REPORT ON EXPLORATION

CARRIED OUT DURING 1984

ON THE

LOUANNA PROJECT

THUNDER BAY DISTRICT

ONTARIO

LACANA MINING CORPORATION
October, 1984

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SUMMARY AND CONCLUSIONS

During 1984, the Canadian Minerals Joint Venture took an option from Cumo Resources on the Louanna Gold Mine property. An additional 14 claims, 6 miles to the east called the Culhane property, were included in the agreement.

The Louanna ore bodies consist of narrow, native gold and gold-telluride-bearing quartz veins with significant sulfide mineral content. The veins were mined predominantly by narrow shrinkage stope methods to avoid dilution, as the wall rocks are usually barren. Mining Corporation of Canada ran the mining operations and a 200 ton/day mill. The mill produced 10-20 oz./ton Au concentrate which was shipped to Pamour's mill in Timmins.

The Louanna ore bodies are confined to a band of east-striking, sheared and altered mafic to intermediate tuffs up to 120 feet wide called the Mine Unit. The Mine Unit tuffs lie within a sequence of massive to pillowed mafic to intermediate volcanic flows. The volcanics are cut by numerous diorite intrusions, one of which lies close to the north boundary of the Mine Unit. The tuff band has been the focus of strong shearing, intrusive activity (quartz-eye porphyries) and widespread alteration (silicification, sericitization and carbonate alteration). All three processes and ore genesis are strongly inter-related.

Early work by Lacana (1983) indicated that the mine stratigraphy was essentially untested along strike and to depth. During 1984, Lacana completed a program consisting of line cutting, detailed geophysics, geological mapping, 9,545 feet of diamond drilling and reinterpretation of old data.

The aim of the 1984 program was to develop a significant tonnage of gold reserves close to the mine workings and within 600 feet of surface. Other aims included exploring the Mine Unit along strike and to find similar geological settings elsewhere on the property.

A fence of shallow holes tested the Mine Unit for 1,000 feet east and west of the mine on 100-200 foot centres. This drilling indicated that the economic gold-quartz veins were best developed in the mine area and diminished short distances to the east and west.

Deeper surface holes east of the mine tested the Mine Unit at depth and the possible down-rake continuation of the ore bodies. These holes intersected an auriferous, sulfide horizon within the Mine Unit with erratic, though locally high, gold values (up to .23 oz./ton Au) over narrow widths. An anomalous chert unit (up to .03 oz./ton Au) occurs at the northern edge of the Mine Unit. The cherts increase in thickness, but decrease in gold content to the east.

The underground drill program was designed to test the Mine Unit on 50 foot centres in the 'Mine Area'. Many gaps occurred in the mine longitudinal sections. Early drilling developed a new stope, 2,700-260E, and added tonnage to 9,750-100W. Exploration drilling at the east and west ends of the workings outlined numerous, narrow, erratic and high grade (>0.50 oz./ton Au) quartz veins. Drilling to depth below the ramp indicated that the two mine horizons come together at depth and possibly rake east. Gold values in these holes were erratic and generally over uneconomic widths.

A model for ore genesis at the mine is included with this report.

The 1984 program essentially covered all information gaps in the mine longitudinal sections over a 900 foot strike length. Surface drilling tested the Mine Unit at shallow to intermediate depth for a 2,000 foot strike length.

Outside the mined areas, very little tonnage of reasonable grade (>.20 oz./ton Au over 5 feet) was outlined. The statabound auriferous zones east of the mine area are, at the present time, not ecnomomic. No further untested targets were found on the property.

It is recommended, on the basis of these results, that no further work take place on the property and the option be dropped.

INTRODUCTION

During March, 1984 Lacana, on behalf of the Canadian Minerals Joint Venture, made an agreement with Cumo Resources Ltd. to explore the Louanna Gold Mine property north of Nakina, Ontario. This gold property consists of 36 patented mining claims which are listed in Appendix 'A'.

The agreement carried a work commitment of $200,000 to be spent by the Joint Venture during the first year on the Louanna property, of which $75,000 was to be spent within the designated 'Mine Area' (Appendix 'B'). Fourteen unpatented mining claims, called the 'Culhane Property', were also included in the agreement (Appendix 'C'). A separate report dealing with exploration on that property occurs after this report.

During October, 1983, a property examination was made of the Louanna gold property. A two-man crew spent three weeks getting familiar with the mine geology and carrying out geological and geochemicl surveys. The surveys indicated that the potential for finding more gold ore along strike and,to depth at the Louanna mine was good.

The aim of the 1984 exploration program was to outline a significant tonnage of mineable gold reserves averaging better than 0.2 oz./ton Au within 600 feet of surface and close to the mine workings. Other aims were to explore the Mine Unit along strike and to find similar units elsewhere on the property.

LOCATION AND ACCESS

The Louanna Gold Mine is located on the west shore of O'Sullivan Lake, 20 miles north of Nakina, Ontario (Figure 1). An all-weather road services the mine from Geraldton, 60 miles to the south.

PREVIOUS HISTORY

Louanna Gold Mine has a history dating back to the 1940's. The main events are as follows (mainly from Chisholm, 1983).

1940: Original surface showing staked by J. Miller. Property optioned and drilled by McIntyre Porcupine Mines Ltd.

1945: Miller restaked property and optioned to Osu Lake Mines Ltd. Intensive drilling outlined gold values in tuff-quartz porphyry zone.

1947: Shaft sunk to 150 foot level. Work was suspended in 1948.

1950: Company organized as Lake Osu Mines Ltd. Second level developed at 300 feet. Work was suspended and property lay idle for next 10 years.

1960: Magnetometer survey over claims and 7,000 feet of surface diamond drilling.

1963: Louanna Gold Mine Ltd. was formed to acquire and develop the claims.

1964: Ten surface diamond drill holes for 6,000 feet.

1964-1965: Underground development on both levels and 7,600 feet of drilling.

1973-1974: Dewatering of shaft and improving buildings. Shaft deepened to 420 feet. 1,000 feet of lateral work on old levels. Underground drilling to 400 foot depth.

1974: Mattagami Lake Mines Ltd. completes major work program in O'Sullivan Lake area. Magnetometer and VLF surveys cover all but four mine claims. Four short surface holes to test anomalies east of the mine.

1979: Geological mapping, dewatering of shaft and underground sampling. Report by consultant W. A. Carter with tonnage estimate (probable, possible) of 113,129 tons averaging 0.352 oz./ton gold.

1981-1982: A feasibility study was made by E. P. Graham, consulting engineer, for Louanna. Using Carter's tonnage and

grade estimates, a ramp to the 300 level and 200 tons per day flotation mill were recommended. Ramp and mill construction went ahead. Milling started in February, 1982.

1982: Cumo Resources Ltd. entered into an agreement with Louanna and took over as operator.

1983: Mining Corporation of Canada Ltd. were contracted by Cumo to take over mining and milling operations basically as a salvage operation. Ramp finished in September, 1983 and mining began by shrinkage stope methods. Milling at 200 tons per day producing concentrate of between 10 and 25 oz./ton gold. Concentrate shipped by truck once a week to Pamour Mill, Timmins.

1984: Canadian Minerals Joint Venture makes an agreement with Cumo. Major work program including 6,000 feet of surface and 3,000 feet of underground diamond drilling.

Mining Corporation ceases production in October due to exhausted reserves. Production since Mining Corporation began was in the order of 64,000 tons grading between 0.15 and 0.25 oz./ton gold.

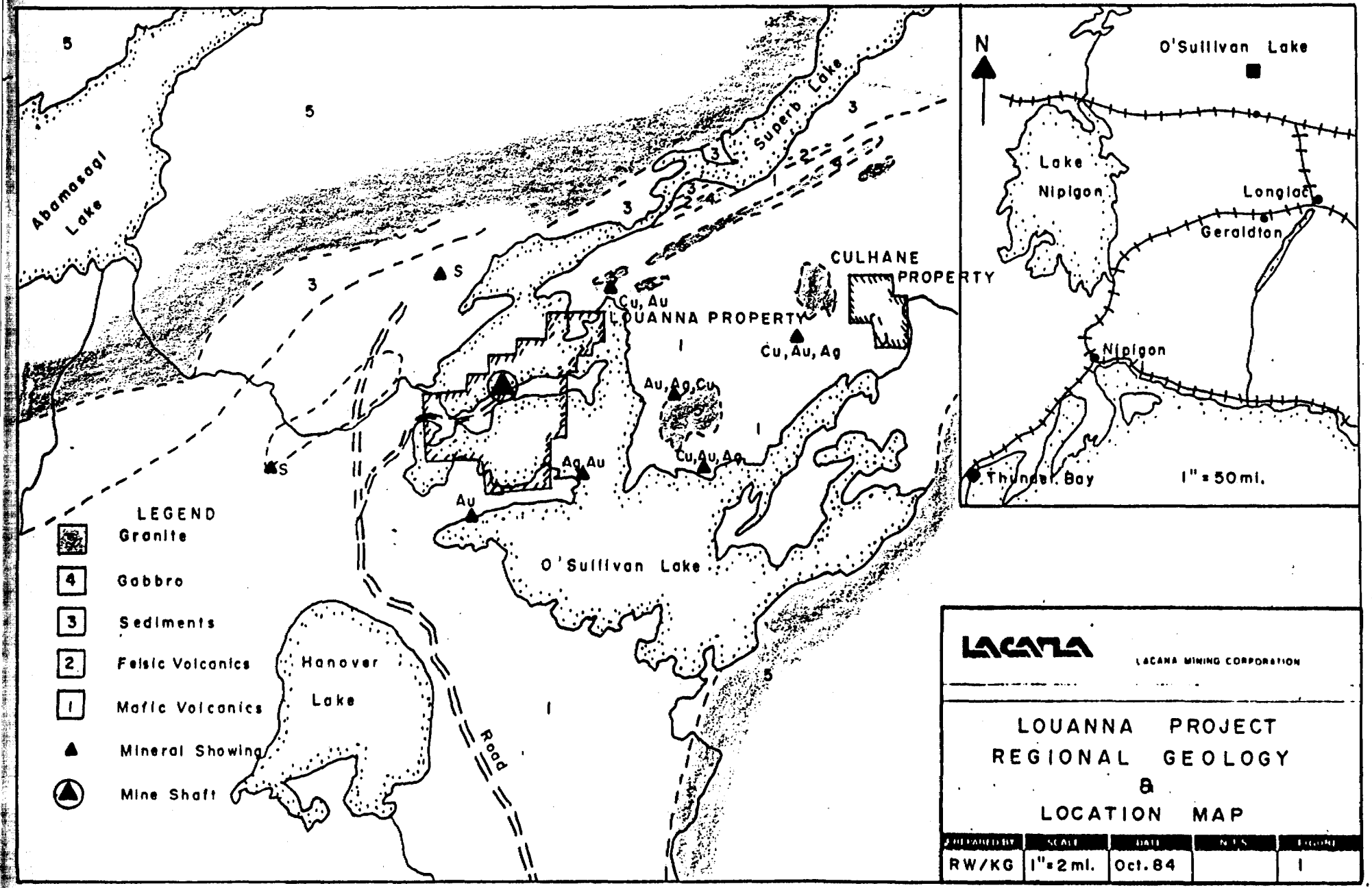
REGIONAL GEOLOGY

Geological mapping of the area has been conducted by both federal and provincial surveys. W. J. Wilson and W. H. Collins, G.S.C., (1904), P. E. Hopkins, O.D.M., (1916), L. F. Kindle, O.D.M., (1929, 1930) and W. W. Morehouse, (1955).

The area is underlain by Archaen metavolcanics and metasediments belonging to the Wabigoon Belt (Figure 1). Locally interbedded massive and pillowed mafic flows are overlain by a narrow belt of felsic to intermediate tuffs and metasediments (Superb Lake). The volcanics are locally intruded by sills, dikes and small stocks of gabbroic to granitic composition. Metamorphic grade varies from greenschist in the central belt to upper amphibolite adjacent to the granite bodies. All the rocks are sheared in an easterly direction bearing 065°-045°. A number of strong, northerly trending faults 010°-030° have been identified and assumed. Evidence of strong isoclinal folding with east-west axis has been reported from the north part of the belt.

The Louanna mine is the only gold producer in the O'Sullivan Lake area. Numerous gold showings occur in the area (Figure 1). Most are associated with narrow quartz veins in narrow shear zones at the margins of felsic intrusions and are of no economic importance.

The topography of the O'Sullivan Lake area is generally low lying. Away from the lake, fairly open, outcrop ridges are separated by densely vegetated alder and cedar swamps.



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LOUANNA PROJECT
REGIONAL GEOLOGY
& LOCATION MAP

PREPARED BY	SCALE	DATE	N.T.S.	FIGURE
RW/KG	1"=2mi.	Oct. 84		1

1984 LACANA WORK PROGRAM

A three-man crew was based on the Louanna mine property from March to August, 1984. R. Wells and C. Bishop for the full period, G. Murphy for the winter and J. Mucklow for the summer. The work program can be summarized as follows:

(1) FAMILIARIZATION WITH MINE GEOLOGY:
Correlation and compilation of all mine data into a useable format. Relogging of over 10,000 feet of old mine drill core and splitting numerous unsplit sections. Underground geological mapping in critical areas.

(2) GRID PREPARATION:
Over 10 miles of lines to cover an area 3,000 feet east and west of the mine.

(3) GEOPHYSICAL SURVEYS:
Detailed magnetometer and VLF electromagnetic surveys on the grid.

(4) GEOLOGICAL SURVEY:
Detailed mapping of the grid. Pospecting of areas not covered by grid.

(5) SURFACE DIAMOND DRILLING:
6,470 feet in 2 phases.

(6) UNDERGROUND DIAMOND DRILLING:
3,075 feet.

(1) MINE GEOLOGY AND BACKGROUND

The Louanna Mine is located on the northern shore of the Osulake Peninsula in the western part of O'Sullivan Lake (Figure 1).

During the 1984 work program, Mining Corporation was actively mining and milling, and a good working relationship was developed with them.

The underground workings at the mine basically consist of the two old levels at 150 and 300 feet and a number of new sub levels serviced by a ramp from surface (Figures 2.1 and 2.2). The ramp reaches a depth of about 300 feet and ends in a series of draw-points and a sump. All the workings are housed in an area 800 feet long by 400 feet deep and a maximum of 100 feet wide.

Prior to the 1984 exploration program, a fair amount of work (drilling, mapping and mining) had been done in this area, though it was patchy, with numerous information gaps. The strike and depth extensions of the Mine Unit had been tested by an insignificant number of holes.

Surface exposures of the mine geology are limited; most information comes from the underground workings and drill core. The mine geology is illustrated in a series of cross sections on Figures 3.1-3.5 and mine plans on Figure 2.1.

LEGEND FOR FIGURES 3.1 TO 3.5

--- Quartz vein or zone with Au

5 ------ Diorite

4 ------ Chert and cherty tuffs

3 ------ Quartz eye porphyry - including associated strong siliceous and sericitic alteration in wall rocks

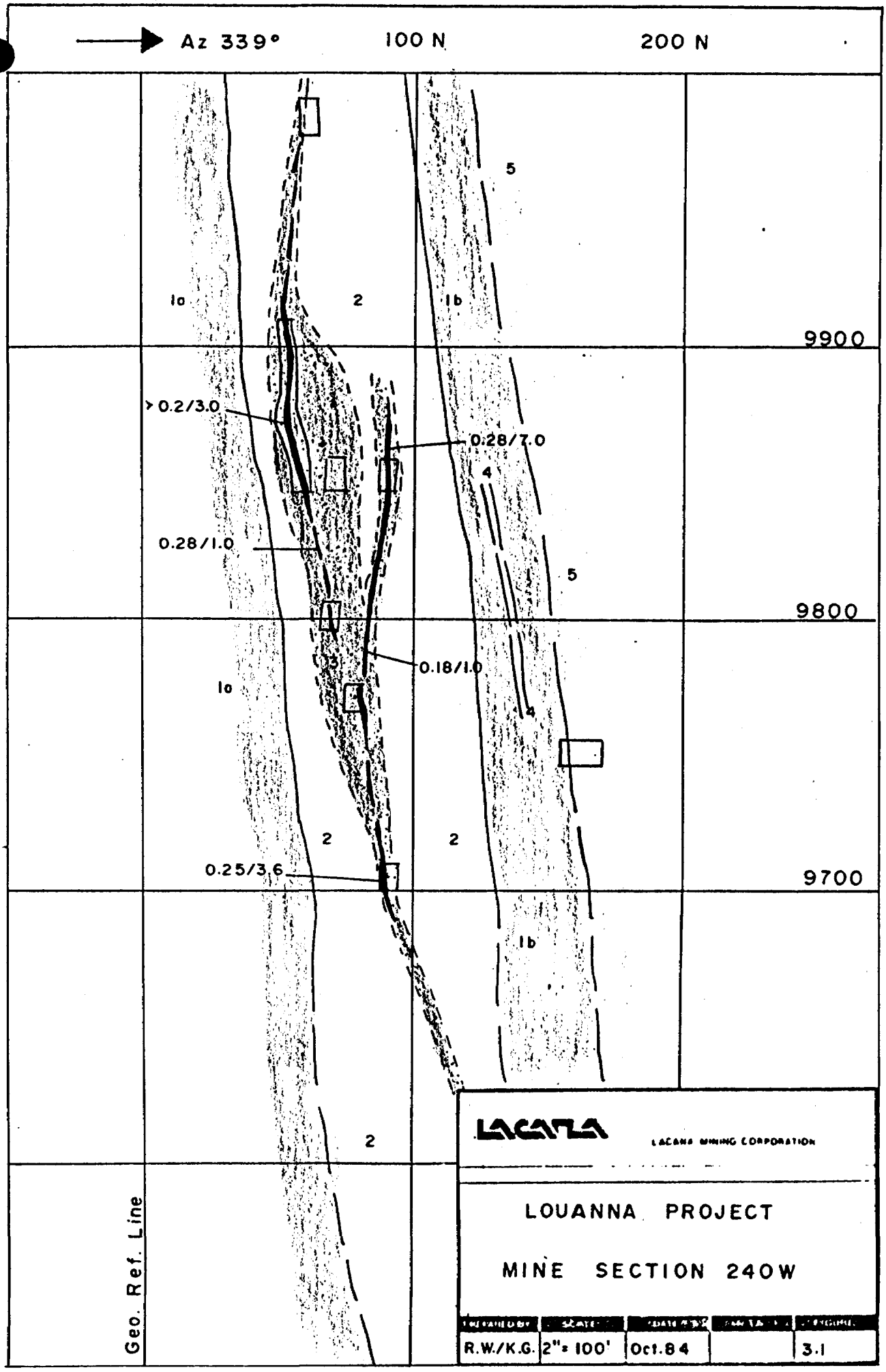
2 ------ Mine unit chloritic tuffs

1b ------ Andesitic tuffs - local massive andesite flows

1a ------ Basalt to andesite flows commonly pillowed

.25/3.6 - Representative intersection - Au oz./ton/ true with.


Mine workings


Az 339°
100 N
200 N
9900
9800
9700
0.2/3.0
0.28/7.0
0.28/1.0
0.18/1.0
0.25/3.6
1a
1b
2
3
4
5
Geo. Ref. Line
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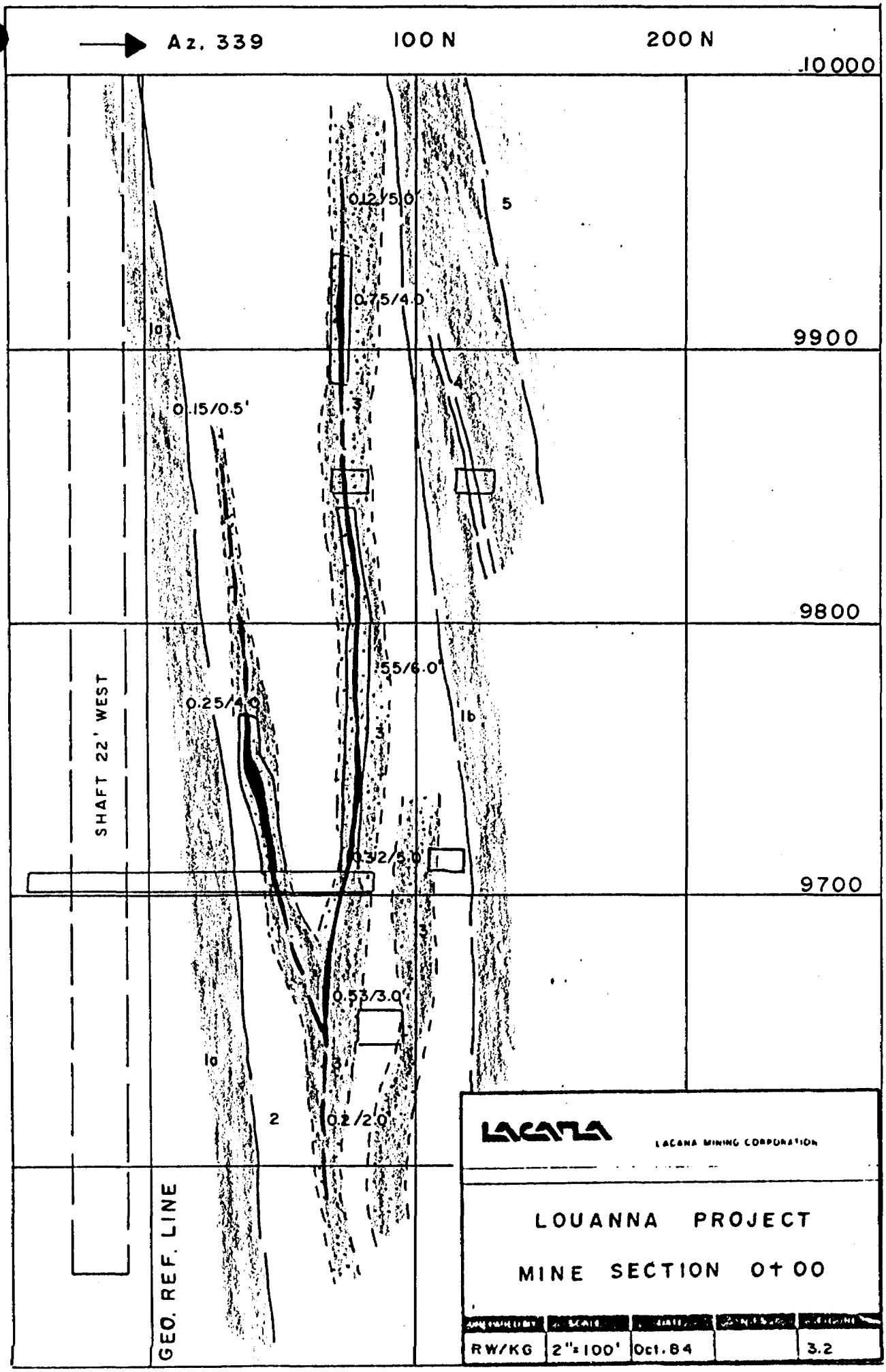
MINE SECTION 240W
R.W./K.G.
2" = 100'
Oct. 84
3.1


Az. 339
100 N
200 N
10000
9900
9800
9700
SHAFT 22' WEST
GEO. REF. LINE
0.12/5.0'
0.75/4.0'
0.15/0.5'
0.55/6.0'
0.25/4.0'
0.32/5.0'
0.53/3.0'
0.2/2.0'
5
4
3
2
1a
1b
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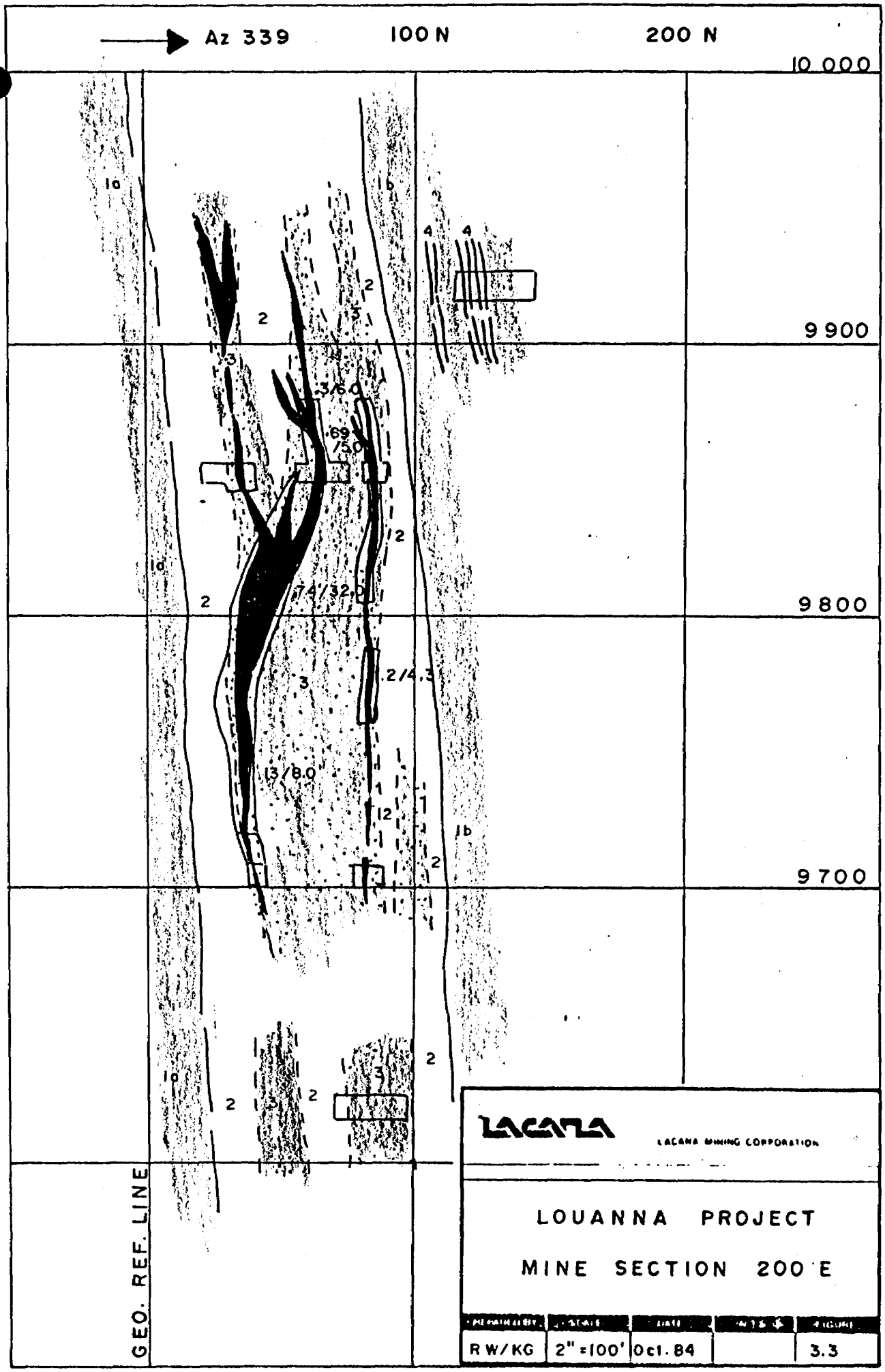
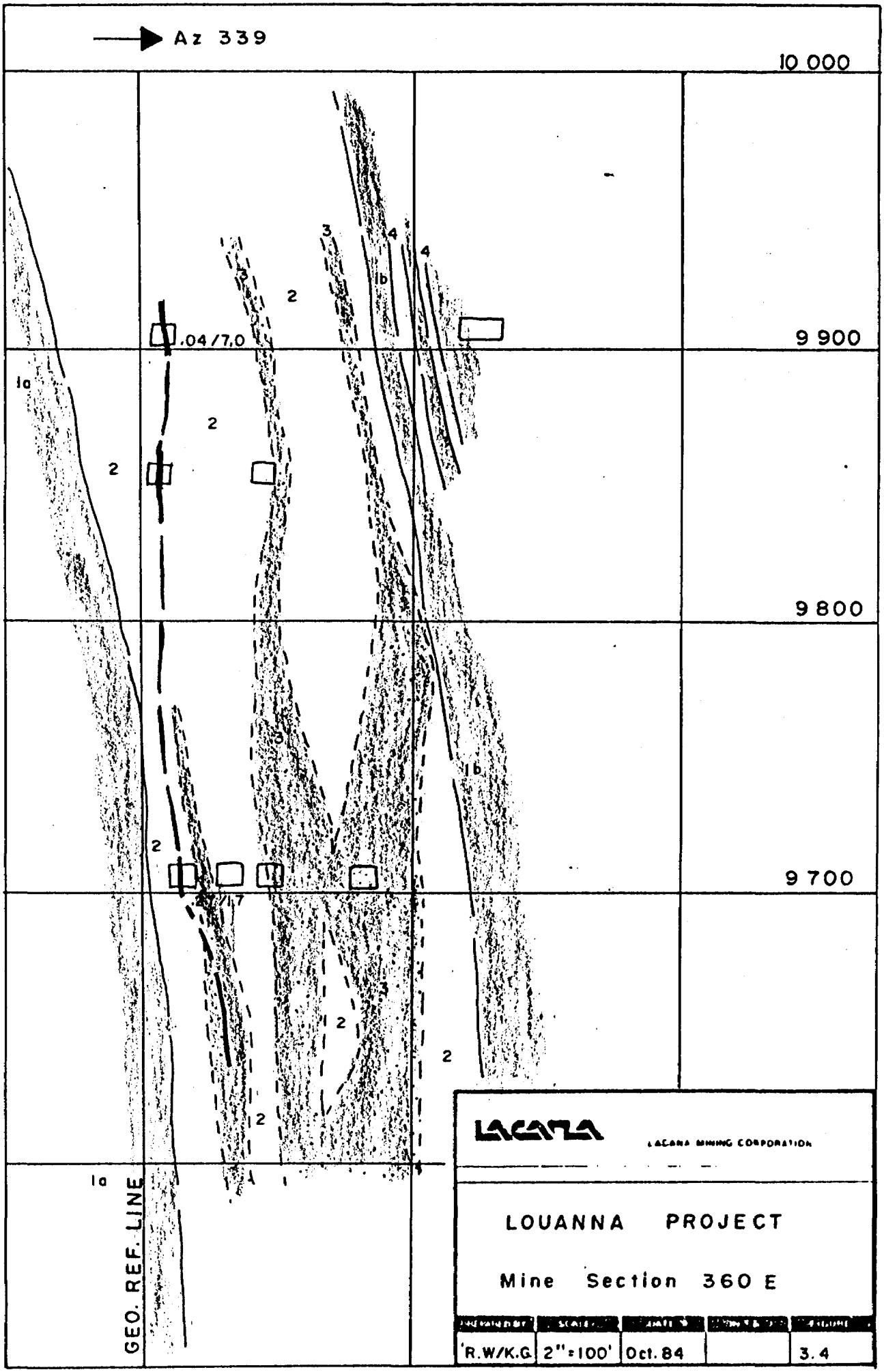
LOUANNA PROJECT
MINE SECTION 0+00
RW/KG
2"=100'
Oct. 84
3.2


Az 339
100 N
200 N
10 000
9 900
9 800
9 700
GEO. REF. LINE
LACANA
LACANA MINING CORPORATION
LOUANNA PROJECT
MINE SECTION 200 E
RW/KG
2" =100'
Oct. 84
3.3



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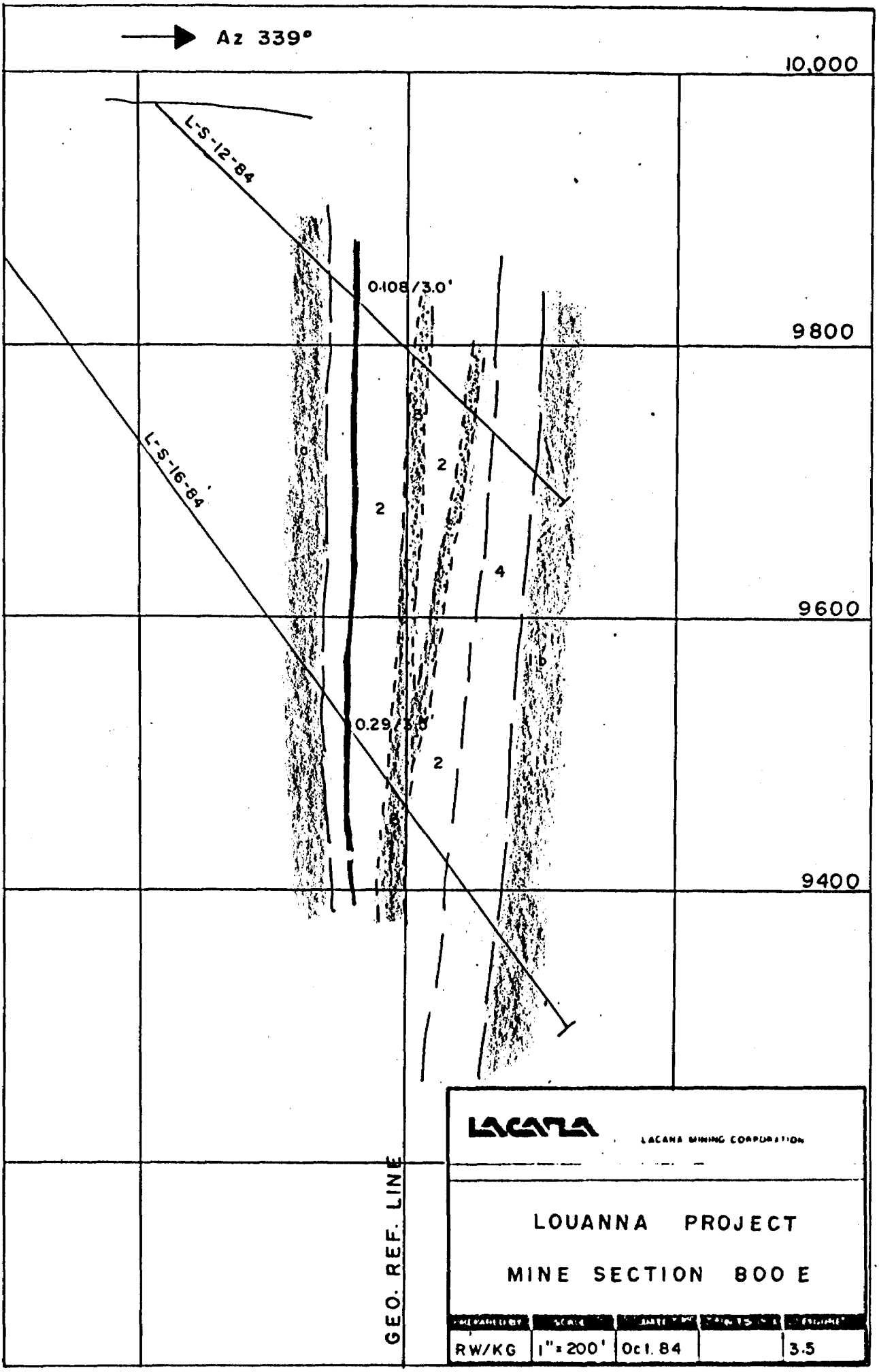
LOUANNA PROJECT

Mine Section 360 E

DRAWN BY	SCALE	DATE	REVISED	FIGURE
R.W/K.G	2"=100'	Oct. 84		3.4



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LOUANNA PROJECT

MINE SECTION 800 E

DRAWN BY	SCALE	DATE	REVISIONS	FIGURE
RW/KG	1" = 200'	Oct. 84		3.5

The Louanna ore bodies are confined to a band of sheared and altered, mafic to intermediate, tuffs (Mine Unit) up to 100 feet wide. These lie within a sequence of massive to pillowed andesite/basalt lows that strike easterly (060°-075°) and dip north (75°-90°). The tuff band has been the focus of strong shearing, intrusive activity and widespread alteration (silicification, carbonation and sericitization). All three processes and ore genesis are strongly inter-related.

The felsic intrusives are fairly homogeneous and commonly sheared - they feature quartz 'eyes' set in a quartz, sericite groundmass. As evident on Figures 3.1-3.5 and 2.1, the intrusives are highly irregular in size and shape, commonly anastomosing and lensy. Contacts with the chloritic tuff may be sharp or gradational with silicification and sericitization extending many feet from the intrusion.

Shearing within the Mine Unit is of two ages: The first set which controlled alteration, intrusion and to a large extent the location of the ore bodies, is roughly vertical at a slight angle to the tuff bedding (070°-075°). The second post ore set control late (barren) quartz veining and dip at shallow angles to the east. These shears may be responsible for the easterly rake of the ore bodies.

The ore bodies at the mine can be divided into two types: (1) quartz-eye hosted and (2) tuff hosted.

Both involve very distinct, gray to bluish, quartz vein material which is commonly brecciated and has a significant sulfide mineral content, locally up to 15%. Sulfide minerals include pyrite, pyrrhotite and arsenopyrite with lesser sphalerite (an ore indicator) and chalcopyrite. Gangue minerals include quartz, tourmaline (an ore indicator), carbonate and sericite. Gold is generally free and fine or as a gold telluride (with silver).

(1) Quartz Eye (Intrusive-Alteration) Hosted

These are gray quartz veins and vein complexes generally at the margins of the schistose felsic intrusions. They have sharp to gradational contacts and may be a few inches to over 20 feet wide (Figure 3.3, 220E stope). Ore bodies of this type are commonly lensy and of good grade, averaging 0.25 opt Au and better (220E stope commonly 1.0 opt Au).

(2) Tuff Hosted

These gray quartz veins have sharp contacts and little wall rock alteration and mineralization (low grade values). The veins are more consistent and may be uniform width over 100 foot strike length and 100 foot depth (much of North Horizon, Figure 2.1). Veins vary from 1-5 feet in width and are of lower average grade (0.1-0.5 opt Au) and sulfide content (<5%) than the quartz-eye-hosted.

Along strike, changes from one type of ore body to another are common. The two types of ore body are both stratabound, being confined to the Mine Unit tuffs.

In the western and central parts of the mine, there are two distinct horizons within the Mine Unit at which ore bodies occur (North and South Horizons). These are shown on Figure 2.1.

In the eastern part of the mine, the two horizons are further apart and are separated by a number of middle zones.

The lateral and vertical continuity of all these zones was tested by the 1984 drill programs; these are described in later sections.

(2) GRID PREPARATION AND GEOPHYSICS

During March, a large grid was prepared by Lacana staff to cover the possible strike extensions of the Mine Unit for over 3,000 feet east and west of the mine. The grid featured 100 foot spaced lines (Az 339°) with 50 foot spaced stations (Figure 4). The grid was used for detailed magnetometer, VLF electromagnetic surveys, geological mapping and drill hole control. (The base line is the same as the mine geological reference line). All surveys were conducted by Lacana personnel.

For the magnetometer survey, an EDA PPM 300 was used as the survey instrument, with an EDA PPM 400 base station recorder for continuous data correction. For the VLF survey, a Crone Radem VLF was used. As north and east striking structures occur in the area, the VLF survey was run in two directions (69° and 339°), with good results.

The main magnetic and VLF features are compiled into a single diagram; Figure 4. The variable rock types within the Mine Unit and adjacent to it give a fairly distinct magnetic signature, featuring a series of narrow, parallel, weak, highs and lows with easterly strike (Az 075°). This magnetic signature can be traced for over 3,000 feet to the west and 1,500 feet to the east (Figure 4) of the mine. There are a number of strong, north trending, magnetic features (diabase dikes) and VLF features with similar trend (probably fault zones). Offsets of the Mine Unit (magnetics) and east trending, VLF features, can be observed along these north trending structures and dike healed structures. Magnetic 'plateaux' areas represent the main diorite intrusives. Weak, east trending VLF features commonly, but not always, represent their margins.

The magnetic and VLF data was a very valuable guide during the early surface, exploration, drilling to the west of the mine.

(3) GEOLOGICAL MAPPING

During June, detailed geological mapping was conducted over the winter geophysical grid. The results are summarized on Figure 5. The geological mapping generally agreed well with the geophysics (Figure 4).

To the west of the mine, the Mine Unit trends 075° and disappears beneath the lake at 4W-6W. The Mine Unit can be traced by poor exposures on a number of islands for over 3,000 feet to the west.

The quartz eye felsic intrusives at the mine pass south out of the Mine Unit (at surface) at 6W-8W (trend 065°) into foot wall, pillowed basalts. Within the basalts, the intrusives have very sharp contacts and contain very little quartz vein material. On the shore line, at 9W, the intrusives within pillow lavas are highly irregular (lensy, anastomosing) and locally strongly sericitic with fine to coarse, cubic pyrite (0.04 opt Au, 1983).

At Fish Point, 3,000 feet west of the mine, good exposures of north striking, thinly bedded, tuffs and cherty tuffs occur. North trending, quartz eye, feldspar, porphyry dikes with irregular, interfingering contacts occur in this area. Numerous white quartz veins fill east trending tension gashes within the dikes. It is possible that the sequence at Fish Point may represent the Mine Unit in the nose of a fold. Very low gold values were obtained from a number of samples taken in the area.

To the east of the mine, outcrops are fairly sparse and no exposure occurs of the Mine Unit. An east trending quartz eye, felsic dike occurs east of 30W where it cuts massive to schistose diorite. It is possible that this may represent an easterly continuation of the mine's felsic intrusions.

A large diorite intrusion lies north of the base line between 15W and 15E. East of 15E, the inrusive contact trends more southerly and very probably cuts out the Mine Unit in this area.

The geological mapping, in conjunction with drill results, indicated that major exploration east of 15E and west of 10W was not warranted.

(4) SURFACE DIAMOND DRILLING

The 1984 surface diamond drilling program was designed to test the favourable Mine Unit east and west of the mine, outside the 'mine area'. A total of 6,470 feet were drilled. Details of the drilling can be obtained from Table 1, longitudinal sections (Figures 6.1 and 6.2) and the location of the holes are shown on a geological plan (Figure 5). The drill program was in two phases.

Phase 1 (Total 3,253 feet)

Drilled by Kenora Diamond Drilling Ltd. Involved a fence of shallow holes on 100-200 foot centres from 1300W-1000E. These holes tested the Mine Unit at 100-200 feet vertical depth. Four short holes were drilled in the crown pillar in an area inaccessible from underground (development drilling).

Drill holes SL-1-SL-5 and SL-14 were drilled west of the mine. Narrow quartz veins and siliceous-sericitic alteration zones were intersected in the Mine Unit out to 1000W. Gold values were generally very low, with the exception of SL-1 (5+50W) with 0.18 opt Au over 3 feet. Hole SL-5 at 1300W intersected the Mine Unit, but alteration, quartz veining and gold values were noticeably absent.

Drill holes SL-11-SL-14 tested the Mine Unit east of the mine. Deeper, sandy overburden up to 60 feet thick was encountered in this area. The holes outlined two auriferous stratabound zones in the Mine Unit between 500E and 1100E. A sulfide rich zone, 3-5 feet wide with minor, brecciated, gray quartz and up to 10% pyrrhotite, pyrite and arsenopyrite, occurs close to the southern edge of the Mine Unit (Figure 3.5). The zone yielded assays from 0.036 opt Au over 2 feet to .108 opt Au over 3 feet. The second anomalous zone occurs at the northern edge of the Mine Unit in a sequence of thick chert beds and tuffs. The best values were obtained in hole SL-11 with .03 opt Au over 5 feet and >200 ppb Au over 15 feet.

Holes SL-6-SL-9 were drilled in the crown part of the mine between 160W and 300W above the 9850-200W stope (Figure 6.1). All the holes intersected gray quartz veining (North Horizon) with gold values ranging from .05-0.13 opt Au over 2.0-6.0 feet. The better values occurred above the west end of the stope and developed a small, mineable tonnage.

Phase 2 (Total 3,217 feet)

Drilled by Tindale Drilling Ltd.

Involved a short fence of deeper holes below SL-11-SL-14 east of the mine. These holes tested the Mine Unit at 400-600 feet depth. Holes SL-15 and SL-16 intersected the two auriferous stratabound zones, SL-17 only one (cherts). The sulfide zone was best developed in SL-16 with 0.15 opt Au over 7 feet, in SL-15, .075 opt Au over 5 feet and very low values in the easternmost hole, SL-17.

Anomalous cherts were present in all three holes, but values were generally below 500 ppb Au.

SL-18 (1400W) was drilled west of the mine to test an easterly-trending, VLF anomaly (Figure 4) which has over 2,000 foot strike length and is completely water covered. The hole intersected weak pyrrhotite mineralization at a diorite-andesite contact below the anomaly.

(5) UNDERGROUND DIAMOND DRILLING

The underground drill program was conducted by Kenora Diamond Drilling Ltd. from April to August, 1984, with a total of 3,075 feet. The program was designed to test obvious gaps in the mine longitudinal sections in areas not being mined and the auriferous mine horizons on 50 foot centres (to depth and along strike) wherever possible. Deep drilling was limited to a large extent by lack of drill stations far enough away from the targets to intersect at a reasonable angle. The positions of all underground holes were surveyed by Mining Corporation. Details of the drilling can be obtained from Table 2, longitudinal sections (Figures 7.1 and 7.2) and level plans (Figure 21.2).

Diamond drill holes LUG-1-84 to LUG-12-84 were essentially production holes aimed at increasing tonnage in active or semi-active stopes. LUG-13-84 to LUG-34-84 were exploration holes testing the mine horizons on 50 foot centres.

LUG-1-84 to LUG-6-84 helped to outline a new stope, 9700-260E (Figure 7.1) from which 1,700 tons were eventually mined with an average grade between 0.1 and 0.2 opt Au. An important point noted by the mine geologist early in our program, was that drill intersection values generally gave a reasonable estimation of average grade but were usually slightly lower, rather than higher, than the 'mined' value.

LUG-7-84 and LUG-8-84 marginally increased tonnage of the 9700-220E stope. LUG-9-84 and LUG-10-84 intersected high grade material averaging over 0.7 opt Au and Ag and added at least 400 tons to the 975-100W stope. LUG-1184 and LUG-12-84 did not increase tonnage in the 9650-100W stope.

The first 12 holes contributed approximately 3,000 tons (allowing 20% dilution) to mineable reserves.

Exploration holes, drilled at the west end of the mine workings (LUG-15, 16, 17, 21 and 22-84) yielded negative results with either low values or narrow, inconsistent, widths (LUG-16-84, 0.8 opt Au over 2.7 feet).

Exploration holes drilled at the east end of the mine workings (to -300 feet depth), such as LUG-13-84, indicated that a number of fairly isolated, high grade veins were present. Deeper holes (-300 to -400 feet depth), such as LUG-18, 19, 20, 30, 31, 32, 33 and 34-84, showed a marked increase in the width of intrusives, alteration and quartz vein development.

The North Horizon in this area is poorly developed (LUG-18-84 to LUG-20-84) with low gold values.

The South Horizon (LUG-31-84 to LUG-34-84) yielded values from 0.1-0.44 opt Au over 2-3 feet. The better development of the South Horizon to depth (raking east?) prompted the drilling of deep surface holes in the area (see previous section).

A fence of 7 holes, testing deeper mine levels (-400 to -450 feet), was drilled from the bottom of the ramp (LUG-23-84 to LUG-29-84). In this area, the North and South Horizons have merged to become a single zone of gray quartz of variable width and gold content. The best intersection (0.38 opt Au over 4 feet) was obtained in LUG-25-84. Values in adjacent holes were lower, with 0.12 opt Au over 3.5 feet.

The underground exploration drill program did not encounter any significant tonnage of economic, gold mineralization based on current prices.

DISCUSSION

The Louanna ore bodies are confined to a 1,000 foot strike length of the Mine Unit tuffs from 500W-500E and to shallow depth, generally less than 400 feet. Within this area occur a number of epigenetic, quartz vein zones; outside there are very few veins and the style of mineralization is very different.

Two semi-continuous, subparallel quartz vein zones, the North and South Horizons, seem to follow strong shear zones within the tuffs in the mine area. These zones merge at 350 foot depth in the central part of the mine. The distance between the zones (Figure 2.1) increases toward the east with a number of narrower, but higher, grade quartz veins forming Middle Zones. Besides the quartz veins, the shear zones also controlled the location of felsic intrusive rocks (quartz eye units) and strong alteration such as silicification, sericitization and carbonation. An important point to note is that the quartz vein systems are nearly always in some way associated with the felsic intrusives (quartz eye porphyry). They occur at their altered margins, within them, or off their ends in strong alteration zones.

The better ore bodies in the mine occur in the 200E area (Figure 3.3), such as the 220E stope. In this area, the quartz vein systems bulge out to abnormal width and have better than average mine grade (>.25 oz./ton Au).

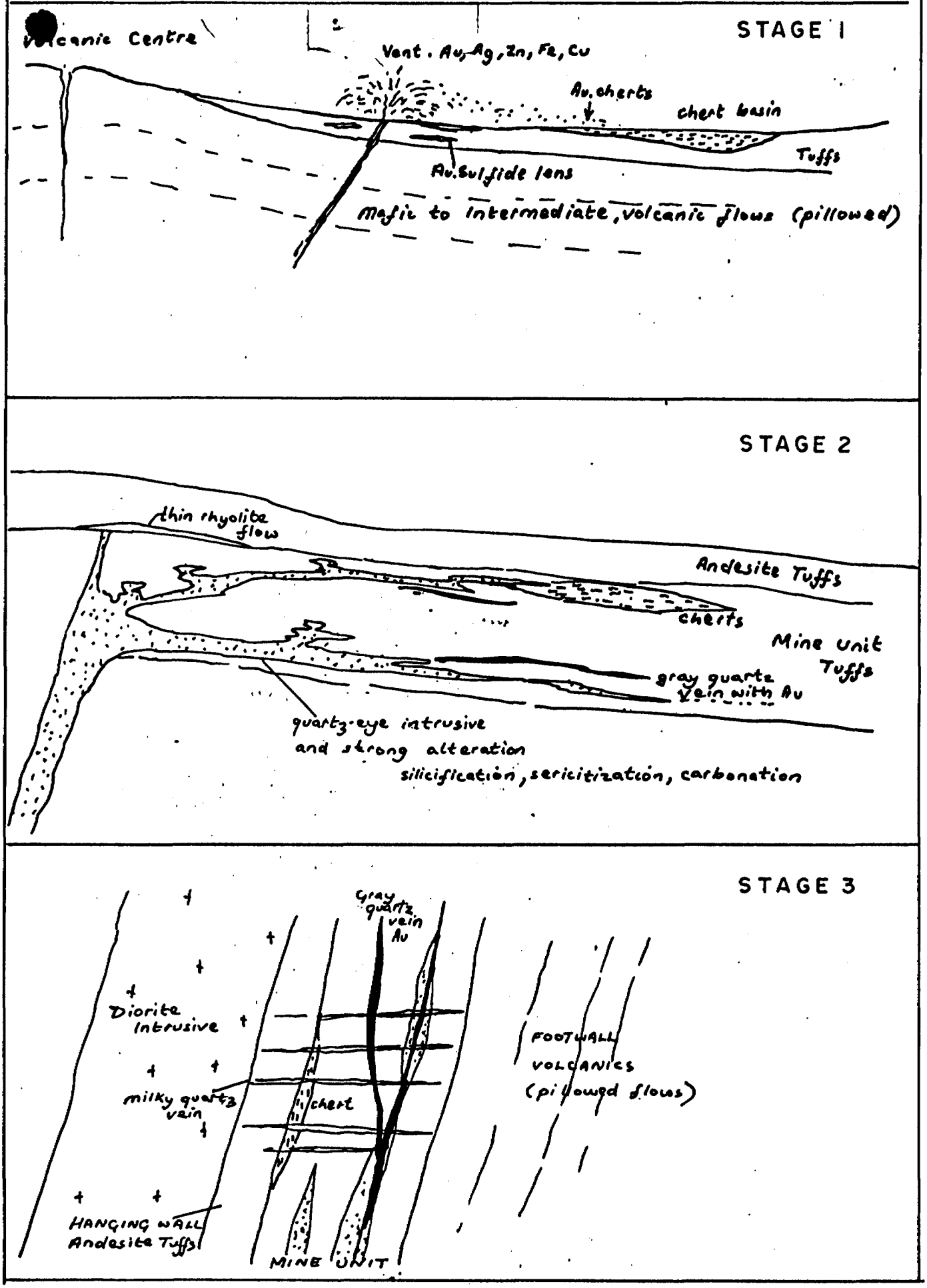
Another feature of this area are the abnormal concentrations of sulfide minerals in the host tuffs (5% to 10%+). The sulfide-rich tuffs adjacent to gold-quartz veins may in these areas yield gold values up to .15 oz./ton.

A genetic model was developed for the Louanna ore bodies during the field program. It is felt that the model, with slight modifications, still holds good and can explain most features at the mine. The model is illustrated on Figure 8 and explained as follows:

STAGE 1 - Mafic to intermediate volcanic centre. Exhalative activity from a single or number of closely spaced vents introducing Cu, Fe, Zn, Au and Ag into the environment. Development of auriferous sulfide-rich zones/layers within tuffs in proximal areas to vents and pyritic cherts (locally auriferous) in more distal basins.

STAGE 2 - Later felsic stage to the volcanic cycle with widespread early fracturing followed by intrusion of quartz eye dikes/sills. Extrusion of thin rhyolite flows where magma reaches the surface. The heat from the magma drives hot brines which scavenge Au, Ag and base metals from sulfide and chert units. Brines follow fracture 'plumbing system' in tuffs, causing widespread alteration and depositing of Au and base metals with gray quartz in favourable locations.

FIGURE 8. Genetic model for Louanna orebodies.



STAGE 3 - Rotation to near vertical dip during folding. Introduction of late stage, barren, milky quartz veins along gently dipping fracture zones possibly related to diorite intrusion.

The model, as it stands, puts strong limitations on tonnage potential and lateral continuation of ore bodies at Louanna.

Any potential lies in locating a much larger or more auriferous vent system within the tuffs.

APPENDIX "A"

LOUANNA PROJECT

LIST OF MINING CLAIMS

APPENDIX "A"

LOUANNA PROJECT

The property consists of 36 patented mining claims in the Thunder Bay Mining Division, as follows:

KK 3341	KK 3348	KK 3347	KK 3340	KK 3342
KK 3346	KK 3339	KK 3200	KK 3201	KK 3202
KK 3203	KK 3338	KK 3345	KK 3350	KK 3344
KK 3337	KK 3204	KK 3205	KK 3352	KK 3353
KK 3207	KK 3206	KK 3336	KK 3343	KK 3351
KK 3335	KK 3334	KK 3199	KK 3354	KK 3355
KK 3356	KK 3357	KK 3358	KK 3359	KK 3349
KK 3360				

APPENDIX "B"

LOUANNA PROJECT

DEFINITIONS

APPENDIX "B"

LOUANNA PROJECT

DEFINITIONS

Description of Mine Area and Existing Ore Blocks

1. The 'Mine Area' is descibed as follows:

The area within 100 feet east of the easternmost present underground working, being more or less 5+00 east on the present mine sections, using the present mine survey grid and 100 feet west of the westernmost underground working, being more or less 5+00 west on the same grid and extending from surface to the 9200 foot level on the same grid, or approximately 280 feet below the bottom of the vertical shaft. The width of this area shall be the width of the 'Mine Series' on host ore horizon and is approximately 200 feet. The zone shall extend from surface down the geologic dip of this unit.

2. The 'Existing Ore Blocks' are described as follows:

Those ore blocks existing within the following boundaries as indicated on existing mine survey sections of the north and south horizons dated February 18, 1984, more fully described as follows, using mine survey grid coordinates:

Appendix "B" - Continued

From 10,000 ELEV (surface), 360 west to 10,000 ELEV (surface), 240 west lot, thence to 9900 ELEV, 240 west, thence to 9900 ELEV, 80 west, thence to 10,000 ELEV (surface), 80 west, thence to 9950 ELEV (surface), 320 east, thence to 9800 ELEV, 320 east, thence to 9800 ELEV, 360 east, thence to 9650, 360 east, thence to 9650, 200 east, thence to 9600, 200 east, thence to 9600, 040 west, thence to 9650, 040 west, thence to 9650, 200 west, thence to 9800, 200 west, thence to 9800, 360 west, thence to 10,000 (surface), 360 west.

APPENDIX "C"

LOUANNA PROJECT

CULHANE PROPERTY

APPENDIX "C"

LOUANNA PROJECT

CULHANE PROPERTY

Fifteen unpatented mining claims in the Thunder Bay Mining Division of the Province of Ontario, recorded in the names of Patrick Culhane and Ozias Theriault, and described as follows:

CLAIM NUMBER	AREA AND MAP NUMBER	ACRES
TB 631507	MAUN LAKE M 1416	40
TB 631699	MAUN LAKE M 1416	40
TB 631502	MAUN LAKE M 1416	40
TB 766516	MAUN LAKE M 1416	40
TB 766517	MAUN LAKE M 1416	40
TB 766518	MAUN LAKE M 1416	40
TB 631501	MAUN LAKE M 1416	40
TB 766519	MAUN LAKE M 1416	40
TB 603178	MAUN LAKE M 1416	40
TB 603177	MAUN LAKE M 1416	40
TB 631700	MAUN LAKE M 1416	40
TB 603176	MAUN LAKE M 1416	40
TB 766527	MAUN LAKE M 1416	40
TB 766524	MAUN LAKE M 1416	40
TB 766526	MAUN LAKE M 1416	40
TOTAL 15		600

APPENDIX "D"

LOUANNA PROJECT

TABLES

TABLE 1
APPENDIX "D"
LOUANNA PROJECT

SUMMARY OF 1984 DIAMOND DRILLING - SURFACE

HOLE NO.	ANGLE°	LENGTH IN FEET	POSITION (1984 GRID)	INTERSECTION FOOTAGE Au oz./ton	ACCUMULATED TOTAL
SL- 1-84	-55	257	5+50W 2+50N	138.0-141.0/ .175	257
SL- 2-84	-55	267	5+50W 3+50N	LOW VALUES	524
SL- 3-84	-55	345	7+00W 2+50N	84.0-87.0/ .038	869
SL- 4-84	-55	214	8+50W 3+00N	LOW VALUES	1,083
SL- 5-84	-55	182	13+20W 2+75N	LOW VALUES	1,265
SL- 6-84	-60	87	1+89W 1+27N	44.0-53.0/ .013	1,352
SL- 7-84	-45	90	1+10W 1+20N	50.0-55.4/ .055	1,442
SL- 8-84	-60	92	1+10W 1+20N	70.8-73.2/ 0.167; 78.8-81.8/ .105	1,534
SL- 9-84	-56	108	0+57W 1+22N	89.5-92.5/ 0.046	1,642
SL-10-84	-55	146	6+00E 2+00S	HOLE ABANDONED	1,788
SL-11-84	-45	440	6+00E 2+00S	275.0-277.0/ .036; 339.0-340.0/ .04	2,228
SL-12-84	-45	430	7+64E 1+85S	210.4-213.4/ .108	2,658
SL-13-84	-45	394	10+00E 1+50S	49.5-51.5/ .032; 53.5-56.0/ .042	3,052
SL-14-84	-45	201	3+85W 0+24N	LOW VALUES	3,253
SL-15-84	-55	970	6+60E 4+00S	653.5-656.01/ .05; 656.0-658.5/ .108 737.0-745.5 CHERTS UP TO 480 PPB; 583.0-586.5/ .06; 586.5-590.0/ .29;	4,223
SL-16	-55	860	8+00E 4+00S	593.5-597.0/ .03; 765.0-768.0/ 121 PPB	5,083
SL-17-84	-55	8,385	10+00E 4+10S	LOW VALUES	5,921.5
SL-18-84	-45	545	14+00W 3+40S	NO VALUES	6,470.5
				TOTAL	6,470.5

TABLE 2
APPENDIX "D"
LOUANNA PROJECT

SUMMARY OF 1984 DIAMOND DRILLING - UNDERGROUND

HOLE NO.	TARGET	INTERSECTIONS, FOOTAGES (Au oz./ton)	LENGTH	AZIMUTH	ANGLE	ELEVATION	MINE SECTION	TOTAL (FEET)
LUG- 1-84	N ZONE	66.0-71.0(.10)	78	300	+35	9708	220E	78
LUG- 2-84	N ZONE	11.0-16.0(.175) 16.0-21.0(.054) 21.0-26.0(.034)	69	339	+35	9711	260E	147
LUG- 3-84	N ZONE	12.0-15.1(.125) 15.1-18.7(.06) 29.0-32.5(.09)	72	334	+45	9708	310E	219
LUG- 4-84	N ZONE	13.0-17.0(.16) 17.0-21.0(.042) 34.-39.0(.066)	53	334	+55	9708	310E	272
LUG- 5-84	N ZONE	23.0-26.0(.08) 30.0-32.0(.02) 34.0-38.0(.026)	50	334	-45	9849	255E	322
LUG- 6-84	N ZONE	LOW VALUES	67	345	-42	9850	300E	389
LUG- 7-84	M & S ZONES	26.0-28.0(.192) 44.0-48.5(.015)	62	166	-35	9851	300E	451
LUG- 8-84	S ZONE	19.-22.0(.04) 25.0-26.5(.034)	56	150	-65	9848	150E	513
LUG- 9-84	S ZONE AT ANGLE	6.0-15.0(1.0) 24.0-25.0(.104)	59	118	-32	9858	180W	569
LUG-10-84	S ZONE	7.0-9.5(.125) 26.0-28.0(.10) 31.8-34.0(.782	54	148	-55	9867	220W	623
LUG-11-84	S ZONE	NO SIGNIFICANT VALUES	44	157	-38	9749	180N	667
LUG-12-84	N ZONE	54.5-56.2(.118) 69.3-71.0(.106) 74.6-75.6(.505)	83	139	+39	9755	180N	756
LUG-13-84	N & S ZONES	140.8-142.8(.433) 190.5-192.5(.052) 196.7-198.7(.566)	210	134	-52	9859	350E	916
LUG-14-84	N & S ZONES	115.5-118.6(.016)	152	351	-55	9678	160W	1,118
LUG-15-84	S ZONE	NO SIGNIFICANT VALUES	72	169	-47	9799	435W	1,150
LUG-16-84	N & S ZONES	42.0-44.7(.80)	84	158	-30	9795	320W	1,274
LUG-17-84	N & S ZONES	NO SIGNIFICANT VALUES	72	223	-28	9803	320W	1,346
LUG-18-84	N ZONE		142	340	-45	9700	347E	1,488
LUG-19-84	N ZONE		165	352	-50	9700	390E	1,653
LUG-20-84	N ZONE	2.0-4.0(.44) 4.0-9.0(.04)	201	340	-60	9701	450E	1,854
LUG-21-84	S ZONE	68.4-70.6(.17) 78.9-82.8(.06)	100	194	-50	9812	260W	1,854
LUG-22-84	S ZONE	56.0-57.0(.17) 59.6-62.0(.04)	79	194	-20	9830	260W	2,033
LUG-23-84	S ZONE	38.0-40.6(.074) 40.6-42.6(.10) 48.3-50.4(.127)	75	159	-60	9624	136E	2,108
LUG-24-84	N AREA	13.4-15.5(.078)	88	339	-45	9624	136E	2,196
LUG-25-84	S ZONE	16.-20.0(.09), 20.0-24.0(.38)	90	159	-60	9631	95E	2,286
LUG-26-84	S ZONE	LOW VALUES	66	159	-50	9637	58E	2,352
LUG-27-84	N AREA	31.0-33.0(.058)	65	339	-60	9637	59E	3,417
LUG-28-84	S ZONE	27.0-29.5(.123)	80	159	-60	9648	20E	2,497
LUG-29-84	S ZONE	29.6-32.6(.06) 32.6-37.0(.03) 44.5-48.0(.124)	90	159	-60	9617	180E	2,587
LUG-30-84	N AREA	LOW VALUES	78	339	-60	9700	400E	2,665
LUG-31-84	N & S ZONES	3.0-9.0(.03) 57.4-59.5(.224)	141	120	-50	9700	440E	2,806
LUG-32-84	N & S ZONES	24.5-27.0(.03) 66.5-69.0(.13)	153	159	-60	9700	360E	2,959
LUG-33-84	N & S ZONES	16.5-19.5(.104)	116	159	-60	9700	300E	3,075
LUG-34-84	N & S ZONES	9.0-12.0(.105) 72.3-74.0(.09)	119	159	-60	9700	260E	3,194

TOTAL 3,194

TABLE 1
APPENDIX "D"
LOUANNA PROJECT

SUMMARY OF 1984 DIAMOND DRILLING - SURFACE

HOLE NO.	ANGLE°	LENGTH IN FEET	POSITION (1984 GRID)	INTERSECTION FOOTAGE Au oz./ton	ACCUMULATED TOTAL
SL- 1-84	-55	257	5+50W 2+50N	138.0-141.0/ .175	257
SL- 2-84	-55	267	5+50W 3+50N	LOW VALUES	524
SL- 3-84	-55	345	7+00W 2+50N	84.0-87.0/ .038	869
SL- 4-84	-55	214	8+50W 3+00N	LOW VALUES	1,083
SL- 5-84	-55	182	13+20W 2+75N	LOW VALUES	1,265
SL- 6-84	-60	87	1+89W 1+27N	44.0-53.0/ .013	1,352
SL- 7-84	-45	90	1+10W 1+20N	50.0-55.4/ .055	1,442
SL- 8-84	-60	92	1+10W 1+20N	70.8-73.2/ 0.167; 78.8-81.8/ .105	1,534
SL- 9-84	-56	108	0+57W 1+22N	89.5-92.5/ 0.046	1,642
SL-10-84	-55	146	6+00E 2+00S	HOLE ABANDONED	1,788
SL-11-84	-45	440	6+00E 2+00S	275.0-277.0/ .036; 339.0-340.0/ .04	2,228
SL-12-84	-45	430	7+64E 1+85S	210.4-213.4/ .108	2,658
SL-13-84	-45	394	10+00E 1+50S	49.5-51.5/ .032; 53.5-56.0/ .042	3,052
SL-14-84	-45	201	3+85W 0+24N	LOW VALUES	3,253
SL-15-84	-55	970	6+60E 4+00S	653.5-656.01/ .05; 656.0-658.5/ .108 737.0-745.5 CHERTS UP TO 480 PPB; 583.0-586.5/ .06; 586.5-590.0/ .29;	4,223
SL-16	-55	860	8+00E 4+00S	593.5-597.0/ .03; 765.0-768.0/ 121 PPB	5,083
SL-17-84	-55	8,385	10+00E 4+10S	LOW VALUES	5,921.5
SL-18-84	-45	545	14+00W 3+40S	NO VALUES	6,470.5
				TOTAL	6,470.5

R. Wells 1/1/85

DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE → HOLE NO. LS-1-84 | PAGE NO. 1 of 3

DRILLING COMPANY: Kenora Drilling		COLLAR ELEVATION: 9,970	BEARING OF HOLE FROM TRUE NORTH: 157	TOTAL FOOTAGE: 257 feet	DIP OF HOLE AT: collar 55°	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM	MAP REFERENCE NO. / CLAIM NO.
DATE HOLE STARTED: 3/4/84	DATE COMPLETED: 5/4/84	DATE LOGGED: 7/4/84	LOGGED BY: R. C. Wells		250 ft | 53°		LOCATION (Tp., Lot, Con. OR Lot, and Long.): 1984 Grid 5+50W 2+50N, Mine Section 656W
EXPLORATION CO., OWNER OR OPTIONEE: Lacana Mining Corporation		DATE SUBMITTED: Sept. 10/84	SUBMITTED BY (Signature)		ft |		PROPERTY NAME: Louanna Mine

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION (Colour, grain size, texture, minerals, alteration, etc.)	PLANAR FEATURE ANGLE °	CORE SPECIMEN FOOTAGE ↓	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	AuAssay oz./T	AuAssay ppb	AgAssay oz./T
0	10		Water Casing				52	54.5	2.5		4	
10	27	Soft Sand/Silt O/B					91.7	96.7	5.0		11	
							96.7	101.7	5.0		8	
27	91.7	Diorite	Medium green-white speckled (salt & pepper), medium hard, medium grained, equigranular. Massive to blocky recovery with sub-parallel to 30°CA fractures locally. Chloritic, with numerous narrow stringers and fine veins of quartz, carbonate, epidote at variable angles. Sparse fine to very fine disseminated sulfides (Po, Py).				101.7	106.7	5.0		33	
							106.7	111.7	5.0		8	
				0-30°			111.7	112.5	0.8		21	
							112.5	115.5	3.0	.002		.02
							115.5	118.5	3.0		65	
							118.5	121.5	3.0		11	
			@ 35.5 — 1" fine quartz carbonate vein, sharp contacts	30°			121.5	125.0	3.5		8	
			@ 52.0-54.5 — blocky recovery 15°CA quartz vein 1/2 wide with strong black tourmaline development near margins. Minor quartz carbonate alteration of wall rocks. Sparse fine Py minor Cpy.	15°			125.0	130.0	5.0		9	
							130.0	135.0	5.0	.002		
							135.0	138.0	3.0	.004		
							138.0	141.0	3.0	.175		.14
			@ 65.8-67.0 — 1/2" quartz vein, sharp sub-parallel to 15°CA contacts.	0-15°			141.0	145.0	4.0	.002		
							145.0	150.0	5.0		5	
			@ 74.1-74.4 — narrow carbonated shear 30°CA	30°			162.0	167.0	5.0		8	
			@ 70.0-91.7 — local schistose zones 40°CA with some fine quartz, carbonate.	40°			212.0	214.0	2.0		4	
							218.0	224.0	6.0		4	
91.7	156.5	Schist, Schistose-Tuff (Mine Unit)	Medium to dark green, medium hard to soft, predominantly fine grained. Strong schistosity-straight to wavy 40°CA. Alternating chloritic, quartz carbonate and locally sericitic layers. Whole unit is carbonated to varying degrees. Local quartz vein development with sulfides (Cpy, Po, Py).	40°CA								
			@ 112.5-115 — brown siliceous and sericitic with fine disseminated Py and minor Aspy. Dark chlorite for 3.0 feet either side of vein.	30°								
			@ 120.5 — 1/4" quartz vein 30°CA.									
			@ 134.0-138.8 — light green, carbonated, weakly siliceous									

DIAMOND DRILLING LOG

FILL IN ON EVERY PAGE | HOLE NO. LS-1-84 | PAGE NO. 2 of 3

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE °	CORE SPECIMEN FOOTAGE °	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS °
			and sericitic. Disseminated Py, local Py smears along schistosity planes.							
			@ 138.8-141.0 -- siliceous with gray quartz with some late fracturing with fine quartz-carbonate fill. 1-2% disseminated and bleby Po and Py some 40° stringers. Minor coarse Cpy blebs.	40°						
			@ 141.0-142.9 -- weak to moderate siliceous, sericitic with some high angle 'woody' tourmaline stringers. Minor disseminated Po and Py.	50-80°						
			@ 142.9-143.0 -- milky quartz vein 60°CA.	60°						
		Quartz Eye Tuff	@ 143.0-145.0 -- moderate development of blue quartz eyes, sericitic, brownish green. Very fine, sharp, quartz-tourmaline, fracture veins 20°CA.	20°						
			@ 145.0-156.5 -- weakly sericitic with poorly developed quartz eyes.							
			Gradational Contact							
156.5	189.8	Andesite	Medium green, moderately soft, fine grained and carbonated to varying degree, Locally schistose 40°CA. Local brecciation. Few carbonate stringers and lenses at varying angles (possibly poillow margins).	40°						
			@ 162.5-166.5 -- schistose 40°CA, carbonated and brecciated. Locally up to 2% disseminated Po, Py is carbonated breccia matrix.							
			@ 186.9-188.1 -- quartz carbonate with sub-angular epidotized fragments (breccia?).							
189.8	212.5	Coarse Andesite/ Diorite	As above but coarser grained with local equigranular salt & pepper texture. 40° schistosity locally well developed. Sparse sulfides mainly Py. Numerous narrow quartz carbonate-epidote stringers at varying angles.	40°						
			@ 205-210 -- light green, carbonated pillow? with carbonated matrix.							
			@ 210-212.5 -- coarse flow-diorite? carbonate lenses and layers concordant with schistosity 40°CA.	40°						

DIAMOND DRILLING LOG

FILL IN ON EVERY PAGE | HOLE NO. LS-1-84 | PAGE NO. 3 of 3

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE °	CORE SPECIMEN FOOTAGE °	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS °
212.5	227	Diorite	Medium green to black, medium hard, medium to coarse grained equigranular. Chloritic to strong biotitic. Strong 40°CA schistosity locally. Few carbonate veins. 15°-30°CA. Good diorite to quartz-biotite diorite. @ 212.5-214.1 — biotitic with 1-2% Py and Po. No cubes or smears along schistosity. @ 214.1-217.5 — light to medium green coarse diorite. @ 217.5-224.8 — biotitic varying grain size up to 5% Py, Po disseminated and along schistocite. @ 224.8-227.0 — coarse green diorite.	40° 15-30°						
227	257	Andesite	Medium to light green, fine grained and carbonated to varying degree. Moderate to poor schistosity 40°CA. Few carbonate stringers. This unit is possibly pillow lavas especially 240-242. @ 247.1 — 1/2" quartz vein 60°CA. @ 254.8-256 — carbonated with occasional Py, Po, Cpy lens	40° 60°						
	257	END OF HOLE DIP TEST 53° (Corrected)								

R. C. Wells - 1/1/85

DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE ▶ HOLE NO. LS-2-84 | PAGE NO. 1 of 2

DRILLING COMPANY: Kenora Drilling		COLLAR ELEVATION: 99.70	BEARING OF HOLE FROM TRUE NORTH: 157	TOTAL FOOTAGE: 267	DIP OF HOLE AT: collar 58°	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM
DATE HOLE STARTED: 6/4/84	DATE COMPLETED: 12/4/84	DATE LOGGED: 12/4/84	LOGGED BY: R. C. Wells		120 ft 58°	
EXPLORATION CO., OWNER OR OPTIONEE: Lacana Mining Corporation		DATE SUBMITTED: Sept. 10/84	SUBMITTED BY (Signature):		250 ft 52°	
					ft	
					ft	

MAP REFERENCE NO.: | CLAIM NO.:

LOCATION (Tp., Lot, Con. OR Lot. and Long.): 1984 Grid 5+50W 3+50N; Mine Section 656W

PROPERTY NAME: Louanna Mine

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION (Colour, grain size, texture, minerals, alteration, etc.)	PLANAR FEATURE ANGLE °	CORE SPECIMEN FOOTAGE ±	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS ±
0	10	Water	) Casing							
10	60	Soft Clay, Sand, Silt	) to) 62 Feet							
60	225	Diorite	Medium green-white speckled (salt & pepper), medium hard, medium to coarse grained, equigranular. Locally schistose (40°-50°) and chloritic otherwise massive throughout with numerous quartz, carbonate or epidote stringers & fine veins at varying angles. Some quartz carbonate veins 70°CA. Sparse disseminated sulfides mainly Py and Po.	40-50°						
			@ 87-87.5 — broken core, schistose 65°CA and chloritic with some vuggy quartz.	70°						
			@ 89-94 — weakly brecciated with some quartz-carbonate stringers 80°-90°CA with up to 1% Py (minor Po).	65°						
			@ 104.5-105 — milky quartz vein 50°CA.	80-90°						
			@ 105-107 — coarse diorite with few 20-40°CA shears from 172 downwards becoming brecciated (coarse) in appearance local 30°-40° CA shears	50°						
			@ 199-199.5 — number of narrow quartz-carbonate veinlets.	20-40°						
			@ 213-215.3 — angular andesite fragment, medium green fine grained, weakly carbonatized.	30-40°						
			@ 217-218 — good 30°CA schistosity.	70-80°						
				30°						
225	241.8	Andesite	Medium to dark green, chloritic, medium hard, weakly carbonated. 1 mm white phenocrysts (feldspar) alligned with 30°-40° schistosity.	30-40°						
			@ 218-226 — gradational, interfingering contact with diorite.							
			@ 228-229 — brecciated, carbonated matrix.							
			@ 229-241.8 — schistose 35°-40°CA. Weak to moderate carbonated (softer) and chloritic.	35-40°						

DIAMOND DRILLING LOG

FILL IN ON EVERY PAGE

HOLE NO.	PAGE NO.
LS-2-84	2 of 2

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE *	CORE SPECIMEN FOOTAGE *	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS * Au Geo ppb
			@ 240-241.8 -- carbonated with fine quartz disseminated Py, Po minor Cpy.							
241.8	267	Schist, Schistose, Tuff (Mine Unit)	Light to medium gray to brownish, medium hard to soft. Predominantly fine grained, strong schistosity straight to wavy. Alternating chloritic, quartz carbonate and locally sericitic layers. Near andesite contact above alligned phenocrysts with schistosity.	40°		42520	248	253	5.0	16
						42521	253	258	5.0	89
						42522	258	263	5.0	18
						42523	263	267	4.0	20
			@ 244.5-245 -- siliceous and carbonated sparse sulfides.							
			@ 248 -- 1/2" quartz vein with minor Po, Py.							
			@ 246-250 -- moderate to strongly carbonated.							
		Quartz Eye Tuff	@ 250-253 -- light brown to greenish, sericitic with siliceous stringers. Good quartz eye development.							
			@ 253-262.5 -- strongly carbonated and soft, fine schist, locally siliceous. Weak to moderately sericitic.							
			@ 262.5-264 -- weakly siliceous with narrow quartz veins (concordant), some Fe carbonate and dark tourmaline. Very fine disseminated Py.							
	267	END OF HOLE	HOLE ABANDONED BROKEN CORE BARREL AT BOTTOM OF HOLE							
			* NB HOLE DID NOT REACH TARGET							

R. C. Wells 1/8/85

DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE → HOLE NO. LS-3-84 | PAGE NO. 1 of 4

DRILLING COMPANY: Kenora Drilling	COLLAR ELEVATION:	BEARING OF HOLE FROM TRUE NORTH: 157	TOTAL FOOTAGE: 345	DIP OF HOLE AT: collar 55°	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM:	MAP REFERENCE NO.: / CLAIM NO.:
DATE HOLE STARTED: 13/4/84	DATE COMPLETED: 16/4/84	DATE LOGGED: 17/4/84	LOGGED BY: R.C.Wells/C.Bishop	300 ft 54°		LOCATION (Tp., Lot, Con. OR Lot. and Long.): 1984 Grid 7+00W 2+50N Mine Section 806W
EXPLORATION CO., OWNER OR OPTIONEE: Lacana Mining Corporation		DATE SUBMITTED: Sept. 10/84	SUBMITTED BY (Signature):	ft		PROPERTY NAME: Louanna Mine

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION (Colour, grain size, texture, minerals, alteration, etc.)	PLANAR FEATURE ANGLE *	CORE SPECIMEN FOOTAGE *	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS * Au oz./ton	ASSAYS * Au ppb
0	10	Water	) Casing								
10	25	Soft Clay, Sand, Silt	) to) 25 Feet								
25	29.3	Diorite Boulder	Bleached, light green, medium grained.								
29.5	55.0	Diorite (c. Andesite)	Medium green, locally speckled (salt & pepper), medium hard, fine, medium fine to locally coarse grained Moderately to strongly chloritic in finer andesitic sections. Weakly porphyritic with 1 mm white feldspar pheonocrysts. Sparse sulfides.			42524	79.7	84.0	4.3		16
			@ 29.5-41.0 — fine prophyritic andesite, numerous fine chlorite-epidote veins/fractures at varying angles most at 40°-60°.			42525	84	87	3.0	.038	
						42526	87	90	3.0		230
						42527	90	93	3.0	.002	
				40-60°		42528	93	96	3.0		5
			@ 36-37.1 — sub-angular fragment? of fine andesite.			42529	96	99	3.0	.002	
			@ 41.0-50.0 — altered coarse diorite, fairly hard, numerous stringers of quartz, minor epidote at varying angles.			42530	93	103	4.0		5
						42531	196	100	4.0		12
			@ 50.0-53.5 — porphyritic andesite, weak to moderately schistose 40°-50°CA.			42532	100	104	4.0		3
				40-50°		42533	226	229	3.0		10
			@ 53.5-55.0 — chloritic, rubbly flow contact?								
55.0	108.2	Schist, Schistose Tuff	Light to dark green to gray to light brownish, fine grained predominantly finely laminated 40°CA. Weak to strongly carbonated, locally sericitic (brownish) and siliceous. Variable content of fine disseminated sulfides (Py, Po).								
			@ 55.0-72.0 — chloritic, moderately carbonated. Sparse sulfides.								
			@ 72.0-79.8 — gray green, moderately to strongly carbonates. Alligned phenocrysts? becoming siliceous @ 77-79.8.								

DIAMOND DRILLING LOG

FILL IN ON EVERY PAGE ▷ HOLE NO. LS-3-84 | PAGE NO. 2of4

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE °	CORE SPECIMEN FOOTAGE ↓	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS ↓ Au oz./ton	ASSAYS ↓ Au ppb
			@ 79.8-81.2 — medium gray, hard, coarse. QUARTZ EYE SCHIST/TUFF. Noticeable fine disseminated Po>Py 30-40% milky to grayish quartz.								
			@ 81.2-82.5 — 1" milky quartz vein with minor Py. 40°CA.	40°							
			@ 82.5-83.0 — dark green chloritic tuff.								
			@ 83.0-88.0 — light gray-green-brown, sericitic tuff. Few medium quartz eyes, sparse sulfides.								
			@ 88.0-102.0 — light green to brownish to gray, Weak to moderately sericitic/carbonated. Fine grained, fine laminated. Local concordant and fine streaks of dark tourmaline in strong sericite alteration.								
			@ 102.0-108.2 — medium to dark green chloritic tuff. Weak to moderately carbonated.								
108.2	133.5	Andesite	Medium to dark green, moderately schistose 40°CA. Medium hard locally softer and carbonated.	40°							
			@ 115-118 — medium green schistose tuff, fine Py, Po as streaks along schistosity planes. Locally up to 1%.								
133.5	144.2	Diorite (c. Andesite)	Medium green, medium hard, medium grained. Locally carbonated and softer. 40° schistosity locally well developed.	40°							
144.2	150.0	Andesite	Medium to darkish green, fine grained.								
150.0	155.5	Diorite (c. Andesite)	Medium green, medium grained, locally carbonated.								
155.5	167.0	Contact Zone	Diorite-Andesite contact sub-parallel to CA reaction zone in andesite contact.	0°							
167.0	177.0	Diorite (Quartz)	Light to medium green, medium hard, medium to coarse grained. Local carbonated stringers 10°-40°CA. Poor schistosity 40°-50°CA.	10-40° 40-50°							
177.0	196.5	Andesite	Light to medium green, fine grained, weak to moderately carbonated (pervasive and as stringers).								

DIAMOND DRILLING LOG

FILL IN ON EVERY PAGE | HOLE NO. LS-3-84 | PAGE NO. 3of4

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE °	CORE SPECIMEN FOOTAGE ↓	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS ↓ Au oz./ton	ASSAYS ↓ Au ppb
			@ 182-192 — pillowed, local disseminated Po, Py. Tuffy-carbonated matrix.								
196.5	202.5	Quartz Porphyry	Light to medium gray, medium hard, coarse grained. Coarse bluish quartz eyes are common. Siliceous and sericitic with up to 1% Py. Lensy or disseminated.								
202.5	213.2	Diorite	Light gray-green, medium grained, medium hard. Moderate to good schistosity, 45°CA. Local carbonate stringers at variable angles. Sparse sulfides.	45°							
213.2	219	Andesite/Diorite	Green to gray green, medium hard, fine to medium grained. Local strong carbonate veining/lenses. Good 45° schistosity. Locally weakly sericitic. @ 217.2-218.5 — much quartz-carbonate, disseminated and lensy Py, minor Po.								
219	227.0	Andesite Schist	As above, good 45° schistosity (bedding?). Weak to moderate sericitic.	45°							
227.0	228.4	Quartz Porphyry	As at 196.5-202.5. Medium, bluish quartz eyes poor to good 45° schistosity.								
228.4	239.0	Andesite Schist	As at 219-227.0. Sericitic local Py stringers 45°CA.	45°							
239.0	289.0	Andesite	Medium green to gray-green, weak to moderately carbonated. Fine to medium grained. Numerous carbonate stringers-variable angles. Poor to good 45° schistosity. Weakly sericitic.	45°							
			@ 250-270 — medium grained dioritic! 40° schistosity.	40°							
			@ 272-282 — carbonated.								
			@ 282-289 — prophyritic andesite. Carbonate porphyroblasts?								
289.0	345.0	Andesite	Medium green to brownish green, fine grained numerous carbonate stringers/veins at variable angles. Good schistosity (tuff?) @ 312-314, 328-331, 334.5-336, 339-341.								

DIAMOND DRILLING LOG

FILL IN ON EVERY PAGE ▷ HOLE NO. LS-3-84 | PAGE NO. 4 of 4

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE °	CORE SPECIMEN FOOTAGE °	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS ° Au oz./ton	ASSAYS ° Au ppb
			@ 332-333 — irregular quartz carbonate vein 30° to sub-parallel to CA.	30°-0°							
	345	END OF HOLE									

R. C. Wells 1/1/85

DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE ▶ HOLE NO. LS-4-84 | PAGE NO. 1of2

DRILLING COMPANY: Kenora Drilling		COLLAR ELEVATION	BEARING OF HOLE FROM TRUE NORTH: 157	TOTAL FOOTAGE: 214	DIP OF HOLE AT: collar 55°
DATE HOLE STARTED: 19/4/84	DATE COMPLETED: 22/4/84	DATE LOGGED: 22/4/84	LOGGED BY: R. C. Wells		180 ft 54°
EXPLORATION CO., OWNER OR OPTIONEE: Lacana Mining Corporation		DATE SUBMITTED: Sept. 10/84	SUBMITTED BY (Signature)		ft / ft / ft

LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM:

MAP REFERENCE NO.: CLAIM NO.:

LOCATION (Tp., Lot, Con. OR Lot. and Long.): 1984 Grid 8+50W 3+00N Mine Section 956W

PROPERTY NAME: Louanna Mine

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION (Colour, grain size, texture, minerals, alteration, etc.)	PLANAR FEATURE ANGLE °	CORE SPECIMEN FOOTAGE ↓	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS ↓ Au ppb
0	62	Casing	0-8' Water, 8-62' Soft Sand and Clay. Boulders last 10'.							
62	111	Basalt	Medium hard, dark green, fine locally medium grained. Occasional quartz-epidote stringers. Local fine to coarse disseminated Py (cubes).							
			@ 72.7-74.5 — quartz carbonate vein sub-parallel to CA.	Pall		42554	120	123	3.0	37
			@ 78.0-79.5 — tuffaceous, banding 30°.	30°		42555	127	132	5.0	2
			@ 80.3 — 2" quartz-carbonate vein 30°CA.	30°		42556	148	152	4.0	10
			@ 88.3-89.0 — anstomosing quartz carbonate veins sub-parallel to 30°CA.	0-30°		42557	165	170	5.0	119
						42558	170	173	3.0	151
			@ 100-111.0 — weakly brecciated to tuffaceous 30°-40°CA.	30-40°		42559	200	203	3.0	49
			@ 108.1-108.5 — banded milky quartz carbonate vein 40°.	40°						
111	173	Tuff/Schistose Tuff (Mine Unit)	Medium green, fine to medium laminated 40°-45°CA. Fine grained, medium hard to soft and carbonated. Locally weakly sericitic. Disseminated and stringer Py, Po locally up to 1%.							
			@ 115-120.5 — moderately to strongly carbonated as concordant layers.							
			@ 120.5-120.9 — gray, siliceous, moderately carbonated with 1-2% Po, Py, minor Cpy.							
			@ 120.9-127.7 — chloritic tuff.							
			@ 127.7-131.5 — QUARTZ EYE TUFF. Mottled, medium, brownish green; 1-2% disseminated Po, Py. Brownish quartz along late fractures 40°-60°CA.	40-60°						
			@ 131.5-138.0 — carbonated, chloritic tuff.							
			@ 138.0-152.0 — carbonated, chloritic tuff, dark bands of Fe carbonate, Very finely bedded 40°-70°.	40-70°						
			@ 151-152 — up to 5% Po, Py disseminated and lenses.							
			@ 152-158 — moderately schistose chloritic tuff 40°-45°. Fairly massive and carbonated.	40-45°						
			@ 158-165.2 — carbonated chloritic tuff.							

DIAMOND DRILLING LOG

FILL IN ON EVERY PAGE | HOLE NO. LS-4-84 | PAGE NO. 2of2

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE °	CORE SPECIMEN FOOTAGE ↓	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS ↓ Au ppb
			@ 165.2-167.1 -- Gray carbonated to siliceous tuff. 1-5% Py, Po. Minor dark tourmaline stringers. 40°-45°.	40-45°						
			@ 167.1-167.3 -- 45° quartz carbonate vein with Py, Po and tourmaline?							
173.0	188.1	Andesite	Medium green to gray green, fine grained, moderately hard. Massively, locally poorly bedded.							
188.1	203	Quartz Eye Tuff	Medium green, hard, siliceous with 1-5 mm well developed and bluish quartz eyes in chloritic schistose. Matrix 45°CA. Sparse fine disseminated Py.	45°						
			@ 200-203 — fairly massive, medium green, no quartz eyes.							
203	214	Quartz Eye Diorite	Medium green, hard, fine to coarse grained becoming coarser with depth, especially 212-214. Good quartz eyes-bluish to 5 mm.							
			@ 200-203 — massive, medium green (contact zone). No quartz eyes.							
	214	END OF HOLE								

R. C. Wells 1/1/85

DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE → HOLE NO. LS-5-84 | PAGE NO. 1 of 1

DRILLING COMPANY: Kenora Drilling		COLLAR ELEVATION	BEARING OF HOLE FROM TRUE NORTH: 157	TOTAL FOOTAGE: 182.0	DIP OF HOLE AT: collar 55°	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM	MAP REFERENCE NO. / CLAIM NO.
DATE HOLE STARTED: 23/4/84	DATE COMPLETED: 26/4/84	DATE LOGGED: 26/4/84	LOGGED BY: R. C. Wells		180 ft 53°		LOCATION (Tp., Lot, Con. OR Lat. and Long.): 1984 Grid 1320W 2+75N; Mine Section 1426W
EXPLORATION CO., OWNER OR OPTIONEE: Lacana Mining Corporation		DATE SUBMITTED: Sept. 10/84	SUBMITTED BY (Signature)		ft		PROPERTY NAME: Louanna Mine

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION (Colour, grain size, texture, minerals, alteration, etc.)	PLANAR FEATURE ANGLE °	CORE SPECIMEN FOOTAGE ↓	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS ↓ Au oz./ton
0	15.0	Casing	Bouldery O/B							
15.0	52.0	Diorite	Speckled medium green, gray, medium hard, equigranular medium to coarse grained, massive with local chloritic fractures 45°-50°CA.			42575	72.0	77.0	5.0	.002
						42576	109.0	110.0	1.0	.002
						42577	118.0	119.0	1.0	.002
52.0	53.2	Schist/Tuff	Medium green, fine to poorly laminated 45°CA. Weak to moderately carbonated with concordant carbonate veins, lenses.							
53.2	72.0	Andesite	Medium green, medium hard, fine to medium grained. Locally weak to moderately schistose 45°-60°CA. Numerous carbonate, quartz, epidote stringers at varying angles. Becomes more chloritic and darker green with depth.							
			Sharp Contact							
72.0	167.0	Tuff/Schistose, Tuff (Mine Unit)	Medium green to gray green, medium hard to soft, predominantly fine grained. Moderately to well banded 55°CA. Locally moderately to strongly carbonated. @ 72.7-76.5 — 70% gray quartz, strongly brecciated with dark chloritic fractures and carbonate. Sparse fine disseminated Py. @ 76.5-83.5 — strongly carbonated, medium gray tuff, moderately banded. @ 93.7-94.0;-101-101.3 — milky quartz vein 60°CA. Sharp contacts, no sulfides. @ 109.3-110; 118-118.7 — grayish quartz veins with 1% Po, Py. @ 148.0-164.0 — finely bedded chloritic tuff 55°-60°CA.							
167.0	182.0	Andesite	Medium green, medium hard, predominantly fine, locally coarse grained. Numerous quartz-carbonate-epidote stringers, highly irregular. @ 169.0-170.0 — very blocky recovery.							
	182	END OF HOLE								

DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE → HOLE NO. LS-6-84 | PAGE 1 of 2

DRILLING COMPANY: Kenora Drilling		COLLAR ELEVATION: 9,986.56	BEARING OF HOLE FROM TRUE NORTH: Az 159°	TOTAL FOOTAGE: 87.0	DIP OF HOLE AT: collar -60°
DATE HOLE STARTED: 4/5/84	DATE COMPLETED: 5/5/84	DATE LOGGED: 10/5/84	LOGGED BY: R. C. Wells		80 ft -59°
EXPLORATION CO., OWNER OR OPTIONEE: Lacana Mining Corporation		DATE SUBMITTED: Sept. 10/84	SUBMITTED BY (Signature):		ft / ft / ft

LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM: Mine Survey N 10051.51 E 9776.44

MAP REFERENCE NO.:

CLAIM NO.:

LOCATION (Tp., Lot, Con. OR Lot. and Long.): 1984 Grid 1+89W 1+27N Mine Section 295W

PROPERTY NAME: Louanna Mine

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION (Colour, grain size, texture, minerals, alteration, etc.)	PLANAR FEATURE ANGLE °	CORE SPECIMEN FOOTAGE ◊	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS ◊ Au oz./ton	ASSAYS ◊ Au ppb
0	8.0	O/B	Casing			42620	44.0	48.0	4.0	0.13	.13/9.0
8.0	14.0	Chloritic Tuff	Soft to medium hard, medium green, chloritic, weak to moderately carbonated. Well laminated 25°-30°CA. Sparse fine Py.			42621	48.0	51.0	3.0	0.12	
						42622	51.0	53.0	2.0	0.15	
14.0	22.0	Quartz Eye Tuff	Hard, light to medium gray to yellowish gray, weak to moderately sericitic. Well developed quartz eyes to 6 mm. Poor to well laminated. Sparse Py.			42623	58.0	59.5	1.5	0.03	1000
						42624	62.8	64.0	1.2	0.044	1000
						42625	70.8	73.0	2.2	.073	
22.0	28.3	Chloritic Tuff	Medium green, soft to medium hard, chloritic, weak to moderately carbonated. Well laminated 35°CA.			42626	74.0	78.0	4.0		286
						42627	82.0	85.0	3.0	.013	
28.3	44.3	Quartz Eye Tuff	Hard, light to medium gray to greenish gray to yellowish. Weak to moderately sericitic with well developed quartz eyes to 6 mm. Poor to well laminated 30°-40°CA. @ 28.9-37.0 — chloritic-sericitic tuff, finely laminated with quartz eyes. Up to 1% Py>Po mainly as concordant stringers. @ 39.5-40.7 — sericitic tuff with 1% to 2% fine stringer and disseminated Py>Po. @ 43.0-44.3 — medium to dark green chloritic tuff.			42628	85.0	86.0	1.0		535
44.3	53.0	Brecciated Gray Quartz	Brecciated gray quartz with 1% to 5% disseminated and fracture fill Py, Pb, Aspy minor Cpy. @ 50.5-53.0 — siliceous, sericitic tuff with 1% to 2% stringer Py, Po.								
53.0	68.3	Quartz Eye Tuff	Hard, light to medium gray to yellowish gray, well developed quartz eyes to 6 mm. Poor to moderately laminated 35°CA. @ 58.0-59.5; 62.5-64.0 — sericitic with disseminated Py.								
68.3	80.0	Siliceous Tuff	Hard, light gray, poor to well laminated 40°CA. Local stringers of Py minor Cpy. Few quartz eyes.								

DIAMOND DRILLING LOG

FILL IN ON EVERY PAGE ▷ HOLE NO. LS-6-84 | PAGE NO. 2 of 2

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE °	CORE SPECIMEN FOOTAGE ↓	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS ↓ Au oz./ton	ASSAYS ↓ Au ppb
			@ 70.5-73.0 — sericitic with some gray quarts lenses 1% to 2%, Py, minor Cpy.								
80.0	87.0	Chloritic/ Sericitic Tuff	Gray to yellowish gray, chloritic to sericitic tuff, locally siliceous. @ 82.0, 85.0, 86.0 — narrow 1" to 2½" wide bluish gray quartz veins 45°CA. Much fine Py, Po, Aspy at contacts.								
	87	END OF HOLE									

R. C. Wells 1/1/85

DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE → HOLE NO. SL-7-84 | PAGE 1 of 2

DRILLING COMPANY: Kenora Drilling	COLLAR ELEVATION: 9984.67	BEARING OF HOLE FROM TRUE NORTH: Az 159°	TOTAL FOOTAGE: 90.0	DIP OF HOLE AT: collar 45°	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM: Mine Survey N 10071.34 E 9852.31
DATE HOLE STARTED: 6/5/85 — DATE COMPLETED: 8/5/84	DATE LOGGED: 10/5/84	LOGGED BY: R. C. Wells		90 ft 44°	MAP REFERENCE NO. / CLAIM NO.
EXPLORATION CO., OWNER OR OPTIONEE: Lacana Mining Corporation	DATE SUBMITTED: Sept. 10/84	SUBMITTED BY (Signature)		ft / ft / ft	LOCATION (Tp., Lot, Con. OR Lot. and Long.): 1984 Grid 1+10W 1+20N Mine Section 2+16W
					PROPERTY NAME: Louanna Mine

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION (Colour, grain size, texture, minerals, alteration, etc.)	PLANAR FEATURE ANGLE °	CORE SPECIMEN FOOTAGE ↓	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS Au oz./ton	ASSAYS Ag ppb	ASSAYS Ag oz/t
0	11.0	Overburden	Casing			42637	31.6	34.0	2.4		174	
11.0	17.5	Chloritic Tuff	Medium hard to soft, medium green to green gray. Finely laminated 50°-55°CA. Chloritic, weak to moderately carbonated. Locally sericitic and brownish.			42638	43.0	43.5	0.5		356	
						42639	50.6	53.3	2.7	.074		.06
						42640	53.3	55.4	2.1	.034		.02
17.5	27.5	Quartz Eye Tuff	Hard, medium green to yellowish green to brown. Finely laminated 50°CA with alternating chloritic, sericitic, carbonated and siliceous bands. Sparse sulfides. @ 23.5-27.5 — brownish quartz and strongly sericitic. No quartz eyes, very sparse sulfides.			42641	61.3	62.3	1.0		244	
						42642	68.3	71.75	3.35		600	
27.5	31.6	Chlorite/ Sericite Tuff	Mixed green, yellowish green to gray chlorite to sericite tuff. Weak to moderately carbonated. Fine to coarse laminated 45°-50°CA. Local concordant quartz stringers. Sparse Py.									
31.6	77.8	Quartz Eye Tuff	Hard, light to medium gray to yellowish, poor to moderately laminated. Well developed quartz eyes to 5 mm. Weak to moderately sericitic. @ 37-57 — scarce quartz eyes. @ 50.8-53.2; 54.0-55.1 — gray quartz veins, brecciated with 1% to 3% disseminated and fracture fill Py>Aspy, Po, Cpy. @ 57.0-77.8 — good quartz eyes. @ 62.0-63.0 — 1% disseminated and stringer Py. @ 68.5-71.5 — brecciated gray quartz up to 10% disseminated and fracture fill Py minor Po, Aspy.									

DIAMOND DRILLING LOG

FILL IN ON EVERY PAGE | HOLE NO. SL-7-84 | PAGE NO. 2 of 2

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE °	CORE SPECIMEN FOOTAGE °	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS °
77.8	83.8	Chloritic Tuff	Soft, medium green, moderately laminated 55°CA, with alterating chloritic, carbonate bands. Occasional quartz stringer. Sparse Py.							
89.8	90.0	Quartz Eye Tuff	Hard, light gray with well developed quartz eyes up to 3 mm.							
	90	END OF HOLE								

R. C. Wells 1/1/85

DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE → HOLE NO. LS-8-84 | PAGE 1 of 1

DRILLING COMPANY: Kenora Drilling	COLLAR ELEVATION: 9984.67	BEARING OF HOLE FROM TRUE NORTH: Az 159°	TOTAL FOOTAGE: 92.0	DIP OF HOLE AT: collar -60°	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM: Mine Survey N 10071.34 E 9852.51
DATE HOLE STARTED: 8/5/84	DATE COMPLETED: 10/5/84	DATE LOGGED: 15/5/84	LOGGED BY: R. C. Wells	ft -58°	MAP REFERENCE NO. / CLAIM NO.
EXPLORATION CO., OWNER OR OPTIONEE: Lacana Mining Corporation		DATE SUBMITTED: Sept. 10/84	SUBMITTED BY (signature)	ft	LOCATION (Twp., Lot, Con. OR Lat. and Long.): 1984 Grid 1+10W 1+20N Mine Section 2+15W
				ft	PROPERTY NAME: Louanna Mine
				ft	

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION (Colour, grain size, texture, minerals, alteration, etc.)	PLANAR FEATURE ANGLE °	CORE SPECIMEN FOOTAGE ↓	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS Au ppb	ASSAYS Ag oz./ton
0	8	Overburden	Casing			42650	41.0	43.0	2.0	11	
8	24.4	Chloritic Tuff	Soft to medium hard, weak to well carbonated. Poor to well and finely laminated 40°-45°CA. Sparse fine Py, local carbonate bands.			42651	41.0	46.0	3.0		.019 1.00
						42652	53.5	55.3	1.8		.024 0.08
						42653	62.0	66.0	4.0	377	
24.4	26.0	Quartz Eye Tuff	Hard, light gray and siliceous with well developed quartz eyes to 4 mm.			42654	66.0	70.8	4.8	275	
						42655	70.8	73.2	2.4		0.167 .06
26.0	34.0	Siliceous Tuff	Hard, light gray to yellowish, weakly brecciated and poorly laminated. Weak to strongly sericitic. Disseminated fine Py.			42656	73.2	74.7	1.4	356	
						42657	2477	77.4	2.7		.022 .04
34.0	43.0	Chloritic Tuff	Medium green, locally yellowish, chloritic, locally sericitic. Locally siliceous with poorly developed quartz eyes. Weak to moderately carbonated-sparse fine Py.			42658	78.8	81.8	3.0		.105
43.0	45.5	Siliceous/ Sericitic Tuff	Gray to yellowish, fine to moderately laminated 35°-40°CA, (wavy) disseminated, bleby and stringer Py, Cpy, locally up to 1%.								
45.5	92.0	Quartz Eye Tuff	Hard, light to medium gray, well laminated 40°CA, locally brecciated. Well developed quartz eyes to 5 mm. Sparse fine Py. @ 54.0-55.2 — brecciated gray quartz. Sericitic with 1% disseminated and bleby Py minor Cpy. @ 62.0-70.8 — yellow and sericitic with up to 1% very fine disseminated and bleby Py. @ 70.8-81.2 — 60% brecciated gray quartz, bending 35°CA, 1% to 5% disseminated and fracture fill Py, Aspy minor Cpy. Siliceous tuff or quartz eye tuff matrix.								
	92.0	END OF HOLE									

DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE → HOLE NO. LS-9-84 | PAGE 1 of 1

DRILLING COMPANY: Kenora Drilling	COLLAR ELEVATION: 9986.74	BEARING OF HOLE FROM TRUE NORTH: Az 159°	TOTAL FOOTAGE: 108.0	DIP OF HOLE AT: collar | -56°	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM: Mine Survey
DATE HOLE STARTED: 10/5/84	DATE COMPLETED: 12/5/84	DATE LOGGED: 15/5/84	LOGGED BY: R. C. Wells	100 ft | -54°	N 10081.83 E 9901.34
EXPLORATION CO., OWNER OR OPTIONEE: Lacana Mining Corporation		DATE SUBMITTED: Sept. 10/84	SUBMITTED BY (Signature):	ft |	
				ft |	
				ft |	

MAP REFERENCE NO.: | CLAIM NO.:

LOCATION (Tp., Lot, Con. OR Lot. and Long.): 1984 Grid 0+57W 1+22N Mine Section 162W

PROPERTY NAME: Louanna Mine

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION (Colour, grain size, texture, minerals, alteration, etc.)	PLANAR FEATURE ANGLE °	CORE SPECIMEN FOOTAGE ↑	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS + Au oz./ton	
0.	3.0	Overburden	Casing								
3.0	15.0	Diorite	Medium hard, medium grained-equigranular, salt and pepper (green & white), texture. Weakly carbonated, becoming schistose with depth. Very sparse Py.	30-35°		42659	89.5	92.5	3.0	.046	
15.0	39.0	Chloritic Tuff	Medium green to gray green, medium hard to soft, weak to strongly carbonated (pervasive to lenses). Well laminated, locally wavy. Narrow cross-cutting quartz stringers.	35-40°							
39.0	41.6	Quartz Eye Tuff	Hard, light brown to gray, strongly sericitic. Finely laminated. Sparse fine, disseminated Py.	35-40°							
41.6	54.0	Siliceous/ Chloritic Tuff	Mixed green, gray, brownish, fine laminated. Siliceous to chloritic to sericitic. Hard to soft.								
			@ 51.0-51.4 — brecciated quartz carbonate vein.	45°							
54.0	97.8	Quartz Eye Tuff	Hard, light gray, well developed quartz eyes to 7 mm. Matrix schistose to brecciated/granulated and siliceous. Very sparse Py. @ 89.5-92.4 — siliceous tuff with up to 5% disseminated to lensy Py, Po (fine) Aspy. @ 90.6-91.5 — brecciated gray quartz vein, minor Py.								
97.8	108.0	Chloritic/ Siliceous Tuff	Medium green, finely laminated, chloritic to siliceous (above).	40°							
			@ 97.0 — ¼" wavy quartz vein 45° minor Py, Po, Cpy.	45°							
	108	END OF HOLE.									

DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE

HOLE NO. SL-10-84 | PAGE 1 of 1

DRILLING COMPANY: Kenora Drilling	COLLAR ELEVATION: 9978.5	BEARING OF HOLE FROM TRUE NORTH: 249°	TOTAL FOOTAGE: 146	DIP OF HOLE AT: collar | 55°	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM	MAP REFERENCE NO. / CLAIM NO.
DATE HOLE STARTED: 23/5/84 / DATE COMPLETED: 26/5/84	DATE LOGGED: 24/5/84	LOGGED BY: R. C. Wells		ft | °		LOCATION (Tp., Lot, Con. OR Lot. and Long.): 1984 Grid 6+00E 2+00S Mine Section 494E
EXPLORATION CO., OWNER OR OPTIONEE: Lacana Mining Corporation	DATE SUBMITTED: Sept. 10/84	SUBMITTED BY (Signature)		ft | °		PROPERTY NAME: Louanna Gold Mine
				ft | °		

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION (Colour, grain size, texture, minerals, alteration, etc.)	PLANAR FEATURE ANGLE °	CORE SPECIMEN FOOTAGE ↓	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS ↓
0	74	Overbruden	Sand and Coarse Gravel							
74	146	Andesite	Medium hard, medium green to gray green, massive to pillowed fine grained. Weak to moderately carbonated. @ 80.0-93.0 — pillow lavas and breccia, large angular fragments, to rounded pillow selvages with reaction rims. Local amygdules, some carbonate and silica in matrix. @ 23.0-146.0 — massive to locally brecciated. Local dark epidote filled fractures. @ 78.3-79.7 — open fracture } strong fractures with @ 145-145.5 — much broken core } water gain and loss.							
	146	END OF HOLE	HOLE WAS ABANDONED. FRACTURE SYSTEMS CLOSE TO SURFACE ALLOWED GRAVEL, SAND OVERBURDEN TO ENTER HOLE AND "CEMENTED IN" THE CORE BARREL.							

Revised 1/1/85

DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE → HOLE NO. SL-11-84 | PAGE 1 of 2

DRILLING COMPANY: Kenora Drilling	COLLAR ELEVATION: 9978.5	BEARING OF HOLE FROM TRUE NORTH: 249°	TOTAL FOOTAGE:	DIP OF HOLE AT: collar -45°	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM:
DATE HOLE STARTED: 22/5/84	DATE COMPLETED: 26/5/84	DATE LOGGED: 24/5/84	LOGGED BY: R. C. Wells	280 ft -43°	MAP REFERENCE NO.:
EXPLORATION CO., OWNER OR OPTIONEE: Lacana Mining Corporation		DATE SUBMITTED: Sept. 10/84	SUBMITTED BY (Signature):	440 ft -41°	CLAIM NO.:
				ft	LOCATION (Tp., Lot, Con. OR Lat. and Long.): 1984 Grid 6+00E 2+00S Mine Section 490E
				ft	PROPERTY NAME: Louanna Gold Mine

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE °	CORE SPECIMEN FOOTAGE ↓	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS Au oz./ton	ASSAYS Au ppb	ASSAYS Ag oz./ton
0	75	Overburden	Casing in Coase Sand/Gravel			42676	220.6	221.0			2	
75	230	Andesite	Medium hard, light to medium green to gray green, locally carbonated and soft. Fine to medium grained, massive to poorly schistose 45° to 50°CA. Local good sections of pillows with fine reaction rims and carbonated to chloritic matrix. Sparse veining.			42677	221.7	222.3			4	
						42678	227.5	228.0			8	
				40-50°		42679	269.0	270.0			12	
						42680	273.5	275.0		/002		
						42681	275.0	277.0		.036		
			@ 75.0-79.0 — massive andesite.			42682	339.0	340.0		.040		
			@ 79.0-106.0 — pillowed locally massive (large pillow?).	50°		42683	342.5	346.0			155	
			@ 106.0-127.0 — massive to schistose andesite, local carbonate band and lens at varying angles.			42684	349.0	352.0			315	
						42685	352.0	357.0			292	
			@ 109-110 — badly broken core-strong seam.			42686	357.0	362.0			59	
			@ 127-138 — pillowed.			42687	383.4	388.0			1051	
			@ 128-139 — moderately carbonated with stringers and bands and schistosity 40°-60°CA.			42688	388.0	393.0			252	
						42689	393.0	398.0			22	
			@ 139-148 — massive.			42690	398.0	401.0			16	
			@ 148-158 — pillows and pillow breccia.			42691	401.0	404.0			8	
			@ 158-173 — massive, medium grained, andesite, structureless.			42692	379.0	383.4			25	
			@ 173-175 — strong carbonate banding, 50°CA.	50°								
			@ 175-211.4 — massive, medium grained andesite, fine diorite.									
			@ 211.4-211.6; 212.0-212.4 — irregular milky quartz & carbonate veins with isolated coarse blebs of fine Po, Py. These look like coarse breccia fracture fill.									
			@ 211.4-230 — coarse pillows.									
			@ 220.6-221.0; 221.7-222.3; 227.5-228 — carbonate-silica cemented interpillow breccia up to 20% Po minor Py, Cpy.									
230	266	Andesite Tuff	Medium green, fine grained weakly laminated 50°-50°CA. Weakly carbonated, local concordant carbonate bands. Sparse quartz veining.	50-55°								

DIAMOND DRILLING LOG

FILL IN ON EVERY PAGE | HOLE NO. SL-11-84 | PAGE NO. 2of2

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE °	CORE SPECIMEN FOOTAGE °	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS °
			@ 223-254.3 — massive with occasional quartz, carbonate stringers.							
			@ 254.3-266.0 — moderately to strongly carbonated, soft, well laminated. Numerous quartz and carbonate cross-cutting stringers at varying angles.	50-60°						
266	404	Chloritic Tuff (Mine Unit)	Medium green to gray, medium hard to soft, fine grained, fine to medium laminated 50°. Numerous concordant carbonate stringers and bands, few quartz veins at varying angles. Locally weakly sericitic and brownish.	50°						
			@ 269-270 — moderately siliceous with 20% broken brown quartz, 1% disseminated and lensy Po>Py.							
			@ 273.7-275.0 — siliceous tuff with 5% to 10% broken gray quartz. Weakly sericitic. 1% to 5% disseminated and lensy Po>Py, Aspy.							
			@ 319.5-321.0 — QUARTZ EYE TUFF, fine grained, gray, hardy siliceous, well developed quartz eyes to 3 mm.							
			@ 321.0-339.2 — chloritic locally carbonated tuffs.							
			@ 339.2-339.7 — much gray quartz veining 55°, 3% to 5% fine Py, Po, Aspy.	55°						
			@ 339.7-342.5 — fairly massive and siliceous.							
			@ 342.5-347.0 — chloritic tuff.							
			@ 347.0-348.9 — strongly siliceous, gray, poorly developed quartz eyes.	ua						
			@ 348.9-362.0 — gray to dark brown CHERT and CHERTY TUFF mixed with dark chloritic tuff. Sulfides rare.							
			@ 362.0-383.4 — QUARTZ EYE TUFF (silicified tuff) hard, gray, fine grained, poorly laminated. Local well developed bluish quartz eyes to 6 mm.							
			@ 383.4-404 — mixed chloritic tuff, silicified tuff and banded brown chert 170°CA.	170°						
404	440	Basalt/Tuff	Dark green, fine grained, medium hard, massive to locally tuffaceous. Local edidote stringers.	70°						
	440	END OF HOLE								

R. C. Wells 4/1/85

DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE ▶ HOLE NO. LS-12-84 PAGE 1 of 3

DRILLING COMPANY: Kenora Drilling	COLLAR ELEVATION: 9976.7	BEARING OF HOLE FROM TRUE NORTH: 338°	TOTAL FOOTAGE: 430	DIP OF HOLE AT: collar | -45°	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM
DATE HOLE STARTED: 27/5/84	DATE COMPLETED: 31/5/84	DATE LOGGED: 2/6/84	LOGGED BY: R.C.Wells/J.P.Mucklow	314 ft | -45°	
EXPLORATION CO., OWNER OR OPTIONEE: Lacana Mining Corporation		DATE SUBMITTED: Sept. 10/84	SUBMITTED BY (Signature)	380 ft | -40°	
				ft |	
				ft |	

MAP REFERENCE NO.: | CLAIM NO.:

LOCATION (Tp., Lot, Con. OR Lot. and Long.): 1984 Grid 7+64E 1+85S Mine Section 654E

PROPERTY NAME: Louanna Gold Mine

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE °	CORE SPECIMEN FOOTAGE ±	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS ± Au oz./ton	Ag oz./ton	Au ppb
0	38	Overburden	Casing									
38	159	Andesite	Medium green to gray-gree; medium hard; medium grained, equigranular, locally fine grained; massive, locally schistose; @ 38-82 — very sparse fine disseminated Py. @ 57-64 — moderate schistose 45°-55° to CA, weakly carbonated. @ 82-110 — light to medium green, fine grained, pillow & low breccia, weak to strongly carbonated, especially matrix. @ 110-159 — coarse flow, medium grained, locally fine especially close to contacts, sparse sulfides. @ 136-141 — finely laminated, 35°-40° to CA, carbonated tuff, soft, concentrated carbonate bands.	45-50° CA 35-40°								
159	186	Andesite Tuff/ Schist	Medium green; medium hard to soft; mixed fine grained andesite and finely laminated and carbonated tuff, few narrow, irregular stringers.	40-45° 40-70° CA								
186	349	Chloritic Tuff/ Schist (Mine Unit)	Light to medium green to dark green, soft of medium hardness, finely laminated, weak to strongly carbonated, numerous concordant carbonate bands, locally siliceous and sericitic, local concentrations of Py, Po. @ 191-191.8 — bleached sericitic, quartz-carbonate veins/lens 55° to CA, up to 2% Po>Py as coarse blebs and quartz-carbonate. @ 191.8-210.4 — increasingly sericitic and silicified. @ 210.4-213.4 — moderately sericitic to very highly silicified, gray quartz breccia, tuff, bands of concentrated sulfides, especially Po. @ 213.4-220 — alternating zones of chlorite-sericite tuff with gray quartz and milky quartz breccia, sulfides up to 1% Po, Py.	45-55°		42726 42723 42724 42725	190.5 210.4 213.4 217	192.5 213.4 217 220	2 3 3.5 3	 0.108 0.014	 0.01	23 174

DIAMOND DRILLING LOG

FILL IN ON EVERY PAGE | HOLE NO. LS-12-84 | PAGE NO. 2 of 3

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION (Colour, grain size, texture, minerals, alteration, etc.)	PLANAR FEATURE ANGLE °	CORE SPECIMEN FOOTAGE ↓	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS ↓ Au oz./ton	Ag oz./ton	Au ppb
			@ 220-225 — weakly sericitic, local dark quartz vein breccia.	50°CA								
			@ 225-244 — numerous random dark quartz and carbonate stringers.									
			@ 244-246 — quartz-carbonate-chlorite breccia.									
			@ 246-258 — less chistose, medium fine grained.									
			@ 258-265.5 — fine grained, good schistosity to finely laminated.									
			@ 265.5-268 — dark quartz vein breccia with chlorite tuff schist, good sulfides on fracture planes, especially Po.			42720	265.5	268	2.5			52
			@ 273.5-279.2 — quartz eye, silicified tuff, bleached gray, very hard, eyes 2-3 mm, fine grained groundmass.									
			@ 275.2-290 — bleached silicified alternating with carbonated-sericitic tuffs, light green-gray to brownish green.	60°CA								
			@ 290-300.5 — zone of sericitic-silicified tuff, permeated by dark quartz vein/lenses, variable sulfides generally +1%, concentrated in concordant bands Po>Py, 4" quartz eye tuff @ 293'.			42721	290	293	3	.004	.02	
						42722	293	295.5	2.5	.006	.02	
			@ 300.5-307.6 — bleached carbonated, minor sericite, trace sulfides.									
			@ 307.6-309.8 — quartz eye-sericite tuff, brown-green, hard, eyes 1-2 mm groundmass fine grained, well silicified, sulfides > 1% Py>Po.									
		(Ashy Tuff)	@ 309.8-329.2 — chlorite tuff-schist, sulfides on schistosity planes and as sub-equant blebs, especially Py, last foot sericitized.									
			@ 325.2-335 — quartz eye tuff, gray, hard, eyes up to 2 mm, well defined schistosity, sulfides >1%, especially Py.									
			@ 335-349 — chlorite tuff, bleached green-gray, well carbonated @ 335, very soft varying to hard @ 349.	60°								
349	395.5	Quartz Eye Cherty Tuff (Mainly Altered Chert)	Bleached gray to green, very hard, eyes 1 mm sparsely distributed in fine grained matrix, intensely silicified, locally very cherty character, sparse sulfides except along fractures and along margins of cross-cutting quartz veins.			42774	349.5	353.5	3			5
						42775	352.5	356	3.5			2
						42776	356	360	4			3
						42777	360	364	4			3

DIAMOND DRILLING LOG

FILL IN ON EVERY PAGE | HOLE NO. LS-12-84 | PAGE NO. 3 of 3

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE °	CORE SPECIMEN FOOTAGE ▸	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS ▸ Au oz./ton	Ag oz./ton	Au ppb
			@ 352.5-353 — dark green cherty, no quartz eyes			42778	364	367.5	3.5			2
			@ 357.5-358 — dark green cherty, no quartz eyes			42779	367.5	370.5	3			3
			@ 370.5-379 — chlorite tuff, locally sericitic, dark to olive green, medium soft, pervasively carbonated, numerous carbonate stringers, sparse sulfides.			42780	379	382.5	3.5			2
						42781	382.5	386	3.5			4
						42782	386	390	4			7
395.5	409	Chorite Tuff/ Schist	Green with white bleby texture, medium hardness, medium fine grained pervasively carbonated, numerous carbonate stringers, good schistosity.	60°		42783	392.5	395	2.5			3
409	430	Andesite	Green, medium hardness, medium fine grained, pervasively carbonated, numerous carbonate stringers, schistosity good.	60°								
	430	END OF HOLE										

R. Mucklow 11/1/85

DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE → HOLE NO. LS-13-84 | PAGE 1 of 3

DRILLING COMPANY: Kenora Drilling	COLLAR ELEVATION: 9975.2	BEARING OF HOLE FROM TRUE NORTH: 334°	TOTAL FOOTAGE: 394	DIP OF HOLE AT: collar | -45°	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM
DATE HOLE STARTED: 01/06/84	DATE COMPLETED: 04/06/84	DATE LOGGED: 05/06/84	LOGGED BY: J. P. Mucklow	125 ft | -52°	MAP REFERENCE NO. / CLAIM NO.
EXPLORATION CO., OWNER OR OPTIONEE: Lacana Mining Corporation		DATE SUBMITTED: Sept. 10/84	SUBMITTED BY (Signature)	200 ft | -56°	LOCATION (Tp., Lot, Con. OR Lat. and Long.): 1984 Grid 10000E 150S Mine Section 8+90E
				390 ft | -42°	PROPERTY NAME: Louanna Gold Mine
				ft |	

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION (Colour, grain size, texture, minerals, alteration, etc.)	PLANAR FEATURE ANGLE °	CORE SPECIMEN FOOTAGE ±	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS ± Au oz./ton	Ag oz./ton	Au ppb
0	48	Overburden	Casing									
48	291	Chloritic Tuff/ Schist	Gray to dark greenish-gray, medium soft to medium hard, medium fine to fine grained, well defined schistosity, locally silicified, numerous quartz and carbonate lenses/stringers, often well carbonated concordantly, variable sulfides.	40-50 °CA								
			@ 49.5-51.5 — bleached, hard, siliceous, gray quartz veining and minor brecciation and carbonate fringes, sulfides > 2%, especially Po, cross-cutting white quartz vein @ 51.2'.			42741	49.5	51.5	2	0.032	tr.	
			@ 51.5-53.5 — sulfides > 2%, especially Po, cross-cutting white quartz vein @ 53.2'.			42742	51.5	53.5	2			107
			@ 53.5-55.5 — bleached, hard, siliceous, gray quartz veining and minor brecciation and carbonate, sulfides > 2%, especially Po.			42743	53.5	56	2.5	0.042	0.03	
			@ 58-60 — quartz-chlorite breccia, small gray quartz veins, sulfides > 2% Py, Po.			42744	56	60.5	4.5			609
			@ 63-65.5 — gray quartz veins and breccia in bleached tuff, sulfides > 2% Po, Py, especially.			42745	60.5	63	2.5			64
			@ 65.5-87 — sparse sulfides but for local concentrations, weak schistosity.			42746	63	66	3	0.014	0.02	
			@ 87-91 — very bleached, medium soft to medium hard, gray quartz @ 88.5-89', sparse sulfides, weakly sericitic.									
			@ 91-138.5 — occasional quartz-carbonate stringers, good quartz veining with sulfides → 2" @ 92', 2" @ 94', 3" @ 111', 8" zone > 2% sulfides, especially Cp, Py, Po @ 126.5'.			42747	126	128	2	tr.	0.02	
						42748	130	132	2			43
			@ 138.5-146 — brown-green, increasingly sericitic. @ 140 - 17" quartz-carbonate-sericitic zone, good sulfides Cp, Py. @ 143 - 6" highly silicified bleached.									
			@ 146-153.5 — sericitic tuff-schist, bleached gray to olive									

DIAMOND DRILLING LOG

FILL IN ON EVERY PAGE ▷ HOLE NO. LS-13-84 | PAGE NO. 2of3

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE °	CORE SPECIMEN FOOTAGE °	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS ° Au oz./ton	Ag oz./ton	Au ppb
			green, varyingly silicified, trace sulfides. @ 149 - 2" gray quartz followed by 6" sheared QUARTZ EYE tuff, ±1% sulfides. @ 151.5 - 12" chlorite-sericite tuff-schist. @ 153.5-167 — chlorite-sericite tuff-schist, dark green to brown-green, soft, good schistosity. @ 160.5 - 6" buff, sericitic, well silicified, medium hard to hard, chert. @ 167-205.5 — chlorite tuff-schist as before. @ 179.5 - 2" white quartz vein, sulfides (Py) on fringes.	40°CA									
			@ 205.5-212.5 — buff brown, locally brown-gray, hard, very fine grained, altered chert, sericitic, well silicified, schistosity less penetrative ±¼" spacing, strong sulfides on fracture planes, especially Py. @ 212.5-229.5 — varyingly sericitic, soft @ 228'-229' harder, more massive. @ 229.5-231 — QUARTZ EYE schist, gray, medium hard, eyes 0.2-1.5 mm, contact 50°CA, good schistosity. ° 231-241 — andesitic appearing chloritic tuff-schist.	50°CA 50°CA		42749 42750	205.5 209	209 212.5	3.5 3.5			230 7
291	247	Quartz Eye Tuff-Schist	Grayish, medium hard, eyes 1-10 mm elongate, sericitic gray quartz veins @ 241' (1/2"), 243.3' (1/2"), 244.6' (1"), 245.2' (1/2") all with good sulfide mineralization, especially Py.			42756 42757	241 243	243 245.5	2 2.5	tr. tr.	tr. tr.	tr.
247	256±	Chloritic Tuff-Schist	As before, but andesitic in appearance, grades into andesitic schist.									
256±	380±	Andesite	@ 256-265 — well sheared, green, medium soft to medium hardness, fine grained, numerous carbonate stringers, occasional quartz stringers, rare sulfide. @ 264-380 — green, medium hard to medium hardness, fine to medium fine grained, massive, infrequent quartz and carbonate stringers, locally medium grained (dioritic in appearance) toward 380', trace disseminated sulfides.	40°CA								

DIAMOND DRILLING LOG

FILL IN ON EVERY PAGE ▶ HOLE NO. LS-13-84 | PAGE NO. 3of3

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE °	CORE SPECIMEN FOOTAGE ◊	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS ◊ Au oz./ton	Ag oz./ton	Au ppb
380±	394±	Diorite	Gray-green, speckled white, medium hard to hard, medium grained, locally finer, locally sheared, infrequent quartz stringers. @ 386.4-387 — 3/4" quartz-tourmaline vein and numerous tiny quartz stringers.									
	394 .	END OF HOLE										

R. Lindley 1/11/85

DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE ▶ HOLE NO. LS-14-84 | PAGE 1 of 1

DRILLING COMPANY: Kenora Drilling	COLLAR ELEVATION: 9974.3	BEARING OF HOLE FROM TRUE NORTH: 337°	TOTAL FOOTAGE: 201	DIP OF HOLE AT: collar | -45°	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM	MAP REFERENCE NO. / CLAIM NO.
DATE HOLE STARTED: 06/06/84	DATE COMPLETED: 07/06/84	DATE LOGGED: 07/06/84	LOGGED BY: J. P. Mucklow	200 ft | -50°		LOCATION (Tp., Lot, Con. OR Lot. and Long.): 1984 Grid 3+85W 0+24N Mine Section 505W
EXPLORATION CO., OWNER OR OPTIONEE: Lacana Mining Corporation	DATE SUBMITTED: Sept. 10/84	SUBMITTED BY (Signature)		ft |		PROPERTY NAME: Louanna Gold Mine

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION (Colour, grain size, texture, minerals, alteration, etc.)	PLANAR FEATURE ANGLE °	CORE SPECIMEN FOOTAGE ↓	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS ↓ Au ppb
0	29	Overburden	Casing							
29	33	Andesitic Porphyry	Dark green, hard, fine grained groundmass, zoned plagioclase crystals up to 3 mm, massive.							
33	106	Andesite	Dark green to dark gray, hard, medium fine grained, occasional quarrz and carbonate stringers, locally fine grained, locally porphyritic, some sulfides on fracture planes. @ 101-104 — basaltic appearance.							
106	178	Chloritic Tuff-Schist	Gray green, soft to medium soft, fine grained, strong schistosity, generally well carbonated concordantly, frequent-carbonate and quartz stringers often concordant, occasional tourmaline with quartz stringers, sulfides common on cleavage planes-Py, Po. @ 106-137.5 — chloritic tuff-schist. @ 137.5-139.5 — QUARTZ EYE tuff-schist, gray, hard, eyes 0.5-2 mm, sericitic, possible intrusive contact @ 139.5'. @ 139.5-167 — chloritic tuff-schist-terminated abruptly against 3/4" white quarts vein. @ 160.5-161.5 - brown carbonated zone. @ 167-171.5 — sericitic tuff-schist, bleached buff gray, fine grained, well silicified, occasional tourmaline stringers. @ 171.5-178 — chloritic tuff-schist, andesitic looking, well carbonated concordantly, infrequent carbonate and quartz stringers.	40°CA		42798 42797	167 169	169 171	2 2	7 8
178	201	Andesite	Green to dark green, medium hard, medium fine to fine grained massive, locally sheared, numerous carbonate stringers-locally epidotized. @ 181-187.5 — sheared and carbonated concordantly.	40°CA						
	201	END OF HOLE								

DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE → HOLE NO. LS-15-84 | PAGE 1 of 3

DRILLING COMPANY: Kenora Drilling	COLLAR ELEVATION:	BEARING OF HOLE FROM TRUE NORTH: 339°	TOTAL FOOTAGE: 970	DIP OF HOLE AT: collar | -55°	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM: AZIMUTH 339°
DATE HOLE STARTED: 05/07/84	DATE COMPLETED: 09/07/84	DATE LOGGED: 10/07/84	LOGGED BY: J. P. Mucklow	320 ft | -52.5°	
EXPLORATION CO., OWNER OR OPTIONEE: Lacana Mining Corporation		DATE SUBMITTED: Sept. 10/84	SUBMITTED BY (Signature):	500 ft | -57°	340.5°
				700 ft | -49°	341°
				970 ft | -35°	332°

MAP REFERENCE NO.: | CLAIM NO.:

LOCATION (Tp., Lot, Con. OR Lat. and Long.): Geology Grid 1984 L6+60E 4+00S Mine Section 5+50E

PROPERTY NAME: Louanna Gold Mine

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION (Colour, grain size, texture, minerals, alteration, etc.)	PLANAR FEATURE ANGLE °	CORE SPECIMEN FOOTAGE ↓	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS ↓ Au oz./ton	Ag oz./ton	Au ppb
0	20	Overburden	Casing									
20	620±	Andesite	Dark green to gray, medium soft to hard, medium to very fine grained, massive, numerous quartz and carbonate stringers with associated sulfides (Po, Cp), locally enriched, disseminated sulfides, local shearing. @ 20-29.5 — tuffaceous, dark gray, medium fine grained, soft, well laminated 47°CA. @ 29.5-40 — pillowed, fine grained. @ 40-61 — medium grained flow. @ 61-182 — pillowed, fine grained, excellent pillow margins, aphanitic chilled zones. @ 182-235 — pillowed, margins well carbonated, epidotized with quartz and significant sulfides (Po, Cp). @ 235-258 — pillowed, amygdular. @ 258-331 — massive flow, grain size increasing from fine to medium (diorite) @ 320' then decreasing. @ 331-451 — pillowed, last 1' sheared and carbonated. @ 451-516 — massive flow, dioritic from 475'. @ 512-514 - sheared. @ 516-610 — pillowed. @ 610-620± — increasingly laminated (tuffaceous?) grading into mine unit tuff-schists.	75°CA 10°CA								
620±	832	Mine Unit	Series of chloritic tuff schists, followed by quartz eye porphyry, more chloritic tuff-schist and cherts. @ 620-685 — chloritic tuff-schists; greenish gray to brownish gray, soft fine grained, strong schistosity, numerous concordant carbonated zones, quartz and carbonate stringers, sulfides localized on cleavage planes. @ 623-645 - weakly sericitic, locally bleached buff,	45°CA								

DIAMOND DRILLING LOG

FILL IN ON EVERY PAGE | HOLE NO. LS-15-84 | PAGE NO. 2of3

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE °	CORE SPECIMEN FOOTAGE ↓	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS ↓ Au oz./ton	Ag oz./ton	Au ppb
			buff weak to moderate silicification (especially @ 632'-633').									
			@ 645-654 — increased carbonate and sulfide content.									
			@ 654-655 — brecciated brown carbonate and quartz, sulfides <1%.			42808	653.5	656	2.5	0.046	tr.	
			@ 655-659 — gray quartz and carbonate veins and breccia, sulfides up to 5% (Py, Po, Asp).			42809	656	658.5	2.5	0.108	0.02	
						42810	670	673	3			116
			@ 659-685 — well carbonate, numerous quartz stringers, sulfides locally concentrated with quartz.			42811	679	681	2			56
						42812	682	684.5	2.5			754
			@ 685-732.5 — quartz eye tuff-schist, grayish to brownish, hard, fine grained groundmass, eyes to 2-3 mm, well foliated, locally well silicified, sulfides > 2%.	40°CA								
			@ 686.5-688 — 2" gray quartz vein, followed by well silicified zone with sulfides > 3%.			42813	684.5	687	3.5	0.006	tr.	
						42814	687	689.5	2.5			223
			@ 693.5 - 3" gray quartz vein, good sulfides, decreasing eye size.			42815	692	693	1	0.024	tr.	
			@ 702-706 - chloritic tuff-schist, low sulfides, sharp contact.			42816	704	706	2			186
			@ 705 - 3" quartz eye tuff, up to 2% sulfide.									
			@ 706-732.5 - quartz eye tuff-schist, grayish, eyes to >5 mm well schistose, 706-708' massive, 708-727' becoming increasingly schistose and sericitic.									
			@ 727-732.5 - chloritic-possibly alteration.									
			@ 732.5-766.5 — chloritic tuff-schist, very well carbonated.									
			@ 735 - local bleaching.			42817	737	740	3			480
			@ 738-745 - buff-gray, medium to medium hard chert cleaved at 1/2" intervals.			42818	740	743	3			343
						42819	743	745.5	2.5			34
			@ 745 - 4" quartz eye tuff-schist.									
			@ 745.5-766.5 - dark green, andesitic appearance.									
			@ 757-758.5 - grayish, fine grained, massive intermediate flow.									
			@ 766.5-832 — chert, variably altered, usually with tiny (< 1 mm) quartz eyes - alteration? generally aphanitic.									
			@ 766.5-773 - potassically enriched, massive quartz eyes, weakly brecciated, white quartz veining @ 768.5' (6"), @ 770' (4"), @ 771'-772.5', Cp in fractures.	K-chert → White Quartz →		42820	766	771	5			3
						42821	766	772.5	6.5			2
						42822	772.5	776	3.5			2
			@ 773-783 - gray, locally olive green, quartz eyes, massive, cleaved @ 1/2" intervals, locally potassic, sericite on cleavage planes.			42823	776	780	4			4
						42824	780	783.5	3.5			7

DIAMOND DRILLING LOG

FILL IN ON EVERY PAGE ▶ HOLE NO. LS-15-84 | PAGE NO. 3of3

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE °	CORE SPECIMEN FOOTAGE °	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS ° Au oz./ton	Ag oz./ton	Au ppb
			@ 783-788± - gray, fine, eyes to 1.5 mm, massive but granular (ashy?) texture, fine but weak cleavage, concordant sericitic whisps.			42825	783.5	788	4.5			2
			@ 788±-795.5 - chert as @.733!-783', potassic toward white quartz vein @ 783'.			42726	788	792	4			2
						42727	792	796	4			3
			@ 795.5-798 - white quartz vein.			42728	796	798	2			2
			@ 798-799.5 - chloritic tuff-schist, dark green, soft some white quartz fracture filling, well carbonated.	50°CA								
			@ 799.5-801.5 - potassically enriched chert, white quartz fracture filling, weak brecciation, massive.			42729	799.5	801.5	2			2
			@ 801.5-803 - chloritic tuff-schist.									
			@ 803-808 - gray chert, medium hard, fine grained, massive but granular (ashy?), finely but weakly cleaved, locally potassic, gradational contacts.			42730	803.5	808	4.5			2
			@ 808-811 - chloritic tuff-schist.									
			@ 811-817 - gray chert, granular, massive, quartz eyes, local sulfides, bands (1/4") of argillite.			42731	811	814	3			2
						42732	814	817	3			2
			@ 817-827 - chloritic tuff-schist, @ 826' 4" dark gray, hard, siliceous, massive flow.									
			@ 827-832 - gray chert, eyes to 1.5 mm (locally 4 mm), sulfides (Cp).			42733	827	832	5			3
832	910	Andesite	@ 832-854 — andesitic tuff, well carbonated, chloritic, medium fine grained.									
			@ 854-885 — dark green, medium hard, fine to medium fine, massive flow, some carbonate near upper contact, local carbonate stringers @ 860'-861.5' quartz-carbonate-epidote breccia (pillow margin).			42734	860	861.5	1.5			4
			@ 885-910 — pillowed, soft, fine grained, weakly brecciated, small quartz-carbonate stringers.									
910	970	Diorite	Dark green, speckled, medium hardness, medium fine to medium grained, aphitic texture, massive, local shearing, disseminated sulfides, minor quartz-carbonate stringers. @ 950-970— medium coarse grained.			PAJARI	BOREHOLE SURVEY					
						depth		dip	AZIMUTH			
	970	END OF HOLE				320		-59°	340.5°			
						500		-48°	341°			
						970		-26°	332°			

R. Wells 1/1/85

DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE → HOLE NO. LS-16-84 | PAGE 1 of 3

DRILLING COMPANY: Kenora Drilling	CO-ORD. ELEVATION	BEARING OF HOLE FROM TRUE NORTH: 339°	TOTAL FOOTAGE: 860	DIP OF HOLE AT: collar | 55°	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM: AZIMUTH 339°	MAP REFERENCE NO.	CLAIM NO.
DATE HOLE STARTED: 10/7/84	DATE COMPLETED: 14/7/84	DATE LOGGED: 14/7/84	LOGGED BY: Ron Wells	260 ft | 57°	334°	LOCATION (Tp., Lot, Con. OR Lat. and Long.): 1984 Grid 8+00E 4+00S Mine Section 796E	
EXPLORATION CO., OWNER OR OPTIONEE: Lacana Mining Corporation		DATE SUBMITTED: Sept. 10/84	SUBMITTED BY (Signature)	440 ft | 56°	338°		
				620 ft | 54°	338°		
				860 ft | 48°	340°	PROPERTY NAME: Louanna Gold Mine	

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION (Colour, grain size, texture, minerals, alteration, etc.)	PLANAR FEATURE ANGLE °	CORE SPECIMEN FOOTAGE ↓	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS ↓ Au oz./ton	Au ppb	Ag oz./ton
0	6	Overburden	Casing									
6	555	Andesite	Massive to pillowed lavas, locally tuffaceous. Medium green to gray green, soft to medium hard. Predominantly fine grained. Weak to strongly carbonated. Carbonate and quartz carbonate veins at variable angles, usually less than 1/2" wide. Local strong sub-parallel fractures.									
			@ 8.0-10.0 — numerous carbonate veinlets.									
			@ 30.0-32.0 — fine tuffs/schist with numerous quartz carbonate veins 25°-50°. Minor stringer Po.	35-50°								
			@ 53.0-62.0 — fine tuffs/schist, some pillows?	30-40°								
			@ 62.0-80.0 — massive andesite.									
			@ 80.0-100.0 — massive to pillowed. Quartz-carbonate matrix and up to 2% Po. Local epidotization.									
			@ 100.0-116.0 — massive andesite.									
			@ 116.0-120.0 — pillowed. Quartz carbonate matrix, up to 2% Po. Local epidote.									
			@ 120.0-150.0 — massive andesite.									
			@ 150.0-175.0 — pillowed, locally tuffaceous. Up to 2% Po in matrix.									
			@ 175.0-187.0 — massive andesite.									
			@ 187.0-225.0 — pillowed with up to 2% Po in matrix.									
			@ 210.0 — bleby Cpy.									
			@ 225.0-275.0 — massive andesite, moderately carbonated.									
			@ 275.0-282.0 — pillowed, 1-2% Po, Cpy in matrix.									
			@ 295.0-324.0 — pillowed with minor tuff.									
			@ 342.0-345.0 — andesite tuff/schist, well carbonated.									
			@ 345.0-375.0 — massive andesite.									
			@ 375.0-402.0 — pillowed, local strong epidote alteration.									
			@ 402.0-404.0 — schist, finely laminated.	70°								
			@ 404.0-439.0 — massive. Fine to medium grained.									

DIAMOND DRILLING LOG

FILL IN ON EVERY PAGE

HOLE NO. LS-16-84 | PAGE NO. 2of3

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE °	CORE SPECIMEN FOOTAGE ↓	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS ↓ Au oz./ton	Au ppb	Ag oz./ton
			@ 439.0-515.0 -- pillowed, local epidote.									
			@ 515.0-555.0 -- andesite tuff. Well laminated, sparse fine sulfides.	40-50°								
555	767.7	Mine Unit	Predominantly green, chloritic tuffs/schist with chert, siliceous, quartz eye and sericitic tuffs local ashy to cherty tuffs.									
			@ 555.0-569.0 -- chloritic tuff, moderately to finely laminated, weak to moderately carbonated and sparse fine sulfides.	45-50°								
			@ 654.0-654.5 -- sericitic tuff. Buff coloured, finely laminated and weakly deformed.									
			@ 564.5-600.0 -- mixed chloritic, carbonated, siliceous and sericitic tuffs. Well bedded, fine to coarse laminated, local concordant, brecciated quartz or carbonate layers.	45-50°		42835	570	572	2	.003	205	tr.
						42836	572	576.5	4.5	.019	280	tr.
						42837	583	586.5	3.5	.061		tr.
						42838	586.5	590	3.5	.293		0.03
			From 564-570.0' - up to 1% fine, disseminated to stringer Po, Aspy, Py.			42839	590	593.5	3.5		4	
						42840	593.5	597	3.5	.034		tr.
			From 570-578.2'- moderately to strongly carbonated and siliceous, some brown carbonate and granular textures. Minor sericite. Up to 5% disseminated to stringer Po, Aspy, Py.			42841	597	600	3	.016		tr.
			From 578.2-582.5' - chloritic up to 1% fine sulfides.									
			From 582.5-600.0' - as @ 570' with narrow black argillaceous layers. More sericitic and brecciated quartz. 1% to 10% and locally up to 20% Po, Aspy, Py.									
			@ 600.0-633.0' -- chloritic tuff. Well laminated, commonly brecciated. Very noticeable, very fine Aspy < 1%.	45-50°								
			@ 633.0-635.0 -- siliceous, quartz eye tuff, medium green to gray with quartz eyes up to 4 mm. Becoming more siliceous and brecciated with depth, sparse quartz eyes up to 1% fine, disseminated to stringer Aspy.			42842	631.5	635	3.5	.008		tr.
			@ 635.0-639.0 -- chloritic tuff.	45-50°								
			@ 638.0-645.0 -- siliceous tuff, gray to yellowish, weak to moderately sericitic. 1% to 2% disseminated, lensy to bleby Po, Py. Few quartz veins.			42843	639	642.5	3.5	.008		tr.
						42844	642.5	646	3.5	.008		tr.
			@ 645.0-659.0 -- quartz eye tuff/schist (intrusive!) gray, massive to schistose, moderately sericitic. Numerous quartz eyes to 6 mm. Sparse very fine sulfides.	50°								

DIAMOND DRILLING LOG

FILL IN ON EVERY PAGE ▷ HOLE NO. LS-16-84 | PAGE NO. 3of3

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE °	CORE SPECIMEN FOOTAGE ▷	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS ▷ Au oz./ton	Ag ppb	Au oz./ton
			@ 659.0-680.0 -- quartz eye tuff. (alteration!). Gray to green, chloritic tuff and chert with overgrowing quartz eyes at various growth stages up to 8 mm local quartz veins with lensy Po, Cpy.									
			@ 680.0-685.0 -- siliceous, carbonated tuff. Local fine, stringer to disseminated Po.									
			@ 685.0-687.0 -- chloritic tuff altered to quartz eye.									
			@ 687.0-689.5 -- chloritic, carbonate tuff up to 3% Po, Py.			42845	687	689.5	2.5		3	
			@ 689.5-691.3 -- chloritic tuff altered to quartz eye.									
			@ 691.3-710.5 -- chloritic, carbonated tuff, well laminated	50°		42846	710.5	715.8	5.3		3	
			@ 710.5-767.5 -- mixed chloritic tuff, chert and cherty tuff. Light green to buff, soft to medium hard. Chloritic tuff is carbonated and softer. Much fine disseminated Py, Aspy, 1%, chert and cherty. Tuff is hard, gray to yellowish gray (weakly saricitic) local fine ashy tuff with black argillite bands, @ 710-712'- chert and cherty tuff, @ 712-715.8', @ 731.8-733.8', 741.3-755.0'.			42847	731.5	733.5	2		3	
						42848	739	741.5	2.5		3	
						42849	741.5	746.5	5		3	
						42850	746.5	751.5	5		4	
						42901	751.5	756	4.5		30	
						42902	756	761	5		14	
						42903	761	769	4		5	
						42904	765	768	3		121	
			@ 755.0-763.5 -- mainly fine andesite tuff with narrow bands of cherty tuff.	50-55°								
			@ 763.5-767.7 -- mixed yellowish gray chert, ashy chert and cherty tuff, minor black argillite.	45-50°		PAJARI	BOREHOLE	SURVEY				
						depth		dip	AZIMUTH			
			SHARP CONTACT									
767.7	838.0	Andesite Tuff	Medium green, soft, fine, well laminated. Moderately to strongly carbonated, sparse fine sulfides.	50-55°		260'		-50°	334°			
						440'		-83°	338°			
			GRADATIONAL CONTACT			602'		-45°	338°			
838.0	860.0	Andesite	Medium green, massive to poorly laminated. Weakly to moderately carbonated.			860'		-40°	340°			
	860	END OF HOLE										

DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE → HOLE NO. LS-17-84

DRILLING COMPANY	COLLAR ELEVATION	BEARING OF HOLE FROM TRUE NORTH	TOTAL FOOTAGE	DIP OF HOLE AT	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM	MAP REFERENCE NO.	CLAIM NO.
Kenora Drilling		339°	838.5	collar | 55°	AZIMUTH 339°		
				249 ft | 57°	338°		
				529 ft | 54°	342°		
				838.5 ft | 42°	343°		
				ft |			

DATE HOLE STARTED	DATE COMPLETED	DATE LOGGED	LOGGED BY	LOCATION (Tp., Lot, Con. OR Lot. and Long.)
14/7/84	17/7/84	18/7/84	R. C. Wells	1984 Grid 1000E 4+10S Mine Section 896E

EXPLORATION CO., OWNER OR OPTIONEE	DATE SUBMITTED	SUBMITTED BY (Signature)	PROPERTY NAME
Lacana Mining Corporation	Sept. 10/84		Louanna Gold Mine

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE °	CORE SPECIMEN FOOTAGE ↓	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS ↓ Au oz./ton	ASSAYS ↓ Au ppb
0	14.0	Overburden	@ 0-10 — Casing @ 10-14 --bouldery with fine gravel matrix.								
14.0	536.0	Andesite	Medium green to gray green, soft to medium hard, massive to pillowed flows with local tuffaceous units. Weak to locally strong carbonate alteration. @ 14.0-21.5 — massive, fine to medium grained. @ 21.5-30.5 pillows with quartz, carbonate, epidote matrix. @ 30.5-71.5 — massive, locally schistose.	20°							
			@ 71.5-100.0 -- pillows with quartz, carbonate, epidote matrix. @ 100.0-133.0 — massive locally coarser grained. Minor stringers with Po, Cpy.	55°							
			@ 133.0-143.0 — pillowed. @ 143.0-182.0 — massive, fine to locally coarse. Numerous carbonate stringers at variable angles. Local sub-parallel fractures.								
			@ 182.0-184.0 — sheared with quartz carbonate stringers.	Par//							
			@ 184.0-196.0 — massive. @ 196.0-225.0 — pillowed with quartz-carbonate matrix. @ 225.0-287.0 — massive and moderately carbonated. @ 287.0-338.0 — pillowed, moderately carbonated. @ 338.0-360.0 — massive, poorly carbonated, sparse veining. @ 360.0-445.0 — pillowed, weakly to moderately carbonated, quartz, carbonate, epidote matrix. Local coarse carbonate porphyroblasts. Sheared.	40-50°							
			@ 445.0-523.0 — massive locally strongly sheared. Numerous irregular quartz and carbonate stringers.	40-50°							
			@ 523.0-536.0 — andesite tuff. Fine grained, well laminated and fairly soft. Well carbonated. Grades into mine unit with depth.								

Rec. [illegible] 1/9/85

DIAMOND DRILLING LOG

FILL IN ON EVERY PAGE ▶ HOLE NO. LS-17-84 PAGE NO. 2of3

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE °	CORE SPECIMEN FOOTAGE ▶	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS ▶ Au oz./ton	Au ppb	Ag opt
536.0	763.5	Mine Unit	Consisting of predominantly chloritic tuffs with siliceous sericitic quartz eye and ashy tuffs. Quartz eye intrusive rocks. Chert and cherty tuffs with minor black argillite. Local sulfide rich (1%-5%) sections usually siliceous with Po > Py > Cpy. Local gray or brown, brecciated, semi-concordant quartz-carbonate veins.									
			@ 537.0-540.0 — mixed chloritic and sericitic tuffs. Soft, well carbonated with up to 1% disseminated and stringer Po, finely laminated.	35-40°		42905	537.5	539			10	
						42906	539	544			5	
			@ 542.0-567.4 — carbonated, chloritic tuff. Locally weakly sericitic with patchy to disseminated Po.			42907	552	554		.006		tr. (.2ppm)
			@ 567.4-568.1 — siliceous, sericitic tuff, sparse sulfides.									
			@ 568.1-618.0 — chloritic tuff. Soft and well carbonated, fine to medium grained. Moderately to well laminated. Local chicken feed texture from disseminated medium grained, brown carbonate (especially @ 568-572').	45°								
			@ 618.0-623.3 — chloritic tuff, strong to moderately carbonated. Concordant and usually brecciated quartz carbonate veins. Local disseminated to stringer Po < 0.5%.									
			@ 623.3-629.0 — siliceous and carbonated tuff with 1% to 5% disseminated, stringer and lensy Po, Py, minor Cpy.	45°								
			@ 629.0-632.8 — chloritic tuff locally weakly siliceous and carbonated. Local Po lenses shot blebs.			42908	610	612			30	
						42909	625	629.5		.006		.02 (.2ppm)
			@ 632.8-639.0 — quartz eye tuff. Gray fine grained schistose, good quartz eyes to 4 mm. Sharp contacts, 50°CA.	40-50°		42910	625	629.5		tr.		tr. (.2ppm)
						42911	629.5	632.8		.002		tr. (.2ppm)
						42912	632.8	636			394	
			@ 639.0-658.5 — carbonated, chloritic tuffs.									
			@ 658.5-671.7 — mixed chloritic tuffs, siliceous quartz eye tuffs and cherty to ashy tuffs. Regular to locally irregular layering. Numerous 50° fractures with Po, Py. Local Cpy. Sparse black argillite.			42913	658.5	663			13	
						42914	663	668			44	
			@ 617.7-711.7 — chloritic tuffs, well carbonated with local narrow siliceous chery tuff sections @ 686.5-689.0', 695.0-697.2' (sericitic).			42915	681.4	686.4			236	
						42916	686.4	692			174	
						42917	692	694.1			541	

DIAMOND DRILLING LOG

FILL IN ON EVERY PAGE | HOLE NO. LS-17-84 | PAGE NO. 3of3

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE °	CORE SPECIMEN FOOTAGE °	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS ° Au oz./ton	ASSAYS ° Au ppb	ASSAYS ° Ag opt
			up to 1% Po, Py @ 681.5-686.5', 697.5-699', up to 5% Py @ 692.0-693.0'.			42918	699.1	697.2			245	
			@ 711.7-720.5 — massive to laminated gray to buff chert with minor black argillite. Strong cleavage.	50°		42919	711.7	716.7			89	
			@ 720.5-762.5 — siliceous tuff, cherty tuff with local 1-2 mm quartz eyes, weakly carbonated. Moderately laminated with sparse sulfides, fine black argillite layers. Good gray chert @ 728-741.8' with up to 1% Po, Py in irregular fractures. Good quartz eyes to 4 mm @ 750-783.0'.	50°		42920	711.7	716.7			78	
						42921	716.7	721.7			94	
						42922	721.7	726.7			30	
				50°		42923	726.7	729.7			19	
						42924	729.7	734			34	
						42925	734	739			10	
				50-70°		42926	739	742			14	
						42927	742	795			3	
			@ 762.5-763.5 — breciated gray to brown quartz-carbonate. 1-2% stringer Po, Py.			42928	745	749			7	
						42929	749	754			3	
						42930	754	758.5			67	
763.5	838.5	Andesite Tuff	Medium green, well carbonated, finely laminated, cherty tuff @ 772.9-773.5', 778.0-783.5'.	45°		42931	758.5	763.5			166	
						42932	763.5	767.5			20	
			@ 785.0-793.0 — quartz eye tuff. Gray, fine grained, laminated and weakly carbonated eyes to 4 mm.			42933	767.5	772			7	
				45°		42934	772	777			2	
						42935	777	782			2	
						42936	782	784			3	
	838.5	END OF HOLE										
						PAJARI BOREHOLE SURVEY						
						depth		dip		AZIMUTH		
						249'		-56°		338°		
						529'		-50°		343°		
						838.5		-33°		343°		

Rec'd 1/1/85

DIAMOND DRILLING LOG

Start a new page for every new hole, but fill in top portion of form only on first page for each hole.

FILL IN ON EVERY PAGE

HOLE NO. LS-18-84 | PA 1o

DRILLING COMPANY	COLLAR ELEVATION	BEARING OF HOLE FROM TRUE NORTH	TOTAL FOOTAGE	DIP OF HOLE AT	LOCATION OF HOLE IN RELATION TO A FIXED POINT ON THE CLAIM	MAP REFERENCE NO.	CLAIM NO.
Kenora Drilling		339°	549	collar -45°			
DATE HOLE STARTED: 18/07/84	DATE COMPLETED: 20/07/84	DATE LOGGED: 28/07/84	LOGGED BY: J. Mucklow	200 ft -50°		LOCATION (Tp., Lot, Con. OR Lat. and Long.): 1984 Grid 4+00W 3+40S Mine Section 15+10W	
EXPLORATION CO., OWNER OR OPTIONEE: Lacana Mining Corporation		DATE SUBMITTED: Sept. 10/84	SUBMITTED BY (Signature)	400 ft -48°		PROPERTY NAME: Louanna Gold Mine	
				545 ft -44°			
				ft			

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE °	CORE SPECIMEN FOOTAGE ±	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS ±
0	45.5	Overburden	Casing							
45.5	316	Andesite	Dark green, fine to medium fine grained, medium soft to medium hard, massive to locally tuffaceous/schistose, fine disseminated Py and Po, carbonate stringers common with occasional hematite stain. @ 45.5-65 — massive, fine grained. @ 65-67 — schistose, fine grained, medium soft. @ 66 --1" white quartz vein with 3/8" blebs of Cp and associated minor Po. @ 67-86 — massive, medium fine grained. @ 86-97 — increasingly laminated then pervasively carbonated— blotchy to sub-concordant CA=50°. @ 97-316 — massive, medium fine grained, numerous carbonate stringers, becoming carbonated @ 109' and increasingly sheared @ 114' and again @ 119.5'. @ 133-135 - well laminated, well carbonated concordantly. @ 179-211 - frequent carbonate/epidote stringers-well silicified. @ 208-210 - well laminated. @ 211-227 - decreasing grain size. @ 227-228.5 - well laminated. @ 238 - 4" epidote rich. @ 265 - 6" epidote and carbonate and quartz stringer mess.							
316	364.5	Diorite?	Dark green, blotchy, medium soft, coarse to medium grained, chloritic, numerous carbonate stringers, gradational contacts. @ 316-353 — coarse to medium grained. @ 353-359.5 — medium fine to fine grained, laminated, carbonated andesite with 1 mm elongate black mineral diss. @ 359.5-364.5 — dioritic as @ 316-353', sharp contact @ 364.5'.							

DIAMOND DRILLING LOG

FILL IN ON EVERY PAGE ▷ HOLE NO. LS-18-84 | PAGE NO. 2of2

FOOTAGE FROM	FOOTAGE TO	ROCK TYPE	DESCRIPTION Colour, grain size, texture, minerals, alteration, etc.	PLANAR FEATURE ANGLE ◊	CORE SPECIMEN FOOTAGE ◊	YOUR SAMPLE NUMBER	SAMPLE FOOTAGE FROM	SAMPLE FOOTAGE TO	SAMPLE LENGTH	ASSAYS ◊
364.5	384.7	Andesite	Dark green, medium fine to fine grained, massive, disseminated 1 mm Po blebs (up to 2%).							
384.7	385.7	Diorite	As at 359.5-364.5', shar contacts.							
385.7	398.2	Andesite	As at 364.5-384.7', but more finely disseminated Po.							
398.2	416	Diorite	Medium grained, hard, chlorite and epidote rich, good aphitic texture, massive, sharp contacts.							
416	420	Andesite	Fine grained, numerous Po blebs ±2 mm, sharp contacts.							
420	526	Diorite/Andesite	Medium coarse to medium fine grained, chloritic, frequently sheared, numerous carbonate stringers with epidote and quartz and locally much hematitic staining. @ 452.5 — 4"fine grained andesite with sharp contacts. @ 479-480 — well laminated andesite. @ 525-526 — well laminated andesite. -locally appears convincingly dioritic or andesitic, but contacts quite gradational.							
526	534	Diorite	Medium coarse grained, chloritic, sheared contacts.							
534	549	Andesite	Medium fine grained, massive.							
	549	END OF HOLE								

UNDERGROUND DIAMOND DRILL LOG

LOUANNA PROJECT 1984

Sheet No. 1 of 2

Hole No. LUG-1-84

Location: North: 10160.775 East: 10307.486 Other:

Elevation: 9708.126 Level: 9700 Section: At Angle 220E

Bearing: 300° Dip: +35° at collar (Actual) +39°

at

Logged By: Ron Wells

R. Wells 1/8/85

From	To	Description
0	69	QUARTZ EYE TUFF (SCHIST) Medium gray, hard, medium to fine grained. Good quartz eye development, poor to moderately laminated 50°CA, local quartz veins, variable sulfide content Py > Po, locally >1%, usually <1% to sparse, weakly to moderately sericitic. @ 3-3.4 - milky quartz vein 40°CA. @ 12.4 - black tourmaline/biotite band 50°CA. @ 16.5 - stringers of Po 40°-50°CA. @ 23-23.5 - milky to grayish quartz vein 60°CA. Disseminated and bleby Py, minor Po and Cpy (concentrations .5% to 5%). @ 27.2-28.0 - series of quartz veins 20°CA with sericitic margins and fine Py. @ 48.0 - strongly schistose 40°-50°CA, becoming more fractured (brecciated) and chloritic with depth. @ 51-59.5 - up to 2% disseminated and stringer Py, Po (fine). @ 59.5-68.0 - moderate to good quartz eye development, moderately sericitic, disseminated to lensy Py, Po. @ 65.9-66.4 - milky to gray quartz, 40°CA, 2%-5% Py (disseminated), minor disseminated Py, Aspy.
69.0	78.0	TUFF Gray green to brownish gray, moderately soft, carbonated, weak to moderately sericitic, finely bedded sparse fine Py, Po. @ 76.5 - 3/4" quartz carbonate vein 80°CA, with coarse radiating biotite laths from vein margin.
	78.0	END OF HOLE

UNDERGROUND DIAMOND DRILL LOG

(SAMPLING)

LOUANNA PROJECT 1984

Sheet No. 2 of 2

Hole No. LUG-1-84

CORE SAMPLE

From	To	Sample No.	Length	Au oz./ton	Au ppb	Ag oz./ton
21.0	24.0	42541	3.0	.002		
61.0	66.0	42538	5.0	.007		
66.0	71.0	42539	5.0	Split .1/.05		
71.0	76.0	42540	5.0	.007		

UNDERGROUND DIAMOND DRILL LOG

LOUANNA PROJECT 1984

Sheet No. 1 of 3
Hole No. LUG-2-84

Location: North: 10192.226 East: 10310.199 Other:
Elevation: 9711.764 Level: 9700 Section: 260E
Bearing: 339° Dip: +35° at collar (Actual)
at

Logged By: Ron Wells
R. Wells 1/1/85

From	To	Description
0	6.0	QUARTZ EYE TUFF Hard, medium gray, fine to medium grained with well developed 2 mm quartz eyes, fine to medium laminated 45°CA, weak to moderately sericitic, disseminated Py and local 45°CA lenses (concordant), few narrow gray quartz veins (concordant). @ 5.2-5.4 - 60% gray quartz vein, small clusters of fine Py, Po.
6.0	18.5	SULFIDE RICH TUFF Medium green gray to gray well laminated 45°CA, locally brecciated with much gray quartz, disseminated to lensy Py, Po, Aspy, minor Cpy (total 10% locally). @ 14.0-14.7 -) much banded (45°) gray quartz 15.2-17.0 -) with disseminated and 18.0-18.5 -) lensy Py, Po, Aspy.
18.5	19.4	QUARTZ EYE TUFF (as at 0-6.0) Up to 5% fine disseminated and lensy Py.
19.4	22.3	SULFIDE RICH TUFF (as at 0-6.0) Sericitic and siliceous with fine VG at 21.5.

UNDERGROUND DIAMOND DRILL LOG

(Continuation)

LOUANNA PROJECT 1984

Sheet No. 2 of 3

Hole No. LUG-2-84

From	To	Description
22.3	32.7	CHLORITIC TUFF Medium green, well laminated 45°CA, weak to moderately carbonated with up to 2% Py, Po as disseminations and stringers.
42.7	43.7	QUARTZ EYE TUFF Hard, gray to yellowish gray, fine to medium grained, laminated 45°CA, moderately sericitic with local coarse quartz eyes to 5 mm, some disseminated and stringer Py.
43.7	50.5	SILICEOUS TUFF Gray to Brownish gray, finely laminated 45°CA, siliceous with poorly developed quartz eyes, sparse very fine sulfides.
50.5	69.0	CHLORITIC TUFF Medium green, fine to coarse laminated, softer and carbonated, more massive with depth, sparse fine Py.
	69.0	END OF HOLE

UNDERGROUND DIAMOND DRILL LOG

(SAMPLING)

LOUANNA PROJECT 1984

Sheet No. 3 of 3

Hole No. LUG-2-84

CORE SAMPLE

From	To	Sample No.	Length	Au oz./ton	Au ppb	Ag oz./ton
6.0	11.0	42542	5.0	.004		.02
11.0	16.0	42543	5.0	.175		.05
16.0	21.0	42544	5.0	.054		.02
21.0	26.0	42545	5.0	.034		.02
26.0	31.0	42546	5.0	.006		.03

UNDERGROUND DIAMOND DRILL LOG

LOUANNA PROJECT 1984

Sheet No. 1 of 3
Hole No. LUG-3-84

Location: North: 10205.194 East: 10361.083 Other:
Elevation: 9708.866 Level: 9700 Section: 310E
Bearing: 334° Dip: +45° at collar (Actual) +41.00°
at

Logged By: Ron Wells
R. Wells 1/1/85

From	To	Description
0	12.7	SILICEOUS TUFF Medium hard, gray, fine to medium grained, poor to moderately laminated 35°-45°CA, up to 2% fine to medium disseminated Po, Py, also as concordant stringers, some gray quartz. @ 11.0-12.7 - weak to moderately brecciated, 1%-2% Py, Po.
12.7	18.1	SILICEOUS TUFF BRECCIA/GRAY QUARTZ Medium gray, hard, poor to moderately laminated, much gray quartz and up to 10% Py, Po, minor Cpy and Aspy, local poorly developed quartz eyes. @ 12.5-14.0 - 80% gray quartz with 5% Po, Py, Aspy, possibly some fine VG. @ 17.6-18.1 - brecciated gray quartz with 1% fine Py, local Aspy.
18.1	26.8	QUARTZ EYE TUFF Medium gray, hard, poor to moderately laminated, good 1-3 mm quartz eyes, disseminated Py $<$ 1%, weakly sericitic. @ 20.3-21.0 - milky quartz vein 90°CA.
26.8	33.0	SILICEOUS TUFF Gray, medium hard, moderately to strongly laminated, locally brecciated, up to 10% Py, Po, minor Cpy, disseminated and stringers.

UNDERGROUND DIAMOND DRILL LOG

(Continuation)

LOUANNA PROJECT 1984

Sheet No. 2 of 3

Hole No. LUG-3-84

From	To	Description
		@ 27.0-27.3 - brecciated gray quartz with Py, Po, Aspy. @ 27.3-31.0 - finely laminated with local heavy Py, Po, especially at 23.9-30.0. @ 31.0-32.3 - brecciated gray quartz with up to 10% Py, Po, Aspy, minor Cpy.
33.0	38.7	CHLORITIC TUFF Medium gray to greenish, weak to moderately siliceous, becoming more chloritic with depth, fine laminated 45°CA, < 1% disseminated Py. @ 37-37.2 - brecciated bluish quartz, minor Py.
38.7	63.5	QUARTZ EYE TUFF Medium gray, hard, good 1-5 mm quartz eyes, weakly sericitic disseminated Py, local siliceous sections with quartz eyes. @ 38.7-42.0 - siliceous tuff.
63.5	72.0	CHLORITIC TUFF Medium green, soft, chloritic, carbonated, siliceous bands near upper contact, poorly developed quartz eyes, sparse sulfides.
	72.0	END OF HOLE

UNDERGROUND DIAMOND DRILL LOG

(SAMPLING)

LOUANNA PROJECT 1984

Sheet No. 3 of 3

Hole No. LUG-3-84

CORE SAMPLE

From	To	Sample No.	Length	Au oz./ton	Au ppb	Ag oz./ton
12.0	15.1	42551	3.1	.125		.02
15.1	18.7	42552	3.2	.06		.01
29.0	32.5	42553	3.5	.09		.03

UNDERGROUND DIAMOND DRILL LOG

LOUANNA PROJECT 1984

Sheet No. 1 of 3

Hole No. LUG-4-84

Location: North: 10205.194 East: 10361.083 Other:

Elevation: 9708.866 Level: 9700 Section: 310E

Bearing: 334° Dip: +55° at collar (Actual) +50°

at

Logged By: Ron Wells

R. . Wells 1/1/85

From	To	Description
0	26.6	SILICEOUS TUFF Hard, medium gray, moderately to well laminated 25°-30°CA, locally brecciated, stringers and disseminated Py, Po up to 2% locally. @ 13.2-16.5 - much brecciated gray quartz, moderately sericitic with up to 10% Py, Po, Aspy, minor Cpy, mainly as concordant stringers. @ 16.5-26.6 - siliceous and carbonated tuff, moderately soft, 1%-3% Py, Po, disseminated and stringers, weakly sericity, brecciated gray quartz.
26.6	32.2	QUARTZ EYE TUFF Hard, medium gray, siliceous, well laminated 35°-45°CA, well developed quartz eyes and locally well developed sericitic bands.
32.2	38.7	SILICEOUS TUFF Hard, medium gray, moderately to well laminated 35°-45°CA, locally brecciated with gray quartz, stringers and disseminated Py, Po, local Cpy, Aspy. @ 34.6-38.0 - siliceous tuff with locally up to 80% brecciated gray quartz, especially at 37-38, 1%-5% Po, Py, locally up to 20% as at 34.5-34.8.

UNDERGROUND DIAMOND DRILL LOG

(Continuation)

LOUANNA PROJECT 1984

Sheet No. 2 of 3

Hole No. LUG-4-84

From	To	Description
		@ 37.7-37.8 - milky quartz vein 30°CA.
38.7	45.0	SILICEOUS/CHLORITIC TUFF Gray to green gray, with fine disseminated and lensy Po, Py, locally up to 1%. @ 41.9-42.6 - brecciated gray quartz. @ 42.6-45.0 - siliceous-chloritic tuff, carbonated.
45.0	53.0	QUARTZ EYE/SILICEOUS TUFF Hard, gray, locally brecciated with up to 20% gray quartz, 2%-5% Py, Po, minor Cpy. @ 45-47.3 - quartz eye tuff, gray quartz at 48-49 with 1%-5% Py, Po, banding 25°CA. @ 49.6-50.0 - strong chloritic shear 25°CA.
	53.0	END OF HOLE

UNDERGROUND DIAMOND DRILL LOG

(SAMPLING)

LOUANNA PROJECT 1984

Sheet No. 3 of 3

Hole No. LUG-4-84

CORE SAMPLE

From	To	Sample No.	Length	Au oz./ton	Au ppb	Ag oz./ton
10	13	42565	3	.026		.08
13	17	42566	4	.160		.04
17	21	42567	4	.042		.03
32	34	42568	2	.016		.04
34	39	42569	5	.066		.03
45	48	42570	3	.066		.04
48	50	42571	2	.034		.06

UNDERGROUND DIAMOND DRILL LOG

LOUANNA PROJECT 1984

Sheet No. 1 of 3
Hole No. LUG-5-84

Location: North: 10190.017 East: 10312.581 Other:
Elevation: 9849.597 Level: 9850 Section: 255E
Bearing: 334° Dip: -45° at collar (Actual) -41°40'
at

Logged By: Ron Wells
R. Wells 1/1/85

From	To	Description
0	23.4	QUARTZ EYE TUFF Medium gray, hard, siliceous, poor to well laminated with well developed quartz eyes up to 3 mm, weak to moderately sericitic, giving brownish colouration, locally sparse Py, Po mainly disseminated.
23.4	25.8	SILICEOUS TUFF WITH GRAY QUARTZ Gray, hard, well banded 50°CA, gray quartz vein from 24.9-25.7 with 10% Aspy minor Py, speck of VG, heavily sericitic above with 1%-5% fine to coarse disseminated Py, minor Cpy.
25.8	31.5	CHLORITIC TUFF Medium to dark green to gray, medium hard to softer and carbonated. @ 28-29.5 - siliceous bands, hard, disseminated Py, minor Cpy. @ 30.7-31.5 - 3%-5% fine disseminated and lensy Py, Po.
31.5	46.0	QUARTZ EYE/SILICEOUS TUFF Medium gray, hard, siliceous, poor to well banded 50°CA, well developed quartz eyes at 31.5-34.0, from 34-46.0, finely banded siliceous tuffs, local concentrations of Py as fine concordant lenses.

UNDERGROUND DIAMOND DRILL LOG

(Continuation)

LOUANNA PROJECT 1984

Sheet No. 2 of 3

Hole No. LUG-5-84

From	To	Description
		@ 40.0 - very blocky ground.
46.0	50.0	CHLORITIC TUFF Dark green, strongly chloritic and schistose, very blocky core recovery, shear zone.
	50.0	END OF HOLE

UNDERGROUND DIAMOND DRILL LOG

(SAMPLING)

LOUANNA PROJECT 1984

Sheet No. 3 of 3

Hole No. LUG-5-84

CORE SAMPLE

From	To	Sample No.	Length	Au oz./ton	Au ppb	Ag oz./ton
23.0	26.0	42572	3.0	.219		.08
30.0	32.0	42573	2.0	.022		.03
34.0	38.0	42574	4.0	.026		.04

UNDERGROUND DIAMOND DRILL LOG

LOUANNA PROJECT 1984

Sheet No. 1 of 3

Hole No. LUG-6-84

Location: Actual: 10212.409N North: 10204.75 Actual: 10353.15E East: 10356.7 Other:

Elevation: 9850.9 Level: Section: 300E

Bearing: 330° Dip: -42° at collar (Actual)
Actual: 345°
at

Logged By: Ron Wells
R. C. Wells 1/1/85

From	To	Description
0	5.0	CHLORITIC TUFF Medium gray to dark gray, soft and moderately to strongly carbonated, becoming more gray and siliceous with depth, sericitization increases also with depth.
5.0	8.2	SILICEOUS/SERICITIC TUFF Light gray, medium hard, siliceous and sericitic, alteration is patchy and transects tuff banding/ schistocity?
8.2	13.0	SILICEOUS TUFF (TRANSITION TO QUARTZ EYE TUFF) Dark gray, medium hard, strong siliceous, poorly laminated 50°-55°CA, poort o moderately developed quartz eyes, sparse fine sulfides.
13.0	20.7	QUARTZ EYE TUFF Medium gray to brownish gray, medium hard, siliceous locally brownish and sericitic, moderately to poorly banded 50°-60°CA, local fine disseminated Py.
20.7	21.6	HIGHLY BROKEN CORE fragments of milky quartz-epidote carbonate veins, sparse sulfides.
21.6	24.0	QUARTZ EYE TUFF (as at 13.0-20.7)
24.0	37.0	SILICEOUS TUFF Medium to dark gray, hard, massive to moderately laminated 50°CA, local light brownish with sericite alteration.

UNDERGROUND DIAMOND DRILL LOG

(Continuation)

LOUANNA PROJECT 1984

Sheet No. 2 of 3

Hole No. LUG-6-84

From	To	Description
		@ 24.0-26.5 - gray siliceous with poorly developed quartz eyes. @ 26.5-29.0 - much brownish gray quartz, few poor quartz eyes, minor disseminated Py, Po. @ 29.0-32.0 - siliceous locally sericitic tuff. @ 32.0-37.0 - gray, highly siliceous, better banded with depth, disseminated Py.
37.0	67.0	CHLORITIC TUFF Medium to dark green, moderately soft, finely banded 40°-45°CA, weak to moderately carbonated. @ 60.0-66.0 - moderately carbonated. @ 66.0-67.0 - brecciated, gray quartz with 1% medium to coarse Po, Py.
	67.0	END OF HOLE

UNDERGROUND DIAMOND DRILL LOG

(SAMPLING)

LOUANNA PROJECT 1984

Sheet No. 3 of 3

Hole No. LUG-6-84

CORE SAMPLE

From	To	Sample No.	Length	Au oz./ton	Au ppb	Ag oz./ton
25	27.0	42585	2.0	.004		
27	29.0	42586	2.0	.006		
29	32.0	42587	3.0	.006		
32.0	34.5	42588	2.5	tr.		
34.5	37.0	42589	2.5	.002		

UNDERGROUND DIAMOND DRILL LOG

LOUANNA PROJECT 1984

Sheet No. 1 of 3
Hole No. LUG-7-84

Location: North: 10204.75 East: 10356.89 Other:
Elevation: 9851.46 Level: Section: 300E
Bearing: 166° 27' Dip: -35° at collar (Actual) -34°
at

Logged By: Ron Wells
R. . . wells 1/1/85

From	To	Description
0	26.5	CHLORITIC TUFF MINOR ANDESITE Medium green to gray green, relatively soft and moderately to well carbonated, few irregular quartz carbonate stringers, poor to moderately banded 50°-60°CA, to massive (andesite flow), sparse very fine Py, local lensoid structures with chloritic margins which may be lapilli. @ 6.3-6.7 - lensy and brecciated gray quartz 1%-5% Py, fine to coarse (fracture.fill!). @ 10.8-11.9 - andesite, dark green, massive, poorly carbonated.
26.5	27.5	SULFIDE ZONE Dark green, chloritic tuff with 5%-10% gray quartz lenses (5%), 10% bleby to disseminated Py, Po.
27.5	44.6	CHLORITIC TUFF Light to medium green, medium hard to soft and carbonated, chloritic with few irregular quartz carbonate vein.
44.6	48.1	SILICEOUS CHLORITIC TUFF Medium green to gray, medium hard mixed chloritic / siliceous tuff, poor to well brecciated (fine), patchy gray quartz 5%-10% disseminated and lensy Py minor Po.

UNDERGROUND DIAMOND DRILL LOG

(Continuation)

LOUANNA PROJECT 1984

Sheet No. 2 of 3

Hole No. LUG-7-84

From	To	Description
48.1	50.7	CHLORITIC TUFF Medium to dark green to gray chloritic, locally carbonated and softer.
50.7	58.0	SILICEOUS TUFF BRECCIA Gray to green gray, finely brecciated siliceous tuff in chloritic to weakly carbonated matrix, good 45° banding/ schistocity, 1%-5% disseminated to lensy Py, Po. @ 54.9-55.5 - 10% Py, Po as concordant lenses.
58.0	62.0	CHLORITIC TUFF Medium green to gray, chloritic, weak to moderately carbonated, local brecciated quartz (60.8-61.3).
	62.0	END OF HOLE

UNDERGROUND DIAMOND DRILL LOG

(SAMPLING)

LOUANNA PROJECT 1984

Sheet No. 3 of 3

Hole No. LUG-7-84

CORE SAMPLE

From	To	Sample No.	Length	Au oz./ton	Au ppb	Ag oz./ton
26	28	42595	2.0	.192		
44	46	42596	2.0	.016		
46	48.5	42597	2.5	.014		
50	55.0	42598	5.0	.006		
55.0	52.0	42599	4.0	.004		
59.0	62.0	42600	3.0	.022		

UNDERGROUND DIAMOND DRILL LOG

LOUANNA PROJECT 1984

Sheet No. 1 of 3
Hole No. LUG-8-84

Location: North: 10153.157 East: 10212.436 Other:
Elevation: 9848.932 Level: Section: 150E
Bearing: 150° 17' Dip: -65° at collar (Actual) -62°
at

Logged By: Ron Wells Remarks: Target South Zone

R. C. Wells 1/1/85

From	To	Description
0	16.9	SILICEOUS TUFF Light to medium gray, medium hard, moderately to poorly banded 30°-35°CA, local fine disseminated or fine stringer Py, Po, weakly sericitic. @ 3.6-3.7 - brecciated gray to white quartz vein 60°CA, 1% disseminated fine to coarse Py. @ 6.5-8.2 - coarsely brecciated gray quartz, white quartz-carbonate and siliceous tuff, tuff well banded 40° to subparallel to CA, concordant Py, Po stringers, averaging 5%, narrow quartz vein 90°CA. @ 10.4-12.8 - brecciated gray quartz, white quartz carbonate with 5%-10% stringer Py, Po in brecciated portion, contact is subparallel to 20°CA.
16.9	19.0	CHLORITIC TUFF/SILICEOUS TUFF Dark gray, moderately siliceous, medium hard, moderately banded 35°CA, sparse fine Py.
19.0	22.0	SILICEOUS TUFF Medium to light gray, hard siliceous, moderately to well banded 35°-40°CA, locally up to 1% Py, Po. @ 19.7-21.5 - siliceous, weak to moderately sericitic and brownish 1%-3% disseminated and stringer Py, Po.

UNDERGROUND DIAMOND DRILL LOG

(Continuation)

LOUANNA PROJECT 1984

Sheet No. 2 of 3

Hole No. LUG-8-84

From	To	Description
22.0	54.5	CHLORITIC TUFF Medium green, medium hard to soft, well laminated usually fine 30°-40°CA, carbonate stringers and bands, locally harder and siliceous. @ 25.5-26.0 - irregular gray quartz with 5% Py, Po, no coarse blebs and lenses. @ 39.0-39.5 - brecciated quartz with 1%-2% disseminated Py, Po.
54.5	56.0	SILICEOUS TUFF Light gray, hard, finely laminated 30°CA, sparse sulfides.
	56.0	END OF HOLE

UNDERGROUND DIAMOND DRILL LOG

(SAMPLING)

LOUANNA PROJECT 1984

Sheet No. 3 of 3

Hole No. LUG-8-84

CORE SAMPLE

From	To	Sample No.	Length	Au oz./ton	Au ppb	Ag oz./ton
7.0	10.0	42606	3.0	.004		.02
10.0	13.0	42607	3.0	.002		.02
19.0	22.0	42608	3.0	.040		.02
25.0	26.5	42609	1.5	.034		.03

UNDERGROUND DIAMOND DRILL LOG

LOUANNA PROJECT 1984

Sheet No. 1 of 3
Hole No. LUG-9-84

Location: North: 10026.079 East: 9871.34 Other:
Elevation: 9850.84 Level: Section: Collar @ W
Bearing: 118° Dip: -32° at collar (Actual) Angle to 180W
at

Logged By: Ron Wells
R. L. Wells 1/1/85

From	To	Description
0	2.0	CASING
2.0	5.0	QUARTZ EYE TUFF Hard, light to medium gray, poorly to moderately laminated 50°-60°CA, good quartz eyes to 4 mm, sparse disseminated Py, weakly sericitic.
5.0	14.5	SILICEOUS/QUARTZ EYE TUFF Hard, light gray to green gray, poor to moderately laminated, sericitic, locally with gray quartz and 1%-10% Py, Po, as stringers and disseminations, local quartz eyes. @ 10.4-12.0 - strongly brecciated gray quartz with 5%-20% Py >> Po stringers and fracture fill, some VG noted. @ 12.0-14.5 - few deformed! quartz eyes.
14.5	33.0	QUARTZ EYE TUFF Hard, light gray to greenish gray, poor to moderately laminated 55°CA, well developed quartz eyes, local fracturing with Py fill, disseminated and stringer Py, sparse to 1% locally up to 5%, weak to moderately sericitic. @ 18.6-19.0 - siliceous 5% stringer Py. @ 24.4-25.0 - siliceous 10% Py. @ 31.0-33.0 - moderately to strongly sericitic.

UNDERGROUND DIAMOND DRILL LOG

(Continuation)

LOUANNA PROJECT 1984

Sheet No. 2 of 3

Hole No. LUG-9-84

From	To	Description
33.0	46.0	SILICEOUS/QUARTZ EYE TUFF (as at 5.0-16.5) 1%-10% Py Po, stringer and disseminated. @ 35.5-36.5 - brecciated gray quartz and siliceous tuff, 1%-3% tuff up to 20% massive to lensy Py, some brecciated gray quartz. @ 39.8-41.0 - brecciated gray quartz vein, 1%-2% disseminated Py, Aspy. @ 41.0-42.5 - mixed gray quartz siliceous and sericitic tuff with 1%-10% Py, minor Aspy, Po, VG noted. @ 45.1-45.7 - milky quartz vein 45°CA.
46.0	59.0	CHLORITIC TUFF Medium gray to greenish gray, medium hard to soft, finely laminated 45°CA, locally numerous concordant carbonate stringers, sparse disseminated fine Py.
	59.0	END OF HOLE

UNDERGROUND DIAMOND DRILL LOG

(SAMPLING)

LOUANNA PROJECT 1984

Sheet No. 3 of 3

Hole No. LUG-9-84

CORE SAMPLE

From	To	Sample No.	Length	Au oz./ton	Au ppb	Ag oz./ton
6	9.7	42610	3.7	.046		.02
9.7	12.0	42611	2.3	2.301		.63
12.0	15.0	42612	3.0	0.036		.02
18.5	20.0	42613	1.5	.060		.03
24.0	25.0	42614	1.0	.104		.06
33.5	36.5	42615	3.0	1.08		.33
36.5	39.0	42616	2.5	1.21		.35
39.0	43.0	42617	4.0	1.66		1.22
43.0	45.0	42618	2.0	.683		.30
15.0	18.0	42619			478	

1.0 / 5.0

.06 - 1/.05

1.0 / 5.5

UNDERGROUND DIAMOND DRILL LOG

LOUANNA PROJECT 1984

Sheet No. 1 of 2

Hole No. LUG-10-84

Location: North: 10027.04 East: 9867.993 Other:

Elevation: 9867.993 (Actual) Level: Section: 220W

Bearing: 148° Dip: -55° 9852.393 at collar (Actual)

at

Logged By: R. L. Wells 1/11/85

From	To	Description
0	1.5	CASING
1.5	34.0	QUARTZ EYE TUFF Hard, light to medium gray, weak to moderately sericitic, poor to moderately laminated 45°-50°CA, well developed 1-3 mm quartz eyes, though absent in better banded siliceous tuff, sparse disseminated Py for most part. @ 7.0-9.5 - patchy (brecciated?) gray quartz in well laminated siliceous, strongly sericitic tuff, 2%-5% stringer and disseminated Py > Po, Aspy, Cpy. @ 21.0-26.0 - finely laminated tuff 35°CA, poorly developed quartz eyes, strongly sericitic. @ 26.0-34.0 - fine sericitic tuff with much gray quartz, locally brecciated 1%-5% stringer and disseminated Py, VG noted at 32.0.
34.0	55.0	CHLORITIC TUFF Medium hard to soft, medium green to yellowish green, finely laminated 45°CA, poor to moderately carbonated and softer, few cross-cutting narrow milky quartz veins 60°CA. @ 34.0-38.0 - patchy weak to moderate sericite alteration. @ 49.3-50.3 - two barren, milky quartz veins 65°CA. @ 43.0-55.0 - soft, moderately carbonated as concordant stringers/layers.
	55	END OF HOLE

UNDERGROUND DIAMOND DRILL LOG
(SAMPLING)

LOUANNA PROJECT 1984

Sheet No. 2 of 2

Hole No. LUG-10-84

CORE SAMPLE

From	To	Sample No.	Length	Au oz./ton	Au ppb	Ag oz./ton
7.0	9.5	42629	2.5	.125		.07
26.0	28.2	42530	2.2	.100		.04
28.2	31.8	42531	3.6		232	
31.8	34.0	42532	2.2	0.782		0.19

UNDERGROUND DIAMOND DRILL LOG

LOUANNA PROJECT 1984

Sheet No. 1 of 2
Hole No. LUG-11-84

Location: North: 10039.0 East: 9906.06 Other:
Elevation: 9748.6 Level: Section: 180W
Bearing: 151° 24' Dip: -38° at collar (Actual)
at

Logged By: Ron Wells
R. Wells 1/1/85

From	To	Description
0	18.6	QUARTZ EYE TUFF Hard, light to medium gray, poorly laminated 70°CA. well developed quartz eyes 1-5 mm, weak to moderately sericitic, sparse disseminated or stringer Py. @ 5.8-7.3 - milky quartz vein 70°CA. @ 13.0-15.5 - brownish and sercitic. @ 17.6-18.4 - brecciated milky quartz with platy fracture fill Py, up to 1%.
18.6	33.8	CHLORITIC TUFF Medium to darkish green, finely laminated 75°CA, weak to moderately carbonated and soft, sparse disseminated fine Py. @ 22.7-23.2 - series of 1-2" wide milky quartz veins 60°-70°CA, cross-cutting bedding.
33.8	44.0	ANDESITE Medium green, massive to poorly bedded, weak to moderately carbonated as stringers and fracture fill at varying angles, sparse Py. @ 39.0-44.0 - gray well carbonated.
	46.0	END OF HOLE

UNDERGROUND DIAMOND DRILL LOG

(SAMPLING)

LOUANNA PROJECT 1984

Sheet No. 2 of 2

Hole No. LUG-11-84

CORE SAMPLE

From	To	Sample No.	Length	Au oz./ton	Au ppb	Ag oz./ton
6.4	7.2	42635	0.8	.002		
17.5	18.5	42636	1.0	.002		

UNDERGROUND DIAMOND DRILL LOG

LOUANNA PROJECT 1984

Sheet No. 1 of 2

Hole No. LUG-12-84

Location: North: 10075.95 East: 9868.72 Other:

Elevation: 9755.43 Level: Section: Angle to 180W

Bearing: 139° 34' 50' Dip: +39° at collar (Actual)

at

Logged By: Ron Wells

R. . . Wells 1/1/85

From	To	Description
0	52.0	CHLORITIC TUFF Medium green to gray green, soft, strongly carbonated, finely laminated 40°CA, local strong carbonate banding, sparse fine Py. @ 11.0-12.0 - finely bedded much broken core. @ 15.5-22.0 - strongly carbonated with a few siliceous laminations. @ 28.9-29.5 - concordant siliceous bands. @ 50.0-52.0 - hard and siliceous.
52.0	89.0	QUARTZ EYE TUFF Hard, light to medium gray to yellowish, weak to moderately sericitic, local well developed quartz eyes up to 5 mm, local stringer and disseminated Py. @ 54.5-56.2 - 1%-3% stringer Py in siliceous, sericitic tuff. @ 59.6-62.3 - sericitic tuff with much gray quartz, up to 5% stringer Py > Po. @ 62.3-63.3 - strongly sericitic good quartz eyes. @ 69.3-71.0 - much gray quartz with 1%-3% stringer and disseminated Py, Po. @ 75.0-77.0 - siliceous and sercitic with 1%-5% Py > Po.
	89.0	END OF HOLE

UNDERGROUND DIAMOND DRILL LOG

(SAMPLING)

LOUANNA PROJECT 1984

Sheet No. 2 of 2

Hole No. LUG-12-84

CORE SAMPLE

From	To	Sample No.	Length	Au oz./ton	Au ppb	Ag oz./ton
54.5	56.2	42643	1.7	.118		.05
59.6	62.3	42644	2.7	.08		.02
62.3	66.0	42645	3.7		496	
66.0	69.3	42646	3.3		324	
69.3	71.0	42647	1.7	.106		.04
74.6	75.6	42648	1.0	.505		.18
75.6	77.6	42649	1.0		600	

UNDERGROUND DIAMOND DRILL LOG

LOUANNA PROJECT 1984

Sheet No. 1 of 4

Hole No. LUG-13-84

Location: North: 10278.33 East: 10377.54 Other: Switchback in Ramp

Elevation: 9899.93 Level: Section: Angle to 350E

Bearing: 134° 4 Dip: -52° at collar (Actual)
-47° at 210'

Logged By: Ron Wells Remarks: Test N and S Zones between 9700 and 9850 El

R. Wells 1/1/85

From	To	Description
0	32.8	ANDESITE Medium to dark green, fine grained, massive to poorly schistose 40°CA, becoming carbonated with depth, sparse fine Py. @ 10.0-20.0 - carbonated chloritic tuff (schist with carbonated bands), finely laminated 40°CA. @ 20.0-32.8 - fairly massive, few carbonate stringers. @ 32.4-32.8 - milky quartz carbonate vein, sharp contacts 30°CA.
32.8	58.3	CHLORITIC TUFF Medium green to grayish, moderate to well laminated 40°CA, usually finely carbonated to varying degree, sparse disseminated fine Py, black core recovery. @ 32.8-39.8 - speckled with carbonate blebs/metacrysts (concordant). @ 39.8-40.0 - brownish, brecciated quartz vein 50°CA. @ 52.6-52.9 - barren milky quartz vein 40°CA. @ 53.0-58.3 - gray and siliceous, weakly sericitic.
58.3	60.9	SILICEOUS TUFF Light brown to greenish brown, fine, moderately laminated 40°-50°CA, very sparse Py.
60.3	133.0	CHLORITIC TUFF Soft, moderate to strongly carbonated, medium green with numerous light carbonate bands, sparse fine Py.

UNDERGROUND DIAMOND DRILL LOG

(Continuation)

LOUANNA PROJECT 1984

Sheet No. 2 of 4

Hole No. LUG-13-84

From	To	Description
		@ 78.9-79.5 -) weakly @ 80.0-83.0 -) siliceous. @ 98.9-99.4 - much broken core. @ 131.0-132.0 - narrow stringers of fine Po, Py 25°CA.
133.0	140.9	QUARTZ EYE TUFF Hard, medium gray, poorly laminated 45°CA, fine quartz eyes to 2 mm, sparse fine Py.
140.9	152.0	SILICEOUS TUFF Hard, laminated 50°CA, locally brecciated and lensy, up to 1% disseminated bleby and stringer Py, weak to moderately sericitic. @ 141.8-142.3 - gray quartz vein 50°CA, fine Py, numerous specks of VG, siliceous below with up to 3% lensy Py.
152.0	210.0	CHLORITIC TUFF Medium green to gray, soft, moderate to strongly carbonated, generally poorly laminated 45°CA. @ 151-153.5 - brecciated siliceous tuff with some gray quartz fragments and vein material, up to 5% fine disseminated and fracture fill Py, Po, Aspy. @ 160-167 - gray, massive, strongly carbonated. @ 175-190 - chloritic tuff, carbonated, locally siliceous, sparse fine Py. @ 190-192.6 - siliceous with brecciated gray quartz, weakly sericitic, 1%-2% stringer and disseminated Py, Aspy. @ 192.6-193.1 - QUARTZ PORPHYRY, narrow dike 30°CA, sharp contacts (wavy), fine purplish groundmass with 1-2 mm elongate quartz phenocrysts? parallel to schistocity 45°CA.

UNDERGROUND DIAMOND DRILL LOG

(Continuation)

LOUANNA PROJECT 1984

Sheet No. 3 of 4

Hole No. LUG-13-84

From	To	Description
		@ 197.0-198.7 - sericitic tuff with brecciated gray quartz, stringer and fracture fill Aspy > Py. @ 198.7-210 - chloritic tuff, weakly sericitic, fine laminated 50°CA.
	210	END OF HOLE
		DIP TEST 47° (corrected)

UNDERGROUND DIAMOND DRILL LOG

(SAMPLING)

LOUANNA PROJECT 1984

Sheet No. 4 of 4

Hole No. LUG-13-84

CORE SAMPLE

From	To	Sample No.	Length	Au oz./ton	Au ppb	Ag oz./ton
140.8	142.8	42661	2.0	.433		
142.8	144.8	42660	2.0	.032		
144.8	147	42662	2.2		429	
151	153.5	42663	2.5	.050		
190.5	192.5	42664	2.0	.092		
196.7	198.7	42665	2.0	.566		

UNDERGROUND DIAMOND DRILL LOG

LOUANNA PROJECT 1984

Sheet No. 1 of 3
Hole No. LUG-14-84

Location: North: 10016.924 East: 9930.208 Other: Ramp Switchback
Elevation: 9678.52 Level: Section: Angle to 160°W
Bearing: Az 351° 41' Dip: -55° at collar (Actual)
at 150 -52°

Logged By: Ron Wells Remarks: Target N and S Zones @ 9600 El

R. ... Wells 1/1/85

From	To	Description
0	28.8	ANDESITE Medium green, medium hard, massive to poorly laminated, weakly carbonated with narrow carbonate stringers at variable angles, occasional narrow quartz veins with epidote. @ 11.8-11.9 -) quartz-carbonate- @ 14.3-15.8 -) epidote veins @ 17.0-17.2 -) 30°-60°CA.
28.8	63.0	ANDESITE TUFF Medium green to dark greenish gray, fine grained, moderately laminated 30°-40°CA, weak to moderately carbonated with concordant bands, cross-cutting stringers and locally pervasive, sparse fine Py.
63.0	108.0	CHLORITIC TUFFS Light to medium green, medium hard to soft, finely laminated 25°-30°CA, with carbonate bands and cross-cutting quartz stringers, sparse fine Py. @ 67.1-67.4 - milky quartz vein 50°CA, bleby and disseminated Cpy ±1%. @ 88.0-90.0 - series of 2" wide milky quartz-carbonate veins 45°-90°CA. @ 91.0-94.0 - moderately carbonated, banding 30°CA. @ 105-108 - silicified and gray, tourmaline bands 25°CA.

UNDERGROUND DIAMOND DRILL LOG

(Continuation)

LOUANNA PROJECT 1984

Sheet No. 2 of 3

Hole No. LUG-14-84

From	To	Description
108.0	113.0	QUARTZ EYE TUFF Hard, light gray, finely laminated 35°CA, siliceous, weakly sericitic with well developed quartz eyes to 5 mm.
113.0	120	SILICEOUS TUFF AND QUARTZ Hard, mixed gray to yellowish to brown, siliceous, sericitic tuff, massive to brecciated with some gray quartz. @ 113.0-113.7 - brecciated gray to bluish quartz with chloritic tuff, 1%-5% disseminated to stringer Po > Py. @ 113.7-113.8 - massive to weakly brecciated milky quartz vein, sparse disseminated fine Po, Py. @ 115.8-119.0 - brecciated siliceous, sericitic tuff with quartz 1%-5% disseminated to stringer Py, Po minor sphalerite. @ 119.0-120.0 - light brown sericitic tuff, no visible sulfide minerals.
120	152	CHLORITIC TUFF Medium green, finely laminated 20°-35°CA, weak to moderately carbonated. @ 128.2-129.0 - brecciated gray quarts carbonate veins with 1% disseminated and stringer Po, Py, Aspy, speck of VG. @ 132.2-132.7 - brecciated quartz carbonate vein < 1% Po, Py, Aspy.
	152	END OF HOLE DIP TEST 52°

UNDERGROUND DIAMOND DRILL LOG

(SAMPLING)

LOUANNA PROJECT 1984

Sheet No. 3 of 3

Hole No. LUG-14-84

CORE SAMPLE

From	To	Sample No.	Length	Au oz./ton	Au ppb	Ag oz./ton
113.1	114.0	42666	0.9	tr.		
114.0	115.5	42667	1.5	tr.		
115.5	118.6	42668	3.1	.016		
128.0	129.2	42669	1.2	.004		
132.7	134.0	42670	1.3		12	
66.5	67.5	42671	1.0	.006		

UNDERGROUND DIAMOND DRILL LOG

LOUANNA PROJECT 1984

Sheet No. 1 of 2
Hole No. LUG-15-84

Location: North: 10024.427 East: 9643.142 Other:
Elevation: 9779.4 Level: Section: 435W
Bearing: 164° 49' Dip: -47° at collar (Actual)
at 71'=-43°

Logged By: Ron Wells Remarks: Te Test S Zone

R. C. Wells 1/1/85

From	To	Description
0	16.1	CHLORITIC TUFF Light green gray to dark green, medium soft, moderate to heavy carbonate alteration, well laminated 40°CA, sparse sulfides. @ 10.0-14.0 - light to moderate silicification, sericitization.
16.1	16.5	QUARTZ EYE TUFF Medium hard, blue gray, well developed quartz eyes up to 4 mm, laminated 45°CA, sparse sulfides.
16.5	19.4	QUARTZ VEIN Milky quartz contacts shard 25°-45°CA, few quartz eyes tuff fragments.
19.4	47.0	CHLORITIC TUFF Medium soft, green to gray green, moderately carbonated, concordant carbonate bands 50°-55°CA, local siliceous stringers, sparse Py.
47.0	72.0	ANDESITE Medium soft to medium hard, carbonated, locally schistose 50°CA.
	72.0	END OF HOLE

UNDERGROUND DIAMOND DRILL LOG

(SAMPLING)

LOUANNA PROJECT 1984

Sheet No. 2 of 2

Hole No. LUG-15-84

CORE SAMPLE

From	To	Sample No.	Length	Au oz./ton	Au ppb	Ag oz./ton
15.5	17.2	42672	1.7	tr.		
17.2	19.5	42673	2.3	tr.		

UNDERGROUND DIAMOND DRILL LOG

LOUANNA PROJECT 1984

Sheet No. 1 of 3
Hole No. LUG-16-84

Location: North: 10036.68 East: 9758.35 Other: Bay in Ramp
Elevation: 9795.29 Level: Section: 320W
Bearing: 158° 42' Dip: -30° at collar (Actual) -28°
at
Logged By: Ron Wells Remarks: To Test N and S Zones

R. Wells 1/1/85

From	To	Description
0	42	CHLORITIC TUFF Medium green to brown green to dark green, moderate to strongly carbonated, well laminated 60°-70°CA, sparse sulfides. @ 0-8.0 -) broken @ 23.0-25.2 -) ore. @ 2.0-2.6 - buff coloured, sericitic. @ 23.5 - fracture 20°CA.
42.0	48.5	SILICEOUS, SERICITIC TUFF Green to gray, medium soft to hard, well laminated 60°-65°CA, up to 5% Py, Po > Aspy, Cpy, local minor tourmaline. @ 42.0-43.3 - gray quartz with fracture fill and disseminated Py, Po, VG at 42.85 in gray quartz. @ 43.3-44.2 - sericitic tup to 2% Py. @ 44.2-44.7 - gray quartz 1% Aspy, Py, Po. @ 44.7-45.6 - sericitic, sparse Po. @ 45.6-48.5 - disseminated and lensy Po, Py up to 2%.
48.5	58.0	CHLORITIC TUFF Green to gray green, carbonated, moderately laminated 60°-65°CA, sparse Py.

UNDERGROUND DIAMOND DRILL LOG

(Continuation)

LOUANNA PROJECT 1984

Sheet No. 2 of 3

Hole No. LUG-16-84

From	To	Description
58.0	84.0	ANDESITE Medium to dark green, medium hard, weakly carbonated. @ 59.7-59.85 - milky quartz vein. @ 69.5-71.0 - broken ore.
	84.0	END OF HOLE

UNDERGROUND DIAMOND DRILL LOG

(SAMPLING)

LOUANNA PROJECT 1984

Sheet No. 3 of 3

Hole No. LUG-16-84

CORE SAMPLE

From	To	Sample No.	Length	Au oz./ton	Au ppb	Ag oz./ton
42.0	44.7	42674	2.7	.870		0.12
44.7	47.8	42675	3.1	.002		

UNDERGROUND DIAMOND DRILL LOG

LOUANNA PROJECT 1984

Sheet No. 1 of 1
Hole No. LUG-17-84

Location: North: 10035.31 East: 9754.22 Other: Bay in Ramp
Angle to 320W
Elevation: 9802.74 Actual-9794.52 Level: Section: Finish at 380W
Bearing: 223° Dip: -28° at collar (Actual)
Actual-220° 41' at

Logged By: Ron Wells Remarks: To Test S Zone

R... 4/4/85

From	To	Description
0	27	CHLORITIC TUFF Light to medium green, soft well laminated 30°-35°CA, moderately to strongly carbonated with concordant carbonate bands and stringers. @ 0-0.5 - siliceous and hard.
27	28	QUARTZ EYE TUFF(?) Medium green to brownish, finely laminated 30°CA, with brecciated gray quartz fragments, (5%), poorly developed quartz eyes.
28	72	CHLORITIC TUFF Light to medium green, poor to well laminated 30°-35° CA, weak to moderately carbonated. @ 38-38.3 - brecciated, light gray quartz-carbonate stringer 45°CA, minor fine disseminated Py. @ 56.5-57.5 -) brecciated quartz carbonate- @ 66.0-67.0 -) fragments in chloritic matrix.
	72	END OF HOLE

UNDERGROUND DIAMOND DRILL LOG

LOUANNA PROJECT 1984

Sheet No. 1 of 3
Hole No. LUG-18-84

Location: North: 10185.67 East: 10420.50 Other:
Elevation: 9700 Level: Section: 360E
Bearing: 339° Dip: -45° at collar (Actual)
at 140'=35°

Logged By: Ron Wells

From	To	Description
0	40.0	SILICEOUS TUFF Light to medium gray, hard siliceous locally sericitic and brown, fine to medium laminated 50°-55°, disseminated, stringer and fracture fill sulfides, Py, Po, minor Cpy, Aspy from less than 1% up to 10%. @ 0-8.0 - chloritic with narrow siliceous sections < 1% fine Po, Py. @ 8.0-11.4 - siliceous tuff with 20% broken gray quartz, 5%-10% Po, Py. @ 11.4-20.9 - light gray siliceous tuff, 1% Po, Py. @ 20.9-22.4 - siliceous tuff 20%-40% broken gray quartz 5% Py, Po, Cpy. @ 22.4-24.0 - sericitic tuff with poorly developed quartz eyes 3% disseminated Py. @ 24.0-40.0 - siliceous tuff 1% stringer and lensy Py, Po locally up to 5%.
40.0	98.0	QUARTZ EYE TUFF Light gray, hard, siliceous, moderately to poorly laminated 55°CA, well developed quartz eyes to 5 mm, sparse fine Py. @ 72.5-73.2 - finely bedded siliceous buff and weakly brecciated gray quartz 1% very fine Py, Aspy. @ 82.0-96.0 - numerous sericite veinlets 60°-70°CA. @ 91.5-91.8 - milky quartz vein 35°CA.

UNDERGROUND DIAMOND DRILL LOG

(Continuation)

LOUANNA PROJECT 1984

Sheet No. 2 of 3

Hole No. LUG-18-84

From	To	Description
		@ 96.0-98.0 - finely laminated 80°CA, siliceous, small quartz eyes, becomes dark and chloritic with depth.
98.0	116.0	ANDESITIC TUFF Medium green, carbonated, moderately laminated 70°-80°CA.
116.0	142.0	ANDESITE Medium green, massive, fine grained.
	142	END OF HOLE

UNDERGROUND DIAMOND DRILL LOG

(SAMPLING)

LOUANNA PROJECT 1984

Sheet No. 3 of 3

Hole No. LUG-18-84

CORE SAMPLE

From	To	Sample No.	Length	Au oz./ton	Au ppb	Ag oz./ton
8.0	11.6	42693	3.6	0.221		
20.9	22.4	42694	1.5	0.228		
32.5	34.7	42695	2.2	0.006		
34.7	37.0	42696	2.3	..024		
37.0	40.1	42697	3.1	.040		
55.0	59.5	42698	4.5		180	
67.1	71.0	42699	3.9		258	
72.0	73.2	42700	1.2	0.010		
96.0	98.0	42701	2.0		27	

UNDERGROUND DIAMOND DRILL LOG

LOUANNA PROJECT 1984

Sheet No. 1 of 3
Hole No. LUG-19-84

Location: North: 10189.0 East: 10160.0 Other: South Drift E
Elevation: 9701.3 Level: Section: Finish at 420E
Bearing: 352° Dip: -50° at collar (Actual) 165.0 -50°
at 392°E

Logged By: Ron Wells
R. Wells 1/4/85

From	To	Description
0	49.5	CHLORITIC TUFF Light to medium green to gray, moderately soft, weak to strongly carbonated, fine grained, finely laminated 45°CA, sparse fine Py. @ 25.0-26.0 - siliceous bands 45°-50°CA. @ 40.7-41.4 - broken whitish quartz, sparse Py. @ 46.0-48.0 - gray, strongly carbonated.
49.5	147.0	QUARTZ EYE TUFF Hard, light to medium gray, poor to well laminated 50°-60°CA, alternating sections of siliceous tuff (no quartz eyes) and quartz eye tuff (more massive quartz eyes to 4 mm). @ 49.5-57.0 - quartz eye tuff. @ 57.0-58.0 - 20% broken gray quartz and white quartz, 1% Po, Py minor Cpy, disseminated and stringer. @ 58.0-62.4 - quartz eye tuff. @ 62.4-67.6 - siliceous tuff, minor quartz eyes, few 80°CA gray quartz veins with 10%-20% Po, Py, Aspy (62.5-62.8). @ 67.6-79.6 - quartz eye tuff weakly brecciated. @ 79.6-85.7 - siliceous tuff small quartz eye sections, local broken whitish quartz, less 1% fine Py, narrow sections of cherty and ashy tuff. @ 85.7-87.4 - quartz eye tuff. @ 87.4-87.7 - gray quartz vein 45°CA, 1%-2% fine to medium size Aspy.

UNDERGROUND DIAMOND DRILL LOG

(Continuation)

LOUANNA PROJECT 1984

Sheet No. 2 of 3

Hole No. LUG-19-84

From	To	Description
		@ 87.7-88.0 - silicesou tuff 1%-2% disseminated and fine stringer Py, Aspy. @ 89.0-92.0 - siliceous tuff with chert? 1% fine disseminated Aspy Py. @ 92.0-96.0 - mixed siliceous tuff, cherty tuff and chloritic argillaceous tuff with locally up to 1% fine Py, Aspy. @ 96.0-103.0 - mixed quartz eye and siliceous tuff. @ 103.0-123.4 - quartz eye tuff, good quartz eyes to 6 mm, numerous cross-cutting sericite veinlets 45°CA. @ 123.4-124.4 - mixed siliceous tuff and quartz eye tuff, number of narrow 40°CA tourmaline stringers. @ 124.4-132.9 - quartz eye tuff with numerous 45° sericite veinlets. @ 132.9-147.0 - chert and siliceous tuff, hard, medium to dark green to brown green, finely bedded 45°-50°CA, few small quartz eyes in siliceous sections, sparse Py.
147.0	165	CHLORITIC TUFF Medium green to grayish, fine grained, moderately carbonated and laminated 45°CA.
	165	END OF HOLE

UNDERGROUND DIAMOND DRILL LOG

(SAMPLING)

LOUANNA PROJECT 1984

Sheet No. 3 of 3

Hole No. LUG-19-84

CORE SAMPLE

From	To	Sample No.	Length	Au oz./ton	Au ppb	Ag oz./ton
62.4	63.4	42713	1.0	0.058		
63.4	68.0	42717	4.6	0.004		
79.5	84.4	42715	4.9	0.004		
84.4	85.8	42716	1.4	0.006		
87.2	89.2	42717	2.0	0.032		
89.2	92.0	42718	2.8	0.020		
92.0		42719	3.5	0.010		
133.4	138.5	42764	5.1		761	
138.5	147	42765	8.5		215	3.5 ft. core missing

UNDERGROUND DIAMOND DRILL LOG

LOUANNA PROJECT 1984

Sheet No. 1 of 4
Hole No. LUG-20-84

Location: North: 10202 East: 10522 Other: South Drift E
Elevation: 9701.3 Level: Section: 450E
Bearing: 340° 30' Dip: -60° at collar (Actual)
at Dip Test 132=55°

Logged By: Chris Bishop

R... Wells 4/1/85

From	To	Description
0	10	CASING
0	2	NO CORE - CASING IN DRIFT
2	8.2	SILICEOUS/SERICITE TUFF Gray to gray green to brown green, medium hard to hard, fine grained, moderately to finely laminated 30°-35°CA, sulfides (arsenopyrite, Py, Po, >> chalco) from <1%-6%. @ 2-4 - up to 80% broken blue gray quartz, sulfides along fractures, disseminated, and bleby, up to 7%. @ 4-8.2 - sericitic tuff (up to 10% blue gray quartz), sulfides disseminated and minor bands (< 1%-3%). @ 8.0-8.4 - gradational contact.
8.2	67.5	CHLORITIC TUFF Green to gray green, medium soft to medium hard, light to moderately carbonated, finely laminated and concordant carbonate laminations at 30°-35°CA, very sparse sulfides, local quartz/carbonate veinlets (< 1 cm) at 25°CA, some sericitized (buff colour) and brecciated veinlets (up to 3 cm) at 30°CA. @ 51-54.8 -) mottled appearance, as in @ 59-62.6 -) a coarse flow. @ 60-67.5 - increase in silicification.
67.5	183.5	QUARTZ EYE TUFF Gray to green gray, medium hard to hard, poor to well laminated 30°-40°CA, alternating sections of siliceous tuff

UNDERGROUND DIAMOND DRILL LOG

(Continuation)

LOUANNA PROJECT 1984

Sheet No. 2 of 4

Hole No. LUG-20-84

From	To	Description
		(no quartz eyes) and quartz eye tuff (quartz eyes up to 3 mm), local sub-parallel fractures. @ 67.5-69.4 - schistocity from 30°-40°, 30% blue gray quartz and up to 1% sulfides near contact. @ 71.1-71.3 - blue gray quartz (broken) up to 50%, sulfides up to 1%. @ 71.3-78.9 - quartz eye tuff. @ 73.9-91 - siliceous/sericitic tuff broken blue gray quartz from 10%-30%, sulfides (Aspy, Py, Po >> chalco) disseminated, in bands and net texture from 1% up to 20%, sheared 30°-35°CA. @ 91-96.9 - silicified chloritic tuff, 30°-35°CA, sub-parallel, 1 cm quartz/cal vein from 91-93. @ 96.9-105 - siliceous/sericitic tuff with quartz eyes broken blue gray quartz up to 20%, banded and disseminated sulfides from < 1%-5% Py, Po, Aspy. @ 105-105.9 - milky white quartz. @ 105.9-107 - sericitic quartz eye tuff (orange buff coloured). @ 107-111 - sericitic chloritic tuff banded and disseminated sulfides up to 3%. @ 111-118.4 - quartz eye tuff -35°CA. @ 118.4-124.6 - chlorite tuff, silicified, finely laminated at 30°CA. @ 124.6-125.2 - quartz eye tuff. @ 125.2-126.6 - silicified chlorite tuff. @ 126.6-126.8 - broken blue gray quartz 40% at 35°CA. @ 126.8-149.7 - quartz eye tuff, moderately sheared at 35°-40°CA, last 9 feet the number of quartz eyes decrease but the size increases (up to 5 mm). @ 149.7-150.8 - sub-parallel, milky white quartz vein, sulfides (Py, Po) along fractures. @ 150.8-163.0 - quartz eye tuff chlorite increasing and quartz eyes becoming less distinct. @ 163.0-165.0 - highly silicified and chloritic, minor quartz eyes (1-2 mm), schistocity is 30°.

UNDERGROUND DIAMOND DRILL LOG

(Continuation)

LOUANNA PROJECT 1984

Sheet No. 3 of 4

Hole No. LUG-20-84

From	To	Description
		@ 165.0-166.4 - quartz eye tuff, moderately sheared. @ 166.4-169.0 - siliceous tuff, buff to green buff, no quartz eyes. @ 169.0-183.5 - 'chert' and siliceous tuff, hard, gray to green, finely laminated at 30°CA, few small quartz eyes in siliceous sections, badly broken.
183.5	201	CHLORITE TUFF Green, medium soft, fine grained, moderately carbonated, finely laminated and concorndant, carbonate laminations 35°-40°CA, very sparse sulfides.
	201	END OF HOLE

UNDERGROUND DIAMOND DRILL LOG
(SAMPLING)

LOUANNA PROJECT 1984

Sheet No. 4 of 4

Hole No. LUG-20-84

CORE SAMPLE

From	To	Sample No.	Length	Au oz./ton	Au ppb	Ag oz./ton
2	4	42727	2	0.438		
4	8.2	42728	4.2	0.042		
59.8	61	42729	1.2		37	
67.5	69.5	42740	2.0		22	
78.9	80.5	42730	1.6	0.012		0.01
80.5	84.1	42731	3.6	0.060		0.02
84.1	87.5	42732	3.4	0.112		0.02
87.5	91.0	42733	3.5	0.010		0.01
91.0	96.9	42734	5.9		29	
96.9	102	42735	5.1	0.032		0.01
102	105	42735	3.0	0.056		
105	106	42737	1.0		1045	.2 ppm
106	111	42738	5.0		590	
166.4	169.0	42739	2.6		569	
170	175	42766	5.0		441	
175	180	42767	5.0		52	
180	183.5	42768	3.5		10	

UNDERGROUND DIAMOND DRILL LOG

LOUANNA PROJECT 1984

Sheet No. 1 of 3

Hole No. LUG-21-84

Location: North: 10064.96 East: 9830.73 Other: Collar on Ramp-240W Ends at 280W

Elevation: 9812.542 Level: Section: At Angle to Section 260W

Bearing: 194° 44' Dip: -50° at collar (Actual)

at

Logged By: Chris Bishop Remarks: Standard AW core

R. . . 1/1/85

From	To	Description
0	1.5	NO CORE-RODS IN DRIFT
1.5	66.0	CHLORITE TUFF Dark to light green to brown green to gray green, medium soft to medium hard, fine to medium grained, light to moderately carbonated, also local short siliceous sections, finely laminated 30°-35°CA, concordant carbonate laminations parallel schistocity, very sparse sulfides. @ 15.4-15.7 - moderately silicified. @ 15.7-15.8 - broken blue gray quartz vein, 30°CA, <1% sulfides. @ 17.0-21.0 - badly broken, silicified buff gray tuff, 'bleached' appearance, sericitic with sparse dark black bands (< 3 mm width), <1% sulfides. @ 38.8-40.0 - moderately silicified. @ 47.7-48.0 - broken blue gray quartz (10%), sericitic, sulfides 1%. @ 49.0-53.5 - medium hard with sparse blebs of sulfides. @ 56.4-56.8 - milky white quartz vein. @ 60.0-66.0 - moderately silicified.
66.0	82.8	SERICITIC SILICEOUS TUFF Buff to gray to green, medium hard to hard, fine to medium grained, finely to moderately laminated 30°-40°CA, mixed siliceous, chloritic and quartz eye units, sulfides disseminated, bleby and banded from < 1%-10% (Aspy, Py, Po >> chalco).

UNDERGROUND DIAMOND DRILL LOG

(Continuation)

LOUANNA PROJECT 1984

Sheet No. 2 of 3

Hole No. LUG-21-84

From	To	Description
		@ 66.0-69.5 - sericitic tuff. @ 69.5-71.2 - up to 50% broken blue gray quartz, sulfides up to 5%, VG at 70, 71. @ 64-73 - 1 foot core missing. @ 70.6-70.7 - milky white quartz vein. @ 71.2-77.2 - chlorite tuff. @ 77.2-78.2 - quartz eye tuff, blue gray, quartz eyes up to 3 mm. @ 78.2-78.7 - siliceous chlorite tuff. @ 78.7-80.0 - 40% broken blue gray quartz, chloritic and sericitic, from 78.7-79 15% banded sulfides, from 79-80 sulfides up to 5% (Aspy, Py, Po >> chalco). @ 80.0-81.7 - mixed milky white quartz and broken blue gray quartz, up to 3% sulfides in blue gray quartz and as selvage in milky white quartz vein. @ 81.7-82.8 - 20% broken blue gray quartz, 1% sulfides.
82.8	100	CHLORITE TUFF Gray green to black green, medium soft, lightly to heavily carbonated, fine grained, finely laminated 30°-35° CA, concordant carbonate laminations also 30°-35°. @ 84.2-85 -) milky @ 86-86.2 -) white @ 86.7-87.7 -) quartz @ 87.8-87.9 -) veins.
	100	END OF HOLE

UNDERGROUND DIAMOND DRILL LOG

(SAMPLING)

LOUANNA PROJECT 1984

Sheet No. 3 of 3

Hole No. LUG-21-84

CORE SAMPLE

From	To	Sample No.	Length	Au oz./ton	Au ppb	Ag oz./ton
17.0	21.0	42758	4.0		81	
28.7	31.4	42759	2.7		340	silty volcanics?
66.0	68.4	42760	2.4	0.002		tr.
68.4	70.6	42761	2.2	0.172		0.06
76.7	78.9	42762	2.2		149	
78.9	82.8	42763	3.9	0.058		0.78

UNDERGROUND DIAMOND DRILL LOG

LOUANNA PROJECT 1984

Sheet No. 1 of 3
Hole No. LUG-22-84

Location: North: 10064.96 East: 9830.73 Other: Collar on Ramp 240W Ends at 280W
Elevation: 9812.542 Level: Section: 260W
Bearing: 194° 44' Dip: -20° at collar (Actual)
at
Logged By: Chris Bishop Remarks: Standard AW Core

R. Wells 1/1/85

From	To	Description
0	1.4	NO CORE-RODS IN DRIFT
1.4	53.8	CHLORITE TUFF Green to black green, medium soft to medium hard, light to moderately carbonated, finely to moderately laminated and concordant carbonate laminations at 50°-55° CA, very sparse sulfides. @ 9.2-9.6 - heavily silicified. @ 10.8-11.4 - badly broken, buff green colour. @ 13.0-13.1 - quartz/calcite vein at 45°-50°CA. @ 20.5-24.0 - silicified. @ 40.0-40.1 - quartz/calcite vein with selvage biotite.
53.8	62.0	SILICEOUS SERICITIC TUFF Buff green to buff to blue gray, medium hard to hard, finely to moderately laminated 45°-50°CA, sulfides from <1%-4% (Py, Po, Aspy >> chalco). @ 53.8-55.1 - sericitic and banded sulfides (Po, Py) to 2%, 10% broken blue gray quartz. @ 55.1-55.4 - quartz eye tuff. @ 55.4-55.8 - chlorite tuff, medium hard. @ 55.8-57.0 - 1st 3 inches broken blue gray quartz, then 15% broken blue gray quartz and sericitic plus up to 4% disseminated and banded sulfides (Aspy, Py, Po).

UNDERGROUND DIAMOND DRILL LOG

(Continuation)

LOUANNA PROJECT 1984

Sheet No. 2 of 3

Hole No. LUG-22-84

From	To	Description
		@ 57.0-58.8 - chlorite tuff, medium hard. @ 58.8-59.3 - quartz eye tuff. @ 59.3-59.6 - chloritic sericitic tuff. @ 59.6-60.2 - 80% broken blue gray quartz, sulfides bleby, disseminated, banded and along fractures up to 3% (Aspy, Po, Py>>chlaco). @ 60.2-62 - sericitic tuff, 10% broken blue gray quartz, up to 2% sulfides.
62.0	79	CHLORITE TUFF Green to gray green, medium soft, moderately carbonated, fine grained, finely laminated 55°CA, local concordant carbonate laminations 50°-55°CA, local broken sericitic/calcite/quartz veinlets (up to 1" width) along schistocity, very sparse sulfides. @ 76.3 - 1 cm buff coloured, vuggy calcite vein, lost water.
	79	END OF HOLE

UNDERGROUND DIAMOND DRILL LOG

(SAMPLING)

LOUANNA PROJECT 1984

Sheet No. 3 of 3

Hole No. LUG-22-84

CORE SAMPLE

From	To	Sample No.	Length	Au oz./ton	Au ppb	Ag oz./ton
20.5	24.0	42751	3.5		100	
53.8	56.0	42752	2.2	0.002		0.02
56.0	57.0	42753	1.0	0.170		0.07
57.0	59.6	42754	2.6		422	
59.6	62.0	42755	2.4	0.038		0.03

UNDERGROUND DIAMOND DRILL LOG

LOUANNA PROJECT 1984

Sheet No. 1 of 3
Hole No. LUG-23-84

Location: North: 10170.8 East: 10193.29 Other:
Elevation: 9624.37 Level: Section: 1+36E
Bearing: 159° Dip: -60° at collar (Actual)
at

Logged By: Chris Bishop Remarks: 85' N of Geo Ref

R. ... 4/1/85

From	To	Description
0	2.0	CASING
2.0	15.0	CHLORITIC TUFF Dark green, medium soft, moderately carbonated, moderately laminated at 20° to core axis, sulfides sparse (Py, Po).
15.0	20.0	GROUND CORE
20.0	35.3	CHLORITIC TUFF Dark green, medium osft, moderately to heavily carbonated, moderately laminated at 20°, sparse sulfides. @ 34.5-35.3 - medium hard, moderately silicified. @ 35.3 - sharp contact with quartz eye tuff at 30° to core axis.
35.3	38.0	QUARTZ EYE TUFF Gray to gray green, medium hard to hard, lightly to mildly chloritic along shear at 30°-35° to core axis, quartz eyes up to 4 mm and elongated, sulfides <1% (Py, Po).
38.0	50.4	SILICEOUS SERICITIC TUFF Gray to gray green, medium hard to very hard, well laminated at 20°-30° to core axis.

UNDERGROUND DIAMOND DRILL LOG

(Continuation)

LOUANNA PROJECT 1984

Sheet No. 2 of 3

Hole No. LUG-23-84

From	To	Description
		@ 38.0-40.2 - 85% blue gray quartz, up to 5% sulfides (Aspy, Py, Po) along schistocity and fracture filling. @ 38.3 - VG. @ 38.6-39.8 - 1 inch milky white quartz vein at 75° to core axis. @ 40.2-42.6 - light gray sericitic, siliceous and carbonated tuff, up to 3% sulfides, lightly banded (Aspy, Py, Po). @ 42.6-48.3 - chloritic tuff, well carbonated, < 1% sulfides. @ 48.3-50.4 - 15% blue gray quartz, 2% sulfides, Py, Po, Aspy.
50.4	68.0	CHLORITIC TUFF Green, fine grained, medium soft, moderately carbonated, concordant carbonate laminations and schistocity at 35°-40°, sparse sulfides.
68.0	75	ANDESITE Green, medium hard to medium soft, fine grained, lightly carbonated and poorly laminated at 35°-40° to core axis, sparse sulfides.
	75	END OF HOLE

UNDERGROUND DIAMOND DRILL LOG

(SAMPLING)

LOUANNA PROJECT 1984

Sheet No. 3 of 3

Hole No. LUG-23-84

CORE SAMPLE

From	To	Sample No.	Length	Au oz./ton	Au ppb	Ag oz./ton
35	38	42858	3.0		205	
38	40.6	42859	2.6	.074		tr.
40.6	42.6	42860	2.0	.099		tr.
42.6	48.3	42861	5.7		208	
48.3	50.4	42862	2.1	.127		.02

UNDERGROUND DIAMOND DRILL LOG

LOUANNA PROJECT 1984

Sheet No. 1 of 3
Hole No. LUG-24-84

Location: North: 10170.8 East: 10193.29 Other:
Elevation: 9624.37 Level: Section: 1+36E
Bearing: 339° Dip: -45° at collar (Actual)
at
Logged By: Chris Bishop Remarks: 90° N of Geo Ref

R.C. 1/1/85

From	To	Description
0	8.7	QUARTZ EYE TUFF Green gray, medium hard to hard, lightly to moderately chloritic, weakly laminated at 50° to core axis, sub-angular to rounded elongate quartz eyes up to 5 mm in a fine grain matrix, weakly to moderately sericitic.
8.7	16.0	CHLORITE TUFF Green to gray green, fine grained, medium soft to medium hard, moderately to heavily carbonated, locally siliceous and sericitic, well laminated at 50°, sparse sulfides except where siliceous. @ 10.2-11.8 - moderately siliceous, very sparse quartz eyes, <1% sulfides, 4% blue gray quartz. @ 12-13 - badly broken along laminations, ... e.g. delaminated. @ 13.4-16 - 20% blue gray quartz, up to 3% sulfides (Aspy, Py, Po) bleby and fracture filling.
16.0	33.8	QUARTZ EYE TUFF Green gray, medium hard to hard, quartz eyes up to 5 mm, weakly to moderately laminated at 55°-60°, sparse sulfides.
33.8	48.0	CHLORITE TUFF Green to light brown green, fine grained, medium soft, and well carbonated, finely to moderately laminated at 50° to core axis, very sparse sulfides.

UNDERGROUND DIAMOND DRILL LOG

(Continuation)

LOUANNA PROJECT 1984

Sheet No. 2 of 3

Hole No. LUG-24-84

From	To	Description
48.0	58.0	ANDESITE Green to light green, medium hard, fine to medium grained, very sparse sulfides. @ 48-53 - poorly laminated at 55°.
58.0	60.7	CHERT Black green to olive green, very fine grained, very hard, chloritic, moderately banded.
60.2	88	ANDESITE Green, medium hard, fine to medium grained, sparse sulfides. @ 75-88 - becomes more coarser grained, e.g. medium grained diorite, with white acicular lathes up to 2 mm long.
	88	END OF HOLE

UNDERGROUND DIAMOND DRILL LOG

(SAMPLING)

LOUANNA PROJECT 1984

Sheet No. 3 of 3

Hole No. LUG-24-84

CORE SAMPLE

From	To	Sample No.	Length	Au oz./ton	Au ppb	Ag oz./ton
13.4	15.5	42863	2.1	0.078		.02
58.0	60.7	42864	2.7		15	

UNDERGROUND DIAMOND DRILL LOG

LOUANNA PROJECT 1984

Sheet No. 1 of 3
Hole No. LUG-25-84

Location: North: 10142.38 East: 10159.06 Other:
Elevation: 9631.11 Level: Section: 0+95E
Bearing: 159° Dip: -60° at collar (Actual)
at

Logged By: Chris Bishop Remarks: 75' N of Geo Ref

R. . . 1/1/85

From	To	Description
0	1.8	CASING
1.8	13.0	CHLORITE TUFF Green to light green, medium soft, fine to medium grained, moderately to heavily carbonated, finely to moderately laminated at 15° to core axis, sparse sulfides. @ 2-4 - heavily carbonated, mildly sericitic. @ 11.5-13 - moderately silicified, very few quartz eyes, increasing sericitization, increasing sulfides but still < 1% (Py, Po blebs) - contact is gradational.
13.0	32.2	SILICEOUS TUFF Light gray to green gray, fine grained, heavily silicefied and up to 95% blue gray quartz, mildly to moderately sericitic, minor chlorite, locally quartz eyes from 0.5 mm-3 mm, mild pervasive schistocity at 15°-20°, 1%-15% sulfides (Aspy, Py, Po >> chalco) as blebs, bands and fracture filling. @ 13.2-15.3 - sheared siliceous quartz eye tuff at 15°. @ 14.7-15.3 - contact of quartz eye tuff and blue gray to milky white quartz vein is sub-parallel. @ 15.3-20.8 - milky white to blue gray quartz vein 80%, quartz eye tuff remnants, 1%-2% sulfides.

UNDERGROUND DIAMOND DRILL LOG

(Continuation)

LOUANNA PROJECT 1984

Sheet No. 2 of 3

Hole No. LUG-25-84

From	To	Description
		@ 19.2 - 1" milky white quartz vein at 20°-25%. @ 20.8-22.0 - up to 15% sulfides (Aspy, Py, Po) and VG at 21.3. @ 22-31 - moderate sericitization, up to 8% sulfides (Aspy, Py, Po) and quartz eye tuff remnants up to 20%. @ 31.0-32.2 - brown, hard, fine to medium grained, up to 15% sulfides (banded), ashy/silty volcanics, 4% quartz eyes, moderate chlorite. @ 32.1-32.3 - contact gradational at 35°CA.
32.2	48.0	CHLORITE TUFF Green, fine grained, soft to medium soft, moderately carbonated, finely to moderately laminated at 35° to core axis, sparse sulfides. @ 32.4 - 0.75" milky white quartz vein at 35°.
48.0	90	ANDESITE Green, fine to medium grained, medium soft to mildly hard, lightly to moderately carbonated, concordant carbonate laminations at 30°-35°, sparse sulfides. @ 48-63 - weakly schistose at 35°. @ 64.5-65.2 - epidote, very hard, alteration rim surrounds. @ 77.6 - 0.5" calcite vein 15° to core axis, 1% sulfides as selvage (Py).
	90	END OF HOLE

UNDERGROUND DIAMOND DRILL LOG

(SAMPLING)

LOUANNA PROJECT 1984

Sheet No. 3 of 3

Hole No. LUG-25-84

CORE SAMPLE

From	To	Sample No.	Length	Au oz./ton	Au ppb	Ag oz./ton
11.9	16.0	42865	4.1	.004		tr.
16.0	20.0	42866	4.0	.088		.02
20.0	24.0	42867	4.0	.382		.04
24.0	28.0	42868	4.0	.004		.02
28.0	32.3	42869	4.3	.052		tr.

UNDERGROUND DIAMOND DRILL LOG

LOUANNA PROJECT 1984

Sheet No. 1 of 2
Hole No. LUG-26-84

Location: North: 10142.16 East: 10119.71 Other:
Elevation: 9637.4 Level: Section: 0+58E
Bearing: 159° Dip: -50° at collar (Actual)
at
Logged By: Chris Bishop Remarks: 90' N of Geo Ref

C. Bishop 4/1/85

From	To	Description
0	1	CASING
1	25	QUARTZ EYE TUFF Gray to green gray, medium hard to hard, quartz eyes up to 4 mm in a fine grained matrix, poorly laminated at 50°-55°, <1% sulfides (Py, Po). @ 9-12 - moderately chloritic.
25	32	CHLORITE TUFF Gray to green, fine grained, medium soft, moderately to well carbonated, finely laminated, at 45°, very sparse sulfides. @ 25.0-25.8 - interfingered chlorite tuff and ashy tuff.
32	42.6	QUARTZ EYE TUFF Same as unit at 1-25. @ 32-35 - interbedded quartz eye tuff and siliceous chlorite tuff. @ 33.9-34.2 - quartz/carbonate vein at 50° to core axis.
42.6	66.0	CHLORITE TUFF Same as unit at 25-32.
	66.0	END OF HOLE

UNDERGROUND DIAMOND DRILL LOG

(SAMPLING)

LOUANNA PROJECT 1984

Sheet No. 2 of 2

Hole No. LUG-26-84

CORE SAMPLE

From	To	Sample No.	Length	Au oz./ton	Au ppb	Ag oz./ton
25	26.5	42870	1.5		25	
33	35	42871	2.0		16	

UNDERGROUND DIAMOND DRILL LOG

LOUANNA PROJECT 1984

Sheet No. 1 of 3
Hole No. LUG-27-84

Location: North: 10135.5 East: 10121.85 Other:
Elevation: 9637.37 Level: Section: 0+59E
Bearing: 339° Dip: -60° at collar (Actual)
at

Logged By: Chris Bishop Remarks: 81' N of Geo Ref

R.C. 1/4/85

From	To	Description
0	2	CASING
2	9	CHLORITE TUFF Gray green, fine to medium grained, medium soft, moderately carbonated, moderately laminated, at 25° to core axis, very sparse sulfides. @ 7-9 - lightly silicified.
9	13	QUARTZ EYE TUFF Green gray, medium hard, quartz eyes up to 4 mm, weakly to moderately laminated at 20°, sparse sulfides.
13	17.6	CHLORITE TUFF Gray green, fine grained, medium soft to medium hard, modertately carbonated, moderately to well laminated at 30°. @ 16.0-17.6 - concordant buff orange quartz carbonate veins with brecciation, increasing sericitization, lightly silicified, up to 1%-2% sulfides (Py, Po).
17.6	32.7	QUARTZ EYE TUFF Light gray to green, medium grained, medium hard to hard, quartz eyes up to 3 mm, poorly laminated at 30°-35°, disseminated and bleby sulfides (Py, Po) up to 1%.

UNDERGROUND DIAMOND DRILL LOG

(Continuation)

LOUANNA PROJECT 1984

Sheet No. 2 of 3

Hole No. LUG-27-84

From	To	Description
		@ 25-31 - dark green, chloritized, 1% sulfides. @ 31-32.7 - quartz eye, ashy volcanics, and chlorite tuff interfingered, up to 2% sulfides (Py, Po).
32.7	53	CHLORITE TUFF Green, fine grained, medium soft to medium hard, moderately to lightly carbonated, well laminated at 40°-80°, very sparse sulfides.
53	65	ANDESITE Green, fine grained, medium hard, poorly laminated at 25°-30°, weakly carbonated, concordant carbonate laminations at 25°-30°, very sparse sulfides.
	65	END OF HOLE

UNDERGROUND DIAMOND DRILL LOG

(SAMPLING)

LOUANNA PROJECT 1984

Sheet No. 3 of 3

Hole No. LUG-27-84

CORE SAMPLE

From	To	Sample No.	Length	Au oz./ton	Au ppb	Ag oz./ton
7	9	42872	2		22	
16	18	42873	2	.006		.03
28	31	42874	3		451	
31	33	42875	2	.058		tr.

UNDERGROUND DIAMOND DRILL LOG

LOUANNA PROJECT 1984

Sheet No. 1 of 3
Hole No. LUG-28-84

Location: North: East: Other: Ramp
Elevation: 9648 Level: Section: 0+20E
Bearing: 159° Dip: -60° at collar (Actual)
at

Logged By: Chris Bishop
R. C. Bishop 4/4/85

From	To	Description
0	2	CASING
2.0	6.3	CHLORITIC TUFF Green, fine to medium grained, medium soft, lightly to moderately carbonated, moderately laminated at 20° sparse sulfides.
6.3	29.3	QUARTZ EYE TUFF Gray to green, fine to medium grained, medium hard to hard, lightly to moderately sericitic, quartz eyes variable in quantity and size, locally up to 4 mm and elongated, poorly laminated at 20°-30°, sulfides from < 1% up to 3% disseminated, bleby and along fractures (Py, Po) moderately chloritic. @ 6.3-7.1 - siliceous chloritic tuff with quartz eyes, moderately sericitic, < 1% sulfides. @ 11.9-12.4 - 2% disseminated sulfides (Py, Po). @ 16.5-17.2 - brecciated milky white quartz and minor carbonate along shear direction @ 18.9-19.2 - up to 2% disseminated sulfides (Py, Po). @ 20-27.8 - sulfides up to 1%, increasingly bleby and lensy. @ 27.8-29.3 - ashy volcanics, chloritic tuff and quartz eyes, 1%-2% sulfides (Po, Py) at 25° to core axis.

UNDERGROUND DIAMOND DRILL LOG

(Continuation)

LOUANNA PROJECT 1984

Sheet No. 2 of 3

Hole No. LUG-28-84

From	To	Description
29.3	60.0	CHLORITE TUFF Green, fine grained, medium soft to soft, moderately to well carbonated, finely laminated at 40°, sparse sulfides, locally up to 1/2" milky white quartz and carbonate brecciated along schistocity. @ 48.7-48.9 - milky white quartz vein at 35°. @ 58.5-59.1 - milky white quartz vein sub-parallel to core axis.
60	80	ANDESITE Green, fine to medium grained, hard to medium soft locally, lightly to moderately carbonated, weakly to moderately laminated at 40°. @ 75-78 - moderately laminated.
	80	END OF HOLE

UNDERGROUND DIAMOND DRILL LOG

(SAMPLING)

LOUANNA PROJECT 1984

Sheet No. 3 of 3

Hole No. LUG-28-84

CORE SAMPLE

From	To	Sample No.	Length	Au oz./ton	Au ppb	Ag oz./ton
6.5	8.5	42876	2.0		48	
11.5	15.5	42877	4.0		225	
27.0	29.5	42878	2.5	.123		.03
15.5	18.6	42879	3.1		103	

UNDERGROUND DIAMOND DRILL LOG

LOUANNA PROJECT 1984

Sheet No. 1 of 3
Hole No. LUG-29-84

Location: North: East: Other: Ramp
Elevation: 9617 Level: Section: 180E
Bearing: 339° Dip: -60° at collar (Actual)
at

Logged By: R. C. Kelly 1/1/85

From	To	Description
0	1	CASING
1	27.8	CHLORITE TUFF Gray green to dark green, fine to medium grained, medium soft to mildly hard, moderately to heavily carbonated, locally siliceous, moderately to well laminated at 25° to core axis, local sericitic, buff carbonate veinlets, sparse sulfides.
27.8	47.6	SILICEOUS TUFF Gray to green gray, fine to medium grained, medium hard to hard, lightly to moderately carbonated, mildly to heavily siliceous, moderately sericitic, moderately laminated. @ 25-30 - disseminated, bleby and fracture filling sulfides from <1% up to 13% (Py, Po, Aspy >> chalco). @ 27.8-36 - up to 40% broken blue gray quartz, up to 13% sulfides, appears banded, e.g. interfingered ashy volcanics and chloritic tuff. @ 36-41.0 - light gray, moderately sericitic and carbonated, lightly siliceous, up to 1% disseminated and lensy sulfides (Py, Po). @ 41-44.5 - quartz eye tuff, medium hard, light gray, quartz eyes up to 2 mm, disseminated and lensy sulfides < 1% (Py, Po), poorly laminated at 30°. @ 44-45 - fracture 10° to core axis with manganese (>), Py, Po smears.

UNDERGROUND DIAMOND DRILL LOG

(Continuation)

LOUANNA PROJECT 1984

Sheet No. 2 of 3

Hole No. LUG-29-84

From	To	Description
		@ 44.5-46.5 - mildly siliceous, moderately carbonated, up to 10% broken blue gray quartz, up to 4% disseminated, bleby, and banded sulfides (Py, Po, Aspy), moderately laminated at 35°. @ 46.5-47.6 - 85% blue gray quartz, up to 10% sulfides (Aspy, Py, Po).
47.6	69.0	CHLORITE TUFF Light gray to dark green, fine to medium grained, medium soft to locally medium hard, moderately to lightly carbonated, finely laminated at 35°-40°, locally siliceous, sparse sulfides. @ 57.4-58 - interfingered ashy volcanics(?). @ 58-66 - lightly to moderately siliceous, dark green.
69	90	ANDESITE Green to dark green, fine to medium grained, medium hard, mildly carbonated, weakly laminated at 35°-40°, very sparse sulfides. @ 73.5-73.9 - 1/2" quartz vein, at 35°, brecciated quartz fragments (up to 3 mm).
	90	END OF HOLE

UNDERGROUND DIAMOND DRILL LOG

(SAMPLING)

LOUANNA PROJECT 1984

Sheet No. 3 of 3

Hole No. LUG-29-84

CORE SAMPLE

From	To	Sample No.	Length	Au oz./ton	Au ppb	Ag oz./ton
27.6	29.6	42880	2.0	.027		tr.
29.6	32.6	42881	3.0	.062		.02
32.6	37.0	42882	4.4	.030		.02
37.0	41.0	42883	4.0	tr.		tr.
41.0	44.5	42884	3.5		217	
44.5	48.0	42885	3.5	.124		.03

UNDERGROUND DIAMOND DRILL LOG

LOUANNA PROJECT 1984

Sheet No. 1 of 3

Hole No. LUG-30-84

Location: North: East: Other: 9700 N Drift E

Elevation: Level: Section: 400E

Bearing: 339° Dip: -60° at collar (Actual)

at

Logged By: Chris Bishop

R. C. Ardy 1/1/85

From	To	Description
0	2	CASING
2	46.6	QUARTZ EYE TUFF Gray to green gray, medium to fine grained, medium hard to hard, quartz eyes up to 4 mm, moderately to poorly laminated at 40° to core axis, very sparse sulfides. @ 6 - 1 cm milky white quartz vein at 20°. @ 10.9-11 - milky white quartz vein at 45°. @ 14.0-20.0 - quartz eye cherty tuff incipient quartz eyes. @ 24.2 - Two 2 mm argillitic(?) bands along schistocity. @ 29.2 - 1 cm milky white quartz/calcite vein with fracture filling sulfides (Py, Po). @ 36.5 - 1 cm milky white quartz/calcite vein at 45°. @ 37.8 - same as 36.5. @ 44.0-46.6 - quartz eye altered chert.
46.6	54.5	CHERT Banded greens, gray and black, very fine grained, hard, moderately to well laminated at 35°-40°, locally minute (< 1 mm) quartz eyes, sparse sulfides that appear as lenses along thin black (1 mm) bands. @ 51-55 - very badly broken, 1 foot core missing.

UNDERGROUND DIAMOND DRILL LOG

(Continuation)

LOUANNA PROJECT 1984

Sheet No. 2 of 3

Hole No. LUG-30-84

From	To	Description
54.8	68	CHLORITE TUFF/SCHISTOSE ANDESITE Green to dark green, fine grained, medium soft to medium hard, moderately to well laminated at 40°, very sparse sulfides.
68	78	ANDESITE Green, medium grained, medium hard, very sparse sulfides. @ 68-78 - very poorly laminated at 40°.
	78	END OF HOLE

UNDERGROUND DIAMOND DRILL LOG

(SAMPLING)

LOUANNA PROJECT 1984

Sheet No. 3 of 3

Hole No. LUG-30-84

CORE SAMPLE

From	To	Sample No.	Length	Au oz./ton	Au ppb	Ag oz./ton
44.0	46.6	42886	2.6		74	
46.6	50.0	42887	3.4	.012		tr.
50.0	55.0	42888	5.0	.004		tr.

UNDERGROUND DIAMOND DRILL LOG

LOUANNA PROJECT 1984

Sheet No. 1 of 4
Hole No. LUG-31-84

Location: North: East: Other: 9700 N Drift E
Elevation: Level: Section: Start at 4+00
Finish at 4+35
Bearing: 125° Dip: -50° at collar (Actual)
at

Logged By: Chris Bishop
R. C. Mills 1/1/85.

From	To	Description
		N.B. - starts at 4+00E, ends at 4+50E, maximum perpendicular distance from drift= 137.5' at -50° or 35' at horizontal. maximum depth of penetration 108' from 9700' level.
0	2.0	CASING
2.0	60.8	SILICEOUS, SERICITIC TUFF Gray to green, fine to medium grained, medium hard to hard, poorly to well laminated at 20°-30° to core azis, sulfides (Aspy, Py, Po) from < 1% up to 15%. @ 2.0-3.3 - siliceous, dark black green, hard and very fine grained, < 1% sulfides. @ 3.3-4.0 - yellow range, finely laminated at 20°, medium hard, moderately sericitic. @ 4.0-4.4 - 70% broken blue gray quartz, sulfides (Aspy, Py, Po) 2%-3% bleby and fracture filling. @ 4.4-5.7 - sericitic tuff, brecciated carbonate and quartz, gray brown, finely to moderately laminated at 20°. @ 5.7-6.1 - 85% broken blue gray quartz at 20°, up to 5% sulfides (Aspy, Py, Po), lower contact sharp with 0.5" black (argillitic/tourmaline) band.

UNDERGROUND DIAMOND DRILL LOG

(Continuation)

LOUANNA PROJECT 1984

Sheet No. 2 of 4

Hole No. LUG-31-84

From	To	Description
		@ 6.1-7.3 - quartz eye tuff, greenish gray, quartz eyes variable and up to 1 cm, angular to rounded, < 1% sulfides. @ 7.3-9.0 - up to 50% broken blue gray quartz, quartz eyes up to 4 mm in a broken ashy(?) matrix, up to 1% sulfides (Aspy, Py, Po), lower contact sharp and at 20°. @ 9.0-22 - siliceous tuff, light to dark gray, finely laminated at 25°, < 1% sulfides. @ 11.6-12.2 - 4% broken blue gray quartz and quartz eyes. @ 19-20 - sub-parallel fracture. @ 22-32.6 - siliceous, sericitic tuff, green gray brown gray, fine to medium grained, medium hard, local buff carbonate breccia, moderately laminated at 25°-30°, 1%-2% banded sulfides (Py, Po, Aspy), increasingly siliceous with depth. @ 32.6-33 - 70% broken blue gray quartz, 8% sulfides (Aspy, Py, Po) as disseminations, blebs, fracture fillings and bands. @ 33-40 - quartz eye tuff, dark green to gray green, < 1% sulfides. @ 40-40.7 - barren, white to gray quartz vein at 20°, <1% sulfides. @ 40.7-44 - quartz eye tuff, dark gray quartz eyes up to 2 mm, <1% sulfides. @ 44-44.4 - sub-parallel fracture. @ 44-44.5 - quartz eye tuff, green. @ 45.5-45.9 - quartz and carbonate vein, milky white to blue gray, brecciated, 1% sulfides (Po, Py), contacts at 80° to core axis. @ 45.9-52.6 - siliceous quartz eye tuff, gray and locally green, <1% sulfides. @ 50.1 - 1" quartz/carbonate vein at 20°, brecciated, 2% sulfides (Aspy, Py, Po). @ 51-51.3 - brecciated blue gray quartz (80%) and carbonate (5%) vein at 25°, up to 7% sulfides (Aspy, Py, Po) as selvage and fracture filling.

UNDERGROUND DIAMOND DRILL LOG

(Continuation)

LOUANNA PROJECT 1984

Sheet No. 3 of 4

Hole No. LUG-31-84

From	To	Description
		@ 52.6-57.4 - siliceous chlorite tuff, green, medium soft to hard, minor brecciated carbonate lenses, moderately to well laminated at 30°. @ 57.4-58.3 - siliceous tuff, gray. @ 58.3-59.5 - up to 80% broken blue gray quartz, up to 15% sulfides. (Aspy, Py, Po). @ 59.5-60.8 - quartz eye tuff, gray. @ 60.8 - sharp contact at 30°.
60.8	141.0	CHLORITE TUFF Green to gray green, fine to medium grained, medium soft to medium hard, moderately to well carbonated, locally siliceous, moderately to well laminated at 40°, sparse sulfides, local brecciated orange carbonate veins along schistocity. @ 60.8-73 - moderately siliceous. @ 86-93 - moderately siliceous. @ 125.7 - 1 cm argillite band at 40°. @ 126.1-126.7 - quartz-carbonate vein, < 1% sulfides.
	141	END OF HOLE

UNDERGROUND DIAMOND DRILL LOG
(SAMPLING)

LOUANNA PROJECT 1984

Sheet No. 4 of 4

Hole No. LUG-31-84

CORE SAMPLE

From	To	Sample No.	Length	Au oz./ton	Au ppb	Ag oz./ton
3.0	6.1	42889	3.1	.024		0.02
6.1	9.0	42890	2.9	.038		0.02
23.0	28.0	42891	5.0		166	
28.0	33.0	42892	5.0	.014		tr.
39.5	41.0	42893	1.5	.012		tr.
50.0	53.0	42894	3.0	.016		tr.
57.4	59.5	42895	2.1	.224		0.04
125.6	126.7	42896	1.1	tr.		tr.

UNDERGROUND DIAMOND DRILL LOG

LOUANNA PROJECT 1984

Sheet No. 1 of 3
Hole No. LUG-32-84

Location: North: East: Other: 9700 N Drift E
Elevation: Level: Section: 360E
Bearing: 159° Dip: -60° at collar (Actual)
at

Logged By: Chris Bishop

R. C. Bishop 1/1/85

From	To	Description
0	2	CASING
2	59	QUARTZ EYE TUFF-SCHIST Gray green to green brown, medium hard, fine grained, with quartz eyes 2-3 mm, strong schistocity CA=20°-30°, well silicified, concordant sericitic bands numerous, disseminated sulfide. @ 2-21 - cherty looking. @ 19.5 - two 1/2" boudinaged quartz vein, surrounding sulfides (Po, Py) to 20%. @ 21-27 - brecciated quartz-carbonate-chlorite zone, variabley hard, well silicified, occasional concordant sericitic bands, strong schistocity and brecciation, sulfides 2%-5%, locally 20% (Po, Py, Asp). @ 27-55 - quartz eye tuff-schist, schistocity moderately to poorly developed. @ 33 - 6" with up to 3% sulfide (Po, Py). @ 55-59 - mixed zone of quartz eye, brecciated gray quartz with quartz-carbonate-chlorite breccia well silicified, sulfides (Po, Py, Asp) up to 10%, cross-cutting 1" white quartz vein with 5 mm blebs of Po at 58.
59	67	CHLORITE TUFF-SCHIST Gray green, medium soft to medium hard, medium fine grained, good schistocity CA=40°, moderately silicified and carbonated, sulfides disseminated to smeared concordantly (up to 1%-2%).

UNDERGROUND DIAMOND DRILL LOG

(Continuation)

LOUANNA PROJECT 1984

Sheet No. 2 of 3

Hole No. LUG-32-84

From	To	Description
67	68.5	GRAY QUARTZ VEINING Weakly brecciated, with carbonate blebs to 68' followed by sericitic quartz eye tuff-schist - all with up to 5% sulfide (Asp, Po, Py) many euhedral crystals.
68.5	94.5	QUARTZ EYE TUFF-SCHIST Olive green with chlorite blebs, medium hardness, very fine grained with 2-3 mm quartz eyes and 1-3 mm chlorite blebs, sericitic, sparse sulfide.
94.5	115	ANDESITIC(?) CHLORITE TUFF-SCHIST Green, soft, medium fine grained, well defined schistocity CA=40°, moderately carbonated with occasional boudinaged carbonate blebs, sparse disseminated sulfide locally concentrated. @ 101.5-110 - mixed with brown carbonate and up to 1% Po. @ 105 - 5% sulfide (Po, Cp).
115	116.5	CHERT Buff to green, sheared with sericite on foliation.
116.5	120±	CHLORITE TUFF-SCHIST-ANDESITIC(?) As at 94.5-115.
120±	143	ANDESITIC TUFFS Medium fine grained, well carbonated.
143	153	ANDESITE Pillows, brecciated flow tops, and tuff interbedded, chloritic, epidotized, moderately carbonated with stringers in massive zones, minor quartz.
	153	END OF HOLE

UNDERGROUND DIAMOND DRILL LOG

(SAMPLING)

LOUANNA PROJECT 1984

Sheet No. 3 of 3

Hole No. LUG-32-84

CORE SAMPLE

From	To	Sample No.	Length	Au oz./ton	Au ppb	Ag oz./ton
19	21	42937	2		509	
21	24.5	42938	3.5	0.002		tr.
24.5	27	42939	2.5	0.026		tr.
27	29.5	42940	2.5		181	
54.5	58	42941	3.5	0.002		tr.
63	66.5	42942	3.5		271	
66.5	69	42943	2.5	0.130		0.03
101.5	105.5	42944	4		491	
105.5	110.5	42945	5		118	
115	116.5	42946	1.5		12	

UNDERGROUND DIAMOND DRILL LOG

LOUANNA PROJECT 1984

Sheet No. 1 of 3
Hole No. LUG-33-84

Location: North: East: Other: 9700 N Drift E
Elevation: Level: Section: 300E
Bearing: 159° Dip: -60° at collar (Actual)
at

Logged By: Chris Bishop

C. Bishop 1/1/85

From	To	Description
0	2	CASING
2	65	QUARTZ EYE TUFF-SCHIST Grayish to green, medium soft, medium fine grained, eyes 2-3 mm, schistocity well defined CA=30°-35°, chloritic, locally sericitic, sulfide <1% (Po) at 4', 1" cross-cutting quartz vein. @ 16.5-18 - gray quartz veining with chloritic and sericitic quartz boudinaged in schistose rock, sulfides up to 5% (Asp, Po, Py), trace VG at 17.1'. @ 18-22.5 - quartz eye tuff-schist as at 2-16.5, sulfide locally to 8% Py, Po. @ 19-19.7 - gray quartz and carbonate in quartz eye sulfides to 3%. @ 21-22 - 40% gray quartz in sericitic quartz eye tuff, sulfide to 15% (Py, Po, euhedral Asp). @ 22.5-65 - quartz eye tuff-schist, buff green gray, medium hard, medium fine grained, eyes 2-3 mm, schistocity moderately defined, sericitic, weakly chloritic, local chlorite blebs, sulfides <1% local to 2% (Po, Py). @ 63.5 - 4" carbonate veining.
65	68	MIXED ZONE Of chorite tuff-schist, ashy tuff, gray quartz and carbonate veining, variable hardness, numerous fold structures, occasional quartz eyes.

UNDERGROUND DIAMOND DRILL LOG

(Continuation)

LOUANNA PROJECT 1984

Sheet No. 2 of 3

Hole No. LUG-33-84

From	To	Description
68	83.5	CHLORITE TUFF-SCHIST Green, soft, medium fine grained, schistocity well defined CA=40°-45°, well carbonated concordantly, locally weakly sericitic, sparse sulfide. @ 76.6 - 3" fracture/veining.
83.5	90±	ANDESITIC-CHLORITIC TUFF-SCHISTS Medium fine grained, soft, schistocity well defined, CA=45°-50°, moderately carbonated concordantly.
90±	102±	ANDESITIC TUFF Green, medium soft, schistocity well defined CA=45°-50°, weakly carbonated, occasional carbonate stringers, gradational contacts.
102±	116	ANDESITE Green, medium hard, medium fine to medium grained, massive, rare carbonate stringers.
	116	END OF HOLE

UNDERGROUND DIAMOND DRILL LOG

(SAMPLING)

LOUANNA PROJECT 1984

Sheet No. 3 of 3

Hole No. LUG-33-84

CORE SAMPLE

From	To	Sample No.	Length	Au oz./ton	Au ppb	Ag oz./ton
14	16.5	42947	2.5		267	
16.5	19.5	42948	3	0.104		0.03
19.5	22.5	42949	3		591	
64	68	42950	4		474	

UNDERGROUND DIAMOND DRILL LOG

LOUANNA PROJECT 1984

Sheet No. 1 of 3
Hole No. LUG-34-84

Location: North: East: Other: 9700 N Drift E
Elevation: Level: Section: 260$
Bearing: 159° Dip: -60° at collar (Actual)
at

Logged By: Chris Bishop
R. C. Wells 1/1/85.

From	To	Description
0	2	CASING
2	9	CHLORITE TUFF-SCHIST Dark green, medium soft to medium hardness, fine to medium fine grained, well defined schistocity CA=25°-30°, well carbonated, moderately silicified, sulfides locally concentrated (Po, Py).
9	12	GRAY QUARTZ VEINING Slight, brecciation, up to 5% sulfides (Po, Py, Asp). @ 10.2-11.3 - zone of sericite and brown carbonate schist with quartz and up to 5% sulfide.
12	72.3	QUARTZ EYE TUFF-SCHIST Medium hard to hard, eyes to 4 mm, moderately sericitic, sulfides from 1%-2%, locally well silicified. @ 12-13 - zone of chlorite, brown carbonate, sericite quartz schist-breccia, no quartz eyes. @ 16-45.5 - quartz eye tuff-schist, <1% sulfide locally concentrated (Po, Py). @ 22-25 - zone of well carbonated chlorite tuff-schist, locally well silicified. @ 35-36 - well silicified zone, sulfides up to 2%, cross-cutting quartz vein at 35.2'. @ 39.5 - 6" well silicified and quartz veining. @ 45.5-48.5 - chlorite tuff-schist, pervasive carbonate lensoids, quartz, sericite schistose to slightly brecciated, medium soft, variable grain size.

UNDERGROUND DIAMOND DRILL LOG

(Continuation)

LOUANNA PROJECT 1984

Sheet No. 2 of 3

Hole No. LUG-34-84

From	To	Description
		@ 48.5-59± - cherty(?)-quartz eye, dark olive green to gray, eyes 2-4 mm, medium soft to medium, sericitic, sulfides (1%-2%) concentrated in concordant bands, schistocity 20°-25°CA. @ 59±-72.3 - quartz eye tuff-schist 16-45.5', occasional bands of sulfide. @ 68 - 12" dominantly calcite veining with quartz eye inclusions.
(72.3	95±	CHLORITE TUFF-SCHIST Green, soft, fine grained, schistocity well defined CA=40°, well carbonated concordantly, occasional quartz stringer, sparse sulfide.
(95±	101.5	ANDESITIC TUFF Green, soft, medium fine grained, schistocity moderately well defined CA=40°, sparse sulfide, occasional carbonate band.
101.5±	119	ANDESITE Green, medium soft, medium fine grained, sparse sulfide except in pillow margins, (especially at 104.5' (3") and 105.5'(3") of quartz-chlorite-carbonate, up to 15% Po), frequent carbonate stringers.
	119	END OF HOLE N.B. - Box 5 (79-99) spilled before logging -- andesite/mine unit contact within 1 foot.

UNDERGROUND DIAMOND DRILL LOG

(SAMPLING)

LOUANNA PROJECT 1984

Sheet No. 3 of 3

Hole No. LUG-34-84

CORE SAMPLE

From	To	Sample No.	Length	Au oz./ton	Au ppb	Ag oz./ton
9.0	12.0	42951	3	0.105		0.03
12.0	15.0	42952	3		230	
15.0	18.5	42953	3.5		219	
35.0	36.5	42954	1.5		122	
38.8	40.3	42955	1.5		215	
45.5	48.5	42956	3		469	
48.5	52.5	42957	4		465	
52.5	56.0	42958	3.5		522	
56.0	59.0	42959	3		84	
72.3	74.0	42960	1.7	0.088		0.02
104.5 (3")	105.5 (3")	42961	0.5		15	

ACCUMULATED TOTAL UNDERGROUND DRILLING

HOLE	GOOD LOG	DEPTH	DESCRIPTION	SECT. Az	ASSAYS	ELEVATION	NORTHING	EASTING	PLOTTED ON SECTION	PLOTTED ON TARGET	COMPLETE LOG	ACCUMULATED TOTAL
LUG- 1	x	78	Target N Zone		x	9708.126	10160.775	10307.486	x	tr.	x to HQ	78
LUG- 2	x	69	Target N Zone		x	9711.764	10192.226	10310.199	x	x	x to HQ	147
LUG- 3	x	72	Target N Zone		x	9708.866	10205.194	10361.083	x	med?zone	x to HQ	219
LUG- 4	x	53	Target N Zone		x	9708.866	10205.194	10361.083	x	med?	x to HQ	272
LUG- 5	x	50	Target N Zone		x	9849.567	10190.017	10312.581	x	x	x to HQ	322
LUG- 6	x	67	Target N Zone		x	9850.90	10204.75	10356.7	x	x	x to HQ	389
LUG- 7	x	62	Target N & S Zones		x	9851.46	10204.75	10356.85	x	x	x to HQ	451
LUG- 8	x	56	Target S Zone		x	9848.932	10153.157	10212.436	x	x	x to HQ	513
LUG- 9	x	59	Target S Zone		x	9867.993	10027.04	9905.46	x	med?zone	x to HQ	569
LUG-10	x	54	Target S Zone		x	9857.74	10026.079	9871.34	x	x		623
LUG-11	x	44	Target S Zone		x	9748.6	10039.0	9906.06	x	x		667
LUG-12	x	89	Target N Zone		x	9755.43	10075.95	9868.72	x	x med		756
LUG-13	x	210	Exploration N & S Zones		x	9899.93	10278.33	10377.54	x	xto for E		966
LUG-14	x	152	Exploration N & S Zones		x	9678.52	10016.924	9930.208	x	-		1118
LUG-15	x	72	Exploration S Zone		x	9899.4	10024.427	9643.142	x	-		1190
LUG-16	x	84	Exploration N & S Zones		x	9795.25	10036.68	9758.95	x	x		1274
LUG-17	x	72	Exploration N & S Zones		x	9802.74	10035.31	9754.22	x	-		1346
LUG-18	x	142.0	N Zone at Depth Exploration		x	9700	10185.67	10920.50	x	x		1488
LUG-19	x	165.0	N Zone at Depth Exploration		x	9701	1018910	10460.0	x	-		1653
LUG-20	x	201.0	N Zone at Depth Exploration		x	9701.3	10202.0	10522.0	x	-		1854
LUG-21	x	100.0	S Zone Prod.		x	9812.54	10064.96	9830.73	x			1954
LUG-22	x	79.0	S Zone Prod.		x	9812.54	10064.96	9830.73	x	DIP x FROM JUNE-2033		2033
LUG-23	x	75	S Zone	1+36E 159		9624.37	10170.8	10193.29		-60°		2108
LUG-24	x	88	N Zone	1+36E 339		9624.37	10170.8	10193.29		-45°		2136
LUG-25	x	90	S Zone	0+95E 159		9631.1	10142.4	10159.1		-60°		2286
LUG-26	x	66.0	S Zone	0+58E 159		9637.4	10142.16	10119.7		-50°		2352
LUG-27	x	65.0	N Zone	0+59E 339		9637.4	10135.5	10121.85		-60°		2417
LUG-28	x	80.0		0+20 159								2497
LUG-29		90.0	S Zone	159								2587
LUG-30		78.0	N Contact	339								2665
LUG-31		141.0	N & S Zones									2806
LUG-32		153.0	N & S Zones									2959
LUG-33		116.0	N & S Zones									3075
LUG-34			N & S Zones									

NOT SURVEYED

REPORT ON EXPLORATION

CARRIED OUT DURING 1984

ON THE

LOUANNA PROJECT

CULHANE PROPERTY

THUNDER BAY DISTRICT

ONTARIO

LACANA MINING CORPORATION
October, 1984

Ronald C. Wells, Geologist
Kirkland Lake, Ontario

TABLE OF CONTENTS

FIGURES

CONCLUSIONS AND RECOMMENDATIONS

Interesting gold values occur in a number of northerly and easterly trending shear zones crossing the property.

The main areas of interest have previously received diamond drilling and in two cases are peripheral to the claim group.

No new areas of interest were found by the 1984 program and, therefore, it is recommended that no further work take place on the property.

INTRODUCTION

The Culhane property consists of 14 unpatented mining claims (Louanna Report, Appendix "C") in the Maun Area, District of Thunder Bay.

P. Culhane and O. Theriault of Geraldton are the claim holders.

Cumo Resources Ltd. have an option on the property.

During the 1984 summer field season, the following program was conducted on the property by Lacana.

1. 15 miles of line cutting, by B. Nelson, of Jellicoe.
2. Geophysical surveys. Magnetometer and VLF electromagnetics.
3. Geological mapping of favourable areas.
4. Detailed sampling, mapping and prospecting concentrating on areas of previous trenching.

LOCATION AND ACCESS

The claim group lies a few hundred feet north of Conlon Bay on the east side of O'Sullivan Lake. Access is by boat from Louanna mine, a distance of more than 6 miles.

PREVIOUS WORK

The east side of O'Sullivan Lake has been prospected sporadically over the last 50 years. Mattagami Lake Mines and Amax covered much of the area with airborne and ground geophysics in the 1970's. Three areas on the property have received previous trenching, geophysics and limited diamond drilling.

Parts of the claim group (northeast) were worked by Tombill Mines Ltd. in the 1960's. Much of the work concentrated on Cu, Ni showings called the Warren Prospect, east of claim 631502 (Figure 1.0). A total of 7 drill holes tested the surface showings (highest 1% Cu, 0.7% Ni) with narrow, lower grade intersections.

The second area of previous work straddles the western boundary of claim 724378 (Figure 1.0) called the Megan-Hurd Pospect. This area received a great deal of trenching by Tombill Mines Ltd and Lake Osu Mines Ltd. (1950's). The work concentrated on sulfide rich quartz veins with gold in narrow shear zones cutting granodiorite and basalt flows. Lake Osu (1950) drilled five holes totalling 1,800 feet under the main showing which is just west of the claim group boundary. The holes intersected numerous highly siliceous zones in the granodiorite, but no assay results are available.

Amax Minerals Exploration Ltd. conducted a program of trenching, geological mapping and diamond drilling on the Culhane property during 1981 and 1982. The work concentrated on gold bearing quartz veins and breccia, following a north trending shear zone on claim 603176 (Figure 1.0). The four Amax holes (1982) tested below the better surface showings, but yielded disappointing results, with the best intersection of 0.89 ppm Au over 1.5 meters (sulfide rich breccia).

GENERAL GEOLOGY

Much of the area is underlain by northeast striking, massive to pillowed, mafic volcanics. The volcanics are sheared, generally with north to northeast trend, and are intruded by a number of intermediate (diorite) to felsic (granite, felsite, quartz monzonite) dikes, sills and plugs of variable size and orientation. The whole sequence is cut by late north to northwest trending diabase dikes.

1984 LACANA WORK PROGRAM

1. LINE CUTTING AND GEOPHYSICS

Ben Nelson of Jellicoe was contracted by Lacana to cut 147 miles of line to cover the claim group with a base line trending N45°E and perpendicular survey lines at 400 foot intervals.

The results of the geophysical survey are summarized on a compilation map, Figure 1.0. Magnetic features follow the northeast trending volcanic stratigraphy. A moderate to strong magnetic ridge lies south of the Megan-Hurd and Warren Prospects and may represent a concordant mafic intrusive or more mafic flows. VLF, electromagnetic features are generally weak and have westerly trend. They possibly represent late, westerly trending fracture zones.

2. GEOLOGICAL MAPPING AND SAMPLING

Most of this work concentrated on the Megan-Hurd, Warren and Amax occurrences.

WARREN SHOWING

A number of trenches occur in this area and feature narrow shear zones in mafic metavolcanics. The shears contain local heavy pyrite, pyrrhotite mineralization and yielded very low gold assays (maximum 75 ppb Au).

MEGAN-HURD PROSPECT

In this area, northeasterly striking mafic volcanics are intruded by semi-concordant plugs of granodiorite and fine felsite. A north-northeast trending shear zone of variable width cross cuts the

intrusives and volcanic stratigraphy. A large number of trenches occur on the western end of the shear (Figure 1.0). In this area, the shear cuts granodiorite and contains quartz veins up to 2 feet wide, locally with up to 20% arsenopyrite, pyrite, chalcopyrite and pyrrhotite and wall rock silicification and sericitization. All trenches were sampled. The most sulfide rich sample yielded 0.43 oz./ton Au (main showing) another, close by, 0.173 oz./ton Au. Other values within 400 feet of these ranged from 100 ppb Au to 0.053 oz./ton Au. Trenches further to the east, where the shear cuts mafic volcanics, yielded gold values from 100 ppb to 0.05 oz./ton Au.

AMAX SHOWING

A narrow, north trending (N10°E) shear zone cross cuts a series of intermediate to mafic volcanic flows striking N45°E. Narrow quartz veins and zones of quartz carbonate cemented breccia occur within the shear and locally contain heavy arsenopyrite, pyrite and pyrrhotite mineralization. A series of trenches expose the shear for over 800 feet; these were all sampled (Figure 1.0). The results indicate that the better gold values occur in the south where Amax drilled and decrease in a northerly direction. For example, in the most southerly trench, assays range from .002 to .307 oz./ton Au, central trench 0.08 oz./ton Au, northern trench .016 oz./ton Au.

SUPPLEMENTARY GEOLOGICAL REPORT

ON THE

LOUANNA PROPERTY

O'SULLIVAN LAKE AREA, NAKINA

THUNDER BAY MINING DIVISION

ONTARIO

LACANA MINING CORPORATION

Ronald C. Wells
Geologist
Kirkland Lake, Ontario

December, 1984

TABLE OF CONTENTS

INTRODUCTION

This report gives geological information on the area mapped in detail by Lacana on the Louanna property during 1984. The results of the mapping are shown on accompanying geological maps, Figures 11.1 and 11.2. Background information and a detailed discussion of mine geology occur in the main report.

GEOLOGICAL UNITS

The geological units described have the same numbers as those on the maps (Figures 2 to 11).

1. Mafic to Intermediate Metavolcanics

This is the most predominant rock type in the area. It consists of massive (1a) to pillowed (1b) basalt to andesite flows with local interbedded andesite tuffs (1c). These rocks are medium to dark green coloured, fine to medium grained, rarely porphyritic, locally with minor amounts of disseminated, coarse, pyrite. Carbonate alteration is generally weak, though near contacts with the Mine Unit (2) and in tuff units (1c) it may be moderate to strong. The andesite tuffs (1c) are fine grained, fine to moderately laminated (<1 to 3 mm) and commonly sheared.

2. Mine Unit

This is a tuff unit, approximately 100 feet wide, lying within the metavolcanic sequence (1). Green, chloritic tuffs predominate. In the vicinity of the mine, the chloritic tuffs have been sheared, deformed, altered and intruded by a dike complex consisting of quartz eye sericite porphyry (unit 6 below). The dikes follow fractures and zones of weakness within the chloritic

tuffs and have highly irregular, lensy form. Wide zones of strong alteration occur at the dike margins and feature silicification, sericitization and carbonate alteration. The alteration and dikes are confined to a strike lengh of 2,000 feet in the vicinity of the mine. Details of the Mine Unit occur within the main report.

3. Mixed Cherts, Cherty Tuffs and Chloritic Tuffs

A narrow band of these rocks occurs at the northern edge of the Mine Unit (2) in the central and eastern parts of the mine. Light to medium green to yellowish green, fine grained, hard cherts are interbedded with chloritic tuffs and cherty tuffs. In the central mine area, the cherts are a few inches to 2 feet wide. To the east, the cherts are more abundant and wider, reaching 10 to 20 feet width. The pyrite content in the cherts varies from sparse to 10% and occurs as fine disseminations or as fracture filling. Thin beds of fine, black argillite occur locally within the cherts.

4. Andesite Tuffs

10 to 30 feet of andesitic tuffs occur at the nothern edge of the Mine Unit (2) west of the mine and north of the cherts (3) east of the mine. These are relatively homogenous, moderately carbonated, fine to moderately laminated tuffs which are similar to tuff units (1c) in the metavolcanics (1).

5. Diorite

These are medium to coarse grained, green, equigranular rocks which are locally rich in hornblende. Throughout most of the area, these rocks are very homogenous. East of Fish Point and on the headland north of the mine, the diorite is mixed with more gabbroic material which is coarse grained and very dark. These gabbroic areas show up well on magnetic maps.

6. Quartz Eye, Sericite, Porphyry

This intrusive unit occurs mainly within the Mine Unit (2) close to the mine workings. It is very hard to locally soft, fine to medium grained, gray with quartz eyes up to 1 cm long set in a groundmass of quartz, sericite, minor hornblende and chlorite. Disseminated pyrite is common up to 5%. The groundmass is usually schistose with the quartz eyes alligned with their long axis parallel to the schistosity. Local relict phenocrysts show imminent breakdown to sericite.

7. Quartz Eye, Feldspar, Porphyry

This rock type is similar to #6 with the exception of numerous tabular feldspar phenocrysts up to 1 cm. The groundmass is more mafic with a higher percentage of chlorite and hornblende and far less sericite. Pyrite is generally sparse. Quartz eyes may or may not be present and are smaller, less than 5 mm.

At Fish Point, northerly trending dikes of this rock type are very lensy, interfingering with the volcanics and sediments. Numerous east trending tension fractures are filled by barren, milky, quartz.

8. Diabase

Two major, north trending diabase dikes occur in the east and west parts of the grid. The dikes have sharp contacts, dip steeply and are medium to coarse grained, equigranular. Plagioclase, hornblende and chlorite are the predominant minerals.

STRUCTURE

In the central part of the grid, the volcanic stratigraphy strikes east to north-easterly. Shearing within the volcanics generally has similar to more northerly trend.

At Fish Point in the west, the stratigraphy trends north and east and displays small folds with hinges plunging steeply to the west. This area possibly represent a fold nose.

At the eastern end of the grid, the intrusive diorites' south contact trends more southerly and cuts out the Mine Unit at 15E to 20E.

63.4520

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Certificate of Analysis

NO. B755-84 **DATE:** July 26, 1984

SAMPLE(S) OF: Core (20) **RECEIVED:** July, 1984

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corp.

Sample No.	Gold/ppb	Zinc/ppm
42835		64
6		48
7		57
8		38
9	4	
42840		33
1		34
2		50
3		15
4		28
5	3	
6	3	
7	3	
8	3	
9	3	
42450	4	
42901	30	
2	14	
3	5	
4	121	

IN ACCORDANCE WITH LONG-ESTABLISHED NORTH AMERICAN CUSTOM, UNLESS IT IS SPECIFICALLY STATED OTHERWISE GOLD AND SILVER VALUES REPORTED ON THESE SHEETS HAVE NOT BEEN ADJUSTED TO COMPENSATE FOR LOSSES AND GAINS INHERENT IN THE FIRE ASSAY PROCESS.

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Certificate of Analysis

NO. 25206 **DATE:** July 25, 1984

SAMPLE(S) OF: Core (9) **RECEIVED:** July, 1984

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corp.

Sample No.	Gold/oz.	Silver/oz.
G42835	0.003	Trace
6	0.019	Trace
7	0.061	Trace
8	0.293**	0.03
G42840	0.034	Trace
1	0.016	Trace
2	0.008	Trace
3	0.008	Trace
4	0.008	Trace

** Checked

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Certificate of Analysis

File Copy Lacana Lou Anna D'Sulli, Timmins Lab

NO. B718-83 **DATE:** October 6, 1983

To Ron Ok-Oct 14-83 cy

SAMPLE(S) OF: Rock (24) **RECEIVED:** October, 1983

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corporation

Sample No.	Gold/ppb
1	10
2	7
3	333
4	8
5	8
6	10
7	21
8	143
9	15
10	8
11	214
12	12
13	222
14	18
15	12
16	4
17	4
18	37
19	77
20	160
21	53
22	10
23	372
24	34

ACCORDANCE WITH LONG-ESTABLISHED NORTH ERICAN CUSTOM, UNLESS IT IS SPECIFICALLY STATED HERWISE GOLD AND SILVER VALUES REPORTED ON SE SHEETS HAVE NOT BEEN ADJUSTED TO COMPEN- E FOR LOSSES AND GAINS INHERENT IN THE FIRE ASSAY PROCESS.

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PER

Louanna.

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OCT 19 1984

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Certificate of Analysis

NO. 42102 **DATE:** October 16, 1984

SAMPLE(S) OF: Rock (6) **RECEIVED:** October, 1984

SAMPLE(S) FROM: Mr. Ron Wells for Mr. A. L. Barker
Lacana Mining Corporation

Sample No.	Gold oz.
HR-01	1.43 **
-02	Trace
-03	Trace
KZ-01	0.082
67	0.014
68	0.046

** Checked

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NO. B1344-84 **DATE:** November 19, 1984

SAMPLE(S) OF: Rock (2) **RECEIVED:** August, 1984

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corp. RE: "Nakina"

File - Lacana Assay

Sample No.	Tungsten ppm
BM1	5
BM2	<5

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Certificate of Analysis

NO. B729-84 **DATE:** July 23, 1984

SAMPLE(S) OF: Fines (1) **RECEIVED:** June, 1984

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corp. "Nakina"

Sample No.	Arsenic/ppm
C13R	500

IN ACCORDANCE WITH LONG-ESTABLISHED NORTH AMERICAN CUSTOM, UNLESS IT IS SPECIFICALLY STATED OTHERWISE GOLD AND SILVER VALUES REPORTED ON THESE SHEETS HAVE NOT BEEN ADJUSTED TO COMPENSATE FOR LOSSES AND GAINS INHERENT IN THE FIRE ASSAY PROCESS.

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Certificate of Analysis

NO. 25206 **DATE:** July 25, 1984

SAMPLE(S) OF: Core (9) **RECEIVED:** July, 1984

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corp.

6922
File Lomaman

Sample No.	Gold/oz.	Silver/oz.
G42835	0.003	Trace
6	0.019	Trace
7	0.061	Trace
8	0.293**	0.03
G42840	0.034	Trace
1	0.016	Trace
2	0.008	Trace
3	0.008	Trace
4	0.008	Trace

Surface hole ??
Tuffaceous

** Checked

ACCORDANCE WITH LONG-ESTABLISHED NORTH RICAN CUSTOM, UNLESS IT IS SPECIFICALLY STATED ERWISE GOLD AND SILVER VALUES REPORTED ON SE SHEETS HAVE NOT BEEN ADJUSTED TO COMPEN- FOR LOSSES AND GAINS INHERENT IN THE FIRE ASSAY PROCESS.

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Certificate of Analysis

NO. B755-84 **DATE:** July 26, 1984

SAMPLE(S) OF: Core (20) **RECEIVED:** July, 1984

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corp.

6922
Lacana
Assays

Sample No.	Gold/ppb	Zinc/ppm
42835		64
6		48
7		57
8		38
9	4	
42840		33
1		34
2		50
3		15
4		28
5	3	
6	3	
7	3	
8	3	
9	3	
42450	4	
42901	30	
2	14	
3	5	
4	121	

IN ACCORDANCE WITH LONG-ESTABLISHED NORTH AMERICAN CUSTOM, UNLESS IT IS SPECIFICALLY STATED OTHERWISE GOLD AND SILVER VALUES REPORTED ON THESE SHEETS HAVE NOT BEEN ADJUSTED TO COMPENSATE FOR LOSSES AND GAINS INHERENT IN THE FIRE ASSAY PROCESS.

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P.O. BOX 187, HAILEYBURY, ONTARIO TEL: 672-3107

Certificate of Analysis

NO. B870-84 **DATE:** August 13, 1984

SAMPLE(S) OF: Core(19) **RECEIVED:** August, 1984

SAMPLE(S) FROM: Mr. Ron Wells, Lacana Mining Corporation

LOUANNA - Project 6922

→ Louanna Assay

Sample No.	Gold ppb
G42891	166
G42937	509
G42940	181
G42942	271
G42944	491
G42945	118
G42946	12
G42947	267
G42949	591
G42950	474
G42952	230
G42953	219
G42954	122
G42955	215
G42956	469
G42957	465
G42958	522
G42959	84
G42961	16

IN ACCORDANCE WITH LONG-ESTABLISHED NORTH AMERICAN CUSTOM, UNLESS IT IS SPECIFICALLY STATED OTHERWISE GOLD AND SILVER VALUES REPORTED ON THESE SHEETS HAVE NOT BEEN ADJUSTED TO COMPENSATE FOR LOSSES AND GAINS INHERENT IN THE FIRE ASSAY PROCESS.

BELL-WHITE ANALYTICAL LABORATORIES LTD.

Per

BELL-WHITE ANALYTICAL LABORATORIES LTD.
P.O. BOX 187, HAILEYBURY, ONTARIO TEL: 672-3107

Certificate of Analysis

NO. 27241 **DATE:** August 15, 1984

SAMPLE(S) OF: Core (14) **RECEIVED:** August, 1984

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corp.

Project 6309 File - Louanna
6922 Assays
probably Cullaro
!?

Sample No.	Gold/oz.	Silver/oz.
G42889	0.024	0.02
G42890	0.038	0.02
2	0.014	Trace
3	0.012	Trace
4	0.016	Trace
5	0.224**	0.04
6	Trace	Trace
G42938	0.002*	Trace
9	0.026	Trace
G42941	0.022	Trace
G42943	0.130**	0.03
G42948	0.104**	0.03
G42951	0.105**	0.03
G42960	0.088	0.02

* Estimate
** Checked

BELL-WHITE ANALYTICAL LABORATORIES LTD.

Per

BELL-WHITE ANALYTICAL LABORATORIES LTD.
P.O. BOX 187, HAILEYBURY, ONTARIO TEL: 672-3107

Certificate of Analysis

NO. B885-84 **DATE:** August 16, 1984

SAMPLE(S) OF: Rock (15) **RECEIVED:** August, 1984

SAMPLE(S) FROM: Mr. R. Wells
Lacana Mining Corp.

→ Lacana Assays

Sample No.	Gold/ppb	Gold/oz.
BM-1		0.606**
BM-2		0.076**
C-18	118	
9	537	
C-20	70	
0A	21	
0B	15	
0C	95	
1		0.413**
2		0.173**
3		0.053**
4	345	
5	414	
6	149	
6A	100	

** Checked

BELL-WHITE ANALYTICAL LABORATORIES LTD.

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BELL - WHITE ANALYTICAL LABORATORIES LTD.
P.O. BOX 187. HAILEYBURY, ONTARIO TEL: 672-3107

Certificate of Analysis

NO. B803-84 Page 1 of 2 **DATE:** August 2, 1984

SAMPLE(S) OF: Core (56) **RECEIVED:** July, 1984

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corp.

Sample No.	Gold/ppb	Gold/oz.	Silver/oz.	Zinc/ppm	Silver/ppm
42865		0.004	Trace		
6		0.088	0.02		
7		0.382**	0.04		
8		0.032	0.02		
9		0.052	Trace		
42870	25				
1	16				
2	22				
3		0.006	0.03		
4	451**				
5		0.058	Trace		
6	48				
7	225				
8		0.123**	0.03		
9	103				
42880		0.027	Trace		
1		0.062	0.02		
2		0.030	0.02		
3		Trace	Trace		
4	217				
5		0.124**	0.03		
6	74				
7		0.012	Trace		
8		0.004	Trace		
42905	10				
6	5				
7		0.006	Trace	75	0.2

** Checked

IN ACCORDANCE WITH LONG-ESTABLISHED NORTH AMERICAN CUSTOM, UNLESS IT IS SPECIFICALLY STATED OTHERWISE GOLD AND SILVER VALUES REPORTED ON THESE SHEETS HAVE NOT BEEN ADJUSTED TO COMPENSATE FOR LOSSES AND GAINS INHERENT IN THE FIRE ASSAY PROCESS.

BELL-WHITE ANALYTICAL LABORATORIES LTD.

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AUG 8 1984

BELL-WHITE ANALYTICAL LABORATORIES LTD.

P.O. BOX 187. HAILEYBURY, ONTARIO TEL: 672-3107

Certificate of Analysis

File Lacana assays

NO. B803-84 Page 2 of 2 DATE: August 2, 1984

SAMPLE(S) OF: Core (56) RECEIVED: July, 1984

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corp.

Sample No.	Gold/ppb	Gold/oz.	Silver/oz.	Zinc/ppm	Silver/ppm
42908	30				
9		0.006	0.02	80	0.2
42910		Trace	Trace	68	0.2
1		0.002*	Trace	66	0.2
2	394**				
3	19				
4	44				
5	236				
6	174				
7	541**				
8	249				
9	89				
42920	78				
1	94				
2	30				
3	19				
4	34				
5	10				
6	14				
7	3				
8	7				
9	3				
42930	67				
1	166				
2	20				
3	7				
4	2				
5	2				
6	3				

** Checked

BELL-WHITE ANALYTICAL LABORATORIES LTD.

Per

File Lacana Mining

BELL-WHITE ANALYTICAL LABORATORIES LTD.

P.O. BOX 187, HAILEYBURY, ONTARIO TEL: 672-3107

Certificate of Analysis

NO. B892-84 **DATE:** August 20, 1984

SAMPLE(S) OF: Rock (15) **RECEIVED:** August, 1984

SAMPLE(S) FROM: Mr. R. Wells
Lacana Mining Corp.

Sample No.	Copper/ppm	Zinc/ppm	Silver/ppm	Lead/ppm
BM-1	34	34	1.0	14
BM-2	24	32	1.0	2
C-18			0.2	
9			0.2	
C-20			0.2	
0A			0.2	
0B			0.2	
0C			0.8	
C-21			2.8	
2			3.0	
3			0.2	
4			0.2	
5			0.2	
6			0.8	
6A			0.2	

Assay

IN ACCORDANCE WITH LONG-ESTABLISHED NORTH AMERICAN CUSTOM, UNLESS IT IS SPECIFICALLY STATED OTHERWISE GOLD AND SILVER VALUES REPORTED ON THESE SHEETS HAVE NOT BEEN ADJUSTED TO COMPENSATE FOR LOSSES AND GAINS INHERENT IN THE FIRE ASSAY PROCESS.

BELL-WHITE ANALYTICAL LABORATORIES LTD.

Laurentian Assays
RECD SEP - 4 1984

BELL-WHITE ANALYTICAL LABORATORIES LTD.
P.O. BOX 187, HAILEYBURY, ONTARIO TEL: 672-3107

Certificate of Analysis

NO. B944-84 **DATE:** August 28, 1984

SAMPLE(S) OF: Rock (3) **RECEIVED:** August, 1984

SAMPLE(S) FROM: Mr. R. Wells
Lacana Mining Corp.
Kirkland Lake, Ontario

Sample No.	Gold/ppb
G32001	11
G32002	37
G32003	78

ACCORDANCE WITH LONG-ESTABLISHED NORTH
RICAN CUSTOM, UNLESS IT IS SPECIFICALLY STATED
ERWISE GOLD AND SILVER VALUES REPORTED ON
E SHEETS HAVE NOT BEEN ADJUSTED TO COMPEN-
FOR LOSSES AND GAINS INHERENT IN THE FIRE
ASSAY PROCESS.

BELL-WHITE ANALYTICAL LABORATORIES LTD.

PER

Lacana Assays

RECEIVED SEP - 4 1984

BELL-WHITE ANALYTICAL LABORATORIES LTD.

P.O. BOX 187, HAILEYBURY, ONTARIO TEL: 672-3107

Certificate of Analysis

NO. B948-84 **DATE:** August 28, 1984

SAMPLE(S) OF: Rock (2) **RECEIVED:** August, 1984

SAMPLE(S) FROM: Mr. R. Wells
Lacana Mining Corp., Nakina, Ontario

Sample No.	Arsenic/ppm
BM1	1000
BM2	600

BELL-WHITE ANALYTICAL LABORATORIES LTD.

PER

AUG 23 1984

- CHEMICAL RESEARCH AND ANALYSIS
- CONTRACT LABORATORIES

TECHNICAL SERVICE LABORATORIES
DIVISION OF BURGENER TECHNICAL ENTERPRISES LIMITED
1301 FEWSTER DRIVE, MISSISSAUGA, ONT. L4W 1A2
TELEPHONE: (416) 625-1544
TELEX 06-960215

CERTIFICATE OF ANALYSIS

Semiquantitative Spectrographic

SAMPLE(S) FROM Bell-White Analytical Laboratories
P.O. Box 187
Haileybury, Ontario
POJ 1KO
Attn: P. Lafreniere

Lovanna
Assay

REPORT No. T7156

Inv#25907

SAMPLE(S) OF PULP

	Sample C-16	Sample C-17	Sample		Sample C-16	Sample C-17	Sample
Aluminum	M	M-H		Manganese	0.01	0.07	
Antimony	-	-		Magnesium	0.5	3	
Arsenic	0.5	-		Molybdenum	-	-	
Barium	0.02	0.01		Neodymium	-	-	
Beryllium	-	-		Nickel	0.001	0.01	
Bismuth	-	-		Phosphorus	-	-	
Boron	0.1	0.001		Silver	0.1oz/T	0.05oz/T	
Calcium	0.3	0.05		Silicon	H	H	
Cadmium	-	-		Sodium	0.2	0.1	
Cerium				Strontium	-	-	
Chromium	0.5	0.1		Tantalum	-	-	
Cobalt	-	0.01		Thorium	-	-	
Columbium	-	-		Tin	<0.001	<0.001	
Copper	0.05	0.05		Titanium	0.05	0.3	
Gallium	-	-		Tungsten	-	-	
Germanium	-	-		Uranium	-	-	
Iron (Fe)	3	H		Vanadium	<0.001	0.01	
Lanthanum	-	-		Yttrium	-	-	
Lead	-	-		Zinc	-	-	
Lithium	-	-		Zirconium	-	-	
Extra Elements							
Caesium				Platinum			
Gold				Rhenium			
Hafnium				Rubidium			
Indium				Tellurium			
Palladium				Thallium			

Figures are approximate:

CODE
H – High – 10 – 100% approx.
M – Medium – 1 – 10% approx.
L – Low – .1 – 1% approx.

– Not Detected – Elements looked for but not found
X Not Looked For
< Less Than

Samples, Pulps and Rejects discarded after two months

DATE August 10, 1984 SIGNED Paul E Burgener

CTA

TSL FORM # 2

• CHEMICAL RESEARCH AND ANALYSIS
• CONTRACT LABORATORIES

TECHNICAL SERVICE LABORATORIES
DIVISION OF BURGENER TECHNICAL ENTERPRISES LIMITED
1301 FEWSTER DRIVE, MISSISSAUGA, ONT. L4W 1A2
TELEPHONE: (416) 625-1544
TELEX 06-960215

CERTIFICATE OF ANALYSIS

Semiquantitative Spectrographic

REPORT No. T - 6856

SAMPLE(S) FROM

Bell-White Anlytical Laboratories Ltd.
P.O. Box 187
Haileybury, Ontario
P0J 1K0

SAMPLE(S) OF Pulp

	Sample C 15	Sample	Sample		Sample C 15	Sample	Sample
Aluminum (Al_2O_3)	H			Manganese	0.1		
Antimony	–			Magnesium (MgO)	H		
Arsenic	–			Molybdenum	0.001		
Barium	<0.01			Neodymium (Nd_2O_3)	–		
Beryllium (BeO)	–			Nickel	1		
Bismuth	–			Phosphorus			
Boron	–			Silver	0.1 0z/t		
Calcium (CaO)	5			Silicon (SiO_2)	H		
Cadmium	–			Sodium (Na_2O)	–		
Cerium (CeO_2)	–			Strontium	<0.05		
Chromium	0.1			Tantalum (Ta_2O_5)	–		
Cobalt	0.05			Thorium (ThO_2)	–		
Columbium (Cb_2O_5)	–			Tin	–		
Copper	M			Titanium	1 - 2		
Gallium	<0.001			Tungsten	–		
Germanium	–			Uranium (U_3O_8)	–		
Iron (Fe)	H			Vanadium	0.01		
Lanthanum (La_2O_3)	–			Yttrium (Y_2O_3)	–		
Lead	0.005			Zinc	–		
Lithium (Li_2O)	–			Zirconium (ZrO_2)	–		
Extra Elements							
Caesium				Platinum			
Gold				Rhenium			
Hafnium				Rubidium			
Indium				Tellurium			
Palladium				Thallium			

Figures are approximate:

CODE H – High – 10 – 100% approx.
M – Medium – 1 – 10% approx.
L – Low – .1 – 1% approx.

– Not Detected – Elements looked for but not found
X Not Looked For
< Less Than

Samples, Pulps and Rejects discarded after two months

DATE July 6, 1984 SIGNED Carl F Burgener

FORM: T.S.L. #1

BELL-WHITE ANALYTICAL LABORATORIES LTD.
P.O. BOX 187, HAILEYBURY, ONTARIO TEL: 672-3107

Certificate of Analysis

NO. 24477 **DATE:** July 20, 1984

SAMPLE(S) OF: Core (8) **RECEIVED:** July, 1984

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corp.

Sample No.	Gold/oz.	Silver/oz.
42808	0.046	Trace
9	0.108**	0.02
42813	0.006	Trace
42815	0.024	Trace
42859	0.074	Trace
42860	0.099**	Trace
42862	0.127**	0.02
3	0.078	0.02

** Checked

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P.O. BOX 187, HAILEYBURY, ONTARIO TEL: 672-3107

Certificate of Analysis

NO. B724-84 **DATE:** July 20, 1984

SAMPLE(S) OF: Core (29) **RECEIVED:** July, 1984

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corp.

Sample No.	Gold/ppb
G42805	686**
6	31
7	18
G42810	116
1	56
2	754**
G42814	223
G42816	186
7	480**
8	343**
9	34
G42820	3
1	2
2	2
3	4
4	7
5	2
6	2
7	3
8	2
9	2
G42830	2
1	2
2	2
3	3
4	4
5	205
6	280
G42864	15

** Checked

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P.O. BOX 187, HAILEYBURY, ONTARIO TEL: 672-3107

Certificate of Analysis

NO. B684-84 **DATE:** July 17, 1984

SAMPLE(S) OF: Rock (7) **RECEIVED:** July, 1984

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corporation "Nakina"

Sample No.	Gold/ppb
G42851	10
2	3
3	3
4	3
5	3
6	3
7	7

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BELL - WHITE ANALYTICAL LABORATORIES LTD.
P.O. BOX 187. HAILEYBURY, ONTARIO TEL: 672-3107

Certificate of Analysis

NO. B685-84 **DATE:** July 17, 1984

SAMPLE(S) OF: Soil (3) **RECEIVED:** June, 1984

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corporation "Nakina"

Sample No.	Gold/ppb
C12R	4320**
C13R	156
C14H	540

Sample No.	Silver/ppm
C13R	0.4

** Checked

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P.O. BOX 187. HAILEYBURY, ONTARIO TEL: 672-3107

Certificate of Analysis

NO. B596-84 **DATE:** July 6, 1984

SAMPLE(S) OF: Core (16) **RECEIVED:** June, 1984

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corporation "Nakina"

Sample No.	Gold/ppb	Gold/oz.	Silver/oz.
G42789	2		
G42790	2		
1	3		
2	45		
3	3		
4	5		
5		0.116**	0.03
6	7		
7	8		
8	7		
9		0.002*	Trace
G42780	5		
1		0.002*	Trace
2		0.062	0.02
3	236		
4	134		

* Estimate

** Checked

IN ACCORDANCE WITH LONG-ESTABLISHED NORTH AMERICAN CUSTOM, UNLESS IT IS SPECIFICALLY STATED OTHERWISE GOLD AND SILVER VALUES REPORTED ON THESE SHEETS HAVE NOT BEEN ADJUSTED TO COMPENSATE FOR LOSSES AND GAINS INHERENT IN THE FIRE ASSAY PROCESS.

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Certificate of Analysis

NO. B626-84 **DATE:** July 11, 1984

SAMPLE(S) OF: Rock (1) **RECEIVED:** June, 1984

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corp.

Sample No.	Au/ppb
C-15	74

IN ACCORDANCE WITH LONG-ESTABLISHED NORTH AMERICAN CUSTOM, UNLESS IT IS SPECIFICALLY STATED OTHERWISE GOLD AND SILVER VALUES REPORTED ON THESE SHEETS HAVE NOT BEEN ADJUSTED TO COMPENSATE FOR LOSSES AND GAINS INHERENT IN THE FIRE ASSAY PROCESS.

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P.O. BOX 187, HAILEYBURY, ONTARIO TEL: 672-3107

Certificate of Analysis

NO. B532-84 **DATE:** June 25, 1984

SAMPLE(S) OF: Core (21) **RECEIVED:** June, 1984

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corporation "Nakina"

File Lacana Assays

Sample No.	Gold/ppb	Gold/oz.	Silver/oz.
C-16		0.062	0.15
C-17		0.052	0.01
42770		Trace	Trace
1		0.002*	Trace
2		Trace	Trace
3		0.048	0.02
4	5		
5	2		
6	3		
7	3		
8	2		
9	3		
42780	2		
1	4		
2	7		
3	3		
4	2		
5	4		
6	2		
7	2		
8	4		

Dup 6.92 .15 .013

* Estimate

IN ACCORDANCE WITH LONG-ESTABLISHED NORTH AMERICAN CUSTOM, UNLESS IT IS SPECIFICALLY STATED OTHERWISE GOLD AND SILVER VALUES REPORTED ON THESE SHEETS HAVE NOT BEEN ADJUSTED TO COMPENSATE FOR LOSSES AND GAINS INHERENT IN THE FIRE ASSAY PROCESS.

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P.O. BOX 187. HAILEYBURY, ONTARIO TEL: 672-3107

Certificate of Analysis

NO. B504-84 **DATE:** June 20, 1984

SAMPLE(S) OF: Core (6) **RECEIVED:** June, 1984

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corp.

Sample No.	Au/ppb	Ag/ppm
42764	761	
5	215	
6	441	
7	52	
8	10	
9	174	0.4

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P.O. BOX 187, HAILEYBURY, ONTARIO TEL: 672-3107

Certificate of Analysis

NO. B465-84 **DATE:** June 14, 1984

SAMPLE(S) OF: Core (23) **RECEIVED:** June, 1984

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corp. (Nakina)

Sample No.	Au/ppb	Au/oz.	Ag/ppm	Ag/oz.
G42741		0.032		Trace
2	107		0.4	
3		0.042		0.03
4	609		0.6	
5	64		0.6	
6		0.014		0.02
7		Trace		0.02
8	43		0.4	
9	230		1.0	
G42750	7		0.2	
1	100			
2		0.002*		0.02
3		0.170**		0.07
4	422			
5		0.038		0.03
6		Trace		Trace
7		Trace		Trace
8	81			
9	340			
G42760		0.002*		Trace
1		0.172**		0.06
2	149			
3		0.058		0.78

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* Estimate
** Checked

IN ACCORDANCE WITH LONG-ESTABLISHED NORTH AMERICAN CUSTOM, UNLESS IT IS SPECIFICALLY STATED OTHERWISE GOLD AND SILVER VALUES REPORTED ON THESE SHEETS HAVE NOT BEEN ADJUSTED TO COMPENSATE FOR LOSSES AND GAINS INHERENT IN THE FIRE ASSAY PROCESS.

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P.O. BOX 187, HAILEYBURY, ONTARIO TEL: 672-3107

Certificate of Analysis

NO. B442-84 **DATE:** June 11, 1984

SAMPLE(S) OF: Core (21) **RECEIVED:** June, 1984

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corporation "Nakina"

Sample No.	Au/ppb	Au/oz.	Ag/oz.	Ag/ppm
G42720	52			0.2
1		0.004	0.02	
2		0.006	0.02	
3		0.108**		0.2
4	174			0.2
5		0.014	0.01	
6	23			0.2
7		0.438**	0.09	
8		0.042	0.01	
9	37			
G42730		0.012	0.01	
1		0.060	0.02	
2		0.112**	0.02	
3		0.010	0.01	
4	29			
5		0.032	0.01	
6		0.056		
7	1045**			0.2
8	590**			
9	569**			
G42740	22			

** Checked

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O/SULLIVAN LAKE

BELL-WHITE ANALYTICAL LABORATORIES LTD.

P.O. BOX 187, HAILEYBURY, ONTARIO TEL: 672-3107

LOUANNA

Certificate of Analysis

NO. B813-83 Page 1 of 3 DATE: October 31, 1983

SAMPLE(S) OF: Soils(199) RECEIVED: October, 1983

SAMPLE(S) FROM: Mr. R. Wells, Lacana Mining Corp.

Sample No.		Arsenic ppm
L4W	1+50S	ND
	2+00S	ND
	2+50S	ND
	3+00S	ND
	3+50S	ND
	4+00S	5
	4+50S	ND
	5+00S	ND
	5+50S	ND
	6+00S	ND
	6+50S	ND
	7+00S	5
L16E	1+00S	ND
	1+50S	10
	2+00S	ND
	2+50S	5
	3+00S	15
	3+50S	ND
	0+50S	ND
	0+50N	ND
	1+00N	ND
	1+50N	ND
	2+00N	ND
	2+50N	ND
	3+00N	10
L20E	0+50N	ND
	1+00N	ND
	1+50N	ND
	2+00N	ND
	2+50N	5
	3+00N	ND
	3+50N	ND
	4+00N	5
	4+50N	ND

Sample No.		Arsenic ppm
L20E	0+50S	ND
	1+00S	ND
	1+50S	ND
	2+00S	5
	2+50S	ND
	3+00S	5
	3+50S	ND
L24E	0+50N	ND
	1+00N	ND
	1+50N	ND
	2+00N	ND
	2+50N	ND
	3+00N	ND
	3+50N	ND
	4+00N	ND
	4+50N	ND
	5+00N	ND
	6+00N	ND
	6+50N	ND
	7+00N	ND
	0+50S	ND
	1+00S	ND
	1+50S	ND
	2+00S	15
	2+50S	10
	3+00S	ND
L28E	5+50N	ND
L32E	0+50N	ND
	1+00N	ND
	1+50N*	--
	2+00N	ND
	2+50N	ND
	3+00N	ND
	3+50N	ND

ND denotes not detected.

Cont'd...

ACCORDANCE WITH LONG-ESTABLISHED NORTH RICAN CUSTOM, UNLESS IT IS SPECIFICALLY STATED ERWISE GOLD AND SILVER VALUES REPORTED ON E SHEETS HAVE NOT BEEN ADJUSTED TO COMPEN- FOR LOSSES AND GAINS INHERENT IN THE FIRE ASSAY PROCESS.

BELL-WHITE ANALYTICAL LABORATORIES LTD.

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BELL-WHITE ANALYTICAL LABORATORIES LTD.
P.O. BOX 187, HAILEYBURY, ONTARIO TEL: 672-3107

Certificate of Analysis

NO. B813-83 **DATE:** October 31, 1983

SAMPLE(S) OF: Soils(199) **RECEIVED:** October, 1983

SAMPLE(S) FROM: Mr. R. Wells, Lacana Mining Corp.

Sample No.	Arsenic ppm
BL 3+00E	ND
4+00E	ND
5+00E	ND
6+00E	5
7+00E	ND
8+00E	ND
9+00E	ND
10+00E	ND
11+00E	ND
12+00E	ND
13+00E	ND
14+00E	ND
15+00E	5
16+00E	ND
17+00E	ND
18+00E	ND
19+00E	ND
20+00E	ND
21+00E	ND
22+00E	ND
23+00E	ND
24+00E	ND
25+00E	ND
26+00E	ND
31+00E	5
33+00E	ND
36+00E	5
37+00E	20
38+00E	5
39+00E	5
40+00E	ND
41+00E	ND
42+00E	5
43+00E	ND

Sample No.	Arsenic ppm
BL 44+00E	15
45+00E	5
BL 3+00EB	ND
4+00EB	ND
5+00EB	ND
6+00EB	ND
7+00EB	ND
8+00EB	ND
9+00EB	ND
10+00EB	ND
11+00EB	ND
12+00EB	ND
13+00EB	ND
14+00EB	ND
15+00EB	ND
16+00EB	ND
17+00EB	ND
18+00EB	ND
19+00EB	ND
20+00EB	ND
21+00EB	ND
22+00EB	5
24+00EB	ND
25+00EB	ND
26+00EB	ND
27+00EB	ND
32+00EB	ND
34+00EB	ND
35+00EB	10
38+00EB	ND
40+00EB	ND
41+00EB	ND
43+00EB	ND
L4W 1+00S	ND

ND denotes not detected.

Cont'd...

ACCORDANCE WITH LONG-ESTABLISHED NORTH ERICAN CUSTOM, UNLESS IT IS SPECIFICALLY STATED HERWISE GOLD AND SILVER VALUES REPORTED ON SE SHEETS HAVE NOT BEEN ADJUSTED TO COMPEN- E FOR LOSSES AND GAINS INHERENT IN THE FIRE ASSAY PROCESS.

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P.O. BOX 187, HAILEYBURY, ONTARIO TEL: 672-3107

Certificate of Analysis

NO. B813-83 Page 3 of 3 **DATE:** October 31, 1983

SAMPLE(S) OF: Soils(199) **RECEIVED:** October, 1983

SAMPLE(S) FROM: Mr. R. Wells, Lacana Mining Corp.

Sample No.	Arsenic ppm
L32E 4+00N	ND
4+50N	ND
5+00N	ND
5+50N	ND
6+00N	ND
6+50N	ND
7+00N	ND
7+50N	ND
8+00N	ND
8+50N	ND
9+00N	ND
9+50N	ND
10+00N	ND
0+50S	ND
1+00S	5
1+50S	15
2+00S	15
2+50S	40
3+00S	ND
3+50S	ND
L36E 0+50S	5
1+00S	15
1+50S	5
2+00S	ND
2+50S	ND
L28E 1+00N	ND
1+50N	ND
2+00N	ND
2+50N	ND
6+50N	ND
9+00N	ND
9+50N	ND
10+00N	ND

Sample No.	Arsenic ppm
L36E 0+50N	ND
1+00N	ND
1+50N	ND
2+00N	ND
2+50N	ND
3+00N	ND
3+50N	ND
4+00N	ND
4+50N	ND
5+00N	ND
5+50N	ND
6+00N	ND
6+50N	ND
7+00N	ND
7+50N	ND
8+00N	ND
8+50N	ND
9+00N	ND
9+50N	ND
L40E 0+50N	5
1+00N	ND
1+50N	ND
0+50S	5
1+00S	5
L40W 1+50S	ND
2+00N	ND
2+50N	ND
3+00N	ND
3+50N	ND
4+00N	ND

ND denotes not detected.

* denotes insufficient sample for assay.

IN ACCORDANCE WITH LONG-ESTABLISHED NORTH AMERICAN CUSTOM, UNLESS IT IS SPECIFICALLY STATED OTHERWISE GOLD AND SILVER VALUES REPORTED ON THESE SHEETS HAVE NOT BEEN ADJUSTED TO COMPENSATE FOR LOSSES AND GAINS INHERENT IN THE FIRE ASSAY PROCESS.

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P.O. BOX 187, HAILEYBURY, ONTARIO TEL: 672-3107

Certificate of Analysis

NO. B532-84 **DATE:** June 25, 1984

SAMPLE(S) OF: Core (21) **RECEIVED:** June, 1984

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corporation "Nakina"

Sample No.	Gold/ppb	Gold/oz.	Silver/oz.
C-16		0.062	0.15
C-17		0.052	0.01
42770		Trace	Trace
1		0.002*	Trace
2		Trace	Trace
3		0.048	0.02
4	5		
5	2		
6	3		
7	3		
8	2		
9	3		
42780	2		
1	4		
2	7		
3	3		
4	2		
5	4		
6	2		
7	2		
8	4		

* Estimate

IN ACCORDANCE WITH LONG-ESTABLISHED NORTH AMERICAN CUSTOM, UNLESS IT IS SPECIFICALLY STATED OTHERWISE GOLD AND SILVER VALUES REPORTED ON THESE SHEETS HAVE NOT BEEN ADJUSTED TO COMPENSATE FOR LOSSES AND GAINS INHERENT IN THE FIRE ASSAY PROCESS.

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Certificate of Analysis

NO. B465-84 **DATE:** June 14, 1984

SAMPLE(S) OF: Core (23) **RECEIVED:** June, 1984

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corp. (Nakina)

Sample No.	Au/ppb	Au/oz.	Ag/ppm	Ag/oz.
G42741		0.032		Trace
2	107		0.4	
3		0.042		0.03
4	609		0.6	
5	64		0.6	
6		0.014		0.02
7		Trace		0.02
8	43		0.4	
9	230		1.0	
G42750	7		0.2	
1	100			
2		0.002*		0.02
3		0.170**		0.07
4	422			
5		0.038		0.03
6		Trace		Trace
7		Trace		Trace
8	81			
9	340			
G42760		0.002*		Trace
1		0.172**		0.06
2	149			
3		0.058		0.78

* Estimate
** Checked

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Certificate of Analysis

NO. B442-84 **DATE:** June 11, 1984

SAMPLE(S) OF: Core (21) **RECEIVED:** June, 1984

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corporation "Nakina"

Sample No.	Au/ppb	Au/oz.	Ag/oz.	Ag/ppm
G42720	52			0.2
1		0.004	0.02	
2		0.006	0.02	
3		0.108**		0.2
4	174			0.2
5		0.014	0.01	
6	23			0.2
7		0.438**	0.09	
8		0.042	0.01	
9	37			
G42730		0.012	0.01	
1		0.060	0.02	
2		0.112**	0.02	
3		0.010	0.01	
4	29			
5		0.032	0.01	
6		0.056		
7	1045**			0.2
8	590**			
9	569**			
G42740	22			

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Certificate of Analysis

NO. B284-84 **DATE:** April 17, 1984

SAMPLE(S) OF: Core(8) **RECEIVED:** April, 1984

SAMPLE(S) FROM: Mr. R. Wells, Lacana Mining Corp. (Nakina, Ont.)

Sample No.	Gold ppb
G42502	8
8	8
9	7
G42514	5
5	8
7	4
8	4
9	4

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Certificate of Analysis

NO. 9639 **DATE:** April 18, 1984

SAMPLE(S) OF: Core (13)
Rock (2) **RECEIVED:** April, 1984

SAMPLE(S) FROM: Mr. Ron Wells "Nakina"
Lacana Mining Corporation

Sample No.	Gold/ppb	Gold/oz. 1st Cut	Gold/oz. 2nd Cut	Silver/oz.
G42501	11			
G42503	33			
4	8			
5	21			
6		0.002*		0.02
7	11			
G42510		0.002*		Trace
1		0.004		0.02
2		0.172	0.178	0.14
3		0.002*		
G42516	65**			
L83256		0.134	0.140	0.04
7		0.478	0.474	0.11
S-1	16			
-2	218**			

*Estimate

**Checked

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P.O. BOX 187, HAILEYBURY, ONTARIO TEL: 672-3107

Certificate of Analysis

NO. B298-84 **DATE:** April 23, 1984

SAMPLE(S) OF: Core (4) **RECEIVED:** April, 1984

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corporation "Nakina"

Sample No.	Gold/ppb
G42520	16
1	89**
2	18
3	19

** Checked

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Certificate of Analysis

NO. B308-84 **DATE:** April 25, 1984

SAMPLE(S) OF: Core (13) **RECEIVED:** April, 1984

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corporation "Nakina"

Sample No.	Gold/ppb
G42524	16
G42526	230
G42528	5
G42530	5
1	12
2	3
3	10
4	12
5	11
6	7
7	15
8	248
G42540	244

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Certificate of Analysis

NO. 19053 **DATE:** April 27, 1984

SAMPLE(S) OF: Core (13) **RECEIVED:** April, 1984

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corporation "Nakina"

Sample No.	Gold/oz.	Gold/ppb	Silver/oz.
G42525	0.038		
G42527	0.002*		
G42529	0.002*		
G42539	0.050**		
G42541	0.004		0.02
2	0.004		0.02
3	0.175**		0.05
4	0.054		
5	0.034		0.02
6	0.006		0.03
7		16	
8		2	
9		3	

* Estimate

** Checked

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Certificate of Analysis

NO. B321-84 **DATE:** April 30, 1984

SAMPLE(S) OF: Core (11) **RECEIVED:** April, 1984

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corporation "Nakina"

Sample No.	Gold/ppb
G42554	37
5	2
6	10
7	119
8	151
9	49
G42560	2
1	2
2	11
3	23
4	158

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Certificate of Analysis

NO. 11027 **DATE:** May 1, 1984

SAMPLE(S) OF: Core (3) **RECEIVED:** April, 1984

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corporation "Nakina"

Sample No.	Gold/oz.	Silver/oz.
42551	0.125**	0.02
2	0.060	0.01
3	0.090	0.03

** Checked

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Certificate of Analysis

NO. 11521 **DATE:** May 3, 1984

SAMPLE(S) OF: Core (7) **RECEIVED:** April, 1984

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corporation "Nakina"

Sample No.	Gold/oz.	Silver/oz.
G42565	0.026	0.08
6	0.160**	0.04
7	0.042	0.03
8	0.016	0.04
9	0.066	0.03
G42570	0.066	0.04
1	0.034	0.06

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Certificate of Analysis

NO. 12068 **DATE:** May 8, 1984

SAMPLE(S) OF: Core (13) **RECEIVED:** May, 1984

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corporation

Sample No.	Gold/oz.	Gold/ppb	Silver/oz.
G42572	0.219**		0.08
3	0.022		0.03
4	0.026		0.04
5	0.002*		0.02
6	0.002*		0.04
7	0.002*		0.03
8	0.004		0.02
9	0.040		0.03
G42580	0.110**		0.03
1		773**	
2	0.062		0.03
3	0.038		0.03
4		52	

* Estimate

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Certificate of Analysis

NO. 12193 **DATE:** May 9, 1984

SAMPLE(S) OF: Core (17) **RECEIVED:** May, 1984

SAMPLE(S) FROM: Ron Wells .
Lacana Mining Corporation "Nakina"

Sample No.	Gold/oz.	Silver/oz.
G42585	0.004	
6	0.006	
7	0.006	
8	Trace	
9	0.002*	
G42590	0.028	
1	0.002*	0.01
2	0.018	0.02
3	0.222**	0.08
4	0.012	0.01
5	0.192**	0.01
6	0.016	0.02
7	0.014	0.05
8	0.006	
9	0.004	
G42600	0.002*	
1	0.082	

* Estimate

** Checked

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Certificate of Analysis

NO. B359-84 **DATE:** May 11, 1984

SAMPLE(S) OF: Tailings (2) **RECEIVED:** May, 1984

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corporation

Sample No.	Gold/ppb
86803	469
86808	451

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Certificate of Analysis

NO. 12722 **DATE:** May 11, 1984

SAMPLE(S) OF: Core (21) **RECEIVED:** May, 1984

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corporation "Nakina"

Sample No.	Gold/ppb	Gold/oz.	Silver/oz.
G42602	206		
3	610		
4	255		
5		0.004	0.02
6		0.002*	0.02
7		0.002*	0.02
8		0.040	0.02
9		0.034	0.03
G42610		0.046	0.02
1		2.34 **	0.63
2		0.036	0.02
3		0.060	0.03
4		0.104**	0.06
5		1.08 **	0.33
6		1.21 **	0.35
7		1.66 **	1.22**
8		0.683**	0.30
9	478		
G42620		0.138**	0.13
1		0.113**	0.12
2		0.020	0.15

* Estimate

** Checked

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Certificate of Analysis

NO. B364-84 **DATE:** May 15, 1984

SAMPLE(S) OF: Core (14) **RECEIVED:** May, 1984

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corporation "Nakina"

Sample No.	Gold/ppb	Gold/oz.	Silver/oz.
42623		0.030**	
4		0.044**	
5		0.073**	
6	286		
7		0.013	
8	537		
9		0.125**	0.07
42630		0.100**	0.04
1	232		
2		0.782**	0.19
3	100		
4	385		
5		0.002*	Trace
6		0.002*	0.01

* Estimate
** Checked

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Certificate of Analysis

NO. 13258 **DATE:** May 18, 1984

SAMPLE(S) OF: Core(13) **RECEIVED:** May, 1984

SAMPLE(S) FROM: Mr. R. Wells, Lacana Mining Corp. (Nakina, Ont.)

Sample No.	Gold ppb	Oz. Gold	Oz. Silver
42637	174		
8	356		
9		0.074	0.06
42640		0.034	0.02
1	244		
2	796**		
3		0.118**	0.05
4		0.084	0.02
5	496		
6	324		
7		0.106**	0.04
8		0.505**	0.18
9	684**		

** Checked.

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Certificate of Analysis

NO. 14427 **DATE:** May 24, 1984

SAMPLE(S) OF: Rock (11) **RECEIVED:** May, 1984

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corporation

Sample No.	Gold/oz.	Silver/oz.
C-1	0.016	0.16
-2	0.026	0.02
-3	0.088	0.05
-4	0.134**	1.29
-5	0.002*	0.02
-6	0.243**	0.20
-7	0.004	0.02
-8	0.002*	0.02
-9	0.022	0.20
-10	0.002*	0.02
-11	0.307**	0.95

** Checked

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Certificate of Analysis

NO. 14411 **DATE:** May 24, 1984

SAMPLE(S) OF: Core (16) **RECEIVED:** May, 1984

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corporation

Sample No.	Gold/ppb	Gold/oz.	Silver/oz.
42650	11		
1		0.019	1.00**
2		0.024	0.08
3	377		
4	275		
5		0.167**	0.06
6	356		
7		0.022	0.04
8		0.105**	
9		0.046	0.03
42660		0.032**	
1		0.433**	0.07
2	429		
3		0.050	0.02
4		0.092	0.02
5		0.566**	0.08

** Checked

IN ACCORDANCE WITH LONG-ESTABLISHED NORTH AMERICAN CUSTOM, UNLESS IT IS SPECIFICALLY STATED OTHERWISE GOLD AND SILVER VALUES REPORTED ON THESE SHEETS HAVE NOT BEEN ADJUSTED TO COMPENSATE FOR LOSSES AND GAINS INHERENT IN THE FIRE ASSAY PROCESS.

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Certificate of Analysis

NO. 14855 **DATE:** May 29, 1984

SAMPLE(S) OF: Core (10) **RECEIVED:** May, 1984

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corporation "Nakina"

Sample No.	Gold/oz.	Gold/ppb	Silver/oz.
G42666	Trace		Trace
7	Trace		Trace
8	0.016		0.01
9	0.004		0.02
G42670		12	
1	0.006		0.03
2	Trace		Trace
3	Trace		Trace
4	0.870**		0.12
5	0.002*		Trace

** Checked

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Certificate of Analysis

NO. B416-84 Page 1 of 2 **DATE:** June 5, 1984

SAMPLE(S) OF: Core (37) **RECEIVED:** May, 1984

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corporation "Nakina"

Sample No.	Gold/ppb	Gold/oz.	Silver/oz.
42676	2		
7	4		
8	8		
9	12		
42680		0.002*	0.02
1		0.036	Trace
2		0.040	Trace
3	155		
4	315**		
5	292**		
6	59		
7	1051**		
8	252		
9	22		
42690	16		
1	8		
2	25		
3		0.221**	0.03
4		0.288**	0.05

IN ACCORDANCE WITH LONG-ESTABLISHED NORTH AMERICAN CUSTOM, UNLESS IT IS SPECIFICALLY STATED OTHERWISE GOLD AND SILVER VALUES REPORTED ON THESE SHEETS HAVE NOT BEEN ADJUSTED TO COMPENSATE FOR LOSSES AND GAINS INHERENT IN THE FIRE ASSAY PROCESS.

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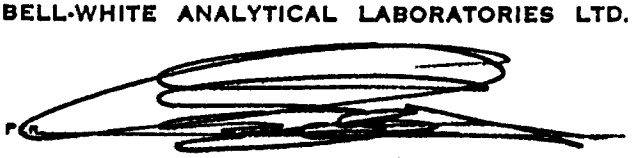

BELL - WHITE ANALYTICAL LABORATORIES LTD.
P.O. BOX 187. HAILEYBURY, ONTARIO TEL: 672-3107

Certificate of Analysis

NO. B416-84 Page 2 of 2 DATE: June 5, 1984

SAMPLE(S) OF: Core (37) RECEIVED: May, 1984

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corporation "Nakina"

Sample No.	Gold/ppb	Gold/oz.	Silver/oz.
42695		0.006	Trace
6		0.024	Trace
7		0.040	Trace
8	180		
9	258		
42700		0.010	Trace
1	27		
2	755**		
3		0.092	0.36
4		0.052	0.89
5		0.020	2.21
6		0.066	
7	151		
8		0.064	0.03
9	391		
42710	321		
1	865**		
2	1865**		

* Estimate

** Checked

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BELL-WHITE ANALYTICAL LABORATORIES LTD.
P.O. BOX 187, HAILEYBURY, ONTARIO TEL: 672-3107

Certificate of Analysis

NO. 17072 **DATE:** June 5, 1984

SAMPLE(S) OF: Core (7) **RECEIVED:** June, 1984

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corporation "Nakina"

Sample No.	Gold/oz.	Silver/oz.
G42713	0.058	0.01
4	0.004	0.02
5	0.004	0.02
6	0.006	0.01
7	0.032	0.01
8	0.020	Trace
9	0.010	0.01

IN ACCORDANCE WITH LONG-ESTABLISHED NORTH AMERICAN CUSTOM, UNLESS IT IS SPECIFICALLY STATED OTHERWISE GOLD AND SILVER VALUES REPORTED ON THESE SHEETS HAVE NOT BEEN ADJUSTED TO COMPENSATE FOR LOSSES AND GAINS INHERENT IN THE FIRE ASSAY PROCESS.

BELL-WHITE ANALYTICAL LABORATORIES LTD.

PER

• CHEMICAL RESEARCH AND ANALYSIS
• CONTRACT LABORATORIES

TECHNICAL SERVICE LABORATORIES
DIVISION OF BURGENER TECHNICAL ENTERPRISES LIMITED
1301 FEWSTER DRIVE, MISSISSAUGA, ONT. L4W 1A2
TELEPHONE (416) 625 1544
TELEX 06 - 960215

CERTIFICATE OF ANALYSIS

Semiquantitative Spectrographic

SAMPLE(S) FROM Bell-White Analytical Lab.
P.O. Box 187
Haileybury, Ont.
POJ 1KO

Attn: P. Lafreniere

REPORT No T-7268

Inv#26323

SAMPLE(S) OF PULP

	Sample S-6	Sample	Sample		Sample S-6	Sample	Sample
Aluminum (Al_2O_3)	H			Manganese	0.1		
Antimony	–			Magnesium (MgO)	3		
Arsenic	–			Molybdenum	–		
Barium	–			Neodymium (Nd_2O_3)	–		
Beryllium (BeO)	–			Nickel	0.004		
Bismuth	–			Phosphorus	–		
Boron	–			Silver	0.5oz/T		
Calcium (CaO)	1			Silicon (SiO_2)	H		
Cadmium	–			Sodium (Na_2O)	H		
Cerium (CeO_2)	–			Strontium	–		
Chromium	0.1			Tantalum (Ta_2O_5)	–		
Cobalt	–			Thorium (ThO_2)	–		
Columbium (Cb_2O_5)	–			Tin	–		
Copper	0.01			Titanium	0.5		
Gallium	0.001			Tungsten	–		
Germanium	–			Uranium (U_3O_8)	–		
Iron (Fe)	2			Vanadium	0.01		
Lanthanum (La_2O_3)	–			Yttrium (Y_2O_3)	–		
Lead	–			Zinc	–		
Lithium (Li_2O)	–			Zirconium (ZrO_2)	0.01		
Extra Elements							
Caesium				Platinum			
Gold				Rhenium			
Hafnium				Rubidium			
Indium				Tellurium			
Palladium				Thallium			

Figures are approximate:

CODE H – High – 10 – 100% approx.
M – Medium – 1 – 10% approx.
L – Low – .1 – 1% approx.

– Not Detected – Elements looked for but not found
X Not Looked For
< Less Than

Samples, Pulps and Rejects discarded after two months

DATE September 20, 1984 SIGNED A. G. Burgener

FORM: T.S.L. #1

BELL-WHITE ANALYTICAL LABORATORIES LTD.
P.O. BOX 187. HAILEYBURY, ONTARIO TEL: 672-3107

Certificate of Analysis

NO. B1078-84 **DATE:** September 26, 1984

SAMPLE(S) OF: Fines (1) **RECEIVED:** July, 1984

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corporation **RE:** Nakina

Sample No.	Mercury/ppm
C13R	0.025

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Certificate of Analysis

NO. B870-84 **DATE:** August 13, 1984

SAMPLE(S) OF: Core(19) **RECEIVED:** August, 1984

SAMPLE(S) FROM: Mr. Ron Wells, Lacana Mining Corporation

Sample No.	Gold ppb
G42891	166
G42937	509
G42940	181
G42942	271
G42944	491
G42945	118
G42946	12
G42947	267
G42949	591
G42950	474
G42952	230
G42953	219
G42954	122
G42955	215
G42956	469
G42957	465
G42958	522
G42959	84
G42961	16

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BELL-WHITE ANALYTICAL LABORATORIES LTD.
P.O. BOX 187. HAILEYBURY, ONTARIO TEL: 672-3107

Certificate of Analysis

NO. B784-83 Page 1 of 2 **DATE:** October 24, 1983

SAMPLE(S) OF: Soil(167) **RECEIVED:** October, 1983

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corporation

Sample No.	Gold/ppb	Sample No.	Gold/ppb	Sample No.	Gold/ppb
BL 3+00E	2	BL 40+00E	14	L4E 3+50S	6
4+00E	4	41+00E	20*	4+00S	2
5+00E	4	42+00E	12*	4+50S	6
6+00E	8	43+00E	28*	5+00S	2
7+00E	2	44+00E	24*	5+50S	2
8+00E	4	45+00E	20*	L8E 0+50S	6
9+00E	4*	BL 15+00E(B)	2	1+00S	4
10+00E	10*	16+00E(B)	6	1+50S	2
11+00E	14*	17+00E(B)	4	2+00S	2
12+00E	6	18+00E(B)	2	2+50S	4
13+00E	8	19+00E(B)	2	3+00S	6
14+00E	10	20+00E(B)	6	3+50S	4
15+00E	22	21+00E(B)	4	4+00S	2
16+00E	14*	22+00E(B)	6	4+50S	4*
17+00E	16*	24+00E(B)	8	0+50N	2
18+00E	8*	25+00E(B)	8	1+00N	4
19+00E	14*	26+00E(B)	8	1+50N	4
20+00E	10*	27+00E(B)	2	2+00N	4
21+00E	8	32+00E(B)	4	2+50N	4
22+00E	12	34+00E(B)	4	3+00N	8*
23+00E	10*	35+00E(B)	4	3+50N	8*
24+00E	8*	38+00E(B)	2	L8W 1+50S	90*
25+00E	8*	40+00E(B)	4	2+00S	10*
26+00E	10*	41+00E(B)	6	4+00S	4
31+00E	12*	43+00E(B)	4	6+00S	10*
33+00E	24*	BL 3+00W	8	6+50S	6*
36+00E	12	L4E 0+50N	8*	7+00S	19*
37+00E	52	1+00N	6*	L16E 3+00N	6*
38+00E	28*	1+50N	8*	3+50S	6*
39+00E	20*	2+00N	6*	L20E 0+50N	2

ACCORDANCE WITH LONG-ESTABLISHED NORTH ERICAN CUSTOM, UNLESS IT IS SPECIFICALLY STATED HERWISE GOLD AND SILVER VALUES REPORTED ON ESE SHEETS HAVE NOT BEEN ADJUSTED TO COMPEN- TE FOR LOSSES AND GAINS INHERENT IN THE FIRE ASSAY PROCESS.

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BELL-WHITE ANALYTICAL LABORATORIES LTD.
P.O. BOX 187, HAILEYBURY, ONTARIO TEL: 672-3107

Certificate of Analysis

NO. B784-83 Page 2 of 2 **DATE:** October 24, 1983

SAMPLE(S) OF: Soil (167) **RECEIVED:** October, 1983

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corporation

Sample No.	Gold/ppb	Sample No.	Gold/ppb	Sample No.	Gold/ppb
L20E 1+00N	2	L32E 5+50N	8	L36E 5+00N	6*
1+50N	6	6+00N	6	5+50N	10*
2+00N	2	6+50N	4	6+00N	6*
2+50N	16	7+00N	8	6+50N	4*
3+00N	2	7+50N	4	7+00N	8*
3+50N	4	8+00N	6	7+50N	6
4+00N	42*	8+50N	6	8+00N	6
4+50N	6*	9+00N	4	8+50N	2
0+50S	6	9+50N	4	9+00N	8
1+00S	2	10+00N	2	9+50N	10*
1+50S	12*	0+50S	8	0+50S	12
2+00S	4	1+00S	18*	1+00S	8
2+50S	4	1+50S	8	1+50E	18
3+00S	8*	2+00S	10*	2+00S	6
3+50S	2	2+50S	8	2+50S	6
L32E 0+50N	2	3+00S	14*	L40E 0+50N	16
1+00N	8	3+50S	2	1+00N	6
1+50N	8*	L36E 0+50N	8	1+50N	6
2+00N	10*	1+00N	4	2+00N	4
2+50N	6*	1+50N	4	2+50N	2
3+00N	12*	2+00N	4	3+00N	4
3+50N	10*	2+50N	2	3+50N	6
4+00N	4	3+00N	2	4+00N	2
4+50N	4	3+50N	10*	0+50S	4
5+00N	2	4+00N	2	1+00S	12*
		4+50N	10*	1+50S	2

* Insufficient sample for accurate assay

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PC

BELL-WHITE ANALYTICAL LABORATORIES LTD.
P.O. BOX 187. HAILEYBURY, ONTARIO TEL: 672-3107

Certificate of Analysis

NO. B788-83 **DATE:** October 24, 1983

SAMPLE(S) OF: Soils(72) **RECEIVED:** October, 1983

SAMPLE(S) FROM: Mr. R. Wells, Lacana Mining Corp.

Sample No.		Arsenic ppm
L4E	0+50S	ND
	2+50S	ND
	3+00S	ND
	3+50S	ND
	4+00S	10
	4+50S	ND
	5+00S	ND
	5+50S	ND
	0+50N	ND
	1+00N	ND
	1+50N	ND
	2+00N	ND
	2+50N	ND
L8E	0+50S	ND
	1+00S	ND
	1+50S	ND
	2+00S	ND
	2+50S	ND
	3+00S	ND
	3+50S	ND
	4+00S	ND
	0+50N	ND
	1+00N	ND
	1+50N	ND

Sample No.		Arsenic ppm
L8E	2+00N	ND
	2+50N	ND
	3+00N	ND
	3+50N	ND
L4E	4+50S	ND
L8WBL	3+00W	15
	1+50S	25
	2+00S	ND
	2+50S	ND
	4+00S	ND
	6+00S	ND
	6+50S	ND
	7+00S*	--
L12E	0+50S	ND
	1+00S	ND
	2+00S	ND
	2+50S	ND
	0+50N	ND
	1+00N	ND
	1+50N	ND
	2+00N	10
	2+50N	ND
	3+00N	ND
	3+50N	ND

Sample No.		Arsenic ppm
L12E	1+50S	ND
L0+00	3+50S	ND
	4+00S A	ND
	4+00S B	ND
	5+00S	ND
	5+50S	ND
	6+00S	ND
	6+50N	ND
	7+00S	ND
	7+50S	ND
	8+00S	ND
	8+50S	ND
	9+00S	ND
L28E	3+00N	ND
	3+50N	ND
	4+00N	ND
	4+50N	ND
	5+00N	ND
	5+50N	ND
	6+00N	ND
	7+00N	ND
	7+50N	ND
	8+00N	ND
	8+50N	ND
	10+50N	ND

Note: ND denotes not detected.

* Insufficient sample for assay.

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New File - O'Sullivan Lake. Cons Lacana Geochemistry

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P.O. BOX 187, HAILEYBURY, ONTARIO TEL: 672-3107

Certificate of Analysis

NO. B764-83 Page 1 of 2 **DATE:** October 18, 1983

SAMPLE(S) OF: Soils(103) **RECEIVED:** October, 1983

SAMPLE(S) FROM: Mr. R. Wells, Lacana Mining Corp.

Sample No.		Gold ppb
L4E	0+50S	2
	2+50S	10
	3+00S	2
L4E	2+50N	16
L4W	1+00S	4
	1+50S	8
	2+00S	6
	2+50S	4
	3+00S	4
	3+50S	10
	4+00S	4
	4+50S	2
	5+00S	8
	5+50S	16
	6+00S	24
	6+50S	4
	7+00S	16
L12E	0+50S	2
	1+00S	4
	2+00S	4
	2+50S	4
L12E	0+50N	4
	1+00N	2
	1+50N	2
	1+50N *	6
	2+00N	2

Sample No.		Gold ppb
L12E	2+50N	2
	3+00N	4
	3+50N	4
L16E	0+50S	2
	1+00S	32
	1+50S	2
	2+00S	4
	2+50S	8
	3+00S	2
L16E	0+50N	4
	1+00N	2
	1+50N	2
	2+00N	2
	2+50N	6
L24E	0+50S	10
	1+00S	6
	1+50S	2
	2+00S	14
	2+50S	40
	3+00S	6
L24E	0+50N	6
	1+00N	4
	1+50N	10
	2+00N	12
	2+50N	16
	3+00N	8

* Sample tag number illegible.

Cont'd...

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BELL-WHITE ANALYTICAL LABORATORIES LTD.
P.O. BOX 187, HAILEYBURY, ONTARIO TEL: 672-3107

Certificate of Analysis

NO. B764-83 Page 2 of 2 **DATE:** October 18, 1983

SAMPLE(S) OF: Soils(103) **RECEIVED:** October, 1983

SAMPLE(S) FROM: Mr. R. Wells, Lacana Mining Corp.

Sample No.	Gold ppb
L24E 3+50N	6
4+00N	4
4+50N	10
5+00N	8
6+00N	6
6+50N	8
7+00N	6
BL 3+00E(B)	10
4+00E(B)	46
5+00E(B)	24
6+00E(B)	12
7+00E(B)	14
8+00E(B)	18
9+00E(B)	16
10+00E(B)	10
11+00E(B)	8
12+00E(B)	10
13+00E(B)	16
14+00E(B)	10
L28E 1+00N	8
1+50N	8
2+00N	8
2+50N	6
3+00N	4
3+50N	2
4+00N	8

Sample No.	Gold ppb
L28E 4+50N	4
5+00N	2
5+50N	10
6+00N	2
6+50N	2
7+00N	2
7+50N	8
8+00N	2
8+50N	6
9+00N	2
9+50N	2
10+00N	4
10+50N	4
L0+00 3+50S	2
4+00S	2
4+00S *	6
5+00S	6
5+50S	6
6+00S	4
6+50S	10
7+00S	2
7+50S	10
8+00S	4
8+50S	4
9+00S	4

* Sample tag number illegible.

IN ACCORDANCE WITH LONG-ESTABLISHED NORTH AMERICAN CUSTOM, UNLESS IT IS SPECIFICALLY STATED OTHERWISE GOLD AND SILVER VALUES REPORTED ON THESE SHEETS HAVE NOT BEEN ADJUSTED TO COMPENSATE FOR LOSSES AND GAINS INHERENT IN THE FIRE ASSAY PROCESS.

BELL-WHITE ANALYTICAL LABORATORIES LTD.

ER.

BELL-WHITE ANALYTICAL LABORATORIES LTD.
P.O. BOX 187, HAILEYBURY, ONTARIO TEL: 672-3107

Certificate of Analysis

NO. 30931 **DATE:** September 30, 1983

SAMPLE(S) OF: Rock (23) **RECEIVED:** September, 1983

SAMPLE(S) FROM: Mr. Ron Wells
Lacana Mining Corporation

Sample No.	Gold/oz.
F37101	0.014
2	0.002*
3	Trace
4	Trace
5	Trace
6	Trace
7	0.002*
8	Trace
9	0.004
F37110	0.004
1	Trace
2	Trace
3	0.012
4	Trace
5	0.002*
6	Trace
7	Trace
8	0.002*
9	0.006
F37120	0.058
1	Trace
2	Trace
3	Trace

* Estimate

IN ACCORDANCE WITH LONG-ESTABLISHED NORTH AMERICAN CUSTOM, UNLESS IT IS SPECIFICALLY STATED OTHERWISE GOLD AND SILVER VALUES REPORTED ON THESE SHEETS HAVE NOT BEEN ADJUSTED TO COMPENSATE FOR LOSSES AND GAINS INHERENT IN THE FIRE ASSAY PROCESS.

BELL-WHITE ANALYTICAL LABORATORIES LTD.

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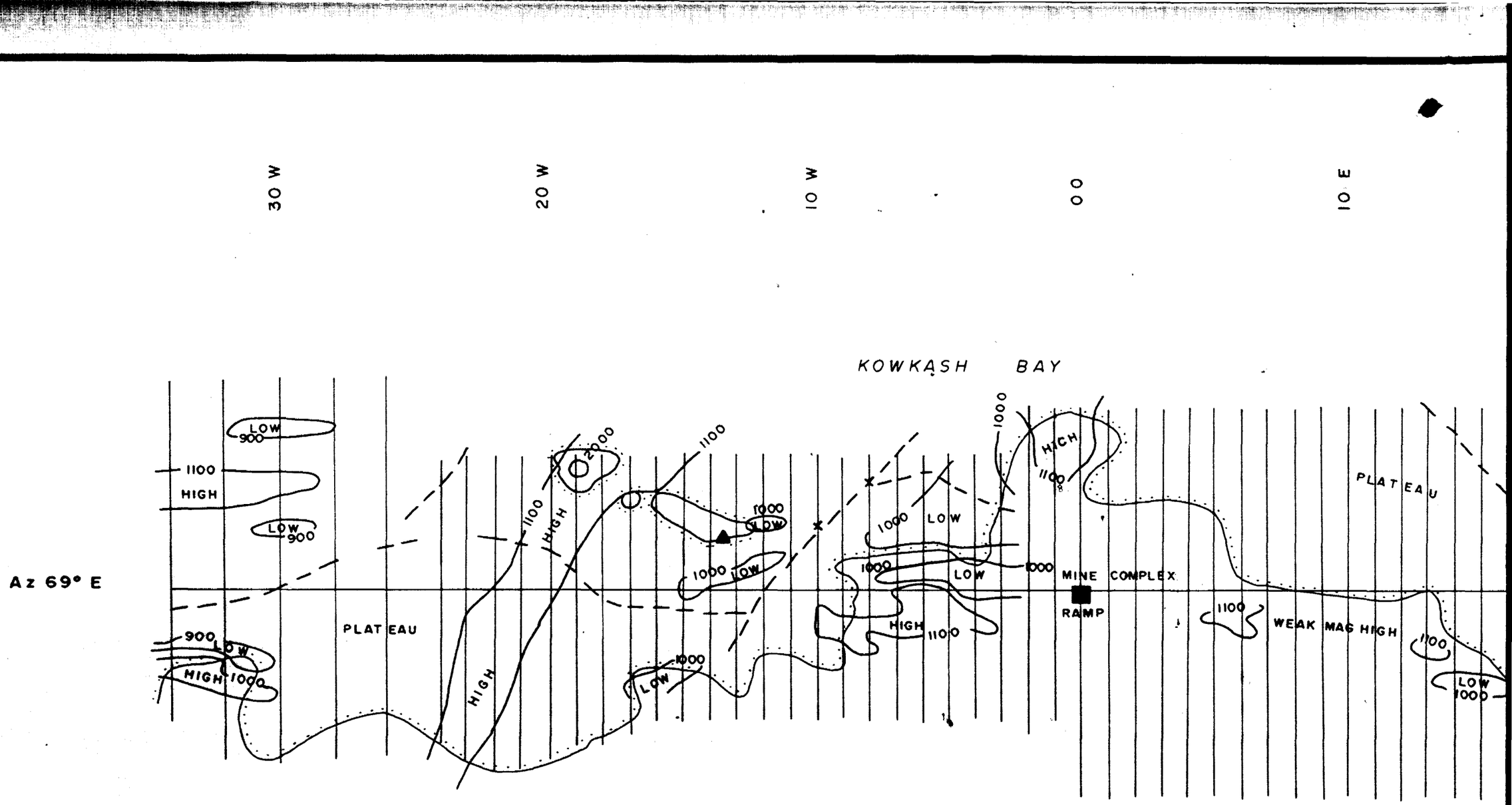
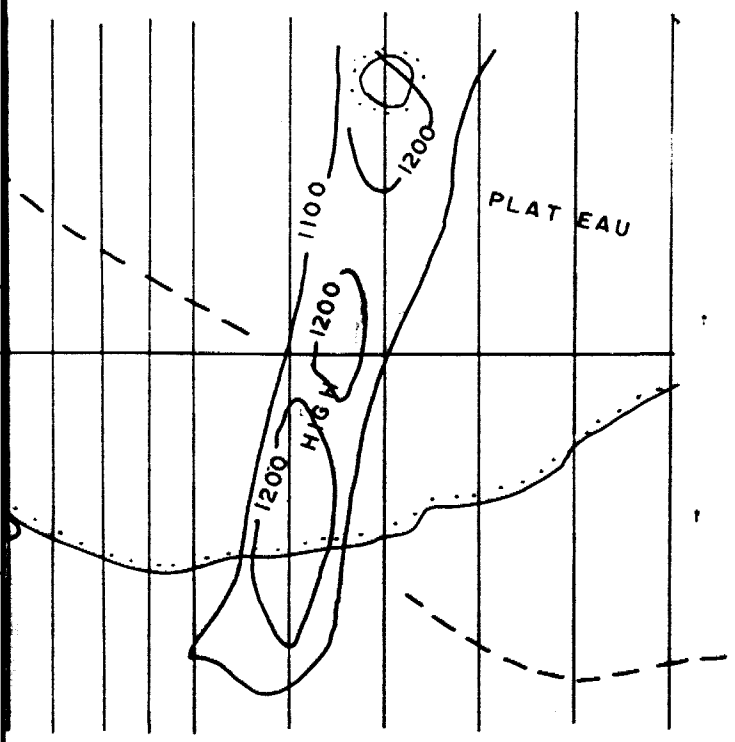
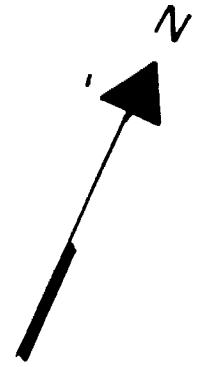

30 W
20 W
10 W
00
10 E
KOWKASH BAY
Az 69° E
LOW 900
1100 HIGH
LOW 900
PLATEAU
1100 HIGH
2000
1100
1000 LOW
HIGH
1000 LOW
1000
1000 LOW
1000
HIGH 1100
MINE COMPLEX
RAMP
1100
WEAK MAG HIGH
1100
LOW 1000
900 LOW
HIGH 1000
PLATEAU
HIGH
1000 LOW





GEOPHYSICAL LEGEND

MAGNETIC

1000 HIGH — Magnetic contour in gammas with relative magnetic relief.

▲ Location of base station.

VLF ELECTROMAGNETIC

Trace of anomaly

OM84-4-JV-7
63.4520

LACANA MINING CORPORATION

LOUANNA PROJECT
GEOPHYSICAL COMPILATION MAP

RW/KG	1"=400'	Oct. 84		4

R.C. Wally Dec 1/1984

30 W

20 W

10 W

00

10 E

20 E

KOWKASH BAY

Mine Complex

Ramp

LEGEND

- Diabase
- Quartz-eye, Feldspar, Porphyry
- Quartz-eye, Porphyry
- Diorite, minor Gabbro
- 3 — Mixed Chert and Tuffs
- 2 — Mine Unit, mixed Tuffs, Quartz-eye, Porphyry
- 1 — Andesite / Basalt flows

SYMBOLS

- 2 — 1984 Surface DDH
- Dip and strike of geological unit
- Geological contact
- Shoreline
- Fault line

0 400 800 Feet

00

10 E

20 E

30 E

N

KOWKASH BAY

Az 69° E

Ramp

Mine Complex

OM84-4-JV-7
63.4520

ffs, Quartz-eye, Porphyry

lows

SYMBOLS

1984 Surface DDH

Dip and strike of geological unit

Geological contact

Shoreline

Fault line

0 400 800 Feet

LACANA MINING CORPORATION

LOUANNA PROJECT
GEOLOGY MAP
&
DRILL PLAN

PREPARED BY	SCALE	DATE		FIG. NO.
RW/KG	1"=400'	Oct. 84		5

R. a. Wells Dec 1/1984

LEGEND

INTRUSIVE ROCKS

- 8 — Diabase. Late dikes.
- 7 — Quartz-eye, Feldspar, Porphyry
- 6 — Quartz-eye, Sericite, Porphyry
- 5 — Diorite, locally Gabbroic. Intrusive or coarse grained Flows

METAVOLCANICS AND METASEDIMENTS

- 4 — Andesitic tuffs.
- 3 — Mixed Cherts, cherty Tuffs, and chloritic Tuffs.
- 2 — **Mine unit.** Predominantly chloritic Tuffs; siliceous, sericitic Tuffs; Unit 6; minor Rhyolite, Cherts and ashy Tuffs.
- 1 — Mafic to intermediate Metavolcanics. Mainly Basalt, Andesite flows.
  - 1c Mafic Tuffs
  - 1b Pillowed Flows
  - 1a Massive Flows

SYMBOLS

- Area of bedrock outcrop.
- Bedding; inclined, vertical.
- Pillow lava; inclined, vertical.
- Schistocity; inclined, vertical.
- Lineation with plunge.
- Geological boundary, observed.
- Geological boundary, position interpreted or deduced from geophysics or diamond drilling.
- Fault, interpreted.
- Drill hole, inclined.
- Trench
- Swamp
- Grid lines
- Lake, shoreline
- Trail, unsurfaced road
- Buildings
- Mine complex

OM84-4-JV-7
63.4530

LACANNA MINING CORPORATION

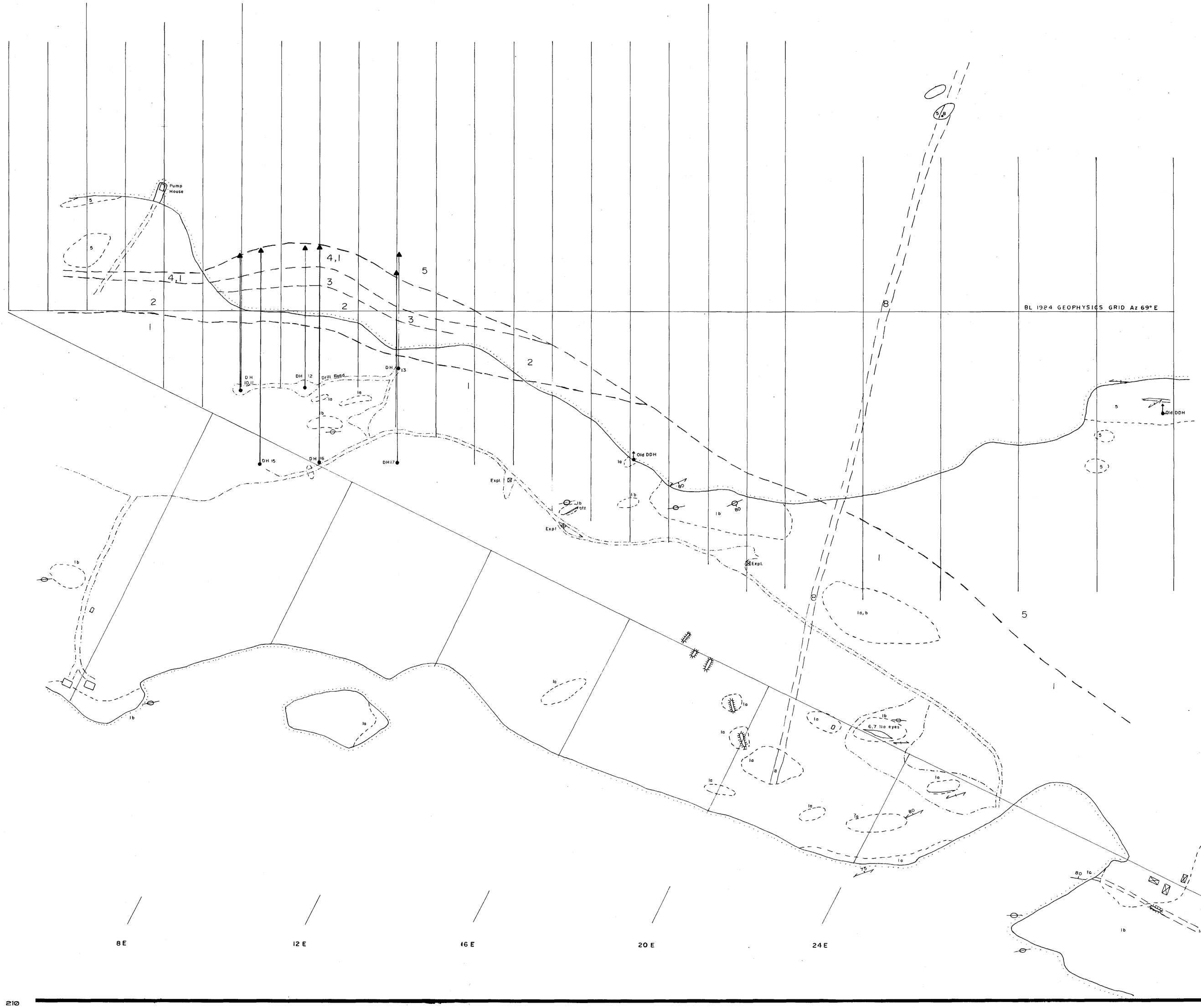
LOUANNA PROPERTY
O'SULLIVAN LAKE
GEOLOGY MAP
WEST HALF

PREPARED BY	SCALE	DATE	MAP SHEET	FIGURE
RW/KG	1"=100'	1/10/84	42E12	23.1

200

R. Wallis 10/1/85.

0 1E 2E 3E 4E 5E 6E 7E 8E 9E 10E 11E 12E 13E 14E 15E 16E 17E 18E 19E 20E 22E 24E 26E 28E 30E



4E 8E 12E 16E 20E 24E

N

LEGEND

INTRUSIVE ROCKS

- 8 — Diabase. Late dikes.
- 7 — Quartz-eye, Feldspar, Porphyry
- 6 — Quartz-eye, Sericite, Porphyry
- 5 — Diorite locally Gabbroic, Intrusive or coarse grained Flows

METAVOLCANICS AND METASEDIMENTS

- 4 — Andesitic tuffs.
- 3 — Mixed Cherts, cherty Tuffs, and chloritic Tuffs.
- 2 — Mine unit. Predominantly chloritic Tuffs; siliceous, sericitic Tuffs; Unit 6; minor Rhyolite, Cherts and ashy Tuffs.
- 1 — Mafic to Intermediate Metavolcanics. Mainly Basalt, Andesite flows.
  - 1c Mafic-Tuffs
  - 1b Pillowed Flows
  - 1a Massive Flows

SYMBOLS

- Area of bedrock outcrop.
- Bedding; inclined, vertical.
- Pillow lava; inclined, vertical.
- Schistocity; inclined, vertical.
- Lineation with plunge.
- Geological boundary, observed
- Geological boundary, position interpreted or deduced from geophysics or diamond drilling.
- Fault, interpreted.
- Drill hole, inclined.
- Trench
- Swamp
- Grid lines
- Lake shoreline
- Trail, unsurfaced road
- Buildings
- Mine complex

100 0 100 Feet

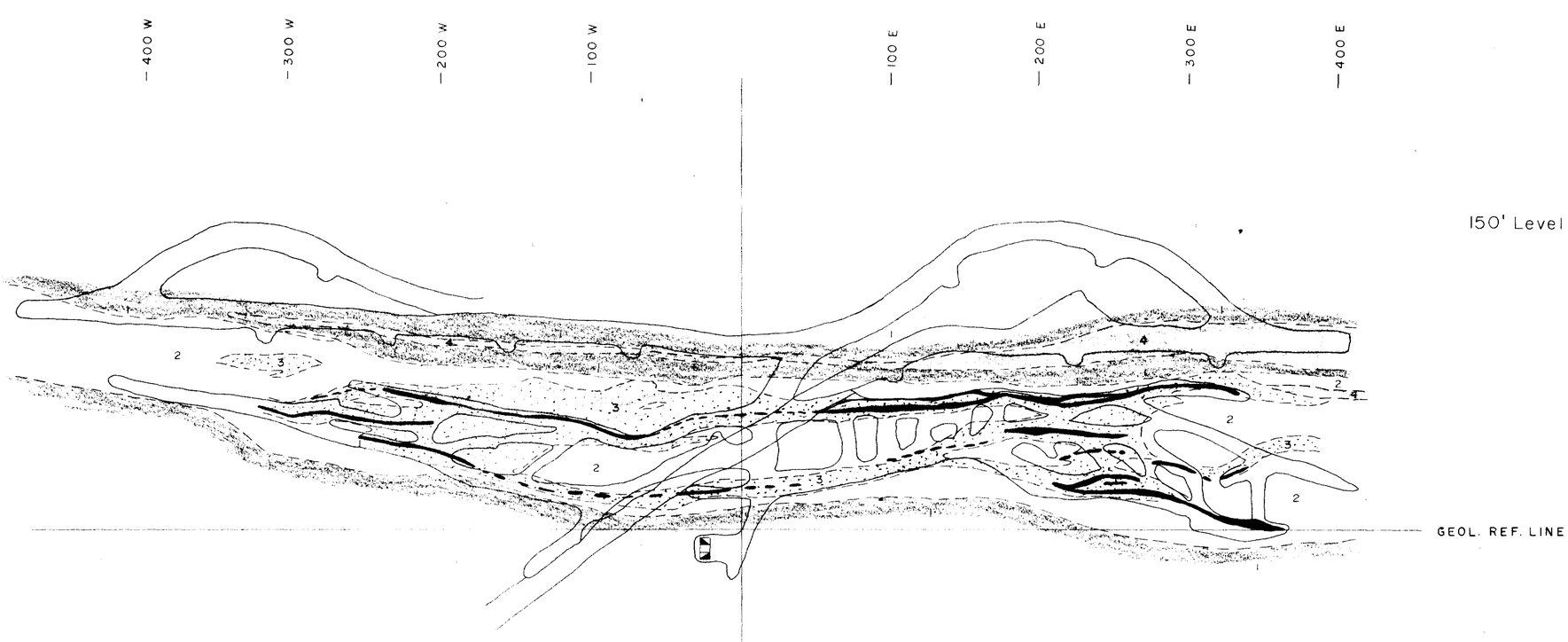
OM84-4-JV-7
63.4520

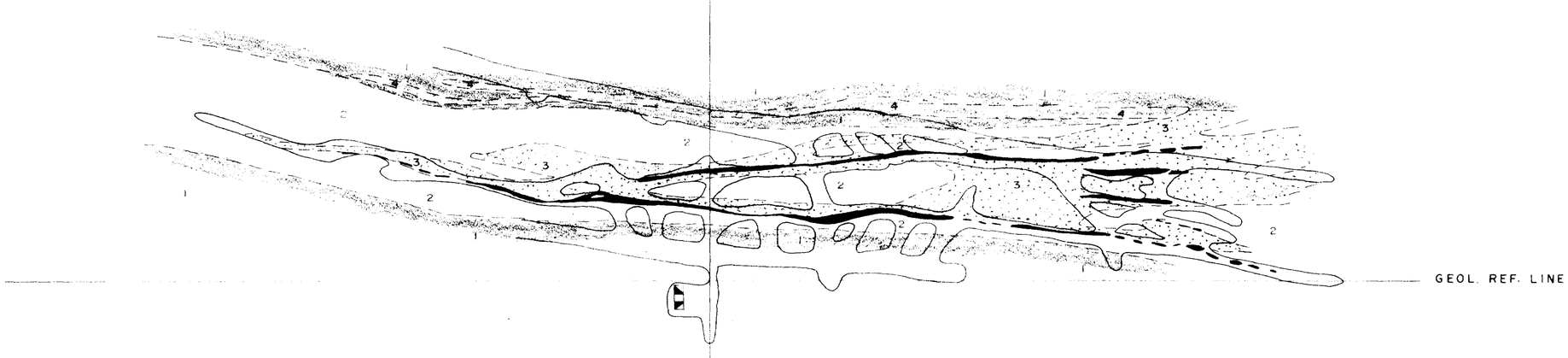
LACANA MINING CORPORATION

LOUANNA PROPERTY
O'SULLIVAN LAKE
GEOLOGY MAP
EAST HALF

PREPARED BY	SCALE	DATE	N.T.S. SHEET	FIGURE
RW/KG	1"=100'	1/10/84	42E12	11.2

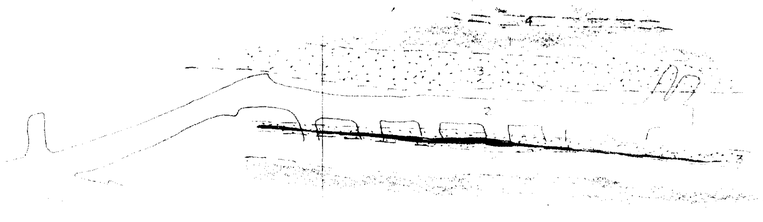
R. Wallace 11/1/85





LEGEND

- 4 — Chert, cherty tuffs.
- 3 — Quartz eye porphyry.
- 2 — Chloritic tuffs.
- 1 — Footwall and hanging wall Andesite, andesite tuffs.
- Grey quartz vein with Au
- Probable vein trace.
- Shaft



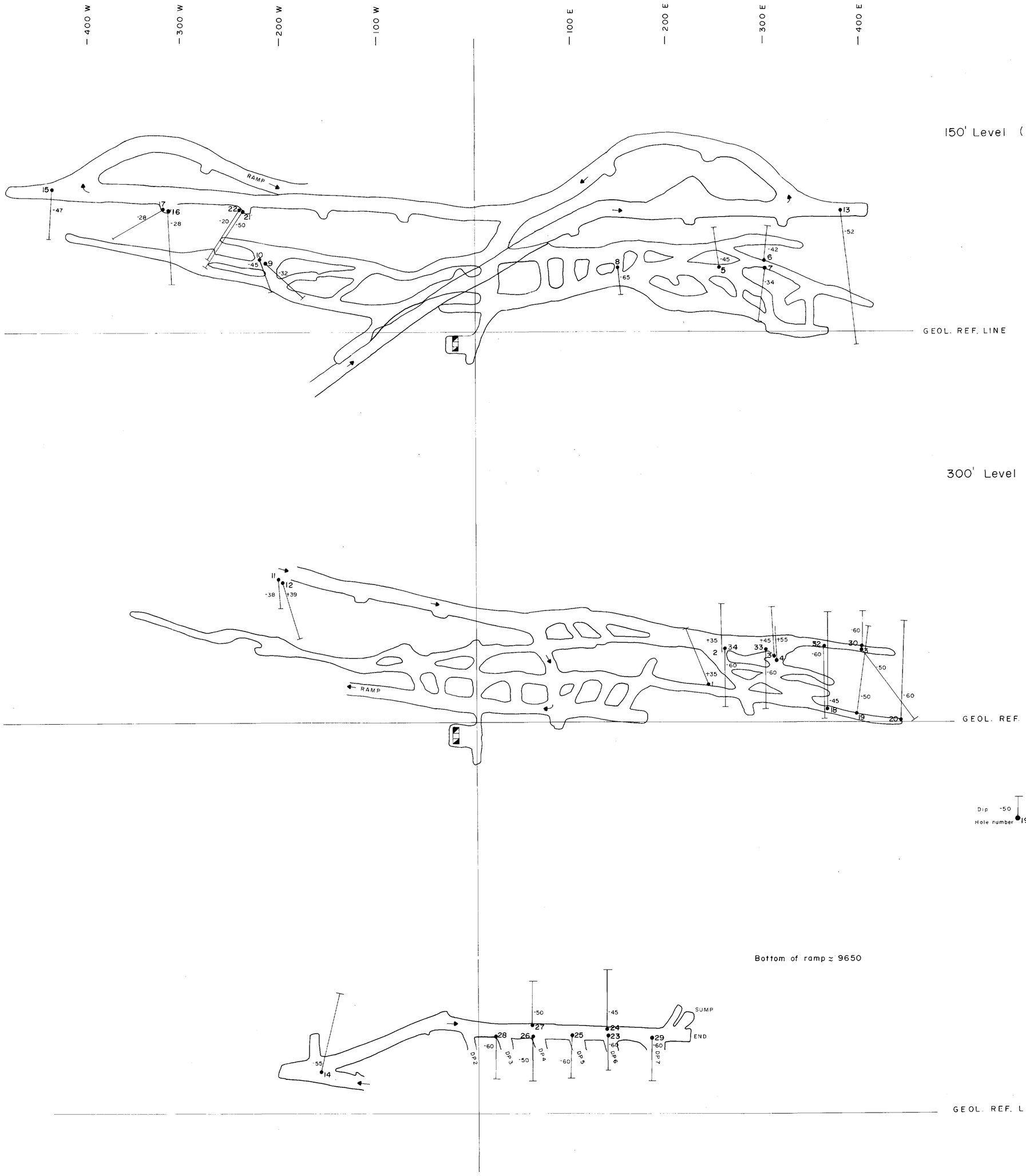
OM84-4-JV-7
63.4520

LAC LA MINING CORPORATION

LOUANNA PROJECT
UNDERGROUND GEOLOGY PLANS
9850, 9700 and 9650 LEVELS

PREPARED BY	SCALE	DATE	NTS SHEET	FIGURE
RW/KG	1"=50'	Oct 84		2.1

R. Wells Dec 1/84



LEGEND

Dip -50
Hole number 19

1984 Drill hole location with hole number and dip.

GM84-9-JV-1
63.4529

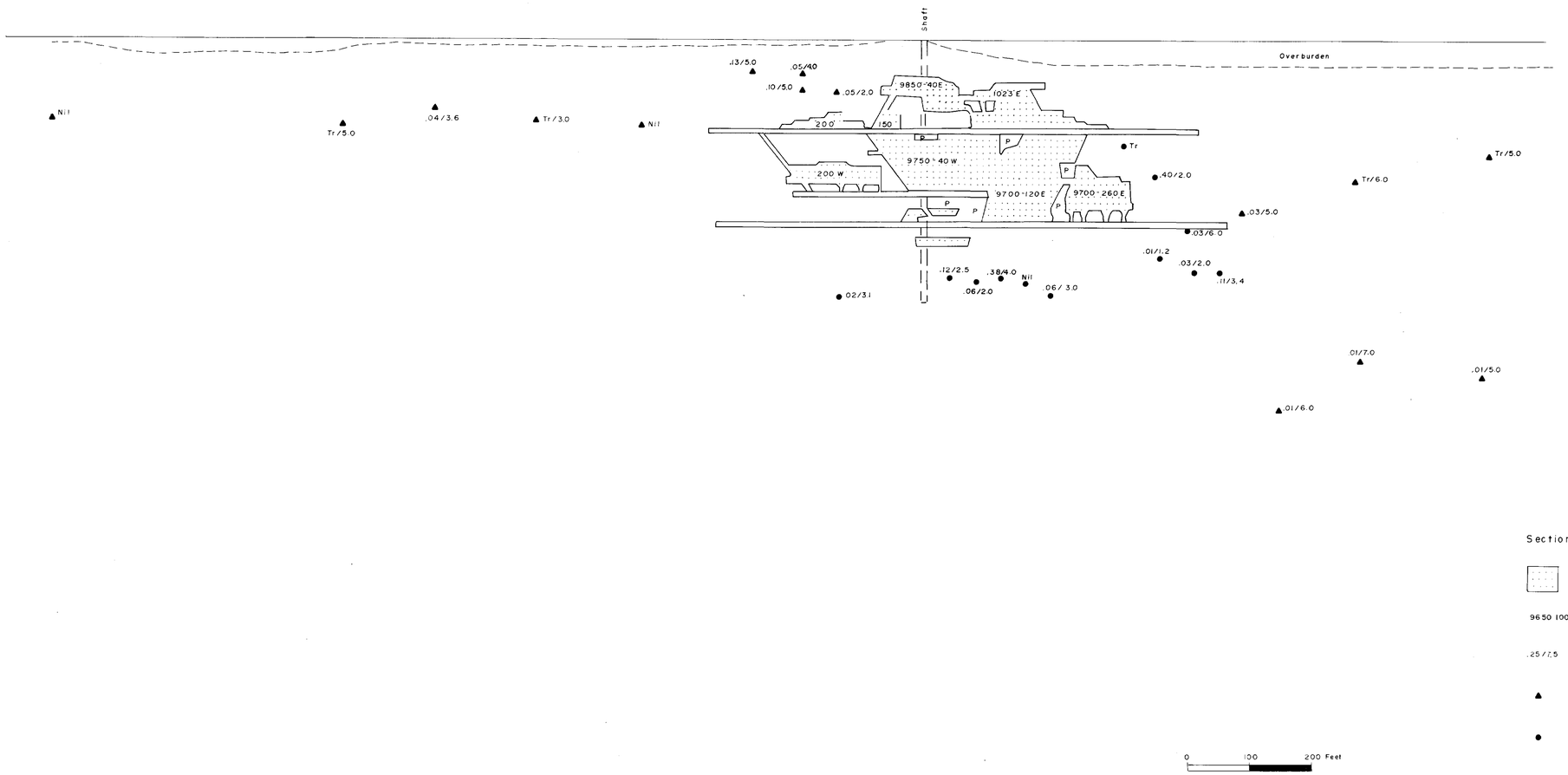
LACANA MINING CORPORATION

LOUANNA PROJECT
UNDERGROUND DRILL PLANS
9850, 9700 and 9650 LEVELS

PREPARED BY	SCALE	DATE	N.T.S. SHEET	FIGURE
RW/KG	1"=50'	Oct. 84		2.2

R. Wells 1 Dec 1984

WEST 1400 1300 1200 1100 1000 900 800 700 600 500 400 300 200 100 0 100 200 300 400 500 600 700 800 900 1000 EAST



10,000
9 900
9 800
9 700
9 600
9 500
9 400

LEGEND

Section is approximately in plane of 69° E

Mined out area (August, 1984)

9650 100W Stope

.25/7.5 Au intersection in oz/ton/true width

▲ 1984 Surface hole

● 1984 Underground hole

CANSIM 4-3717
55,450

LACANA CONVENTURES LIMITED
MURPHY OIL COMPANY LTD
LACANA MINING CORPORATION

CANADIAN MINERALS JOINT VENTURE

LOUANNA PROJECT

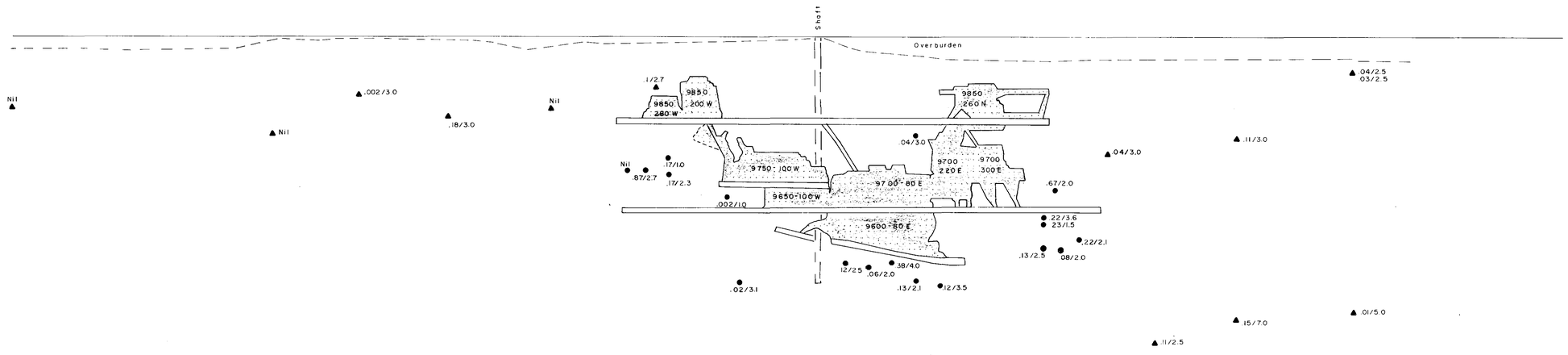
LONGITUDINAL SECTION

NORTH HORIZON

DRAWN BY	SCALE	DATE	REVISED	FIGURE
RW/KG	1"=100'	Sept.84		6.1

R. Walty Dec 1/1984

WEST 1400 1300 1200 1100 1000 900 800 700 600 500 400 300 200 100 0 100 200 300 400 500 600 700 800 900 1000 EAST



0 100 200 Feet

LEGEND

Section is approximately in plane of 69° E.

- Mined out area (August, 1984)
- 9650 100W — Stope
- .25/7.5 — Au intersection in oz/ton/true width
- ▲ 1984 Surface hole
- ● 1984 Underground hole

CMSP-4-DDH-1
63,49.20

LACANA CONVENTURES LIMITED
MURPHY OIL COMPANY LTD
LACANA MINING CORPORATION

CANADIAN MINERALS JOINT VENTURE

LOUANNA PROJECT

LONGITUDINAL SECTION

SOUTH HORIZON

DRAWN BY	SCALE	DATE	NTS	FIGURE
RW/KG	1"=100'	Sept.84		6.2

R. c. wells 1 Dec 1994

N 69E

320 W 280 W 240 W 200 W 160 W 120 W 80 W 40 W 0+00 40 E 80 E 120 E 160 E 200 E 240 E 280 E 320 E 360 E 400 E 440 E

10 000 / 10000
9 900 / 9900
9800
9700
9600
9500

9850 40E
1023 ST
200 ST
9750 40W
9700 120
9700 120E
9700-120 SUB
9700-260E
Shaft
Sh 1

LUG 10 0.12/2.0
LUG 12 0.5/1.0
LUG 5 0.22/3.0
LUG 6 0.006/5.0
LUG 13 .404/2.0
LUG 1 10/5.0
LUG 2 0.175/5.0
LUG 4 0.16/4.6
LUG 3 0.125/3.1
LUG 34 0.105/3.0
LUG 18 0.010/12
LUG 19 0.032/2.0
LUG 20 0.112/3.4
LUG 28 0.123/2.5
LUG 27 0.06/2.0
LUG 25 0.38/4.0
LUG 23 Nil (ground core)
LUG 29 0.06/3.0
LUG 14 0.016/3.1

LEGEND

9600-80E Mined out stope

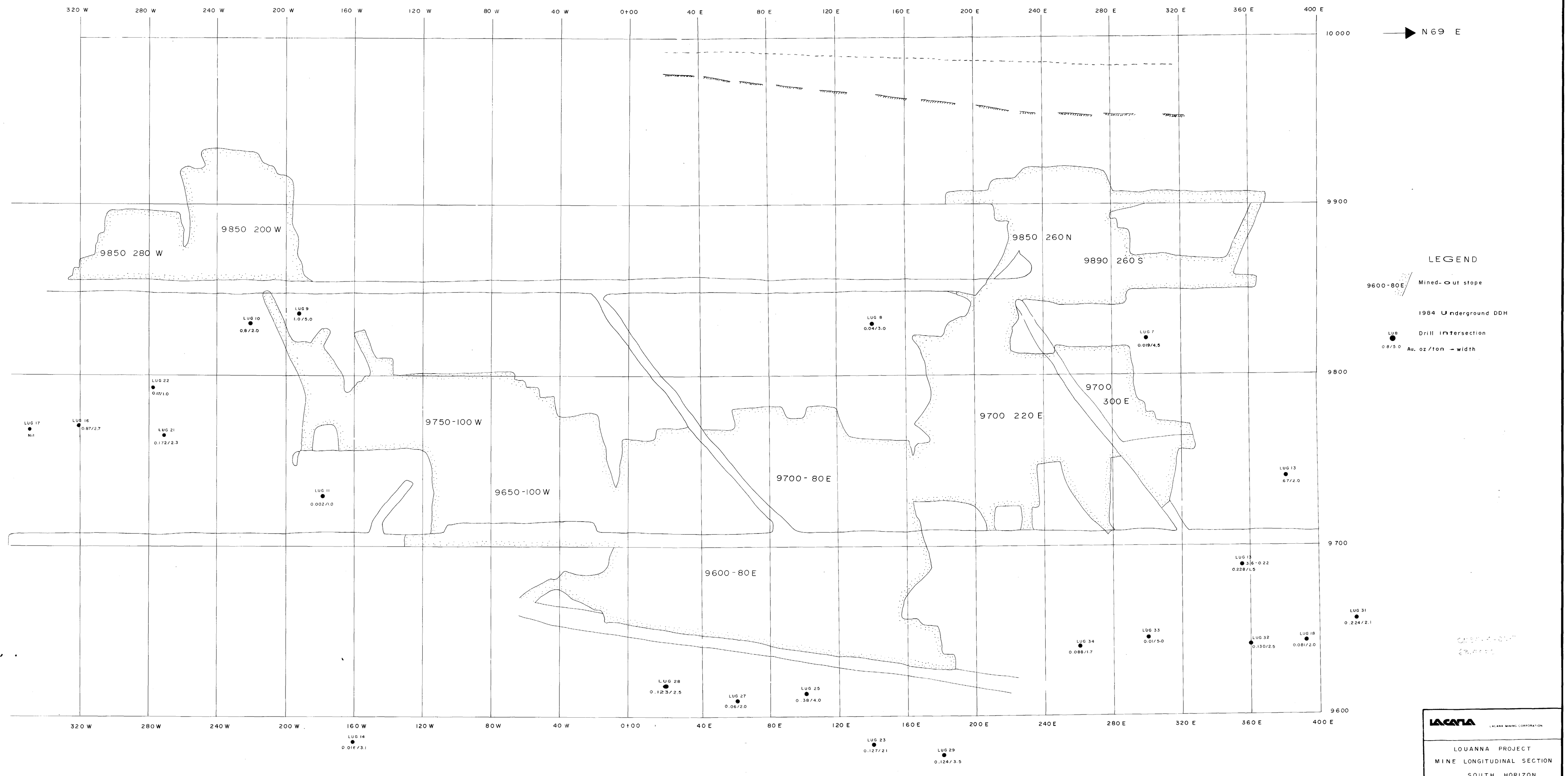
1984 DDH Drill intersection oz/ton Au / width

LUG 4 10/5.0

LACANA MINING CORPORATION

LOUANNA PROJECT
MINE LONGITUDINAL SECTIONS
NORTH HORIZON

PREPARED BY	SCALE	DATE	N.T.S. SHEET	FIGURE
RW/KG	1"=20'	Oct. 84		7.1


320 W
280 W
240 W
200 W
160 W
120 W
80 W
40 W
0+00
40 E
80 E
120 E
160 E
200 E
240 E
280 E
320 E
360 E
400 E
10 000
9 900
9 800
9 700
9 600
N69 E
9850 280 W
9850 200 W
9850 260N
9890 260 S
9750-100 W
9650-100 W
9700 220 E
9700 300 E
9700-80 E
9600-80 E
LUG 17 Nil
LUG 16 0.87/2.7
LUG 22 0.17/1.0
LUG 21 0.172/2.3
LUG 10 0.8/2.0
LUG 9 1.0/5.0
LUG 11 0.002/1.0
LUG 8 0.04/3.0
LUG 7 0.019/4.5
LUG 13 67/2.0
LUG 12 316-0.22 0.228/1.5
LUG 31 0.224/2.1
LUG 34 0.088/1.7
LUG 33 0.017/5.0
LUG 32 0.130/2.5
LUG 18 0.081/2.0
LUG 28 0.123/2.5
LUG 27 0.06/2.0
LUG 25 0.38/4.0
LUG 14 0.016/3.1
LUG 23 0.127/21
LUG 29 0.124/3.5
LEGEND
9600-80E Mined-out stope
1984 Underground DDH
LUG Drill intersection
0.8/5.0 Au. oz/ton - width
LACANA LACANA MINING CORPORATION
LOUANNA PROJECT
MINE LONGITUDINAL SECTION
SOUTH HORIZON
PREPARED BY RW/KG
SCALE 1"=20'
DATE Oct. 84
N.T.S. SHEET
FIGURE 7.2

34 W 32 W 30 W 28 W 26 W 24 W 23W 22W 21W 20W 19W 18W 17W 16W 15W 14W 13W 12W 11W 10W 9W 8W 7W 6W 5W 4W 3W 2W 1W 00

LEGEND

Instruments: EDA PPM 300 Magnetometer
EDA PPM 400 Base station

Accuracy: 0.1 gamma

Operators: LACANA

Date: March 1984

SYMBOLS

Magnetic contour 100 gamma intervals.

1050 gammas.

▲ Magnetic low.

ONE4-4-JV-7
63.4520

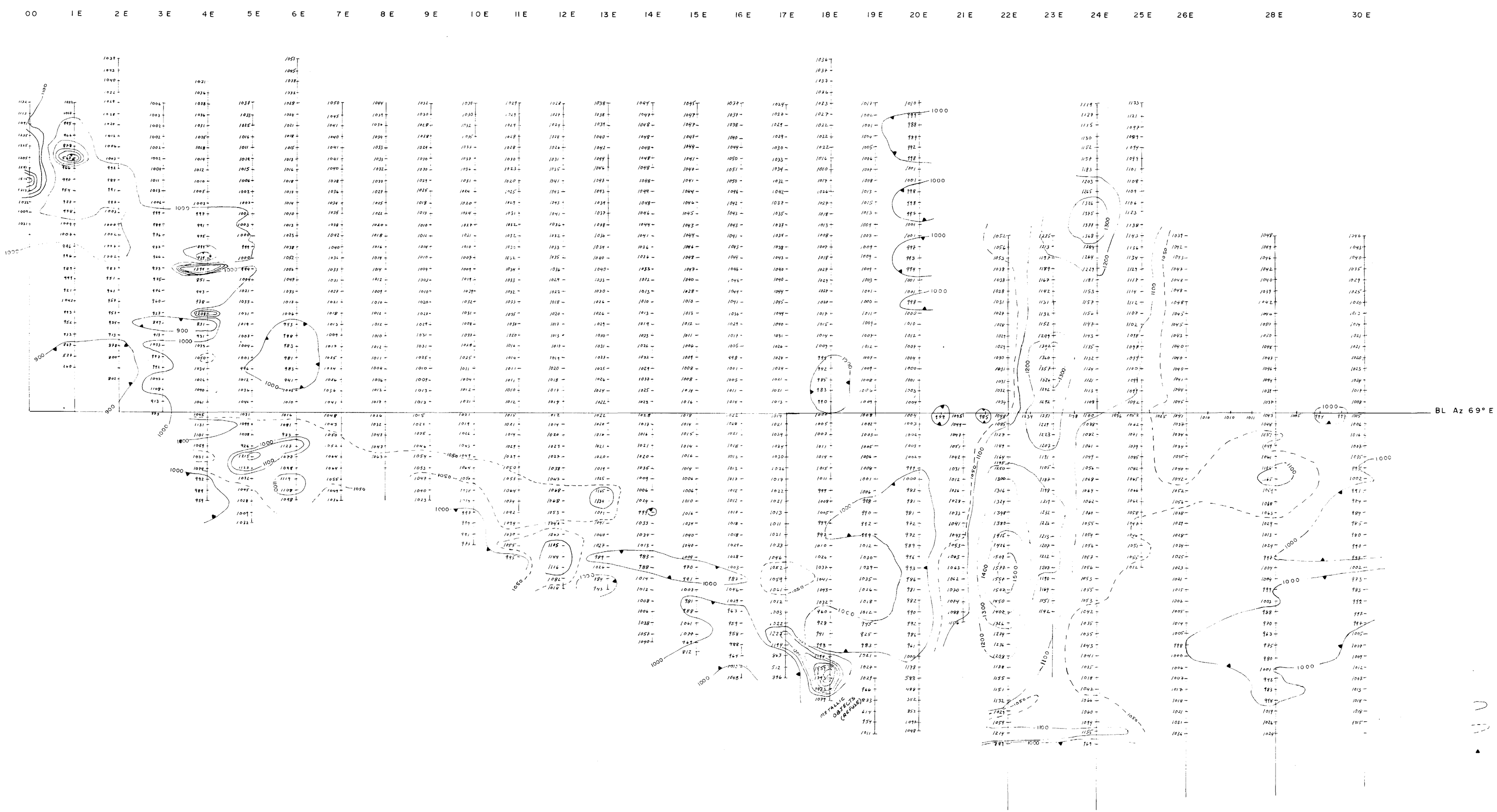
0 100 200 Feet

LACANA MINING CORPORATION

LOUANNA PROJECT
DETAILED MAGNETIC MAP
1984 GRID WEST HALF

PREPARED BY	SCALE	DATE	NTS SHEET	FIGURE
RW/KG	1"=100'	Dec. 84	42E12	9.1

R. C. Bulley
10/1/85



LEGEND

Instruments: EDA PPM 300 Magnetometer
EDA PRM 400 Base station

Accuracy: 0.1 gamma

Operators: LACANA

Date: March 1984

SYMBOLS

Magnetic contours (100 gamma intervals)

1250 gamma

Magnetic low

OM84-4-JV-7
63.4520

LACANA MINING CORPORATION

LOUANNA PROJECT
DETAILED MAGNETIC MAP
1994 GRID EAST HALF

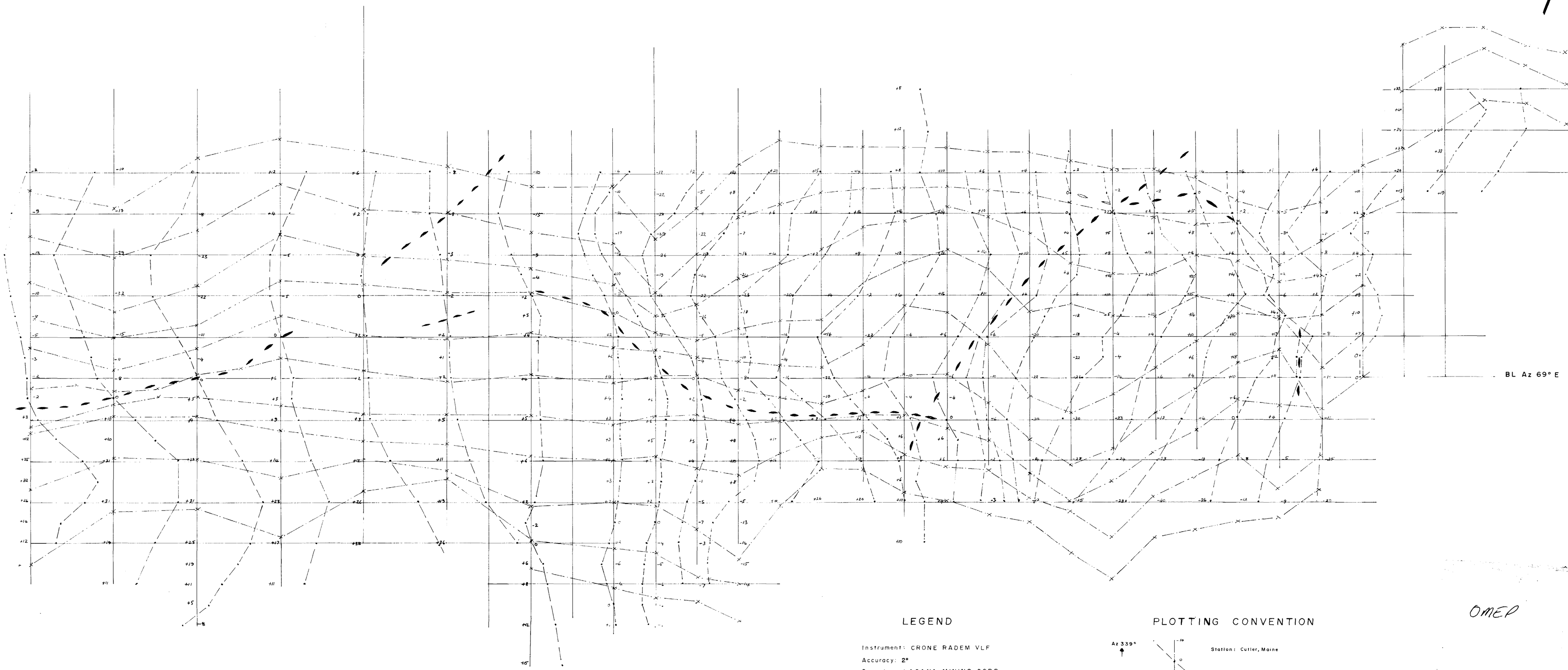
PREPARED BY	SCALE	DATE	NTS SHEET	FIGURE
RW/KG	1"=100'	Dec. 84	42E12	9.2

R. C. Walker 10/1/85

34 W 32 W 30 W 28 W 26 W 24 W 23 W 22 W 21 W 20 W 19 W 18 W 17 W 16 W 15 W 14 W 13 W 12 W 11 W 10 W 9 W 8 W 7 W 6 W 5 W 4 W 3 W 2 W 1 W 00

N

BL Az 69° E



BL Az 69° E

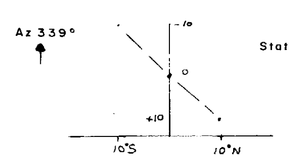
OMEP

LEGEND

Instrument: CRONE RADEM VLF
Accuracy: 2°
Operators: LACANA MINING CORP.
Date: March 1984

0 100 200 Feet

PLOTTING CONVENTION



Correct Crossovers

Anomaly axis

OM84-4-JV-7
63.4530

LACANA CONVENTURES LIMITED
MURPHY OIL COMPANY LTD.
LACANA MINING CORPORATION

CANADIAN MINERALS JOINT VENTURE

LOUANNA PROJECT

VLF SURVEY

WEST HALF

DRAWN BY	SCALE	DATE	JOB NO.	FIG. NO.
RW/KG	1"=100'	Dec. 84	42 E 12	8

42L8704NW0005 63.4520 MAIN LAKE

300

A. C. Wells 10/1/85

00 1E 2E 3E 4E 5E 6E 7E 8E 9E 10E 11E 12E 13E 14E 15E 16E 17E 18E 19E 20E 22E 24E 26E 28E 30E 32E

N

BL Az 69° E

BL Az 69° E

LEGEND

Instrument: CRONE RADEM VLF

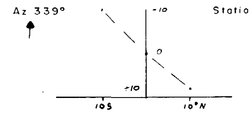
Accuracy: 2°

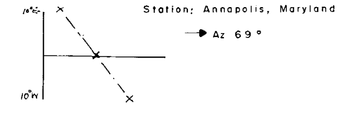
Operators: LACANA MINING CORP.

Date: March, 1984

0 100 200 Feet

PLOTTING CONVENTION





Anomaly axis

OM84-4-JV-7
63.4520

LACANA CONVENTURES LIMITED
MURPHY OIL COMPANY LTD
LACANA MINING CORPORATION

CANADIAN MINERALS JOINT VENTURE

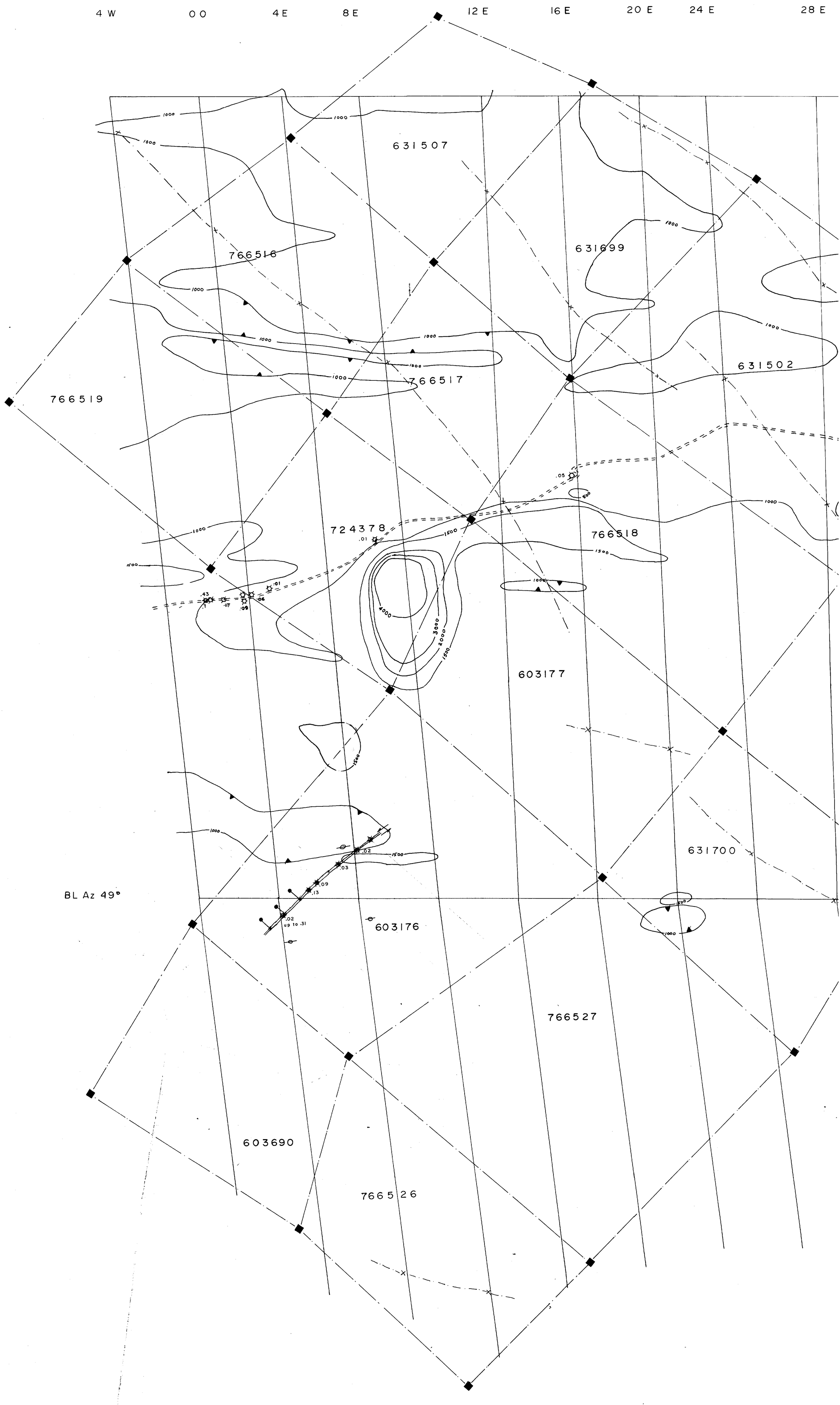
LOUANNA PROJECT

VLF SURVEY

EAST HALF

DRAWN BY	SCALE	DATE	NTS	FIG. NO.
RW/KG	1" = 100'	Dec. 84	42E12	10.2

R. C. Burns 10/1/85


4 W
00
4E
8E
12 E
16 E
20 E
24 E
28 E
631507
766516
631699
766519
766517
631502
724378
766518
603177
631700
BL Az 49°
603176
766527
603690
766526

16 E 20 E 24 E 28 E 32 E 36 E 40 E

631699

631502

631501

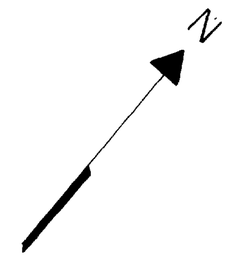
631700

766518

766527

77

1000 1500 500 .05 Trace .03



LEGEND

GEOPHYSICAL MAGNETIC

500 — Selected magnetic contour in gammas.

Magnetic readings decrease.

VLF ELECTROMAGNETIC

—x— VLF anomaly trace

SYMBOLS

.03 Trench with Au assay oz/ton

Shear zone defined

Pillow lavas strike

Old DDH located

Claim line and claim post

Trail

200 0 200 Feet

OM84-4-JV-7
63.4520

LACANA MINING CORPORATION

LOUANNA PROJECT
CULHANE PROPERTY
COMPILATION MAP

PREPARED BY	SCALE	DATE	N.T.S. SHEET	FIGURE
RW/KG	1"=200'	Oct. 1984		1

R. C. Walls 1/12/84