AR 89-253

ORE RESERVES CALCULATION
RAMP AREA

GOLDBORO PROPERTY

Guysborough County, Nova Scotia

Submitted toExploration Orex Inc.

By: Guy Parent, M.Sc.,geologist

ST-MICHEL
GÉOCONSEIL

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EXTRA 1988 DE LA NOUVELLE ENTREPRISE

ST-MICHEL
GÉOCONSEIL INC

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SUMMARY

The Goldboro property is situated on the eastern shore of Nova Scotia,Canada,Along the Atlantic Ocean. The owner of the property, Exploration Orex inc., has executed two major exploration program since 1988, and has now sufficient information to certify that the property contain an excellent potential for important coarse free gold mineralization.

This report describe the ore reserves calculation of the ramp area, using all information available. A total of 114 diamond drill hole logs are available coming from 28237 meters of core. All old mining plans of the four shafts have also been compiled. In 1988, Orex has proceeded to the excavation of a ramp with the development of two cross cuts. Mapping, chip sampling, and muck sampling have been done and used for the interpretation.

Since the end of 1988, many metallurgical tests had been realized on muck samples and on core. The results indicate the difficulty to use conventional assays results to estimate the grade of the orebody. Most of the metallurgical results suggest a grade content higher than the one obtain by assay methods.

Presently the ore reserves calculation is limited to a restricted area where sufficient information is available and where reserves are easily accessible to make a production decision rapidly. The lateral extent of the reserves is 137,5 m, and vertically it measures 84 m. A total of 1070000 metric tons(all categories) are presently defined, grading 6.2 g/mt. The grade estimate take into account the metallurgical tests and the assay results, with a priority for the metallurgical tests results.

We recommend to proceed to the assaying of all the core that has not been yet analyzed, with the objective to acquire necessary data to fix the grade of the overall orebody. Secondly we recommend the milling of a representative part of the orebody, near the surface, via the existing ramp, between the first and second level(stope 2-1), where the N1 belt is at its maximal

amplitude, and the best known. It will permit to define the exact grade of this zone in comparison with assays statistical estimate, and will put the project at the feasibility stage.

In our point of view, this project contains an excellent potential for important coarse gold mineralization on a minimum of 800 meters along the Upper Seal Harbour anticline, and we recommend to execute as soon as possible the next step on this project,the production decision.

INTRODUCTION

This report concerns the ore reserves calculation of the Goldboro Project. The reserves are defined only where it is accessible rapidly, in the ramp area.

The aim of this estimate is to define sufficient reserves to justify a production decision as soon as possible.

All the information available has been used, and a preference was given to the results of the C.R.M. metallurgical tests. The information obtained from those tests constitute the base of the new interpretation and the concept of bulk mining instead of selective mining method for the future production.

The reader is referred to the final report of 1988 for the complete geological description and interpretation, and for the history of the property.

1. INFORMATION AVAILABLE

1.1 INFORMATION AVAILABLE FROM WORK DONE TO THE END OF 1988

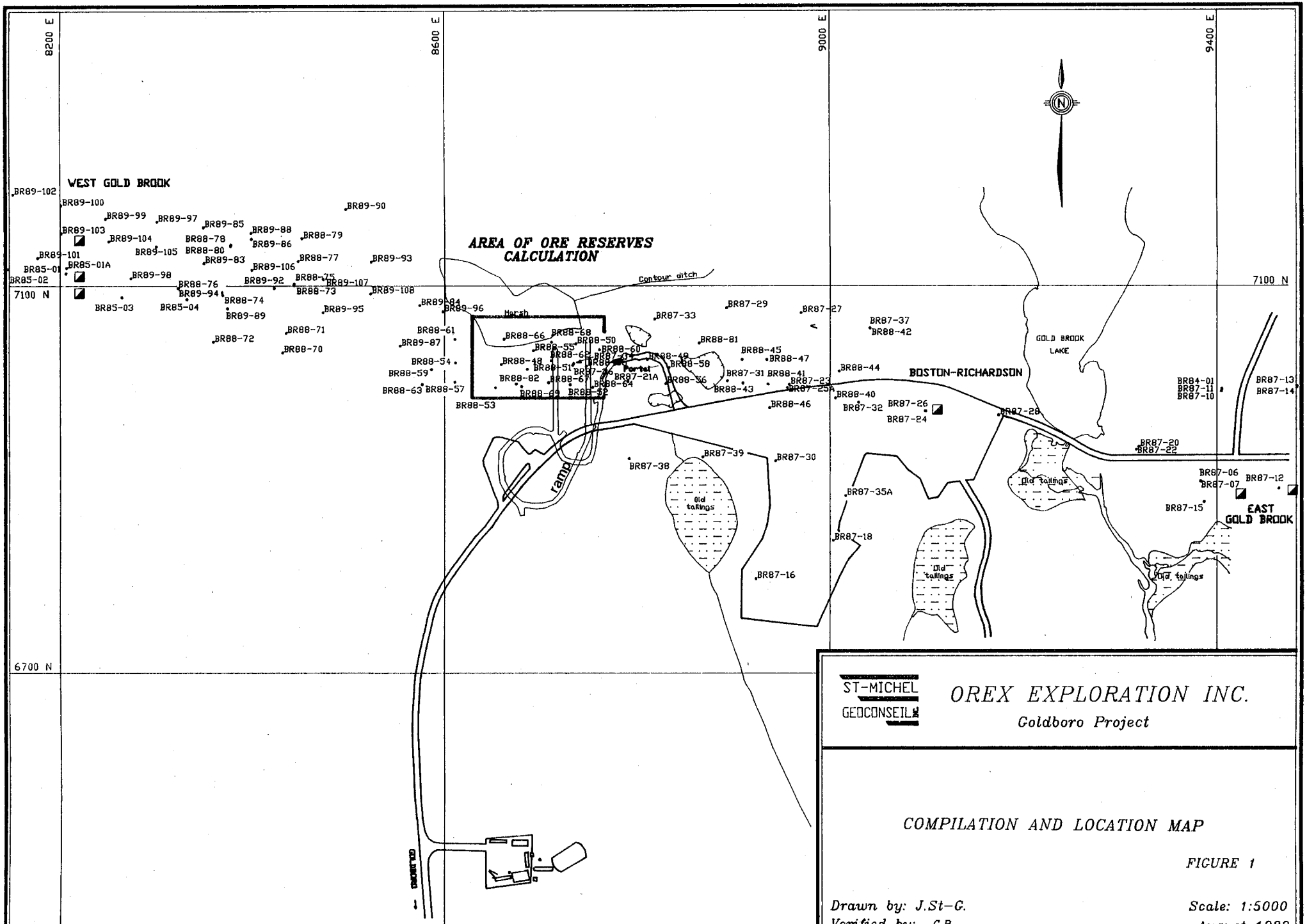
Most of the layouts of the shafts in use at the beginning of the century (West Goldbrook, East Goldbrook, Dolliver Mountain) were found, as well as those of the Boston-Richardson Mine. The layout confirmed the geological interpretation and contained the gold assays of the old underground developments. This information was used and added to our plans. Underground developments opened in 1988 also help the understanding of the geology and permitted preliminary metallurgical tests.

We also used the drill logs which we managed to retrieve for holes done in 1988 and before. The logs concern the 88 holes drilled since 1981 and cover a total of 25415 meters (see figure 1, drill hole location map).

1.2 1989 EXPLORATION PROGRAM AND METALLURGICAL TESTS

In 1989, an exploration program was performed on the Goldboro project. A total of 2,821.52 meters were drilled before the middle of May. (A previous report describes progress on the exploration program as of April 30, 1989.) In all, twenty-six new holes were drilled. At the same time, core from several holes was sent to two different laboratories for metallurgical testing. The reason for these tests was that a sampling of the muck from the 1988 developments had been tested in a pilot mill after being subjected to atomic absorption analysis. An enrichment factor of 1.66 had been noted

between the assays and the mill test, which had produced a grade of 3.3 g/mt. The data lead us to think that an analytical problem existed, so four holes were selected for complete testing at the Centre de recherche minérales (C.R.M.). The test consisted to mill 100 % of the core sended to the pilot mill and representing the milling of 194 kg (BR-61) to 440 kg (BR-35A) of ore material for each hole.



ST-MICHEL GEOCONSEIL Inc.

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Goldboro Project

COMPILATION AND LOCATION MAP

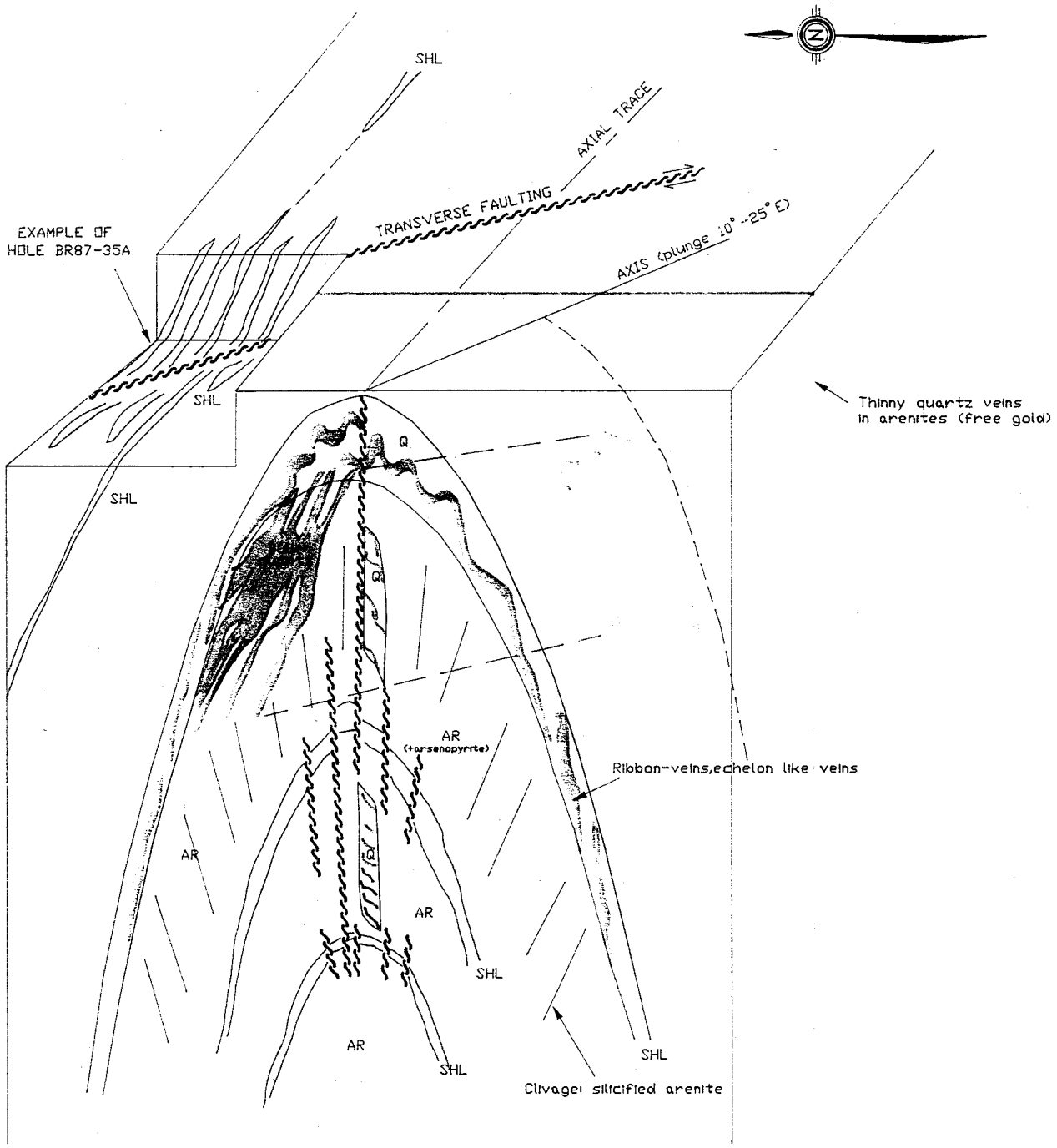
FIGURE 1

Drawn by: J.St-G.
Verified by: G.P.

Scale: 1:5000
August 1989

Holes BR-35A, BR-48, BR-60 and BR-62 were tested first, over lengths varying between 102.57m (BR-48) and 123.86m (BR-62) and included the total core (arenites included) between belts N1 and N5 (BR-48, BR-60 and BR-62), and total core of East Gold Brook belts intersected (BR-35A) near the surface. Preliminary assays were obtained along the entire length by conventional atomic absorption method. Later, each hole was tested separately at the pilot mill (see report by Jean Dionne and Robert Vachon on this subject), with very impressive results. The average grade of each of these holes was 2.78 for BR-35A, 12.59 for Br-48, 18.20 for BR-60 and 28.07 g/mt for BR-62, compared with generally greatly inferior grades for the samples analyzed in the assay lab: 3.51, 0.91, 0.72, and 1.48g/mt respectively (analyzed feed). In view of these impressive results, two other holes were "milled", with even tighter controls: BR-61 over 72.81 m (194 kg) and BR-85 over 105.96 m (264 kg). The results were just as encouraging: 4.25 and 10.63g/mt respectively. In addition, for hole BR-85, we took care to separate the batches containing visible gold from those which did not. A total of 5.64m containing visible gold returned 102.49g/mt, and the rest of the core produced 5.05 g/mt for a general average for the hole of 10.63 g/mt.

Since these tests were done, hole BR-93 was also tested at the Centre de recherches minérales (C.R.M.) for a gold liberation test and two holes, BR-52 and BR-65, were sent to the Lakefield Research Laboratory. The two holes were treated differently, having been subdivided into batches to set the ore-bearing segments apart from the barren. Hole BR-52 was divided into four batches and hole BR-65 into five different batches which separated the "belts" from the arenite. The results, although not yet final, are a little disappointing, but already enable us to establish that the arenites are low grade to barren, just as the assays and our geological interpretation had seemed to indicate. The grades obtained in the "belts" were relatively low compared to what everyone expected. We will nevertheless use the results obtained to date to estimate the grade of the ore.



SHL AURIFEROUS SHALE UNIT

QUARTZ VEINS

AR ARENITE

FAULT AND FRACTURES ZONES

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SCHEMATIC DIAGRAM OF DISTRIBUTION OF ORE ZONES

FIGURE 2

Drawn by: J.St-G.

Verified by: C.P.

August 1989

2. COMMENTS ON THE METALLURGICAL TESTS AND INTERPRETATION

The preceding paragraphs briefly describe some of the results of the metallurgical tests, which are very different from those of the atomic absorption analysis and the fire assay on the drill holes (see report by Guy Parent and Robert Éthier, May 1989). The metallurgical tests executed on the core are the more reliable information we can use because the tests consisted in the milling of 100 % of the material of the core. For example, the grade obtained (28.07 g/t) on hole BR-62 has been produced on a sample of 333 kg (coming from 123.86 m of core). The grade represents a calculated feed and has the same significance than what a mill would have done. In comparison, for the same hole, the assay results are based on individuals samples of approximately 1.5 m of core for a maximum of 83 samples for hole BR-62. On each sample, only a 30 g (29.167 g) is analysed for 1 Assay ton fire assay (5 g for atomic absorption). In total, a maximum of 2.49 kg of core material is analysed, representing minus than 1 % of the material. The atomic absorption assays would represent the assaying of approximately 0.12 % of the core. The representativity of the assays can be very poor for the type of orebody than Goldboro is. Coarse gold occurence can be hardly estimated by very limited samples as A.A and even fire assays. The probability to get a gold grain in an assay are very poor and that's what would explain the difference between the milling and the assays.

The grades obtained from the C.R.M., over appreciable lengths were used as the basis for the bulk mining exploitation model. The internal dilution, although appreciable, is compensated for by the high grades obtained in the shale and quartz units. But in light of the new results and following several underground visits, we think that we are in the presence of a combination of a stratigraphic and structural controls. First, the gold-rich units are for the most part confined to the shale-slate belts, with the exception of certain quartz veins which intersect the different stratigraphic units. Secondly, a vertical structural control system exists in the heart of the anticlinal and is represented

by fracture zones along which the units were displaced slightly in response to tectonic constraints. These structural zones are mainly located in the axial zone and are taken up by "schistose" rocks similar to shale. These often contain quartz lenses in echelon with a slight dip (see figure 2). These zones rarely show good continuity and are often confined within an arenite unit.

This latest structural interpretation may help to understand the results from the C.R.M. and explains the high grades. The holes will have a tendency to follow the zones of vertical weakness and give a wrong idea of the thickness of the real stratigraphic shale units. High grades could be obtained, but may not be applicable to large volumes. Despite this fact, those vertical weak zones are scarcely distributed, of limited widthness and of limited vertical extent. A individual hole cannot follow one of those structures for more than a 5 m.

Among the drill core sent to the C.R.M., it is especially the core taken directly on the apex which may have intersected these zones. Despite this, the assay problem remains intact, since the analyzed grade remains low (in comparison with metallurgical tests) even in the case of the holes which would have follow the enriched vertical zones.

The professionals at the C.R.M. think these differences are associated with a problem of coarse gold. The analyses bring this out rather clearly, with very large variations (see report by Jean Dionne and Robert Vachon, June 1989).

Holes BR-62, BR-60, BR-61 and BR-48 were all drilled vertically, whereas hole BR-35A was drilled on the south limb with a sharp dip to the north, at 80m to the south of the axis, close to the surface, and intersects a series of shale units intercalated with bands of arenite, in a proportion of about 50-50, they represent the East Gold Brook belts overlying the Boston-Richardson belt. A 103.67m length of this hole produced a grade of 2.78 g/mt when put through the pilot mill. The analyzed feed gave 3.5 g/mt. This is one of the only tests where both grades are so close. This hole was a big surprise, because

it had never been assayed before and was considered entirely barren. These new results show that the background grade of a quartz-free sequence containing piles of arenite and shale in a proportion of 50-50 can be equivalent to 2.80 g/mt. The assay results, in accordance with the calculated feed at the pilot mill, indicate than this sequence is probably characterised by a finely disseminated gold distribution.

Hole BR-85 is also very interesting since it intersects both sides of the fold and was drilled at an angle of 70° . Shale units account for a large percentage of this hole, which contained six occurrences of free gold. The free gold-containing samples were treated separately from the rest by gravimetric method. The rest of the hole, i.e., 100.32 m of core, gave a grade of 5.05 g/mt at the pilot mill. The feed analyzed had only given 0.52 g/mt ± 7.82 g/mt. The average grade of the 5.64m containing visible gold reached 102.49 g/mt. It therefore appears that the highly gold-enriched zones are relatively small. Our field observations lead us to think that coarse gold is almost always concentrated in a sheet less than 1 cm wide at the contact points between quartz veins and shale. What we have to determine now is the frequency of the grains of coarse visible gold and the average grade of the fine gold-containing shale, which is over 5 g/mt in the hole BR-85. In this latest case the fine non-visible gold giving an average of 5.0 g/mt has not been reproduced by assay results, which missed the gold.

3. METHODOLOGY OF THE ORE RESERVES CALCULATIONS

As explained earlier in this report, two different types of information are available at present, metallurgical test and assay results, which give very different grades for the same drill hole. For reserve calculation purposes, we gave priority to the metallurgical test results, which should be closer to reality than the samples subjected to fire or atomic absorption analysis, which are simply estimates on a very small part of the core (maximum 30 g per 2 kg).

The present calculations concern the ore reserves accessible where a maximum of highly reliable information is available due to the underground openings made on two levels (38 m and 76 m) in 1988. Moreover, the author produced the reserves calculations with a view to possible exploitation by the bulk mining method. This method is possible in the view of the results from the C.R.M. We will be able to apply the bulk mining method in the surrounding belts, if future results support such a grade in the extension of the one already defined.

The general parameters for calculating the reserves are the following:
Density (specific gravity) = 2.70 g/mt
Minimum cut-off grade = 3.00 g/mt
Maximum cut-off grade = 34.00 g/mt

Two reserve categories have been defined: probable and possible reserves, and an internal dilution has been estimated on reserve blocks which do not show a minimum grade of 3.00 g/mt.

The probable reserve category concerns the blocks which are cut through by at least one drill intersection or drift. The outside limit of a block is a maximum distance of 15 m from the information on the section, and 12.5 m, on the lateral (east-west) extension.

The possible category includes the extensions of probable blocks. The maximum distance from an information is generally 30 m, on the section, and 25 m, on the lateral (east-west) extension.

The blocks were divided up to be classified level by level, in order to make stope planning easier. The block numbers shown on the following tables were established as follows: first, each sequence of blocks is related to its section (which explains why the figures are repeated from one section to the next). The numbers can be broken down into three parts: an alphanumeric unit showing the lithological unit concerned (N1, for example); a second unit showing the level, level 2 or 3 (N1-2 or N1-3, for example); and finally, the block number corresponding to a unit on a level: N1-2-1, then N1-2-2, etc.

The reserve calculations are limited to a section measuring 137.5 meters laterally centered over the ramp area(see figure 3). It therefore concerns about 15% of the entire orebody as explored by drilling, but for which analyses either have not been done or are unreliable or incomplete.

4. RESULTS

The reserve calculation results are presented below as tables 1 to 5. Table 1 is a summary of the calculations. A total of 1,070,000[1] metric tons is estimated for the part of the ramp made up of four different blocks which could eventually be stoped. The table

[1] Rounded-out to take into account the significant numbers.

presents the grades on two columns: the first represents 100% of the gross grades obtained by the C.R.M. or by laboratory analysis (Chimitec or Assayer's), while the second, cut at 34.0 g/mt represents the cut grade of the assays.

TABLE 1
SUMMARY OF THE ORE RESERVES CALCULATION-RAMP AREA
GOLDBORO PROJECT, EXPLORATION OREX INC.

	PROBABLE			POSSIBLE			INTERNAL DILUTION		
	Metric Tons	Grade(g/mt) UNCUT	CUT	Metric Tons	Grade(g/mt) UNCUT	CUT	Metric Tons	Grade(g/mt) UNCUT	CUT
STOPE 2-1	133704	17.69	17.30				91747	0.69	0.69
STOPE 3-1	109973	21.15	21.15	24598	11.78	11.61	176604	0.20	0.20
STOPE 2-3	48867	12.59	12.59				197524	0.35	0.35
STOPE 3-3	60162	12.59	12.59				225368	0.49	0.49
	PROBABLE RESERVES			POSSIBLE RESERVES			INTERNAL DILUTION		
SUB-TOTAL	352706	17.2	17.0	24598	11.78	11.61	691243	0.40	0.40

GRAND TOTAL: **1068547** METRIC TONS **6.2** G/T UNCUT **6.2** G/T CUT

We know from the information obtained to date that the arenites cannot support economic grades. For the holes treated at the C.R.M., the grade obtained should represent the average grade of the shale units diluted with arenites that are considered barren, at 0.0 g/mt. Even if some arenites sequences support a grade of more than 0.50 g/tmt. But, the type of test performed at the C.R.M. does not tell us if one gold-bearing structure is richer than another and gives no such detailed information. This is why we have always used the average grade of the hole in the reserves calculations.

In the ore reserves defined, the stope 2-1 is the block of reserves that contains more information than any other (see figure 3; longitudinal view, and figures 4, 5, 6, and 7). Underground holes, surface diamond drilling and underground workings have helped to define those reserves. With reserves of 225451 metric tons and a grade between 10.77 and 10.54 g/mt(table 2), it constitute the best block of reserves and the more accessible. A production schedule should start with this stope centered on the N1 belt, one of the high grade and large volume belt already defined previously(Parent and Ethier, may 1989).

STOPE 2-3

STOPE 2-1

BR87-48 CRM

BR88-66

BR88-55

BR88-62 CRM

BR87-34

BR88-65 LAKEFIELD

38.1m

125 x/c

BR88-68

BR88-67

BR88-60 CRM

BR87-21A

BR88-82

BR88-51

BR87-50

56.57

BR87-36

250 x/c

76.2m

UG88-03

UG88-02

BR88-64

Ps Ps Ps

BR87-36

Ps Ps Ps

4900

115.5m

STOPE 3-2

STOPE 3-1

SCALE 1:500

0 10 20m

8800 E

LEGEND

Block limits

Ps Possible reserves

Metallurgical test

8625 E 8650 E 8675 E 8700 E 8725 E 8750 E

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Goldboro Project

LONGITUDINAL VIEW LOOKING NORTH
OF THE UNDERGROUND WORKINGS AND
D.D.H. WITH BLOCK RESERVES OUTLINE

FIGURE 3

Drawn by: J.St-C.
Verified by: C.P.

August 1989

TABLE 2

Descriptive Table of Reserves of Stope 2-1

SPECIFIC GRAVITY= 2.70

BLOCKS NB#	HOLES NB#	CATEGORIES OF RESERVES	SURFACE (M2)	THICKNESS (M)	METRIC TONS	GRADE(G/T) UNCUT	GRADE(G/T) CUT	LABORATORY
N1-2-1	BR-62,36,Gal	PB	847.58	25.00	57,212	28.07	28.07	CRM
A2-2-1	BR-62	PB*	227.97	25.00	15,388	28.07	28.07	CRM
N1-2-1	BR-34	PB	793.17	18.75	40,154	2.57	1.27	F.A OR A.A.-1.27 coupé
A1-2-1	BR-34+APEX 250	PB	63.12	18.75	3,195	3.30	3.30	CRM
N1-2-2	BR-60	PB	618.35	6.25	10,435	18.20	18.20	CRM
N1-2-3	G2-APEX	PB	433.76	6.25	7,320	3.30	3.30	CRM
ıt contain gold , see text for more details								
	SUB-TOTAL OF PROBABLE RESERVES OF STOPE 2-1				133,704	17.69	17.30	
INTERNAL DILUTION								
N1-2-2	BR-50	PB	608.25	18.75	30,793	0.21	0.21	F.A OR A.A.
N1-2-1	BR-65+TB250	PB	1382.61	12.50	46,663	0.83	0.83	65-2,65-3 LAKEFIELD
N1-2-2	TB250	PB	249.39	12.50	8,417	1.02	1.02	CRM
N1-2-1	BR-21A	PB	348.13	6.25	5,875	1.65	1.65	F.A OR A.A.
	SUB-TOTAL OF INTERNAL DILUTION				91,747	0.69	0.69	
	TOTAL OF RESERVES OF STOPE 2-1				**225,451**	**10.77**	**10.54**	

TABLE 3

Descriptive Table of Reserves of Stope 3-1

SPECIFIC GRAVITY= 2.70

SECTION	BLOCKS NB#	HOLES NB#	CATEGORIES OF RESERVES	SURFACE (M2)	THICKNESS (M)	METRIC TONS	GRADE(G/T) UNCUT	GRADE(G/T) CUT	LABORATORY
8712.5E	A2-3-2	BR-62	PB*	641.83	25.00	43,324	28.07	28.07	CRM
	N4-3-1	BR-62	PB	387.07	25.00	26,127	28.07	28.07	CRM
8750E	N1-3-1	TB250	PB	166.34	12.50	5,614	3.30	3.30	CRM
	N1-3-3	TB250+BR-65	PB	304.44	12.50	10,275	3.30	3.30	CRM
	N4-3-1	BR-65	PB	154.4	12.50	5,211	2.74	2.74	65-4 LAKEFIELD
8762.5E	N1-3-1	G2-APEX	PB	175.26	6.25	2,958	3.30	3.30	CRM
	A1-3-1a	BR-60	PB*	996.2	6.25	10,087	18.20	18.20	CRM
	N1-3-2	BR-60	PB	267.99	6.25	4,522	18.20	18.20	CRM
	N3-3-1a	BR-60	PB	549.84	6.25	1,856	18.20	18.20	CRM
SUB-TOTAL OF PROBABLES RESERVES OF STOPE 3-1						109,973	21.15	21.15	
8737.5E	N1-3-1	BR-34	PS	62.31	18.75	3,154	2.57	1.27	F.A OR A.A.-1.27 coupé
8750E	N1-3-5	TB250	PS	216.17	12.50	7,296	3.30	3.30	CRM
8762E	A1-3-1b	BR-60	PS		6.25	6,725	18.20	18.20	CRM
	N3-3-1b	BR-60	PS		6.25	7,423	18.20	18.20	CRM
SUB-TOTAL OF POSSIBLES RESERVES OF STOPE 3-1						24,598	11.78	11.61	
INTERNAL DILUTION									
8712.5E	N1-3-1	BR-67	PB	256.94	25.00	17,343	0.52	0.52	F.A OR A.A.
	A2-3-3	BR-67	PB	341.58	25.00	23,057	0.02	0.02	F.A OR A.A.
8737.5E	A2-3-1	BR-34	PB	579.16	18.75	29,320	0.14	0.14	F.A OR A.A.
	A2-3-2	BR-50	PB	124.19	18.75	6,287	0.00	0.00	NO SAMPLE
	A1-3-1a	BR-50	PB	896.51	18.75	27,231	0.03	0.03	F.A OR A.A.
	A1-3-1b	BR-34	PS			18,154	0.03	0.03	F.A OR A.A.
	N1-3-2	BR-50	PB	91.78	18.75	4,646	0.21	0.21	F.A OR A.A.
	N4-3-1	BR-34	PB	149.09	18.75	7,548	0.59	0.59	F.A OR A.A.
8750E	A1-3-1	BR-65	PB	712.7	12.50	24,054	0.04	0.04	65-3 LAKEFIELD
	A1-3-2	BR-64	PB	344.05	12.50	11,612	0.36	0.36	F.A OR A.A.
	N1-3-2	BR-64	PB	217.84	12.50	7,352	1.22	1.22	F.A OR A.A.
SUB-TOTAL OF INTERNAL DILUTION						176,604	0.20	0.20	
TOTAL OF RESERVES OF STOPE 3-1						**311,175**	**8.52**	**8.50**	

TABLE 4

Descriptive Table of Reserves of Stope 2-3

SPECIFIC GRAVITY= 2.70

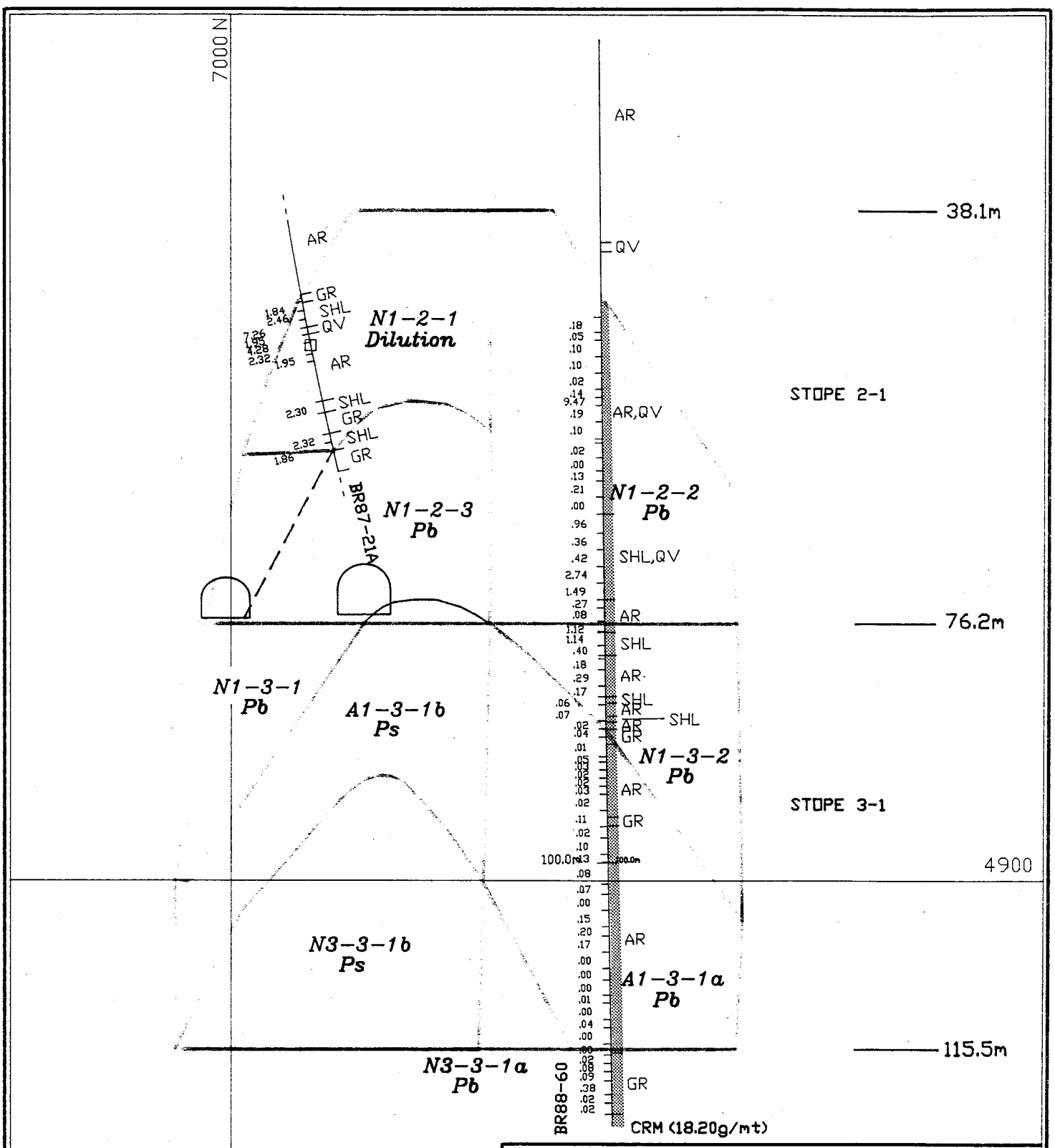
SECTION	BLOCKS NB#	HOLES NB#	CATEGORIES OF RESERVES	SURFACE (M2)	THICKNESS (M)	METRIC TONS	GRADE(G/T) UNCUT	GRADE(G/T) CUT	LABORATORY
8662.5E	N1-2-1	BR-48	PB	282.21	25.00	19,049	12.59	12.59	CRM
	A1-2-1	BR-48	PB*	208.81	25.00	14,095	12.59	12.59	CRM
	N2-2-1	BR-48	PB	53.47	25.00	3,609	12.59	12.59	CRM
	A2-2-1	BR-48	PB*	179.47	25.00	12,114	12.59	12.59	CRM
SUB-TOTAL PROBABLES RESERVES STOPE 2-3						48,867	12.59	12.59	
INTERNAL DILUTION									
8625E			PS		6.25	24,112	0.00	0.00	NO SAMPLE
8637.5E			PS		12.50	67,959	0.73	0.73	F.A OR A.A.
8650E			PS		6.25	21,390	0.00	0.00	NO SAMPLE
8662.5E	N1-2-2	BR-66	PB	524.33	25.00	35,392	0.41	0.41	F.A OR A.A.
	A1-2-2	BR-66	PB	211.82	25.00	14,298	0.00	0.00	NO SAMPLE
8687.5E	N1-2-1	BR-51	PB	178.73	10.00	4,826	0.81	0.81	F.A OR A.A.
	N1-2-2	BR-55	PB	226.35	10.00	6,111	0.00	0.00	NO SAMPLE
	A1-2-1	BR-51	PB	254.08	10.00	6,860	0.04	0.04	F.A OR A.A.
	A1-2-2	BR-55	PB	613.91	10.00	16,576	0.00	0.00	NO SAMPLE
SUB-TOTAL OF INTERNAL DILUTION						197,524	0.35	0.35	
TOTAL OF RESERVES OF STOPE 2-3						**246,391**	**2.77**	**2.77**	

TABLE 5

Descriptive Table of Reserves of Stope 3-3

SPECIFIC GRAVITY= 2.70

SECTION	BLOCKS NB#	HOLES NB#	CATEGORIES OF RESERVES	SURFACE (M2)	THICKNESS (M)	METRIC TONS	GRADE(G/T) UNCUT	GRADE(G/T) CUT	LABORATORY
8662.5E	A2-3-1	BR-48	PB	85.73	25.00	5,787	12.59	12.59	CRM*-12.59
	N4-3-1	BR-48	PB	262.85	25.00	17,742	12.59	12.59	CRM
	A4-3-1	BR-48	PB	542.71	25.00	36,633	12.59	12.59	CRM*-12.59
SUB-TOTAL OF PROBABLE RESERVES OF STOPE 3-3						60,162	12.59	12.59	
INTERNAL DILUTION									
8625E			PS		6.25	36,168	0.00	0.00	NO SAMPLE
8637.5E			PS		12.50	101,939	0.73	0.73	F.A OR A.A.
8650E			PS		6.25	32,085	0.00	0.00	NO SAMPLE
8662.5E	A1-3-1	BR-66	PB	278.44	25.00	18,795	0.00	0.00	NO SAMPLE
	N4-3-2	BR-66	PB	262.99	25.00	17,752	2.06	2.06	F.A OR A.A.
	A4-3-2	BR-66	PB	276	25.00	18,630	0.00	0.00	F.A OR A.A.
SUB-TOTAL OF INTERNAL DILUTION						225,368	0.49	0.49	
TOTAL OF RESERVES OF STOPE 3-3						**285,530**	**3.04**	**3.04**	



SCALE 1:500

0 10 20m

LEGEND

- Block limits
- *A2-3-3* Block number
- *Pb* Probable reserves
- *Ps* Possible reserves
- ( ) Not included in the reserves
- Metallurgical test

ST-MICHEL GEOCONSEIL

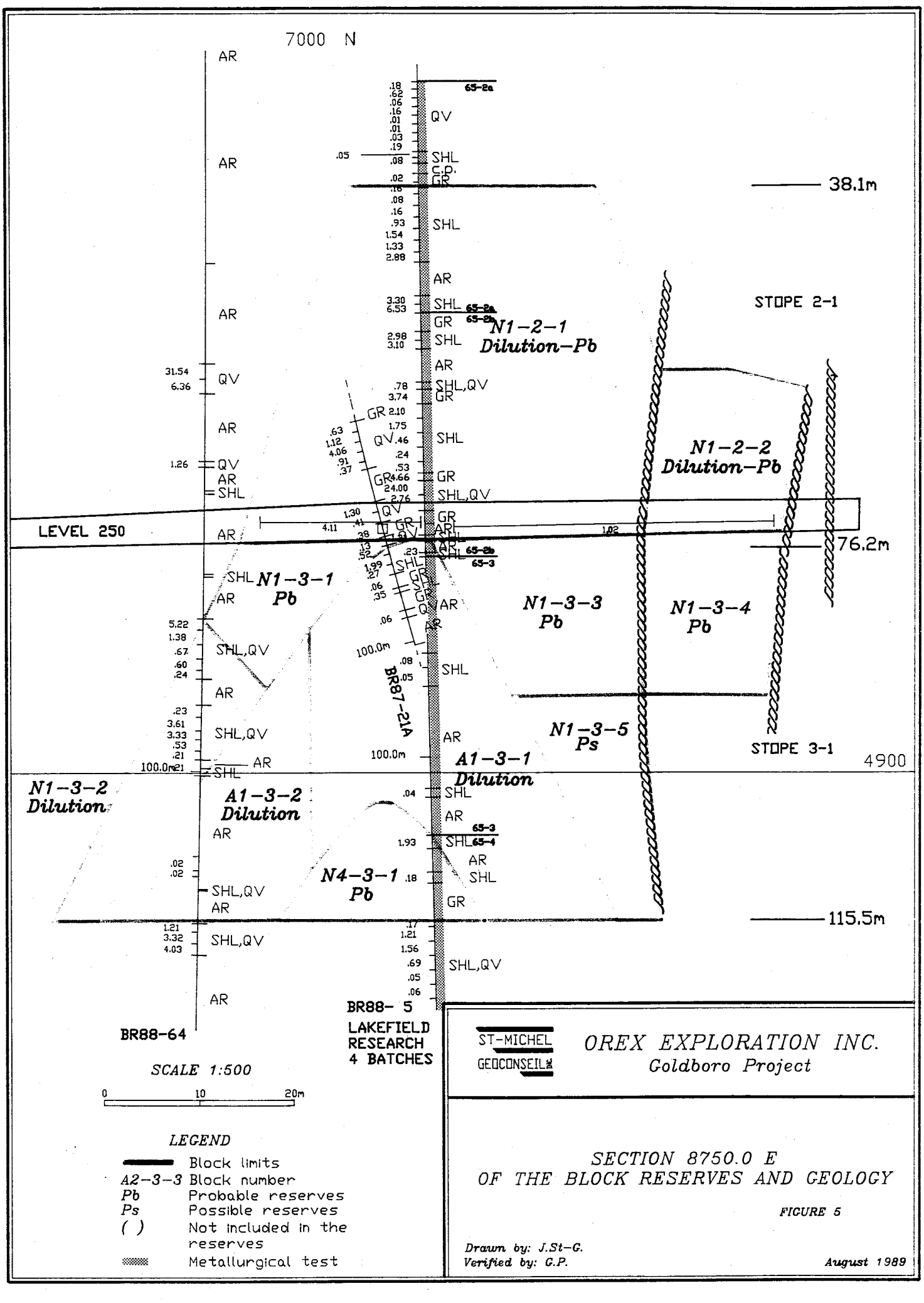
OREX EXPLORATION INC.
Goldboro Project

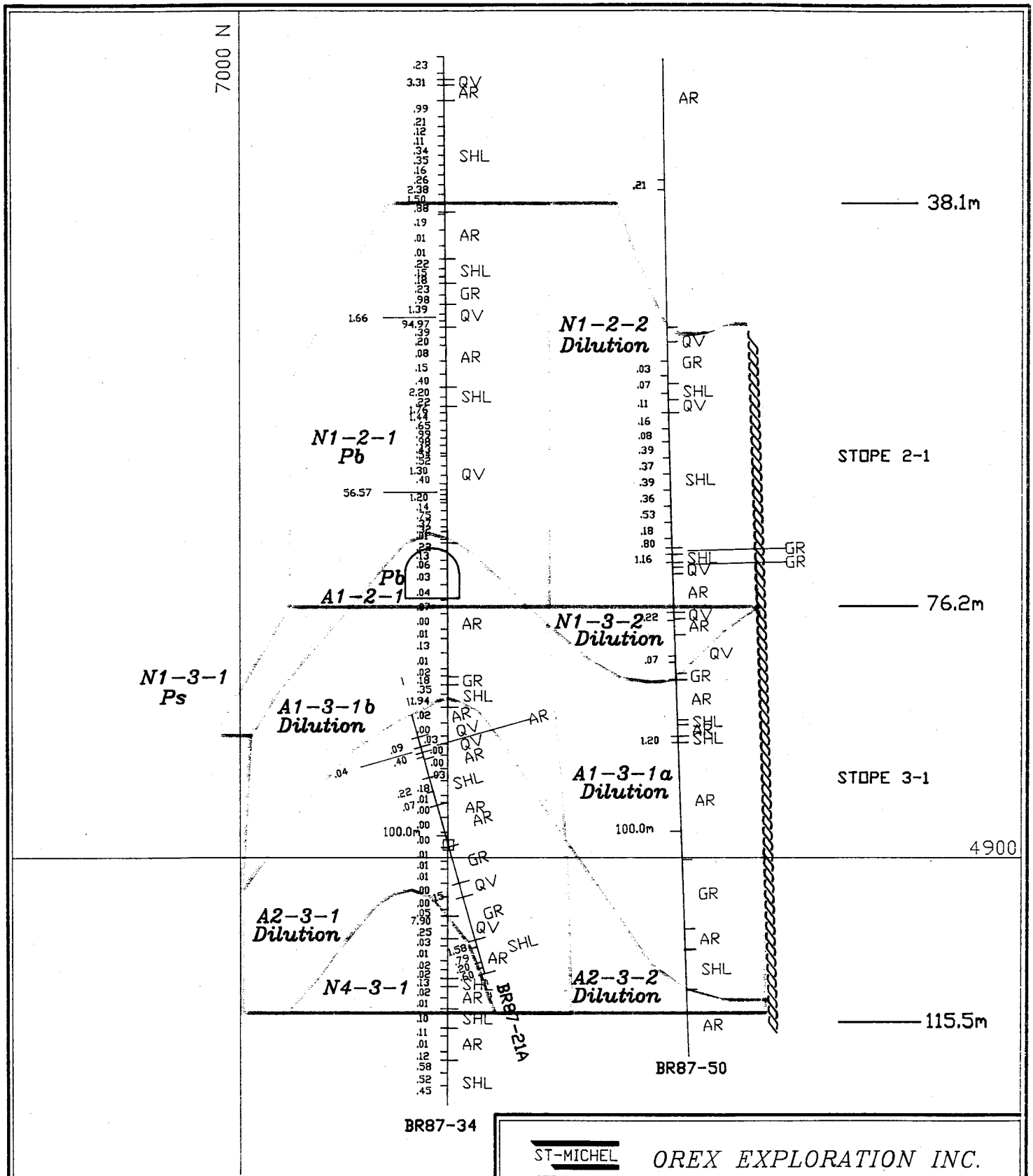
SECTION 8762.5 E
OF THE BLOCK RESERVES AND GEOLOGY

FIGURE 4

Drawn by: J.St-G.
Verified by: C.P.

August 1989


7000 N
38.1m
76.2m
115.5m
LEVEL 250
4900
STOPE 2-1
STOPE 3-1
N1-2-1
Dilution-Pb
N1-2-2
Dilution-Pb
N1-3-1
Pb
N1-3-2
Dilution
N1-3-3
Pb
N1-3-4
Pb
N1-3-5
Ps
A1-3-1
Dilution
A1-3-2
Dilution
N4-3-1
Pb
BR87-21A
BR88-64
BR88- 5
LAKEFIELD
RESEARCH
4 BATCHES
SCALE 1:500
0 10 20m
LEGEND
Block limits
A2-3-3 Block number
Pb Probable reserves
Ps Possible reserves
( ) Not included in the reserves
Metallurgical test
ST-MICHEL GEOCONSEIL
OREX EXPLORATION INC.
Goldboro Project
SECTION 8750.0 E
OF THE BLOCK RESERVES AND GEOLOGY
FIGURE 5
Drawn by: J.St-G.
Verified by: G.P.
August 1989



ST-MICHEL GEOCONSEILS

OREX EXPLORATION INC.

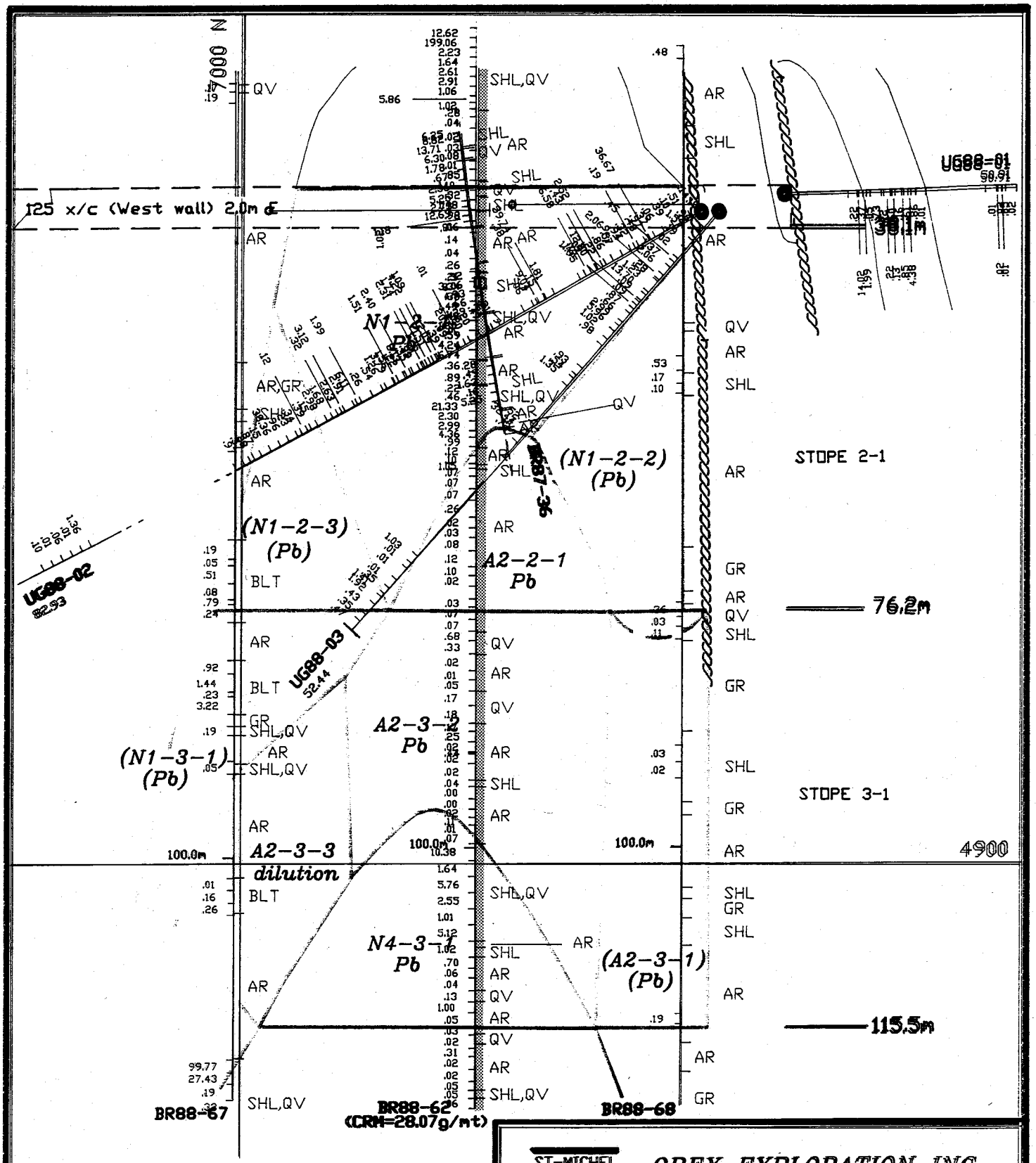
Goldboro Project

SECTION 8737.5 E
OF THE BLOCK RESERVES AND GEOLOGY

FIGURE 6

Drawn by: J.St-C.
Verified by: C.P.

August 1989



ST-MICHEL GEOCONSEIL

OREX EXPLORATION INC.

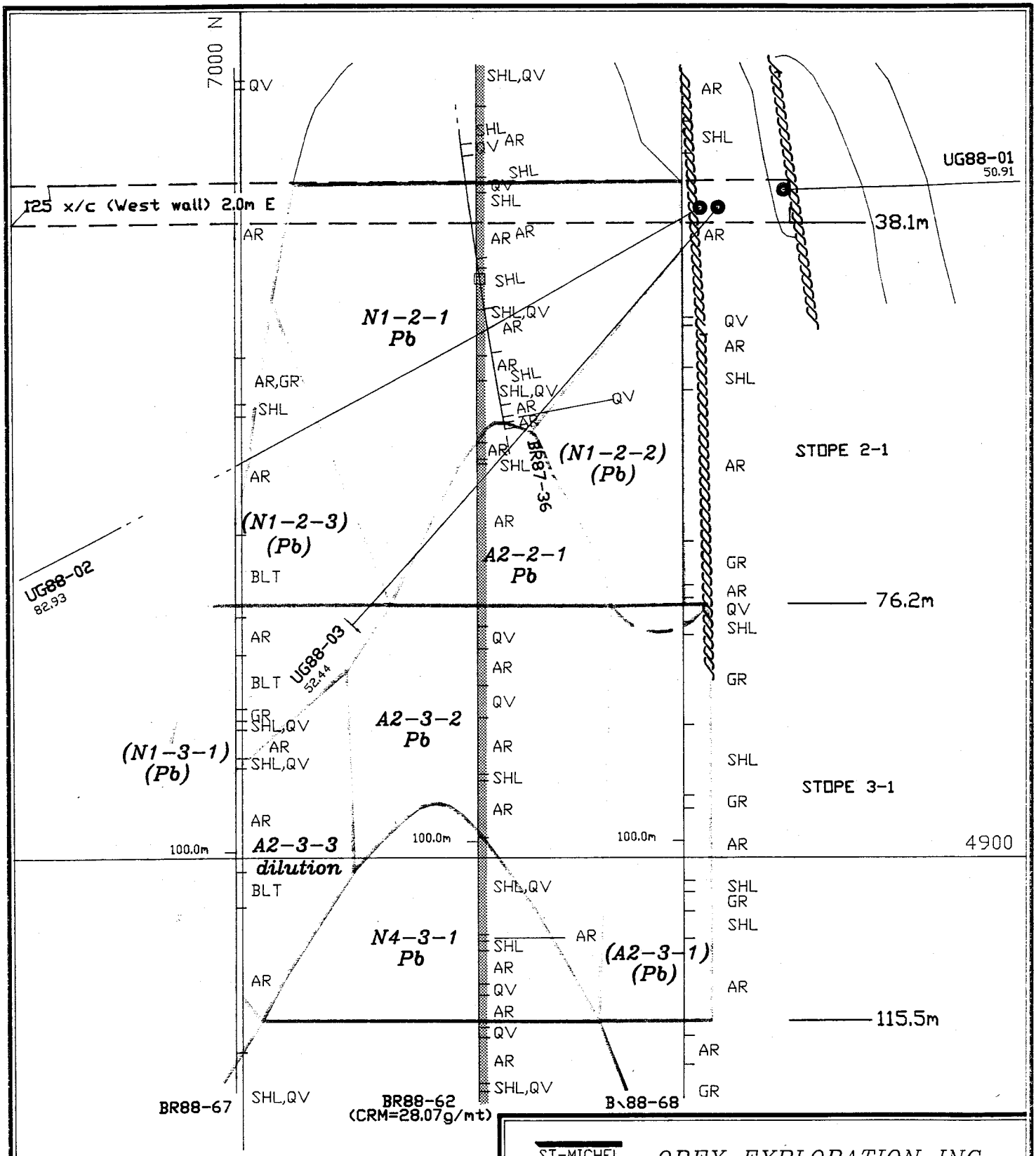
Goldboro Project

TYPSECTION N2.87E2.5 E
OF THE BLOCK REVELSAND GEOLOGY

FIGURE 7

Drawn by: J.St-G.
Verified by: C.P.

August 1989



ST-MICHEL GEOCONSEIL

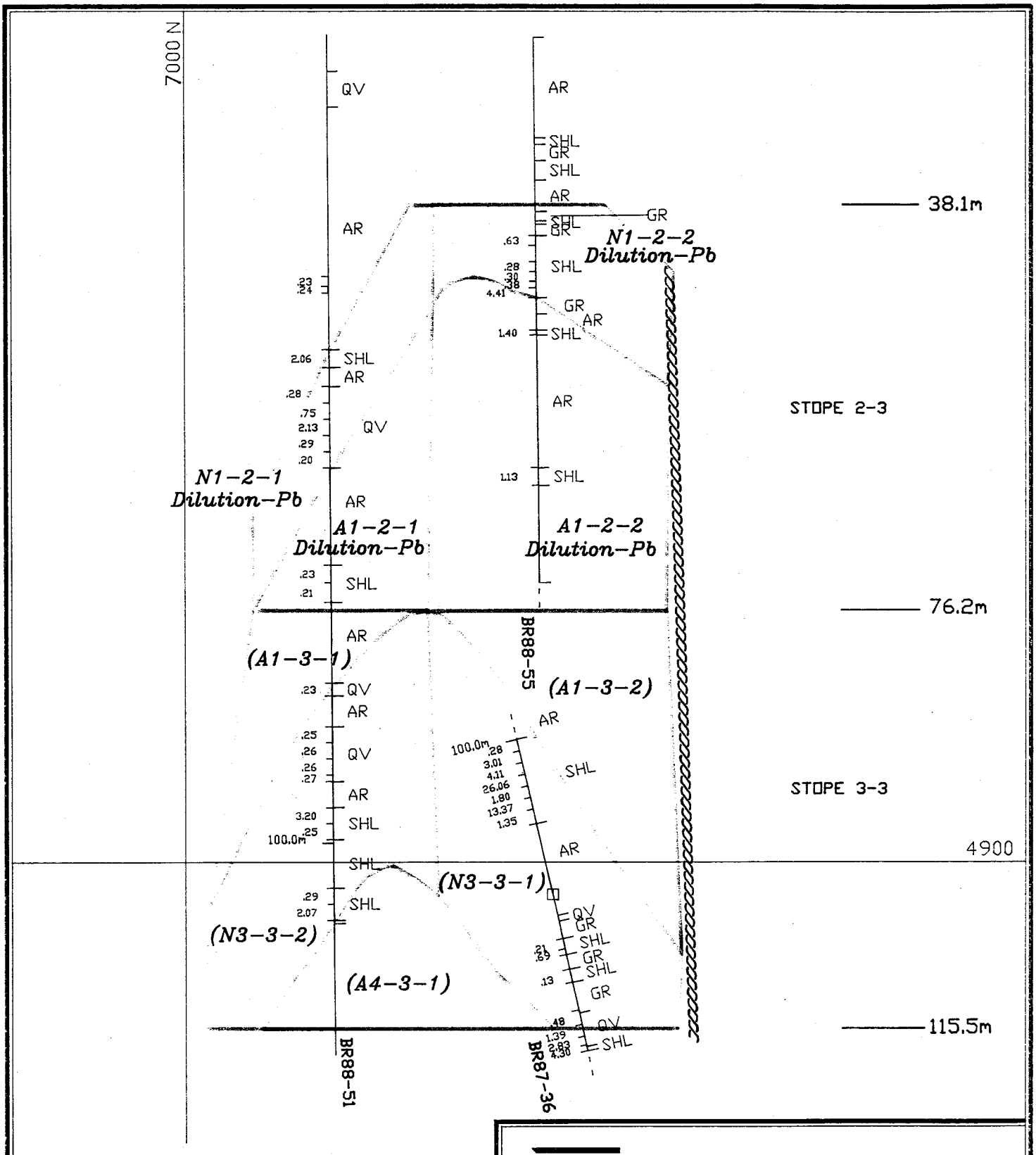
OREX EXPLORATION INC.
Goldboro Project

TYPICAL SECTION 8712.5 E
OF THE BLOCK RESERVES AND GEOLOGY

FIGURE 7

Drawn by: J.St-C.
Verified by: C.P.

August 1989



SCALE 1:500

0 10 20m

LEGEND

- Block limits
- *A2-3-3* Block number
- *Pb* Probable reserves
- *Ps* Possible reserves
- ( ) Not included in the reserves
- Metallurgical test

ST-MICHEL GEOCONSEIL

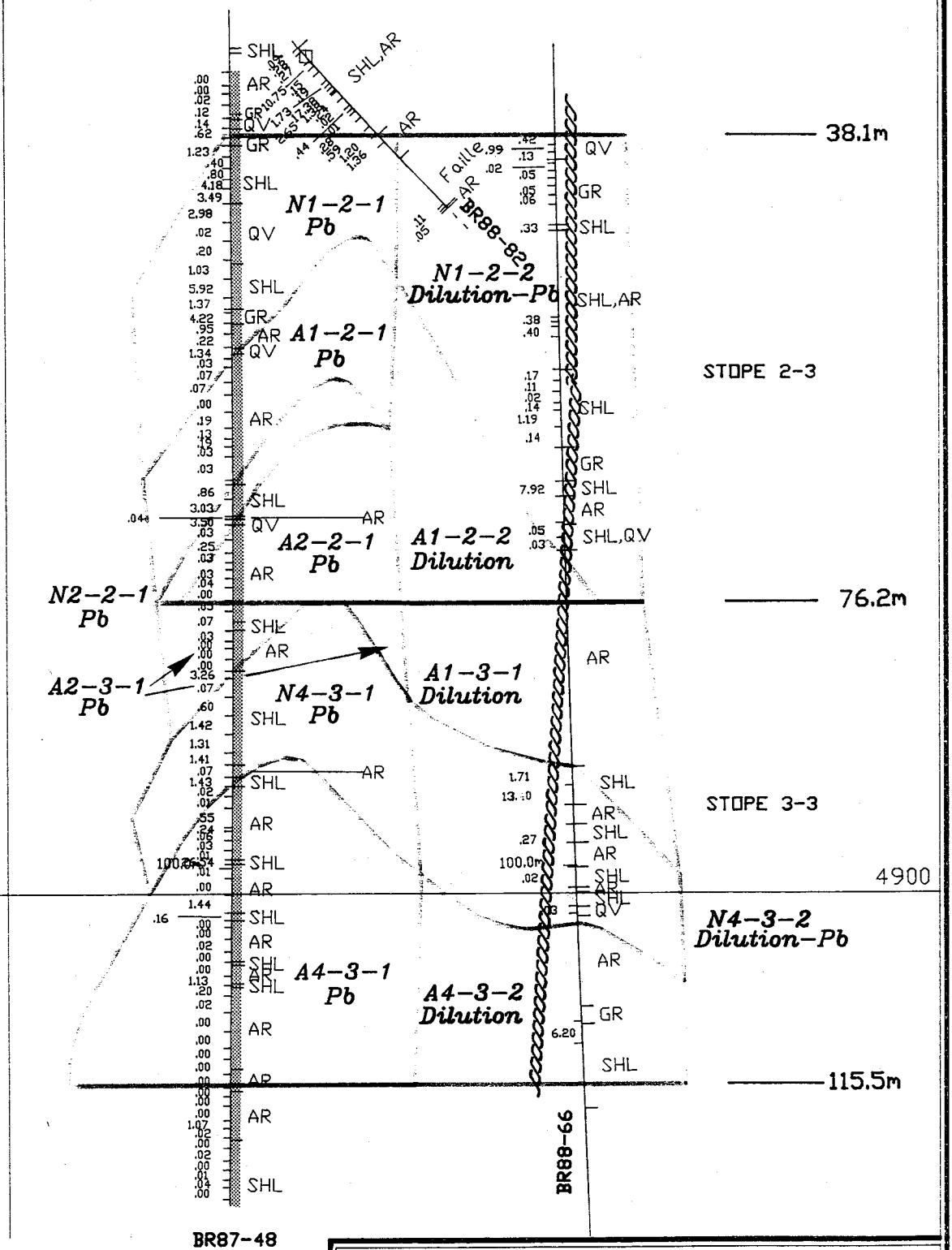
OREX EXPLORATION INC.
Goldboro Project

SECTION 8687.5 E
OF THE BLOCK RESERVES AND GEOLOGY

FIGURE 8

Drawn by: J.St-G.
Verified by: C.P.

August 1989



SCALE 1:500

0 10 20m

LEGEND

- Block limits
- *A2-3-3* Block number
- *Pb* Probable reserves
- *Ps* Possible reserves
- ( ) Not included in the reserves
- Metallurgical test

ST-MICHEL GEOCONSEIL

OREX EXPLORATION INC.
Goldboro Project

SECTION 8662.5 E
OF THE BLOCK RESERVES AND GEOLOGY

FIGURE 9

Drawn by: J.St-G.
Verified by: G.P.

August 1989

4. CONCLUSIONS AND RECOMMENDATIONS

The Goldboro project contains several layers of gold-bearing structures containing both coarse and fine gold. The distribution of the gold and the grades are still relatively little-known.

The reserves estimate calculations in this report are based on the better-known gold-bearing structures, belt N1 in particular, which has a high volume and good grade. They are based on the validity of the results obtained to date and are limited to these results.

The average grade of the accessible orebody, presently evaluated at 1,070,000 metric tons, is 6.2 g/mt. We recommend that the following steps be taken in order to better define the grade:

1- analysis if the existing drill core be completed;

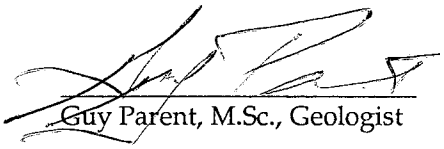
2- drifts be driven on the two existing levels for systematic underground drilling at a maximum spacing of 12.5m in three dimensions;

3- a large bulk sample be done on a representative portion of the reserves in order to do a complete mill test.

The reserves have been calculated on 15% of all drill holes. The potential of this property remains excellent, since coarse gold-bearing structures have been followed along the entire length of the orebody.

We therefore recommend that work continue on this orebody.

Respectfully yours,



Guy Parent, M.Sc., Geologist

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DIONNE, J. et R. VACHON, 1989. Détermination de la teneur en or de six lots de minerai. Essais de cyanuration en charge, propriété Goldboro. Rapport final, le 29 juin 1989, Centre de Recherches Minérales, Projet 88 UP 35, pour le Groupe minier Morisco.

PARENT, G. and D. ADAM, 1989. Progress Report on Goldboro Project. Works performed until the 31 th december 1988. St-Michel Géoconseil inc ,submitted to Exploration Orex.

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Nova Scotia
Department of
Mines and Energy

Report of Work Performed

RECEIVED
Nov 23 13 19 '89
MINES
AND ENERGY

I, the undersigned, holder of/agent for, Exploration License No. 0114 issued on the 29th day of November 19 88, hereby report work as follows:

I have, under said License, and in conformity with the provisions of The Mineral Resources Act, performed or caused to be performed on the licensed area 129947 days' work (eight-hour days) not reported before, totalling $ 2,598,936. as per the attached list of expenditures. (Rate is one day's work for each $20.00 spent.)

Expenditures relating to office overhead, transportation, lodging, freight, express, construction of roads, erection of buildings, etc., will be accepted up to a maximum of ten percent (10%) of the **required** work.

The said work consisted of Diamond drill hole campaign and underground exploration program via a ramp, including dewatering and rehabilitation of the Boston-Richardson shaft; - underground drilling, - many metallurgic tests, - ore reserves calculation, - prefeasibility study.

Attached is a geological report with applicable maps, sample results, drill logs, etc., which is submitted as evidence and initialled by me.

My Post Office address is St-Michel Géoconseil inc. 209, 9th street, Rouyn-Noranda (Qc), J9X 2C1 Tel. No. (819) 797-1061

Dated this seventeenth day of november 19 89.

Signature of Licensee/Agent
Guy Parent for Muselta Thwaites

I hereby make oath and say that the above statement is true and correct.

Signature of Licensee/Agent
Michel Roy for Muselta Thwaites

Sworn to by Muselta Thwaites
at Halifax
in the County of Halifax

NAMES AND ADDRESSES OF MEN AND CONTRACTORS, WORK PERFORMED AND DATES OF THE SAID WORK

NAME	ADDRESS	TYPE OF WORK	DATES
Dave Hatchette	18 Glenair Estates Antigonish County N.-S. B2G 2L4	Exploration geologist underground follow up	dec.88-jan.89
Dave Hatchette	same	Exploration geologist D.D.H. Campaign	jan.89-may 89
Dave Hatchette	same	Exploration geologist Sampling program	may 89-nov.89
Pat Campbell	P.O.Box 640 Port Hawkesbury N.-S. B0E 2V0	Exploration geologist D.D.H. Campaign	march 89-may 89
Kenny Giffin	R.R.#1 Goldboro N.-S. B0H 1L0	Office clerk and core splitter	dec.88-may 89
Victor Bois	P.O.Box 1567 Pictou, N.-S. B0K 1H0	Surv. Underg.Developm. D.D.H. Campaign	dec.88-may 89
Pinkerton	P.O.Box99 Halifax, N.-S. B3J 2L4	Security	dec.88-may 89
Dynatec Mining Ltd.	10720 Yonge Street Richmond Hill Ontario L4C 3C9	Underground development maintenance on dewatering	dec.88-may 89
Ideal Drilling	P.O.Box40, Bathurst N.-B. E2A 3Z1	Underground drilling D.D.H. Campaign	dec.88-march 89
Watson Lands	R.R.# 1 Barneys River Pictou County N.-S. B0H 1A0	Line cutting Wood cutting	march 89-may89
Assayers Lmited	100 York Blvd. Suite 120 Richmond Hill, Ont. L4B 1J8	Assays	
Chimitec Ltd.	200 Nérée-Tremblay Sainte-Foy, Qué. G1N 4N7	Assays	

.../2

NAMES AND ADDRESSES OF MEN AND CONTRACTORS, WORK PERFORMED AND DATES OF THE SAID WORK

NAME	ADDRESS	TYPE OF WORK	DATES
Centre de Recher-	2700, Einstein Str.	Metallurcical tests	jan.89-nov.89
ches minérales du Québec	Sainte-Foy, Qué. G1P 3W8		
St-Michel Géoconseil Inc.	209, 9th Street Rouyn-Noranda Québec J9X 2C1	Supervision of Underground D.D.H.	dec.88-jan.89
St-Michel Géoconseil Inc.	209, 9th Street Rouyn-Noranda Québec J9X 2C1	Ore Research	jan.88-feb.89 march 89-aug.89
St-Michel Géoconseil Inc.	209, 9th Street Rouyn-Noranda Québec J9X 2C1	Metallurgical tests	jan.88-nov.89

TOTAL EXPENSES OF THE WORK PERFORMED IN 1989

DEVELOPMENT LICENSE NO. 0114- REFERENCE MAP 11F4D

OREX EXPLORATION INC.-GOLDBORO PROJECT

GUYSBOROUGH COUNTY-NOVA SCOTIA

November, 17 1989

Ramp development		
Ending of 250 ft. level development+ ore drift(including rock bolting)		146 283 $
Underground drilling(Ideal Drilling)		39 562 $
Underground surveys		24 031 $
Supervision, geological surveys and drafting		85 620 $
Assays(Chimitec Ltée)		19 842 $
Shaft rehabilitation and dewatering		
Rental		787 000 $
Pumping costs		196 511 $
Security		77 155 $
	SUB-TOTAL	**1 376 004 $**
Diamond drill hole program		
Drilling and contractors		208 450 $
Assays (Chimitec)		8 458 $
Surveyors and equipment rental		30 036 $
Supervision, core logging, core splitting, report preparation, sample transportation,drafting, microcomputers, etc.		138 536 $
Sampling program		
geologist and sample transportation		18 813 $
	SUB-TOTAL	**404 293 $**
Metallurgical tests		
Centre de Recherches Minérales		104 524 $
Supervision, planning and consultant metallurgist		45 228 $
	SUB-TOTAL	**149 752 $**
Other special works		
Geological interpretation, ore reserves calculation and report		94 411 $
prefeasability study		136 065 $
Environmental studies		
Assays		13 514 $

planning, follow up, etc.		51 778 $
Planning, ingeniring, organization of the 1989-1990 expl. program		373 119 $
	SUB-TOTAL	668 887 $
	GRAND TOTAL	2 598 936 $

s