GM 59764

ADDENDA AU RAPPORT DE QUALIFICATION, PROPRIETE LAC DUFAULT, SECTEUR DE ROUYN-NORANDA

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RESSOURCES METCO INC.,

ADDENDA AU RAPPORT DE QUALIFICATION,
DATÉ DU 10 SEPTEMBRE 2001
PROPRIÉTÉ LAC DUFAULT

SECTEUR DE ROUYN-NORANDA

Donald Théberge, ing., M.B.A
Le 30 septembre 2002

MRN-GÉOINFORMATION 2002

GM 59764

SOMMAIRE

La propriété Lac Dufault est détenue à 100% par Ressources Metco Inc. Elle est formée de 18 claims, totalisant 386 ha et répartis en quatre blocs. Ces blocs sont localisés à proximité des anciennes mines Millenbach, Waite Amulet et le Bloc Ouest inclu l'ancienne mine Corbet.

Depuis le début des années cinquante, pas moins de 177 forages totalisant plus de 97 000 m ont été effectués sur ou à proximité de la propriété. De ce nombre seulement 8 ont été levés au Pulse-Em, au cours des années quatre vingt.

Ressources Metco a acquis la propriété dans le but de localiser des amas de sulfures massifs de type Noranda par la méthode Pulse-Em en forages. Pour ce faire, les forages sélectionnés devaient répondre aux critères suivants :

Avoir une longueur minimum de 300 m.
Être distants d'au moins 150 m.
Être localisés dans un environnement géologique favorable à la découverte de sulfures massifs de type Noranda.

Metco a ainsi entrepris des travaux de sélection de forages, localisations sur le terrain, vérification au "dummy" et levés Pulse-Em. Seize (16) trous sur les 24 qui ont été levés, ont révélé de faibles anomalies Pulse variant de in-hole à off-hole, qui sont causées par des veinules de sulfures. Sur le bloc sud, dans sa partie est, la fréquence de ces anomalies et le fait qu'elles semblent corrélables entre certains forages nous amène à considérer une activité hydrothermale plus intense dans cette région de la propriété. Des travaux de compilation géologique et un forage de 1 050 m, y sont suggérés.

Sur le bloc ouest, la géologie plus complexe à cause de la présence de nombreuses failles, nous amène à suggérer un compilation géologique détaillée en préalable à la poursuite des travaux. Sur le bloc nord, nous suggérons de lever au Pulse Em le trou D-165, qui même s'il est bloqué à 521 m, a atteint le contact andésitique contenant la lentille principale de la mine Waite-Amulet. Sur le bloc est, à cause de la profondeur du contact favorable (1 350 m dans le trou D-321) et de la faible qualité des résultats Pulse obtenu, aucun travail supplémentaire, à l'exception d'une compilation géologique n'est recommandé.

En résumé, afin de poursuivre l'exploration de la propriété, les travaux suivants sont recommandés :

- Lever au Pulse-Em le trou D-165
- Effectuer une compilation informatisée, avec codage des forages, interprétation géologique et corrélation des unités avec emphase sur la structure et la géologie économique. Production des sections de forage, des plans de surface et des plans de niveau choisis. Cette compilation devra intégrer non seulement les 4 blocs de claims, mais aussi les terrains les séparant, afin d'établir la géologie d'une façon continue et systématique.
- Provision de 1 050 m de forages, pour vérifier la géologie de la partie sud est du bloc sud.

Le programme ci-haut décrit, réparti en trois phases, avec le budget correspondant est suggéré, ci-après :

BUDGET

Phase I, Pulse du trou D-165				
Levé Pulse du trou D-165		Estimé à 2 700$	2 700$	
Rapport du géophysicien		Estimé à 500$	500$	
Frais divers			400$	
		Total	**Phase I**	**~3 600$**
Phase II, Compilation géologique détaillée				
Achat de documents au MRN		Estimé à 800$	800$	
Codage des trous et géologie de surface	20 jours	375$/jour	7 500$	
Corrélation des unités, interprétation géologique et définition des cibles s'il y a lieu	10 jours	375$/jour	3 750$	
Production de plans et sections		Estimé à 600$	600$	
Production de figures thématiques 8½x11	2 jours	375$/jour	750$	
Frais divers			1 700$	
		Total	**Phase II**	**~15 000$**
Phase III, Forage				
Provision de 1 050 m de forage dans la partie sud est du bloc sud.		Environ 85$ du mètre, incluant tous les frais	89 250$	
1 forage à lever	1 trou,	2 700$/trou	2 700$	
Rapport géophysicien		Estimé à 500$	500$	
Frais divers			11 500$	
		Total	**Phase II**	**~104 000$**
		Total des 3 phases		**~122 600$**

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EN POCHETTE

Carte de localisation des forages, à l'échelle de 1 :5 000

1.0) INTRODUCTION

La présente est une mise à jour du rapport de qualification effectué par le même auteur, et daté du 10 septembre 2001. Le sommaire de ce document, tel qu'il apparaît au prospectus de Ressources Metco Inc.,(Metco) daté du 5 décembre 2001, le résume et est donné à l'item 3 du présent rapport.

Les items concernant la localisation, l'accès, l'historique ainsi que la géologie sont demeurés inchangés. Ils sont résumés à l'item 3, et ne seront donc pas repris en détail dans ce rapport. La figure 1, montre la localisation régionale de la propriété, alors que la figure 2 en montre la position en relation avec le camp minier de Rouyn-Noranda.

2.0) TITRES MINIERS

La propriété est formée de 18 claims, totalisant 386 ha. Ils sont répartis en quatre blocs. Metco détient 100% des intérêts de la propriété Lac Dufault qu'elle a acquise par voie de jalonnement (5 claims) et par acquisition (13 claims) en vertu d'une convention en date du 8 juin 2000 entre Mario Therrien, Daniel Mercier, Aline Leclerc et Metco, par laquelle celle-ci a acquis un groupe de 23 claims (dont 13 font partie de la propriété Lac Dufault) en contrepartie de l'émission de 100 000 actons ordinaires. Le tableau 1 ci-après donne la liste des claims.

TABLEAU 1 : LISTE DES CLAIMS (EN DATE DU 29 AOÛT 2002)

Claim no	Superficie (ha)	Canton	Travaux requis	Date d'expiration	Excédents au titre
5215168	27,20	Dufresnoy	1 200,00 $	28-10-03	11 716,43 $
5215169	26,40	Dufresnoy	1 200,00 $	28-10-03	2 734,69 $
5215170	0,72	Dufresnoy	500,00 $	28-10-03	0,00 $
5215171	71,60	Dufresnoy	1 200,00 $	28-10-03	9 728,80 $
5215172	20,00	Dufresnoy	500,00 $	28-10-03	219,97 $
5215173	14,80	Dufresnoy	500,00 $	28-10-03	32,78 $
5215174	7,20	Dufresnoy	500,00 $	28-10-03	0,00 $
5215175	29,20	Duprat	1 200,00 $	28-10-03	8 804,11 $
5215176	15,20	Duprat	500,00 $	28-10-03	3 031,49 $
5215177	29,60	Duprat	1 200,00 $	28-10-03	2 847,48 $
5215178	26,00	Duprat	1 200,00 $	28-10-03	0,00 $
5215179	4,40	Duprat	500,00 $	28-10-03	0,00 $

5215180	11,20	Duprat	500,00 $	28-10-03	0,00 $
5257651	21,60	Dufresnoy	500,00 $	28-10-03	106,77 $
5257652	20,30	Dufresnoy	500,00 $	28-10-03	230,77 $
5257653	22,00	Dufresnoy	500,00 $	28-10-03	6 023,55 $
5257654	21,00	Dufresnoy	500,00 $	28-10-03	18,92 $
5257655	17,60	Dufresnoy	500,00 $	28-10-03	2 947,09 $
Total	386,02		13 200,00 $		48 442,85 $

La carte de claims est illustrée à la figure 3.

3.0) RÉSUMÉ DU RAPPORT DE QUALIFICATION DU 10 SEPTEMBRE 2001[1]

INTRODUCTION

La propriété Lac Dufault est localisée au sein du camp minier de Rouyn-Noranda, hôte de nombreux dépôts de métaux de base. Le gisement polymétallique de Corbet se situe dans la portion ouest de la propriété alors que les mines Millenbach et Waite-Amulet sont localisées respectivement à moins de 50 et 300 mètres de la limite de la propriété. L'objectif principal du programme consiste tout d'abord à évaluer le nombre de forages profonds susceptibles de faire l'objet de nouveaux levés Pulse-Em.

Les mines Millenbach et Corbet ont été respectivement découvertes en 1966 et 1974 par Mines Lac Dufault Ltée. À l'exception de trois trous, tous les sondages de surface ont été réalisés avant 1980, soit à une période où les levés géophysiques de type Pulse-Em en forage n'étaient pas la norme. Par conséquent, il est plausible de croire que certains sondages profonds auraient pu rater des amas conducteurs d'autant plus que les lentilles de sulfures de ce secteur sont très souvent de petite dimension. Ainsi, une nouvelle investigation géophysique de ces sondages pourrait modifier l'approche d'exploration de la propriété et mener à la mise à jour d'un dépôt.

TITRES

Metco détient 100% des intérêts de la propriété Lac Dufault qu'elle a acquise par voie de jalonnement (5 claims) et par acquisition (13 claims) en vertu d'une convention en date du 8 juin 2000 entre Mario Therrien, Daniel Mercier, Aline Leclerc et Metco, par laquelle celle-ci a acquis un groupe de 23 claims (dont 13 font partie de la propriété Lac Dufault) en contrepartie de l'émission de 100 000 actions ordinaires.

La propriété Lac Dufault comprend un total de 18 claims répartis en quatre blocs distincts couvrant une superficie totale de 386 hectares.

PROPRIÉTÉ, LOCALISATION ET ACCÈS

La propriété se situe à 8 kilomètres au nord-ouest de la ville de Rouyn-Noranda. Elle est localisée dans les rangs I et II des cantons Duprat et Dufresnoy et est facilement accessible par la route 101 nord reliant Rouyn-Noranda à la municipalité de D'Alembert.

TRAVAUX DE FORAGE ANTÉRIEURS

Jusqu'à maintenant, un total de 177 sondages de surface, majoritairement effectués par Mines Lac Dufault Ltée, ont été identifiés sur la propriété. Plus de 80 sondages excèdent une profondeur de 1500 pieds. Seulement 8 trous de tous les journaux de sondage consultés font référence à des levés Pulse-Em en forage.

[1] Tiré du prospectus de ressources Metco inc., daté du 5 décembre 2001

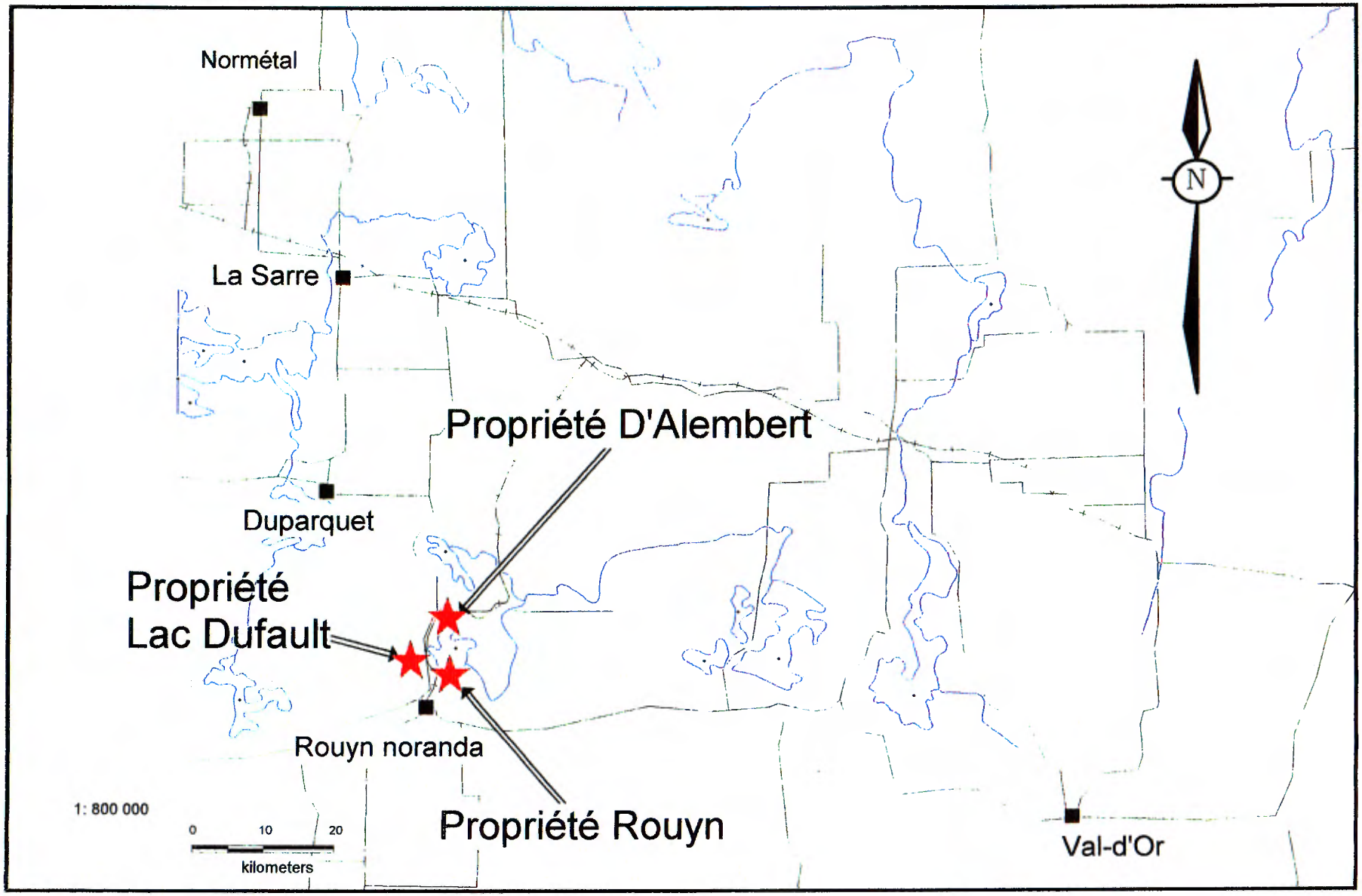

Figure 1: Localisation des propriétés

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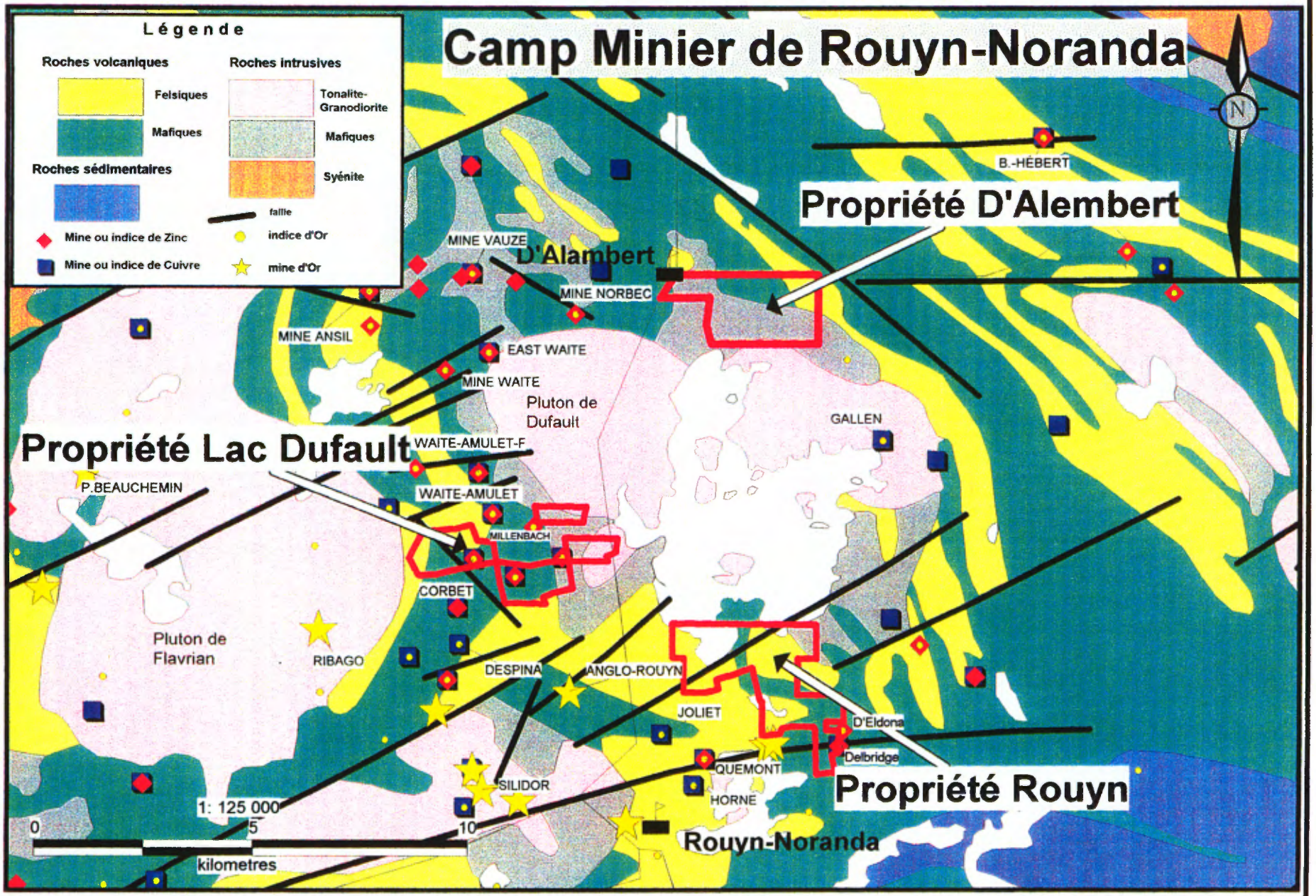

Figure 2: Géologie régionale; Propriétés D'Alembert, Rouyn et Lac Dufault

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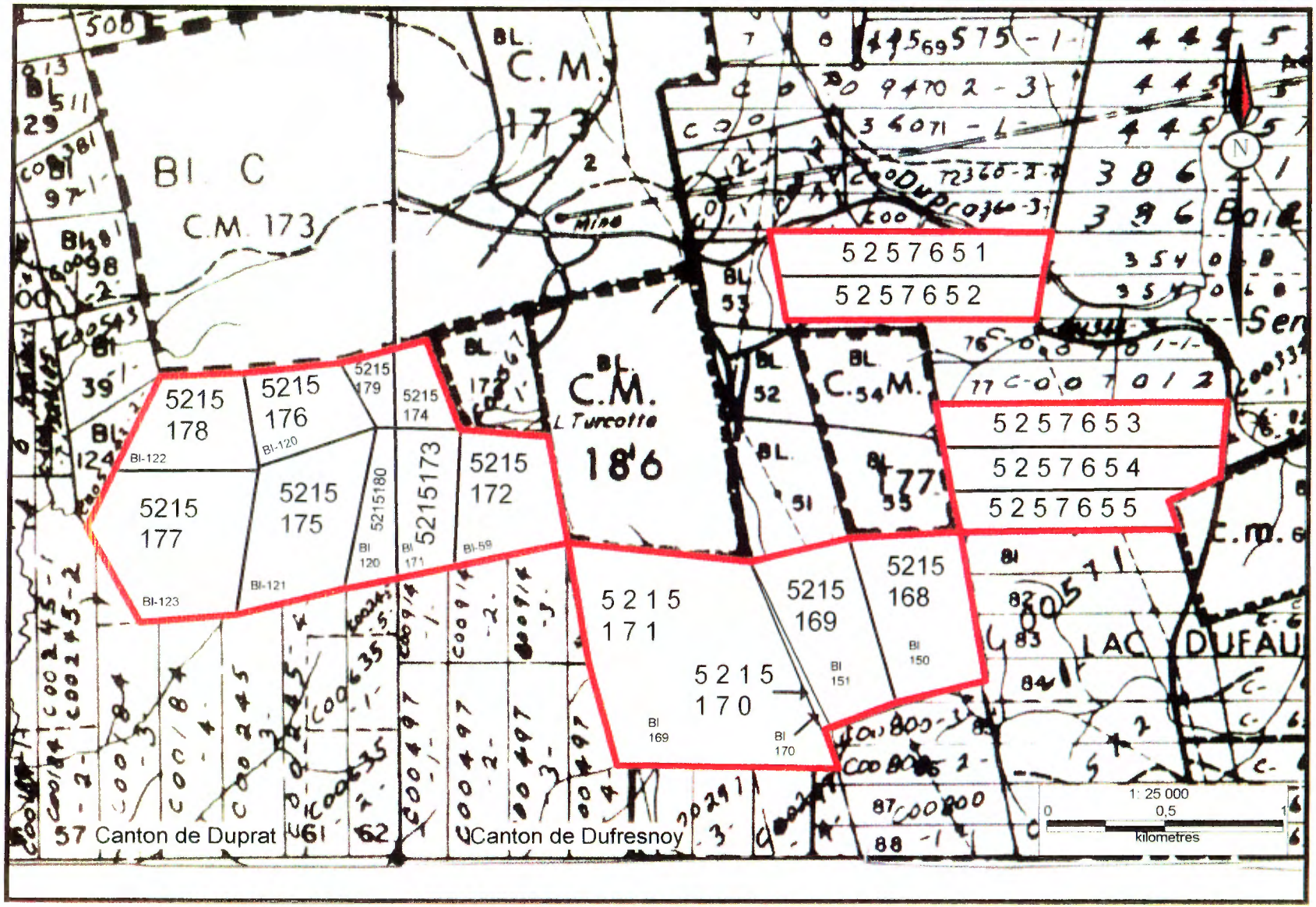

Figure 3 Carte de claims propriété Lac Dufault

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GÉOLOGIE

Le projet Lac Dufault fait partie du camp minier de Noranda, lequel est interprété comme une immense dépression volcanique. Cette structure est délimitée par les failles Hunter Creek et Horne, par le Pluton de Flavrian et par le cisaillement de D'Alembert. Elle comprend cinq cycles volcaniques et la majeure partie des dépôts de sulfures massifs de type volcanogène sont associés au 3e cycle volcanique. Des coulées felsiques marquant la fin du 3e cycle sont présentes sur la propriété.

La propriété est dominée par des coulées felsiques. De la base vers le sommet se retrouvent les unités principales suivantes : l'Andésite de Flavrian, la Rhyolite de Northwest, l'Andésite de Rusty Ridge, la Rhyolite d'Amulet , l'Andésite de Millenbach et le porphyre à quartz et feldspath. L'intrusion synvolcanique de Flavrian, reconnue comme la source de chaleur de la séquence des mines, n'affleure pas en surface sur la propriété mais se retrouve vraisemblablement sous la partie ouest de cette dernière à une profondeur d'au moins 1 600 pieds sous la surface.

La propriété comprend deux contacts lithologiques favorables à la déposition d'un dépôt de sulfures massifs : la partie supérieure de l'Andésite de Flavrian, hôte du gisement Corbet et la partie inférieure de l'Andésite Amulet qui renferme les dépôts Millenbach et Waite-Amulet.

De manière générale, ces gisements (Corbet, Waite-Amulet et Millenbach) sont formés d'une ou plusieurs lentilles de sulfures, semi-massif à massif et parfois lités, surmontant des zones de stockwork et encaissées dans des unités andésitiques et/ou rhyolitiques bréchiques. Les principaux minéraux présents sont la chalcopyrite , sphalérite, pyrrhotine et galène. Il s'agit de gîtes de sulfures massifs (Cu, Zn, Ag, Au) typiques des gîtes volcanophiles formés par exhalaison volcanique dans des unités favorables.

Les forages réalisés jusqu'à maintenant sur la propriété ne montrent pas de minéralisation significative. Seul le sondage D-160 indique des teneurs de 1,7% Cu, 10% Cu et 20% sulfures. Cependant, il est important de noter que la majorité des sondages répertoriés n'indique aucune analyse, une pratique courante à l'époque. La géologie de la propriété est illustrée à la figure 4.

TRAVAUX EFFECTUÉS PAR RESSOURCES METCO INC

Des travaux de localisation de forages ont permis de situer 48 sondages sur une possibilité de 73. Par la suite, une compilation succincte des données disponibles a été effectuée afin de sélectionner les sondages répondant aux critères suivants, afin d'optimiser le levé Pulse-Em.

-Longueur minimale des sondages de 300 m ;
-Forages distants d'au moins 150 m ;
-Les forages doivent être localisés dans un environnement métallogénique favorable à la découverte de dépôts de sulfures massifs volcanogènes de type Noranda.

Des 21 forages sélectionnés, 16 ont été levés au Pulse-Em. Deux (2), les D-278 et D-283, ont révélé des anomalies off-hole, corrélables entre les deux forages. De plus ces anomalies sont situées dans un environnement géologique favorable, soit des roches felsiques, avec de faibles concentrations de sulfures.

RECOMMANDATIONS

Ces résultats nous amènent donc à recommander la poursuite des travaux, qui devront comporter les éléments suivants :

- *Poursuivre la compilation afin de sélectionner d'autres forages potentiellement favorables ;*
- *Localisation sur le terrain et vérification au "dummy" des forages jugés favorables ;*
- *Lever au Pulse-Em, dans un premier temps, les forages favorables qui ne sont pas obstrués.*
- *Mobiliser une foreuse afin de débloquer les forages obstrués, et les lever au Pulse-Em.*

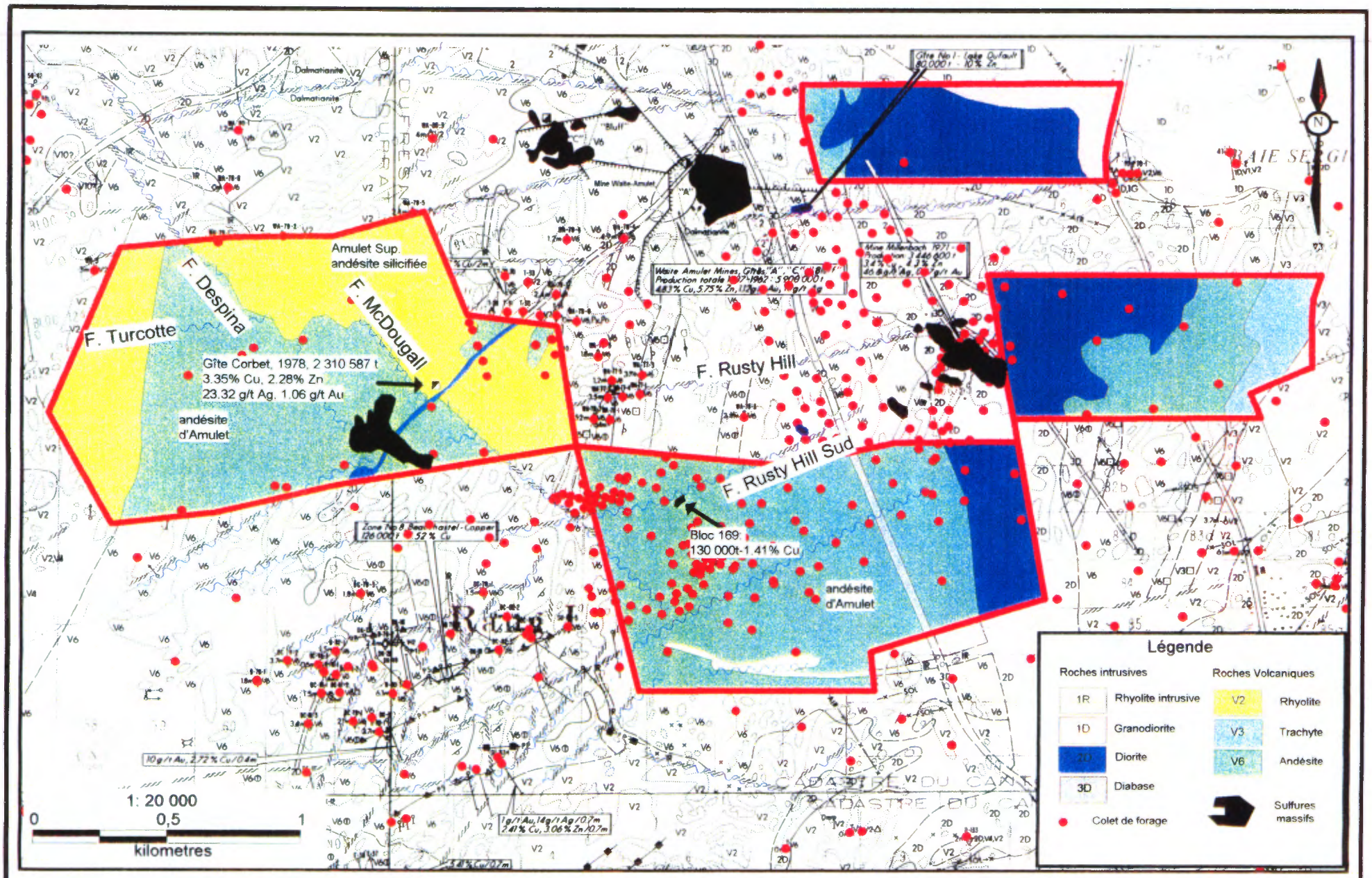

Figure 4 **Géologie de la propriété Lac Dufault**

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- *Prévoir environ 1 forage de 1 000 m pour la vérification de la meilleure cible qui aura été localisée par les levés Pulse-Em.*

4.0) TRAVAUX EFFECTUÉS PAR RESSOURCES METCO INC.,

Un rappel succinct des travaux effectués en 2000 et 2001 est donné ci-après, alors que ceux effectués en 2002 seront décrits en détail.

4.1) Travaux effectués en 2000

Localisation des collets des forages ayant atteint une profondeur d'au moins 300 m.
De plus, il y a eu :

Cartographie des accès, en notant les difficultés;
Repérage et identification des tubages sur le terrain de manière à les rendre facilement repérables;
Archivage des coordonnées MTM relevées au GPS pour les tubages retrouvés et les principaux repères topographiques;
Une carte montrant les accès et les forages, à l'échelle du 1 :5 000 a été produite.

Quarante-huit (48) sondages sur une possibilité de 73 ont été trouvés.

Le rapport de Gestion Aline Leclerc décrivant ces travaux a été déposé au Ministère des Ressources Naturelles du Québec et est archivé sous le numéro de GM 58726.

4.2) Travaux effectués en 2001

Vingt et un (21) forages ont été sélectionnés et identifiés comme potentiels pour la découverte de sulfures massifs, ils ont tous été investigués avec une sonde inerte (dummy), préalablement au levé Pulse-Em. De ces 21 forages, cinq (5) étaient obstrués. Les 16 autres ont été levés au Pulse-Em. Le rapport de Josée Gauthier ing., décrivant ces travaux et incluant le rapport de Gérard Lambert ing., concernant les levés Pulse-Em en forage, a été déposé au Ministère des Ressources Naturelles du Québec et est archivé sous le numéro de GM 59044.

Le tableau qui suit résume les travaux effectués, soit les forages localisés en 2000 et ceux qui ont été vérifiées au dummy et levés au Pulse-Em.

TABLEAU 2 RÉSUMÉ DES TRAVAUX EFFECTUÉS EN 2000-2001

	Coordonnées MTM[2]		Vérification au dummy		
Forage	E	N	Prof. (m)	Prof. bloquée (m)	Commentaires
LD-37	0337426	5352165			Localisé en dehors de la propriété
D-54	*0337244*	*5350890*	*678*	*Non bloqué*	*Levé au Pulse-Em. Petite anomalie in-hole à 565 m, conducteur de dimension restreinte.*
D-78	0337076	5350923			Tubage NQ et BQ, capé, identifié
D-82					Tubage pas trouvé
LD-83	0337627	5352115			Localisé en dehors de la propriété
D-88	*0337040*	*5350997*	*562*	*Non bloqué*	*Levé au Pulse-Em. Petite anomalie in-hole à 390 m, conducteur de dimension restreinte.*
D-92	0337281	5350430			Tubage EXT
D-94	0337373	5350640			Tubage EXT
D-95	*0337201*	*5350692*	*691*	*Non bloqué*	*Levé au Pulse-Em. Aucune anomalie.*
D-98	0336988	5351040			
D-99					Tubage pas trouvé
D-100	*0335023*	*5351452*	*507*	*441*	*Pulsé jusqu'à 441 m. Aucune anomalie.*
D-105	*0335369*	*5351337*	*1 223*	*Non bloqué*	*Levé au Pulse-Em. Anomalies in-hole à 445, 560 et 610 m. Pas de suivi de recommandé.*
D-106	0337187	5351073			
D-108					Tubage pas trouvé
D-109	*0337576*	*5351081*			*Impossible à dummy, plug impossible à enlever*
D-110					Pas de tubage de trouvé
D-111					Pas de tubage, seulement des débris
D-112	0337840	5351126			
D-131	0337210	5350941			
D-146					Seulement des débris de forage, pas de tubage
D-148	0337996	5351819			
D-161	0338048	5351671			
D-165	*0337356*	*5352331*	*781*	*521*	*Calibre EXT.*
D-169	0338055	5351613			
D-180					Pas de tubage de trouvé
D-184	0337661	5352080			
D-186	0337593	5353085			Localisé en dehors de la propriété
D-187					Sondage non trouvé
D-118					Pas de tubage de trouvé
D-182	0337754	5351285			Tubage EXT
D-191	0337518	5352056			Localisé en dehors de la propriété
D-192					Pas de tubage
D-200					Pas de tubage, seulement des débris
D-252					Tubage pas trouvé
D-254					Tubage pas trouvé
D-255	*0337498*	*5350814*	*885*	*Non bloqué*	*Tubage AQ*
D-257	*0337082*	*5350655*			*Terrain trop mou impossible à dummer*
D-258					Tubage pas trouvé
D-259					Tubage pas trouvé

[2] Les coordonnées MTM ont été obtenues en programmant le "User Grid" du GPS de la façon suivante : Système de référence : NAD 83 ou WGS 84, longitude d'origine : 79^0 30' W, latitude d'origine (équateur) : $0{,}00^0$, coordonnée X d'origine : 304 800 m, coordonnée Y d'origne : 0 m, facteur d'échelle : 0,9999, nord : true.

D-260	0337443	5352116			Localisé en dehors de la propriété
D-263					Tubage pas trouvé
D-268	*0337515*	*5350926*	*760*	*150*	
D-269	*0338082*	*5350936*	*1 150*	*348*	*Tubage AQ*
D-273	*0337638*	*5350962*	*802*	*Non bloqué*	*Levé au Pulse-Em. Off-ole à 780 m, représentant une petite zone de sulfures.*
D-276	*0337727*	*5351051*	*870*	*Non bloqué*	*Levé au Pulse-Em. Petite anomalie in-hole à 815 m, corps conducteur de petite dimension.*
D-277	0335547	5351195			
D-278	*0337779*	*5350936*	*916*	*Non bloqué*	*Levé au Pulse-Em. Anomalies off-hole à 870 et 905 m, conducteurs de dimension restreinte.*
D-279	*0335393*	*5351678*	*1 220*	*Non bloqué*	*Levé au Pulse-Em. Aucune anomalie.*
D-282	*0335210*	*5351648*	*509*	*50*	*Bloqué à 50 m, lors du levé Pulse-Em. AQ*
D-283	*0337868*	*5351015*	*1 008*	*Non bloqué*	*Petits off-hole, à 865 et 895 m, zone restreinte de sulfures in-hole à 1 008 m. Les off-holes correspondent aux sulfures rencontrés dans le D-278, situé 120 m au SE.*
D-286	*0334958*	*5351020*	*389*	*Non bloqué*	*Levé au Pulse-Em, aucune anomalie.*
D-288					Tubage pas trouvé
D-302	0335257	5351035			Forage non trouvé
D-303					Tubage pas trouvé
D-306	*0338074*	*5351110*	*1 083*	*Non bloqué*	*Levé au Pulse-Em, anomalie in-hole à 1 025 m, zone conductrice de faible dimension.*
D-316	*0338375*	*5351698*			*Seulement les ancrages du forage localisés*
D-318	*0338336*	*5351421*	*1 280*	*Non bloqué*	*Levé au Pulse-Em, in-hole à 1 180 m, de dimension restreinte.*
D-319					Un bidon d'huile, pas de tubage
D-321	*0338802*	*5351468*	*1 356*	*Bloqué au collet*	
D-323	*0338662*	*5351687*	*1 345*	*Non bloqué*	*Levé au pulse-Em, aucune anomalie.*
D-325	*0338219*	*5351820*			*Seulement les ancrages du forage localisés*
D-326	*0338494*	*5351819*	*1 249*	*Non bloqué*	*Levé au pulse-Em, in-hole à 1 090 m, zone à filonnets de sulfures.*
D-327	0335424	5351175			Pas de tubage trouvé
D-329	0335336	5351219			
D-335	0335831	5351182			
D-340					Tubage pas trouvé
D-380	0335024	5352012			
D-382	0335247	5352011			
D-379	0335336	5351219			
D-388	0335750	5352102			
D-402	0335514	5351764			Tubage pas trouvé

4.3) Travaux effectués en 2002

Conformément aux recommandations formulées au rapport de qualification du 10 septembre 2001, une partie des travaux a été effectuée. La recherche et la vérification à l'aide d'une sonde inerte (dummy), de forages jugés favorables a été entrepris. Nous rappellerons ici brièvement au lecteur les caractéristiques des forages recherchés.

Les forages doivent avoir une longueur minimale de 300 m pour que le volume de roche investigué par le levé Pulse-Em soit optimal.

Les forages doivent être distants d'au moins 150 m afin d'optimiser le volume vérifié.

Les forages doivent être localisés dans un environnement métallogénique favorable à la découverte de dépôts de sulfures massifs volcanogènes de type Noranda i.e, localisés aux contacts favorables et de préférence contenant des valeurs anomales en métaux de base.

La recherche des forages a été effectuée du 23 au 28 mai 2002, par Donald Théberge ing., M.B.A assisté de Mario Chouinard, de Géophysique TMC. Du 4 au 10 juillet 2002, les différents accès aux forages ont été débroussaillés lorsque nécessaire, et suivi de la vérification au dummy. Ces travaux ont été effectués par Jean-Guy Brisson et Joël Grenier de Géophysique TMC, et supervisés par l'auteur.

Du 27 août au 3 septembre les forages D-269 et D-282, ont été débloqués à l'aide d'une foreuse, par Forage Mercier de Val d'Or. Les travaux de déblocage ont été suivi du levé Pulse-Em des 2 forages précités. De plus, les forages D-94, D-109, D-255, D-257, D-302, D-382 et D-402 ont été levés au Pulse-Em, par la firme Géophysique TMC de Val D'Or. Ces travaux ont été effectués par Raphaël Dallaire et André Michaud de géophysique TMC, et supervisés par l'auteur. Les permis de coupe de bois requis, ont été obtenus par l'entremise du Groupe C.A.F de Rouyn-Noranda. L'interprétation des levés Pulse-Em a été confiée à Gérard Lambert, ing., géophysicien. La version intégrale de son rapport se retrouve à l'annexe I. La description géologique des forages levés au Pulse-Em, se trouve à l'annexe II. Les sections des forages levés au Pulse ont été produites et se trouvent à l'annexe III, les sections des trous D-321 et D-288 sont aussi incluses.

Comme l'accès au trou D-321 se fait directement à partir de la route 101, à la sortie nord de Rouyn-Noranda, une permission spéciale a été demandée et obtenue, du Ministère des Transports du Québec, pour mobiliser et démobiliser l'équipement de forage. Pour ce faire, Metco a dû établir une signalisation appropriée et avoir recours aux services de 3 signaleurs, afin de prévenir les automobilistes des travaux en cours.

Des contraintes nous ont aussi été imposées en ce qui concerne l'équipement de forage. Afin de ne pas endommager la route et ses abords, l'équipement de forage habituel, c'est à dire une foreuse montée sur patins et remorquée par un bélier mécanique ou une débusqueuse, n'était pas envisageable. Nous avons donc fait appel aux services de Forages M. Rouillier d'Amos qui a mis au point une foreuse autotractée montée sur chenilles.

Cependant, lors du déblocage du forage D-321, des bouts de bois ainsi qu'un morceau de métal ont été traversés près du collet, et finalement, une fois descendues au fond du trou, les tiges de forages sont demeurées coincées. Nous avons dû faire appel à Forage et Dynamitage Rouanda, pour couper les tiges avec de la dynamite. Le dynamitage nous a permis de récupérer environ 747 m de tiges de forage, 700 m de tiges, soit de 747 m à 1447 m ont été impossible à récupérer. Comme le contact andésite-rhyolite se situe vers 1 350 m, il devenait alors inutile d'effectuer le levé Pulse-Em. Le tableau 3 à la page suivante résume les travaux effectués. La figure 5, montre la position des forages de façon schématique, alors que le plan en pochette à l'échelle de 1 :5 000 les montre de façon détaillée.

TABLEAU 3 RÉSUMÉ DES TRAVAUX EFFECTUÉS EN 2002

	Coordonnées MTM		Vérification au dummy		
Forage	E	N	Prof. (m)	Profondeur bloquée (m)	Commentaires
D-92	0337281	5350430	743	154	Tubage EXT. Impossible à débloquer avec la foreuse. (calibre trop petit).
D-94	0337373	5350640	820	Non bloqué	Tubage EXT, donné à 665 m sur le log, mais dummy et pulsé jusqu'à 820 m. Le forage a dû être approfondi, sans être rapporté au MRNQ. Le Pulse-Em a révélé une petite anomalie in-hole sur 11 canaux, vers 760 m, possiblement corrélable à celle obtenue vers 790 m dans le D-255.
D-109	0337576	5351081	782	Non bloqué	Levé au Pulse-Em. Vers 745 m, petite anomalie off-hole de 15 canaux, de très courte longueur d'onde, coïncide avec 10 cm de py massive. Anomalie semblable à celle recoupée dans le D-273. Tubage AQ
D-162					Tubage recherché et non trouvé
D-165	0337356	5352331	781	521	Tubage EXT. Impossible à débloquer avec la foreuse. (calibre trop petit)
D-254					Tubage recherché et non trouvé
D-255	0337498	5350814	885	Non bloqué	Levé au Pulse-Em. Vers 790 m, petite réponse in-hole de courte longueur d'onde. Vers 850 m, anomalie de courte longueur d'onde, définie sur 20 canaux. Tubage AQ
D-257	0337082	5350655	630	Non bloqué	Levé au Pulse-Em. Aucune anomalie Pulse-Em n'a été repérée dans ce trou. Tubage AQ
D-269	0338082	5350936	1 150	348	Débloqué avec la foreuse et levé au Pulse-EM. Vers 1 010 m, petite anomalie off-hole, de 16 canaux, Vers 1 080 m, anomalie de type edge, avec composante off-hole, à partir des canaux 3-4, jusqu'au canal 20. Ces 2 réponses se comparent aux 2 mêmes types de réponses obtenues dans le trou D-273, levé en 2001. Tubage AQ
D-282	0335210	5351648	509	50	Débloqué avec la foreuse et levé au Pulse-EM. Aucune anomalie n'a été repérée dans ce trou. Tubage AQ
D-288					Tubage recherché de façon très intensive, mais non trouvé.
D-289					Tubage recherché et non trouvé
D-302	0335248	5351037	617	Non bloqué	Forage localisé et levé au Pulse-Em. Vers 380 et 425 m, faibles réponses off-hole sur 5 canaux. Anomalie off-hole au fond du trou, à demi définie et probablement centrée sur 600 m, visible sur 8 à 9 canaux. Tubage AQ
D-303					Tubage recherché et non trouvé
D-316	0338375	5151689			Seulement les ancrages de la foreuse ont été trouvés.
D-319					Tubage recherché et non trouvé
D-321	0338802	5351468	1 447	Au collet	Environ 700 m de tiges de forage abandonnées dans le trou, (i.e de 747 à 1447 m) impossible de les retirer. Le trou n'a pas été lu au Pulse-Em, le contact andésite-rhyolite se situe vers 1 350 m, et est maintenant inaccessible. Calibre AQ
D-382	0335247	5352011	1 148	Non bloqué	Forage levé au Pulse-Em, Aucune anomalie n'a été repérée dans ce trou. Tubage AQ
D-402	0335515	5351765	1 091	929	Forage levé au Pulse-Em jusqu'à 929 m. Vers 750 m, faible réponse off-hole sur 5 canaux. (AQ)

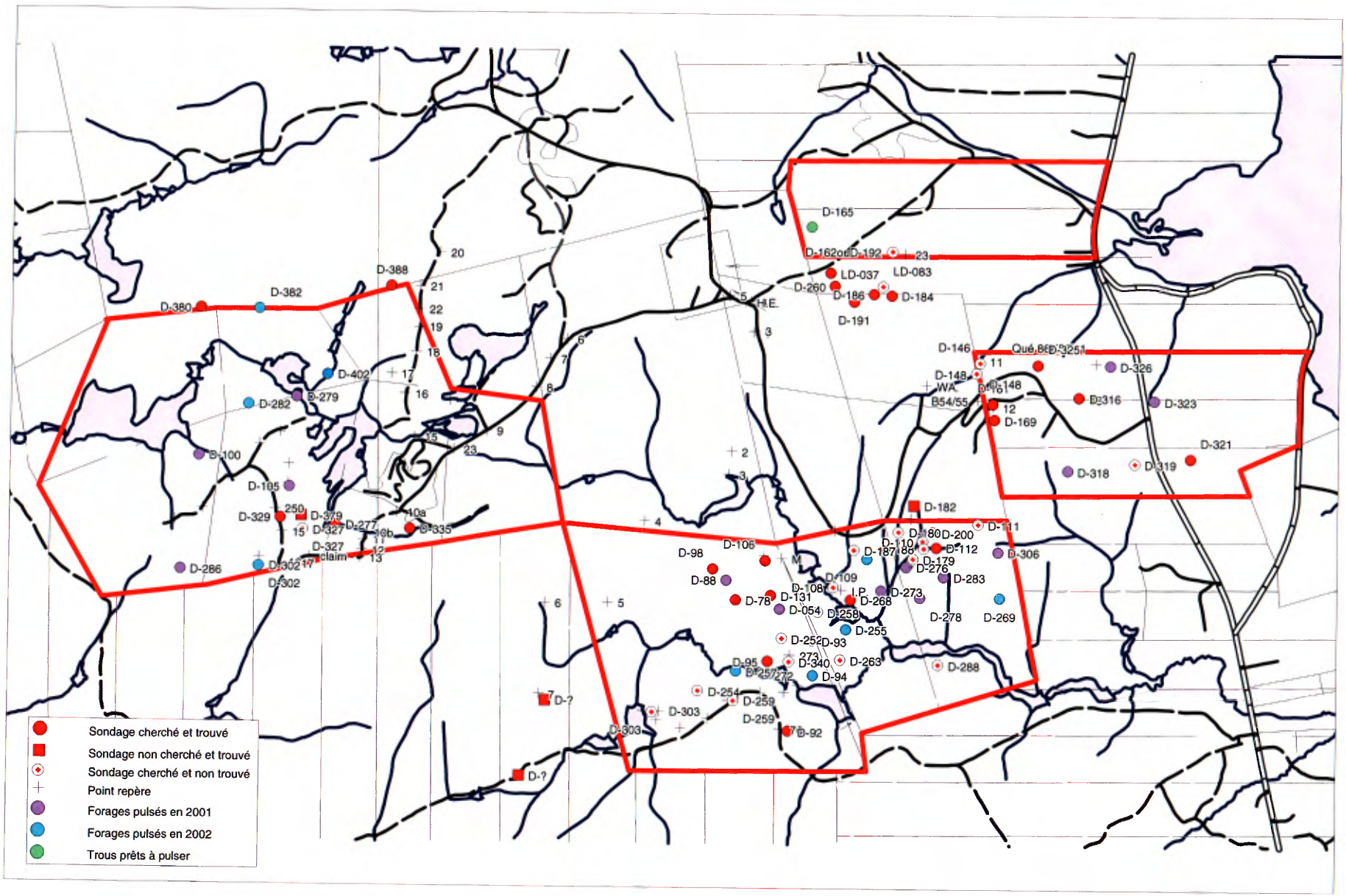


Figure 5
Localisation des forages
Propriété Dufault

Échelle: 1 : 20 000

0 0,5 1 km

METCO

5.0) DISCUSSION ET CONCLUSION

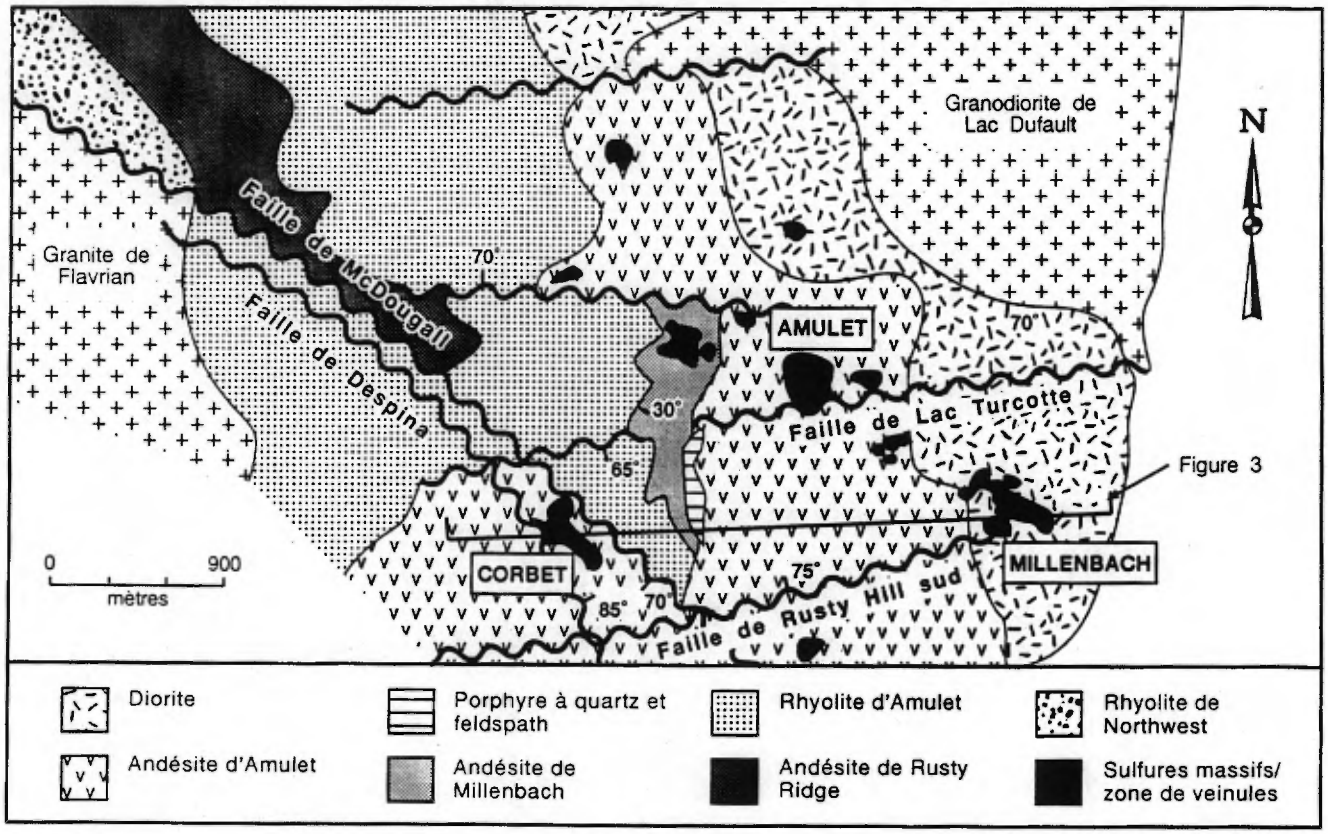
La propriété est située dans l'environnement immédiat de 3 anciens producteurs de métaux de base. Le bloc ouest de la propriété couvre même l'ancienne mine Corbet. Le tableau 4 ci-après donne une idée de l'envergure de ces producteurs.

TABLEAU 4 : ANCIENS PRODUCTEURS, DANS L'ENVIRONNEMENT IMMÉDIAT DE LA PROPRIÉTÉ

Producteur	Tonnage	Cu %	Zn %	Ag g/t	Au g/t
Corbet	2,3 MT	3,35%	2,28%	23,32	1,06
Waite Amulet A,C,F	9,7 MT	4,2%	3,6%	28	0,9
Millenbach	3,4 MT	3,5%	4,3%	46	0,7

Les trois gisements sont situés dans le cycle III de la séquence des mines, mais stratigraphiquement à des niveaux différents. La mine Waite Amulet se situe au niveau le plus élevé, au contact des andésites de Millenbach et d'Amulet. La mine Millenbach, se trouve au niveau intermédiaire, au contact de l'andésite d'Amulet et de la rhyolite d'Amulet, alors que la mine Corbet, se localise au niveau inférieur, au contact de l'andésite de Flavrian et de la rhyolite de Northwest. La figure 6 ci-après montre la position relative des 3 gisements, en plan.

FIGURE 6 : GÉOLOGIE ET STRUCTURE DE LA RÉGION DE CORBET-MILLENBACH (KNUCKEY ET AL)



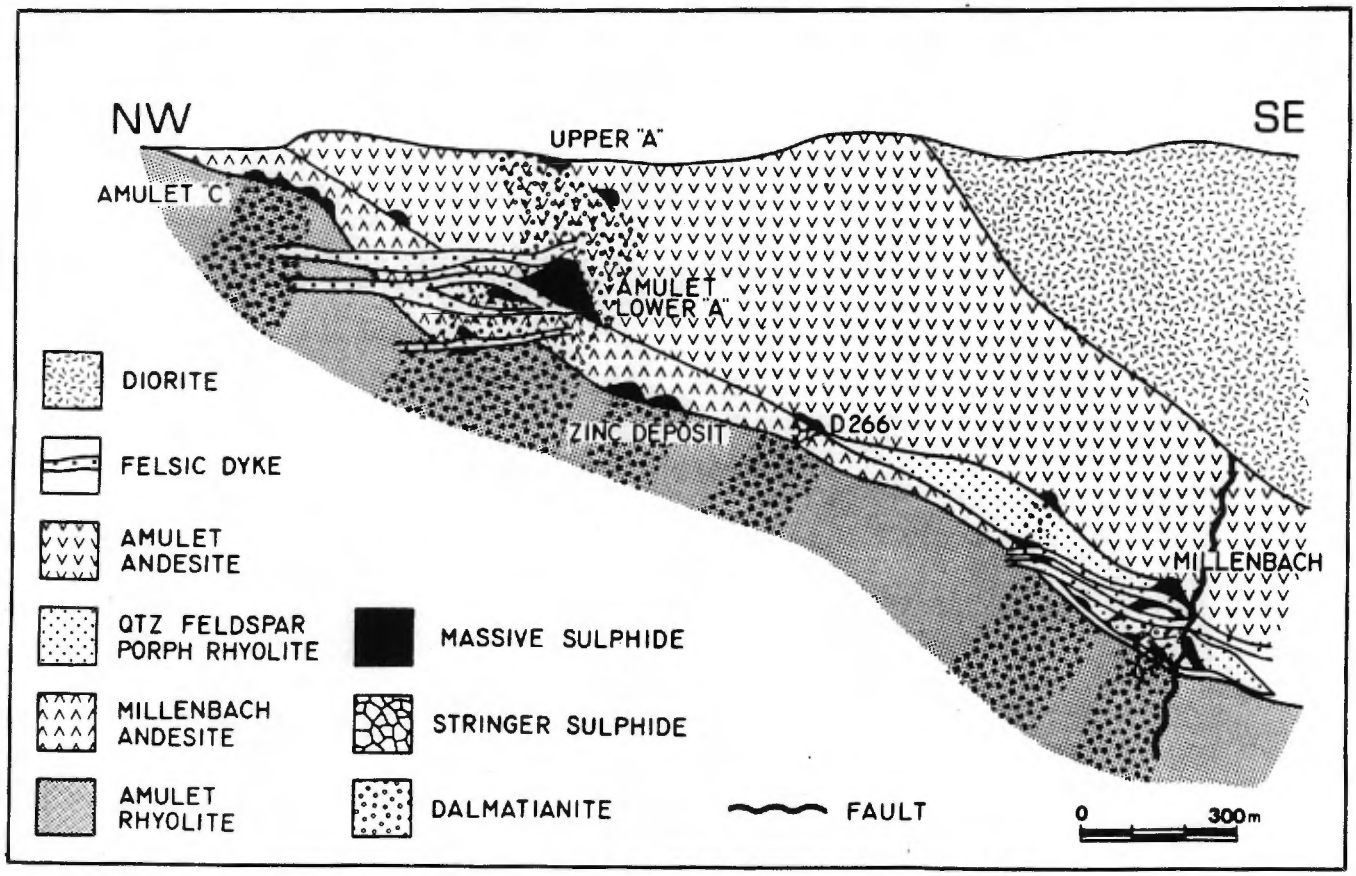
Chacun des quatre blocs formant la propriété sont traités ci-après :

BLOC NORD

À l'exception de la recherche de forages et de la vérification au dummy du trou D-165, il n'y a pas eu de travaux d'effectués sur ce bloc de claims. Le trou D-165, d'une profondeur totale de 781 m, est bloqué à 518 m. Ce forage est de calibre EXT, et donc impossible à débloquer puisque les tiges de forage de ce calibre ne sont plus utilisées dans l'industrie.

Cependant ce forage occupe une position stratégique, 300 m à l'est de la lentille principale de la mine Waite Amulet, qui stratigraphiquement se situe au contact de l'andésite d'Amulet et de l'andésite de Millenbach. Normalement le contact andésitique favorable devrait se situer vers 460 m de profondeur, dans le forage D-165. Il est donc recommandé d'effectuer un levé Pulse-Em du forage D-165, pour vérifier ce contact. La figure 7 ci-après montre la position stratigraphique relative des mines Waite Amulet et Millenbach et du forage D-165.

FIGURE 7 : NW-SE SECTION DES GISEMENTS DE MILLENBACH ET D'AMULET (KNUCKEY ET AL)



BLOC EST

À date, trois (3) trous, les D-318, D-323 et D-326, ont été lus au Pulse-Em. Les forages D-318 et D-326 ont retournés de faibles anomalies in-hole, respectivement à 1 180 et 1 090 m, qui témoignent de la présence de petites veinules de sulfures d'extension très limitées. Aucune anomalie n'a été localisée dans le forage D-323. Une tentative de déblocage a été initiée sur le forage D-321, mais elle s'est soldée par un échec (voir section 4.3).

Ce bloc de claims est situé pratiquement à la limite est de la mine Millenbach. Le contact recherché est celui de la rhyolite d'Amulet et de l'andésite d'Amulet, qui renferme le gisement de Millenbach. Hors, ce contact a un pendage d'environ 30^0 vers le sud-est (voir figure 7) . Donc plus on s'éloigne vers l'est (sur le bloc est), et plus le contact favorable se retrouve en profondeur. En guise d'exemple le contact andésite/rhyolite se trouve à 1 067 m dans le trou D-318, et à 1 350 m dans le trou D-321.

Étant donné la faible qualité des anomalies Pulse détectées, et la profondeur du contact à investiguer, aucun travail supplémentaire n'est recommandé sur ce bloc, à l'exception d'une compilation géologique détaillée.

BLOC SUD

Le bloc sud se situe au sud des gisements de Millenbach et d'Amulet, et au sud est du gisement de Corbet. De petites lentilles de sulfures existent sur le bloc de claims, au sud de la faille South Rusty Hill. Une des plus importantes, le bloc 169, s'établit à 130 000 T à 1,41% de Cu. Le modèle retenu pour le bloc sud, est celui de Millenbach, avec lentilles de sulfures au contact andésite d'Amulet/rhyolite d'Amulet. La littérature indique que l'activité hydrothermale associée au contact des andésites d'Amulet et de Millenbach, diminue vers le sud, et donc, le modèle Waite Amulet est à exclure.

En ce qui concerne le modèle de Corbet, où le contact favorable se situe dans l'andésite de Flavrian, près de la rhyolite de Northwest, donc stratigraphiquement sous le contact de Millenbach, il est aussi à exclure. Une vérification rapide des descriptions de forage, montre que s'il existe sur ce bloc, il n'a pas été atteint par les forages, tout du moins ceux levés au Pulse-Em, puisqu'après avoir traversé des coulées andésitiques, ils se sont terminés dans des unités rhyolitiques, donc typiques du modèle Millenbach.

Depuis 2001, les forages D-54, D-88, D-94, D-95, D-109, D-255, D-257, D-269, D-273, D-276, D-278, D-283 et D-306, ont été lus au Pulse-Em. Les trous D-95, et D-257, n'ont révélé aucune anomalie. Les autres forages ont retourné des anomalies Pulse variant de in-hole à off-hole, toujours interprétées comme représentant des veinules de sulfures de dimension restreinte.

Cependant, tant d'un point de vue géophysique que géologique, il semble possible de corréler les anomalies Pulse des trous D-109 et D-269 avec celle du trou D-273, puisqu'elles se présentent en relation avec la rhyolite bréchique et montrent les mêmes caractéristiques. Il en va de même des trous D-276, D-278, et D-283, pulsés en 2001.

Les anomalies localisées dans chacun d'eux, représentent probablement des réseaux de veinules de sulfures qui témoignent d'une certaine activité hydrothermale. Il aurait été intéressant de pouvoir pulser le trou D-288, situé au sud des trous D-283 et D-278 (voir carte en pochette) afin de vérifier l'extension vers le sud de cette zone. Malheureusement, il n'a pu être localisé, malgré d'intensives recherches sur le terrain. Ce forage d'une profondeur totale de 1051 m, a pénétré, au fond, d'environ 120 m, les unités rhyolitiques sous-jacentes à l'andésite. La meilleure section minéralisée dans ce forage était de 5% de sulfures (chalcopyrite, pyrrhotine et pyrite) dans un tuf lité, avec des sections de dacite de 920,2 à 924,5 m. Aucune analyse n'est indiquée avec la description du forage.

Étant donné que la partie sud est du bloc sud a été peu forée et qu'on y décèle grâce aux levés Pulse et aux descriptions de forage un certain degré d'activité hydrothermale, Il est recommandé d'y effectuer un forage d'environ 1 050 m, qui devra être levé au Pulse-Em , et dans lequel de la lithogéochimie devra être faite de façon systématique.

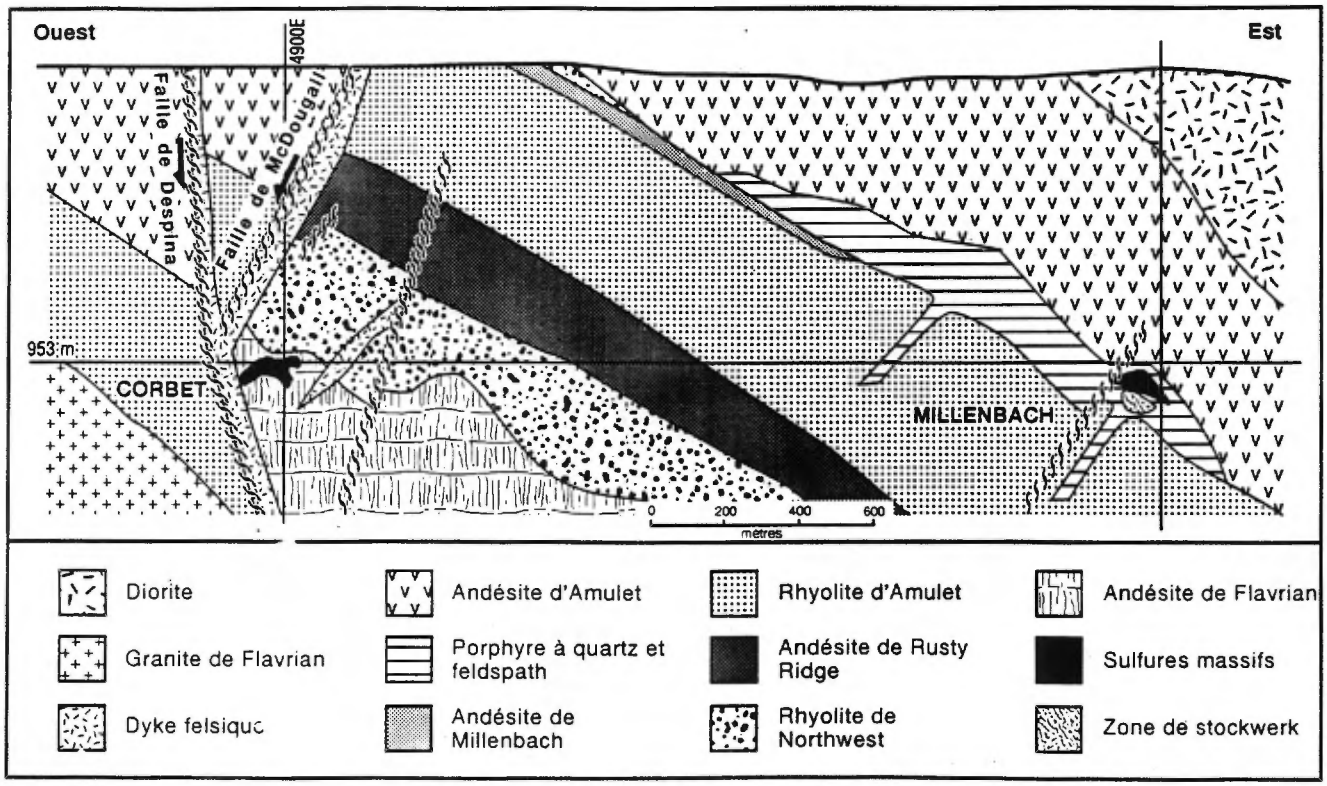
En préalable au forage, et pour établir sa position optimale, une compilation géologique détaillée devra être faite, pour définir la position et le niveau des contacts favorables, ainsi que le jeu des déplacements occasionnés par les différentes failles.

BLOC OUEST

Ce bloc de claims renferme dans sa partie sud sud-est l'ancienne mine Corbet. Le gisement de Corbet se situe stratigraphiquement en dessous du gisement de Millenbach, le jeu des failles synvolcaniques Despina et McDougall l'a cependant ramené au même niveau, soit à

environ 950 m sous la surface..Il se situe dans l'andésite de Flavrian, près du contact, avec la rhyolite de Northwest (voir figure 8).

FIGURE 8 : SECTION GÉOLOGIQUE DE LA RÉGION CORBET-MILLENBACH (KNUCKEY ET AL 1982)



Deux modèles peuvent donc être ici envisagés pour l'exploration du bloc ouest, soit celui de Millenbach, au contact de la rhyolite et de l'andésite d'Amulet, si on se situe à l'ouest de la faille Despina, et celui de Corbet, près du contact de l'andésite de Flavrian et de la rhyolite de Northwest, si on se situe à l'est de la faille McDougall.

Sur ce bloc, les forages D-100, D-105, D-279, D-282, D-286, D-302, D-382 et D-402, ont été lus au Pulse-Em. Les trous D-100, D-279, D-282, D-286 et D-382 n'ont révélé aucune anomalie. Les autres forages ont révélé des anomalies Pulse variant de in-hole à off-hole, faibles, interprétées comme représentant des veinules de sulfures de dimensions restreintes. Un anomalie off-hole est cependant à demi définie à la fin du trou D-302. Elle est observée sur 8 à 9 canaux. G. Lambert, ing géophysicien, suggère qu'à la rigueur, le forage pourrait être allongé de 200 m pour la définir dans sa totalité. Un examen attentif de la description du forage, montre qu'il avait déjà intercepté le contact andésite/rhyolite depuis plus de 45 m.

Hors la cible recherchée, soit les sulfures massifs, se situent au contact même, ou tout du moins dans son environnement immédiat, alors que l'anomalie débute plus en profondeur, dans la rhyolite même. Il n'est donc pas recommandé d'approfondir le trou D-302.

Le bloc ouest a été peu foré dans sa partie ouest. Des contacts géologiques favorables (modèles Millenbach dans la partie ouest, et Corbet dans la partie est) y sont localisés. Le potentiel pour découvrir une ou des lentilles de sulfures massifs, demeure donc élevé. Cependant tout travail de terrain supplémentaire, qu'il s'agisse de levés géophysiques ou de forages, devra être précédé d'une compilation géologique détaillée, afin d'établir la position et le niveau des contacts favorables, ainsi que le jeu des déplacements occasionnés par les différentes failles.

6.0) RECOMMANDATIONS ET BUDGET

Afin de poursuivre l'exploration de la propriété, les travaux suivants sont donc recommandés :

- Levé au Pulse-Em le trou D-165
- Effectuer une compilation informatisée, avec codage des forages, interprétation géologique et corrélation des unités avec emphase sur la structure et la géologie économique. Production des sections de forage, des plans de surface et des plans de niveau choisis. Cette compilation devra intégrer non seulement les 4 blocs de claims, mais aussi les terrains les séparant, afin d'établir la géologie d'une façon continue et systématique.
- Provision de 1 050 m de forages, pour vérifier la géologie de la partie sud est du bloc sud.

Le programme ci-haut élaboré réparti en trois phases, avec le budget correspondant est suggéré, ci-après :

BUDGET

Phase I, Pulse du trou D-165				
Levé Pulse du trou D-165		Estimé à 2 700$	2 700$	
Rapport du géophysicien		Estimé à 500$	500$	
Frais divers			400$	
		Total	**Phase I**	**3 600$**
Phase II, Compilation géologique détaillée				
Achat de documents au MRN		Estimé à 800$	800$	
Codage des trous et géologie de surface	20 jours	375$/jour	7 500$	
Corrélation des unités, interprétation géologique et définition des cibles s'il y a lieu	10 jours	375$/jour	3 750$	
Production de plans et sections		Estimé à 600$	600$	
Production de figures thématiques 8½x11	2 jours	375$/jour	750$	
Frais divers			1 700$	
		Total	**Phase II**	**~15 000$**
Phase III, Forage				
Provision de 1 050 m de forage dans la partie sud est du bloc sud.		Environ 85$ du mètre, incluant tous les frais	89 250$	
1 forage à lever	1 trou,	2 700$/trou	2 700$	
Rapport géophysicien		Estimé à 500$	500$	
Frais divers			11 500$	
		Total	**Phase II**	**~104 000$**
		Total des 3 phases		**~122 600$**

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CERTIFICAT

La présente est pour certifier que :

-Je suis ingénieur géologue et je réside au 54, De La Vigie, Lévis (Québec) G6V 5W2;

-Je suis enregistré sous le nom de Solumines;

-Je suis membre en règle de l'Ordre des Ingénieurs du Québec;

-Je suis diplômé en génie géologique de l'Université du Québec à Chicoutimi (1978), et j'ai obtenu une maîtrise en administration des affaires (M.B.A.) de l'Université Laval en 1994;

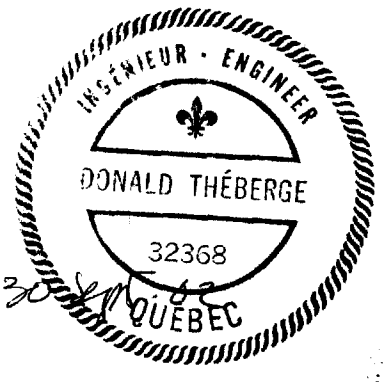
-Depuis 1978, j'ai oeuvré comme ingénieur géologue pour diverses sociétés publiques et privées, ainsi que pour Énergie Mines et Ressources Canada;

-J'ai agi comme personne qualifiée. J'ai pris connaissance de la Norme 43-101. Ce rapport a été établi conformément à la Norme canadienne 43-101 et à l'annexe 43-101-A ;

J'ai visité la propriété à de nombreuses reprise, de mai à septembre 2002,

-Je ne possède et ne prévois recevoir aucun intérêt direct ou indirect dans Ressources Metco Inc,. ses propriétés ou ses compagnies affiliées;

-Ce rapport est basé sur les documents techniques fournis par Ressources Metco Inc, lesquels sont présumés exacts et authentiques, ainsi que sur les travaux statutaires archivés au Ministère des Ressources Naturelles du Québec et sur l'expérience que l'auteur a acquis dans la région.



Donald Théberge, ing., M.B.A.

ANNEXE I

MEMORENDUM, PROPRIÉTÉ LAC DUFAULT, LEVÉS PULSE-EM EN FORAGE, AOÛT-SEPTEMBRE 2002

GÉRARD LAMBERT
GÉOSCIENCES
Consultation et génie-conseil en géophysique.

le 13 Septembre, 2002

MEMORANDUM

À: **Donald Théberge,** Ressources Metco Inc., Lévis, Qué.

De: **Gérard Lambert**, Géophysicien consultant, St-André-Avellin, Qué.

Re: **Propriété Dufault, Levés Pulse E.M. en forage, Août-Septembre 2002**

Suite aux levés Pulse E.M. en forage effectués récemment par **Géophysique TMC** dans plusieurs anciens trous de forage sur la propriété Dufault à Rouyn-Noranda, voici un compte-rendu des résultats obtenus et de leur interprétation.

On peut se rappeler que ces 9 forages ont été lus entre le 28 Août et le 11 Septembre 2002 avec le système Pulse E.M., dans le but de localiser et caractériser des zones conductrices potentiellement nouvelles, dans un rayon de 125 à 150 mètres autour de chaque trou investigué. L'identification d'anomalies électromagnétiques jusque-là inconnues pourrait mener potentiellement à définir des nouvelles zones de sulfures massifs sur cette propriété.

• Méthode utilisée (Système Pulse E.M. de Crone Geophysics):

Les levés Pulse E.M. en forage visaient principalement à détecter, ainsi que déterminer selon l'éventualité, la position de la bordure de la ou des lentilles sulfurées conductrices (si présentes) et ce, en-dedans d'un rayon de détection nominal de 100m à 150m autour des trous sondés (dépendant des dimensions de la zone conductrice). Ces forages testaient des horizons stratigraphiques minéralisés et considérés comme favorables, dans les extensions de zones de sulfures massifs déjà connues.

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La technique Pulse E.M. en forages utilise deux composantes principales: **Le transmetteur**, consistant en une génératrice AC de 5 kW, fournissant la puissance à un générateur de signal dont la forme d'onde est rectangulaire, et envoyée sous forme d'impulsions à tous les 16.6 millisecondes.

Ce signal, une fois amplifié par le transmetteur, est injecté dans une boucle de fil #10 AWG de forme carrée ou rectangulaire, étendue sur le terrain autour du collet des trou à lire et dont les dimensions étaient fonction de la profondeur d'investigation désirée. Un courant de 12 à 20 ampères circulait dans les boucles de transmission, dépendant de leurs dimensions.

La coupure soudaine du courant dans la boucle pendant 1.5 millisecondes et ce à tous les 16.6 msec, dans la boucle de transmission, cause l'induction de courants de Foucault dans tout conducteur métallique soumis à l'influence du champ primaire de cette boucle émettrice.

La partie réceptrice du système Pulse E.M. consiste en une sonde qui est introduite dans le trou de forage et qui capte les champs magnétiques associés aux courants de Foucault induits dans un conducteur, s'il y en existe un dans le voisinage du trou.

La sonde est reliée au récepteur par un fil gainé et renforci avec du kevlar. L'amplitude des champs magnétiques secondaires est mesurée par le récepteur. Cette amplitude dépend de la proximité du conducteur par rapport à la sonde, sa conductance et ses dimensions.

Le récepteur analyse l'amplitude des champs secondaires à des intervalles (fenêtres) de temps distribués de façon géométrique à l'intérieur d'une durée de quelques millisecondes après la coupure du champ primaire transmis.

Plus le conducteur est "mauvais", c'est-à-dire de faible conductance, plus l'amplitude des courants décroît rapidement avec le temps. La réponse anomalique ne sera alors visible que sur les premiers canaux. A l'inverse, une décroissance lente de l'amplitude des canaux indique un "bon" conducteur, i.e. de forte conductance. On observera alors la réponse anomalique sur presque tous les 20 canaux.

La figure 1. ci-bas montre la géométrie du champ primaire produit par une boucle de transmission typique, et la relation qui existe entre les lignes de flux de ce champ avec les horizons conducteurs investigués.

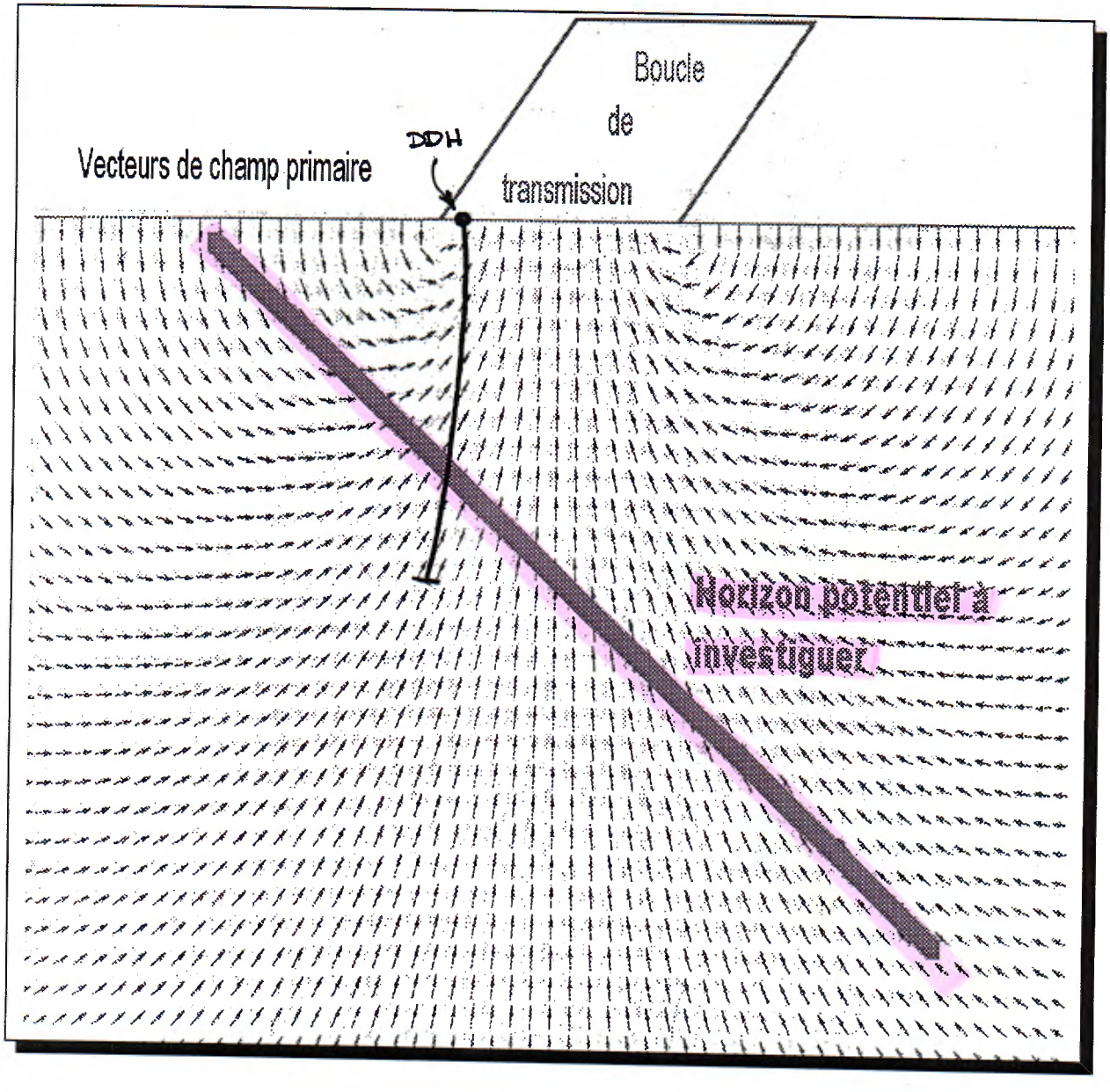


Figure 1.

La carte à l'échelle 1:5,000 annexée au présent rapport montre un plan de surface indiquant la localisation des boucles de courant (dessinées en vert) utilisées pour les 9 forages qui ont été lus avec succès sur cette propriété (noms des forages tracées en rouge et surlignés en jaune). Les boucles de transmission ont été positionnées de façon à activer adéquatement des horizons conducteurs de pendage Est à Sud-Est faible, entre 30° et 40° (voir figure 1. ci-dessus).

En forage, on effectue normalement les lectures à tous les 20m et 10m, avec détail aux 5m s'il y a une anomalie. Les résultats sont présentés sous forme de profils de l'amplitude des canaux 1 à 20 de la composante axiale (composante "Z") en fonction de la profondeur.

Des mesures de détail avec une sonde mesurant les composantes orthogonales (X et Y) sont effectuées quand des anomalies significatives sont observées sur la composante Z dans les trous sondés et que ces anomalies sont potentiellement intéressantes. La lecture des composantes X et Y du champ secondaire permet en principe de situer le centre électrique ou la bordure électrique d'un conducteur par rapport au forage investigué et diminue ainsi (mais n'élimine pas nécessairement) le besoin de faire des mesures directionnelles avec des boucles multiples. La composante X est surtout diagnostique de la position haut-bas, alors que la composante Y permet de situer le conducteur latéralement (gauche-droite) par rapport au trou. Il est cependant important de savoir que dans le cas de trous verticaux comme ici, il devient impossible de mettre pleinement à profit les mesures X - Y car il n'y a plus cette notion de "haut-bas" versus "gauche-droite" car un trou vertical n'a pas vraiment d'azimut et donc aucun repère de ce qui peut être "à gauche" ou "à droite" ou bien "en avant" ou "en arrière".

L'amplitude des canaux, leur taux de décroissance ainsi que la longueur d'onde des réponses Z, X et Y sont trois éléments essentiels dans l'évaluation de l'importance d'une anomalie Pulse E.M. en forage.

Une sonde factice ("dummy probe") est toujours envoyée dans chaque trou avant de le lire, pour s'assurer qu'il n'est pas bloqué ou qu'il ne représente pas de risques de blocage potentiels. Si le trou est bloqué ou que le risque est jugé trop grand par les techniciens, le trou n'est pas lu.

Le tableau présenté en annexe provient de Géophysique TMC et énumère tous les forages sur lesquel une tentative de levé a été faite ainsi que les résultats obtenus. Le tableau ci-bas énumère les principales caractéristiques des trous qui ont été sondés avec succès:

TROU	Longueur lue avec Pulse E.M.	Boucle P.E.M.
D-94	820m	#269, 800m x 800m
D-109	788m	#269, 800m x 800m
D-255	883m	#269, 800m x 800m
D-257	630m	#269, 800m x 800m
D-269	1110m	#269, 800m x 800m
D-282	500m	#100, 250m x 250m
D-302	615m	#302, 300m x 450m
D-382	1140m	#382, 800m x 800m
D-402	915m	#382, 800m x 800m

• Résultats et Interprétation:

Les profils Pulse E.M. (Échelle 1:2,000) obtenus pour chaque forage sont en appendice du présent rapport. Dans le présent contexte, il importe de rappeler que le but principal des travaux géophysiques était de réussir à identifier des anomalies qui indiquent ou qui suggèrent que des masses importantes de sulfures massifs conducteurs auraient été soit "manquées" ou bien encore recoupées par les forages en question. Il est évident que si un forage avait recoupé des sulfures massifs sur des épaisseurs appréciables, les gens concernés auraient poursuivi avec d'autre trous autour.

Cependant dans le cas d'une intersection relativement minime de sulfures et qui n'aurait pas suscité d'intérêt additionnel, la méthode Pulse E.M. en forage permet d'établir (à partir de l'anomalie "In-Hole" produite par les sulfure recoupés) si l'intersection en question fait partie d'une masse plus importante dont le centre serait situé plus loin autour du trou mais en-dedans du rayon de recherche de la technique P.E.M. en forages.

Dans le cas d'un trou qui n'aurait pas recoupé de sulfures au contact stratigraphique jugé "favorable", la méthode Pulse E.M. en forage permet d'établir si de tels sulfures existent en-dedans du rayon de recherche de la technique. L'anomalie "Off-Hole" ainsi produite devrait normalement être diagnostique des caractéristiques physiques (dimensions, géométrie, distance, conductivité) de la masse de sulfures détectée, si celle-ci existe.

À ces profondeurs (500m a 1000m sous la surface), la détermination ou l'estimation des dimensions des conducteurs détectés est particulièrement importante car on ne serait sûrement pas intéressé à "pourchasser" un corps conducteur dont les dimensions seraient, disons 50m par 50m. Heureusement la technique Pulse E.M. en forage est particulièrement sensible aux effets des dimensions et de la continuité électrique de la minéralisation en sulfures métalliques et permet donc d'estimer l'étendue et le volume occupé par les courants induits.

Voici donc une brève discussion les résultats obtenus dans les 9 forages qui ont été sondé avec le système Pulse E.M.

Trou D-94: 1- Effets de courants induits en surface au début du trou ("smoke ring currents")
2- Vers 760m: Petite réponse de très courte longueur d'onde, visible sur 11 canaux. Surtout de nature in-hole (positive), cette réponse est diagnostique d'un recoupement d'une mince veine de sulfures modérément conducteurs possiblement apparentée à celle du D-255 vers 790m. Il n'y a cependant pas de potentiel économique dans une telle réponse car elle n'est pas indicatrice d'une masse importante.

Trou D-109: La réponse observée vers 745m consiste en une petite anomalie de 15 canaux, de très courte longueur d'onde et de nature surtout "off-hole" même si elle coincide avec un recoupement de 10 cm de pyrite. L'anomalie, très semblable à delle du D-273 (levés de 2001) ne dure que sur une trentaine de mètres et provient très certainement d'une toute petite veine de sulfures fortement conducteurs mais qui ne fait pas partie d'une masse conductrice d'envergure. On ne peut donc pas justifier de pourchasser (dans un rayon de 200m du moins) cette anomalie, car elle n'est pas diagnostique d'un corps pouvant presenter un intérêt économique surtout en termes de dimensions.

Trou D-255: 1- Effets de courants induits en surface au début du trou ("smoke ring currents")
2- Petite réponse de courte longueur d'onde vers 790m. Surtout de nature in-hole (une seule lecture), cette réponse est diagnostique d'un recoupement d'une mince veinule de sulfures modérément conducteurs. Aucun potentiel économique dans une telle réponse. Voir trou D-94 ci-haut.
3- Autre réponse anomalique vers 850m Il s'agit cette fois d'une signature de type "off-hole", de courte longueur d'onde et définie sur 20 canaux. De toute évidences causée par plusieurs veinules de pyrrhotine (entre 843m et 883m), cette anomalie est diagnostique de courants induits dans un volume tout de même très restreint et ne présente pas les caractères de grande longueur d'onde qui seraient désirables pour une anomalie off-hole, surtout à cette profondeur. On note une migration vers le haut des canaux tardifs, suggérant que le centre électrique de cette petite zone de sulfures se trouve probablement vers le haut ("updip") le long de l'horizon.

Trou D-257: Sauf pour des effets de courants induits en surface au début du trou ("smoke ring currents"), il n'y a pas d'anomalies dans ce trou.

Trou D-269: 1- Vers 1010m: Toute petite anomalie off-hole de 16 canaux. Phénomène très localisé et de peu d'intérêt car l'anomalie ne dure que sur une vingtaine de mètres et provient très certainement d'une toute petite veine de sulfures fortement conducteurs (pyrite-pyrrhotine) mais qui ne fait pas partie d'une masse conductrice d'envergure. On ne peut donc pas justifier de pourchasser (dans un rayon de 200m du moins) cette anomalie, car elle n'est pas diagnostique d'un corps pouvant presenter un intérêt économique surtout en termes de dimensions.
2- Vers 1080m: Anomalie de type "edge" cette fois-ci avec composante off-hole à partir dues canaux 3-4, allant jusqu'au canal 20. L'anomalie ne dure que sur une cinquantaine de mètres. Petite zone fortement conductrice (Po) mais n'ayant pas de dimensions importantes. Ici encore, les courants induits circulent dans un volume très restreint, de l'ordre de quelques dizaines de mètres tout au plus.

Trou D-269: (suite) On ne peut donc pas justifier de pourchasser (dans un rayon de 200m du moins) cette anomalie, car elle n'est pas diagnostique d'un corps pouvant presenter un intérêt économique surtout en termes de dimensions.
Les deux réponses discutées ci-haut dans le trou D-269 se comparent bien aux 2 mêmes types de réponses dans le trou D-273 (levés de 2001) et sont sûrement apparentées sans toutefois laisser espérer d'améliorations détectables.

Trou D-282: Sauf pour des effets de courants induits en surface au début du trou ("smoke ring currents"), il n'y a pas d'anomalies dans ce trou.

Trou D-302: 1- Effets de courants induits en surface au début du trou ("smoke ring currents")
2- Vers 380m et 425m: Faibles réponses "off-hole" de 5 canaux. Anomalies provenant de courants induits dans une zone de sulfures en veinules, très peu interconnectés entre elles. La conductivité de ce matériel est de toutes évidences très faible. Au mieux, on peut espérer qu'il y ait de la sphalérite avec ces sulfures mais d'un point de vue géophysique, ces signatures ne constituent pas des cibles attrayantes.
3- Deuxième anomalie dans le fond du trou. Il s'agit d'une réponse "off-hole" à demi définie et possiblement centrée sur envirion 600m. Au plus, 8 ou 9 canaux bougent. Il pourrait à la rigueur s'agir d'une réponse intéressante si les roches sont favorables (altérations?). Idéalement on devrait pouvoir définir l'anomalie au complet en rallongeant le trou d'au moins 200m. Cependant l'anomalie dans son ensemble (nombre de canaux et longueur d'onde) ne présente pas des caractères assez encourageants pour justifier une telle action, à moins évidemment qu'une foreuse se trouverait dans le secteur immédiat.

Trou D-382: Il n'y a pas d'anomalies dans ce trou.

Trou D-402: Vers 750m: Faible réponse "off-hole" de 5 canaux. Anomalie provenant de courants induits dans une petite zone de sulfures en veinules, très peu interconnectés entre elles. La conductivité de ce matériel est de toutes évidences très faible. Au mieux, on peut espérer qu'il y ait de la sphalérite avec ces sulfures mais d'un point de vue géophysique, cette signature ne constitue pas une cible attrayante.

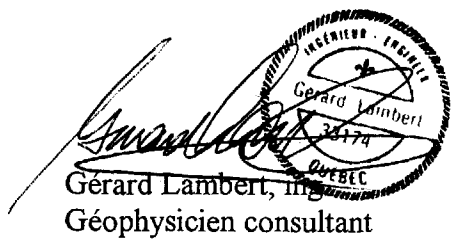
• Conclusion et recommandations

Les levés géophysiques de type Pulse E.M. en forage qui ont été complétés dans neuf anciens trous de forage en Août et Septembre 2002 sur la propriété **Dufault** n'ont pas vraiment réussi à détecter ou définir la présence de zones sulfurées conductrices pouvant être considérées comme nouvelles et de dimensions pouvant justifier des efforts d'exploration additionnels, du moins dans un rayon de 200 mètres autour de chacun des trous sondés. En d'autres termes, les résultats géophysiques obtenus n'ont pas vraiment permis de détecter des réponses anomaliques pouvant provenir de lentilles minéralisées franchement nouvelles et de dimensions économiquement intéressantes, dans le voisinage immédiat (150m ou moins) de chacun de ces trous sondés.

Seule l'anomalie "off-hole" au fond du trou D-302 pourrait à la rigueur présenter un intérêt mais il faudrait analyser l'aspect budgétaire de (1) rallonger ce trou avec une foreuse afin (2) d'y compléter les profils géophysiques, avant de procéder à un tel effort. Strictement parlant, l'anomalie géophysique en question n'est pas du type hautement prioritaire.

Sur la base de ces résultats, il est difficile de recommander de tester par forages, et dans un rayon de 300 mètres ou moins des points de percée de chacun de ces forages discutés ici, les horizons investigués par ces derniers.

En conclusion, on ne peut que recommander de faire des efforts afin de débloquer certains autres trous sur la propriété afin d'y appliquer la méthode Pulse E.M., ou bien encore de lire possiblement certains autres forages considérés comme stratégiques, s'il en demeure.



St-André-Avellin, Québec

le 13 Septembre, 2002

Gérard Lambert, ing.
Géophysicien consultant
Lambert Géosciences Ltée.

GÉOPHYSIQUE TMC
RAPPORT JOURNALIER "DUMMY" BOREHOLE

PROJET #: Q-127.3 **NOM DU CLIENT :** RESSOURCES MOTCO **NOM DU PROJET :** LAC DUFAULT

	DATE	# TROU	PROFONDEUR		TYPE CASING	PROFONDEUR "DUMMY"	DIP	REMARQUES
			Pieds	Mètres	AXT, AQ, BQ			Ex: Accès, difficultées, loop, commentaires, marécage, inondé, falaise, boisé
	04/09/02	D-94		820		820		SENTIER ENTRE 94 ET 95 COMPOSANTE "Z"
	12/09/02	D-92				154m		PROBLEME AUSSI AU DEBUT (BLOQUÉ A 154m) ABANDON
DUMMY->	10/07/02	D-257				630m	LEVÉ -->	COMPOSANTE "Z" LE 05-09-02 (FAIT 2 AUTRES POINTS)
	2001	D-165				525m		ÉTAIT BLOQUÉ EN 2001 ABANDON
	03/09/02	D-255				880m		COMPOSANTES Z-X-Y LE 03-09-02 ACCÈS ARGO
	2001	D-268				150m		TERRAIN INONDÉ ABANDON BUDGET
DUMMY->	29-08-02	D-109				788m		SCIER CASING COMPOSANTES Z-X-Y LE 29-08-02
	30-08-02	D-269		1110m		770m		ROSTER PRIS PERDU 1 DUMMY DANS TROU, FAIRE DÉBLOQUER
	31-08-02	"				1110m		AVEC FOREUSE + LEVÉ JUSQU'A 1110m Z-X-Y
	02-09-02	D-282				500m		LU AVEC FOREUSE SUR TROU COMPOSANTE "Z"
	06-09-02	D-302		617m		610m		LEVÉ 610m AVEC COMPOSANTE "Z"
DUMMY->	10-07-02	D-382		1148m		1140m		COMPOSANTE "Z" LE 09-09-02
		D-321						ABANDON FOREUR PERDU TIGES
DUMMY->	10-07-02	D-402		1091m		915m		LEVÉ COMPOSANTE "Z" LE 10-09-02
								N.B. LA SÉRIE "F" ABANDON
								NOUS AVIONS "DUMMY" LES TROUS
								F-248, F-289, F-251, F-52, F-54, F-238,
								F-237, F-55, 17-C
								AUSSI LA SÉRIE "L"
								TROUS L-25, L-22, L-24

ANNEXE II

DESCRIPTION (LOGS) DES FORAGES LEVÉS AU PULSE-EM

FORM No. 1

LAKE DUFAULT MINES LTD.

Drill Hole Record

Hole No. H-94 Lat. 1560.9 S Dep. 10,441 S E Elev. 1024.28 Dip -90o Bearing -- Depth 2182'

Working Place: Dupresnoy Area 4D

Date Started: March 25, 1957

Date Completed: April 23, 1957

Dip Tests (Corrected Readings)

Depth Read	Corrected
75'	90°
500'	88.0o
1000'	87.7o
1500'	88.5o
2000'	89.0o

SAMPLED SECTIONS

From	To	C.L.	Cu	Zn	Au.	Ag.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
58		C A S I N G - Boulders, sand and clay						
162.1	Au andst.	drk-gry-grn 30	f.g.	Curdy, FFp, wk-q, Mod por (Fp) in last 10 ft.	Wkly amyg nr top. Massive base.	epid. patches 4" ø	very wk. scat. cp.	
171.0	Flow-Bx	Leek-grn		Angular & twisted fragments, Porph (Fp)	Chlor. matrix	Strong chlor. epid.	Strong py, pyrrh. Mo. Zn, Cu.	Scoriaceous flow-top belongs to flow below
199.5	Au. andst (dacite)	drk-grn 70	f.g	Strong q	30% amygs in top 20 ft.	Mod. chlor.	Wk. py.	
207	Rhy dk Por (Fp)	Pale gray 90	aph.	por (Fp) 20%	Massive	Strong sil'n	-	top ctc clearly intrusive
215.8	Unif dacite - AS ABOVE DYKE							
233.7	Por (Fp) rhy dyke	pale gray 90	aph	Por (Fp) 20%	Massive			
282.6	A (p) U	drk-grn 50	m.g.	Salty por (fp) wk q.	Wkly amyg (calcite)	Wk. chlor Epid patches	Wk scat. py.	

Hole No. H - 94

Logged by H. J. Greenwood

FORM No. 2

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
290.4	QFP Dyke	drk-grn	aph to fg	Strongly por (Fp, Q)	Chilled ctcs	Mod chlor.		Top ctc dip - 75o Bottom ctc dips - 76o
328.2	A (P) U andst	med-grn blotchy	f.g. to aph	Salty por	Lower 3 ft. amyg, lam.	Many large epid patches	Wk. scat py.	Lam dip 80o
536.5	APL	med-grn blotchy	f.g. to aph	Speckled (1 mm chlor) 15%	amyg. p-bords clear. p-bords bx'd	Bx'd p-bords are alt'd to epidosite	Wk. py.	Some epid patches have dappled ctc's like 'acid dog'.
624.5	QFP	pale-gry-grn 80	m.g.	Strongly por (20%, Fp) ½ plag, ½ K-Fp Lithic. Soned plag. wkly por-10% 2mm Q	Massive	epid patches (NOTE: Lower contact obscured by swarm of 2" - 6" basic dks & aphanitic ctcs.)	None	Upper ctc - core ground 15% free qtz, no qtz-eyes. Otherwise resembles QFP, (This to 575. From 575-625 Qtz-phenos)
690.0	A (P) PL	med-grn 50	f.g. to aph	V. wkly por. (Salty Fp) Not speckled	Amyg (ep) Nat pw's clear, bx'd ctcs.	Wk. chlor. to strong chlor @ p-bords	mod. py in bx'd p-bords	Possibly same as above QFP, not clear.
713.7	Qtz. diabase dyke	drk-grn 40	c.g.	OPhitic	Massice			
791.5	AU (q)	pale-grn	f.g. to aph	Sl. curdy, mod. q.	amyg. (Q-wk) flow- lam.		Wk. scat. py.	
792.2	Qtz - Diabase	drk-grn	c.g.	Ophitic	Massive			
866	Rhy dk.	pale gry 95	aph	Wkly por. (1 mm Qtz)	lam ctcs.		Wk py in fracts.	Inclusion (?) of APL 843-848. Lower ctc cut out by gougy fault.
937.4	APL	drk-grn 50	f.g.	fine q v.wkly por (Fp)	amyg p-bords			
941	Porph dioritic diabase Dyke	v-drk-grn 20	m.g.	Trachytic wkly ophitic. Hold-plag.	Lam ctcs.			Dip 30o. Main mafic - h blde 80% Main felsic - plag 20 Logged as trachyte H-93

Hole No. H-94

FORM No. 2

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
972	APL	AS PREVIOUS DYKE						
976	Bx	dk-grn			frags. sil's matrix			Probably Bx'd pw's not a true inter-flow Bx.
989.2	APL	med-grn mesh-fract.	f.g.	f.g. equigran chlor specks sl. curdy. No. q.	Amyg (Qtz) p-bords. strongly fract.	Sil'n in fracts.	Mod. py in fracts.	Similar to APL Above trachytic dyke.
1014.5	Rhy dk	Pale gray 95	Aph	Por - ½mm QE (25%)	wkly lam. (dip 70o)	mod sil'n	mod py. in fracts.	Sharp ctc's chilled.
1030.3	Flow-Bx	Mottled Epid-grn			Curved & chilled frags in finely fragmental matrix	mod epid.	mod py.	Excellent andesite flow-Bx, gradational with APL & Bx above Rhy. dk.
1047.4	A (P) PL	med-grn 60	Aph	Curdy Wkly por (Fp)	Clear pw's amyg (calcite)	wk. chl.	wk. py.	
1056.2	Rhy dk.	dk-gry	Aph	Curdy Por (½mm Qt) 15%	Lam ctcs			Chilled ctc's
1064.1	A (p) PL	AS	ABOVE DYKE					1-inch bx @ base
1212.0	APPL	Mottled ep-chlor-grn 50	m.g. to aph.	Lithic, por (25-30% Plag)	Amygs (Qtz) pw's	Mod. chl. cp.	Oxide - up to 5% Fe, O_4 octahedra, Dissem & in fracts.	If magnetite is persistent flow should show magnetic high on surface.
1214	Flow-Bx	Drk-grn	.	Frags-aph, non-porph.	Siliceous matrix	Strong chlor.	Wk. py.	Possibly non-pw'd phase of APPL above.
1415.3	APL	drk-grn 40	f.g.	Dense	Strongly amyg. Bx'd p-bords	Strong chlor.	Mod py @ p-bords	

Hole No. H-94

FORM No. 2

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
1423.7	Rhy Dk	drk-blu-gry 90	aph	Curdy	Dense		Wk. scat. py.	Sharp lower ctc. Upper ctc crushed.
1563.2	APL	drk-grn 40	m.g.	Massive, FFp Wkly por (Fp)	amyg pw'd	Mod chlor.	Mod py. @ p-bords	Same flow as above the rhy dk. Lower ctc taken as lowest p-bord.
1623.6	Au	drk-grn 40	m.g.	Mass. FFp	Amyg in top 5 ft.	Mod. chlor		Phase of APL? above. Lower ctc taken as lowest p-bord.
1655.0	APL	drk-grn 40	m.g.	Mass. FFp.	Amyg ($CaCO_3$) pw'd	Mod epid.	Wk. py, cp.	Phase of flow above.
1666.0	Dyke	drk-gry	f.g.	Massive	6" gneissic ctc's.			Sharp intr. ctc's. Dip 70o
1746.8	APL	Pale epid-grn 50	f.g.	FFp, lithic	Amyg ($CaCO_3$) Pw'd	Mod epid.	Wk. py.	Same rock as above dyke
1766.3	Flow-Bx	Mottled grn.		Amyg (qtz) (matrix and fragments)	Frags - up to 5" ø, scor., 80% of rock			Some frags bleached with sericite.
1857	APU	pale-grn 70	m.g.	Lithic. Mod. por (Fp)	Amyg. (qtz)	A few massive 6" ø patches of epidosite. Many (5%) ¼" ø spots of wh. seric & qtz. with fuzzy ctcs.		
1881	Dyke (Rhy)	drk-gry	f.g.	dense			Scat. py. cubes	Upper contact sharp. Lower ctc. crushed.
1921	APU	SAME AS ABOVE DYKE						
2024	APPL to 2000; APL to 2024	Pale-grn 65	f.g.	Porph (Fp 20%), (top 80') Myrmekitic in top 80 ft.	Amyg ($CaCO_3$)	Irreg. sericite spots. Wk. chlor.	Minor py @ p-bords.	Texture odd. Fine wiggly lines of sericite make rock look worm-eaten. Fp phenos die out about 2000 ft., rock becomes m.g., dark grn.

LOWER CONTACT TAKEN AS LOWEST PILLOW-BORDER

Hole No. H-94

Page 1

FORM No. 2

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
2-91.5	Rhy (Dyke?)	Pale Blu-gray. Mottled.	v.f.g. to aph.	micro-gran?	Massive	Wk. mauve sil.		Both contacts indistinct.
2098.6	AU andst	Drk-grn mottled.	f.m.g.		Bx'd into equidimensional fragments about $\frac{1}{4}$" ϕ Amyg.	Intense sil & chlor.	Wk. py.	Looks like fine lithic tuff, but is really (?) Bx'd AU.
2099.3	Lam. Blk. chert.	Blk & gry	aph	Cherty	Finely lamin. siliceous & chloritic $\frac{1}{4}$" layers.	Mod. chlor.	Strong py. mod. cp.	Dip 20o. Looks identical to Lam rx in H-92, H-93
2107.0	Andst. BX	Drk-grn mottled	m.g.		Fine frags. $\frac{1}{2}$" ϕ	Strong chlor.	Wk. py.	Probably flow-bx
2182	A (P) U andst.	drk-grn 40	f.g.	wkly por. (5%, Fp) Finely curdy Good q.	Strongly amyg. in top 25 ft.	Mod. chlor.	Wk. py.	Definitely andesitied Gougy shr @ 2148, dip 55 Same as below lam. in H-93, H-92
				END OF HOLE - 2182				

Hole No. H-94

FORM No. 1

LAKE DUFAULT MINES LTD.

Drill Hole Record

Hole No. D-109 Lat. 87.67 S Dep. 11,095.75E Elev. 1037.35 Dip -90 Bearing Depth 2568

Working Place: Dupresnoy

Date Started: Aug. 17, 1959

Date Completed: Oct. 14, 1959

Dip Tests — Depth Read Corrected

Acid Tests

Depth	Read.	Corr.
50	88¼	87 3/4°
200	89¼	88 3/4°

TRO-PARI TESTS

Depth	Dip	Bearing
500	2°	S20°E
940	2°	S1½°E
1500	2°	S21°W
2000	2°	S42°W
2560	3°	S32°W

SAMPLED SECTIONS

From	To	C.L.	Cu	Zn	Au.	Ag.

Depth	Rock Type	Colour & % Felsic	Size	Texture	Structure	Alteration	Sulphides	Remarks
38								Casing
98	Amyg. Andste	Grn-gry	m.g.		Str. fract'd.	Mod. chl'ic.		
183	F.por.An.	Grn-gry	m.g.		Mod. fract'd.	Minor epid.	Wk. scat. py.	192 - 196 - Vert. fract'g.
282.5	Sil.An.	Grn-gry	m.g.		Mod. fract'd.	Minor epidote, hematite in fract's.		
284.5	Fault zone				Gneissic andste frags. in qtz. carb. matrix.		Tr. cp.	Shr'ng. at 40-45°(d)
367.5	Andste Pil lava	Lt.grn-gry	m.f.g.		Amyg'l. Pil. lava	Mod. chl. Minor biotite Epid. and hematite in pil. bdrs.	Minor scat. py. pyrr., cp.	
428	Andste Bx. (Scor. flow top)	Grn-gry	m.f.g.		Rhyolite ~~Cherty~~ frags. in andste	Mod. chl., Minor epid. Mod. hematite	Fine scat. py., cp.	Frags ~~actually~~ cherty rhyolite 349-351 - 70°(d) slip. Presence of hematite and chert suggests this is a disconformity.
481	Grano-diorite dyke	Grn-gry	m.c.g.					Top ctc. @ 55°(d) Bot ctc. @ 50°(d)
515.5	Diorite Dyke	Grn-gry	m.g.					

Hole No. D-109

Logged by D.H.B.

FORM No. 7

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
522	Grano-diorite dyke	Grn-gry	m.c.g.					
526	Strong shear Grano. Selvage	Gray	m.g.		Strong shr'ng. @ 60° (d)			
557	Andste P.L.	Grn-gry	m.g.		Pil. lava Mod. fract'd	Bleached in pt. Minor epidote, hematite	Scat. py. Tr. cp.	
596	Amyg. Andste	Grn-gry	m.g.					568) Strong slips 572.5)
599.5	Andste Fault Bx.	Grn-gry	m.g.					595.5 - Strong slip @ 55° (d)
648.5	Andste	Grn-gry	m.g.	U	Strongly fract'd. and sheared sparsely amyg'l.	Zones of strong epid.-carb. alt'n.	Py., assoc. with epidote patches	
726	Andste	Grn-gry	m.g.	U	Strongly fract'd. sparsely amyg'l.	Mildly chl'ic. Fract's. filled by carb. zones of epid.-hem.	Wk. scat. py. Tr. cp.	723-725 - Broken grnd.
739	Broken grnd. 80% core loss							
743	Andste	Grn-gry	m.g.	U	Strong flat fracturing			Core - a series of buttons.
746	Broken ground							50% core loss
769	Andste	Grn-gry	m.g.	U	Strong fract'd.	Epid. and hem. in fract's.		Numerous steep (70°) slips
847	Amgy. Andste	Grn-gry	m.g.		Amyg. Pil. lava. Mod. fract'd. Bx'd. pil. brrs.	Mild zone of epidote		765 - Co. assoc. with slip. 823-24 - Bx. zone

Hole No. D-109

FORM No. 7

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
847.5	Andste	Grn-gry	m.f.g.	U	Mod. fract'd.		Minor py. assoc. with fract's.	
868.5	Diabase	Grn.	m.c.g.	diabasic				
877.5	Flow Bx.	Grn-gry	m.g.					
901.5	Andste	Grn-gry	m.g.		Amyg. Pil. lava.			
1028.5	Sil. Andste	Lt. grn.	f.g.	U	Strongly sheared		Tr. cp.	980-985 - Fault zone (strong) 982.5 - Mud seams
1050	Andste	Lt. grn.	m.g.	U	Very strongly fract'd.	Fract's filled by calcite with minor hematite Minor chl., sericite	Minor scat. py.	Badly broken grnd. to 1049.5
1106	Andste	Lt. grn.	m.g.	U	Mod. fract'd.			
1106.5	Banded Andste Shear(?)	Grn-gry	m.g.	U	Banded or sheared	Mod. chl.	Minor py.	
1136	Andste	Lt. grn.	m.g.	U	Strongly fract'd.	Fracts. filled by qtz. carb. with minor hematite Minor chl., sericite		Broken grnd. 1130-36 Epidote spotting
1159	Acid Dyke	Lt. grn.	f.g.	U	Wkly. steeply fract'd.	Fracts. qtz.-carb. filled - with minor hematite		
1162	Fault Bx. Qtz. filled	Grn-gry			U. An. frags. in qtz. matrix	Minor chl. Mod. hematite	Cp. (tr)	
1180	Andste	Grn-gry	m.g.	f. por.	Minor fract'g.	Minor chl.	Scat. speks. cp.	
1209.5	Amyg. Por. Acid rock	Grn-gry	m.f.g.	co. por.	Amyg'l.	Mod. epid. hem. esp. assoc. with fractures	f. scat. py., cp.	1207.5 - 1209.5 - Dynam. Bx.
1214	Acid Dyke	Lt. grn.	f.g.	U	Amyg'l.	Bleached		
1276.5	Amyg. Por. Acid rock	Grn-gry	m.f.g.	co. por.	Bx. in part	Bleached sections		May be pil. lava. Seen in D108 - 941' D110 - 1441'
1321.5	Acid rock	Lt.grn-gry	m.f.g.	Co.por.(fds) in part	Amyg'l. in part	Some bleaching		Looks like fds. phenos. obscured when rock bleached.

Hole No. D-109

FORM No. 2

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
1348.5	Amyg. An. Pil. lava	Gray	m.g.		Amyg'l. Poorly defined pil. bdrs.	Slightly bleached. Minor chl.	Py., pyrr. at pil. bdrs.	
1366	Acid Dyke	Grey	m.f.g.	f. por.(fds)		Minor biotite		
1372	Amyg. An. Pil. lava(?)	Gray	m.g.		Amyg'l. Poorly defined pil. bdrs.	Minor chl. Minor biotite	Py. pyrr. at pil. bdrs.	
1404	Acid dy.	Dk.blu-gry	f.g.	U	Mod. fract'd.			2" bx. at basal ctc.
1414	Andste Flow breccia	Gray	m.g.		Paisley bx.			
1555.5	Siliceous Andste or Meta-diabase	Brn-gry	m.g.		Strongly amyg'l. (?) in part	Minor epid. Mod. biotite chlorite	Mod. scat. py. Massive py., in some fract's.	'Amygs' here, since they almost all contain some pyrite, may be merely alteration halos around the pyrite xtal. The brownish color attributed here to biotite, may be due to a rust alteration from the large amount of dissem. pyrite.
1557.5	Andste Pil? lava	Grn-gry	m.g.		Mod. fract'd.	Strongly chl'ic.		
1687.5	Meta-diabase	Grn-gry	m.g.	U	Minor fract'y.	Minor chl.		
1748	Co. Por. Andste flow	Grn-gry	m.g.	por (fds)	Minor fract'g.	Minor epidote Minor chl.	Minor scat. py.	P3?
1777	Acid Dyke	Blu-gry	f.g.	U				
1794	Acid Unif.	Blu-gry	f.g.	U	Mod. strongly fract'd.	Grid alt'n.		
1799	Andste Flow	Grn.	m.g.	U				
1807	Sil's. Unif. Andste	Blu-gry	m.g.	U				
1837	Por Andste	Blu-gry	m.g.	Co. por.				P3 ?

Hole No. D-109

FORM No. 2

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
1861	Sil. Unif. Andste	Grn-gry	m.g.	U	Mod. strongly sheared and fract'd.	Mod. chl. Qtz- carb. fract. filling		
1883	Acid Dy?	Blu-gry	f.g.	Wkly. por. (coarse)		Mod. chl.		
1890	Andste flow	Lt. grn-gry	m.f.g.		Amyg'l.			
1920	Meta-diab.	Grn-gry	m.g.	U				Bot. ctc. @ 68° dip.
1946	Andste flow	Lt.grn-gry	m.f.g.		Amyg'l.			
1952	Bx'd. Andste	Grn-gry	m.g.		Bx'd. in pt.	Sections of epidote		
1969	Andste Pil. lava	Grn-gry	m.f.g.		Wk. pil. bdry.	Slightly bleached (silicified)		
1970	Banded tuff or shear zone	Gray	f.g.		Banded (bedded)		Mod. hvy. py. Minor pyrr.	
2038	Acid dyke or sill	Grn-gry	f.g.			Spots of epid. resembling amygs.		Mod'ly acid rock. Prob. intrusive.
2078	Diorite	Grn.	m.c.g.	Dioritic	Strong steep fract'g.			
2252	Acid dyke or sill	Dkgrn-gry	m.f.g.	U		Minor grid. Minor biotite		
2259.5	Acid Fds Por. (Not Q.F.P.)	Grn.	m.c.g.	Str. por(fds)		Mod. chl.	Peppered with pyrite	Not similar to Q.F.P.
2261	Bedded Acid Tuff	Grn-gry	f.g.		Str. bedded		Mod. py. Minor pyrr.	
2262.5	Rhy? Bx.	Grn-gry	f.g.		Fault? bx.		Minor py. Tr. pyrr.	
2270	Shr'd. Rhy.	Gray	f.g.		Strongly shr'd.		Strong finely disnem. py. Tr. pyrr.	
2276.5	Rhyt	Dk. gry	f.g.			Purple alt'n.		2270-2272 - Core ground 2274-2275 " "
2276.5	Slip plane Qtz. filled				at 70°(d)			

Hole No. D-109

FORM No. 2

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
2278	Rhy?	Grn-gry	f.g.			Chl'ic. spotting	Peppered with py.	
2280	Basic Dy.	Grn.	m.g.	U				
2302	Rhyolite	Grn-gry	f.g.		Very strong steep fract'g.	Mod. chl.	Scat. py. Tr. cp.	2280.5 2281 } Bedded banding
2308	Rhy. Fault Bx.	Grn-gry	f.g.		Very strong steep fract'g.	Mod. chl.	Scat. py.	
2311.5	Andste?	Grn-gry	m.f.g.		Amyg'l.	Mod. chl.	Scat. py.	
2313	Core ground							
2313.5	Andste	Grn-gry	m.f.g.		Strongly broken			
2315	Core ground							
2328	Acid rock	Dk. blu-gry	f.g.	U	Badly broken in part	Chloritic?		
2335	Q.F.P. Bx.	Blu-gry	m.f.g.	por.(f.g.)	Rhy(?) frags.	Minor chl.	Minor scat. py., cp.	
2430.5	Q.F.P. Bx.	Blu-gry	f.g.	por.(f.g)	Q.F.P. frags. in Q.F.P. matrix.	Minor biotite chlorite	Tr. cp. assoc. with qtz. 2422.5-2430.5 - Mod. py., pyrr. Minor sph., cp.	
2436.5	Bedded Tuff	Blu-gry	f.g.		well bedded	Mod. chl.	Mod. py. Minor pyrr., sph., cp.	
2449	Rhy. bx.	Dk. blu-gry	f.g.		bx.	Mod. chl. Minor biotite	Mod. Hvy. py. Minor sph.	2439.5 - 3' Mass. py. sphal.
2497	Rhy. bx.	Dk. blu-gry	f.g.		Strong bx. Frags. mostly angular	Mod. chl., Mod. strong biotite Strongly chl/ic.	Minor py.	
2498.5	Basic Dy.	Dk. Grn	m.f.g.					
2513.5	Rhyolite	Dk.blu-gry	f.g.		Flow banded	Mod. chl.	Tr. py.	
2516	Chloritized Selvage of Q(F)P feeder	Dk. Grn	m.f.g.	massive				
2546.5	Qtz. Por. Bx. Dy.	Blu-gry	Co. phenos. in f.g. matrix	Co. por (Qtz)	Frags. of above material	Mod. chl.		2546-2546.5 - f.g. selvage
2568	Rhyolite	Dk. blu-gry	f.g.			Mod. chl'ic.	Tr. cp.	2567-6" Strong hematite alt'd. rhyolite with chloritized rhy. above and below. Prob. fault zone
	END OF HOLE							

Hole No. D-[illegible]

Page 6

D-255

LAKE DUFAULT MINES LTD.

Drill Hole Record

Hole No. D-255 Lat. 979.99 S Dep. 10,849.98 Elev. 10,991.32 Dip -90° Bearing Depth 2905'

Working Place: D-68 Zone

Date Started: Feb 2/70

Date Completed: Mar 11, 1970

Acid Tests

Depth	Dip	M.Brng.
100'	87 1/2°	
250'	87°	
500'	87	
750'	87 1/2°	
1000'	88°	
1250'	89°	

Acid Test

Depth	Read	Corr.
1500'		88 1/2°
1750'		89°
1998'		88 1/2°
2250'		88°
2500'		87 3/4°
2750'		85°
2905'		87°

SAMPLED SECTIONS

From	To	C.L.	Cu	Zn	Au	Ag

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
0.0-70.0	Casing							All angles measured are relative to the core axis.
70.0-95.0	Massive Amygduloidal Andesite	Dark grey	Fine grained	Even	3-4 f/ft. Low angle shearing. Amygdules thoughout. Size 1-10mm.	Carbonate-epidote-quartz filled fracts- ures and amygdules. Some minor leached sections.	Trace 1mm py as - filling of amygdules- as disseminated throughout.	Fracturing at 40-60°. Shearing at 0-20°. Very blocky ground.
95.0-144.0	Brecciated Tuffaceous Andesite Flows	Greenish grey	Fine	Uneven Tuffaceous banded and brecciated sections with strongly brecciated and amygd- ular sections.	5-6 f/ft. Pyro- clastic material 4-20mm(mostly quartz). Sections with very reg- ular rounded amygdules(1-10mm) mixed with undefinite pyroclastics.	Chlorite-sericite and carbonate attn around tuffaceous sections. Sericite and qtz-carbonate filling of amygdules. (epidote?)	Trace py throughout.	Near contact sharp at ~~40-60°~~ 45° ~~Shearing at 0-20°. Very blocky ground.~~ Far obscured. Fracturing 40-60°. tuffaceous sections at contact and 104-106'(about 4") 109-111', 128-128.5', 130'.

Hole No. D-255

Logged by L.N. & A.W.B.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
144.0-152.0	Strongly Sheared Brecciated Andesite	Grey	Fine grained	Uneven	Low angle shearing filled with qtz-carbonate. Brecciated. Few qtz-epidote filled clastics or amygdules. 10-30mm	Qtz-carbonate-sericite-epidote altn.	Not observed.	Both contacts are obscure (around qtz filled fracture at 10o) Shearing 0-20°.
152.0-295.0	Massive Amygduloidal Andesite	Grey	Medium	Even	6 f/ft. Amygdules 2-10mm, mostly not very well pronounced rounded throughout, but not often slow down to 207'. Farther sparse. From 260'L little feldspar phenocrysts observed, amcunts grows up moderately to end of the sections.	Strong sericite altn in sharp, average 1-6" wide, dyke-like sections throughout (1 per 6-8ft average). Little sericite altn? throughout. Qtz-carbonate filling through fractures. Rock look acid dykes. No contact has been observed. From 236': sericite altn mixed up with epidote.	Trace py disseminated throughout.	Near contact indefinite. Fractures at 60-80o, some in opposite directions, lava flows. Sect 242-272': more fractured 8 f/ft, angle slow down at 40°. 295': contact another flow, farther core is finer. From 295': more fractured sometimes sheared(297-306'). Far contact indefinite.
295.0-364.0	As above.							Seperate flow.
364.0-448.0	Fractured Amygduloidal Andesite	Light grey	Fine	Uneven	8-15 f/ft. mostly 2-3mm thick, filled qtz-carbonate. Many amygdules various size	Strong sericite farther sericite-chlorite altn, especially in amygdules. Sericite	Trace py in amygdules, more in near 30'.	Near contact indefinite (lost core). Contacts different lava flows. 367' 368' strong 6" sect. 387'.

Hole No. D-255

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
					and rounding (2-25mm) Small brecciated Sections around lava flows	bleaching throughout Ser-qtz-carb filled fr's.		389-391' 3x 392' 395' 403' 422' 443' 446' Fracturing at 25-60°. 434-435 and 441-blocky ground. 437 lost core 1' Far contact recognised at 70°
448.0-469.5	Fault Zone Creek Fault	Light Grey	Fine	Uneven Soft ground.	Breccia fragments (qtz). No amygdules observed. Very fractured and sheared. 20-25f/ft Intensely sheared throughout.	Chlorite filling fractures. Dense sericite-qtz-carbonate altn throughout. (bleaching).	Not observed.	Near contact at 70° From 450' very blocky ground. Lost core-452-453-1' 456-464.5" 8.5' Erratic fractures to shearing roughly 30-80°.
469.5-567.0	Massive Amygdu-loidal Andesite	Pale Green	Fine	Uneven highly amygdu-loidal	Massive 7-9f/ft Low angle shearing. 1/8"-1/2" dia amygdules through out.	Carbonate, epidote quartz and chlorite filled amygdules. Carbonate filled fractures.	Trace of scattered py.	Fractures at 60 and 80° Shearing at 0-15° Minor small breccia fragments scattered in sections throughout. Highly bleached (carbonate) bottom contact, well defined.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
567.0-574.0	Massive Lamp. Dyke	Greenish Lead Grey	Fine	Even	Massive 3-4f/ft No shearing observed.	Carbonate filled fractures, and bleached through out.	Trace py through out.	Well defined bottom contact slightly finer grained and brecciated. Fractures at 60 and 80°.
574.0-846.0	Fractured Amygdu-ldda1 Andesite	Pale Green	Fine	Uneven Scattered amygdules through out. (to far contact very sparse)	Moderate to highly fractured (Last 25 again moderate). Weak low angle shearing 15° Small 1/8"-1/4" dia. amygdules.	Weak sericite speck-ling. Carbonate sericite filled fractures. Some sericite?-epidote? bleached sections. Limonite? altn around sheaed zone. From ±752' rock becomes more acidic.	Trace of py. Trace cp observed unsheared zone (747-758') In section 773-778' trace cp (as much as py throughout). 791-830-835'	Flow banding at 60o in sections. Small minor breccia fragments along the fracture. Fractures at 60° Shearinga t 20°. Possible scattered feldspar phenocrysts Strong sheared zone 740-741' and 744-750'. From 752'- some strongly brecciated sections 0.5-1 wide (752, 764, 771, 775, 795, 801, 811, 816, 824'. Different lava flows? Far contact as another lava flow 0.8' of pyroclastic tuffaceous? material with py mineralization.
846.0-945.0	Massive Andesite Flow	Grey sometimes greenish	Fine Moderate ly to medium (865')	Even ecept section 848-865' (finer grained brecci-ated with some amygdules	6-10 f/ft. Weak low angle shear-ing. Fracturing moderately weakens to 2-3f/ft	Sericite-chlorite altn at 865'. Some qtz-carbonate-epidote and limonite filling fractures. Some qtz stringers Generally weak altn.	Tr of py, cp in near 20'. Farther not observed.	Near contact at 40°. Fractures at 50°, shearing at 25°. Minor fault at 850-851' (loat core 1'). 882-883': small andesite dyke?. Contacts obscured in broken core. 905-906': tuffaceous contact another flow.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
				and phenocrysts observed throughout. Not important for general view.				910-911': andesite dyke, top contact obscured in broken core. Bottom legible at 7°.
945.0-1086.0	Massive Amygduloidal Andesite	Various grey	Fine	Uneven	6-8 f/ft. Narrow modrately thicker qtz-carbonate. Sulphide filling flow banding. Amygdules in clusters, or scattered throughout, well rounded Some breccia fragments (qtz mostly Small tuffaceous sections. Low angle shearing. Some sections porphyritic and almost without amygdules.	Strong sericite dyke-like sections, serchlorite bleaching throughout. Farther some qtz-carbonate stringers.	Trace py throughout.	Top contact obscured, moderately (grain size) 945-951': fracturing at 40-60 shearing 0-10° strong 1005, 1015'. Several lava flows with tuffaceous contacts. 1061': minor fault. Section 1050-1086': similar to 846-945'.
1086.0-1110.0	Sheared Q.F.P.	Dark grey	Fine grained	Uneven	Weakly but often sheared. 6-8 f/ft. Flow banding	Sericite-chlorite-epidote weak altn (qtz-ca) fairly	Not observed .	Top contact obscured. Rock becomes porphyritic moderately 40 and 80° fractures. Shearing 0-15°.

Hole No. D-255

Depth	Rock Type	Colour & % Foliation	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
					Phenocrysts)1-4mm) of feldspar and quartz. Feldspar phenocrysts. Many times well rounded amygdules?	Acidic Rocks		
1110-1119.0	Fault Zone? Boundary Fault	Grey	Fine	Uneven	Both contacts qtz-ca stringers 4"-2.5' resp). Between structure like next section Massive rocks 6-8f/ft.	Not observed except two qtz-carb stringers.	Nil	Selected speculatively both contacts at 45°, only bottom qtz-ca stringer has contacts like weak fault.
1119.0-1254.0	Massive Andesite Flow	Greenish grey	Medium to fine	Even	8-10 f/ft. Thin low angle shearing. Some flow banding. Difficult to find amygdules.	Qtz-carbonate-epidote-sericite weakly throughout. Some epidote-sericite dyke like sections Some qtz-carbonate stringers. Fairly acidic rocks.	Not observed.	Fractures at 40-60°, different directions. 1176-1177': lava flow contact or fault? 1196-1197': small andesite dyke, fine grained, 75° cts. 1223-1224': andesite dyke, fine grained with amygdules(?) Top contact at 40° bottom lost in 1' tuffaceous sections.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
1254.0-1260.0	Quartz Feldspar Porphyry Dyke	Grey	Fine	Uneven	2-3f/ft. Very thin, very clear phenocrysts 2mm average. Some breccia fragments thoughout.	Sericite-epidote bleached sections. Qtz-ca-limonite stringers.	Not observed.	Both contacts fairly sharp at 40°, without put down eeceptio.n similar to 1086-1110'.
1260.0-1318.0	Massive Andesite Flow	Grey	Fine	Even	Continuation of 1119-1254 Finer grained except last 10'	More qtz-cartonate stringers but generally less altered.	Not observed.	Last 10' more fractured 1308 and 1310 fault(?) at 45° and 35° resp.(May be flow cont.) Texture looks like micro-dioritic.
1318.0-1341.0	Acid Dyke	Dark Grey	Fine	Uneven	8-10f/ft thin low angle shearing. Glassy matrix small feldspar phenocrysts.	Very silicious. Qtz-carbonte-sericite-epidote filling fragtures. First 2'-ser altn?	Py, minor cp disseminated throughout.	Both contact difficult(?) at 50° Fractures at 45-60° Shearing at 20-30°
1341.0-1365.0	Massive Andesite Flows	Greenish Grey	Medium	Even	Continuation of 1119-1254 More sheared.	As 1260-1308 Some limonite filling fractures.	NIL	First 2' Microdioitic dyke. Last 2' fault at 50°, very blocky.
1365.0-1370.0	Micro-diorite Dyke	Grey	Medium	Even	3-4f/ft	Qtz-cartonate-limonite filling fractures.	NIL	Top contact ast in fault, bottom gradational.

Hole No. D-355

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
1370.0-1466.0	Massive porphyritic Andesite	Grey	Fine Matrix	Uneven	2-4f/ft flow banding feldspar phenocryst(to 4mm) throughout some qtz-epidote amygdules. Several strongly brecciated sections(6"-1' wide).	Epidote-sericite bleaching. Minor qtz-ca-limonite.	Not observed.	1376-1378 And. dyke Fractures at 40 and 80° Last 3' probably andesite dyke; top cont, tuffaceous, , bottom at 60°.
1466.0-1926.0	Massive (Amygduloidal) Andesite	(Greenish Grey)	Fine	Even	Sheared in some 2-3' sections/ first 50' and again from 1750 3.5f/ft. thin. Amygdules in first 20', after sparsely or 6' clusters. Flows banding difficult to observe. Some brecciated sections. Some small(to 3") tuffaceous sct. Instead of amygdular sections some porphyritic (little feldspar phenos-especially far 35'-porphyritic andesite from 1790 more fractured 6-10f/ft.	Qtz-carbonate-chlorite-sericite (epidote)throughout. Many qtz-ca stringers (in first 100'). From 1834 more acidic.	Py along fractures-trace throughout. Further minor cp throughout.	Fractures at 30-45° Shearing -0° 1511-1513-Andesite dyke?40°ct 1516-1518-Small fault at 45° 1581-1584 Strongly brecciated with glassy silicious matrix. 1627-Small 6" fault at 60° 1797-Small fault at 30° 1857-1864- fractured andesite

Hole No. D-255

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
1926.0-1951.0	Acid Dyke	Dark Grey	Fine	Even	6-10f/ft Low angle shearing. Last 1' porphyritic.	Chlorite-sericite altn. Qtz-carbonate limonite filling fractures.	Py dissemenated throughout.	Top contact at 70° Bottom contact at 70° but difficult(qtz stringer) Last 4' broken core.
1951.0-2083.0	Massive (Amygdu-loidal) Andesite	(Greenish) Grey	Medium	Even	Continuation of 1466-1926		From 2008-More cp in fractures (2035')	2022'-2074'-Microdioritic texture,no contacts, some amygdules.
2083.0-2117.0	Massive Andesite Flows	Grey	Fine	Uneven	2-3f/ft Strong flow banding- Strongly brecciated sections and tuff-like section. Amygdules-some but not typical.	Epidote-chl-ser altn. Qtz-ca filling fractures. Secundary?Qtz altn throughout.	Py throughout Contact different lavas fairly pyritize.	Top ct at 30° Fractures at 60° Whole section can be called brecciated. Last 3' can be fault.
2117.0-2131.0	Acid Dyke	Dark Grey	Fine	Uneven	2-3f/ft,fine porphyritic (feldspar,qtz? phenos).	Chl altn.	Tr Py, minor cp throughout.	Top ct lost in broken core at 45°? Fractures at 30° Rocks ~~looks~~ looks like rhy bottom ct at 40°.
2131.0-2271.0	Massive Amgydal. Andesite	Grey	Fine	Even	4-8f/ft,fine amygdules very sparcely flow banding difficult ((except last 30')	Epidote-qtz-ca filling fractures weak ser bleaching throughout. Some qtz and epidote stringers.	Tr py,especially in amygdules.	Fractures at 70° and 30°

Hole No. D 255

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
						(especially last 10') Near 5' fairly acidic weakly throughout.		
2271.0-2277.0	Breccia Tuff	Greenish grey	Medium	Uneven	Sheared and fractured throughout.	Sericite-qtz thoughout.	Py cubes throughout. Est. 4%.	Top ct at 70°, bottom at 50°. First 3' composition previous Last 3' composition as following. Shearing or fracturing at 41' and 50°. 2275-2277': rhy?
2277.0-2455.0	Massive Amygd Dacite	Grey	Fine	Uneven	6-15 f/ft, weaken to end. Amygdules very rounded (good). Some breccia fragments and tuff like sections around. Low angle shearing. Flow banding some at 0°.	Qtz-ser-epidote altn. Ser bleaching. Very acid. Some strongly chloritized sections.	First 10' 3% py. estimated. After minor tr py-cp throughout.	Qtz does not form crystals looks like secondary gradationally to more andesitic features. Frs at 30-40° and 70-90°. 2285': 10" breccia tuff. 2338-2339': blocky 2391-2392': "
2455.0-2514.0	Acid Dyke?	Dark grey to light	Fine	Even	Almost glassy. 10-15 f/ft. blocky. moderate to 4-6 f/t. No amygdules phenocrysts and flow banding.	Strong chlorite. Minor ser altn. Acid but qtz nearly not legible.	Py throughout.	Top contact at 60°. Fractures at 40-60°, both directions. 2471': 2" fault. Dyke is not typical, almost the same composition like rocks around. Bottom contact at 45°

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
2514.0-2547.0	Acid Dykes	Continuation			5-10 f/ft.	Stronger ser altn.	Py, trace cp (2526')	Difficult to call the rocks. Another contact at 2518, 2526, 2532, at 45°. Part 2526-2532' can be lamprophyre dyke. Bottom contact at 20°.
2547.0-2592.0	Massive Amygdu-loidal Dacite	Greenish grey	Fine to medium	Uneven	To 2567' fractured (10-15f/ft.) After 5-8 f/ft. In near part well rounded amygdules after sparcely but typical. Flow banding difficult. Some shearing.	Ser-qtz-ca altn. Acid to 2567'.	Tr py.	Fractures at 30-60-80° both directions. 2588' to end: sheared at 0-15°.
2592.0-2629.0	Fractured Amygdu-loidal Brecciated Andesite	Grey	Fine	Uneven	10-20f/ft. 6"-2' strong brecciated sections. Amygdules throughout. Flow banding.	Qtz-ca filling fractures, qtz filling amygdules. Weak ser altn.	Est 1% py.	Top contact at 45°. Fractures at 30-60°, both directions. Some sections silicious but mostly typical andesite. Strong shearing or faults at 2626', 2628', 2629'. 2618-2629': duplicated core by stucking.
2629.0-2645.0	Fault Zone	Grey	Fine	Uneven	8-15 f/ft. in solid places, but mostly broken throughout. Soft.	Qtz-ca.	Minor py.	Very blocky, from shearing to fracturing (0-70°). Locally solid. andesite-dacite. 3' lost core. No contacts.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
2645.0-2698.5	Amygdu-loidal Andesite Dacite	Grey	Medium	Even	5-10 f/ft. Amygdules sparcely not too typical. Flow banding difficult.	Some ser bleaching (weak). Qtz-ca stringers.	Minor py.	Upper part fairly silicious (15'), after more andesitic. Fractures at 30 and 70°.
2698.5-2773.0	Massive Dacite	Pale grey	Fine	Even	Massive. 0-4f/ft. Minor weak shearing.	Qtz-ca filled fractures. Weakly defined chlorite speckling throughout. Dark blue chlorite spots near bottom contact.	Minor scattered diss py.	Andesite dyke at 2712-2712.2' Fracture sets at 60, 30-40°. Minor shearing at 15-30°. Sharply defined "dyke like" top contact, section could be also possibly decribed as an acid? dyke? as it appears very silicious in sections. Poorly defined texture and lack of flow features tend to support acid dyke theory.
2773.0-2782.3	Bedded Tuff	Lead grey	~~Even~~ Fine	Even	Massive. 1-3f/ft.	Minor scattered brecciated-chlorite fragments. Chlorite and qtz-ca filled fractures.	Banded py-po and traces of scattered sph and cp. .3% sulph. 2" massive py at 2782'.	Bedded at 60°. Weak fracturing at 60°.
2782.3-2850.0	Rhyolite Breccia And Flow	Med grey	Very fine	---	Indurated breccia throughout. Flow banding at 2810', 1 f/ft. A few shards and amygds Hopy structure at 2521'.	Almost nil	Py lean disseminations. po. 1" stringer at 2822'. Tr cp-sph.	Contact, upper at 50°. Lower gradational.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
2850.0-2900.0	Massive Rhyolite Flow and Breccia	Med grey	aphanitic	Even or with altered phenocrysts.	1 f/ft. Amydules especially near top. Local breccia, flow banding in places.	Minor sericite.	Minor py, scattered grains of cp.	Fractures at 50 and 30°.
2900.0-2905.0	Rhyolite Breccia	As above.						
					END OF HOLE 2905'.			

Hole No. D-255

LAKE DUFAULT MINES LTD.

Drill Hole Record

Hole No. D-257 Lat. 1,499.94 Dep. 9,479.61 Elev. 11,010.88 Dip -90° Bearing Depth 2069'

Working Place D-68 Zone

Date Started Feb 17/70

Date Completed Mar 12/70

Acid ~~Compass~~ Tests

Depth	Dip	M.Brng.
250'	87°	
336'	86 1/4°	
500'	86°	
697'	84°	
856'	75°	
1000'	81°	

Acid Test

Depth	Read	Corr.
1250'		81°
1360'		83°
1500'		81°
1750'		80°
1954'		82°
2069'		82°

SAMPLED SECTIONS

From	To	C.L.	Cu	Zn	Au	Ag

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
0.0-62.0	Casing.							All angles measured are relative to the core axis.
62.0-3571.0	Massive Amygduloidal Andesite	Light grey	Medium to fine	Even	8-10 f/ft. Medium, mostly qtz-ca filling. Some strong low angle shearing. Amygdules sparsely throughout. Flow banding. Some brecciated sections (lava flows)	Epidote-sericite-chlorite dyke-like sections, also throughout, strong sericite-epidote bleaching. Qtz-ca stringers and fragments. (some 2" thick throughout).	Not observed.	Fractures at 45-90°. Shearing at 0-20°. Small fault at 74' (60°). 100-119': strongly sheared 134-146': " 146-150': fractured andesite 178-182': " 154-178': andesite dyke, porphyritic (feldspar but some qtz observed) Both contacts at 30°.

Hole No. D-257

Logged by I.N. & S.W.B.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
357.0-411.0	Massive Porphyritic Andesite	Grey	Fine matrix	Uneven	8-10 f/ft. Some sections fairly fractured and sheared. Feldspar phenos. Qtz amygdules filling phenos. Flow banding.	Chlorite-epidote-sericite altn, some limonite throughout. Fairly acidic through out. Some qtz-ca stringers and fragments.	Tr of py.	Top contact at 40°, but difficult. Bottom at 55°. 393-396': andesite dyke? without phenos. Contacts lost in broken core, chlorite altn. Fairly blocky ground. Fractures at 20-80°.
411.0-447.0	Massive Andesite Flow	Grey	Medium	Even	1-4f/ft. Some shearing (weak). in first 10' some amygdules and phenos, after very sparsely. flow banding.	Weak sericite throughout.	Tr py throughout.	Fractures at 60°. Shearing at 0-20°. 420-421': fairly sheared. 442-443': fault at 40°.
447.0-479.0	Massive Porphyritic Andesite	Grey	Medium	Uneven	3-5f/ft. Fine feldspar phenocrysts throughout. Flow banding some shearing, not broken core.	Qtz-ca stringer or filling fractures. Some qtz throughout, not crystals.	Some py cubes.	Top contact moderately. Bottom at 45o, but not definite. (Qtz stringer) Frs at 45°. Shearing at 10-20°.
479.0-620.0	Massive Andesite Flows	Light grey	Medium	Even	Continuation of 411-447'. Stronger shearing.	Qtz-ca stringers.	More mineralized 607-620'. Tr cp.	Qtz-ca strgs at 30 and 70°. Sheared section 541-546'. 566-571' 607': lava flow contact at 50° m after more amygdules and flow banding. Whole section can be recryst.

Hole No. D-257

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
620.0-625.0	Fault Zone	Greenish grey	Medium	Even	620-623': fractured andesite (previous section). Last 2' fault.	Ser-qtz-ca.	Py, tr cp.	Both contacts at 45°. Section can have limits 622$\frac{1}{3}$-625'.
625.0-656.0	Dioritised Andesite	Grey	Medium	Even	Microdiorite, but some andesite features kept (amygdules, flow banding weak). 2-3 f/ft. Low angle shearing, fairly strong.	Qtz-ca stringers. ser altn around shearing.	Tr py, minor cp.	625-633': strongly sheared at 0-10°. Frs at 60°.
656.0-970.0	Massive Amygduloidal Andesite	Different grey	Fine to medium	Even	8-15 f/ft. Fairly strong. Low angle shearing throughout. Amygdules in clusters, little throughout. Some porphyritic sections.	Locally strong chloritized, ser-qtz-ca throughout Qtz-ca stringers from 795'. Some epidote-ser bleaching.	Some py.	Top contact 6" fault at 90° Similar to 479-620'.(very sparsely amygdules). Section can be called sheared (0-35°) or fractured (at 70-90°). 848-851': andesite dyke Contacts at 45°. 943-970': sheared amygd andesite. Last 3' dioritised. 864'-870'- mineralized zone (weak) 870'-886'- brecciated
970.0-1046.0	Sheared (Micro-) Diorite	Grey	Medium	Uneven	Strong shearing 8-10f/ft. Grain size varies Microdiorite-diorite.	Qtz-ca-epidote hematite altn.	Nil. 1039': 1" grian of cp.	Top contact lost in broken core. Shearing at 0-20° Fracturing at 45-60°. 991-995': core broken throughout fault? 1014-1016': andesite dyke

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
								Contacts at 45°. Bottom contact lost in broken core, probably 0.5' gradational.
1046.0-1106.0	Fractured Amygduloidal Andesite	Light grey	Fine	Uneven	12-20 f/ft. Fairly strong. Strong shearing. Amygdules not too much typical. Some breccia fragments.	Qtz-ca-epidote hematite altn.	Nil	Fractures or shearing at all directions. Blocky from 1090' more solid. 1099-1106': dioritized.
1106.0-1126.0	(Micro-) Diorite	Grey	Medium	Uneven	Continuation of the 970-1046' fairly solid. 6-10 f/ft. Low angle shearing.	Qtz-ca stringers and altn.	Nil	Top contact lost in broken core. Bottom in qtz-ca stringers at 40°.
1126.0-1161.0	Fractured Amygduloidal Andesite	Grey	Fine	Uneven	10-20 f/ft. Amygdules typical Some porphyritic sections. Low angle shearing.	Qtz-ca-chl-ser altn.	Nil	Fractures at 40-70°. Shearing at 0-25°. Some places very blocky.
1161.0-1170.0	Fault Zone	Light grey	Fine	Uneven	Sheared and fractured throughout.	Strong qtz-ca.	Tr of py.	Fracturing or shearing at 0-50°. 1' lost core. Very blocky. Some places only qtz-ca. Contacts lost.

Hole No. D-257

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
1170.0-1181.0	Micro-Diorite Dyke	Grey	Medium	Uneven	6-10 f/ft. Broken enough. Grain size smaller than microdiorite before. Some shearing.	Qtz-ca.	Nil	Fractures and shearing at 20-40°. Bottom contact at 30°(?).
1181.0-1217.0	Altered Amygdu-loidal Andesite	Different grey	Fine	Even	Low angle shear-ing. 6-12f/ft. Amygdules in clusters, little throughout.	Sericite-epidote chlorite-qtz-ca altn and bleaching. 1206-1217': strong biotite altn. Some sections fairly acid.	Minor py.	Fractures at 40-70°. Shearing at 0-10°. 1192-1195': tuffaceous and brecciated. 1210-1212.5': lamprophyre dyke, both contacts at 15°. Biotite crystals throughout. Gradationally into following.
1217.0-1311.0	Amygdu-loidal Andesite	Greenish grey	Fine	Even	Low angle sheared 6-10 f/ft. Some sections por-phyritic. Flow banding.	Ser-epidote locally bleaching. Qtz-ca altn and stringers. Limonite around shearing.	Tr py.	Fractures at 30 and 60°. Shearing at 0-10°. 1228-1239': feldspar porphyry some silica but not in crystals. Possibly fault at 1240-1241' and 1287-1288'.
1311.0-1324.0	Acid Dyke	Dark grey	Very fine	Even	4-6 f/ft. Fine locally phenos (amygdules?) feldspar.	Ser-chlorite-qtz-ca silicious.	Tr py-fine cubes.	Top contact at 40°. Fractures at 10 and 60°. Bottom contact at 60°.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
1324.0-1402.0	Amygdu-loidal Andesite	Grey	Fine	Even	Continuation	of the 1217-1311' Some sections little silicious.		1325-1328': duplicated core by wedge. 1335-1345': strongly sheared 1376-1378':Fault? Several lava flows with tuff-breccia contacts.
1402.0-1406.0	Breccia Tuff	Greenish grey	Medium coarse	Uneven	3-5f/ft. Breccia fragments. 1-5mm throughout.	Qtz-ca-sericite weak altn.	tr py.	Fairly sharp contacts at 50°. Fractures at 40-50°.
1406.0-1437.0	Massive Amygdu-loidal Andesite	Grey	Fine	Even	Continuation of the 1324-1402' More massive (weak shearing).		Minor py.	
1437.0-1445.0	Acid Dyke	Dark grey	Very fine	Even	3-5f/ft. Sparsely phenos(feldspars?)	Chlorite-ser-qtz-ca weak altn. Silicious.	Minor py.	Top contact difficult at 50° Bottom contact at 50°. But last 2' more andesitic features.
1445.0-1764.0	Massive Amgygd Porphy-ritic Andesite	Greenish grey	Fine to medium	Uneven small feldspar pheno-crysts scattered in sections.	3-6f/ft. Amygdules sparsely through-out. Some porphy-ritic section. Flow banding.	Qtz-ca-ser altn. Qtz-ca stringers and mostly filling frs and amygdules. Some sections fairly silicious.	Minor py, tr cp (around ca-qtz stringers 1543')	Fractures at 20 and 60°. From 1490' slightly recryst-allized amygdules, locally very difficult, to 1597') From 1585' low angle shearing. Bottom contact breccited with numerous amygdules near bottom contact.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
1764.0-1792.0	Massive Acid dyke	Dark leadz grey	Fine	Even	Massive. 2-5f/ft. Low angle shearing.	Qtz-ca filled fractures. Chlorite near lower contact.	Minor diss py throughout.	Fractures at 0-20°. Shearing at 15-30°. Fracture top contact well defined. Sharp, dyke like apparent chilled bottom contact. Possible flow banding or cooling fractures near bottom contact at 60°.
1792.0-1817.0 74.0	Massive Amygdular Andesite	Pale green felsic 70%	Fine	Even basaltic	Amygdules throughout. Flow top breccia 1828' 2 f/ft.	Minor chlorite some bleaching.	Minor py.	Contacts: top sharp at 50° Bottom sharp at 50°. Fractures at 40°. Minor quartz veins parallel to core.
74.0 1817.0-1900.0	Massive Q.F.P. or Porphyritic Rhyolite	Dark grey black	Fine very fine matrix.	Very porphyritic.	Very few fractures.	Some chlorite in matrix.	Minor disseminated py.	Bottom contact brecciated and gradational. Rock type very similar to Q.F.P. in D-256 except quartz eyes are balck. black.
1900.0-1913.0	Rhyolite Breccia	Med grey	Fine very fine	Irregular	Brecciated throughout fragments from 2mm 2cm.	Few fractures.	Py throughout. with 1/2"-1" stringers and blebs at 1904. 1910'. Cp from 1901-1913' as ~~xx~~ scattered grains small stringers and blebs, constituing about 1% of rock.	Lower contact at 50°. Black glassy quartz eyes in overlying Q.F.P. recognition. Apparently breccia derived from Q.F.P. Sample CZAA 1900-1913'.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
1913.0-1922.0	Banded Cherty Tuff	Light grey dark green	Very fine light layers fine dark layers.		Finely layered from 1-8mm.	Sauss.	Py as layers, blebs, lenses, constitutes 5-15% Nearly massive py occurs as follows 6" at 1920' 2" at 1920.5' 2" at 1921' Minor sph? at 1920'.	Bedding at 50°, uniform. Fractures at 10-20°. Contacts brecciated and irregular. Sample throughout.
1922.0-2041.0	Rhyolite Breccia	Med grey	Fine very fine		Indurated breccia fragments 2mm-2cm. Flow banding in several palces Few fractures. Amygdules here and there.	Minor chlorite-sericite.	Minor py as dissemination and isolated blebs and stringers.	Lower contact sharp. Quartz stringers at 0°, near top.
2041.0-2069.0	Andesite Dacite Dyke	Dark grey green	Fine-medium	Even	Massive. Few fractures.	Nil	Minor py.	Chilled top contact. at 70°.
					END OF HOLE	2069'		

Hole No. D-257

D-269

LAKE DUFAULT MINES LTD.

Drill Hole Record

Hole No. D-269 Lat. 605.34 S Dep. 12,765.73 Elev. 11,093.43 Dip -90o Bearing Depth 3773'

Working Place: South Dupresnoy

Date Started: May 30/70

Date Completed: July 14/70

Compass Tests			Acid Test		
Depth	Dip	M.Brng.	Depth	Read	Corr.
2500'	82o	S79°W			

SAMPLED SECTIONS

From	To	C.L.	Cu	Zn	Au	Ag

Acid Dip Tests

Depth	Corr
Collar	90°
250'	89°
500'	89°
750'	90°
1000'	87°
1250'	87 1/2°
1500'	86 1/2°
1850'	86°
2000'	85 1/2°
2250'	82°
2500'	79°
2750'	79°
3000'	79°
3250'	82°
3500'	79°
3750'	77°
wedge 2593'	79°
2616'	83°
wedge 2820'	81°

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
0.0-15.0	Casing.							
15.0-449.0	Massive Diorite	Med gray to med green	Med	Even	Massive. up to 2 f/ft.	Ser-carb filled fractures with limonite on some fractures.	Nil	Fractures at random angles. 401.5.-406': lamp dyke with sharp cts.

Hole No. D-269

Logged by M.A.N. & B.v.E.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alte...	Sulphides	Remarks
449.0-1127.0	Diorite	Grey	Med	Equigranular.	Massive. avg. 1f/foot at random angles.	Fractures ser-carb filled, generally hairline, but up to 1/2" wide.	Nil	451-452': 10-12 hairline frs at random angles. Bottoms on carb-gericite vein at 70°. 486-487': 50% ser-carbonate due to numerous fr-filling at random angles and thickness. 488-489': acid dyke, grey siliceous, granular? Upper ct grad, lower ct at 35-40°. 497.5-505': moderately bleached 524-525': " " 548-549': " " 549-567.5': microdiorite(?) finer grained, upper ct sharp and chilled over 1', lower ct sharp and chilled over 1', trace of po. 590-593': acid dyke, 3" inclusion of altered diorite. at 591.5'. 602-604': mod bleached. 621-622.5':" " 622.5-629': altered appearance. 675.5-678.5': aqygd andesite? 684-685.5': highly epidotised dyke rock, sharp cts at 45°.

Hole No. D-269

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
								759.5-764.5': C.F.P. dyke Sharp cts at 20° epid altn of fs.
								821-822': heavy epidotization
								836-844': coarser grained.
								849-863': porphyritic mafic dyke. 20% white feldspar phenocrysts in a fine to very fine ~~grid~~ grained massive black matrix. Contacts grad over 1/2"
							877.5-929': sulphides as noted.	877.5-883.5': up to 10% diss'd po with very minor cp diss'd throughout.
								908-910': 5-10% diss po.
								924.5-925.5': altered 8-10 random carb fracture fillings.
								926-927': 10% po diss.
								929': 1/2" po bleb.
								951-962': darker colour biotitic
								1025': from onward, altered appearance.
								1034-1035': very coarse, pegmatitic.
								1067-1067.5': 6" carb-ser vein at 30°.
								1081-1081.5': gouge (fault).
								1081.5-1096.5': blocky 6-7 breaks/ft at average 40-45°.

Depth	Rock Type	Colour & % Folic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
								1096.5-1097': gouge(fmlt) 30°. 1100.0-1106': lamp dyke, sharp contacts at 20-30°. 1125-1127': lamp dyke. Sharp contacts at 20-25°.
1127.0-1173.0	Massive Andesxite	Dark greeny black	Fine to very fine	Even	Massive. 2-3 random fractures per foot, generally hairline epidote-carbonate filled.	Very minor light green alteration massoc with fractures.	AS noted generally barren.	1137.0': 1/2" carbonate vein at 35-40° with 10% fine cp diss.
1173.0-1212.0	Diorite Dyke	Grey	Med g.	Even	Massive.	Chloritised mafic minerals.	Nil	1173-1175': finer grained chilled(?) upper contact gradational over 2-3". Lower contact sharp at 80-85°.
1212.0-1767.0	Amygdu-loidal to Massive Andesite	Dark greeny black	F.g.	Even	Generally massive. A few flow bands in places. 1-2f/ft except where noted.	Ser-carb fracture filling. Saussurite veins irregularly speckled and bleached below 1875'.	Tr py, tr cp at 1762'.	1242-1251': heavily bleached. 1262-1263': granite dyke, grad cts. 1276-1278': altered granite 1285-1286': heavy epidote altn 1476.5-1481': silicified. 1500-1525': blocky, averged 3-4 f/ft at 30-60° 1525-1540': silicified.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
								1557.0-1562': heavily fractured epidotized, weakly brecciated. 1686-1688': acid dyke, grad cts.
1767.0-1803.0	Acid Dyke	Med light grey	Very fine	Even to finely porphyritic.	Massive. 1-4f/ft.	Slight epid altn. Slight sauss at bottom.	Tr py. Tr cp as lean dissemination from 1800-1803'.	Lower contact abrupt. Fractured below 1801'. Lower contact abrupt. Sample 1799-1804'.
1803.0-1818.0	Massive to Sheared Andesite	Med green	Fine	Even to porphyritic.	4-5f/ft. Massive. Bottom 2' sheared.	Weak-moderate carbonate in matrix and as stringers.	Nil	Lower contact sheared over 2' at 55°.
1818.0-1866.0	Altered Acid Dyke	Light brown light grey	Very fine-fine	Even to porphyritic.	4 f/ft .	Intensely grid altered(bleached).	Tr diss py.	Prominant frs at 50°. Lower contact gradational. Fracture zone from 1859-1861'.
1866.0-1938.0	Massive Andesite	Med grey	Fine to med	Even	1-5f/ft. Amygdules at 1893'. Flow banding at 1900'.	Bleached above 1874'. Minor epidote-carbonate.	Tr py.	Coarse grained quartz-calcite veins above 1874, one 6" thick. Fractures at 60, 30o.
1938.0-1939.5	Massive Bedded Tuff	Med grey	Fine			Sauss	1-2% py.	Top 1" thinly bedded and cherty. Remainder speckled siliceous rock.

Depth	Rock Type	Colour & % Foliac	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
1939.5-1982.0	Massive Andesite	Dark grey - grey	Fine to very fine	Even	Scattered amygdules and flow banded, sections.	Sauss veins and pods grid altn. Minor chlorite altn of matrix.	Isolated blebs and grains of py.	Prominant fractures at 65°. Siliceous flow banded or amygduloidal sections near top probably result from alteration.
1982.0-2042.0	Flow banded to Massive Andesite	Dark green	Fine	Even	Numerous flow banded section. A few amygdules. Numerous brecciated sections with quartz and/ or sauss cement.	Sauss sections up to 2' long.	Tr py as diss and amygdules fillings. Tr cp at 2022'.	Flow banding from 0-55°. Lower contact sharp at 40°.
2042.0-2136.0	Massive Andesite	Dark green grey	Fine med	Even to porphyritic.	Massive. Numerous amygd near top and isolated amygd throughout.	Grid altn near top.	Tr py, trcp at 2070 and 2072',	Fractures at 40,60,75°.
2136.0-2206.0	Massive Q.F.P. Dyke	Med grey	Very fine matrix phenos up to 6mm.	40-60% feldspar and quartz phenocrysts.	Massive. 1-5f/ft.	Minor grid altn.	Nil	Top contact at 20° apparently chilled. This unit identical to Q.F.P. intersected at a few hundred feet depth in D-262. Bottom contact sharp at 45° and appears chilled.
2206.0-2293.0	Massive Dacite	Med dark grey	Fine	Even to porphyritic.	Massive. 1-3f/ft. A few poorly formed amygdules.	Minor sauss.	Tr py in amygds.	A hard, tough rock. Fractures at 50, 20°. Lower contact sharp chilled, flow banded.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
					Flow banding & chilled contact at 2293'.			
2293.0-2302.0	Silicified Andesite Breccia	Med dark grey	Fine very fine		Flow(?) breccia. Numerous amygdules.	Silicification. Minor chlorite.-grid altn. Sauss.	Minor py, trcp at 2300'.	Upper contact apparently marks scoraceous flow top.
2302.0-2452.0	Massive Porphyritic Andesite	Dark grey-green	Fine	Even porphyritic.	Amygduloidal sections and scattered amygdules. 3-4f/ft.	Weak grid altn.	Tr py, tr cp in amygdules.	Alternating massive and porphyritic sections. Fractures at 5, 60°. 6" thick banded quartz-carbonate vein at 2350'.
2452.0-2469.0	Amygduloidal Andesite	Dark grey	Fine	Even to slightly porphyritic.	Sauss, quartz and feldspar filled amygdules from less 1mm to 1cm. constitute 20-50% of rock.	Mod sauss.	Minor py as blebs and in amygdules.	Contacts gradational, the upper with intercalation.
2469.0-2508.0	Massive Andesite	Dark grey green	Fine med	Even ophitic texture.	Isolated amygdules. 1-5f/ft.	Weak bleaching at bottom.	Tr py in amygdules.	2" qtz vein at 2507'.
2508.0-2559.0	Acid Dyke or Flow?	Med dark grey to black.	Very fine to fine	Even to porphyritic in middle.	Massive. 2-15f/ft. A few elongate structures up to 8mm long,	Weak grid altn near contacts.	Tr py as dissemination and scattered blebs.	Fractures at 65, 45°. Plagioclase phenocrysts. Contacts abrupt.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
					resemble amygdules. Vague banding at bottom, may be flow banding.			
2559.0-2590.0	Massive Andesite And Andesite Breccia	Med grey to dark green	Fine	Even	Sauss and pyrite filled amygdules. Flow breccia. Scattered irregularly shaped amygdules with grey chert fillings.	Blotches of blue-green chlorite, especially strong from 2585-2590'. Minor sauss.	Abundant py. 1-4% as amygdule fillings, blebs and dissemination.	Numerous fragments or cavity filling of dull grey chert. Fragments have irregular shaped and contacts with andesite are sutured.
2590.0-	Porphyritic Andesite	Dark green	Fine	Irregularly porphyritic euhedral feldspars up to 3mm 5-15% of rock.	Massive. 3ft/ft. Scattered amygdules up to 10mm with feldspars and sauss.	Minor sauss.	Minor py diss and amygdules. Tr cp throughout and in amygdules and qtz-sauss veins.	Top somewhat scoraceous. Lower contact appears chilled.
2590.0-2592.0	Q.F.P.	Dark green matrix grey pale blue phenocrysts.	Fine matrix phenocrysts to 3mm.	50% phenocrysts quartz & feldspar.	Massive to indistinctively foliated.	Chlorite(?) in matrix.	Tr py.	Contacts are either sheared or tuffaceous over 6", Contacts very sharp at 60°. Lower contact appears chilled agianst andesite although andesite both within 1/2" below and above Q.F.P. appears slightly recrystallized

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
								Q.F.P. is probably extrusive.
2657.0- 2775.5	Porphyritic Andesite	As above between 2590-2654'.					Tr py, tr cp here and there.	A few fractures at 0. 20, 60°.
2775.5- 2806.0	Dacite Dyke	Dark grey black	Fine	Even	Very massive. Few fractures.	Nil	Tr py.	Upper contact chilled, sharp at 60°
2806.0- 2890.0	Massive Andesite with Andesite Dykes.	Dark green to grey	Fine	Even	Massive. Isolated amygdules. Flow bands 1-15f/ft. carb filled.	Weak chlorite altn including spotting at lower contact.	Tr py in and around carb veins.	A very massive uniform rock probably includes much dyke rock, but contacts with flows not apparent. 8" thick andesite dyke with chilled contacts at 2887'. Prominant fract 60-70°.
2890.0- 2928.0	Acid Dyke	Dark grey black	Very fine	Slightly porphyritic.	Massive. Chloritic inclusions near bottom.	Minor chlorite at contacts.	Tr py.	Top contact marked by carbonate vein at 50°. Bottom contact obscured by altn.
2928.0- 2952.0	Massive Andesite	As above.			Isolated amygdules and flow bands.	Minor chlorite altn.	Nil	Flow contacts at 2932-top chilled.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
2952.0-3089.0	Porphyritic Amygduloidal Andesite	Dark grey-green	Fine to med	Even or speckled here and there with feldspar phenocrysts.	Numerous irregular sauss and quartz filled amygdules A few flow bands.	Numerous sauss veins and pods.	Tr py,tr cp in amygdules at 2970' and in sauss vein at 3036 and 3056'.	Stretched amygdules at 50°. Upper contact obscure. Sauss flow breccia at 3016'. Lamprophyre dykes as follows: 2' thick at 3021' 4" thick at 3027'
3089.0-3130.0	Acid Dyke	Med grey	Fine in middle very fine contacts.	Even	Massive. 2-5f/ft.	Nil	Tr py diss'm.	Contacts sharp and unaltered at 45-50° laminated at bottom. Lamprophyre dyke 3120.5-3124'.
3130.0-3208.0	Massive To Amygduloidal Andesite	Dark grey	Fine	Even A few short porphyritic sections.	Scattered amygduloidal sections. General sections of flow breccia. Flow banding 2-5f/ft.	Sauss pods.	Tr py, tr cp in sauss veins.	Lamprophyre dyke 3162-3166', upper part sheared at 65°. Carb filled fractures at 30, 80°.
3208.0-3266.5	Amygduloidal Flow Banded Andesite	Dark grey	Fine	Even	Scattered large amygdules up to 2cm. Qtz-sauss filled Numerous flow bands. Minor flow breccia.	Weak sauss. Minor silicification, along fractures and flow bands.	Minor py as stringers blebs.	Lower contact abrupt at 60°.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
3266.5-3290.0	Massive And Brecciated Andesite	Dark green	Fine	Even	Brecciated with quartz cement 3266.5-3273'. A few scattered well formed amygdules.	Nil	Minor py stringers above 2689'.	Lower contact sharp at 80°.
3290.0-3296.0	Fragmental Tuff	Grey brown				Bleaching -sericite.	Tr to minor py especially near bottom.	Contact sharp. Upper ct marked by thin chert bed. Fragments from 2mm-1.5cm.
3296.0-3297.0	Bedded Cherty Tuff	Med light grey	Fine to aphan.		Beds 2mm and 8cm thick.		Layers and veinlets 2-4% po less than 1% cp. Tr sph(?).	Bedding at 70°.
3297.0-3332.0	Amygdu-loidal Andesite	As above.			2mm-2cm chlorite or qtz filled amygdules. Well formed. Numerous flow banded sections. Brecciated with qtz cement about 3309'.	Blotches of chlorite here and there.	Minor po-py as blebs and stringers.	
3332.0-3412.0	Massive Dacite or Dacite Dyke	Med grey green	Fine to med.	Very even	Very massive. A few amygdules near top contact.	Minor grid alteration.	Tr py-po.	Massive and featureless. A few possible amygdules suggest this is a flow rock. Fractures at 40, 60°.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
3412.0-3495.5	Altered Andesite or DAcite	Mottled med dark grey dark green	Fine to med	Uneven.	1-4f/ft. Few amygdules except near bottom. Flow banding near bottom.	Irregularly bleached (mottled appearance) Silicified?. Irregularly recrystallized (dioritised)	Tr py, tr cp.	2' andesite dyke at 3432'. Fractures at 60, 0, 40°. Quartz present in matrix of rock except near bottom and either primary or an altered product. Sample 3494.5-3495.5'.
3495.5-3496.2	Cherty Bedded Tuff	Med dark grey	Fine to aphan.		Beds 1mm-2cm.	Nil	3-4% py. 1-2%cp as layers and veins.	Bedding at 65°. Cont ct sharp. Sample 3495.5-3496.2'.
3496.2-3515.0	Amygdu-loidal Andesite	Med grey	Fine	Even	Scattered chlorite filled amygdules to 1cm.	Slightly bleached Sericitised.	Tr py in amygds.	Very massive. Sharp contacts at 75°. Sample 3596.2-3598'
3515.0-3520.5	Cherty bedded Tuff	Med light grey	Fine to aphan.		Beds 1cm to 10cm.	A few patches or layer with chlorite altn.	3-5% po-py as layers up to max. of 1cm thick. Tr cp.	Lapilli?bedsheres and there Bedding at 80°. Sample 3515-3518' 3518-3520.5'
3520.5-3528.2	Massive Andesite	Med grey	Fine	Even	Flow banding. A few amygdules.	Slightly bleached and sericitised.	Minor py as stringers.	2" thick cherty tuff at 3522'. Similar to andesite from 3496.2-3515'. Sample 3527.2-3528.2'.
3528.2-3528.8	MS		Med to coarse	Uneven			90-95% granular py±po.	Upper contact angular at 50°. and marked by thin tuff. lower ct irregular. Sample 3528.2-3528.8'.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
3528.8-3723.0	Altered Rhyolite Breccia And Rhyolite	Med light grey to dark green	Fine	Even in fragments in altered zones.	Flow banded and amygduloidal fragments from 1/2" to 2ft in diameter. Numerous elongate quarts or chlorite filled amygdules.	Matrix and some of frggments almost completely altered to chlorite and sericite. Minor chlorite spotting.	Minor diss py at top ,tr py elsewhere.	Shear at 5, 50° from 3548-3570'. Schistose zones with abundant chlorite-sericite. Lower ct.sharp 4% lampe dyke 3707-3708'. Flow banding 35-90°. Sample 3528.8-3530'.
3723.0-3773.0	Porphyritic Dacite Dyke	Grey	Fine	Asicular feldspar pphenocrysts 5%	Very massive. 2-4f/ft.	Chlorite in matrix. Bleaching around quartz vein.	Minor py as stringers. Sphalerite in quartz vein stockwork.	Upper contact abrupt, and marked by intense chlorite alteration. Stockwork of fine quartz veins with pale brown bleached waggins and 1-3% sphalerite. Sample 3761-3763' 3763-3764.5'
					END OF HOLE			

Hole No. D-269

D-282

LAKE DUFAULT MINES LTD.

Drill Hole Record

Hole No. D-282 Lat. 1800.07N Dep. 3357.29E Elev. 11,086.98 Dip -90° Bearing Depth 1669'

Working Place: Turcotte Lake

Date Started: Oct 4/70

Date Completed: Oct 25/70

Compass Tests

Depth	Dip	M.Brng.
700'	6°	S23°E
1100'	4°	S50°E

Acid Test

Depth	Read	Corr.
50'		90°
250'		87°
500'		84°
718'	WEDGE	81 1/2°

Acid Test

740'	83°
1000'	82°
1250'	77°
1500'	77°
1669'	77°

SAMPLED SECTIONS

From	To	C.L.	Cu	Zn	Au	Ag

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
0.0-10.0	Casing.							
10.0-51.0	Andesite breccia	Med grey	Fine	Even	Massive. 0-5f/ft. Brecciated in most sections. Angular to sub-angular fragments averaging 1/4-3/4" in dia.	Minor ser bleaching of the matrix. Ser-carb filled fractures.	Minor py-po diss and in blebs throughout.	Bottom contact sharp at 35°.
51.0-234.0	Andesite Flow	Med grey	Fine	Even. Uneven in some sections where rock is feldspar porphyritic.	Minor fracturing 2-10f/ft. Odd sections contain flow breccia. Flow banding and amygdules.	Minor ser bleaching and ser-carb filled fractures. Minor chl altn masking core in sections.	Tr to minor py-po in blebs, fractures and disseminated throughout. Tr cp here and there with minor cp in fractures from	Fractures at 30-40 and 60°. Bottom contact sharp at 30°.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
234.0-273.0	Fractured Andesite	Light greenish grey	Fine	Mostly even. Some sections are feldspar porphyritic.	Intensely fractured and sheared throughout. Over 25 f/ft.	Ser-carb-chl filled fractures. Mod carb bleaching in mod sections.	Tr cp, tr to minor py here and there in fractures and disseminated.	Fractures and shearing at 0 to 50° with preferred angle at 20°. Rock is almost completely obscure by shearing and fracturing.
273.0-404.0	Fractured And Sheared Acid Dyke	Light grey	Fine	Qtz and feldspar phenocrysts present.	Intensely sheared and fractured throughout.	Ser-carb-chl filled fractures.	Tr fracture filling and disseminated py-cp.	Fracturing and shearing at all angles but prefered direction around 45°. Top contact sharp at 30° Bottom ct sharp at 70°.
404.0-422.0	Lamp Dyke	Earthy grey 40-50% carbonate	Fine to med	Porphyritic samll biotite phenocrysts present.	Minor fracturing 3-6f/ft.	40-50% carb throughput.	Nil	Top and bottom contacts sharp at 70 and 45° respectively. Fractures at 30 and 70°.
422.0-544.0	Sheared And Fractured Andesite	Dark grey	Fine	Even	Intensely sheared and fractured throughout.	Strong chl throughout.	Tr diss py.	Prefered angle of shearing and fracturing at 35-40° but in all directions as well.

Hole No. D282

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
544.0-565.5	Bleached Andesite Dyke	Light grey green	Fine	Even	Strongly sheared and fractured throughout 25/ft.	Strong carbonate bleaching throughout. Carb filled fractures.	Tr py in tiny cubes.	Fractures at 0 and 30-50°. Top and bottom contacts chilled at 30 and 45° respectively.
565.5-606.0	Sheared And Fractured Andesite	As above.						
606.0-611.5	Bleached Andesite Dyke	Greenish grey	Fine	Even	Mod fractured 15 f/ft.	Strong carb bleaching	Nil	Fractures at 50°, both cts chilled at 40-45°.
611.5-643.5	Andesite Flow	Dark grey green	Fine	Even	Mod fractured 15f/ft. Odd amygdule present. Frothing and churning present in sections.	Minor ser bleaching. Chl present in vague patches.	Tr py-cp in fractures and amygdules.	Fractures at 30 and 50°. Bottom contact graddational over 1". Sample CZAA 639-643.5'.
643.5-649.5	Siliceous Tuff? Breccia	Light grey black fragments	Very fine	Even	Brecciated throughout. Angular chloritic fragments in a very fine grained siliceous altered matrix.	Strong ser altn of matrix.	Tr cp diss.	Bottom contact sharp at 45°. Because of strong altn rock cannot be definitely distinguished as being siliceous throughout although there are siliceous sections which have a cherty appearance. Sample Geochem. 643.5-649.5'.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
649.5-667.5	Andesite Flow	Dark grey	Fine	Even	Minor fracturing 5-10 f/ft. Odd amygdules present.	Mod chl altn present. Carb-qtz filled fractures.	Virtually nil	Sample CZAA 649.5-654' Fractures at 39-55°. Bottom contact sharp at 50°.
667.5-806.5	Altered rhyolite	Light grey	Fine	Even	Minor fracturing 3-12f/ft.	Strong chl or ser altn present in patches and throughout. Carb-qtz-chl filled fractures.	Tr cp diss and fracture filling.	Fractures at 45 and 60°. Of moderate hardness only recognizable as a rhyolite because of scattered quartz eyes and short hard unaltered sections.
806.5-836.0	Massive rhyolite	Med grey	Fine	Weakly to moderately porphyritic.	Massive. 1-2f/ft.	Sericite in sections	About 1% diss py.	Vague discontinuous banding (flow banding?) fractures at 30,50, 50° Porphyritic section near top may be a dyke.
836.0-854.5-	Altered rhyolite	As above	between	667.5-806.5'			Tr diss'd py.	A few possible amygdules.
854.5-861.0	Massive rhyolite	Med grey	Fine	Even	Scattered chlorite amygdules. Flow banding	Minor chlorite.	Tr diss'd py.	Contact grdational over 1'.
861.0-945.0	Altered rhyolite	Med grey	Fine to med	Even	Numerous chlorite amygdules.	Moderate to strong sericite? and minor chlorite from 861-923'. Med grained	Tr diss'd py.	Vitrious luster similar to unaltered rhyolite but relatively soft. Lower contact poorly defined.

Hole No. D-282

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
						and apparently recrystallized from 923-945'.		few thin quartz stringers.
945.0-955.0	Altered Massive Andesite? Flow or Dyke	Dull grey green	Fine	Even	Massive.	Mod chlorite.	Tr diss'd py.	Contacts gradational. This unit may be an intensely altered rhyolite.
955.0-961.0	Altered rhyolite	As above.						
961.0-971.0	Altered Massive Andesite? Flow or Dyke	As above between 945 and 955'.						
971.0-995.0	Altered rhyolite		Med fine	As above.			Tr diss'd py. 982-984' cp diss'n and blebs in quartz veins at 30o to core. EST. 2% Cu	Contacts gradational. Sample CZAA 981-982' 982-984' 984-985'

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
995.0-1012.0	Massive rhyolite	Med grey	Fine	Even	Massive. 5-10 f/ft carb filled.	Hard, only slightly altered.	Tr py.	
1012.0-1033.0	Porphyritic rhyolite	Med grey	Fine matrix	20-30% feldspar phenocrysts.	Massive.	Nil	Tr py diss'n and stringers.	Contacts gradational.
1033.0-1042.0	Rhyolite breccia or Fragmental Tuff	Finely mottled light and dark grey	Fine	Even	Rounded light grey fragments 3-5mm in diameter in dark grey matrix. Few fractures.	Nil	Tr py.	2' massive section at bottom.
1042.0-1043.5	Sheared Bedded Tuff?	Med grey	Fine		beds? a few mm thick. Numerous parallel shear planes.	Nil	Nil	Contacts abrupt.
1043.5-1072.0	Massive rhyolite	"	"	Porphyritic sections.	Massive. A few irregular amygdules near bottom.	Mostly hard and unaltered, sections soft with sericite A few blotches of chlorite.	Tr diss'd py.	Lower contact gradational.

No. D-262

Page

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
1072.0-1096.5	Amygdu-loidal Porphy-ritic rhyolite	Med grey	Fine	20% anhedral feldspar	Massive. Elongate quartz filled amygdules.	Hard and only slightly altered.	Tr diss'd py.	
1096.5-1123.0	Massive rhyolite		As above.			Hard only slightly altered.	Tr diss'd py.	
1123.0-1135.0	Porphy-ritic rhyolite	As above.			Isolated amygdules.	Hard and unaltered.	Tr py in stringers.	
1135.0-1154.0	Amygdu-loidal Andesite And Andesite Breccia	dull grey green	Fine	Even	Chlorite filled amygdules.	Strong silicification in breccia matrix. Minor chlorite. Minor sauss.	1-2% diss'd py.	Contacts abrupt at 70°.
1154.0-1247.5	Amygdu-loidal to Massive rhyolite (Dacite)	Med grey	Fine to very fine	Even	Amygdules in upper half, massive towards bottom.	Blotches of blue-green chloritized at 1190'.	Tr py diss'd. and in amygds. Tr cp here and there in amygdules. Blebs cp in qtz vein at 1166'.	Porphyritic section 1154-1160'. Amygdules filled with chlorite, quartz, pyrite. Grades to dacitic composition in places. Bedded acid tuff sections 1169-1172'(tuff?) 1236.4-1237.5' rhyolite from 1137.5 to 1247.5 has finely mottled

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
								(brecciated?) appearance and may be a pyroclastic rock.
1247.5-1263.0	Diorite Dyke	Dark grey	Med	Even Ophitic	Massive.	Nil	Tr diss'd ppy.	Chilled and slightly bleached contacts at 45°.
1263.0-1303.0	Massive Rhyolite And Rhyolite Breccia	Med grey	Fine		Most is finely mottled or brecciated grading downward to a 'fish roe') texture.	Nil	Tr py.	1263-1296': massive rhyolite to rhyolite bx. 1296-1302': fish-roe' rhyolite or fine agglomerate lower contact gradational. 1302-1303': bedded siliceous tuff.
1303.0-1351.0	Massive Porphyritic Rhyolite Or Trachyte Flow or Dyke	Med grey	Fine	10-20% anhedral feldspar phenocrysts.	Massive.	6" thick calcite vein at 1304'.	Tr diss'd py.	Of only moderate hardness No quartz phenocrysts. Vitreous lustre, typical of rhyolite.
1351.0-1460.0	Massive Rhyolite Or Trachyte Flow or Dyke	Med light grey	Fine	Slightly porphyritic in sections feldspar phenos.	Massive. 2-3ft.	Only slightly	Tr diss'd py.	Fractures at 10, 70°. Contacts gradational over a few inches.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
1460.0-1464.0	Altered rhyolite? or Dacite	Med grey	Fine	Even	Massive.	Strong sericite(?) or chlorite.		A relatively soft rock, but with lustre and colour of a rhyolite.
1464.0-1474.5	Andesite Breccia	Dull grey	Fine		A breccia with dark grey angular fragments from 2mm to 1cm in diameter in light grey matrix of similar composition.	Chlorite especially in fragments.		Top contact marked by thinly banded section either a tuff or flow banded base of overlying flow.
1474.5-1566.0	Massive Altered Rhyolite or Dacite	Med grey	Fine	Even Porphyritic variable distribution of quartz eyes 1mm or less in diameter.	Most is massive. Altered bx zone at 1493-1496'.	Strong ser and chlorite patches at 1495'	Tr diss'd py Minor po with tr cp diss'd from 1502-1514'. Tr cp diss'd here and there throughout.	A uniform massive rock, of only moderate hardness, but with a vitruous lustre typical of rhyolites. No definite flow features. Samples Cu, Zn, Ag, Au, 1501-1504' 1504-1507' 1507-1510' 1510-1514'.
1566.0-1669.0	Altered Dacite	Med grey	Appears m.g. on cut surface but fine on broken surface.	Weakly pporphyritic scattered feldspar laths.	Massive. Possible amygdules and flow bands here and there.	Appears to be completely recrystallized.	Tr py diss'd, tr po here and there in stringers. Tr sph, cp at 1665' in calcite stringer.	Lustre similar to rhyolite. Med hardness. ¾" calcite vein at 1665.5'.

END OF HOLE

No. D-282

LAKE DUFAULT MINES LTD.

Drill Hole Record

Hole No. D-288 Lat. 1374.13 S Dep. 11,866.51 Elev. 11,003.29

Dip -90° Bearing Depth 3449'

TOTAL FOOTAGE = 4612' = 3449' + 1163' REDRILLED

Working Place: South Dupresnoy

Date Started: Nov 23/70

Date Completed: Apr 8/71

Compass Tests — Acid Test

Depth	Dip	M.Brng.	Depth	Read	Corr.

CODE

0-3192' D-288
2996-3286' Branch #1
2600-3449' D-288-A

SAMPLED SECTIONS

From	To	C.L.	Cu	Zn	Au	Ag

Depth	Rock Type	Colour & % Mafic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks

COMPASS TESTS

200'	2°	N27°W
400'	3°	N36°
1200'	3°	N30°W
1500'	10°	N48°W
2200'	7°	N56°W
3100'		N14°W?

Branch #1

3025'	9°	N65°E?
3115'	8°	N42°W

D-288-A

2700'	10°	N42°W
2960'	10°	N21°W
3062'	10°	N14°W

Acid Dip Tests

50'	87°	2750' 82°
250'	86°	3000' 82°
398'	86	3192' stop
441'	89°	
750'	88°	D-288 Branch #1
1000'	86°	3000' 82°W
1038'	86°W	3025' 82°
1090'	87°W	3125' 82°
1150'	88°W	3286' stop
1230'	87°	
1500'	81°	D-288-A
1675'	82°	
1825'	82°	2600' 82°W
1880'	82°	2707' 81°
1960'	83°	2840' 81° W
2380'	82°	2969' 79° W
2500'	83°	3030' 80°
2600'	82°	3062' 79°W
2750'		3449' 78°

Hole Co-ords

Footage	Northing	Easting
300'	1356.98	11,858.79
800'	1343.85	11,847.80
1350'	1318.21	11,833.01
1850'	1269.96	11,779.44
2350'	1233.44	11,725.30
D-288-A		
2600'	1215.04	11,698.03
2830'	1189.03	11,674.62
3011'	1159.34	11,663.22
3449'	1075.49	11,642.36

Hole No. D-288

Logged by R.A.N.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
0.0-31.0	Casing.							
31.0-320.0	Fractured Flow Banded Andesite	Med grey green	Fine	Even. Odd feldspar phenocrysts present.	Strongly fractured. Minor shearing. 15-25f/ft. Flow banding present near top of unit. Abundant amygdules in short sections.	Carb-ser filled fractures. Sauss in small patches here and there. Minor bleaching.	Weak limonite and hematite in odd fracture. Tr diss py-cp and in blebs.	Fractures at 70, 45, 25°. Shearing at 25o. Flow banding at 70 to 45°. 235-240': short sections of intermediate tuff some containing minor to mod py and tr cp. Bottom ct sharp at 50°.
320.0-328.0	Dioritised Andesite	Med grey	Fine	Even. Slightly dioritic	Minor fracturing 5-10f/ft.	Ser speckling and ser-carb fracture filling.	Nil	Bottom contact baked at 35°.
328.0-359.0	Diorite Dyke	Med grey	Med fine	Dioritic	Minor fracturing. 3-8f/ft.	Carb filled fractures. Strong sauss in pods in sections.	Nil	Fractures at random angels. Top and bottom cts sharp and slightly chilled at 35°.
359.0-447.0	Porphyritic Andesite	Dark grey	Fine	Feldspar phenocrysts scattered throughout.	Minor fracturing 2-8f/ft. Flow banding present in sections. Minor frothing and churning and weak brecciation in sections.	Ser in pods. Ser-carb filled fractures.	Nil	3" of bedded intermediate tuff at bottom ct at 40°. Fractures at 50-70°.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
447.0-505.0	Amygdu-loidal Andesite	Med grey	Fine	Even	Minor fracturing 3-9f/ft. Amygdules moderate to sparse. Odd vague pillow border near top.	Minor ser bleaching. Ser-carb filled fractures.	Minor py in odd fracture.	Fractures at 50-60 and 35°. Rock becomes mod fractured near bottom. Bottom ct marked by 6" of brecciation.
505.0-558.0	Bedded and Massive Tuffs With Small siliceous andesite Flows.	Light grey	Fine	Even	Bedded and massive Andesite sections are frothed and churned with poorly developed amygdules. Minor fracturing. 5-12 f/ft.	Cabb filled fractures. Andesite very siliceous. Minor chl altn present. Minor light grey altn.	Tr to minor cp-py-po in bedding and diss in tuff sections and in amygdules in andesite sections.	Bedding at 40-50°. 505-507': bedded tuff. 507-510': siliceous andesite. 510-512': bedded and massive tuff. 512-517.5': bedded and massive tuff with small and sections. 517.5-550': siliceous, amygdular andesite with numerous bedded and massive tuff sections. 550-558': bedded and massive tuff. Sample geoches Numbers LD-X 1164-1177' 505-507' 507-510' 510-512' 512-517.5' 517.5-520.2' 520.2-525(525-527' 527-530.5'

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
								530.5-535.5' 535.5-540.5' 540.5-545.5' 545.5 -550' 550-555' 555-558' Bottom ct sharp at 50o.
558.0-615.5	Andesite Flow	Med grey	Fine	Even	Minor fracturing 3-8f/ft. Small amygdules scattered throughout. Weak shearing.	Carb filled fractures and weak ser carb bleaching. Feldspar? alt n in small blebs near bottom.	Odd short section of py in blebs and fracturing)(trace amount).	Fractures at 20 and 70°. Bottom ct marked by 3" tuff at 55°.
615.5-655.0	Pillowed Andesite	Med to light grey	Fine	Even	Pillowed throughout. Pillows every 1 to 2". Odd well rounded amygdule present. Minor fracturing 3-8f/ft.	Carb-ser filled fractures. SEr bleaching.	Tr to minor py in blebs and fractures.	Bottom ct sharp at 45°. Fractures at 80 and 30°.
655.0-831.0	Flow Banded Andesite	Med grey to grey green	Fine	Even	Minor to mod fracturing 5-15 f/ft. Shearing strong at top of unit. Flow banding strong throughout.	Qtz-carb-ser filled fractures.	Minor py in blebs and fractures. Tr cp in amygdules.	Flow banding at 30 to 50°. Fractures at random angles shearing at 45°.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
					Odd short section of flow brecciation present. Strongly amygduloidal in odd short section.			
831.0-867.5	Fractuted Acid Dyke	Grey-blue	Very fine	Even	Intensely fractured 10-25 f/ft.	Ser-carb filled fractures.	Nil	Contacts sharp at 50°. Fractures at 60-80, 20° and random angles.
867.5-1104.0	Andesite Flows	Med grey	Fine	Even	Mod fracturing 10-15f/ft. Flow banding present in sections. Amygdules scattered throughout. Odd section of flow breccia present.	Qtz-ser-carb filled fractures. Ser(?) speckling in sections.	Tr cp-py-in amygdules and blebs.	885.5-890.5': rhyo-dacite or very sil andesite flow. Flow banding at 35-45°. Fractures at 25, 45, and 90°. 1069-1075': lamp dyke with sharp cts at 80 and 90° respect. Bottom ct arbitrary.
1104.0-1220.0	Fractured Andesite	Med grey	Fine	Even	Mod to intense fracturing 10-25 f/ft. Odd amygdules present.	Ser-carb-epid filled fractures.	Weak tr diss cp.	Fractures at 60 and 90°. Bottom ct sharp at 55°.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
1220.0-1254.0	Sheared Bleached Andesite	Light earthy grey	Fine	Even	Mod sheared with small sections of fault bx.	Ser bleaching masking core. Qtz-carb present in shear plnaes.	Tr py, specularite in odd fracture.	Shearing at 45°. Bottom ct arbitrary.
1254.0-1308.0	Fractured Andesite	As above.			Mod fracturing 10-20f/ft.	Carb filled fractures.	Nil	Preferred set of fractures at 50°.
1308.0-1404.0	Sheared Bleached Andesite Kaolin Zone	Med to earthy grey	Fine	Even	Strongly sheared throughout. Fault bx in sections.	Ser-carb-chl in fractures. Ser bleaching strong in sections.	Tr diss py.	Shearing at 20-40°. Bottom ct sharp at 5°.
1404.0-1425.0	Sheared Lamp Dyke	Earthy brownish grey	Med	Feldspar and biotite porphyritic.	Sheared at 5°	Carb bleached.	Nil	Top ct at 5°. Hole stopped because of bad ground and backed up to 1147'.
1147.0-1350.0	Fractured Andesite	Light to dark grey green	Fine	Even	Mod fracturing throughout 10-20 f/ft. Odd section of amygduloidal Shearing present in sections.	Fractures wide (1/2") and mostly carb filled. Weak qtz-ser-chl and limonite in fractures. Mod sauss.	Nil	Fractures at 90-70 and 45°. Shearing at 45°. Bottom ct very tenative.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
1350.0-1391.0	Andesite Breccia?	Dark	Fine	Even	Minor to mod fracturing 5-15 f/ft. Odd fragment of tuff present. Weak flow banding.	Chl altn strong here and there. Odd sauss.	Tr diss py.	Small sections of tuff appear to be breccia fragments but may be short sections of bedded tuff. Rock obscured by chl$_o$ altn. Fractures at 45, 80° and random angles. Bottom ct arbitrary.
1391.0-1452.0	Flow Banded Andesite	Med grey green	Fine	Even	Mod fracturing 10-15 f/ft. Flow banding abundant throughout. Odd amygdule Odd siliceous breccia fragment here and there.	Minor carb-ser-chl in fractures.	Odd bleb of py.	1390-1431': changed to AX core for better drilling through anticipated bad ground. Flow banding at Fractures at 45° and random angles. No evidence of shearing. Bottom ct arbitrary.
1452.0-1496.0	Andesite Flow	Med grey	Fine	Even	Minor fracturing. 5-12f/ft. Weak flow banding here and there. Odd amygdule.	Odd sauss pod. Ser and chl present as small specks in sections here and there.	Nil	Fractures at 25, 80, and 45°
1496.0-1556.0	Q.F.P. Dyke	Speckled med grey	Fine	Porphyritic abundant qtz and feldspar phenocrysts	Massive for the most part. Odd fractured section. 0-10f/ft.	Qtz, some limonite and carb filled fractures.	Nil	Shearing and hematite staining at top ct at 0-10°. Very distinctive looking rock. Large qtz and feldspar phenocrysts in a dacitic to rhyolitic matrix. Bottom ct sharp and irregular at about 35-40°.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
				up to .5 cm. 30-40% phenocrysts.				
1556.0-1746.0	Massive Andesite	Med grey	Fine	Even	Minor fracturing 0-10f/ft. Odd very small amygdule present.	Limonite-carb sauss in fractures.	Nil	Fractures at 20-45°. Bottom ct sharp at 30°.
1746.0-1749.7	Fragmental Tuff	Light grey	Very fine	Even	Rock is composed of very small to 1/2" fragments in a very siliceous matrix.	Nil	Nil	Bottom ct sharp at 30°.
1749.7-1802.0	Amygdu-loidal Andesite	Med grey	Fine	Even	Massive. Poorly formed, small amygdules mod throughout.	Ser-carb filled fractures.	Nil	Fractures at 15 and 50°.
1802.0-1821.0	Acid Dyke	Med grey	Fine	Even	Massive.	Nil	Tr diss py.	Top and bottom ct at 30° sharp.
1821.0-1996.0	Flow Banded Andesite	Med grey	Fine	Even	Minor fracturing 5-10f/ft. Flow banding strong throughout. Amygdules abundant in short sections	Rare sauss pod. Carb in fractures.	Tr py around fractures.	Flow banding at 30-40°. Sheared at 45°. towards bottom ct.

Hole No. D-288

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
					and scattered throughout.			
1996.0-2044.0	Lamp Dyke	Earthy dark brown	Fine	Porphyritic biotite and feldspar porphyritic.	Slightly sheared.	Carb-chl altn of andesite due to proximity to lamp dyke. Lamp dyke is strongly carbonated.	Nil	Contact is irregular and very steep so the core is in and out of lamp throughout this section. Andesite here is as above. Shearing at 0°. Fairly strong from 2040-2044' Strong shearing at 0°.
2044.0-2141.0	Altered Andesite	Dark grey	Fine	Even	Minor fracturing Scattered amygdules Some flow banding at top.	Chl? altn throughout. Carb-hematite filled fractures.	Tr py in blebs.	Rock has an altered appearance probably due to its closeness to contact of vertical lamp dyke. Fractures at 0-15°.
2141.0-2148.0	Lamp Dyke	Dark brown	Med	Porphyritic	Fractured 5-15f/ft	Carbonted throughout.	Tr py in blebs.	Fractures at 10° and random angles. Top ct at 25°. Bottom ct at 30°.
2148.0-2198.0	Fractured Andesite	Med grey	Fine	Even	Mod fractured. 5-15f/ft. Amygdules scattered here and there.	Carb filled fractures. Weak bleaching.	Trace py in small blebs.	Fractures at 20-30 and 80°.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
2198.0-2250.0	Massive Acid Dyke	Dark Grey	Very fine	Even. Odd feldspar present.	Massive. 0-3f/ft	Weak ser in odd fracture.	NIL	Top ct at 80° Bottom ct sharp at 40°
2250.0-2490.0	Massive Andesite	Med Grey	Fine	Even Odd section contains abundant very small feldspar phenocrysts.	Massive. 0-5f/ft Rare amygdules.	Sauss in fractures.	NIL	2382-2405 Silicified andesite Fractures at 45° Bottom ct gradational.
2490.0-2598.0	Pillowed Andesite	Med Grey	Fine	Odd feldspar phenocrysts present.	Minor fracturing 5-10f/ft Pillow borders present throughout. Amygdules scattered throughout.	Qtz-carb in fractures Ser in fractures and patches.	Tr py, cp in fractures here and there.	Fractures at 35 and 60°
2598.0-2651.0	Flow Banded Andesite	Med Grey	Fine	Even	Minor fracturing 0-8f/ft Odd amygdule Flow banding throughout.	Qtz-carb-ser in patches and fractures.	Tr py in fractures and disseminated.	Flow banding at 35-60°

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
2651.0-2675.0	Porphyritic Acid Dyke	Blue Grey	Very fine	Feldspar Porphyritic	Massive. 0-3f/ft	NIL	NIL	Contacts at 35°
2675.0-2789.0	Flow Banded Andesite	Med Green Grey	Fine	Even	Minor to mod fracturing. 5-15f/ft flow banding in most sections. Flow breccia in short section here and there.	Ser-carb-qtz filled fractures.	Tr py and weak tr cp in blebs.	Flow banding at 25-35° Fractures at 80 and 45° Bottom ct sharp at 70°
2789.0-2789.8	Bedded Tuff	Light to Med Grey	Very fine	Even	Bedded. Folding has taken place in part.	NIL	Minor py along bedding planed and in blebs. Tr cp.	Beddding at 45° where not folded. Bottom ct sharp at 90°
2789.8-2799.0	Andesite Breccia	Pale to Med Grey	Fine	Finely brecciated throughout.	Breccia fragments up to 1/2 inch.	Ser bleaching in places.	Minor py diss and in blebs.	Bottom ct sharp at 45°
2799.0-2825.0	Flow Banded Andesite	Med Grey to Light Grey	Fine	Even	Massive. Flow banded throughout. Odd amygdule here and there.	NIL	Tr py inodd bleb and g fracture.	Flow bandi... Bott...

Hole No. B-288

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
2825.0-3018.0	Dacite? or silicified Andesite	Light to Med Grey	Fine	Even	Minor fracturing Odd shear plane 0-10f/ft Odd amygdule.	Chl altn here and there and in specks throughout.	Tr diss py. Amygdules near bottom contain to amounts of py, po and cp.	Fractures at random angles. Bottom contact sharp at 50°
3018.0-3032.5	Bedded Tuff with Dacite Sections.	Med to Light Grey	Fine to aphanitic	Even	Bedded tuff in sections up to 1' separated by amygduloidal dacite sections up to 3'.	Chl altn of dacite strong in patches. Some light grey altn in sections.	5% sulph in bedding, blebs and diss, cp, po py. Est 0.2% Cu	Bedding at 40-50° Sample CZAA 3018-3020.3 3020.3-3023.5 3023.5-3028.4 3028.4-3032.0 Bottom ct sharp at 45°
3032.5-3150.0	Massive Dacite	Med Light Grey	Fine	Some sections are feldspar porphyritic.	Massive. 0-8f/ft Very odd amygdule present.	NIL	Tr py, cp, po, in amygdules.	A very uniform featureless rock.
3150.0-3162.0	Diabase	Dark Grey	Med fine	Diabasic	Massive. Minor shear planes here and there.	Chl on shear planes.	NIL	Core is strongly magnetic. Top ct chilled at 30° Bottom ct chilled at 15°
3162.0-3167.0	Dacite	As above.						

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
3167.0-3192.0	Diabase	As above.						3178-3179 - Acid Dyke Hole stopped at 3192 and backed up to 2996 in order to wedge away from the diabase.
~~3192~~ 2996.0-3017.0	Dacite							As in section 2825-3018 in previous attempt Bottom ct sharp at 35°
3017.0-3032.0	Bedded Tuff with Dacite sections.							As in coresponding sections in previous attempt. Bottom ct at 55°
3032.0-3169.0	Massive Dacite							As before.
3169.0-3195.0	Fractured Acid Dyke	Reddish to Light Grey			Strongly fract'd.			

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
3195.0-3286.0	Diabase	Hole again stopped. This time at 3286 and backed up to 2597 and switched to AX.						Top ct chilled at 35°
2597.0-2651.0	Andesite Flow	Med Grey	Fine	Even	Minor fracturing 5-10f/ft Odd amggdule Flow banding in most sections.	Ser-carb filled fractures.	Tr py fractures and amygdules.	Fracturing at 35° Flow banding at 40-50°
2651.0-2673.0	Porphyritic Acid Dyke	Dark	Very fine	Feldspar porphyritic throughout.	Minor fracturing 3-8f/ft	Ser in fractures.	NIL	Fractures at 30-45° Top ct sharp at 35° Bottom ct obscured by twisted core.
2673.0-2899.0	Andesite Flow	Med Grey	Fine	Even	Minor fracturing 0-12f/ft Flow banding here and there. Odd amygdule.	Odd sauss pod. Ser-carb in fractures. Speckled appearance in odd short section-may be ser.	Virtually NIL	2790-2804 Section of flow breccia Bottom ct abrupt.
2899.0-3018.0	Andesitic Dacite	Light Grey Green	Fine	Even	Massive.2-5f/ft Vague flow banding here and there. Odd amygdules.	Tiny ser speckled in odd small section.	1% Tr diss py. Tr cp,po in amygs near bottom of unit.	Bottom ct sharp at 45° 3017-3018 Bedded cherty tuff marker. tr py, sph in bedding and blebs.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
3018.0-3140.0	Dacite Flow	Light Grey Green	Fine	Even	Massive. Odd amygdule near top Odd flow band.	Ser speckling in large sections.	Tr disspy, cp,po here and there.	Bottom ct sharp at 70°
3140.0-3175.0	Porphyritic Acid Dyke	Dark	Fine	Feldspar Porphyritic in most sections.	Minor to mod fracturing 5-15f/ft	Ser in fractures with some grid altn.	Tr diss py here and there.	Fractures at 60 and 40° Top ct brecciated. Bottom ct sharp at 80°
3175.0-3229.5	Dacite Flow	As above.					Tr py,po in amygdules near bottom.	Bottom ct sharp at 70°
3229.5-3231.6	Bedded Tuff	Light Grey	Very fine.	Even.	Bedded throughout.	NIL	Tr po, cp, py in bedding.	Bedding at 45-55° Sample geochem 3229.5-3231.6 Bottom ct sharp at 80°
3231.6-3238.6	Fragmental Tuff or Rhyolite Breccia	Light Grey Slightly Dark Matrix.	Very fine	Even	Brecciated throughout. Appears to be chert fragments in a rhyolitic matrix.	NIL	Tr py throughout as small cubes. Tr diss po.	Sample Geochem 3231.6-3235.5 3235.5-3238.6 Bottom ct sharp at 50°

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
3238.6-3251.6	Bedded Tuff and Rhyolite Breccia	Light Grey and Light Brown	Fine Very fine	Even.	Bedded in sections. Brecciated in sections.	NIL	Tr py po in bedding and diss.	Sections of bedded tuff and rhy Breccia are too small and numerous to be broken into individual units. Bedding at 35-50° Sample Geochem 3238.6-3243 3243.0-3247 3247.0-3251.6
3251.6-3360.0	Rhyolite Breccia	Light Grey	Fine	Even	Massive. 0-2f/ft Brecciated throughout. Flow banding in some fragments. Fragments up to 3"	NIL	Tr amounts ~~tm~~ of py, and po in blebs here and there	Bottom ct sharp at 45°
3360.0-3449.0	Massive Rhyolite	Dark Grey	Fine	Even	Minor fracturing 0-10f/ft Odd bx fragment Odd elongated amygdule.	Ser filled fractures.	NIL	
					END OF HOLE			

Hole No. D-288

LAKE DUFAULT MINES LTD.

Drill Hole Record

Hole No. D-302 Lat. 193.31 S Dep. 3455.90 Elev. 11,184.06 Dip -90° Bearing Depth 2024'

Working Place: Turcotte Lake Beaver Meddow

Date Started: Apr 20/71

Date Completed: May 6/71

Compass Tests

Depth	Dip	M.Brng.

Acid Test

Depth	Read	Corr.
35'		90°
250'		90°
500'		90°
750'		90°
1000'		90°
1250'		90°
1500'		90°
1750'		89°
2024'		88°

SAMPLED SECTIONS

From	To	C.L.	Cu	Zn	Au	Ag

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
0.0-12.0	Casing.							
12.0-302.0	Pillowed Andesite	Greenish grey	Fine	Even	Amygdules abundant here and there. Minor fracturing. 8-10 f/ft. Pillowed.	Ser bleaching here and there. Ser-carb filling fractures.	Tr py-po.	Fractures at randomg angles. 298-302': lamp dyke.
302.0-450.0	Amygdu-loidal Flow Banded Andesite	Med grey green	Fine	Even	Massive. 0-5f/ft. Amygdules scattered throughout. Flow banded.	Weak ser bleaching. Odd vague sauss pod. Carb in some fractures.	Tr py-po in amygdules.	Bottom ct arbitrary. Flow banding around 45°.

Hole No. D-302

Logged by R.A.H.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
450.0-647.0	Andesite	Med grey green	Fine	Even	Mod fracturing 5-20f/ft. Some shearing. Odd pillow border. Odd small section of flow banding.	Weak bleaching. Ser filling fractures. Odd sauss pod.	Tr py in blebs.	Fractures at 40-50° and random angles. Bottom ct slightly gradational.
647.0-733.0	Porphyritic Andesite	Med grey	Fine	Feldspar porphyritic throughout.	Massive to minor fracturing. 0-10 f/ft.	Weak ser bleaching.	Nil	Fractures at 45°. Bottom ct sharp at 45°.
733.0-1198.0	Andesite Flow	Md grey	Fine	Even	Minor fracturing. 5-10f/ft. Odd section ismod amygduloidal. Otherwise rock is featureless. Flow banding near bottom.	Weak ser bleaching. Ser filled fractures. Very odd sauss pod.	Tr here and there and in fractures.	Fractures at 35 and 70° Odd lamp dyke present. Bottom ct sharp at 45°.
1198.0-1284.0	Porphyritic Andesite	Med light grey	Fine	Mod feldspar porphyritic throughout.	Minor to mod fracturing. 5-15 f/ft.	Ser-carb filled fractures.	Tr cp,py-sph here and there and in fractures.	Fractures at 70 and 40°. Bottom ct sharp at approx 45°.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
1284.0-1302.0	Bedded to Fragmental Tuff	Light grey	Very fine	Even	Bedded near top and fragmental in major portion of unit.	Nil	Tr diss py-po	Bedding around 40°. Bottom ct sharp at 40°.
1302.0-1357.0	Porphyritic Andesite	Med grey	Fine	Strongly feldspar porphyritic throughcut.	Massive. 0-5f/ft. Odd flow banding.	Ser-carb filling fractures.	Nil	Bottom ct sharp at 50°.
1357.0-1475.0	Siliceous Andesite Flow	Med light grey	Fine	Even	Massive. 0-5f/ft. Amygdules scattered throughout. Flow banding here and there. Odd section of breccia.	Ser-sauss here and there.	Tr sph in frs naer top.	Fractures at 45 and 70°. Bottom ct sharp at 45°.
1475.0-1500.0	Bleached Andesite	Light grey	Fine	Odd feldspar phenocrysts present.	Massive. 0-5f/ft. Weakly defined flow bands present.	Ser bleached throughout. Carb in frs.	Tr py po-cp-sph as blebs and fracture fillings.	Fractures at random angles. Bottom ct sharp at 80°.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
1500.0-1556.0	Acid Dyke	Light grey	Fine	Feldspar Porphyritic near top.	Minor fracturing. 5-10f/ft.	Ser-carb filling fractures with ser grid altn.	Tr diss po with weak tr cp.	Fractures at 45, 30o. Bottom ct sharp at 40°.
1556.0-1593.0	Bleached Andesite	As above.						Bottom ct sheared.
1593.0-1647.0	Andesite Flow	Med to light grey	Fine	Even	Minor fracturing. 5-10f/ft. Amygdules scattered here and there. Weak flow banding here and there.	Carb in fractures.	Tr diss py.	Fractures at 70°. Bottom ct sharp at 50°.
1647.0-1691.0	Dacite Andesite Flows?	Med to med light Grey	Fine	Even	Minor to mod fracturing. 5-15 f/ft. Amygdules fairly abundant in sections.	Carb-qtz filling fractures.	Nil	Fractures at 70°. Bottom ct abrupt.
1691.0-1874.5	Andesite	Dark grey	Fine	Even	Minor to mod fracturing. 5-15 f/ft. Amygdules here and there.	Chl altered throughout. Fractures filled with ca and chl.	Tr diss py.	Rock becomes fairly siliceous near bottom. This could indicate that this is a dacite or a transition zone from andesite to rhyolite. Bottom contact abrupt.

Hole No. D-302

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
1874.5-1917.5	Rhyolite Breccia Rhyolite	Light grey darker matrix	Fine	Even	Massive. 0-5f/ft. Brecciated in most sections. Massive in some.	Chl in patches in matrix, throughout. Ser altn in places.	Nil	Fractures at 30°.
1917.5-1953.0	Andesite Dyke	Light grey	Fine	Even	Minor fracturing. 5-10f/ft.	Ser altn throughout. Carb-ser filled fractures. Chl-ser spots in places.	Nil	Fractures at 60-70°. Top and bottom cts chilled and altered at 45°.
1953.0-2024.0	Rhyolite Rhyolite Breccia	Light grey	Fine	Even	Minor to moderate fracturing. 5-15f/ft. Some shearing. Brecciated in places. Massive in others. END OF HOLE	Chl here and there. Ser in patches. Ser-chl.	Weak to tr cp-py in blebs and in fractures.	Fractures at 15 and 40°.

FALCONBRIDGE COPPER LIMITED
LAKE DUFAULT DIVISION

DRILL HOLE DATA

D. H. No. D 321					
LOCATION	Development Licence Mining Concession ~~93-C~~ 93-C	Claim No. R-38606.	Lot No. 80	Range No. MACAMIC OUEST	Township DUFRESNOY

DRILLED From	To	Footage	Total Footage	Final Depth	Size
0	3973	3973	5420	4747	AQ
3300.	4747	1447			

Drilling Contractor	Logger Name & Qualification	Signature
BRADLEY BROS. LTD.	A. W. BEECHAM M.Sc	A.W. Beecham
Overburden NOT RECOVERED	P. J. HOPE B.Sc.	P.J. Hope
Core Size LAKE DUFAULT No. 1		

D-321

LAKE DUFAULT MINES LTD.

Drill Hole Record

Hole No. D-321 Lat. 1129.16 Dep. 15,140.05 Elev. 11,119.25 Dip -90° Bearing Depth 4747'

Working Place: East Dupresnoy

Date Started: May 27/72

Date Completed: 8 SEP 1972

Compass Tests

Depth	Dip	M.Brng.
1000'	90°	189°
1500'	88°	244°
3000'	89°	289°
3180°	89°	0 53°
2200'	89°	0 15°

Compass Acid Test

Depth	Read	Corr.
3443'	89°	021°
3750'	89°	252°
4110'	88°	226°

SAMPLED SECTIONS

From	To	Sec.	Cu	Zn	Au
COMPRISES: —					
	0'	To	3273'		= 3273'
Plus	3300'	To	4747'		= 1447'
TOTAL FOOTAGE =					5420'

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks

Acid Dip Tests

Ftge	Corr
25'	89°
200'	88°
320'	89°
400'	89°
500'	89°
600'	90°
700'	89°
800'	90°
900'	89°
1000'	90°
1100'	88°
1200'	87°
1300'	87°
1400'	87°
1500'	87°
1600'	87°
1622'	88.5 Wedge
1700'	87.5°

Depth	Corr	
1800'	87°	
1900'	87°	
2000'	86°	
2059°	86°	Wedge
2100'	87°	
2200'	86°	
2300	86°	
2322'	88°	Wedge
2410'	88°	
2500'	88°	
2600'	88°	
2700'	89°	
2800'	88°	
2900'	89°	
3000'	89°	
3100'	89°	
3200'	89°	
3204'	89°	Wedge

Depth	Corr
3300'	88°
3400'	88°
3600'	89°
3700'	89°
3800'	88°
3900'	88°
4000'	88°
4100'	89°
4200'	88°
4300'	88°
4400'	87.5°
4500'	89°
4600'	89°
4700'	89°

Down Hole Deflection

Depth	Northing	Easting	Elev.
Collar	1129.6	15,140.05	11 119.26
500'	1118.2	15,138.3	10,619.4
1250'	1105.3	15,136.3	9,869.6
2250'	1081.5	15,087.5	8,871.1
3090'	1069.8	15,063.4	8,031.6
3190'	1090.9	15,064.8	7,931.6
3321.5	1094.5	15,065.7	7,800.1
3596.5	1101.6	15,068.5	7,525.3
3930.0	1098.9	15,060.0	7,191.9
4747'	1083.3	15,043.8	6,375.2

Hole No. D-321

Logged by P.J.H., A.b./.B

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
0.0-2.0	Casing.							
2.0-170.0	Massive Porphyritic Andesite Flow	Grey	Fine	Uneven. Scattered sericitised feldspar phenocrysts up to 3mm.	Massive. Fracturing weak to moderate, locally strong. Rare amygdules(?) and pillow borders.	Sericite, chlorite occasional limonite staining and some quartz carbonate in fractures. Some slight leaching near top of unit. Weakly dioritised at top of unit. Rare saussurite pods up to 1ft.	Nil	Fractures at 70,55,40, 20, 10° to parallel to core axis. Andesite is siliceous. Unit grades into underlying porphyritic andesite, only distinction being size and density of phenocrysts.
170.0-322.0	Massive Porphyritic Andesite Flow	Grey	Fine	Uneven. Small sericitised feldspar phenocrysts up to 1mm, dying out towards base.	Massive. Fracturing weak to moderate, locally strong. Sporadic clusters of amygdules, otherwise featureless.	Sericitte, epidote, quartz-carbonate and chlorite in fractures. A few weak saussurite pods up to 3".	Trace cp-py in fractures.	Fractures at 80, 60-70,30-35, 20, 5° to parallel to core axis.
322.0-338.0 ?)	Fractured Aplite Dyke	Grey to pinkish grey	Fine	Even.	Fracturing moderate to strong, locally weak. Featureless. Rather heterogeneous.	Quartz-carbonate, chlorite and some hematite staining in fractures. Some development of chlorite.	Trace py in fractures.	Fractures at 80,60-70°, 5° to parallel to core axis. Contacts not defined.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
338.0-510.0	Massive Diorite Dyke	Dark greenish grey	Medium locally fine, locally coarse	Dioritic	Massive. Fracturing weak, locally moderate to strong. Featureless. Heterogeneous.	Quartz-carbonate, chlorite and some sericite in fractures. Local development of epidote.	Trace py in fractures.	Fractures at 60-65, 40, 20-35, 10° to parallel to core axis. Fairly frequent granitic and aplit stringers and dykelets up to 1' Slight fracture zone with limonite staining and leaching at 425-427'.
510.0-660.0	Fractured Diorite Dyke	Dark green grey	Medium locally fine, locally coarse.	Dioritic	Fracturing moderate to strong, locally weak. Featureless. Heterogeneous.	Quartz-carbonate, chlorite sericite, epidote and rare hematite staining in fractures.	Trace py in fractures.	Fractures at 80-85, 55-60, 10° to parallel to core axis.and irregular.
660.0-1025.0	Massive Diorite Dyke	Grey	Medium	Dioritic	Massive. Fracturing weak, locally moderate to strong. Featureless. Fairly homogeneous in upper part, becoming increasingly heterogeneous with increasing depth.	Sericite, epidote, quartz carbonate and some hematite staining in fractures. Slight bleaching.	Nil	Fractures at 80, 55-60, 30-40, 10° to parallel to core axis. Fractured andesite dyke with fractured contacts at 812-817'. Slight fracture zone 850-870'. Quartz-carbonate veinlet at 905-9
1025.0-1080.0	Fractured Diorite Dyke	Grey	Medium locally fine locally coarse.	Dioritic	Fracturing moderate to strong, locally intense. Featureless A little fault gouge in some fractures.	Quartz-carbonate, sericite serpentine and hematite staining in fractures.	Nil	Fractures at 80, 50-55, 35, 20-25 10° to parallel to core axis and irregular. Massive white quartz-carbonate veinlet at 1054-1066' with inclusion of diorite at 1059 1061'

Hole No. D-321

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
1080.0–1250.0	Massive Diorite Dyke	Grey	Medium locally fine, locally coarse	Dioritic	Massive. Fracturing weak to moderate, locally strong. Featureless. Rather heterogeneous.	Quartz–carbonate–sericite chlorite and rare limonite staining in fractures.	Rare trace py in fractures.	Fractures at 70–80, 40–45, 20–30, 5° to parallel to core axis. Slight 50–60° shear zone with some limonite staining in fractures at 1237–1239'.
1250.0–2390.0	Massive Diorite Dyke	Grey	Medium, locally fine or coarse	Dioritic	Massive. Fracturing very weak, locally moderate. Featureless Rather heterogeneous in parts.	Quartz–carbonate and chlorite in fractures.	Rare trace cp in fractures. Local trace disseminated py	Fractures at 65, 45–55, 30, 20, 10°. Slight fracture zone at 1325–1328'. Zone of slight bleaching with carbonate alteration and some weak 70–80° shearing at 1843–1852'. Zones of 60–80° shearing with carbonate alteration at 2143–2149, 2191–2194', 2199–2206, 2208–2213' 2351–2354'. Slight fracture zone at 2375–2385' with bleaching at 2378–2384' and locally some magnetite. Lower contact of dyke is gradational.
2390.0–2665.0	Andesite Flow	Grey	Fine	Even to locally uneven with slight development of sericitised feldspar phenocrysts.	Fracturing moderate, to strong, locally weak. Featureless. save for rare weak amygdules and locally some flow banding.	Sericite, epidote, quartz–carbonate and chlorite in fractures.	Trace, locally minor py in fractures Trace interstitial cp and magnetite.	Fractures at 75–80, 55–60, 30–40. 10–20°. Section with possible (?) banding at 2457–2458'. Fractured acid dyke with indistinct contacts at 2576–2579'. Carbonate rich brown–grey lamprophyre dyke with abundant small biotite phenocrysts up to 1mm and distinct 20° upper, 15° lower contacts at 2638–2639.5'.

	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
								Andesite is rather siliceous.
0– 0	Acid Dyke	Pinkish grey	Fine	Even.	Fracturing moderate to strong. Featureless	Quartz–carbonate and chlorite in fractures.	Trace py disseminated and in fractures. Trace specular hematite in fractures.	Fractures at 80, 65,55, 40–45, 25, 5° to parallel to core axis. Upper contact fairly distinct 55°, Fairly strong 55° shear zone at 2695–2698'. Lower contact fractured.
0– 0	Andesite Flow(?)	Grey	Fine	Even	Fracturing moderate to strong. Featureless save for rare possible amygdules(?)	Sericite, epidote, and some chlorite and quartz–carbonate in fractures.	Nil	Fractures at 55–60 25–30 5–15°
.0– .0	Acid Dyke	Grey	Fine	Even	Fracturing moderate to strong. Featureless	Quartz–carbonate and chlorite infractures.	Trace py in fractures.	Fractures at 80–85, 70, 40, 20–25 5–10°. Fractures upper contact. Inclusion or intrusion of andesitic material at 2751–2753'. Lower contact not defined.
.0– .0	Andesite Flow	Grey	Fine	Even. Locally slightly uneven with weak development of serici tised fs phenos.	Fracturing moderate to strong, Rare weak amygdules and patches of flow breccia.	Sericite, epidote, quartz–carbonate and chlorite in fractures. Rare fairly strong saussurite–epidote pods up to 9".	Rare trace cp in amygdules. Trace py in fractures.	Fractures at 65–70, 55, 35–40, 20–25, 10°. Andesite is extremely siliceous almost dacitic in places.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
2920.0–3120.0	Andesite Flow	Grey	Fine	Even	Fracturing moderate to strong, locally intense. Occasional patches of weak flow breccia and rare possible amygdules, otherwise featureless.	Sericite and epidote with some quartz-carbonate and chlorite in fractures. Infrequent saussurite-epidote pods up to 15".	Trace py interstitially and associated with epidote.	Fractures at 70–80, 50–55, 35, 15–25, 5° to parallel to core axis. Small fault zone at 3020–3030'. Acid quartz feldspar porphyry dykelet with obscured contacts at 3098–3099.5'
3120.0–3162.0	Massive Amygdaloidal Andesite	Grey	Fine	Even	Massive. Fracturing moderate, locally weak or strong. Amygdules moderately abundant, not well developed, up to 8mm. Rare narrow patches of weak flow breccia.	Quartz-carbonate, chlorite and sericite and epidote in fractures. Amygdules predominantly silica-sericite filled.	Trace py in fractures. Trace interstitially cp.	Fractures at 65–70, 40–45, 30, 15–20, 5° to parallel to core axis.
3162.0–3370.0	Massive Andesite Flow	Grey	Fine	Even. Some scattered sericitized feldspar phenocrysts in places.	Massive. Fracturing moderate, locally weak or strong, 1–40 f/ft. Featureless. save for rare amygds.	Quartz-carbonate and sericite in fractures.	Trace py in fractures.	Fractures at 80–85, 65–60, 35–45, 25, 10–15°. Porphyritic andesite dyke with undefined upper, indistinct 50° lower contacts at 3331–3340'. Fractured micro-diorite dyke with undefined upper, vague 30° lower contacts at 3358–3370'.
3370.0–3392.0 (?)	Andesite Flow	Grey	Fine	Even.	Fracturing strong, to intense, locally moderate, 10+ f/ft. Rarepossible amygdules.	Quartz-carbonate and sericite in fractures. Local carbonate alteration, Occasional	Trace py disseminated and in fractures.	Fractures at 75,55–60, 35–40, 25, 10° and irregular, Fractured micro-diorite dyke with fractured contacts at 3382–3390'.

Hole No. D-321

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
						fairly strong saussurite epidote pods up to 9".		
3392.0-3475.0	Massive Andesite Flow	Grey	Fine	Even	Massive. Fracturing weak to moderate, locally strong, 4-40 f/ft. Featureless. Eyes for rare amygds	Quartz-carbonate, chlorite and sericite in fractures. Occasional fairly strong saussurite-epidote pods up to 9".	Tr cpy py disseminated and in fractures.	Fractures at 65-70, 55, 30, 15-20°, 5° to parallel to core axis. Andesite is rather siliceous.
3475.0-3546.5	Massive Amygdaloidal Porphyritic Andesite	Grey	Fine	Uneven. Weak development of scattered sericitized feldspar phenocrysts up to 1mm.	Massive. Fracturing weak to moderate, locally strong, 5-20 f/ft. Sparse amygdules generally poorly developed, up to 7mm. Local weak development of flow breccia.	Quartz-carbonate, sericite and chlorite in fractures. Silica in amygdules. Some biotite alteration, and local weak "grid" alteration.	Trace interstitial cp.	Fractures at 80, 55, 40, 30, 15-20°. Andesite is very siliceous.
3546.5-3581.5	Acid Q.F.P. Dyke	Grey	Fine	Uneven. Abundant sericitised feldspar phenocrysts and pale blue-violet quartz eyes to 5mm.	Fracturing moderate to strong, locally intense, 10 + f/ft. Featureless.	Sericite, epidote, quartz-carbonate and some chlorite in frs.	Trace py in fractures.	Fractures 85-90, 65, 45-55, 20-25° and irregular. Fractured contacts.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
3581.5-3634.0	Amygdu-loidal Porphy-ritic Andesite	Grey	Fine	Unven. Weak development of serici-tised feldspar pheno-crysts up to 1mm, locally absent.	Fracturing moderate, to strong, 10-30f/ft. Scattered poorly developed amygdules up to 1cm. Local narrow patches of flow breccia.	Quartz-carbonate, seri-cite epidote and chlorite in fractures. Silica and sericite in amygdules.	Trace interstitial cp.	Fractures at 85, 50-60, 40, 20-30, 10° to parallel to core axis.
3634.0-3677.0	Acic Q.F.P. Dyke	Grey	Fine	Uneven. Sericitised feldspar phenocrysts up to 4mm, abundant to locally absent. Abundant pale blue-violet quartz eyes up to 4mm.	Fracturing strong, locally moderate. 10-50f/ft. Featureless.	Quartz-carbonate with some sericite and epidote in fractures.	Trace py in frs.	Fractures at 65-70, 50, 35, 15-20, 5° to parallel to core axis. Upper contact indistinct, irregular Lower contact not defined. Andesite dykelet with distinct 45° upper, 15° lower contact at 3651-3651.5. Inclusion of flow banded amygdu-loidal andesite at 3671-3675'.
3677.0-3793.0	Amygdu-loidal Flow Banded Andesite	Grey	Fine	Even to locally uneven with sporadic development.	Fracturing moderate, to strong, weak, 5-25f/ft. Poorly developed amygdules up to 1cm. fairly abundant at top of	Sericite, epidote and some quartz-carbonate in fractures. Chlorite and sericite in amygdules.	Trace cp-py in amygdules.	Fractures at 80, 70, 55-60, 20-30, 10° to parallel to core axis. Possible(?) 1" chert band at top of unit. Andesite is siliceous.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
				of sericitised scattered feldspar phenocrysts.	unit, dying out towards base. Flow banding weak, indistinct dying out towards base of unit.			
3793.0-3846.3	Acid Q.F.I. dyke	Grey	Fine	Uneven. Abundant well developed, sericitised feldspar phenocrysts up to 6mm. Abundant pale bluish quartz eyes up to 5mm.	Fracturing moderate, locally weak or strong 5-25f/ft. Featureless.	Sericite, epidote and some quartz-carbonate in fractures.	Trace py in fractures.	Fractures at 80, 55-60°, 45, 25 10-15°. Upper contact indistinct, irregular, approx. 45°. Lower contact fractured, 20°. Inclusion of fractured andesite 3841-3844'.
3846.3-3973.0	Andesite Flow or Dyke	Grey	Fine	Even	Fracturing moderate to strong, locally intense, 10 +f/ft. Featureless, save for rare possible(?) amygdules.	Quartz-carbonate, sericite and epidote in fractures.	Nil	Fractures at 65-70, 40-45, 20-30, 5° to parallel to core axis. Slight fracture zone at 3861-3862'. Massive rather heterogeneous diorite dyke with undefined contacts at 3873-3886'. Carbonate rich lamprophyre dyke with local weak 55° shearing, undefined upper and fractured lower contacts at 3897-3906'.

Hole No. D-321

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
								Patches of broken ground 3960-3970'
	Rods stuck in Hole at 3995'. Redrill from 3300'.							
3300.0-3330.0	Massive Andesite	Dark blue-grey	Fine	Scattered small fs phenocrysts.	Massive. 2 Isolated amygdules.?	Numerous sauss pods.	Tr py.	
3330.0-3339.0	Andesite Porphyry Dyke	Dark green	Fine matrix.	40% fs-phenos.	Massive.	Nil	Nil	Cts sharp. chilled at 45°.
3339.0-3373.0	Massive Andesite	As above between 3300-3330'.						
3373.0-3382.0	Fractured Andesite				Intense fracturing.	Carb veinlets.	Tr py	Fracturing at 50°.
3382.0-3459.0	Massive Andesite	Dark green grey	Fine to med	Even	Isolated amygdules. Some are stretched.	Sauss pod. Minor grid altn.	Tr py	Middle part med grey and somewhat re-crystallized.
3459.0-3495.0	Andesite breccia	Dark blue-green	Fine	Slightly porphyritic	A few amygdules. Short sections and angular breccia.	Sauss in bx matrix. Minor carb veining.	Tr py	A mixed breccia and flow unit. Cts gradational.

Hole No. D-32

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
3495.0–3588.0	Massive Andesite	Dark blue green	Fine	Even to slightly porphyritic.	Massive. A few amygdules.	Moderate sauss as veins.	Tr py	Relatively hard.
3588.0–3613.0	Q.F.P. dyke	Med grey	Fine matrix.	30–50% large subhedral feldspar and round to angular blue qtz phenocrysts.	Massive.	Minor sauss veining.	Tr cp.	Cts indistinct.
3613.0–3629.0	Massive Andesite.	As above.			A few small amygdules.			
3629.0–3661.0	Q.F.P.	Med grey	Fine matrix	Small phenocrysts mm of colourless and blue qtz from 15–35%.	Massive. Small round sauss structure possible amygdules.?	Minor sauss veining	Small concentration py–tr cp at contacts.	Concentrations of phenocrysts at both cts. Distinctly different than Q.F.P. between 3588–3613'. Phenocrysts relatively small and indistinct. In places approaches Q.P. Likely a dyke.
3661.0–3742.0	Amygdaloidal Andesite	Dark green	Fine	Slightly porphyritic.	Moderately amygdaloidal.	Minor sauss nodules.	Tr–1% py as blebs and amygdules. Tr cp here and there. Blebs cp in 3/4" qtz-amphibole vein at 3703'	4 Q.F.P. dykes at 3665' Lower contact gradational.

Hole No. D-32'

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
3742.0-3831.5	Massive Andesite	Dark grey-green	Fine	Slightly porph.	Massive.	Minor sauss veins and nodules.	Nil	Indistinctively speckled. Sauss nodules may be amygdules. Slightly vitreous lustre, Dacitic.
3831.5-3878.0	Q.F.P. Dyke	Same as between 3583-3613'					Tr py	Upper ct at 30°. Lower ct at 60°. Inclusions of slightly re-crystallized andesite (or dyke) 3864-3871' 3836-3837'.
3878.0-3892.0	Lamprophyre Dyke	Med grey	Med	Porphyritic scattered biotite felty.	Massive. Foliated at contacts.		Nil	Carbonate-rich. Upper ct slightly chilled at 60°. Q.F.P. 3886-3888'.
3892.0-3901.0	Q.P. Dyke	Light grey	Fine matrix	10-20% large blue qtz phenocrysts.	Massive.	Matrix relatively soft. Possible sericitized.	Tr py	Cts indistinct.
3901.0-3944.0	Bleached Massive Andesite	Light grey	Fine to med.	Even	Very massive.	Minor sauss.veining. Possibly silicified.	Tr py	Lyke or flow? Slightly vitreous lustre Relatively hard for andesite. 1/4" chert band at 3933 at 55°.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
3944.0–3958.0	Fractured Lacite? Dyke	Med grey	Fine	Slightly porphyritic	Massive. Intensely fractured.			Recognizable from surrounding rock because of finer grain size.
3958.0–4028.5	Massive Andesite	Med grey	Med fine	Even	Massive. Highly fractured above 3983'	Minor sauss and bleaching.		2' lost core at 3982'. Relatively hard. Probably flow because gradational downward in flow rock.
4028.5–4078.5	Porphyritic Amygdaloidal Andesite	Med grey	Matrix med fine	Anhedral feldspars up to 3mm.	Well formed amygdules in lower part.	Minor sauss.	Tr cp.	A distinctive speckled appearance rounded phenocrysts?
4078.5–4112.0	Altered Amygdaloidal Andesite	Mod grey and light green	med-fine	Even	Numerous irregular amygdules. Churning Flow banding.	Strong a sauss and bleaching in churned sections. Sauss pods.	Tr py	Lower ct gradational. Some sauss pods, appears to be bx fragment.
4112.0–4149.0	Massive Andesite	Dark green dark grey	Fine to med fine	Even	A few amygdules here and there.	A few irregular sauss pods.	Tr py	Middle section 4123–33' massive, med grained, Massive may be a dyke. Flow cts and for thin tuffs at 4138–4140'.

Hole No. [illegible]

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
4149.0–4149.5	Beaded Tuff	Med grey green	Fine, but mod aphanitic		Beds 1mm to 5cm thick. Fragments up to 2mm.	Sil'n around fragments.	A few po beds.	Bedding at 45°. Tuff is weakly magnetic even away from po beds. Probably magnetite present.
4149.5–4361.5	Amygdu-loidal Andesite	Dark green	Fine	Even	Moderately amygdular Well formed. Strongly fractured.	Sauss amygds and pods. Sections up to 2'. Mod carb veining.	Tr py	3' lost core or ground core. Ind between 4262–4269'. Fracture zone 4332–4334'.
4361.5–4379.5	Acid Dyke (Feldspar Porphyr)	Mod dark grey	Aphanitic matrix	30% + euhedral feld. phenos.	Massive.		1% d/iss py	Top ct very irregular with inclusions of andesite. Lower ct obscured by broken core.
4379.5–4434.4	Massive Amygdu-loidal Andesite	Dark grey	Fine	Even. Fine feldspar pheno-cryst towards base.	A few small amygdules More abundant towards base. Pillow borders below 4430'	Minor carb veining.	Tr diss py.	Lower contact irregular and abrupt.
4434.4–4436.2	Fragmental Tuff	Med to light grey		A few qtz eyes.	Rounded sub-angular clasts of rhyolite.	Some sericite.	2–4% diss po–py Slight concentration at base.	One rounded clast to 3cm.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
4436.2-4444.3	M Bedded Tuff	Light grey			Beds from 1mm to several cm.	A few carbonate veins.	Unusually sulphide poor except for po stringers at top only averages 2-5% py-po.	Bedding at 70-75°. Fragmental tuffs similar to section from 4434.4-36.2' From 4439-4440.5' 4442.8-4443.5'.
4444.3-4519.5	Rhyolite Breccia	Med-dark grey, to dark green	Fine		Rounded sub-angular clasts up to 10cm and more.	Small patches of chlorite Carb veins especially [illegible]tom.	1-3% diss py-po. A few 1/4" stringers of po in upper part. A few concentrations diss'd py up to 10% over 6".	Rounded clasts general appearance if matrix suggests at least top part has been water worked. Hard with concoidal fracture.
4519.5-4532.0	Q.P. Dyke	As above at 3892'.						
4532.0-4556.5	Diorite Dyke (Meta-Diorite)	Med grey	Ophitic		Very massive.		Tr diss'd py.	Upper contact at 35°, chilled against Q.P.
4556.5-4596.5	Massive Rhyolite & Rhyolite Breccia	Dark grey	V.f.g.	Even.	Massive to irregularly banded. Amygdules near bottom.	Minor grid altn.	Tr diss py with a few blebs py here and there.	Likely that entire unit fragmental, but outline of fragments very vague.

Depth	Rock Type	Colour & % Felsic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
4596.5-4614.0	Diorite Dyke	Med grey	C.g.	Dioritic	Massive.		Tr diss'd py	Cts chilled at 45-50°.
4614.0-4619.0	Massive Rhyolite and Rhyolite Br	As above.			Vague fragmental structure at top with chrod-like fragments. Massive toward bottom.			
4619.0-4625.0	Altered Rhyolite	Dark grey-green	Very fine	Even	Massive.	Scattered chlorite spots Probably weak dalmatianite in which cordierite altered to chlorite.	Nil	Hard, concoidal fracture.
4625.0-4641.0	Massive Rhyolite	Med grey	Fine	Even	Massive to foliated.	Sericite and chlorite in sheared parts.	Tr diss py	Below 4637', rock strongly sheared at 30° to core. Lower section relatively soft. Small rounded fragments visible on broken surface.
4641.0-4662.0	Fault Zone	Med grey	Very fine	Even	Sheared and broken.	Sericite and chlorite on fractures and shears.	Tr-1% diss py.	Lost core" 4' between 4641-4647' 3' between 4654-4658'. Shearing and fracturing most intensive at 30°.

No. D-321

Depth	Rock Type	Colour & % Folic	Grain Size	Texture	Structure	Alteration	Sulphides	Remarks
4662.0-4685.0	Massive Rhyolite Rhyolite Breccia	Med grey	Fine to v.f.g.	Even	Massive or formed of small shreds-like fragments.	Some black chlorite.	Tr diss'd py.	
4685.0-4704.0	Rhyolite Breccia	Med grey matrix light grey fragments	V.f.g.	Even	Shred-like clasts with a swirled flow banding.	Minor chlorite spotting at 4700'.	Tr py	Bent fragments suggests some flowage after desposition.
4704.0-4722.0	Diorite Dyke	Dark grey	C.g. to f.g.	Dioritic	Massive.	Chlorite in lower part.	Nil	Fine diorite or massive andesite from 4712-22'.
4722.0-4724.0	Lamprophyre Dyke	Med brown	F.g. matrix	Biotite phenocrysts to 5mm.	Massive.		Nil	Contacts 35-45°. No chilling Biotites alighed along ct.
4724.0-4747.0	Massive Rhyolite	Dark grey black	F.g.	Even	Massive. Vague breccia appearance A few elongated amygdules, near end.	Nil	Tr py diss'd.	
					END OF HOLE 4747'			

Hole No. D-321

D-382 (WA-79-2)

DIAMOND DRILL CORE LOG

Sheet No. 1

LATITUDE 2970 N

DEPARTURE 3500 E

ELEVATION

BEARING 90°

DIP AT COLLAR

Tests Depth	Dip	Magnetic Bearing	Corrected Bearing

TOTAL DEPTH OF HOLE 3766'

Joint Boundary drilling.

PROPERTY Waite Amulet - Falcon Copper

CLAIM NO. MC 173 Block C

HOLE NO. WA-79-2 (D-382)

CORE SIZE AQ wireline

STARTED April 5th, 1979

FINISHED June 15th, 1979

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE No	ASSAYS AU OZ	AG OZ	% CU ppm	% ZN ppm	% NI		CORE LENGTH FROM	TO	ACC WIDTH
0	4	CASING										
4	63	RHYOLITE massive uniform texture fine grained										59
		siliceous greenish andesitic at 27' - approximately										
		6" banded tuff.										
63	388	RHYOLITE light grey siliceous fine grained feebly										
		porphyritic locally green dyke at 84.7 - 85.2										
		105.4 - 108.2			traces pyrite							
		Occasionally flow banded and mottled flow breccia.	18561	.001	0.02	710	865					325
		Rare buff type alteration.			traces pyrite cubes							
388	459	RHYOLITE greenish grey fine grained feebly chloritic	18562	.002	0.22	0.88%	1060					71
		and yellow sericite along slip. Somewhat mottled	18563	.001	0.01	455	195					
		and is suspect of nebulous fragmental in places	18564	.001	0.01	213	127					
		quite recognisable.			traces	chalcopyrite as stringer & blebs						

CONTRACTOR HOSKING DIAMOND DRILLING

LOGGED BY W.G. Hosking

DIAMOND DRILL CORE LOG

PROPERTY Joint Venture WAITE AMULET - FALC OPPER

HOLE NO. WA-79-2

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE No.	AU OZ	AG OZ	% CU ppm	% ZN ppm	% NI		CORE LENGTH FROM	TO	ACC WIDTH
459	487	DIORITE pale green medium to fine grained feebly porphyritic uniform texture.										28
487	551	RHYOLITE BRECCIA distinct angular fragmental up to 1" size light siliceous matrix & dark fragments	11583	.002	0.03	195	150					64
		Banded tuff at 503 -3" light & dark banded	11584	.005	0.26	338	0.18%					
		also at 505 - 8" light & dark banded			traces pyrite							
		529 - 6" banded with light & dark	18565	.002	0.01	165	745					
		siliceous bands & pyrite.	18566	.002	0.02	122	770					511
551	1062	RHYOLITE massive uniform to 560'										
		560'- 597' fine fractured massive rhyolite with fine siliceous filled fractures.										
		597'- 617' mainly massive uniform texture										
		617' -652' rhyolite mottled - a bit more chloritic occasional fragment and fine incipient alteration spots occasional spherulitic sections.	18567	.001	0.04	800	288					
		652'- 721' mainly massive uniform texture 700' - 707' lamprohyric dyke.										
		721'- 1062 mottled occasional auto brecciation epidote & buff alteration but mainly massive uniform.										

DIAMOND DRILL CORE LOG

Sheet No. 3
Joint Boundary Drilling
PROPERTY WAITE AMULET- FALCON COPPER
HOLE NO. WA-79-2

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE No.	AU OZ	AG OZ	% CU	% ZN	% NI		CORE LENGTH FROM	CORE LENGTH TO	ACC WIDTH
1062	1961	RHYOLITE light grey good rhyolite with chlorite spotting or mottling - somewhat nebulous, occasionally there are clear quartz eyes & mainly uniform texture. 1122'- 1127' spotting distinct locally feebly porphyritic and possibly spherulitic. Spotting locally near 1255'- disseminated pyrite pyrrhotite to 1336' banding at 1308'- 1309' and 1335' to 1336'. Mainly massive uniform hard siliceous occasional fine porphyritic sections. Weak grid type alteration at 1418' mainly massive uniform texture. 1669.6' - 6" fault zone Near 1658 - feebly spotted light siliceous but increasing in size from $\frac{1}{16}$" to $\frac{1}{8}$" near 1710 and continues on down to 1788. 1847 - 1860 moderately broken faulted zone with quartz carbonate stringers.										899
1961	2151.6	DIORITE light medium green fine grained at upper contact increasing in grain size near 1968 to medium grained uniform texture. Medium dark green porphyritic fine $\frac{1}{8}$ ~~feldspar~~ phenocrysts with rounded fragments darker in color and feebly prophyritic. Odd elongate shaped up to 2" in diameter.										190.6

Trace C.P. (as spots) $\frac{1}{8}$" size amygdule fillings.

DIAMOND DRILL CORE LOG

Sheet No. 4

Joint Boundary Drilling

PROPERTY WAITE AMULET - FALCON COPPER

(D-382) HOLE NO. WA-79-2

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE No.	AU OZ	AG OZ	% CU	% ZN	% NI		CORE LENGTH FROM	CORE LENGTH TO	ACC WIDTH
2151.6	2196	DIORITE-METADIORITE dark fine grained uniform texture.										44.4
2196	2221.6	QUARTZ-FELSPAR PORPHYRY somewhat tubular white felspar phenocrysts $\frac{1}{16}$" to $\frac{1}{8}$" size with bluish opolescent quartz(clear) crystals (rounded) in a siliceous rhyolitic matrix.										25.6
2221.6	2498	DIORITE medium to fine grained uniform texture - fine white leucoxene crystals and locally carbonated. 2326 - 2330 broken fractured, with included white milky quartz stringers - probable fault zone core continues broken blocky to 2337' 2351'- 2366' light colored porphyritic $\frac{1}{8}$" size white felspar phenocrysts, local light bleached patches.										276.40
2498	2700	RHYOLITE hard siliceous sugary texture uniform texture trachytic texture in part. 2465.5 - 2700 cherty siliceous locally spherulitic										202
2700	2900	LAMPROPHYRE DYKE fine ground moderately abundant biotite flakes.										200

DIAMOND DRILL CORE LOG

Sheet No. 5

PROPERTY Joint Boundary Drilling
WAITE AMULET-FALCON COPPER
(D-382)

HOLE NO. WA-79-2

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE NO.	AU OZ	AG OZ	% CU	% ZN	% NI		CORE LENGTH FROM	CORE LENGTH TO	ACC WIDTH
2900	2931	RHYOLITE light grey colored hard siliceous - mainly massive uniform texture.										31
		2725 - 2726 strong talcose shear										
		2765 - 2782 moderately chloritic										
		2859 - 2860 broken fractured										
		2928 - 2929 grid fracturing										
2931	2948	RHYOLITE light grey sperulitic $\frac{1}{16}$" size spherule										17
2948	3001	RHYOLITE dark flow features, massive dense siliceous										53
3001	3061	RHYOLITE light grey spherulitic (as above)										60
3061	3227	RHYOLITE massive uniform locally spherulitic										166
		3063 - 3069 fine grained green dyke										
		3073 - 3078 " " " "										
		locally chloritic & possible nebulous spotting										
3227	3258	QUARTZ-FELSPAR PORPHYRY small less than $\frac{1}{16}$" white felspar phenocrysts - rhyolite siliceous material.										31
3258	3305	RHYOLITE dark fine grained chloritic massive uniform texture.										47
3305	3316	QUARTZ-FELSPAR-PORPHYRY dense fine grained fine phenocrysts as above.										11

DIAMOND DRILL CORE LOG

Sheet No. 6

PROPERTY Joint Boundary Drilling WAITE AMULET - FALCON COPPER

(D 382) HOLE NO WA-79-2

FOOTAGE FROM	FOOTAGE TO	DESCRIPTION	SAMPLE No.	AU OZ	AG OZ	% CU	% ZN	% NI		CORE LENGTH FROM	CORE LENGTH TO	CORE LENGTH ACC WIDTH
3316	3322	GREEN DYKE fine grained massive andesite.										6
3322	3656	RHYOLITE fine grained siliceous medium grey massive uniform texture locally feebly chloritic. Rare carbonate filled fractures. Cut by occasional short green dykes. 3458' - 3488' weak to moderate black chloritic, locally fine dark spotted alteration. 3488' - 3507' uniform massive 3707' - 3513' feebly sheared mottled - weak chlorite and siliceous patches but mainly siliceous uniform texture. 3513' - 3611' moderately abundant quartz carbonate filled fractures. 1311' - 3656' feebly altered by effects of granitisation.										34
3656	3728	GRANITE - granitization effects prominent but no clear cut apophysis or sharp contact, grey almost uniform texture, changing to reddish color near 3699'.										72
3728	3766	DIORITIC DYKE dark medium green somewhat granitised but clear sharp contact. 3735'- 3749' coarse prophyritic . 3745'- 3766'fine grained.										38

CM. 242

402

FALCONBRIDGE COPPER LTD.
EXPLORATION

DRILL HOLE RECORD

Hole No D-402 | Lat 2,159.86 | Dep. 4,355.82 | Elev. 11,099.70 | Dip 90° | Bearing 0 | Depth 3583' | Core AQ

Working Place: COPPER

Date Started: 13/5/80

Date Completed: 9/7/80

Compass Tests

Maq. Declination

Depth	Dip	T. Azim.

Acid Test

Depth	Dip	Depth	Dip	Depth	Dip	Depth	Dip	Depth	Dip
100	89.5°	700	89.5°	1400	88.5°	2100	88?°	2900	89°
200	89.5°	800	89.5°	1500	88.5°	2200	88?°	3000	89°
300	89.5°	900	89.5°	1600	88.5°	2300	89?	3100	89°
400	89.5°	1000	89°	1700	88.5°	2400	89°	3200	89°
500	89.5°	1100	89°	1800	88.5°	2500	89°	3300	89°
600	89.5°	1200	89°	1900	88°	2600	89°	3400	89°
		1300	88.5°	2000	88°	2700	89°	3500	89°
						2800	89°		

Cement at 2985'

DEPTH	ROCK TYPE	COLOUR & % FELSIC	GRAIN SIZE	TEXTURE	STRUCTURE	ALTERATION	SULPHIDES	REMARKS
0 - 217	Amulet "rhyolite"	Variable & dependent on alteration type. Green with epi-qtz alt, grey with silicification & green-grey where least altered	Aphanitic	Aphyric to weakly feldspar porphyritic	Massive, amygdaloidal andesite flow, weakly + locally ribbed at ≈45° to C.A. Amygdules filled by qtz, epi-qtz & calcite, generally less than 1 cm in size (up to 3 cm) and constitutes < 8% of flow. Hint of small, < 2 mm, feldspar phenocrysts altered by epi-sericite. Altered feldspar phenocrysts are more obvious after 78'. Amygdules commonly are concentrated into discrete bands or layers at 10° to C.A. Flow contact rarely observed, however alteration of amygdaloidal & non amygdaloidal sections and	Weak saussuritization of feldspar phenocrysts (<3% phenocrysts). Weak ep-qtz alt along fractures + cooling cracks - ribs Occasional epi-quartz patch up to .8' in size Flows lighter grey in colour from 136'-152'	Chiefly pyrite, some Ccp. <1% sulphides occurring in amygdules + along some fractures.	Upper Amulet rhyolite, andesitic member. Geochem samples Large amugdules up to several cm in size (mafic-chlorite filled) marked by a distinct siliceous buff coloured corona from 172.2' - 172.7'

Hole No. D-402

H. Gibson 0-2452'
Logged by G. Doiron 2452-3583'

DEPTH	ROCK TYPE	COLOUR & % FELSIC	GRAIN SIZE	TEXTURE	STRUCTURE	ALTERATION	SULPHIDES	REMARKS
					amygdule trains suggest that the flow is a composite one.			
217 230.5	Andesite dike	grey-green	f.gr.	Massive	Massive, uniform f.g. andesite dike Contact at 80° to C.A.	Not observed	nil	
230.5 323.7	Massive amygdaloidal "andesite"	light to dk green grey	f.gr. to aphanitic	Weakly & sporadically feldspar porphyritic	Amygdaloidal andesite flow, amygdaloidal andesite containing from 5-10% epi-qtz + chlorite amygdules (<1 cm in size) alternates with massive andesite. 1-3% light green feldspar phenocrysts (4 mm) scattered throughout. Flow bx ct at 267.8 - 268.5, angular in situ bx, underlying flow weakly ribbed & adjacent to bx. Amygdules are distinctly angular, not round.	Occasional, sporadic patches (<1'-1') of a fine chlorite vein network texture, veins mantled by siliceous (1-3 mm wide) envelopes.	Tr Py + Ccp	- probably analyse dacitic in composition. Textures reminiscent of andesites/basalts. Amygdaloidal flow top from 306.8 - 309.0'

DEPTH	ROCK TYPE	COLOUR & % FELSIC	GRAIN SIZE	TEXTURE	STRUCTURE	ALTERATION	SULPHIDES	REMARKS
323.7 333.8	Feldspar porphyritic rhyodacite dike	dark grey	aphanitic groundmass	Porphyritic 3%, 1-4 mm feldspar phenocrysts weakly glomero-porphyritic	Massive, uniform	not observed		
333.8 357.4	Amygdaloidal andesite flow	grey-green	aphanitic	Weakly feldspar porphyritic	Massive, uniform amygdaloidal andesite flow. Amygdules filled by epidote-qtz and/or chlorite. 6% amygdules	Chlorite fractures & veins filled by frequently mantled by thin epi-qtz alteration envelopes	Tr. Py, tr Ccp.	
357.4 438	Massive andesite? flow	grey-green	f.gr aphanitic	Aphyric, locally feldspar porphyritic (1% phenocrysts)	Massive, very weakly amygdaloidal andesite flow. 1% amygdules filled by pyrite and/or epi-qtz. Weakly in situ brecciated over .5' at 408', with a chlorite vein-network mantled by white to pink (hematite?) siliceous envelopes.	Extremely hard, aphanitic rock, if andesitic originally then flow has been silicified Weak epidote veining at 40° + 80° to C.A.	Minor disseminated and fracture pyrite	Gradational into overlying and underlying amygdaloidal flows.
439 606.1	Massive feldspar Porphyritic Flow (andesite?)	Dark green-grey	f.gr.	Porphyritic	Massive, uniform Amygdaloidal, feldspar porphyritic andesite flow.	Amygdules mantled by a halo of green epi-qtz or white quartz.	Minor pyrite	Typical flow tex + alt to that observed in Upper Amulet "rhyolite" formation.

DEPTH	ROCK TYPE	COLOUR & % FELSIC	GRAIN SIZE	TEXTURE	STRUCTURE	ALTERATION	SULPHIDES	REMARKS
					5-8% angular-round chlorite filled amygdules, & 2-3% 1-3 mm feldspar phenocrysts. Epidote-qtz veins up to 3/4" wide at 60° to C.A. Amygdules average <1 cm in size but range up to 2 cm in size. Becomes increasingly silicified & veined 1' from contact at 606.1'.	Occasional chlorite fracture mantled by similar alteration. Local sporadic patch of pale green epidote alt. up to 5 cm in size. Weak chlorite-vein network imparting an in situ - in situ fractured texture; weak silic halos mantling fractures.		
606.1 621.7	Rhyodacite dike	grey	f.gr. to aphanitic	Aphric	Massive rhyodacite dike, flow-banded from 621-621.4' contacts at 45° to C.A.			
621.7 633.0	Amygdaloidal andesite(?) flow	green	aphanitic	Massive aphyric	Amygdaloidal andesite(?), containing 2-3% amygdules up to 3 cm in size filled by epidote, qtz & chlorite	Weak epi-qtz alt.	Specks of Py in amygdules	Same as flow described between 438' & 606.1', except lacks good feldspar phenocrysts.
633.0 (912)	Rhyolite Flow(?)	grey to grey-green	f.gr. aphanitic	variable	633.0-638' Flow top? - altered. Purple-green silicified, brecciated (flow banded?) flow top? -	Not observed. Weak chl alt of altered flow top?	Pyrite with tr Ccp in amygdules + along fractures at 50° to C.A. 2-3% sulphides over	Identical, texturally, to rhyolite flow at base of Amulet rhyolite formation north of this drill hole.

DEPTH	ROCK TYPE	COLOUR & % FELSIC	GRAIN SIZE	TEXTURE	STRUCTURE	ALTERATION	SULPHIDES	REMARKS
					altered glass? 638 - 663 Aphanitic, hard, siliceous, amygdaloidal rhyodacite flow. Stretched - elongate-qtz amygdules with a long axis direction at 20°-25° to C.A. Amygdules occur in bands or trains. Weakly in situ fractured, angular blocks in a white-qtz(?) vein-network matrix. 663 - 687 light grey, weakly chloritized fractured rhyodacite. Qtz-chlorite-calcite shear zone - fault from 677.4 - 678.7, veins at 50° to C.A. A second silicified & chloritized shear-fault zone from 680 - 680.8 at 50° to C.A. 687 - 770 Spectacular flow-banded, flow brecciated & amygdaloidal rhyodacite flow. Texturally heterogeneous, flow-banded, rhyodacite alternates		1'. Minor to isolated disseminated specks of Py in amygdules or groundmass in massive, flow banded & amygdaloidal rhyodacite. 882 - (912) massive amygdaloidal rhyodacite flow contains just under 1% fine dusty brown sphalerite in both amygdules & in groundmass. Assay samples	

DEPTH	ROCK TYPE	COLOUR & % FELSIC	GRAIN SIZE	TEXTURE	STRUCTURE	ALTERATION	SULPHIDES	REMARKS
					with amygdaloidal & massive rhyodacite, all contacts are gradational. Virtually identical to rhyolite of the L member of the A.R* formation observed on surface to the north. Flow breccia is essentially a devitrification or in situ bx, resembles a mega perlitic texture rounded "frags" floating in a siliceous groundmass. Completely gradational into more massive rhyodacite. Flow banding, a result of alternating light & dark laminae not as well developed as observed on surface. Amygdules occur in bands or trains, amygdules elongate such that their long axis parallels the amygdule band, up to 4 cm long & 5 cm wide. 770 - 835.5 Massive, amygladoidal rhyodacite, containing from			

*Amulet Rhyolite

DEPTH	ROCK TYPE	COLOUR & % FELSIC	GRAIN SIZE	TEXTURE	STRUCTURE	ALTERATION	SULPHIDES	REMARKS
					1-4% pyrite + quartz filled amygdules up to 2.5 cm in size. Numerous qtz-calcite veins with bleached envelopes at 60° to C.A. Occasional feldspar phenocrysts $\ll$ 1%. 835.5 - 882 Spectacularly flow-banded, contorted, spherulitic & flow brecciated rhyodacite. Possibly an occasional 2 mm feldspar phenocryst. Weakly qtz amygdaloidal, amygdules aligned & elongate parallel to flow-banding where brecciated fragments are generally weakly chloritic and sit in a siliceous groundmass. 882 - 912 Back again to a more massive only locally flow banded amygdaloidal rhyodacite flow Flows range from aphyric to containing 1% -1-2 mm white feldspar phenocrysts. Percentage of amygdules varies from 2-4% up to 1 cm in size. Filled by quartz & sphalerite. Distinctly massive rhyodacite.			

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DEPTH	ROCK TYPE	COLOUR & % FELSIC	GRAIN SIZE	TEXTURE	STRUCTURE	ALTERATION	SULPHIDES	REMARKS
912 1030.3	Amygdaloidal rhyodacite flow	grey	aphanitic	Aphyric + massive	Massive, amygdaloidal rhyodacite flow 3-6% amygdules filled by epidote-qtz, + chlorite, locally amygdules stretched & elongated at 30° to core axis. Minor pyrite + tr Ccp, Po in amygdules. Weakly + only locally flow banded. Amygdules from 3 cm to 3 mm in size. Groundmass extremely f.gr + siliceous <<1% white feldspar phenocrysts. Flow banded amygdaloidal ctc (black in colour) from 1029.8 - 1030.3 contact at 70° to C.A.	Spherulitic overgrowths as coronas mantling amygdules & fractures. - spherulitic halos appear to be quartz, and are up to 1 cm wide. - where amygdules are abundant spherulitic halos coalesce. Weak epi-qtz alt (patches) from 1013' to 1030.3'	Minor to tr Py, Po & Ccp in amygdules.	Lower rhyolitic member of Amulet rhyolite formation Andesite dike from 1019.2 - 1020.2 at 45° to C.A.
1030.3 1078.0	Beecham Breccia	grey	variable	Specular breccia	Beautiful bimodal Breccia. Consists of subangular & predominantly angular weakly vesiculated amygdaloidal andesite fragments up to 6 cm in size, with about 5% or less white, amygdaloidal silicified fragments. (andesite or rhyolite)	White amygdaloidal fragments have been silicified & may have originally been andesite or rhyolite in composition. Andesite fragments are weakly chloritized & are locally rimmed quartz or fine pyrite.	Pyrite occurring as fine matrix pyrite to pyrite fragment & pyrite rimmed andesite clasts scattered throughout breccia. Pyrite most abundant from 1068 - 1078' (3-10%) as definite sulphide beds. - minor to trace sphalerite.	(1) Angularity of fragments & the preservation of delicate shardy whisps indicate a local ~~province~~ provenance (not transported far or reworked substantially) (2) Low vesiculasty of fragments does not favor a pyroclastic origin for the breccia. Probably in part a true hyaloclastite or phreatomagmatic derived bx (3) Occurrence (<5%) of rounded silicified clasts indicate a second source - for fragments

DEPTH	ROCK TYPE	COLOUR & % FELSIC	GRAIN SIZE	TEXTURE	STRUCTURE	ALTERATION	SULPHIDES	REMARKS
					Predominantly fragmental supported however sections are distinctly matrix supported (<25% fragments). Matrix supported sections of breccia commonly grade upwards into a laminated to thin bedded cherty ash tuff (layering at 60°) and downwards into fragment supported breccia. Laminated ash tuff restricted to the upper 2.5' of the breccia. Matrix appears to be a f.gr. grey, only weakly & locally laminated "cherty" ash. From 1068'-1078' breccia contains abundant (3-10%) pyrite in matrix ash & rimming the occasional clast. From 1076'- 1078 pyrite occurs in definite beds or layers up to 1 cm wide. These pyrite beds are broken & have slumped into the cherty grey ash matrix between layer fragments of andesite. Lower contact (at 1078')			and their incorporation into a primarily andesitic bx. (4) Occurrence of pyrite, especially bedded pyrite in the lowermost 10' & 1.5" of bedded pyrite at base of bx indicate an initial period of submarine sulphide exhalative activity. The occurrence of pyrite throughout bx (in lesser amounts and its concentration at the base & somewhat so in laminated ash at the top implies that hydrothermal activity continued through deposition of bx but was swamped or diluted by deposition of volcanic debris from possibly two sources. Breccia may be a product of phreatomagmatic activity "Lava fountaining" along a paleo fissure (McDougall structure) during a pause in volcanic extrusive activity that was also a period of submarine exhalative activity.

DEPTH	ROCK TYPE	COLOUR & % FELSIC	GRAIN SIZE	TEXTURE	STRUCTURE	ALTERATION	SULPHIDES	REMARKS
					of breccia marked by 1/5" of bedded pyrite, otherwise underlying andesite bx is identical to overlying A. Bx except for the paucity of silicified white fragments. Andesite fragments have delicate forms such as preserved "tails" that indicate a local provence.			
1078.0 1107.5	Andesite Breccia	green	aphanitic	Breccia	Angular to subangular weakly amygdaloidal andesite flow-flow breccia. Fragments separated by a f.gr. grey siliceous matrix that is somewhat cherty locally. Margins of frags weakly chloritized or silicified. - some frags are ribbed (cooling laminations) - gradational into underlying massive andesite. Calcite veins at 65° to C.A. Lamprophyre dike from 1099.8 - 1100.1 at 80° & from 1106.1 -1106.2 at 70° to C.A.	Weak chlorite and/or silicification of fragments	Minor pyrite (<1%-2%) in matrix or mantling fragments	Possible flow top bx? Rusty Ridge Andesite

DEPTH	ROCK TYPE	COLOUR & % FELSIC	GRAIN SIZE	TEXTURE	STRUCTURE	ALTERATION	SULPHIDES	REMARKS
1107.5 1156	Massive amygdaloidal andesite flow (flow top/ bottom bx)	green	f.gr. aphanitic	massive aphyric	2-5% amygdules filled by epi-qtz-chl + pyrite (<1 cm in size). Groundmass is a f.gr. andesite	Weak, mottled epidote quartz alteration occurring as irregular patches & along fractures, light green-yellow epi-qtz alt patches grade outwards into a diffuse mottled zone (epi-qtz) then into andesite. Flow breccia etc break andesite into several flows. Breccias are < 1' wide & consist of angular to subrounded chloritic fragments in a chloritic or siliceous groundmass. Breccias occur at 1115.6 - 1118.2' 1140.8 - 1141.5' Biotite porphyric lamp dike from 1109.6-1115.6 at 75°	Ccp-Py in amygdules and as disseminated grains in groundmass; also in cores of epi-qtz alteration patches.	
1156 1237.8	Massive amygdaloidal andesite flow	dark green	f.gr.	aphyric to weakly feldspar porphyritic	Massive, uniform andesite flow < 3% amygdules filled by chlorite, epi-qtz and/or pyrite. Amygdules < 8 mm in size. Sporadic feldspar phenocrysts. F.gr. massive, andesite dike from 1166.5 - 1167.1 at 85° to C.A.	Weak epidote-quartz, diffuse alteration patches. Patches up to 8 cm in size, gradational into surrounding andesite.	Minor Py in amygdules & in groundmass. Tr diss Ccp < 1% sulphides.	

DEPTH	ROCK TYPE	COLOUR & % FELSIC	GRAIN SIZE	TEXTURE	STRUCTURE	ALTERATION	SULPHIDES	REMARKS
					Qtz veins lean from 1229.1 to 1229.4'			
1237.8 1260	Fault zone				Chloritic fault gouge from 1247'-1248' at 25° to C.A. Bleached, pale-green grey carbonate flows veined by qtz and calcite at 80° to C.A. from 1237.8 - 1260'.	Silicified fault zone	Minor pyrite	Microdiorite dike from 1253.2 - 1253.5 at 45° to C.A.
1260 1274.5	Massive rhyodacite dike	grey	aphanitic	aphyric	Massive, uniform rhyodacite	Non observable	Nil	
1274.5 1282.0	Flow banded rhyodacite dike	grey	aphanitic	aphyric	Massive rhyodacite dike, flow banded margins for 1/2' at contact. Flow banding and ctc at 60°	non observable	nil	
1282.0 1325.1	Andesite flow	green	aphanitic	aphyric	Massive, uniform, mafic "chl-act" amygdaloidal andesite flow. 5% amygdules, < 1 cm in size. Qtz-calcite vein shear from 1324.9 - 1325.1'	Weak chlorite alteration	Trace pyrite	

DEPTH	ROCK TYPE	COLOUR & % FELSIC	GRAIN SIZE	TEXTURE	STRUCTURE	ALTERATION	SULPHIDES	REMARKS
1325.4 1352.7	Composite dike(?)	green	aphanitic	Locally feldspar porphyritic	Massive & uniform rhyodacite. Margins of dike(?) ar distinctly andesite in composition. Interior of dike is a feldspar porphyritic (1-2% phenocrysts) rhyodacite dike. Both are gradational. Contacts at 25° to C.A.	Non observable	Nil	
1352.7 1378.8	Feldspar porphyritic spherulitic rhyodacite dike	dark grey	aphanitic to f.gr.	porphyritic	Massive, uniform spherulitic rhyodacite with 2%, 1-3 mm feldspar phenocrysts. Spherulitic texture well developed. Possible qtz eyes? Ctc at 20° to C.A.	Non observed		
1378.8 1402	Rhyodacite dike	grey	aphanitic	aphyric	Massive, aphanitic rhyodacite (dacite?) dike. Contact at 20° & sheared at 1402'	Weakly chloritic adjacent to margin	Dotted with ≈1% pyrite occurring as 1 mm or less disseminated grains and along fractures. Tr. Ccp.	
1402 1424.5	Massive & brecciated andesite flow(s)	grey-green	f.gr.	aphyric flow(s)	Ribbed massive amygdaloidal andesite flows or pillows,	Weak chlorite alt. Fragments in breccia generally unaltered, local weak silicification	<1% disseminated pyrite and chalcopyrite.	

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DEPTH	ROCK TYPE	COLOUR & % FELSIC	GRAIN SIZE	TEXTURE	STRUCTURE	ALTERATION	SULPHIDES	REMARKS
					separated by thin lenses or screens of andesite (pillow) breccia. Flows contain less than 5% amygdules up to 1 cm in size & are ribbed by qtz. Breccia is either flow top or pillow bx. Frags are angular & rest in a siliceous white or quartz matrix	of margins. Ribbed andesite is slightly silicified & a pale white in color		
1424.5 1425.3	Fault-shear zone	grey	variable		Chloritized andesite veined by calcite & quartz at 40° to C.A.	Chloritized	< 2% Ccp with veins, 1% pyrite	
1425.3 1432.2	Rhyodacite dike	dark grey	aphanitic	aphyric	Massive, uniform, rhyodacite dike		1-2% finely diss. Py-Ccp	Ctc at 65° & 60°
1432.2 1436.0	Biotite porphyritic lamprophyre dike	green	f.gr.	porphyritic	Weakly carbonated lamprophyre Ctc at 60°		Numerous calcite veins at 90° & 70° to C.A.	
1436.0 1444.4	Amygdaloidal ribbed andesite	green	f.gr.	aphyric	Amygdaloidal (<5%) andesite, qtz-filled amygdules, ribbing locally	Slightly paler in color where ribbed	Numerous calcite veins at 89° & 70° to C.A.	Adjacent to fault zone

DEPTH	ROCK TYPE	COLOUR & % FELSIC	GRAIN SIZE	TEXTURE	STRUCTURE	ALTERATION	SULPHIDES	REMARKS
1444.4 1466.5	Silicified fault zone	grey-green	f.gr.		Sheared & veined rhyodacite dike. Host rock lacks amygdules & is rhyodacitic in composition. Numerous calcite & quartz veins at 70° to C.A. Some vein network bx. Most intensely veind & sheared from 1444.5-1447.5 at 70° to C.A.	Silicified	Minor pyrite, tr Ccp & locally hematite associated with veins.	
1466.5 1483.6	Feldspar porphyritic rhyodacite dike	grey	aphanitic	Weakly feldspar porphyritic	Massive, rhyodacite, contains 2% 2-4 mm feldspar phenocrysts. Groundmass weakly spherulitic	None observed	Tr pyrite	
1483.6 1516.0	Massive rhyodacite dike	grey-green	f.gr.	aphyric, to wk feldspar porphyritic	Massive, spherulitic(?) rhyodacite dike, generally aphyric except from 1498'-1508.5' which contains <1% feldspar phenocrysts. Occasional quartz eye also.	Chloritic adjacent to faults	Section from 1498'-1502' contains 1% Py & tr Ccp as diss grains. <1% Ccp + fault zone from 1486'-1487.4'	Chlorite, quartz vein shear fault zone from 1486'- 1487.4' at 65° to C.A.
1516.0 1536.4	Massive rhyodecite dike				Massive rhyodacite, spherulitic? Flow banded margin at 1516'	Non observable.		

DEPTH	ROCK TYPE	COLOUR & % FELSIC	GRAIN SIZE	TEXTURE	STRUCTURE	ALTERATION	SULPHIDES	REMARKS
					Flow-banding and ctc at 45° to C.A. Qtz vein, chloritic fault-shear zone from 1517-1518' @ 60° to C.A. Calcite veins at 85° & 70° to C.A.			
1536.4 1545	Lamprophyre dike	green	f.gr.	Weakly porphyritic	Massive, but sheared at 70° & 60° to contacts.	Carbonated		
1545 1550.5	Massive rhyodacite flow? or dike	grey	aphanitic	aphyric	Massive, spherulitic rhyodacite flow or dike. Qtz vein at 1550.5 at 60° to C.A.			
1550.5 1637	Rhyodacite flow Northwest rhyolite	grey to grey-green	aphanitic to f.gr.	Variable	<u>Variable</u> <u>1550.5 - 1561.0</u> Massive rhyodacite, aphanitic & uniform. Finely brecciated <u>or</u> perlitic textured rhyodacite. Weakly feldspar porphyritic <u>1561.0 - 1590</u> Contorted, flow-banded & flow brecciated rhyodacite flow. Flow-banding	Not strongly altered. Flow banded rhyodacite tends to be more siliceous (lighter coloured) than massive rhyodacite. Some fine leucoxene?	Py-Ccp in amygdules + as disseminated grains in groundmass. < 1% over a 5' section. 1-2% over 1'	

DEPTH	ROCK TYPE	COLOUR & % FELSIC	GRAIN SIZE	TEXTURE	STRUCTURE	ALTERATION	SULPHIDES	REMARKS
					result of light/dark laminae, extremely contorted & brecciated. Amygdule zones parallel banding and consist of 20% elongate amygdules mantled by spherulitic overgrowths. 1590 - 1637.1 Massive, amygdaloidal rhyodacite flow, with < 5% amygdules up to 2 cm in size filled by quartz, chlorite & pyrite-Ccp. <<1% white feldspar phenocrysts. Amygdules decrease to less than 1% after 1615'. Qtz vein network at 70° to C.A. at 1617.2'-1617.6'. Massive rhyodacite is locally spherulitic.			
1637.1 1645.3	Flow banded rhyodacite dike	grey	aphanitic	aphyric	Massive, aphyric rhyodacite dike. Distinctly spherulitic, & flow-banded at margins	none observed	<1% diss Ccp + Py from 1640 - 1642	Contacts at 70° & 60°

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DEPTH	ROCK TYPE	COLOUR & % FELSIC	GRAIN SIZE	TEXTURE	STRUCTURE	ALTERATION	SULPHIDES	REMARKS
1645.3 1664.9	Massive rhyodacite dike	grey	aphanitic	aphyric	Massive and spherulitic rhyodacite dike. Flow banded at ctcs. Contacts at 60° to C.A. Silicified shear zone (2" wide) at 1653' at 40° to C.A.	None observed	<1% sporadic, disseminated Py & Ccp.	
1664.9 1672.1	Feldspar porphyritic rhyodacite dike or flow(?)	grey	aphanitic groundmass	Weakly feldspar porphyritic <1% (1-2 mm) white phenocrysts	Massive, uniform rhyodacite. Dike banded calcite veins at 85° to C.A.	Nil	Specks & fine cubes of pyrite < 1% sulphide.	
1672.1 1676.0	Andesite dike	grey-green	f.gr.	aphyric	Massive, andesite contact @ 80°	Nil	Fine Ccp along calcite veins @ 20° & 25° to C.A.	
1676.0 1678.3	Rhyodacite flow (dike?)	grey	aphanitic	aphyric	Massive rhyodacite dike	fine leucoxene(?) < 1%	Tr. pyrite.	
1678.3 1696	Q.P. dike	grey	aphanitic matrix	Porphyritic 5% quartz phenocrysts up to 8 mm in size (euhedral qtz eyes)	Massive porphyritic rhyodacite	None observed, however besides quartz phenocrysts dike is dotted with <8% black spots (irregular to round in shape)	Specks of Pyrite < 1%.	

DEPTH	ROCK TYPE	COLOUR & % FELSIC	GRAIN SIZE	TEXTURE	STRUCTURE	ALTERATION	SULPHIDES	REMARKS
1686 1693	Rhyodacite flow	grey	aphanitic	aphyric	Massive to weakly in situ bx rhyodacite, breccia occurs as 2" - 5" zones in massive andesite. Spherulitic locally	Chlorite & quartz envelopes mantling a chloritic fracture at 1687.8' at 85° to C.A.	1% diss Ccp as grains and as disseminated blebs over 1'. Assay	
1693 1729	Feldspar porphyritic diorite dike	grey	fine to medium grained	subaphanitic & porphyritic	Massive, weakly foliated parallel to ctc (60°) near margins. F.gr. to aphanitic at margins, grades into a f - m grain diorite. Obvious feldspar phenocrysts from 1707.5 - 1719.5 Contact @ 60°	Weak epi alt of feldspars	Tr. pyrite	
1729 1776.9	Rhyodacite flow	grey	f.gr. to aphanitic	Variable but aphyric	Massive rhyodacite, weakly spherulitic predominant lithology, local areas (<.5') of fine in situ bx or of spherulites < 1% amygdules, up to 1.5 cm in size filled by Ccp, qtz & chlorite.	Generally massive, no observable alt.	Ccp in amygdules, some Ccp as diss grains and along fractures @ 60° to C.A.	

DEPTH	ROCK TYPE	COLOUR & % FELSIC	GRAIN SIZE	TEXTURE	STRUCTURE	ALTERATION	SULPHIDES	REMARKS
1776.9 1836.7	Dacite dike + microdiorite dike	grey	f.gr.		Massive, uniform f.gr. rhyodacite-dacite dike from 1776.9 - 1836.7 at 30° to C.A. Contacts sheared & veined at 30° . Microdiorite dike (subaphitic text) from 1782.8'- 1794.8, contacts @ 60° to C.A. Calcite, qtz vein network in microdiorite from 1789.5 - 1794.3 veins at 20° to C.A. - Possible FAULT?	Fresh in appearance	Microdiorite dike is magnetic.	
1836.7 2395.3	Rhyolite flow	medium grey	aphanitic	Aphyri. to weakly feldspar porphyritic <1% phenocrysts	Massive, amygdaloidal rhyodacite flow, 2-3% qtz amygdules generally <1 cm in size, but up to 2.5 cm in size. Amygdules filled by qtz, pyrite + Ccp. Spherulitic bands. Generally a massive amygdaloidal rhyodacite flow, but with 2"-4" wide zones of bx characterized by rounded frags in vein-network. Siliceous groundmass. Weak in situ-fracture	Fresh looking rhyodacite Groundmass to areas with well developed spherulites typically black + more chloritic. Occasional siliceous "spherulitic"? envelope mantling amygdules.	Py-Ccp in amygdules & as fine diss grains. <1% sulfide over 5'. Ccp in qtz vein at 40° to C.A. from 2326.5 15% Ccp over 3/4".	

DEPTH	ROCK TYPE	COLOUR & % FELSIC	GRAIN SIZE	TEXTURE	STRUCTURE	ALTERATION	SULPHIDES	REMARKS
					type bx. Flow weakly ribbed at 65-70° to C.A. from 1899.5-1902.0' Flows characteristically massive & uniformly emygdaloidal from 1914-1988. Chloritic Whispy shear at 1485-1486', at 10° to C.A. Flows ribbed (weak flow banding?) from 1993-1994.5', 2051.0-2052.5 ribbing at 70° to C.A. Distinctly flow banded from 2017-2019 at 45° to C.A. Banding a result of alternating light & dark bands. Where spherulitic, rhyclite has a very "knotty" texture on fresh-broken surface. Microdiorite dike from 2197.3-2205.2 Ctc at 60° to C.A. Beautifully flow banded from 2210.3 - 2211.8 at 60°, possibly a dike? Massive, faintly ribbed, nonamygdaloidal rhyodacite from 2217-2367.			

DEPTH	ROCK TYPE	COLOUR & % FELSIC	GRAIN SIZE	TEXTURE	STRUCTURE	ALTERATION	SULPHIDES	REMARKS
					Texturally homogeneous, matrix weakly chloritic. From 2367 - 2393 rhyodacite becomes increasingly darker in color & more chloritic with occasional 1-2 mm black quartz eyes. 2383 - 2395.3 Chloritic flow-banded rhyodacite. Banding at 45° to C.A.			
2395.3 2410.4	Andesite flow breccia	black to grey	f. gr to aphanitic	Variable	Spectacular flow bx. from 2395.3-2410.3' breccia is composed of delicate, black, extremely chloritized andesite shards (2 mm - 10 mm) in a grey siliceous matrix. Matrix locallly is laminated. Matrix supported Bx. 2401.3' - 2410.4' chloritic bx grades into a grey less chloritic bx. Fragments are green in colour, less chloritic & more lightly packed (less			

DEPTH	ROCK TYPE	COLOUR & % FELSIC	GRAIN SIZE	TEXTURE	STRUCTURE	ALTERATION	SULPHIDES	REMARKS
				...ic FRAMEWORK	matric). Matrix still of siliceous material. Fragment supported bx.	Chloritization of fragments	Trace pyrite	Top of Flavrian andesite formation.
2410.4 2757	Massive & brecciated amygdaloidal andesite flow(s)	grey to black	f.gr. to aphanitic	variable	Alternating massive & brecciated andesite. Massive andesite is typically amygdaloidal, ribbed & in situ fractured. Breccia occurs as screens in massive & fractured andesite. Contacts are gradational with more massive andesite. Breccia consists of subangular to round, densely packed (Frame work supported) weakly amygdaloidal andesite frags in a fine micro bx or white siliceous matrix. Both massive andesite & fragments from bx are poorly vesiclated, containing less than 5% amygdules (up to 2.5 cm) filled by quartz & chlorite 2452 - 2550' Andesite still amygdaloidal 1 - 2.5 mm qtz, chl &	Both massive andesite & fragments are weakly silicified (light grey color) or chloritized (black in color). Some preferential bleaching (silicification) of ribbed andesite relative to massive andesite.	Generally <1% sulphide (Ccp > Py > Sphal) throughout, in amygdules & fractures. ≈ 1% Ccp in amygdules of massive flow from 2422.5' to 2424'. Assay sample 2462 - 2481' Amygdules mainly pyrite filled 1% also disseminated Py. Split 2481 - 2637' still locally disseminated & within amygdules Py, not as much as between 2462 - 2481', as 1 - 1 mm specks Anhedral to subhedral.	Fault at 2504' & 1" brecciated and sheared zone 70° to C.A.

DEPTH	ROCK TYPE	COLOUR & % FELSIC	GRAIN SIZE	TEXTURE	STRUCTURE	ALTERATION	SULPHIDES	REMARKS
					Py filled, some amygs also cal. filled (rare). Local flow breccia over 1' length. In general this entire length is amygdaloidal. 2550 - 2648' Still amygdaloidal andesite flow but size & abundance of amygs decreasing. Still local flow breccia, the best exposure at 2592 - 2596.6' Fragments are sub-angular 2 mm - 1 cm set in a very fine grained matrix, & again at 2603 - 2608' 2640 - 2657' flow breccia 2657 - 2696' amygdaloidal 2696 - 2704.5' massive andesite 2704.5 - 2732' amygdaloidal 2732 - 2575' massive.	Fresh with slight silic alteration. 6" epidote spot at 2558' 2610 - ~~2226'~~ 2626' minor rare epidote alteration as 1 mm - 3 cm green spots After 2607' andesite flow becomes more silicified, with increasing depth down to 2648'. 2707 - 2731' round to sub-round spots 3 mm - 1 cm which are either chloritic mafic spotting or mafic filled amygdules with spotting appearance, greenish in colour with a faint diffuse pinkish-grey rim. The same colour as andesite except the slight pinkish appearance. Generally these spots are not mineralized but a couple had < 1 mm Py specks anhedral in them. The spots are set in a slightly silic andesite flow matrix.	2610 - 2632' disseminated pyrr along with the Py as < 1 - 1 mm anhedral specks. Magnetic 2637 - 2732' anhedran to sub-hedral Py in amygdules except in the massive andesite sections. Also locally some disseminated and in amygdules Pyrr. Anhedral < 1 - 3 mm specks < 1%.	Magnetic pyrrhotite 1" shear at 2605.2' at 50° to C.A. 1" shear at 2698.7' at 70° to C.A.

DEPTH	ROCK TYPE	COLOUR & % FELSIC	GRAIN SIZE	TEXTURE	STRUCTURE	ALTERATION	SULPHIDES	REMARKS
2757 2813.6	Microdiorite Dyke	Med grey	fine to medium		Top contact sharp. Massive, structureless with ophitic texture on freshly broken surface is med grained. Botton contact chilled @ 60° to C.A.			Strongly magnetic. Fault 2 cm shear at 2811' with cal. at 60° to C.A.
2813.6 2843	Microdiorite Dyke	medium grey	fine to medium		Massive, structureless, ophitic slightly 2827 - 2830' locally a few <1 - 1 mm white feldspar crystals, anhedral	Local leucoxene as <1 mm white dots < 1%		Very faintly magnetic
2843 2917.5	Composite dyke into diorite dyke	med. grey	fine to medium		2843 - 2847' Rhyodacitic in composition, hard & silic after. Good diorite dyke. Changes into upper & lower dykes are gradational. Bottom contact is very fine grained, dark grey & chilled at 55° to C.A.	Epidote alt. along fractures from 2913-2917', fractures, parallel to to one another & 60° to C.A. All 1" apart.	Trace disseminated Py as < 1mm specks < 1%. broken	Good fault at 2851.4' with fault gouge for 1 cm at 45° to C.A. Strongly chloritized for 3". Fault at 2846' 1 cm shear & core for 2" at 45° to C.A. 2846 - 2851' basic andesitic dyke soft at fault Both contacts fault bound. 2888.3' 1 cm shear with cal at 60-70° to C.A. Good fault at 2905'. A 1" shear brecciated zone with good fault gouge strongly Chl and soft from 2902-2906.3' 45° to C.A. 2" Basic tyke at 2912 @ 50° to C.A. Dk grey to black. chilled sharp contacts.

DEPTH	ROCK TYPE	COLOUR & % FELSIC	GRAIN SIZE	TEXTURE	STRUCTURE	ALTERATION	SULPHIDES	REMARKS
291 .5 2918.2	Diorite dyke	Light grey	Med		Both top & bottom contacts & portion of dyke have been cut off by 2 other diorite dykes. Both top & bottom contacts have been dyked out.			
2918.2 2924.8	Diorite dyke	Med grey	Fine contact but med grained		Both contacts chilled & dark grey Top 30° Bottom 30°			
2924.8 2986.8	Diorite dyke	Med grey	Med		Massive, structureless, ophitic texture. Faintly qtz porphyritic as <1 mm in size. 2939 chloritic andesitic, massive, not ophitic. Locally diorite dyke has basic soft sections which are gradational at only a few locations over 1' length areas.	2939 - 2948' chloritized. Soft		Fainly magnetic 1" shear with qtz epidote at 2928.8' at 70° to C.A. Basic dyke 2975' - 6" thick massive dark grey. Both contacts 30° to C.A. Fault at 2985', 1" shear 35° to C.A. Core strongly chloritic for 1' on either side of fault.
2986.8 3013.4'	Feldspar Qtz faintly porphyritic	Med grey with purple tinge	Fine matrix, med feldspar		Top 2' are chloritic, soft, chilled @ 30° to C.A. Bottom contact is rhyodacite in com-			

DEPTH	ROCK TYPE	COLOUR & % FELSIC	GRAIN SIZE	TEXTURE	STRUCTURE	ALTERATION	SULPHIDES	REMARKS
	Rhyodacite Dyke				position. Chilled dk grey & 40° to C.A. Feldspar <1% mainly anhedral < 1-5 mm white. Locally spherulitic	Majority of feldspar is altered (silic) & surrounded by and diffusing inward & outward. Silic rim up to 2 mm thick. This Qtz is purple in colour.		Fault at 3001.6 @ 30° to C A. A 1" qtz-cal vein with py <1% Anhedral to subhedral <1-3 mm Fault at 3006.7' A 1 cm shear zone, 45° to C.A.
3013.4 3016.5	Diorite Dyke	Med grey green	Med		Ophitic. Top contact has been eaten away by rhyodacite dyke			Faintly magnetic
3016.5 3018.0	Basic dyke	dark grey	fine		Massive, structureless. Both top & bottom contacts are chilled. Top 30° to C.A. Bottom 30° to C.A.	Faintly silic.		
3018 3030.2	Feldspar Porphyry Diorite Dyke	Med grey greenish tinge	Med		Subophitic. Feldspar <1-1.5 mm white anhedral to subhedral, largest feldspar being present from 3028.5 - 3030'			Faintly magnetic. Fault at 3025.4 A 1.5 cm shear, 35° to C.A.
3030.2 3108.6	Diorite dyke	Med grey with greenish tinge.	Med		Ophitic texture well developed.	Locally leucoxene is anhedral & subhedral. A pale grey colour square-like <1-1 mm <1%		Magnetic

DEPTH	ROCK TYPE	COLOUR & % FELSIC	GRAIN SIZE	TEXTURE	STRUCTURE	ALTERATION	SULPHIDES	REMARKS
					3030.2 - 3032.2 Basic margin of dykes top contact. Qtz & minor feldspar present < 1 - 1 mm anhedral & faintly subhedral feldspar. Bottom contact faulted off.	3042 - 3046' 3098.8 - 3102' 3105 - 3108.6' Very few qtz-cal fractures are present, rare		Fault at 3081' A 1 cm shear with qtz, 70° to C.A. Fault at 3108.6 2 cm shear zone with qtz & cal also fault breccia @ 30° to C.A.
3108.6 3139.4	Feldspar Porphyritic Andecite Dyke	Med grey	fine with med grained feldspar		Feldspar anhedral to subhedral < 1 mm-2 mm. 2 mm only occur. Locally feldspar is fresh & white. Bottom contact chilled at 40° to C.A.	Rock seems to be faintly, slightly silic in vincinty of fault.		Fault at 3115.5' 1 cm shear with qtz-cal @ 15° to C.A.
3139.4 3145.7	Diorite dyke	Med grey	Med		Ophitic. Both top & bottom contacts have been cut off			
3145.7 3148.3	Diorite dule	Med dark grey	Fine		Both contacts chilled Top 60° Bottom 30°			

DEPTH	ROCK TYPE	COLOUR & % FELSIC	GRAIN SIZE	TEXTURE	STRUCTURE	ALTERATION	SULPHIDES	REMARKS
3148.3 3152	Diorite dyke	Med grey	Med		Ophitic Top contact cut off Bottom contact mafic & chilled 45° to C.A.			
3152 3155.7	Diorite dyke	Med grey	Med		Subophitic. Top contact cut off Bottom contact also cut off			Magnetic
3155.7 3162.5	Diorite dyke	Med grey greenish tinge	Med to fine		Subophitic Top contact chilled & mafic @ 65° to C.A. Bottom contact mafic & chilled @ 65° to C.A.			Faintly magnetic
3162.5 3172.9	Diorite dyke	Med grey greenish tinge	Med		Ophitic. Top contact cut off Bottom contact mafic(fine) & chilled, 75° to C.A.			Magnetic
3172.9 3180	Diorite dyke	Med grey	Med		Ophitic. Top contact cut off Bottom contact mafic & chilled 10-15° to C.A.			Faintly mangetic Fault at 3174' 1 cm shear, 30° to C.A.

DEPTH	ROCK TYPE	COLOUR & % FELSIC	GRAIN SIZE	TEXTURE	STRUCTURE	ALTERATION	SULPHIDES	REMARKS
3180 3187.2	Diorite dyke	med grey	Med		Ophitic to sub-ophitic. Top contact cut off. Bottom contact mafic & chilled, 80° to C.A.			Magnetic
3187.2 3212.3	Rhyodacite dyke	Med grey	Fine		Massive, structure-less. 3198 - 3204' Mafic framework, sub-rounded 6 mm - 2 cm, dark grey, hard, rims are fresh. Also present associated with mafic fragments <1-1 mm white feld-spar. Anhedral to subhedral <1%. 3204 - 3212.3 Chilling phenomena marking end of dyke Bottom contact 15° to C.A.	3196 - 3212.3 Cal. fractures <1 - 6 mm at every 1-3" apart		
3212.3 3304	Intermediate dyke	Med green-grey	Fine			Leucoxene <1 - 1 mm, <1%. White to light grey throughout A few <1-2 mm qtz-cal fragments @ 45°-60°		Fault 3217.2 - 3220' Qtz vein with fault breccia & cal. Angle 10-15° to C.A. as shown by the foliation in rock at contact with fault. Fault 3238' A 3" qtz vein, 40° to C.A. 1.5" on either side of vein have sericitic alteration.

DEPTH	ROCK TYPE	COLOUR & % FELSIC	GRAIN SIZE	TEXTURE	STRUCTURE	ALTERATION	SULPHIDES	REMARKS
								Fault 3254.4' 2" brecciated zone & 1.5 cm cal vein, 30° to C.A. Fault at 3259' 25° to C.A. A 2" qtz vein, clear, with cal along outer contour & containing Chl, at center. Indicates open space filling. Trace Cpy <1%, rock bleached on either side of vein for 2". 3240.4 - 3246' Magnetic, disseminated pyrrhotite <1% - 0.5% Anhedral <1-1 mm specks.
						A few 1-2 mm qtz-cal fractures 45° to C.A.	3240.4 - 3246' Disseminated Pyrr at <1-1 mm anhedral specks <1% - 0.5%	3270 - 3278' Magnetic sections 3289.5 - 3294' Diss. Pyrr <1 mm specks, <1% Fault 3268.8' 2" qtz-cal vein, 40° to C.A. Fault 3280.2 a 1" cal vein, 70° to C.A.
3304 3312	Basic dyke	Med dark grey	Fine		Massive structureless	Strongly chloritized. 1-3 mm qtz veins, 40° to C.A. increases in abundance with increasing depth.		

DEPTH	ROCK TYPE	COLOUR & % FELSIC	GRAIN SIZE	TEXTURE	STRUCTURE	ALTERATION	SULPHIDES	REMARKS
3312 3323.3	Fault zone	Med grey intermediate dyke. Greenish Altered			Qtz is white to smokey brown, altered intermediate dyke or lamprophyre dyke is greenish with mafic, chloritic fragments all flattening out parallel to schistosity 45° to C.A. 2 mm - 1 cm this in non-calcarous, 3319.5 - 3323.3 strongly foliated 45° to C.A. altered Lamp or Int. dyke?	Grass green talc. Some<1-4 mm qtz veins. These bleach the country rock up to 1" away.		Grass green talc. Heart of fault at 3319.5' where rosy qtz is present 45° to C.A.
3323.3 3340.7	Intermediate dyke	Med darkish grey	Fine		Massive Stuctureless Bottom contact chilled @ 60° to C.A.	332.3. - 3335' Many 1-3 mm qtz-cal fractures 45°-60° with increasing depth their abundance decreases. Leucoxene<1-1 mm anhedral white to grey <1%		
3304.7 3352.8	Rhyodacite dyke	Med grey	Fine		Massive Structureless, spherulitic, locally rare trace of white anhedral <1 mm felispar Bottom contact chilled, @ 30° to C.A.			Fault at 3351.8 45° to C.A. 1" shear and 2" chloritized zone

DEPTH	ROCK TYPE	COLOUR & % FELSIC	GRAIN SIZE	TEXTURE	STRUCTURE	ALTERATION	SULPHIDES	REMARKS
3352.8 3354.5	Diorite dyke	Med grey	Fine		Very faintly sub-ophitic. Trace of white anhedral-sub-hedral feldspar < 1-1 mm			Magnetic
3354.5 3357.4	Lamprophyre dyke	Greenish	Med		Faintly calcarous Both contacts sharp & chilled @ 70° to C.A.			
3357.4 3363.3	Diorite dyke to basic looking	Med grey	Fine to faintly med.		Same as 3352.8 - 3354.5 Bottom contact cut cut off by a 4" lamprophyre dyke	A few <1-1 mm qtz fractures 60°-70°	Trace Py along frac planes, anhedral to sub-hedral < 1 mm - 1mm, <1%.	Magnetic 3363 - 3363.3 Lamprophyre dyke chilled 70° to C.A. Med grained greenish
3363.3 3389	Massive rhyodacite qy.	Med grey	Fine		Massive structureless spherulitic feld-spar < 1-1 mm white, anhedral to subhed-ral, < 1%, fresh bottom contact as	Some green, mafic spots < 1-1 mm, round to sub-round surrounded by silic rims up to 3 mm thick. This silic rim is purplish-pink not only as a silic rim but an irregular winding nature, joining one silic spot to another. Many joined together. A few < 1-1 mm qtz fractures 65-70° to C.A cut off.		

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DEPTH	ROCK TYPE	COLOUR & % FELSIC	GRAIN SIZE	TEXTURE	STRUCTURE	ALTERATION	SULPHIDES	REMARKS
3389 3423.7	Composite dyke	Med grey	Fine		Contains both basic & rhyodacitic members, their contacts are gradational. Basic is almost andesitic. Soft. Rhyodacitic -hard Both contacts chilled Top - 65° Bottom - 45°	Moderately fractured, by qtz-cal ∠1-3 mm 50° - 70°		
3423.7 3461	Diorite dyke	Med grey	Med		Has a dioritic appearance subophitic Botton contact possible fault at 60° to C.A. A 1 cm cal vein.			Faintly magnetic Fault at 3406' A 1.5 cm shear with qtz at 60° to C.A. Fault at 3445' A 1 cm shear 30° to C.A.
3461 3484	Highly fractured basic dyke	Dark grey	Fine to med		Soft	Chloritic. Many qtz-cal fractures 60-75° to C.A.		Fault at 3475.3' A 2 cm fault bx zone 60° to C.A. with qtz-cal.
3484 3490.5	Sericitized rhyodacite dyke	Med grey	Fine		Massive structureless	Highly fractured and jointed. Slickensiden along joint planes. Joints & fractures at every angle		Fault at 3490.5' At 60° to C.A. A 3 cm shear with qtz & cal

DEPTH	ROCK TYPE	COLOUR & % FELSIC	GRAIN SIZE	TEXTURE	STRUCTURE	ALTERATION	SULPHIDES	REMARKS
3490.5 3519	Feld Porphyry Rhyodacite Dyke	Med grey	Fine		Massive, structureless. Locally chloritic sections feldspar. Locally 1-3% white, ∠ 1-2 mm anhedral to subhedral	The rare odd feldspar has 1-3 mm diffused silic rims. Moderately qtz-cal fractured ∠1-1.5 mm at every angle	Minor Py. Anhedral along fracture planes ∠1%.	
3519 3583	Diorite dyke	Med grey	Fine to med.		Locally feldspar porphyritic. Also locally qtz porphyritic feldspar ∠1 mm white anhedral qtz, black anhedral 1 mm Both ∠1-1% 3574 - 3579 some kind of mafic crystals mineral, anhedral, ∠ 1-2 mm blobs, featureless as subround blobs. Hard, brownish-purple colour, about 1%.	Intensely qtz-cal fractured. ∠1-4 mm, at every angle. Locally sericitized especially last 3' intensely sericitized.	Locally disseminated Cpy & Py as ∠1-1 mm anhedral specks, ∠1%.	Fault at 3563.2' A 3 mm cal vein 60° to C.A. with fault Bx present only on one side of vein for 1.5". Angular to subangular pieces ∠ 1mm- 1 cm med grey set in med grey-green matrix.
3583	END OF HOLE							

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GEOCHEM, D-402

DIAMOND DRILL CORE ASSAY RECORD

C O	SAMPLE NUMBER	FROM FT	TO FT.	ESTIMATE Cu	ESTIMATE Zn	LENGTH FT.	ASSAYS % Cu	% Zn	Oz. Ag	Oz. Au		PROGRESSIVE TOTALS Ft. % Cu	Ft. % Zn	Ft Oz. Ag	Ft. Oz. Au		REMARKS AND AVERAGE ASSAYS FROM	TO	LENGTH	% Cu	% Zn	Oz. Ag	Oz. Au	
							ppm	ppm	%FeO	%Mg	$\%Na_2O$	$\%K_2O$	%CaO	$\%SiO_2$	$\%TiO_2$										
	24193	36	46				63	137	5.55	1.12	4.17	.19	4.26	61.1	1.10		31.5		160.0		10.8			
	21495	136	146				60	114	5.15	.93	3.72	.70	4.37	62.7	1.09		34.5		163.4		9.7			
	21496	207	217				60	80	4.55	.78	4.42	.39	2.80	68.5	0.61		43.0		121.0		7.8			
	97	302	312				63	80	5.15	.98	4.21	1.11	3.53	61.8	1.14		44.1		145.6		9.9			
	98	407	417				52	74	4.85	.84	5.07	.77	2.91	61.4	0.92		41.3		112.2		9.3			
	99	507	517				50	87	5.00	.80	4.42	.87	2.97	63.6	0.96		36.5		131.2		9.1			
	21500	595	605				370	530	4.55	.72	3.29	2.36	1.06	68.0	0.58		41.1		160.2		7.7			
	23852	633	643				78	260	4.25	1.07	2.75	1.83	.50	71.1	0.55		23.1		193.4		7.5			
	53	717	727				66	140	3.70	1.00	3.29	2.22	.28	73.2	0.44		32.0		142.8		6.4			
	54	817	827				81	130	3.65	.67	4.10	1.21	.78	71.5	0.42		38.4		105.4		6.0			
	55	902	912				96	1910	4.35	.99	4.31	.94	.90	67.9	0.61		5.0		124.0		7.8			
	56	996	1006				47	107	2.90	.57	3.67	1.16	3.19	67.4	0.36	ppm Cr 60 498 6	30.5		94.5		5.1			
	57	1067	1077				120	193	6.90	1.16	4.10	1.21	2.13	60.5	1.09		38.3	(13)	196.6		13.3	Amulet Rhyolite		
	58	1137	1147				183	83	4.20	1.20	4.74	.41	3.75	56.4	1.44		69.0		114.0		9.6	Rusty Ridge Andesite		
	59	1213	1223				172	115	5.15	1.58	4.21	.39	4.31	55.0	1.48		60.0		160.0		12.2			
	23860	1307	1317				95	207	6.30	3.25	3.69	.12	1.12	50.6	1.57		31.4		259.0		18.8			
	61	1413	1423				235	290	6.20	2.53	3.61	0.43	0.50	55.3	1.06		44.7	(4)	241.8		16.0	Rusty Ridge Andesite		
	62	1600	1610				82	168	3.50	0.92	4.80	1.04	0.50	69.6	0.52		32.8		92.1		6.3	North West Rhyolite		
	63	1747	1757				580	115	5.05	1.01	0.40	2.39	0.22	70.7	0.50		83.4		1515.0		8.6			

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GEOCHEM, D-402

DIAMOND DRILL CORE ASSAY RECORD

C O	SAMPLE NUMBER	FROM FT.	TO FT.	ESTIMATE Cu	ESTIMATE Zn	LENGTH FT.	ASSAYS % Cu	ASSAYS % Zn	ASSAYS Oz. Ag	ASSAYS Oz. Au		PROGRESSIVE TOTALS Ft. % Cu	PROGRESSIVE TOTALS Ft. % Zn	PROGRESSIVE TOTALS Ft. Oz. Ag	PROGRESSIVE TOTALS Ft. Oz. Au		REMARKS AND AVERAGE ASSAYS FROM	TO	LENGTH	% Cu	% Zn	Oz Ag	Oz Au
							ccu	ccu	%FeO	% Mg	$\%Na_2O$	$\%K_2O$	%CaO	$\%SiO_2$	$\%TiO_2$									
	23865	1817	1827				147	130	4.00	1.12	0.38	0.84	0.28	70.7	0.49		53.1		1347.4		7.2			
	66	1927	1937			10	464	98	4.05	1.12	2.10	1.61	0.17	71.6	0.47		82.6		246.2		7.2			
	67	2017	2027			10	75	515	3.55	1.16	3.02	1.13	0.17	72.9	0.42		12.7		155.9		6.5			
	68	2217	2227			10	26	66	4.10	1.70	2.86	1.06	0.22	67.6	0.51		28.3		202.8		8.6			
	69	2317	2327			10	910	102	3.85	2.43	1.27	1.25	0.11	63.5	0.57		90.0		494.5		10.0	[illegible]		
	23870	2407	2417			10	32	110	6.65	3.47	2.60	0.14	0.56	47.5	1.22		22.5		389.2		21.3	Flavr[illegible]		
	71	2513	2523			10	58	121	4.45	2.01	5.40	0.72	3.25	53.2	1.27		32.4		119.6		12.14			
	72	2607	2617			10	168	113	4.50	2.22	4.74	0.77	3.19	53.8	1.23		60.0		142.0		12.49			
	73	2727	2737			10	40	110	5.90	2.78	3.77	0.07	1.79	54.2	2.19		26.7		230.2		16.01			
						Avg NWR	326	170	4.01	1.35	2.11	1.33	0.21	69.51	1.49		55		579		8			
						Avg AR	98	296	4.66	0.89	3.96	1.15	2.28	66.05	0.76		34		142		8.49			
						Avg R.R.An	171	174	5.46	2.14	4.06	0.34	2.42	53.33	1.39		51		194		14.15			
						Avg F L An	75	114	5.38	2.62	4.13	0.43	2.20	52.18	1.48		35		220		15.49			

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ANNEXE III

SECTIONS DES TROUS LEVÉS AU PULSE-EM

LÉGENDE UTILISÉE POUR LES SECTIONS

I2J : Diorite

V1B : Rhyolite

V1C : Rhyodacite

V1D : Dacite

V2J : Andésite

Tuf : Tuf

QFP : Dyke à porphyres de quartz et feldspaths

Lamprophyre : Lamprophyre

Mort-terrain : m-t

Amygdalaire : amyg
Bréchique : brecc
Cisaillement : cis
Coussiné : cous
Fracture : frac
Fragments : fx
Localement : loc
Massive : mass
Porphyrique : por

Carbonates : carb
Feldspaths : fp
Pyrite : py
Pyrrhotine : po
Séricite : ser