An Innovative Strategy To Discover New Showings In The Lynn Lake/Greenstone Belt, Northwestern Manitoba Region

A Collaborative Exploration Project
Proposal Developed by:

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The role of prospectors in the mining industry cannot be overstated. In the early years of prospecting, prospectors used their experience, relied upon primitive technology, and with luck and hard work, major deposits were found. Early prospectors have been successful in mining exploration in part due to glaciations of most of Canada, in particular the Canadian Shield. As a result of glacial scouring, the bedrock has been stripped of most of its oxidized surface, leaving fresh rock and sulphides visible along shorelines of lakes and rivers, under vegetal cover or shallow till. Also, mineralized erratic blocks torn out by glaciers from deeper buried deposits and dragged down ice can often be found under the moss. Even today, just like in the past, new showings are being discovered along road cuts, some of which result in major discoveries, as is the rumoured case of the South Bay find near Leaf Rapids, MB.

By shallow trenching with modest means and inexpensive tools, early prospectors were able to find showings. These showings led to the discovery of many mines that have created communities where none existed before and contributed significant tax revenues to government. The mining industry is a significant source of revenue to the Province of Manitoba. Since 1963, annual employment in the mining sector has totalled over 4,000 people, most of whom live and work in northern Manitoba. Over 13,000 indirect and induced jobs were generated as well. Mineral production currently averages 1$ billion annually, accounting for approximately 3.2% of the total GDP for the Province of Manitoba. The mining industry also accounts for roughly 11.2% of the $9.4 billion of goods Manitoba exports around the world (SOURCE: Manitoba Mining, 2003. Manitoba Industry, Trade and Mines, Province of Manitoba. p. 3.)

This innovative proposal is targeted to more closely examine areas believed to have high potential for new showings. The Lynn Lake/Greenstone Belt has portions intensely explored, but the majority of the exploration work done has been done so over the course of decades employing older technology and less reliable testing. Gaps in knowledge of known and probable reserves abound. The Lynn Lake and the Greenstone Belt supported five underground and five open-pit mines. Copper, zinc, nickel and gold deposits were mined in the district, which is dominated by metamorphosed lavas and sedimentary rocks. Lynn

Lake/Greenstone Belt's long history of mining reflects the region's varied and favourable geology and tracts of high mineral potential. The Mineral Deposit Geologist for the Lynn Lake/Greenstone Belt, Dr. Chris Beaumont-Smith of the Manitoba Geological Survey, is of the opinion that more systematic exploration of the area is needed.

Exploration efforts should be fostered through innovative incentive programs that are flexible as to meet the uniqueness of a region. By empowering communities, who know best the area and have a vested interest, in their efforts of continuing to contribute to their mining successes is an effective way at stimulating economic development. Today, advances in technology afford prospectors greater chances of finding deposits. Inexpensive and easy to use exploration tools permit prospectors to identify showings previously impossible to detect from the surface visually.

We propose that a committee be struck composed of representatives of experienced mining representatives with diverse associations, active claim-stakers, area claim holders, retired local miners and prospectors, and the Manitoba Geological Survey though Dr. Chris Beaumont-Smith, Mineral Deposit Geologist and tasked to oversee an integrated innovative exploration program. The innovativeness of this program is the: (a) incentive scheme and, (b) the technology employed. The incentive scheme would motivate prospectors and independent individuals to use newer technology to look for "valid showings".

A "valid showing" would be defined as a newly discovered virgin outcrop with enough mineralization that would justify sampling and assaying by a certified geologist or engineer as in the normal course of an aggressive exploration program. These "valid showings" would usually be sulphide rich outcrops, often conductors. Mineralized quartz veins, non-conductive rusty iron gossans or significant IP anomalies explained by the showings would also qualify as a "valid showing".

EX-IN (Explorateurs Innovateurs de Québec Inc) has successfully participated in many similar projects in the past, and which prospected vast regions at low costs using the Beep Mat. EX-IN remains active and currently engaged in such prospecting activities. The President of Ex-In, Dr. Edwin Gaucher, created the Beep Mat with the Desbiens brothers,

would be available to train a group of pre-qualified prospectors to operate the Beep Mat. The Beep Mat would be the technology employed.

The Beep Mat is a simple and efficient prospecting tool, which was created and designed by Instrumentation GDD with the financial support from the governments of Québec and Canada. Since 1980, three millions dollars have been invested in finalizing this instrument. The Beep Mat and the EM 15 have been proved to be valid and reliable instruments that are easy to use. Both can detect conducting sulphide bearing outcrops or mineralized floats hidden under up to 5 feet (l.5 meters) of vegetal cover, earth or till. Even if a conductor is caused by sterile sulphides or even graphite, the cost per site sampled is so low that the bottom-line cost of a successful discovery more than offsets the minimal costs of many barren samples collected, rewarded and assayed. Also, utilizing this technology avoids the higher costs of more sophisticated exploration technologies, or by the environmentally harmful traditional stripping of moss practiced by prospectors.

Furthermore, if the high mining potential region in the Lynn Lake/Greenstone Belt has been covered by aerial electromagnetic surveys, a large number of weaker showings would have been neglected. Recent experiences indicate that major discoveries, such as the huge Doyon gold mine between Val d'Or and Rouyn are still being found in old mining districts through sampling in areas already explored and deemed to contain low priority geophysical targets. And as most high quality targets have already been tested, mining companies typically have abandoned exploration activities. Economically feasible deposits therefore may be under foot, but unknown.

The Beep Mat approach permits the exploration of these neglected targets at a low cost. Our experience shows that prospectors are motivated by an incentive paid for discovering a confirmed virgin sulphide occurrence. We anticipate mining companies would be willing to allow prospectors to collect samples on their claims, especially if they actively participate in the integrated exploration program, particularly as members of the committee when assay results are released. The key to this project is the sharing of information, good news or bad, intended to stimulate mining activity in the region.

Typically, a minimum cost of investigating any geo-scientific target using the classical exploration approach ranges from $50,000 to $100,000. We recommend based on our experience, an incentive scheme established at $30,000. The incentive, a bonus, established at say, $300, would be payable upon a confirmed "valid sample" to the discoverer under the direction of the committee. We believe that such a program could yield 100 "valid samples", one or several of which could be mineralized and thus motivate mining companies to invest exploration dollars for additional exploration. The economic impact from these investments would be beneficial to the region as well as raising the possibility of another major find that would translate into the opening of a mine in an economically depressed region. However, an investment, to bring this project to fruition in the amount of $50,000, is required.

As a suggestion, the exploration program and the incentive scheme can be managed by the committee, and the dollars used to reward "valid showings" be held in trust by the Province of Manitoba. The Province would commit to $30,000, however only monies resulting from "valid showings" would be payable. Therefore, it is possible that not all $30,000 will be used, thus allowing the Provincial Government to apply remaining monies toward other exploration endeavours. The bonus would be a reward to those with energy and expertise at using the technology and finding "valid showings". Please see Appendix *A – **Technical Precisions Regarding** The Project's Budget,* for a more detailed explanation of this incentive scheme along with the project budget.

The recommended incentive program would encourage new exploration using newer technology that is easy to use and that operates at a low cost per site sampled. Exploration would be accomplished by those who have a vested interest and familiarity of the area. Through the provision of training, funding for the incentive scheme and an integrated exploration planning program involving key decision-makers and predicated on the sharing of information, this innovative strategy toward discovering new showings in the Lynn Lake/Greenstone Belt builds upon the knowledge of known and probable reserves in the region cumulatively and can increase the likelihood of another mine opening.

PROPOSED PROJECT BUDGET
(See Appendix A for more details of this Budget)

100 bonus payments of 300$ for virgin new sites discovered	$30,000.00
Four to six days by qualified engineer or geologist to confirm before payment of bonus some randomly selected 20 to 30 sites discovered by prospectors	$3,000.00
100 samples tested by fire assay for gold and for 32 elements by ICP 100 samples * 30 $ including shipping	$3,000.00
Rental of 4 Beep Mats model BM 2 for 3 months at 200$ per month	$2,400.00
Compilation of available geoinformation around Lynn Lake, printing of resulting maps for the prospectors and final report and maps	$4,000.00
Travelling expenses and room and board for the instructor, E. Gaucher	$4,000.00
Unanticipated expenses	$3,600.00
Total Budget	**$50,000.00**

APPENDIX A – TECHNICAL PRECISIONS REGARDING THE PROJECT'S BUDGET

INTRODUCTION AND CONTEXT

Being an engineer trained to think rationally, I do not expect that Beep Mats will discover a mine after making an expenditure of $50,000.00. I do feel however, that there are even odds in discovering a showing that will warrant further exploration and perhaps a DDH. To support my beliefs, I offer the following examples.

Mr. Moo Moreau*, while working for Koffman around the Flin Flon, MB area in the late 1950's, estimated that he had to discover and drill on average some 100 MaxMin type conductors to find an ore body. Côme Carbonneau**, who after his retirement worked as a consultant for EX-IN, estimated that it will take 2,000 airborne EM conductors sampled by a Beep Mat to have an even*** chance to discover a mine. As we will be rewarding even small surface veinlets, I conservatively estimate that we need to sample between 5,000 and 10,000 sites before a mine is found. Even so, it would cost only 3 million dollars, which would be a bargain.

Not only may some of the larger conductors result in a discovery, but even some of the numerous small veinlets sampled by the prospectors using Beep Mats may result in a discovery. Moreover, not all mines are EM targets that can be found through airborne or ground EM surveys. As an example, the Sillidor Mine that a significant gold producer from a quartz vein in Noranda contained so few sulphides that it could not be detected even by the most carefully performed IP survey. Yet two Noranda Mines prospectors used a Beep Mat over the quartz vein that was covered by a layer of moss. The Beep Mat detected a significant response from a paper thin pyrrhotite veinlet five metres long, crossing the quartz vein. Had that Beep Mat signal been sampled, the mine would have been discovered.

IT should be noted that the Beep Mat technology is pertinent to base metal exploration. As an example, it is widely known that sphalerite is not a conductor. At the Opemisca copper mine (25 million tons of ore) however, most of the veins did not react to MaxMin type surveys; but they were detected by a Beep Mat because they contained small pyrrhotite veinlets. Such veinlets are sufficiently large enough to be detected by a Beep Mat, but much too small for a MaxMin.

* Eventually president of Eldorado.

** After being president of Soquem where he managed to discover four mines, of which three are still running thirty years later, then president of Falconbridge Copper where he started three mines.

*** An even chance means that after sampling 2000 conductors one has a 0.66 odds of discovering only one mine, but 0.30 odds to discover two mines, etc.. the sum of all the probalities adding to an average of one mine.

BUILDING UPON OUR PAST EXPERIENCES WITH BEEP MAT TRAINING

This paragraph will elaborate upon past experiences with training prospectors in the use of Beep Mats, and how this experience will be applied to structure an appropriate and effective course for the Lynn Lake project.

Early in our experiences, the Beep Mats were used only by our personnel. They received a daily salary and a bonus per "proper"[1] site sampled. We observed a very encouraging range discoveries by different personnel. For example, in the same project, one of our personnel found 12 sites, and another personnel discovered only one, yet both were in the field equally performing in their tasks. Evidently not everyone was made to use a Beep Mat. The reason of the difference was evident; one person was more energetic in their work, while the second person was more passive. Yet in a structured environment with proper training, both individuals performed satisfactorily.

In another experience during 1986, I trained two seasoned prospectors to use Beep Mats. They went prospecting for themselves whereby I paid them $100 for each site that beeped if they sent me a bag of samples along with the coordinates from where they were collected from. Each prospector assayed each of their 46 sulphide samples for gold before sending me the samples. They stopped using the Beep Mat when I stopped paying bonus even if I was ready to lend the Beep Mat free to them. Thus, in spite of the fact that a rich copper zinc float was discovered that summer, they didn't continue to use the Beep Mat even if they received substantial payments for the discovery from the companies who searched for its source. As the float was on the surface, they attached the discovery of the float to their eyes rather than to the Beep Mat. They did not consider the fact that 40 of the 46 grab samples were discovered using the Beep Mat.

In 1990, the Ontario Provincial Government purchased 14 beep mats for $140,000.00. During a two month timeframe, Pierre Gaucher taught Beep Mat prospecting to approx. 300 individuals in the 14 districts headed by a resident geologist. In each of the districts Pierre Gaucher succeeded to discover with his students virgin sulphide occurrences. The result of that effort we observed can be attributed to the enthusiastic encouragement of Bernie Schnieders, resident geologist in Thunder Bay (Tel. 807 475-1331). Over the years, the prospectors of that area employed the use Beep Mats. Through the extensive use of the Mats discovering a large number of showings, the Beep Mat eventually downgraded to the point of becoming unusable. As the Beep Mats lay unused in the other districts, Bernie repatriated them one by one and brought them to Thunder Bay. The last Beep Mat died in 2003. In spite of the training in the 14 districts only the Thunder Bay area used them, probably because of the enthusiastic encouragement of Bernie Schnieders.

Since 1990, Edwin or Pierre Gaucher delivered a dozen of courses ranging in training times of one to two weeks to apprentice prospectors. They taught how to use Beep Mats, GPS, drilling, blasting and proper sampling practice. For example, at Norway House, Manitoba, the cost of the course included a supply of dynamite, Beep Mats,

[1] As defined in our original document

gasoline percussion drills, etc. During our courses, we gave small rewards for each site discovered. During the course, everyone was highly motivated. After the course ended however, even with all the equipment still available, no one used it. Evidently, for a single individual, the number of sites to be sampled to discover a new showing is so high that it had a de-motivating effect and almost no one cared to continue

In later courses, we included in the budget a provision to reward those who discovered showings. We decided to do this because to the best of our knowledge, with the exception of three motivated individuals from Norway House and elsewhere, the equipment was used only as long as funds were available. Project longevity appeared to depend upon continued budget support. I wish to utilize time and other resources efficiently in an effort to train persons in Lynn Lake and have a sufficient budget that rewards the prospectors for their efforts.

DETAILED EXPLANATIONS OF THE BUDGET

As mentioned previously, this budget was designed to build upon our past experiences as articulated above. Below presents a more detailed explanation of the project budget.

- Item 1

We budget 60% of the available funds ($30,000) to reward the prospectors for virgin new sites discovered. We feel there is no reason to sell any equipment or instrumentation unless there is a public body that has an interest in committing ongoing funds to replenish the bonus scheme that rewards prospectors for their efforts. As a caveat, rewarding virgin new sites discovered at 300$ per site, may not recoup out of pocket expenses. If interest weakens as the project is evolving, a decision may be made to raise the reward amount.

- Item 2

$3,000 has been allocated to reward a qualified professional to visit about 30 of the 100 sites discovered by prospectors. The prospectors must be encouraged and visited, not only to check on the validity of their claims for a bonus, but also to further train and motivate them. This qualified professional should also participate to the course, but as he will reward the prospectors, he cannot benefit from the bonus scheme himself.

- Item 3

Another $3,000 is allocated to assay "proper" samples collected for gold by fusion and for 32 elements by ICP. All samples should be thus assayed, not only for elements that one expects to occur in a given type of rocks. The professional examining the assays should, if appropriate, specify extra assays, such as platinum. He could also request, for example, a geochemical assay for copper or zinc if he believes some elements are present in significant percentage. The cost to assay, as suggested, is minimal as compared to the

cost of collecting the samples. Nature is full of surprises, and let's mention from memory a few types of samples that some persons may refuse to assay:

1) Eldorado (not a crooked Junior) has exhibited at the PDAC the core a massive layer of graphite, with 10 % of cubic pyrite, that assayed 10 gr Au/ t.

2) A "barren" massive pyrrhotite float gave a high cobalt assay.

3) A "barren" massive magnetite assayed 1% V_2O_5

4) A "barren" looking rusty float was assayed only for gold by two experienced prospectors, but after being seen by a keen geologist, it turned out to assay 3% copper and 8 % zinc.

- Item 4

The $2,400 for this item will cover the rental of 4 Beep Mats model BM 2 for 3 months, or when all of the $30,000 available bonuses are distributed, whichever comes first. We anticipate the fieldwork to last approx. three months, but it could be much shorter if a half dozen of ex-miners with an interest in prospecting show up for the course. If the funds are not distributed but some prospectors are still active we may accept to rent some of the Beep Mats for a longer period. This may not be necessary as the Manitoba government presently owns a BM4+, a better instrument than the BM2. This instrument was recently sent to Instrumentation GDD for repairs and after making an estimate, GDD is waiting for the approval to proceed.

- Item 5

Before a Beep Mat survey in an effort to help guide prospectors, we will prepare a compilation of the area accessible from Lynn Lake. The compilation is digital, so that it can be upgraded and corrected. All the sites already sampled can be plotted and new maps printed. These maps will then be distributed to all prospectors in an effort to avoid sampling the same anomalies.

On the compilation map we will digitally superpose:

1. Topography, from the 1:50 000 federal maps. They are expensive and have to buy it unless the department of mines supplies it;
2. All available reliable airborne EM anomalies from private or government surveys. Most are already compiled by Ifti Hosain;
3. The depth of overburden from glacial maps;
4. All previous DDH as compiled by the department of mines;
5. The geology, also from the mines department or from the GSC;
6. Samples collected in the area by Beep Mat surveys;

7. Any claims and their owners, to notify them promptly in case of discovery of a showing. Of course the prospectors will be free to stake for themselves if there are no claims.

I suggest that we do not pay bonuses on mining properties on which we do not have a written permission from the owners to prospect. This may perhaps motivate them to pay the prospectors an additional reward in case of a discovery. If such a promise is made it must be clearly defined and in writing. Past experience indicates that any promises of rewards are difficult to materialize.

Additionally, we will leave a computer in Lynn Lake with the necessary programs to keep the compilation up to date.

- Item 6

A $4,000 provision will cover the cost of mob-demob of the instructor, Dr. Edwin Gaucher and his assistant from Québec City to Lynn Lake, and their room and board in Lynn Lake. As I will have to bring for the course substantial equipment, including a couple gasoline percussion drills, I will probably travel to Lynn Lake in my large pickup, equipped with a certified dynamite box. We will bring with us all the necessary equipment for the course. The junior assistant will participate with me in raising and maintaining the motivation of all persons in this project.

- Item 7

This sum of $3,600 will pay for all the sundry supplies during the course, such as dynamite, B line and caps, flagging tape, notebooks, pencils, etc.

LYNN LAKE/GREENSTONE BEEP MAT PROJECT
PROPOSED PROJECT BUDGET

ITEM NUMBER?DESCRIPTION	AMOUNT
1. 100 bonus payments of $300 for virgin new sites discovered	$30,000.00
2. Four to six days by qualified engineer or geologist to confirm before payment of bonus some randomly selected 20 to 30 sites discovered by prospectors	$3,000.00
3. 100 samples tested by fire assay for gold and for 32 elements by ICP 100 samples * $30 (including shipping)	$3,000.00
4. Rental of FOUR Beep Mats model BM 2 for 3 months at 200$/month	$2,400.00
5. Compilation of available geo-information around Lynn Lake, printing of resulting maps for the prospectors and the final report with maps	$4,000.00
6. Travelling expenses and room and board for the instructor, E. Gaucher	$4,000.00
7. Unanticipated expenses	$3,600.00
Total Budget	**$50,000.00**

Assumptions and Conditions:

1) We assume that the Town of Lynn Lake will supply a local to give the course and to store the equipment in a safe place. Electric power is needed to recharge the batteries.

2) We also assume that the Town will liberate a responsible person to keep a record of who borrows the Beep Mats, to assure a rotation of the available instruments among the prospectors, and to safeguard the samples.

3) Edwin Gaucher will be available free of charge for a minimum of 10 days to give a course at the beginning of the project and an additional week to help during the rest of the summer.

4) It would be pertinent if the Manitoba government allowed to be used its BM 4+ Beep Mat during the project, and would liberate for a few days each month a geologist to participate in the experience.

5) Finally, the Town of Lynn Lake will advertise the program so that a minimum of qualified candidates will sign up before the course starts.

ADDITIONAL CONSIDERATIONS

A rental contract is to be signed confirming the rate of the rental and the value of the equipment. The equipment either rented (Beep Mats) or provided free (drills, GPS, dynamite box, etc) will have to be insured in case of fire, theft, loss or accidental damage of over $300 for the duration of the rental. Our insurance covers the equipment during Mob and Demob.

CONCLUSION

This budget has been strictly conceived to experiment with Beep Mat prospecting in the Lynn Lake area. If the Town of Lynn Lake and the Province are encouraged by the results of the project and wish to continue it, additional investments can be made for more Beep Mats, a gasoline percussion drill, dynamite box, GPS, computer, etc. Of course, funds for the bonus scheme payable upon valid showings, assays and other professional fees.

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