0029840

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FROM FEET	TO FEET	INTERVAL FEET	CUMUL'TE INTERVAL	MOISTURE RELATIVE	SAMPLE WEIGHT LBS	GOLD WT. MILLIGMS	WT. OF GRAVEL LPS/C.Y.	ADJUSTED GOLD WT. GRAMS	ADJUSTED GOLD WT. OZ./C.Y.	FEET*GRADE	INTRVL GRADE OZ/C.Y.	FACTOR ADJUSTED GRADE OZ/C.Y.
SO83-25A												
0	10	10	10	DRY	75	.1	3500	.0046667	1.498E-4	.0014980		
10	18	8	18	DRY	89	.3	3500	.0117978	3.787E-4	.0030297		
18	24	6	24	DRY	138	22.7	3500	.5757246	.0184808	.1108846		
24	30	6	30	DRY	142	10.2	3500	.2514085	.0080702	.0484213		
30	38	8	38	DRY	336	9	3500	.0937500	.0030094	.0240750		
0	38	38	37							.1879085	.0049450	.0066757
SO83-25B												
0	14	14	14	DRY	77	2.4	3500	.1030909	.0035018	.0490255		
14	22	6	20	DRY	78	3.1	3500	.1391026	.0044652	.0267912		
22	28	6	26	DRY	123	6.3	3500	.1792683	.0057545	.0345271		
28	34	6	34	DRY	157	1.3	3500	.0289809	9.303E-4	.0055817		
34	40	6	40	DRY	142	10.7	3500	.2637324	.0084658	.0507949		
0	40	40	40							.1667203	.0041680	.0056268
SO83-25C												
0	18	18	18	DRY	61	.5	3500	.0286885	9.209E-4	.0165762		
18	24	6	24	DRY	172	8.5	3500	.1729651	.0055522	.0333131		
24	30	6	30	DRY	126	1.7	3500	.0472222	.0015158	.0090950		
30	36	6	36	WET	126	1.4	3500	.0388889	.0012483	.0074900		
36	42	6	42	WET	252	55.2	3500	.7666667	.0246100	.1476600		
42	48	6	48	DAMP	230	105.5	3500	1.605435	.0515345	.3092067		
48	54	6	54	DAMP	165	42.4	3500	.8993939	.0288705	.1732233		
54	60	6	60	DRY	241	46.5	3500	.6753112	.0216775	.1300649		
60	66	6	66	WET	420	.5	3500	.0041667	1.337E-4	8.025E-4		
66	72	6	72	WET	124	.1	3500	.0028226	9.060E-5	5.436E-4		
72	78	6	78	WET	115	.7	3500	.0213043	6.839E-4	.0041032		
78	84	6	84	WET	141	4.1	3500	.1017730	.0032669	.0196015		
36	60	24	24							.7601549	.0316731	.0427587
SO83-27												
0	14	14	14	DRY	72	.2	3500	.0097222	3.121E-4	.0043692		
14	22	6	20	DRY	104	.3	3500	.0100962	3.241E-4	.0019445		
22	28	6	28	DRY	149	3.3	3500	.0775168	.0024883	.0149297		
28	34	6	34	DRY	188	1.5	3500	.0279255	8.964E-4	.0053785		
0	34	34	34							.0266219	7.830E-4	.0010570

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SO83-27A												
0	18	18	18	DRY	294	.9	3500	.0107143	3.439E-4	.0061907		
18	24	6	24	DRY	99	2.5	3500	.0883838	.0028371	.0170227		
24	30	6	30	DRY	125	1.7	3500	.0476	.0015280	.0091678		
30	36	6	36	DRY	175	1.2	3500	.024	.0007704	.0046224		
36	42	6	42	DRY	135	129.3	3500	3.352222	.1076063	.6456380		
42	48	6	48	DRY	60	5	3500	.2916667	.0093625	.0561750		
48	54	6	54	DRY	161	15.4	3500	.3347826	.0107465	.0644791		
54	58	4	58	DRY	209	22.6	3500	.3784689	.0121489	.0485954		
58	64	6	64	DRY	309	.6	3500	.0067961	2.182E-4	.0013089		
64	70	6	70	DRY	196	.7	3500	.0125000	4.012E-4	.0024075		
70	73	3	73	DRY	199	.6	3500	.0105528	3.387E-4	.0010162		
36	58	22	22							.8148875	.0370403	.0500045
SO83-41A												
0	10	10	10	DRY	70	.5	3500	.025	.0008025	.008025		
10	20	10	20	DRY	56	.3	3500	.01875	6.019E-4	.0060188		
20	26	6	26	WET	141	SAND	3500	-----	------	------		
26	32	6	32	WET	234	BL.SAND	3500	-----	------	------		
32	38	6	38	DAMP	212	.3	3500	.0049528	1.590E-4	9.539E-4		
38	44	6	44	DAMP	217	BL. SAND	3500	------	------	------		
44	50	6	50	DAMP	232	BL. SAND	3500	------	------	------		
50	56	6	56	DAMP	218	.1	3500	.0016055	5.154E-5	3.092E-4		
56	60	4	60	DAMP	----	1.3	3500	-----	------	------		
SO83-42												
0	10	10	10	DRY	53	12.5	3500	.8254717	.0264976	.2649764		
10	16	6	16	DRY	34	3	3500	.3088235	.0099132	.0594794		
16	22	6	22	DRY	66	.1	3500	.0053030	1.702E-4	.0010214		
22	28	6	28	DRY	94	5.5	3500	.2047872	.0065737	.0394420		
28	34	6	34	DRY	123	13	3500	.3699187	.0118744	.0712463		
34	40	6	40	DRY	241	62.5	3500	.9076763	.0291364	.1748185		
40	46	6	46	DRY	296	371.9	3500	4.397466	.1411587	.8469520		
46	52	6	52	DRY	121	38.6	3500	1.116529	.0358406	.2150435		
52	58	6	58	DRY	276	8.1	3500	.1027174	.0032972	.0197834		
58	66	8	66	DRY	218	104.5	3500	1.677752	.0538558	.4308468		
66	72	6	72	DRY	230	53.4	3500	.8126087	.0260847	.1565084		
72	78	6	78	DRY	160	2	3500	.04375	.0014044	.0084263		
78	86	8	86	DRY		BL. SAND						
86	92	6	92	DRY		BL. SAND						
92	98	6	98	DRY	---	.1	3500					
98	102	4	102	DRY	204	39.6	3500	.6794118	.0218091	.0872365		
34	72	36	36							1.843953	.0512209	.0691482

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SO83-43												
0	10	10	10	DRY	76	.3	3500	.0138158	4.435E-4	.0044349		
10	16	6	16	DRY	74	.1	3500	.0047297	1.518E-4	9.109E-4		
16	22	6	22	DRY	79	.1	3500	.0044304	1.422E-4	8.533E-4		
22	34	12	34	DRY	488	1.1	3500	.0078893	2.532E-4	.0030390		
34	52	18	54	DRY	745	BL. SAND	3500	-----	----	-----		
52	62	10	62	DRY	509	.5	3500	.0034381	1.104E-4	.0011036		
SO83-44A												
0	10	10	10	DRY	37	2.3	3500	.2175676	.0069839	.0698392		
10	16	6	16	DRY	45	.4	3500	.0311111	9.987E-4	.0059920		
16	22	6	22	DRY	120	12.5	3500	.3645833	.0117031	.0702187		
22	28	6	28	DAMP	158	85.4	3500	1.891772	.0607259	.3643553		
28	34	6	34	DAMP	178	13.1	3500	.2575843	.0082685	.0496107		
34	40	6	40	DAMP	130	61.6	3500	1.658462	.0532366	.3194197		
40	46	6	46	DAMP	127	3.8	3500	.1047244	.0033617	.0201699		
46	52	6	52	DAMP	153	4.5	3500	.1029412	.0033044	.0198265		
52	56	5	56	DAMP	141	23.1	3500	.5734043	.0184063	.0920314		
0	56	56	56							1.011463	.0180618	.0243835
22	40	18	18							.8036045	.0446447	.0602703
SO83-45												
0	10	10	10	DRY	49	.5	3500	.0357143	.0011464	.0114643		
10	16	6	16	DRY	23	4.6	3500	.7000000	.0224700	.1348200		
16	22	6	22	DRY	48	.1	3500	.0072917	2.341E-4	.0014044		
22	28	6	28	DRY	55	1.1	3500	.0700000	.0022470	.0134820		
28	34	6	34	DAMP	116	3	3500	.0905172	.0029056	.0174336		
34	40	6	40	DAMP	127	.1	3500	.0027559	8.846E-5	5.308E-4		
40	46	6	46	DAMP	78	7.2	3500	.3230769	.0103708	.0622246		
46	52	6	52	DAMP	148	2.7	3500	.0638514	.0020496	.0122978		
52	58	6	58	DRY	177	6.7	3500	.1324859	.0042528	.0255168		
58	64	6	64	DRY	352	1.6	3500	.0159091	5.107E-4	.0030641		
64	70	6	70	DRY	281	.1	3500	.0012456	3.998E-5	2.399E-4		
70	76	6	76	DRY	164	.1	3500	.0021341	6.851E-5	4.110E-4		
76	83	7	83	DRY	360	100.6	3500	.9780556	.0313956	.2197691		
40	58	18	18							.1000392	.0055577	.0075029

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FROM FEET	TO FEET	INTERVAL FEET	CUMUL'TE INTERVAL	MOISTURE RELATIVE	SAMPLE WEIGHT LBS	GOLD WT. MILLIGMS	WT. OF GRAVEL LBS/C.Y.	ADJUSTED GOLD WT. GRAMS	ADJUSTED GOLD WT. OZ./C.Y.	FEET*GRADE INTRVL GRADE OZ/C.Y.	FACTOR ADJUSTED GRADE OZ/C.Y.
SO83-46A											
0	10	10	10	DRY	74	5	3500	.2364865	.0075912	.0759122	
10	16	6	16	DRY	63	2.4	3500	.1333333	.0042800	.0256800	
16	22	6	22	DRY	128	BL. SAND	3500	----	----	----	
22	28	6	28	DRY	62	9.8	3500	.5532258	.0177585	.1065513	
28	34	6	34	DRY	119	1.3	3500	.0382353	.0012274	.0073641	
34	40	6	40	DRY	157	6.8	3500	.1515924	.0048661	.0291967	
40	46	6	46	DRY	160	6.7	3500	.1465625	.0047047	.0282279	
46	52	6	52	DRY	159	9.1	3500	.2003145	.0064301	.0385806	
52	58	6	58	DRY	323	.3	3500	.0032508	1.043E-4	6.261E-4	
58	64	6	64	DRY	65	.6	3500	.0323077	.0010371	.0062225	
64	70	6	70	DRY	306	.1	3500	.0011438	3.672E-5	2.203E-4	
70	76	6	76	DRY	315	.5	3500	.0055556	1.783E-4	.0010700	
76	82	6	82	DRY	158	.1	3500	.0022152	7.111E-5	4.266E-4	
82	88	6	88	DRY	158	BL. SAND	3500	---	---	---	
88	93	5	93	DRY	181	.1	3500	.0019337	6.207E-5	3.104E-4	
SO83-47											
0	10	10	10	DRY	99	.8	3500	.0282828	9.079E-4	.0090788	
10	16	6	16	DRY	56	.6	3500	.0375	.0012038	.0072225	
16	22	6	22	DRY	141	.1	3500	.0024823	7.968E-5	4.781E-4	
22	28	6	28	DRY	119	.2	3500	.0058824	1.888E-4	.0011329	
28	34	6	34	DRY	224	60	3500	.9375	.0300938	.1805625	
34	40	6	40	DRY	130	9.6	3500	.2584615	.0082966	.0497797	
40	46	6	46	DRY	88	.1	3500	.0039773	1.277E-4	7.660E-4	
46	52	6	52	DRY	135	1	3500	.0259259	8.322E-4	.0049933	
52	58	6	58	DRY	249	.88	3500	.0123695	3.971E-4	.0023824	
58	62	4	62	DRY	156	7.8	3500	.1750000	.0056175	.0224700	
SO83-48											
0	10	10	10	DRY	112	1.3	3500	.040625	.0013041	.0130406	
10	16	6	16	DRY	26	.1	3500	.0134615	4.321E-4	.0025927	
16	22	6	22	DRY	83	.1	3500	.0042169	1.354E-4	8.122E-4	
22	28	6	28	DRY	211	.2	3500	.0033175	1.065E-4	6.390E-4	
28	33	5	33	DRY	180	4.6	3500	.0894444	.0028712	.0143558	
SO83-55B											
60	66	6	66	DRY	134	.1	3500	.0026119	8.384E-5	5.031E-4	
78	84	6	84	DRY	189	BL. SAND	3500	---	---	---	
84	90	6	90	DRY	299	.6	3500	.0070234	2.255E-4	.0013527	
90	96	6	96	DRY	255	11.66	3500	.1600392	.0051373	.0308236	
96	102	6	102	DRY	189	1.65	3500	.0305556	9.808E-4	.0058850	

APPENDIX A

DRILL SAMPLE SLUICING AND PANNING RESULTS : OTTER CREEK DRILLING PROJECT

FROM FEET	TO FEET	INTERVAL FEET	CUMUL'TE INTERVAL	MOISTURE RELATIVE	SAMPLE WEIGHT LBS	GOLD WT. MILLIGMS	WT. OF GRAVEL LBS/C.Y.	ADJUSTED GOLD WT. GRAMS	ADJUSTED GOLD WT. OZ./C.Y.	FEET*GRADE	INTRVL GRADE OZ/C.Y.	FACTOR ADJUSTED GRADE OZ/C.Y.
SO83-56												
90	96	6	6	DRY	238	.1	3500	.0014706	4.721E-5	2.832E-4		
96	100	4	10	DRY	232	.1	3500	.0015096	4.843E-5	1.937E-4		
SO83-3G												
100	106	6	6	FROZEN	260	.4	3500	.0053846	1.728E-4	.0010371		
106	112	6	12	FROZEN	281	1.9	3500	.0236655	7.597E-4	.0045580		
112	118	6	18	FROZEN	232	15	3500	.2262931	.0072640	.0435841		
118	124	6	24	FROZEN	248	11.3	3500	.1594758	.0051192	.0307150		
124	130	6	30	FROZEN	282	2.9	3500	.0359929	.0011554	.0069322		
130	136	6	36	FROZEN	197	.2	3500	.0035533	1.141E-4	6.844E-4		
136	142	6	42	FROZEN	264	32	3500	.4242424	.0136182	.0817091		
142	148	6	48	FROZEN	269	3.5	3500	.0455390	.0014618	.0087708		
148	152	4	52	FROZEN	167	13.3	3500	.2787425	.0089476	.0357905		
152	156.5	4.5	56.5	FROZEN	121	.2	3500	.0057851	1.857E-4	8.357E-4		
100	156.5	56.5	56.5							.2146168	.0037985	.0051280
SO83-15A												
92	96	4	4	FROZEN	111	BL. SANDS	3500	---	---	---		
96	102	6	10	FROZEN	176	21.9	3500	.4355114	.0139799	.0838795		
102	108	6	16	FROZEN	100	10.6	3500	.371	.0119091	.0714546		
108	114	6	22	FROZEN	130	8	3500	.2153846	.0069138	.0414831		
114	120	6	28	FROZEN	264	8.1	3500	.1073864	.0034471	.0206826		
120	126	6	34	FROZEN	190	65.4	3500	1.204737	.0386721	.2320327		
126	130	4	38	FROZEN	167	7.5	3500	.1571856	.0050457	.0201826		
96	130	34	34							.4697147	.0138151	.0186504
SO83-57A												
104	110	6	6	FROZEN	200	45.7	3500	.79975	.0256720	.1540319		
110	113	3	9	FROZEN	124	BL.SANDS	---	---	---			
104	110	6	6								.025672	.0346572
SO83-16B												
96	100	4	10	DRY	150	BL. SAND	3500	---	---	---		
100	103	3	SAMPLE LOST									

APPENDIX A

DRILL SAMPLE SLUICING AND PANNING RESULTS : OTTER CREEK DRILLING PROJECT

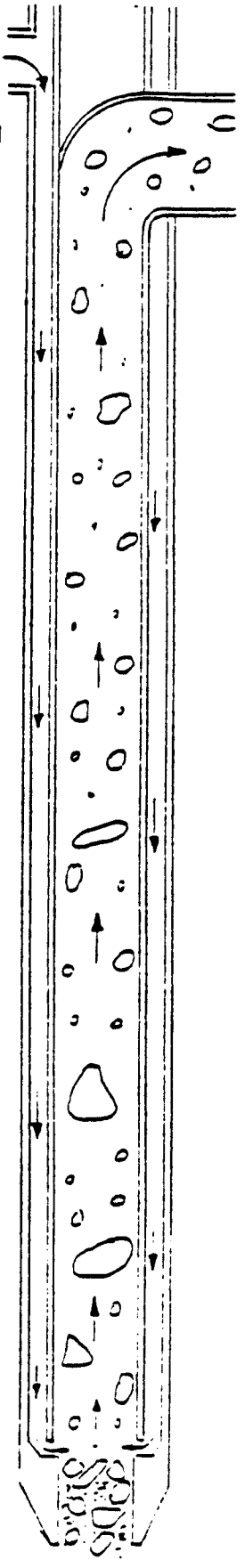
FROM FEET	TO FEET	INTERVAL FEET	CUMUL'TE INTERVAL	MOISTURE RELATIVE	SAMPLE WEIGHT LBS	GOLD WT. MILLIGMS	WT. OF GRAVEL LBS/C.Y.	ADJUSTED GOLD WT. GRAMS	ADJUSTED GOLD WT. OZ./C.Y.	FEET*GRADE	INTRVL GRADE OZ/C.Y.	FACTOR ADJUSTED GRADE OZ/C.Y.
SO83-58												
96	102	6	6	FROZEN	173	51.7	3500	1.045954	.0335751	.2014507		
102	108	6	12	FROZEN	185	1.5	3500	.0283784	9.109E-4	.0054657		
108	114	6	18	FROZEN	212	11.7	3500	.1931604	.0062004	.0372027		
114	120	6	24	FROZEN	226	39.6	3500	.6132743	.0196861	.1181166		
120	126	6	30	FROZEN	185	.1	3500	.0018919	6.073E-5	3.644E-4		
126	132	6	32	FROZEN	145	.1	3500	.0024138	7.748E-5	4.649E-4		
132	138	6	38	FROZEN	135	BL. SANDS	3500	---	---	---		
138	144	6	44	FROZEN	90	.1	3500	.0038889	1.248E-4	7.490E-4		
144	150	6	50	FROZEN	139	.26	3500	.0065468	2.102E-4	.0012609		
150	156	6	56	FROZEN	250	88.27	3500	1.23578	.0396685	.2380112		
96	120	24	24							.3622357	.0150932	.0203758
150	156	6	6								.0396685	.0535525
SO83-59												
10	16	6	6	FROZEN	63	9.1	3500	.5055556	.0162283	.0973700		
16	22	6	12	FROZEN	188	2.9	3500	.0539894	.0017331	.0103984		
22	28	6	18	FROZEN	204	31.5	3500	.5404412	.0173482	.1040890		
28	34	6	24	FROZEN	190	.2	3500	.0036842	1.183E-4	7.096E-4		
34	40	6	30	FROZEN	139	.4	3500	.0100719	3.233E-4	.0019399		
40	46	6	36	FROZEN	172	.3	3500	.0061047	1.960E-4	.0011754		
46	52	6	42	FROZEN	249	.3	3500	.0042169	1.354E-4	8.122E-4		
52	58	6	48	FROZEN	225	.6	3500	.0093333	2.996E-4	.0017976		
58	64	6	54	FROZEN	NOT	SLUICED						
64	70	6	60	FROZEN	NOT	SLUICED	MUCH	CLAY	AS ABOVE SAMPLE			
70	76	6	66	FROZEN	213	.7	3500	.0115023	3.692E-4	.0022154		
76	82	6	72	FROZEN	211	.35	3500	.0058057	1.864E-4	.0011182		
82	88	6	78	FROZEN	217	.1	3500	.0016129	5.177E-5	3.106E-4		
88	94	6	84	FROZEN	193	.2	3500	.0036269	1.164E-4	6.985E-4		
94	100	6	90	FROZEN	378	BL. SANDS	3500	---	---	---		
100	102	2	92	FROZEN	219	.1	3500	.0015982	5.130E-5	1.026E-4		

APPENDIX B

The Dan Group comprises the following leases:

Lease No.	Name	Expiry Date	Owner
PML 1687	Snoopy	Sept 30/84	100% Connolly Holdings Ltd.
PML 1702	Rose	Sept 30/84	" " " "
PML 1703	Joy	Sept 30/84	" " " "
PML 1745	Lake	Oct 12/84	" " " "
PML 1782	Dan	Oct 12/84	" " " "
PML 1849	Randy	Oct 12/84	" " " "
PML 1866	Lucy	Oct 12/84	" " " "
PML 1867	Pauline	Oct 12/84	" " " "
PML 1868	Ford	Oct 12/84	" " " "
PML 1869	Surprise	Oct 12/84	" " " "
PL 4688	-	Oct 17/84	100% Milmac Mines Limited
PL 4689	-	Oct 17/84	" " " "
PL 4690	-	Oct 17/84	" " " "

BECKER HAMMER DRILL



METHOD

A Piledriving Hammer advances a casing of double wall construction. During driving, compressed air is continuously forced down the annulus and returned up the center of the casing. The airstream picks up the soil as it enters through the bit and instantly lifts it to the surface.

Four unique principles of this method boost the performance of the Becker Hammer Drill far beyond that of other drills.

A. The highly efficient method of driving the casing with a Diesel pile hammer.

B. The double walled casing, which creates two channels: a down channel for the air, and a return channel for air and soil.

C. The large center opening which allows soil and rocks to be lifted without prior crushing or grinding.

D. Drilling the hole and casing it is one and the same operation.

CHARACTERISTICS

The outstanding characteristic of the Becker Hammer Drill is its ability to penetrate sand, gravel and boulder formations at high speeds.

SAMPLING

When it comes to overburden sampling, the Becker Hammer Drill presents a very remarkable feature:

> The drill provides automatically, as part of the drilling process, a continuous accurate sample of the penetrated formation. The drill, in fact, penetrates the formation by sampling it.

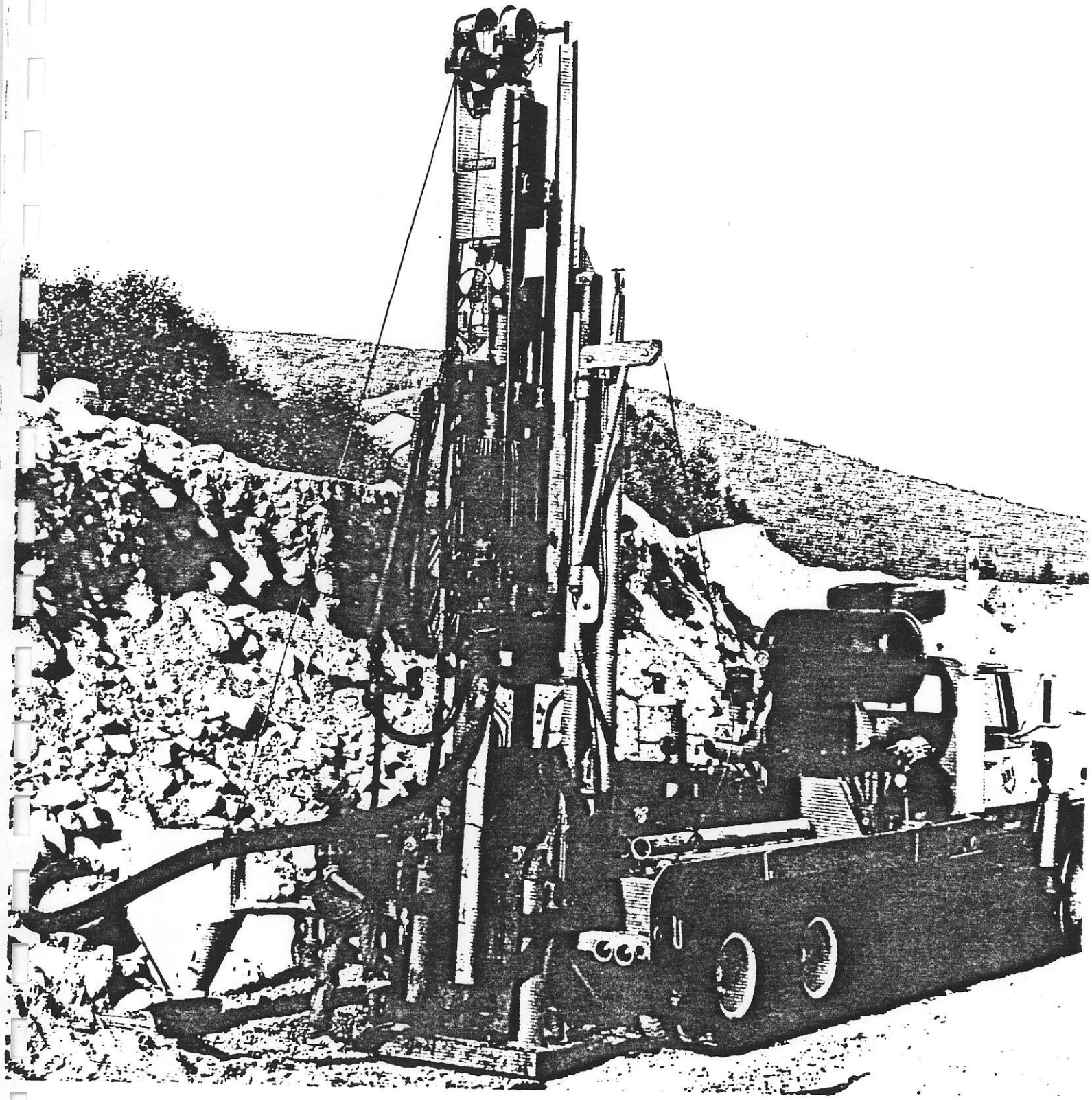
UNBROKEN SAMPLE: Advancement of the casing forces the soil in through the bit. The large center opening (3 in. or 4 in.) allows virtually all material to enter the casing unbroken. There is no triconing, grinding, or crushing of the formation. The soil is sampled, rather than drilled.

UNALTERED SAMPLE: As the drilling fluid is air rather than water, the sample is unaltered.

NO CONTAMINATION: The sample returns inside the casing and is therefore completely uncontaminated.

CONTINUOUS SAMPLE: The sample is continuous for the total length of the hole.

Because of the accurate sample, the Becker Hammer Drill has now become the accepted choice for geological sampling such as gravel exploration, borrow material for damsites, mineral exploration, placer exploration, etc.



BECKER HAMMER – TRUCK MOUNTED

APPENDIX D

FORMULAE USED IN APPENDIX A

I Column 9=

(Column 8 / Column 6) X Column 7 / 1000

II Column 10=

(Column 9 X 0.0321)

III Column 11=

(Column 3 X Column 10)

APPENDIX E

[illegible] - [illegible] DIVISION - B.C.

SUMMARY OF DIAMOND DRILLING

ATLIN [illegible], LTD. (N.P.L.) et al - 1939-40; 1945

Exh. "C"

14-5

Date Finished	Line No.	Hole No.	Elevation Surface	Elevation Bedrock	Depth - Ft. B.P.	Depth - Ft. Pot.	Depth - Ft. Per Hole	Au. Value	Recovered Value	Corrected Recovery	Au. Value	Principal Concentrations
10-20-39	1	1	3504.	3406.	98	105	99	150	14.1	150	16.7	10%-40°; Bal. 95-96°
11-10	1	2	3504.5	3424	84	102	85	460	41.5	460	60.0	33%-35°; 60% - 50°
11-25	2	3	3547	3579		97		Tr. (Slide natl. 50° to 70°)			Tr.	Lost s/c casing bent & broken by shooting.
11-27	2	4	3513	3616	1089	124	24	Nil	Nil.	Nil.	Nil	Sunk in bottom 103° shaft.
12-23	1	5	3503.	3420	83	88	84	1960	176.0	1960	258.0	8%-75°; Bal B.R.
1-18-40	1	6	3500	3412	88	94	89	201	18.2	201	25.2	10%-19°; 20%-75° Bal BR Quicksand 43 to 72°.
[illegible]-25	1	7	3508.5	3430.5	78	90	79	9.5	0.9	9.5	1.3	Scattered Dug.3437-3515
2-8-[illegible]	3	1	3464.5	3450	14.5	26	14.6	39	3.5	39	29.6	Near BR
2-12	3	2	3474.4	3443.4	31	39	31	20	1.8	20	7.8	" "
2-16	3	3	3470.3	3424.3	56	64.5	56	55	4.9	55	11.9	Mostly 45°
2-26	3	4	3473.7	3421.2	62.5	69	62.5	39	5.5	39	7.5	80%-35°; 20% - BR
3-19	3	6	3494.2			87.5	87.5	120	10.8	120	16.7	All-44.5-55.5. Hole lost s/c bent casing and collapsed shoe
3-[illegible]-40	3	7	3496.3	3384.8	113.5	117.5	115	473	42.6	473	50.4	All lower 2'
4-17	3	9	3512.5	3451.5	61.0	64.5	61	1		1	Tr.	
4-22	3	11	3525.8	3491.8	34.0	38.5	34	32	2.9	32	12.0	Mostly 30-34
4-27	3	6a	3491.7	3383.7	108	120	108	903	77.8	864.2	72.0	70% - 44 to 53.5 - Bal BR
7-4	3	8	3504.5	3443.8	60.7	76.	60.7	54	5.4	60	8.9	
7-7	3	5	3489.7	3384.7	105	111	105	147	14.5	160.6	13.7	
7-11	Extra		3461.	3378.	83.2	90	85	930	65.9	732.2	77.5	
5-[illegible]-40	A	4	3429	3326	136		136	325	29.3	312	21.5	
	A	5	3421	3327	100			Nil	Nil		Nil	
	A	3	3430	3316	111			Nil	Nil		Nil	
6-18	A	4	3426	3314	112	128		Tr	Nil		Tr	
6-[illegible]-40	A	6	3433	3335.5	97.7			235			21.7	
5-27-40	4	1			31	43		60			21.5	40% - 15° - 50% - 27°
5-30	4	2			29	39					Nil	
[illegible]-5	4	3			63	67		Tr			Tr	
[illegible]-[illegible]	4	4			89	93		345			43.1	70% - 78° - Bal BR
[illegible]-[illegible]	4	5			106	111.5		114			12.0	30% -94° - Bal BR
[illegible]-[illegible]-40	4	6				77		Tr			Tr	Unfinished hole
[illegible]-[illegible]-[illegible]	4	6a				89		50			6.8	
[illegible]-[illegible]	4	7				77.5		Nil			Nil	
[illegible]-11-[illegible]	4	8				95		248			28.5	

APPENDIX E

Otter Creek - Atlin Mining Division - B.C
Page #2

NOTES:

Value /u estimated at 0.09¢ per milligram equivalent to $35.00 per oz. Troy @ 800 fine
Union drill using 6-7/16" O.D. shoe and 4-7/8" I.D. casing used to 6-22-40.
Keystone 71 drill using: 7-½" O.D. shoe and 6" I.D. casing used for all other holes.
Values except lines 1 & 2 calculated using Keystone "27" factor of 136 for 6-7/16" shoe and 100 for 7-½" shoe.
Values line 1 & 2 calculated using straight factor of 119.5 for 6-7/16" shoe.
Calculations made by drill engineer.

25 Oct. 1946
San Francisco
A. F. D.

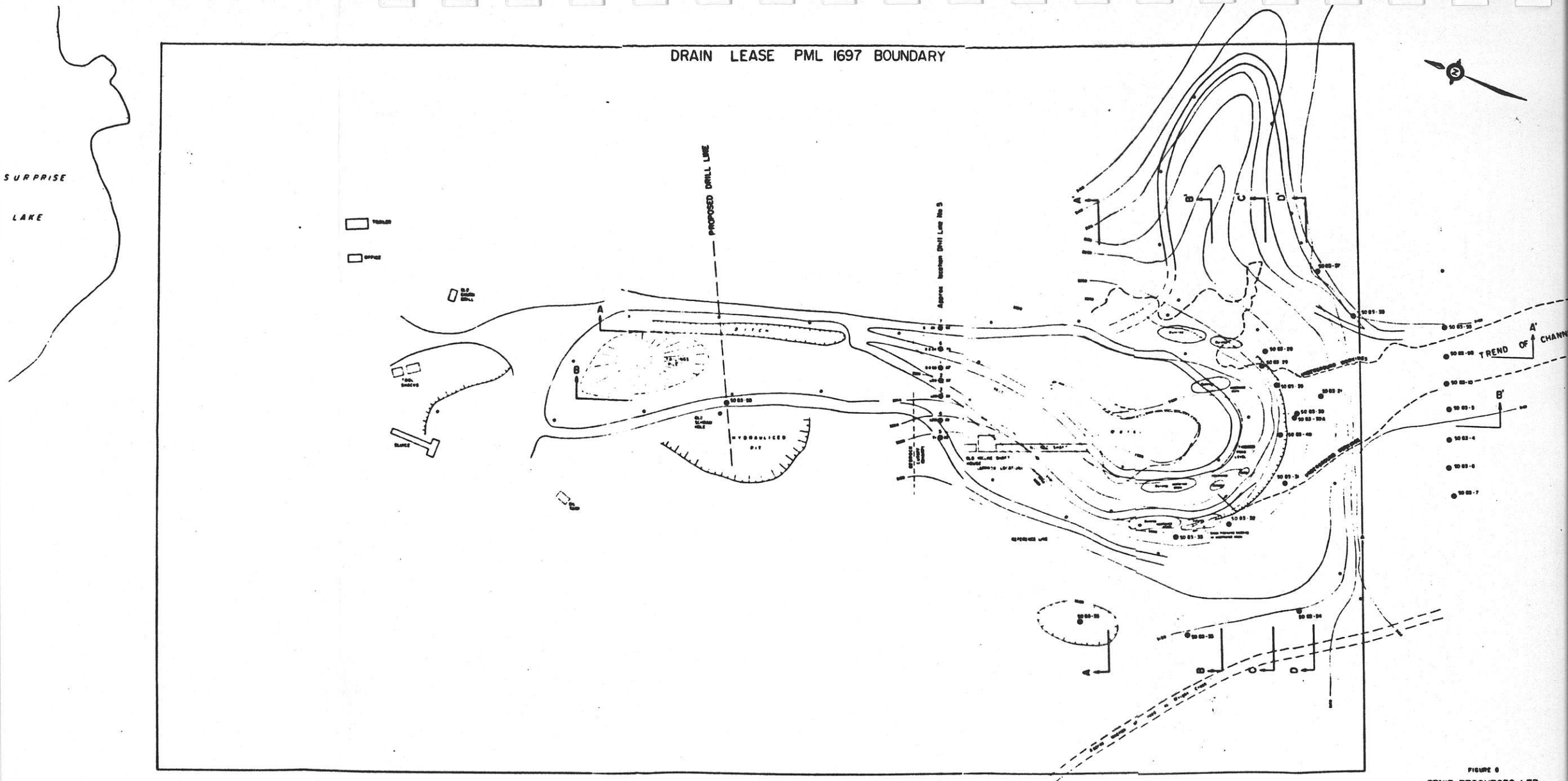


FIGURE 6

GENIE RESOURCES LTD

DRAIN LEASE

(PML 1697)

LOWER OTTER CREEK

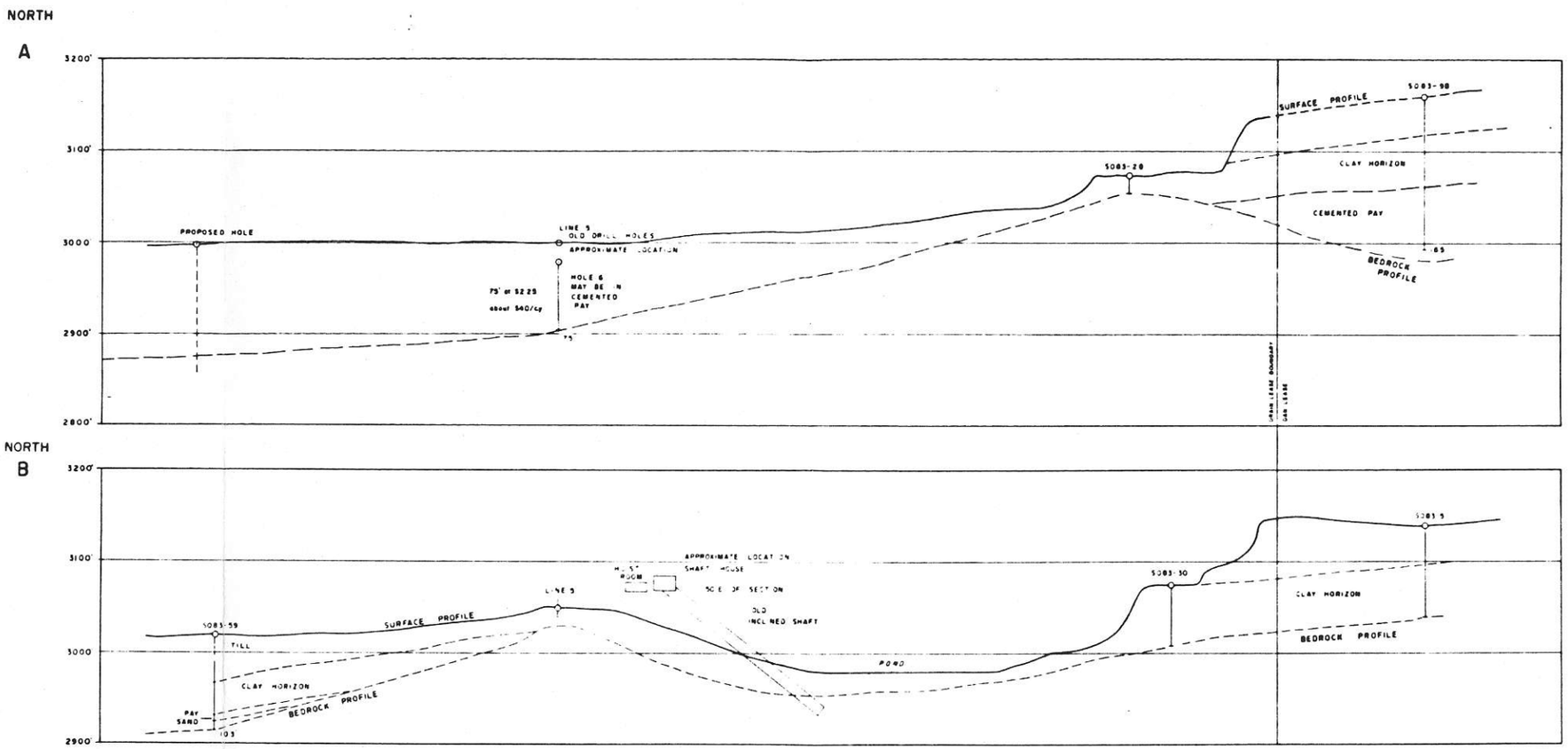


FIGURE 6A

GENIE RESOURCES LTD

DRAIN LEASE

(PML 1697)

LOWER OTTER CREEK

LONGITUDINAL SECTIONS

(SEE FIGURE 6)

LOOKING EAST

SCALE

FEET 50 100 150 200 250 FEET

DECEMBER 1983