No. 82-4427

AVALON VENTURES LTD.
VSE-AVL

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April 26, 2007

Office of International Corporate Finance
US Securities & Exchange Commission
Mail Stop 3628
100 F Street, N.E.
Washington, D. C. 20549
USA

Attention : Mr. Michael Coco

Dear Mr. Coco :

Re : Avalon Ventures Ltd. (the "Company") – File No. 82-4427

Please be advised the attached disclosure documents have been filed by the Company in Canada and are being sent to you for filing with the US Securities & Exchange Commission.

1. Unaudited Interim Financial Statements and related MD&A for the six months ending February 28, 2007 along with Officers Certificates.

2. Technical report on NI 43-101 resource estimates for the Thor Lake rare metals project and QP consents.

3. SEDI (System for Electronic Disclosure by Insiders) Report of Insider Transaction Details dated April 25, 2007 for the period from March 1, 2007 to April 25, 2007.

There have been no news releases since the last filing, but there have been a number of share issuances pursuant to exercise of share purchase options and warrants, bringing the current shares outstanding to 51,535,123. An updated Corporate Profile is included for quick reference.

I trust the enclosed documentation is satisfactory but should you have any concerns do not hesitate to contact me.

dlw 5/4

Yours truly,
Avalon Ventures Ltd.

Donald S. Bubar, P. Geo.
President and CEO

Encl.

c.c. Jeffrey T. K. Fraser, LLB,
Lexus Law Group
1550 – 1185 West Georgia Street
Vancouver, B.C. V6E 4E6

No. 82-4427

Financial Statements

Avalon Ventures Ltd.

For the Six Months Ended February 28, 2007

Unaudited - See Notice to Reader

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NOTICE TO READER

The accompanying unaudited interim financial statements have been prepared by the Company's management and the Company's independent auditors have not performed a review of these financial statements.

Avalon Ventures Ltd.

Balance Sheets
As at February 28, 2007 and August 31, 2006
Unaudited - See Notice to Reader

	February 28, 2007	August 31, 2006
Assets		
Current Assets		
Cash and cash equivalents	$ 3,477,318	$ 2,023,139
Receivables and prepaid expenses	65,963	81,185
	3,543,281	2,104,324
Investments Available for Sale	12,143	22,143
Resource Properties (note 2)	5,445,663	4,765,999
Property, Plant and Equipment	52,083	38,467
	$ 9,053,170	$ 6,930,933
Liabilities		
Current Liabilities		
Accounts payable	$ 407,081	$ 203,275
Shareholders' Equity		
Share Capital (note 3)	25,877,426	23,517,522
Contributed Surplus (note 4)	943,577	742,970
Deficit	(18,174,914)	(17,532,834)
	8,646,089	6,727,658
	$ 9,053,170	$ 6,930,933

Approved on behalf of the Board

"Donald S. Bubar", Director

"Brian MacEachen", Director

Avalon Ventures Ltd.

Statements of Operations and Deficit
For the Periods Ended February 28
Unaudited - See Notice to Reader

	Six Months Ended		Three Months Ended	
	February 28, 2007	February 28, 2006	February 28, 2007	February 28, 2006
Revenue				
Interest income	$ 42,878	$ 9,385	$ 24,147	$ 9,358
Foreign exchange	-	33,702	-	33,702
	42,878	43,087	24,147	43,060
Expenses				
Amortization	6,215	867	3,330	433
Consulting fees	12,740	87,284	5,540	66,050
Directors' fees and expenses	7,985	5,000	5,485	2,500
Insurance	20,925	-	10,462	-
Interest and financing costs	4,623	664	4,089	267
Office and general	5,904	7,531	2,455	2,082
Professional fees	39,070	38,987	24,637	27,987
Public and investor relations	120,960	70,560	62,091	29,830
Rent and utilities	20,464	5,953	15,726	2,870
Salaries and benefits	129,663	45,344	63,402	22,669
Shareholders' information	38,441	23,393	34,008	13,165
Stock based compensation	260,185	147,415	42,275	70,577
Transfer and filing fees	24,566	34,328	21,905	29,345
Travel	28,815	9,439	16,042	5,680
	720,556	476,765	311,447	273,455
Loss Before the Undernoted Items	(677,678)	(433,678)	(287,300)	(230,395)
Gain on Sale of Investments	35,598	-	35,598	-
Loss for the Period	(642,080)	(433,678)	(251,702)	(230,395)
Deficit - Beginning of Period	(17,532,834)	(16,245,253)	(17,923,212)	(16,448,536)
Deficit - End of Period	$ (18,174,914)	$ (16,678,931)	$ (18,174,914)	$ (16,678,931)
Loss per Share	$ (0.01)	$ (0.01)	$ -	$ -
Weighted Average Number of Common Shares Outstanding	49,209,279	40,844,968	50,068,956	42,958,298

Avalon Ventures Ltd.

Statements of Comprehensive Loss
For the Periods Ended February 28
Unaudited - See Notice to Reader

	Six Months Ended		Three Months Ended	
	February 28, 2007	February 28, 2006	February 28, 2007	February 28, 2006
Net Loss	$ (642,080)	$ (433,678)	$ (251,702)	$ (230,395)
Other Comprehensive Income	-	-	-	-
Comprehensive Loss	$ (642,080)	$ (433,678)	$ (251,702)	$ (230,395)

Avalon Ventures Ltd.

Cash Flow Statements
For the Periods Ended February 28
Unaudited - See Notice to Reader

	Six Months Ended		Three Months Ended	
	February 28, 2007	February 28, 2006	February 28, 2007	February 28, 2006
Cash Flows from Operating Activities				
Cash paid to suppliers and employees	$ (364,397)	$ (340,275)	$ (190,190)	$ (199,069)
Interest received	42,878	9,385	24,147	9,358
Interest paid	-	(3,440)	-	(3,440)
	(321,519)	(334,330)	(166,043)	(193,151)
Cash Flows from Financing Activities				
Share capital	2,069,476	2,603,850	1,612,331	2,272,100
Warrants	230,850	476,000	230,850	476,000
	2,300,326	3,079,850	1,843,181	2,748,100
Cash Flows from Investing Activities				
Resource property expenditures	(550,395)	(315,459)	(252,756)	(88,996)
Proceeds from sale of resource properties	-	12,500	-	-
Proceeds from sale of investments	45,598	-	45,598	-
Purchase of plant, property and equipment	(19,831)	-	(19,831)	-
	(524,628)	(302,959)	(226,989)	(88,996)
Change in cash and cash equivalents	1,454,179	2,442,561	1,450,149	2,465,953
Cash and cash equivalents - beginning of period	2,023,139	431,420	2,027,169	408,028
Cash and cash equivalents - end of period	$ 3,477,318	$ 2,873,981	$ 3,477,318	$ 2,873,981

1. Accounting Policies

These interim financial statements have been prepared by the Company in accordance with Canadian generally accepted accounting principles. These financial statements are based on accounting principles and practices consistent with those used in the preparation of the Company's annual financial statements except for the changes made to adopt to the new accounting standards as described in the following paragraph. Certain information and note disclosure normally included in financial statements prepared in accordance with generally accepted accounting principles have been condensed or omitted. These interim financial statements should be read together with the audited financial statements and the accompanying notes included in the Company's 2006 annual report.

On September 1, 2006 the Company adopted the CICA new Handbook Section 3855, "Financial Instruments - Recognition and Measurement", and Section 1530, "Comprehensive Income", on a prospective basis.

Section 3855 establishes standards for the recognition and measurement of all financial instruments, provides a characteristics-based definition of a derivative financial instrument, provides criteria to be used to determine when a financial instrument should be recognized, and provides criteria to be used when a financial instrument is to be extinguished.

Section 1530 establishes standards for reporting comprehensive income. These standards require that an enterprise present comprehensive income and its components in a separate financial statement that is displayed with the same prominence as other financial statements.

2. Resource Properties

	February 28, 2007						
	Separation Rapids Rare Metals	Warren Township Anorthosite Project	Thor Lake Rare Metals Project	U6 Savant Gold Project	Red Hill Copper-Zinc-Silver Project	East Kemptville Rare Metals Project	Total
Acquisition costs	$ -	$ -	$ -	$ -	$ -	$ 180	$ 180
Diamond drilling	-	-	-	166,601	5,458	-	172,059
Environmental studies/permitting	972	17,562	15,643	-	-	-	34,177
Feasibility/engineering studies	-	-	132,726	-	-	-	132,726
Geology	-	-	76,215	-	-	27,080	103,295
Geophysical	-	-	-	-	9,577	1,000	10,577
Metallurgical/market studies	7,526	217,058	2,066	-	-	-	226,650
Current expenditures	8,498	234,620	226,650	166,601	15,035	28,260	679,664
Balance - August 31, 2006	3,431,049	114,276	678,803	48,173	486,857	6,841	4,765,999
Balance - February 28, 2007	$ 3,439,547	$ 348,896	$ 905,453	$ 214,774	$ 501,892	$ 35,101	$ 5,445,663

2. Resource Properties (continued)

	February 28, 2006						
	Separation Rapids Rare Metals	Warren Township Anorthosite Project	Thor Lake Rare Metals Project	U6 Savant Gold Project	Red Hill Copper-Zinc-Silver Project	Other	Total
Diamond drilling	$ -	$ -	$ -	$ -	$ 181,715	$ -	$ 181,715
Environmental studies/permitting	-	-	2,791	-	-	-	2,791
Geology	75	818	99,794	13,631	-	1,582	115,900
Geophysical	-	-	-	-	8,500	-	8,500
Metallurgical/market studies	17,402	1,460	-	-	-	-	18,862
Other	400	-	-	-	-	-	400
Current expenditures	17,877	2,278	102,585	13,631	190,215	1,582	328,168
Balance - August 31, 2005	3,232,125	106,058	341,698	34,042	88,951	16,713	3,819,587
Balance - February 28, 2006	$ 3,250,002	$ 108,336	$ 444,283	$ 47,673	$ 279,166	$ 18,295	$ 4,147,755

3. Share Capital

a) Authorized:

25,000,000 preferred shares
Unlimited common shares

b) Issued and Outstanding:

	Number	Amount
Common Shares		
Balance - August 31, 2006	47,602,598	$ 22,980,488
Issued: for private placement	1,500,000	1,344,150
exercise of warrants	1,507,525	691,522
exercise of options	715,000	334,578
finder's fee paid	-	(18,900)
Balance - February 28, 2007	51,325,123	$ 25,331,838
Warrants		
Balance - August 31, 2006	2,664,650	$ 537,034
Issued: for private placement	750,000	230,850
Exercised	(1,507,525)	(222,296)
Cancelled/Expired	-	-
Balance - February 28, 2007	1,907,125	545,588
		$ 25,877,426

During the six months ended February 28, 2007, the Company issued:

i) Issued 1,500,000 flow-through units for proceeds of $1,575,000. Each unit consists of one flow-through common share and one-half of one non-transferable share purchase warrant, each whole warrant entitles the holder to purchase one non-flow-through common share at a price of $1.35 per share until December 28, 2008.

In connection with this private placement, the Company paid a finder's fee of $18,900 in cash.

3. Share Capital (continued)

The estimated fair market value of the warrants totalled $230,850 and this amount has been allocated to the warrant component of the units. The fair values of these warrants were estimated at the issuance date based on the Black-Scholes pricing model using the following assumptions:

Expected dividend yield	Nil
Average risk-free interest rate	3.96%
Expected life	2.0 years
Expected volatility	77%

ii) 1,507,525 non-flow-through common shares pursuant to the exercise of an equivalent number of common share purchase warrants for cash proceeds of $469,226. The estimated fair value of these warrants at issuance was $222,296, and this amount had been added to the recorded value of the issued shares.

iii) 715,000 non-flow-through common shares pursuant to the exercise of an equivalent number of stock options for cash proceeds of $275,000. The historical estimated fair value of these options was $59,578, and this amount had been added to the recorded value of the issued shares.

c) Warrants

As at February 28, 2007 the following warrants were issued and outstanding:

i) 1,157,125 non-flow-through warrants entitling the holder to purchase one common share at $0.55 per share, expiring January 21, 2008; and

ii) 750,000 non-flow-through warrants entitling the holder to purchase one common share at $1.35 per share, expiring December 28, 2008.

During the three months ended February 28, 2007, share purchase warrants were issued, exercised and expired/cancelled as follows:

	Number of Warrants	Weighted Average Exercise Price
Balance - August 31, 2006	2,664,650	$ 0.41
Issued	750,000	1.35
Exercised	(1,507,525)	0.31
Expired/Cancelled	-	-
Balance - February 28, 2007	1,907,125	$ 0.86

3. Share Capital (continued)

d) Stock Option Plan

The shareholders have approved a Stock Option Plan (the "Plan") that provides for the issue of up to 6,000,000 common shares of the Company to eligible employees, directors and service providers of the Company and its affiliates.

The Plan authorizes the granting of options to purchase shares of the Company's common stock at an option price equal to or greater than the average price of the shares for the ten trading days prior to the grant. The options generally partially vest with the recipient at the time of granting, and have a maximum term of 10 years.

During the six months ended February 28, 2007, stock options were granted, exercised and expired/cancelled as follows:

	Number of Options	Weighted Average Exercise Price
Balance - August 31, 2006	3,075,000	$ 0.43
Granted	1,175,000	1.00
Exercised	(715,000)	0.38
Expired/Cancelled	(200,000)	0.69
Balance - February 28, 2007	3,335,000	$ 0.63

During the six months ended February 28, 2007 the Company granted:

i) 300,000 fully vested stock options to an officer. Each option entitles the holder to purchase one share of the Company's common stock at a price of $0.80 per share until October 17, 2011. The estimated fair value of these options was $165,960 and this amount has been expensed as stock-based compensation.

ii) 100,000 stock options to a consultant. Each option entitles the holder to purchase one share of the Company's common stock at a price of $0.80 per share until October 17, 2008. These options will vest at the rate of 25% every three months following October 17, 2006. As at February 28, 2007, 37,500 options had been earned. The estimated fair value of these options totalled $21,591, and this amount has been expensed as stock-based compensation.

iii) Granted 400,000 stock options to an officer of the Company. Each option entitles the holder to purchase one common share of the Company's common stock at a price of $0.98 per share until January 8, 2012. These options will vest at the rate of 100,000 per year, with the first 50,000 vesting six months from the date of January 8, 2007. As at February 28, 2007, 14,444 options had been earned. The estimated fair value of these options totalled $9,717, and this amount has been expensed as stock-based compensation.

3. Share Capital (continued)

iv) Granted 250,000 stock options to an officer of the Company. Each option entitles the holder to purchase one common share of the Company's common stock at a price of $1.20 per share until January 30, 2012. These options will vest at the rate of 25% every twelve months following January 30, 2007. As at February 28, 2007, 5,208 options had been earned. The estimated fair value of these options totalled $5,000, and this amount has been expensed as stock-based compensation.

v) Granted 25,000 stock options to an employee of the Company. Each option entitles the holder to purchase one common share of the Company's common stock at a price of $1.30 per share until February 26, 2012. These options will vest at the rate of 25% every twelve months following February 26, 2007.

vi) Granted an aggregate of 100,000 stock options to two consultants of the Company. Each option entitles the holder to purchase one common share of the Company's common stock at a price of $1.30 per share until February 26, 2009. These options will vest at the rate of 25% every three months following February 26, 2007.

During the six months ended February 28, 2007, the Company also recorded stock-based compensation expense of $57,917 related to stock options with graded vesting schedules earned during the quarter, related to previous option grants to consultants.

The fair value of stock options to employees, directors and officers was estimated at the grant date and the options to consultants were estimated at the service completion date based on the Black-Scholes pricing model, using the following weighted average assumptions:

Expected dividend yield	Nil
Risk-free interest rate	3.93%
Expected life	4.1 years
Expected volatility	86%

Option pricing models require the input of highly subjective assumptions including the expected price volatility. Changes in the subjective input assumptions can materially affect the fair value estimate, and therefore, the existing models do not necessarily provide a reliable measure of the fair value of the Company's stock options.

3. Share Capital (continued)

As at February 28, 2007 the following options were vested and outstanding:

	Number of Options		Weighted Average
Option Price	Unvested	Vested	Remaining Contractual Life
$ 1.30	125,000	-	2.6 years
$ 1.20	250,000	-	4.9 years
$ 1.08	50,000	150,000	4.0 years
$ 0.98	400,000	-	4.9 years
$ 0.80	75,000	325,000	3.9 years
$ 0.69	-	200,000	4.0 years
$ 0.48	-	425,000	2.3 years
$ 0.40	-	285,000	0.5 years
$ 0.25	-	602,500	1.9 years
$ 0.20	-	447,500	1.1 years
	900,000	2,435,000	

4. Contributed Surplus

Contributed surplus consists of the following components:

Stock Options

Balance - August 31, 2006	$ 715,512
Granted to employees, directors and officers	180,677
Granted to consultants	79,508
Exercised	(59,578)
Expired/Cancelled	(10,918)
Balance - February 28, 2007	$ 905,201

Expired Warrants and Options

Balance - August 31, 2006	$ 27,458
Options expired/cancelled	10,918
Balance - February 28, 2007	$ 38,376
	$ 943,577

5. Related Party Transactions

During the six months ended February 28, 2007 the Company:

a) incurred consulting fees of $24,000 with a director, of which $24,000 were deferred as resource property costs. As at February 28, 2007, accounts payable included $6,695 payable to this director.

b) incurred accounting fees of $12,000 with an accounting firm in which an officer is the principal. As at February 28, 2007, accounts payable included $16,000 payable to this accounting firm.

6. Subsequent Events

Subsequent to the six months ended February 28, 2007:

a) The Company issued 185,000 non-flow-through common shares pursuant to the exercise of an equivalent number of stock options by a group of consultants of the Company for cash proceeds of $74,000.

b) Issued 25,000 non-flow-through common shares pursuant to the exercise of an equivalent number of common share purchase warrants for cash proceeds of $13,750.

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AVALON VENTURES LTD.

Management Discussion and Analysis of Financial Statements
For the six months ended February 28, 2007

This Management Discussion and Analysis ("MDA") of Avalon Ventures Ltd. (the "Company") provides analysis of the Company's financial results for the three and six months ended February 28, 2007. The following information should be read in conjunction with the accompanying audited financial statements and the notes to the audited financial statements.

This MDA includes certain statements that may be deemed "forward-looking statements". All statements in this discussion, other than statements of historical fact, that address future production, reserve potential, exploration drilling, exploitation activities and events or developments that the Company expects, are forward-looking statements. Although the Company believes the expectations expressed in such forward-looking statements are based on reasonable assumptions, such statements are not guarantees of future performance and actual results or developments may differ materially from those in the forward-looking statements.

Factors that could cause actual results to differ materially from those in forward-looking statements include market prices, exploitation and exploration successes, continued availability of capital and financing and general economic, market or business conditions. Investors are cautioned that any such statements are not guarantees of future performance and that actual results or developments may differ materially from those projected in the forward-looking statements. This report is prepared as of ***April 13, 2007***.

Nature of Business and Overall Performance

Avalon Ventures Ltd. (the "Company") is a Canadian junior mineral exploration and development company listed on the TSX Venture Exchange. The Company operates exclusively in Canada with a primary focus on rare metals and minerals including calcium feldspar, lithium, tantalum, cesium, beryllium, indium, gallium, yttrium and the rare earth elements ("REE's"), and a secondary focus on exploration for copper and gold deposits. By definition, "rare earth elements" refers specifically to the Lanthanide series of elements (atomic numbers 57 – 71), whereas the term "rare metals" is a more general "umbrella" term that includes the rare earth elements as well as other rare metals including those named above.

The Company is in the process of exploring or developing six of its eight mineral resource properties. Three of the six active projects (Red Hill, U6 Savant and East Kemptville) are at an early stage where drilling is required to delineate resources. The other three (Thor Lake, Separation Rapids and Warren Township) are rare minerals or rare metals properties that are at a more advanced stage with defined mineral resources that independent consultants have determined are potentially economic, provided that suitable sales contracts with customers for the mineral products can be arranged.

Bulk sampling programs to supply product samples to potential customers and secure long-term supply contracts are in progress on both the Warren Township and Separation Rapids projects. A scoping study is in progress on the Thor Lake project and detailed drilling is being planned to increase the confidence level on portions of a large *inferred* rare metals resource in one zone (the Lake Zone) to the *indicated* level.

Markets for mineral commodities in general have continued to strengthen over the past three years in response to rising demand from Asia and tightening supplies. Some of the strongest demand growth has been for rare metals such as the rare earth elements for applications created by new technological advances particularly in the automotive and alternative energy fields. This also applies to industrial minerals like the Company's lithium mineral product from the Separation Rapids project for which a promising new potential market emerged in 2005 and the Company's calcium feldspar product from Warren Township. The demand for these products is being driven in part by the need for reducing consumption of fossil fuels and lowering greenhouse gas emissions.

Increased media attention on the rare metals and their growing importance in modern society, has helped create new investor interest in companies like Avalon, resulting in continued strength in the Company's share price and access to capital to fund exploration and development programs.

Developing the Company's advanced rare minerals and metals minerals projects to production and cash flow remains management's top priority, with Thor Lake being the highest priority project due to the exceptional quality of the REE resource now recognized there. The Company seeks to build shareholder value by becoming a diversified producer of rare metals and minerals and expanding the markets for its mineral products.

Selected Annual Information

Unless otherwise noted, all currency amounts are stated in Canadian dollars.

The following selected financial data for each of the three most recently completed financial years are derived from the audited annual financial statements of the Company, which were prepared in accordance with Canadian generally accepted accounting principles.

For the Years Ending August 31,	2006	2005	2004
	$	$	$
Net revenues	87,588	414	1,478
Loss before discontinued operations and extraordinary items	1,287,581	472,733	1,670,178
Loss before discontinued operations and extraordinary items, per share	0.03	0.01	0.06
Loss before discontinued operations and extraordinary items, per share fully diluted	n/a	n/a	n/a
Net loss	1,287,581	472,733	1,670,178
Net loss, per share	0.03	0.01	0.06
Net loss, per share fully diluted	n/a	n/a	n/a
Total assets	6,930,933	4,311,718	3,919,123
Total long term liabilities	-	-	-
Cash dividends	-	-	-

The Company has recorded losses in all of the three most recently completed fiscal years and expects to continue to record losses until such time as an economic resource is identified, developed and brought into profitable commercial operation on one or more of the Company's properties or otherwise disposed of at a profit. Since the Company has no revenue from operations, annual operating losses typically represent the sum of business expenses plus any write-offs of mineral properties abandoned during the period. The Company expects to increase its level of business activity in coming years and consequently investors should anticipate that the Company's annual operating losses will also increase until a new operation begins to generate cash flow.

Results of Operations

Exploration and Development Activities

Resource property expenditures for the three months ended February 28, 2007 totalled $347,964 (2006 - $61,883), a comparable level of expenditure to the previous quarter ($331,700). Most of these expenditures (87%) were incurred on the Thor Lake rare metals (42%) and Warren Township anorthosite (45%) projects, with the balance being largely incurred on the East Kemptville and Separation Rapids rare metals projects. These expenditures were funded from the proceeds of the flow-through private placement financing completed in December, 2006 and working capital generated largely from the exercise of share purchase warrants and incentive stock options over the past 14 months. No properties were abandoned during the quarter and no expenditures were written off.

Thor Lake

On the Thor Lake rare metals project, expenditures during the quarter totalled $147,164. Most of these expenditures were incurred in the preparation of the Scoping Study either directly by the independent consulting engineers (Wardrop Engineering) or indirectly by other technical consultants for supporting geological work. $15,463 in expenditures was incurred for community consultation work related to the preparation of a land use permit application.

During the quarter, the Company received the results of the North T deposit and Lake Zone NI 43-101 compliant resource estimations carried out as part of the scoping study. These were publicly-disclosed in the Company's news release dated January 22, 2007 and the technical report documenting the resource estimates was SEDAR filed in early March, subsequent to the end of the quarter. Kevin Palmer, P.Geo., was the qualified person from Wardrop Engineering Inc. responsible for this resource estimation. Tim Maunula, P.Geo., of Wardrop Engineering reviewed his work and assisted with the development of the estimation parameters. David L. Trueman, Ph. D., P.Geo., who has direct experience with the project dating back to 1982, reviewed the data on behalf of the Company and assisted with interpretation where requested by Wardrop.

Highlights of the resource estimations were 1) confirmation that the Lake Zone represents a very large Inferred Mineral Resource of some 375,410,000 tonnes using a relatively low yttrium cut-off grade, and 2) quantification of a 593,000 tonne resource of high quality yttrium plus REE mineralization in the North T deposit, additional to the previously-disclosed estimate of 543,000 tonnes (the Company's News release of March 22, 2005) for the beryllium-rich resource, bringing the total Indicated Mineral Resource for this deposit to 1,136,000 tonnes. Of further significance, was the confirmation that the REE mineralization in both the North T and Lake Zone deposits has a very favourable distribution of the more valuable heavy rare earths compared to the less valuable light rare earths. As at the date of this report, the scoping study was in the final review process, with public release anticipated before the end of April, 2007.

Further drilling is required in the Lake Zone to define potential REE-enriched sub-zones in the southern part of the deposit and upgrade the classification for this portion of the resource from

Inferred to Indicated. This is now scheduled to begin by August, 2007, pending identification of a drill contractor and receipt of requisite land use permits. The program will be funded from the proceeds of a flow-through private placement completed in December, 2006 and has a preliminary budget in the order of $1,000,000. Community consultation efforts required under applicable land use legislation in the NWT are on-going and management is making every reasonable effort to obtain the support of local aboriginal communities before moving ahead with major work programs.

Warren Township

Expenditures of $157,163 were incurred on the Warren Township anorthosite project during the quarter, related to the initiation of a large scale bulk sampling program designed to deliver a minimum 500 tonne bulk sample of the Company's calcium feldspar product to a major US glass manufacturer for a full-scale furnace trial at one of its U.S. glass manufacturing facilities. A successful trial would lead to a long term supply contract, allowing the Company to develop a quarry, build a production facility and commence commercial production once all operating permits are in place.

During the quarter, a bulk sample of ore totalling approximately 1000 tonnes was extracted and crushed for delivery to a toll processing facility in southern Alberta owned by Aerosion Limited. Subsequent to the end of the quarter, the crushed ore was delivered to Aerosion where it will be further crushed, magnetically-treated, and pulverized to minus 200mesh for delivery to the customer over the next two months. This work was just getting underway as at the date of this report. It is expected that furnace trials will be completed during the fourth quarter and, if successful, the Company expects to proceed with quarry development and plant construction later in the year. The project is being managed by Donald Hains, P.Geo., under the direction of Ian London, P.Eng., Vice President, Corporate Development.

The current estimated net cost of the project to the Company is now in the order of $600,000, a variance of approximately of $250,000 or 70% over the original preliminary forecast. This was not entirely unanticipated as the bulk sampling program involved prototype process development involving a number of unknown factors and winter work. More specifically, additional costs were incurred as follows: the site preparation and blasting work which were inadvertently excluded from the original project estimate ($50,000), higher crushing/hauling costs related to winter work ($70,000), additional railcar demurrage costs as a result of inclement weather and delays in loading/unloading until the final process was fully operational ($55,000), and additional process design and quality assurance costs ($75,000).

Efforts to secure operating permits to develop a quarry and process plant were initiated during the quarter, at a cost of $17,562. Some additional fieldwork after spring break is required to gather all the environmental information required to complete the permit application. This work is being carried out by Fudge & Associates (D.T. Fudge, P.Eng.) of North Bay, Ontario.

Separation Rapids

$6,845 in expenditures were incurred on the Separation Rapids lithium minerals project during the quarter (net of cost recoveries from the customer) in the course of preparing 40 tonnes of the 300 tonne bulk sample collected in 2006, for shipping to the customer. This material was successfully delivered subsequent to the end of the quarter. Further shipments are anticipated during the summer

In the meantime, the Company has received several other expressions of interest in the potential petalite products from the property and small test samples are being prepared for delivery to three potential customers. There is renewed interest in lithium globally, especially from the battery sector where the lithium ion battery has become standard in many electronics applications and is considered by many as the preferred battery technology for future electric car developments. The rising demand for lithium raw materials from the battery sector is resulting in higher prices for lithium carbonate and creating much investor interest. The higher prices for lithium carbonate (if sustained) may make it feasible to produce a lithium product from Separation Rapids to serve this rapidly growing market, an intriguing possibility that will be investigated over the next few months.

East Kemptville

During the quarter, the Company incurred expenditures totalling $22,957 on the East Kemptville rare metals project, in Yarmouth Co. Nova Scotia, mainly for geological compilation work.

The geological compilation work is being done by Bruce Hudgins, P.Geo. Dartmouth, N.S. ("Hudgetec") and to date Hudgetec has been successful in securing access to all the historical data necessary to complete a 43-101 resource estimate on the Baby Zone deposit and access to relevant drill cores to do additional assaying for indium and other rare metals, not previously determined. Initial results are very encouraging as they indicate the presence of significant tin-copper-zinc-rare metal resources in the vicinity of the Baby Zone that were not previously fully accounted for. An initial budget of $50,000 was established for this work but the budget will be increased due to the discovery of additional data and the need to create new analytical standards to allow for accurate determination of indium contents.

In addition, the compilation work has revealed other grass roots exploration targets which merit follow-up work which resulted in the acquisition of additional mineral rights in the area. Subsequent to the end of the quarter, the Company acquired 69 claims totaling 1,117 ha by staking to cover additional potential tin-rare metal targets located peripheral to the area staked previously as the Ikes Ridge project and also peripheral to the East Kemptville project special licence. The compilation work will be completed by the fourth quarter after which a drilling program is contemplated, contingent upon securing access rights from surface rights holders.

Red Hill & U6 Savant

No new work was conducted on either the Red Hill copper-zinc or U6 Savant gold projects during the quarter other than routine project maintenance for which combined costs totalled less than $15,000. An airborne EM survey is planned for the third quarter on Red Hill if an aircraft becomes available. No work is currently planned for the U6 Savant project and management is considering farming out both projects in order to focus efforts on the Company's priority rare metals projects.

Administration

Administrative expenses incurred during the three months ended February 28, 2007 totalled $311,447, a 14% increase over the amount incurred during the comparable quarter in 2006. Stock-based compensation accounts for $42,275 of this total, compared with $70,577 in 2006, and $217,910 during the previous quarter. For the six month period, administrative expenses totalled $720,556 compared with $476,765 during the comparable period in 2006

If one excludes stock-based compensation (as a non-cash item) from the totals, they become $269,172 for the current quarter and $202,878 for the comparable quarter in 2006 reflecting a 33% increase in cash expenditures for administrative expenses. The six month period shows a 39% increase in cash expenditures compared to the comparable period in 2006. The major areas of increased expenditures were salaries, rent, insurance, travel and investor relations reflecting increased levels of business activity, the addition of new staff and the move to larger office space. A decrease in consulting fees from $66,050 in 2006 to $5,540 during the quarter is due to the non-recurrence of consulting fees paid in 2006 for new business development in the U.S. Increased cash balances in the Company's bank accounts resulted in increased interest income of $24,147 compared with $9,358 in 2006.

Expenditures on public and investor relations activities during the quarter totalled $62,091, an amount comparable to the previous quarter, but more than double the amount incurred in 2006 ($29,830). This reflects the expansion of the Company's investor relations programs ("IR") as a part of an overall effort to increase the Company's profile in the marketplace. For the six month period, IR expenditures total $120,960, a 71% increase over the comparable period in 2006.

The effectiveness of the Company's IR programs are constantly being reviewed by management and to this end services previously provided by David Ellis and the WI-Link information dissemination service were terminated during the quarter. The internet-based IR service provided by Agora Investor Relations was renewed for another year, but the service provided by Stockgroup Information Systems Inc. is still under review. The Company's website is now hosted and maintained by Blender Media of Vancouver, BC, and the website is currently being redesigned by Blender to give it a new look and feel.

During the quarter, the Company accelerated its marketing efforts to U.S.-based institutional investors through a series of meetings in New York and Boston arranged by O & M Partners, the Company's U.S. IR consultants. O & M is arranging further such meetings at various other locations in the U.S. to be held on at least a monthly basis. Initial response has been encouraging as many investors agree that demand for rare metals in general, and rare earths in particular, is going to increase and that the Company is particularly well-positioned to take advantage of this trend. In addition, the Company continues to retain Northern Geotech Services on an intermittent basis to provide periodic telephone updates to shareholders and assist with trade show presentations, two of which the Company participated in during the quarter and a third subsequent to the end of the quarter.

During the quarter, the Company relocated its head office to larger premises at Suite #1901, 130 Adelaide Street West, Toronto, M5H 3P5, which it shares with Mr. Andersen's accounting practice, and an administrative assistant was hired to assist with office management. Her compensation includes 25,000 incentive stock options exercisable at a price of $1.30 for a period of five years from the date of grant of the option and vesting at the rate of 25% per year.

Summary of Quarterly Results

The following selected financial data is derived from the unaudited interim financial statements of the Company, which were prepared in accordance with Canadian generally accepted accounting principles.

Fiscal Year	2007		2006				2005	
For the Quarters Ended	Feb. 28	Nov. 30	Aug. 31	May 31	Feb. 28	Nov. 30	Aug. 31	May 31
	$	$	$	$	$	$	$	$
Net revenues	42,878	18,731	20,989	23,512	43,060	27	34	33
Loss before discontinued operations and extraordinary items	642,080	390,378	403,069	450,834	230,395	203,283	253,467	73,306
Loss before discontinued operations and extraordinary items, per share	-	0.01	0.01	0.01	-	0.01	0.01	-
Loss before discontinued operations and extraordinary items, per share, fully diluted	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Net loss	642,080	390,378	403,069	450,834	203,395	203,283	253,467	73,306
Net loss, per share	-	0.01	0.01	0.01	-	0.01	0.01	-
Net loss, per share, fully diluted	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

The fluctuation on quarterly net loss is primarily due to stock-based compensation expenses recognized on stock options granted to directors, officers, employees and consultants of the Company and the write-downs of resource properties. The costs of resource properties are written down at the time the properties are abandoned or considered to be impaired in value. The write-downs are usually much more significant in terms of dollar amounts in comparison to the Company's expenses for its ordinary activities.

Liquidity and Capital Resources

In management's view, given the nature of the Company's operations, which consist of the exploration and evaluation of mining properties, the most relevant financial information relates primarily to current liquidity, solvency, and planned property expenditures. The Company's financial success will be dependent on the economic viability of its resource properties and the extent to which it can discover new mineral deposits. Such development may take several years to complete and the amount of resulting income, if any, is difficult to determine. The sales value of any mineralization discovered by the Company is largely dependent on factors beyond the Company's control, including the market value of the metals and minerals to be produced. The Company does not expect to receive significant revenue from any of its properties until late 2007 at the earliest.

As at February 28, 2007, the Company had working capital of $3,148,343 (including investments of $12,143) and cash on hand of $3,477,318 sufficient to cover the Company's planned expenditures for at least the next 18 months. During the quarter, the Company completed a private placement of 1,500,000 flow-through units providing $1,575,000 in exploration funding which is included in the working capital total above.

During the six month period ended February 28, 2007 and subsequent to the end of the current quarter, 900,000 incentive stock options and 1,532,525 share purchase warrants were exercised yielding $831,976. Further, as at the date of this report, there are 1,679,625 in-the-money outstanding common share purchase warrants and incentive stock options expiring within the next 18 months, which if fully exercised, would generate additional funding of $752,169. Conditions for accessing additional capital to supplement the Company's current needs are favourable at the present time due to continuing high commodity prices and strong market interest in resource equities. The Company's current burn rate, including expenditures on work programs, is close to $200,000 per month

The Company's present cash resources are sufficient to meet all of its current contractual obligations for at least the next twelve months. The Thor Lake, Warren Township, Separation Rapids and Lilypad Lakes properties are all 100% owned by the Company with minimal holding costs the most significant being annual lease rental fees on Thor Lake of $15,422.

Under the terms of the East Kemptville Special Licence, the Company has optional expenditure obligations totalling $2.5 million over three years of which $50,000 must be incurred by August 1, 2007. The current work program expenditures will easily meet this initial obligation. The Red Hill and U6 Savant properties are held under option from Teck Cominco Limited and both agreements are currently in good standing until December 31, 2007. Further expenditures totalling approximately $325,000 on the two properties combined are required by December 31, to keep the options in good standing for another year. The Company has the funds available to do this if it so desires.

In view of the Company's relatively healthy present working capital position, management will be selective in evaluating new financing proposals in an effort to balance the shareholders' interest in minimizing dilution against future capital requirements. A joint venture with an industry partner or end-user remains an attractive alternative for financing the next stage of development on the Company's three advanced projects at Separation Rapids, Thor Lake and Warren Township projects, where capital requirements are relatively large.

Off Balance Sheet Arrangements

As at February 28, 2007 the Company had no material off balance sheet arrangements such as guaranteed contracts, contingent interests in assets transferred to an entity, derivative instrument obligations or any instruments that could trigger financing, market or credit risk to the Company.

Transactions with Related Parties

All transactions with related parties are in the normal course of business and are measured at the exchange amount. During the six months ended February 28, 2007, the Company:

a) incurred consulting fees of $24,000 with an officer and director, which were deferred as resource property costs. As at February 28, 2007 accounts payable included $6,695 payable to this officer and director.

b) incurred accounting and consulting fees of $12,000 with an accounting firm in which an officer is the principal. As at February 28, 2007 accounts payable included $16,000 payable to this accounting firm.

Proposed Transactions

With six active projects and limited human resources, the Company is not aggressively searching for new project acquisition opportunities at the present time, although there is one new opportunity presently under consideration. However, management is always interested in evaluating potential transactions or business combinations that are of possible long term strategic value. Similarly, expressions of interest in providing equity financing are received from time to time, but no firm plans are in place at this time for an offering of shares from treasury.

Changes in Accounting Policies Including Initial Adoption

On September 1, 2006, the Company adopted the new Handbook Section 3855, "Financial Instruments - Recognition and Measurement, and Section 1530, "Comprehensive Income", on a prospective basis.

Section 3855 establishes standards for the recognition and measurement of all financial instruments, provides a characteristics-based definition of a derivative financial instrument, provides criteria to be used to determine when a financial instrument should be recognized, and provides criteria to be used when a financial instrument is to be extinguished.

Section 1530 establishes standards for reporting comprehensive income. These standards require that an enterprise present comprehensive income and its components in a separate financial statement that is displayed with the same prominence as other financial statements.

The adoption of these new standards did not have any significant effect on the Company's financial statements for the six months ended February 28, 2007.

Financial Instruments and Other Risk Factors

The Company's financial instruments consist of cash and cash equivalents, investments, other receivables and accounts payable.

Management does not believe these financial instruments expose the Company to any significant interest, currency or credit risks arising from these financial instruments. The fair market values of cash and cash equivalents, other receivables and accounts payable approximate their carrying values.

In conducting its business, the principal risks and uncertainties faced by the Company relate to exploration and development success as well as metal prices and market sentiment to a lesser extent.

Exploration for minerals and development of mining operations involve significant risks, many of which are outside the Company's control. In addition to the normal and usual risks of exploration and mining, the Company often works in remote locations that lack the benefit of infrastructure and easy access.

The prices of metals fluctuate widely and are affected by many factors outside of the Company's control. The relative prices of metals and future expectations for such prices have a significant impact on the market sentiment for investment in mining and mineral exploration companies. The Company relies on equity financing for its long term working capital requirements and to fund its exploration programs. The Company does not have sufficient funds to put any of its resources interests into production from its own financial resources. There is no assurance that such financing will be available to the Company, or that it will be available on acceptable terms.

An additional risk factor that has developed over the past two years is access to adequate human resources to carry out work programs, particularly skilled professionals for which there is currently an industry-wide shortage, which can cause delays completing work programs on schedule and in meeting program budgets.

Internal Control Over Financial Reporting

There has been no change in the Company's internal control over financial reporting during the six months ended February 28, 2007.

Outstanding Share Data

a) *Common and Preferred Shares*

The Company is presently authorized to issue an unlimited number of common shares without par value. The Company is also authorized to issue up to 25,000,000 preferred shares without par value, of which none have been issued.

During the six months ended February 28, 2007, the Company issued:

1) 1,500,000 flow-through units for proceeds of $1,575,000. Each unit consists of one flow-through common share and one-half of one non-transferable share purchase warrant, each whole warrant entitles the holder to purchase one non-flow-through common share at a price of $1.35 per share until December 28, 2008.

   In connection with this private placement, the Company paid a finder's fee of $18,900 in cash.

2) 1,507,525 non-flow-through common shares pursuant to the exercise of an equivalent number of common share purchase warrants for cash proceeds of $469,226.

3) 715,000 non-flow-through common shares pursuant to the exercise of an equivalent number of stock options for cash proceeds of $275,000.

Subsequent to the six months ended February 28, 2007, the Company issued:

1) 185,000 non-flow-through common shares pursuant to the exercise of an equivalent number of stock options by a group of consultants of the Company for cash proceeds of $74,000.

2) 25,000 non-flow-through common shares pursuant to the exercise of an equivalent number of common share purchase warrants for cash proceeds of $13,750.

As at the date of this report, the Company had 51,535,123 common shares issued and outstanding.

b) *Warrants*

As at the date of this report, the Company had an aggregate of 1,882,125 warrants outstanding with a weighted average exercise price of $0.86.

c) Options

As at the date of this report, the Company had an aggregate of 3,150,000 incentive stock options outstanding with a weighted average exercise price of $0.64.

Other Information

Additional information on the Company is available on SEDAR at www.sedar.com and on the Company's website at www.avalonventures.com.

Form 52-109F2 ***Certification of Interim Filings***

I, R. James Andersen, Chief Financial Officer of Avalon Ventures Ltd., certify that:

1. I have reviewed the interim filings (as this term is defined in Multilateral Instrument 52-109 Certification of Disclosure in Issuers' Annual and Interim Filings) of Avalon Ventures Ltd. (the issuer), for the interim period ending February 28, 2007;

2. Based on my knowledge, the interim filings do not contain any untrue statement of a material fact or omit to state a material fact required to be stated or that is necessary to make a statement not misleading in light of the circumstances under which it was made, with respect to the period covered by the interim filings;

3. Based on my knowledge, the interim financial statements together with the other financial information included in the interim filings fairly present in all material respects the financial condition, results of operations and cash flows of the issuer, as of the date and for the periods presented in the interim filings;

4. The issuer's other certifying officers and I are responsible for establishing and maintaining disclosure controls and procedures and internal control over financial reporting for the issuer, and we have:

   (a) designed such disclosure controls and procedures, or caused them to be designed under our supervision, to provide reasonable assurance that material information relating to the issuer, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which the interim filings are being prepared; and

   (b) designed such internal control over financial reporting, or caused it to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with the issuer's GAAP; and

5. I have caused the issuer to disclose in the interim MD&A any change in the issuer's internal control over financial reporting that occurred during the issuer's most recent interim period that has materially affected, or is reasonably likely to materially affect, the issuer's internal control over financial reporting.

April 13, 2007

(signed) "R. James Andersen"
R. James Andersen
Chief Financial Officer

Form 52-109F2 *Certification of Interim Filings*

I, Donald S. Bubar, Chief Executive Officer of Avalon Ventures Ltd., certify that:

1. I have reviewed the interim filings (as this term is defined in Multilateral Instrument 52-109 Certification of Disclosure in Issuers' Annual and Interim Filings) of Avalon Ventures Ltd. (the issuer), for the interim period ending February 28, 2007;

2. Based on my knowledge, the interim filings do not contain any untrue statement of a material fact or omit to state a material fact required to be stated or that is necessary to make a statement not misleading in light of the circumstances under which it was made, with respect to the period covered by the interim filings;

3. Based on my knowledge, the interim financial statements together with the other financial information included in the interim filings fairly present in all material respects the financial condition, results of operations and cash flows of the issuer, as of the date and for the periods presented in the interim filings;

4. The issuer's other certifying officers and I are responsible for establishing and maintaining disclosure controls and procedures and internal control over financial reporting for the issuer, and we have:

   (a) designed such disclosure controls and procedures, or caused them to be designed under our supervision, to provide reasonable assurance that material information relating to the issuer, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which the interim filings are being prepared; and

   (b) designed such internal control over financial reporting, or caused it to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with the issuer's GAAP; and

5. I have caused the issuer to disclose in the interim MD&A any change in the issuer's internal control over financial reporting that occurred during the issuer's most recent interim period that has materially affected, or is reasonably likely to materially affect, the issuer's internal control over financial reporting.

April 13, 2007

(signed) "Donald S. Bubar"
Donald S. Bubar
Chief Executive Officer

Transaction ID	Date of transaction YYYY-MM-DD	Date of filing YYYY-MM-DD	Ownership type (and registered holder, if applicable)	Nature of transaction	Number or value acquired or disposed of	Unit price or exercise price	Closing balance	Insider's calculated balance	Conversion or exercise price	Date of expiry or maturity YYYY-MM-DD	Underlying security designation	Equivalent number or value of underlying securities acquired or disposed of	Closing balance of equivalent number or value of underlying securities
A 196449	2004-02-16	2006-12-07	Direct Ownership :	00 - Opening Balance-Initial SEDI Report			100,000				Common Shares		100,000
592415	2005-11-23	2005-11-29	Direct Ownership :	50 - Grant of options	+75,000	0.4800	175,000	125,000		2010-11-23	Common Shares	+75,000	175,000

Security designation: Warrants (Common Shares)

Transaction ID	Date of transaction YYYY-MM-DD	Date of filing YYYY-MM-DD	Ownership type (and registered holder, if applicable)	Nature of transaction	Number or value acquired or disposed of	Unit price or exercise price	Closing balance	Insider's calculated balance	Conversion or exercise price	Date of expiry or maturity YYYY-MM-DD	Underlying security designation	Equivalent number or value of underlying securities acquired or disposed of	Closing balance of equivalent number or value of underlying securities
862740	2004-02-16	2007-01-03	Direct Ownership :	00 - Opening Balance-Initial SEDI Report							Common Shares		
862745	2006-12-28	2007-01-03	Direct Ownership :	16 - Acquisition or disposition under a prospectus exemption	+25,000		25,000		1.3500	2007-12-29	Common Shares	+25,000	25,000

Insider name: London, Ian Murray

Insider's Relationship to Issuer: 5 - Senior Officer of Issuer

Security designation: Common Shares

Transaction ID	Date of transaction YYYY-MM-DD	Date of filing YYYY-MM-DD	Ownership type (and registered holder, if applicable)	Nature of transaction	Number or value acquired or disposed of	Unit price or exercise price	Closing balance	Insider's calculated balance	Conversion or exercise price	Date of expiry or maturity YYYY-MM-DD	Underlying security designation	Equivalent number or value of underlying securities acquired or disposed of	Closing balance of equivalent number or value of underlying securities
913133	2007-01-08	2007-03-08	Direct Ownership :	00 - Opening Balance-Initial SEDI Report			2,000						

Security designation: Options (Common Shares)

Transaction ID	Date of transaction YYYY-MM-DD	Date of filing YYYY-MM-DD	Ownership type (and registered holder, if applicable)	Nature of transaction	Number or value acquired or disposed of	Unit price or exercise price	Closing balance	Insider's calculated balance	Conversion or exercise price	Date of expiry or maturity YYYY-MM-DD	Underlying security designation	Equivalent number or value of underlying securities acquired or disposed of	Closing balance of equivalent number or value of underlying securities
913121	2007-01-08	2007-03-08	Direct Ownership :	00 - Opening Balance-Initial SEDI Report							Common Shares		
913130	2007-01-08	2007-03-08	Direct Ownership :	50 - Grant of options	+400,000		400,000		0.9800	2012-01-08	Common Shares	+400,000	400,000

Insider name: MacEachen, Brian

Insider's Relationship to Issuer: 4 - Director of Issuer

No. 82-4427

AVALON VENTURES LTD.
VSE-AVL

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E-Mail admin@avalonventures.com
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CORPORATE PROFILE

Avalon Ventures Ltd. (AVL: TSX-V) is a Canadian junior mineral exploration and development company with a primary focus on the rare metals and minerals that are in increasing demand for high technology and environmentally-beneficial applications. These include lithium, beryllium, indium, gallium, rare earth elements ("REE") such as neodymium and terbium and rare minerals such as calcium feldspar.

Avalon presently owns five rare metals and minerals projects in Canada, three of which are at an advanced stage of development. These are the Separation Rapids lithium minerals project, the Warren Township calcium feldspar project where bulk sampling programs are in progress, and the Thor Lake REE-Beryllium project.

Avalon has now clearly positioned itself in the marketplace as a unique junior resource company offering investors exposure to a broad range of rare metals and minerals that are now vital to a growing number of applications in electronics, automotive, aerospace, alternative energy and environmental protection. Specific examples include the strong demand for *indium* because of its critical role in flat screen television technology and new solar energy panel technology and the rare earth element *neodymium* used to make the super magnets that are integral to emerging hybrid and electric car technology.

Demand for rare earth elements is soaring along with consumer demand for more fuel-efficient cars. A typical hybrid car contains some 40lbs of rare earth elements and new sources of supply will be needed to meet the growing demand. *At Thor Lake, Avalon owns one of the highest quality undeveloped REE and beryllium deposits in the world.*

Avalon's strategy for growth is to develop its rare metals and minerals projects to production and cash flow, expand the markets for these materials and acquire additional compatible rare metals assets. Initial production could be achieved as early as 2008.

Shares Outstanding	*51,535,123*	Don Bubar, P.Geo	*President, CEO*
Fully Diluted	*56,567,248*	Jim Andersen, CA	*VP Finance & Secretary*
Recent Price Range	*$1.50-1.80*	Ian London, P.Eng.	*VP Corp. Dev.*
Market Cap (F.D.)	*C$90 million*	Lawrence Page, QC	*Chairman*
Year Hi/Lo	*$1.80/$0.70*	Dale Corman, P.Eng	*Director*
All-time High	*$3.45 (1997)*	Brian MacEachen, CA	*Director*
Management shares	*3,434,500 (6.8%)*	Joe Monteith	*Director*
Exchange Listing	*TSXV- Tier 1*	Alan Ferry, CFA	*Director*

April 25, 2007

No. 82-4427

Report to:

AVALON VENTURES LTD.

Technical Report on the Thor Lake Rare Metals Project, NT

Document No. 0551530201-REP-R0001-01

Report to:

AVALON VENTURES LTD.

TECHNICAL REPORT ON THE THOR LAKE RARE METALS PROJECT, NT

MARCH 2007

Prepared by	*"Original Document, Revision 01 signed by Kevin Palmer, P.Geo."* Kevin Palmer, P.Geo.	Date	March 12th, 2007
Prepared by	*"Original Document, Revision 01 signed by Peter Broad, P.Eng."* Peter Broad, P.Eng.	Date	March 12th, 2007
Reviewed by	*"Original Document, Revision 01 signed by Gilles Arseneau, P.Geo."* Gilles Arseneau, P.Geo.	Date	March 12th, 2007
Authorized by	*"Original Document, Revision01X signed by Tim Maunula, P.Geo."* Tim Maunula, P.Geo.	Date	March 12th, 2007

WARDROP

604-330 Bay Street, Toronto, ON M5H 2S8
Phone: 416-368-9080 Fax: 416-368-1963

REVISION HISTORY

REV. NO	ISSUE DATE	PREPARED BY AND DATE	REVIEWED BY AND DATE	APPROVED BY AND DATE	DESCRIPTION OF REVISION

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1.0 SUMMARY

The Thor Lake Project of Avalon Ventures Ltd. (Avalon) is located in Canada's Northwest Territories about five kilometres (km) north of the Hearne Channel of Great Slave Lake and approximately 100 km southeast of the City of Yellowknife. It is located on National Topographic System (NTS) map sheet 85I/02 at approximately 62°06'30" North and 112°35'30" West within the Mackenzie Mining District.

The Thor Lake property encompasses five contiguous mining leases totalling 10,449 acres (4,249 hectares). The Mining Leases have a 21-year life and are registered to, and wholly owned by Avalon. Each lease is renewable in 21-year increments. The property is subject to two underlying royalty agreements entitling the royalty holders to a cumulative 5.5% Net Smelter Royalty (NSR).

Mineral deposits at Thor Lake formed late in the evolution of the Aphebian Blatchford Lake Intrusive Complex, which is located along the north shore of Great Slave Lake. A description of the geology of the area has been provided by Davidson (1978) and of the mineral deposits by Trueman, Pederson, de St. Jorre and Smith (1989). Principal rock types in the area include syenites, granites and their altered equivalents, which are intruded Archean metasedimentary rocks of the Yellowknife Supergroup.

The six deposits or zones having mineralization of potential economic interest have been identified on the Thor Lake property. These are: the North T, South T, R, S, Fluorite and Lake Zones. The North T and South T Zones are characterized by yttrium, heavy rare earth elements (HREE), light rare earth elements (LREE), beryllium (Be), niobium (Nb) and zirconium (Zr), while the Lake Zone contains yttrium (Y), HREEs, LREEs, tantalum (Ta), niobium and zirconium. The Fluorite Zone is noted for its yttrium and HREE content.

Yttrium and the HREEs are found predominantly in xenotime and gadolinite in the North T-Zone and in fergusonite and monazite in the Lake Zone. The LREEs occur in bastnaesite, which is particularly enriched in the F sub-zone of the North T-Zone, and in accessory amounts in the other zones. In the Lake Zone, the LREEs are principally contained in allanite.

Beryllium mineralization is essentially exclusive to both the North and South T Zones where the predominant beryllium mineral is phenacite although bertrandite, gadolinite and helvite group minerals are also present. Beryllium is notably absent from the other zones.

Niobium is ubiquitous in all zones principally in columbite and is associated with tantalum in the Lake Zone in columbo-tantalite and fergusonite. Tantalum is absent in the T-Zone.

Zirconium is found as zircon in all of the zones and gallium displays enrichment in albite feldspar.

Highwood Resources Ltd. (Highwood) initiated mineral claim staking on the Thor Lake property in 1976 and subsequently conducted mineral exploration on the property for approximately fourteen years. The work by Highwood and by successive property owners to the present has included geological mapping, geophysical surveys, sampling, trenching, drilling, underground bulk sampling and metallurgical research. The results of this work outlined the six deposits containing the beryllium, niobium, tantalum, rare earths, yttrium and zirconium. The work further demonstrated a metallurgical amenity for the processing of several of these metals and also a necessity for further work to advance the quality of some of the products to economically viable commodities.

There have been several mineral resource estimates undertaken by Highwood and its various partners. In order to generate a resource estimate that is to Canadian Institute of Mining (CIM) standards for this preliminary economic assessment, Wardrop Engineering Inc. (Wardrop) has used the historic sub-zone interpretation and data extracted from a historic MineSight© project for the North T-Zone. The results are summarized in Table 1.1, Table 1.2 and Table 1.3.

The resource estimate was based on information extracted from the Minesight© database. In this database no distinction has been made between samples that were not analyzed and those that returned trace values. This estimate has assumed zero grades for all of these samples and is probably a conservative estimate.

Table 1.1 Indicated Mineral Resources at Recommended Cut-offs for the North T-Zone

Cut-off	Cutting Element	Sub-Zone	Tonnes	Density	Yttrium Oxide ($\%Y_2O_3$)	Beryllium Oxide (%BeO)	Cerium Oxide ($\%Ce_2O_3$)	Niobium Oxide ($\%Nb_2O_5$)	Neodymium Oxide ($\%Nd_2O_3$)
0.40	%BeO	C	200,352	2.91	0.14	0.88	0.14	0.96	0.027
0.40	%BeO	D	155,108	2.72	0.23	0.87	0.18	0.29	0.020
0.40	%BeO	E	142,949	2.66	0.03	1.23	0.09	0.10	0.004
0.10	$\%Ce_2O_3$	F	43,877	2.68	0.06	0.16	3.14	0.01	1.552
0.04	$\%Y_2O_3$	Y	593,815	2.72	0.15	0.08	0.09	0.59	0.008
Total			**1,136,101**	**2.74**	**0.14**	**0.48**	**0.23**	**0.53**	**0.07**

Table 1.2 Inferred Mineral Resources at Recommended Cut-offs for the North T-Zone

Cut-off	Cutting Element	Sub-Zone	Tonnes	Density	%Y_2O_3	%BeO	%Ce_2O_3	%Nb_2O_5	%Nd_2O_3
0.40	%BeO	D	2,906	2.72	0.37	0.70	0.19	0.41	0.001
0.40	%BeO	E	2	2.66	0.03	0.81	0.04	0.00	0.000
0.10	%Ce_2O_3	F	1,338	2.68	0.06	0.16	2.41	0.03	0.558
Total			**4,247**	**2.71**	**0.27**	**0.53**	**0.89**	**0.29**	**0.177**

Wardrop also generated a resource model for the Lake Zone. The model was generated from validated historic data and a geological interpretation based on drill holes and the geomorphology of Thor Lake. The results are tabulated in Table 1.3.

Table 1.3 Inferred Mineral Resource for the Lake Zone

Cut-off	Cutting Element	Tonnes	Density	%Y_2O_3	%Ce_2O_3	%Nb_2O_5	Tantalum Oxide (%Ta_2O_5)	Zirconium Oxide (%ZrO_2)
0.04	%Y_2O_3	103,660,000	2.83	0.07	0.37	0.30	0.023	1.89

A portion of the resources on the Thor Lake has been categorized as an Inferred Mineral Resource. Due to the uncertainty of Inferred Mineral Resources it cannot be assumed that all or any part of this resource will be upgraded to an Indicated or Measured Resource as a result of continued exploration. To justify an upgrading of the mineral resource demonstrated economic viability is required.

Prior to any further economic evaluation of the property, it is recommended that the database be reconstructed from primary data sources. A double entry procedure is recommended. All intersections that lie within the estimated pit should be sampled and analyzed for all economic elements. There are indications from some drill holes that there is mineralization present below the established zones. This should be investigated to establish the extent of the mineralization.

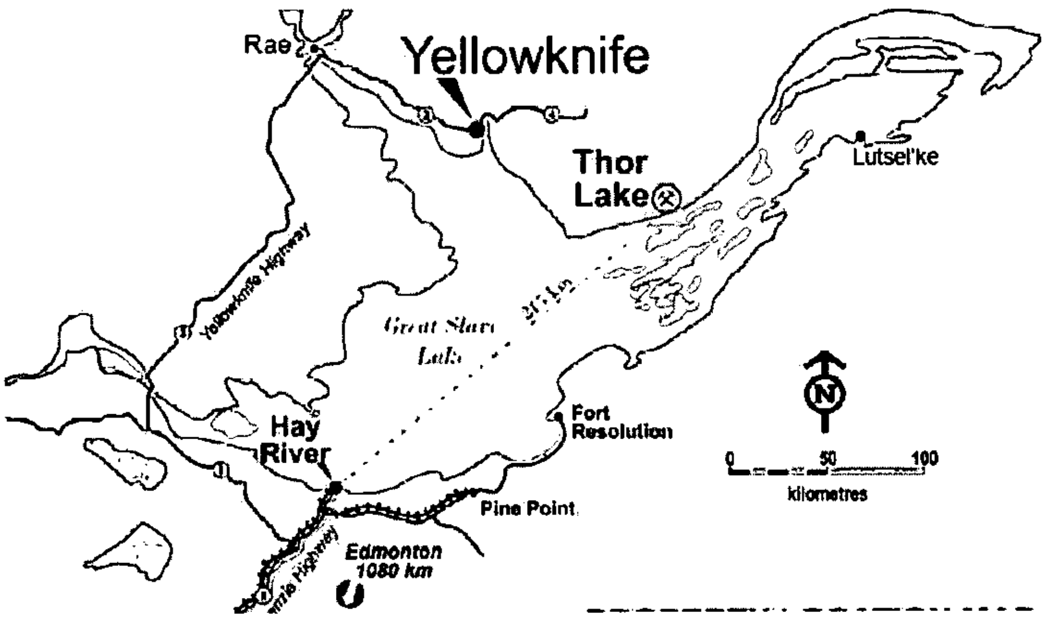
A comparable resource estimate should be calculated for the South T-Zone.

2.0 INTRODUCTION

The purpose of this report is to support the first time disclosure of an NI 43-101 compliant resource for the Thor Lake Project by Avalon.

The Thor Lake property encompasses an area of 4,249 hectares (10,449 acres) hosting six known rare metal mineral deposits. Located in the Mackenzie Mining District of the Northwest Territories, the Thor Lake property is approximately 100 km southeast of Yellowknife and 5 km north of the Hearne Channel of Great Slave Lake (Figure 2.1).

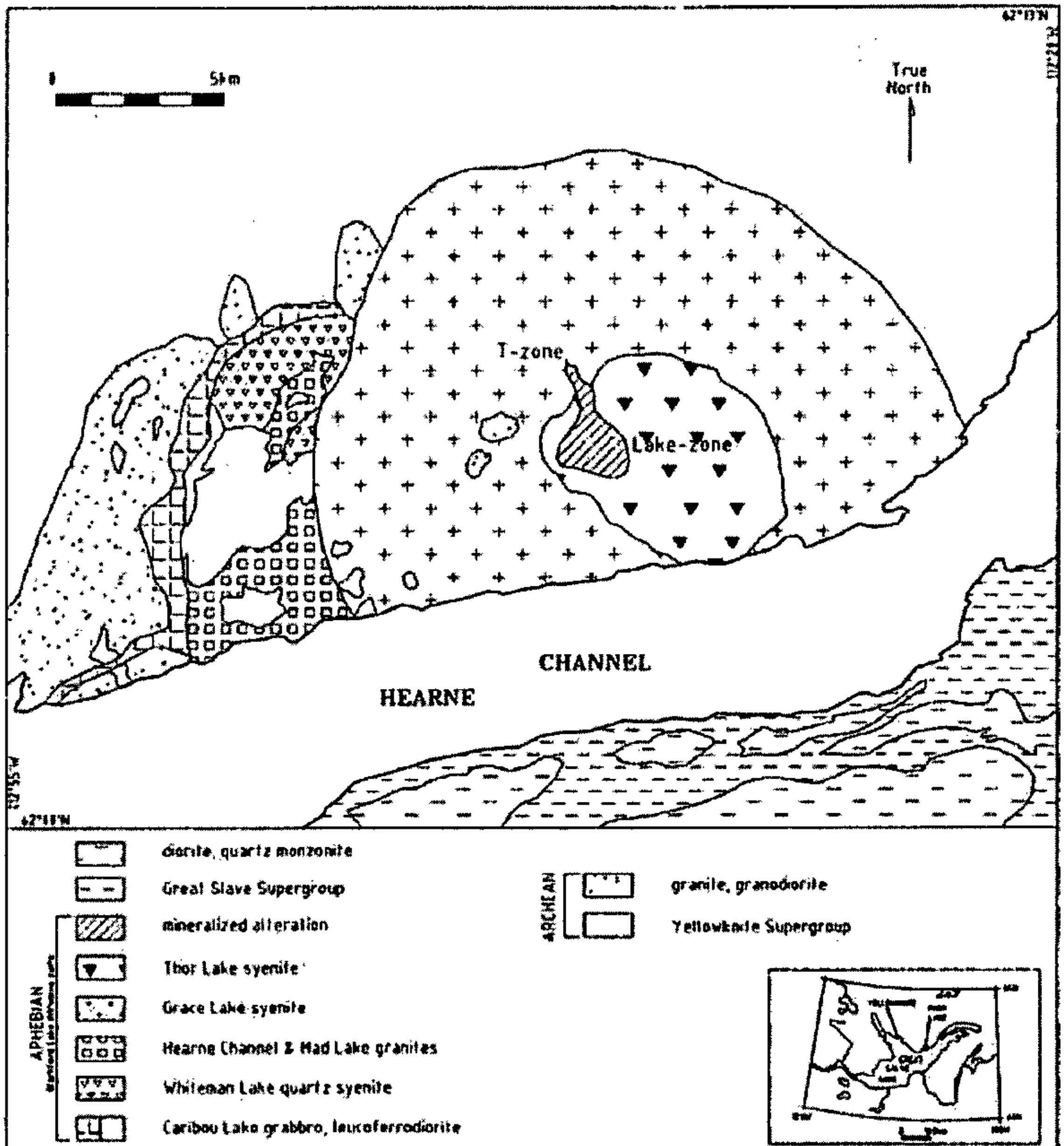
Figure 2.1 Thor Lake Property Location



The rare metal deposits occur in distinct mineralized zones that are variably enriched in yttrium, heavy and light rare earth elements, beryllium, tantalum, niobium, zirconium, and gallium (Ga). The mineralization occurs within syenites and granites of the multi-phase Blatchford Lake Intrusive Complex; a series of sub-circular intrusive rocks of Aphebian age that range from gabbro to syenite and granite intrusive into Archean metasedimentary rocks of the Yellowknife Supergroup (Figure 2.2).

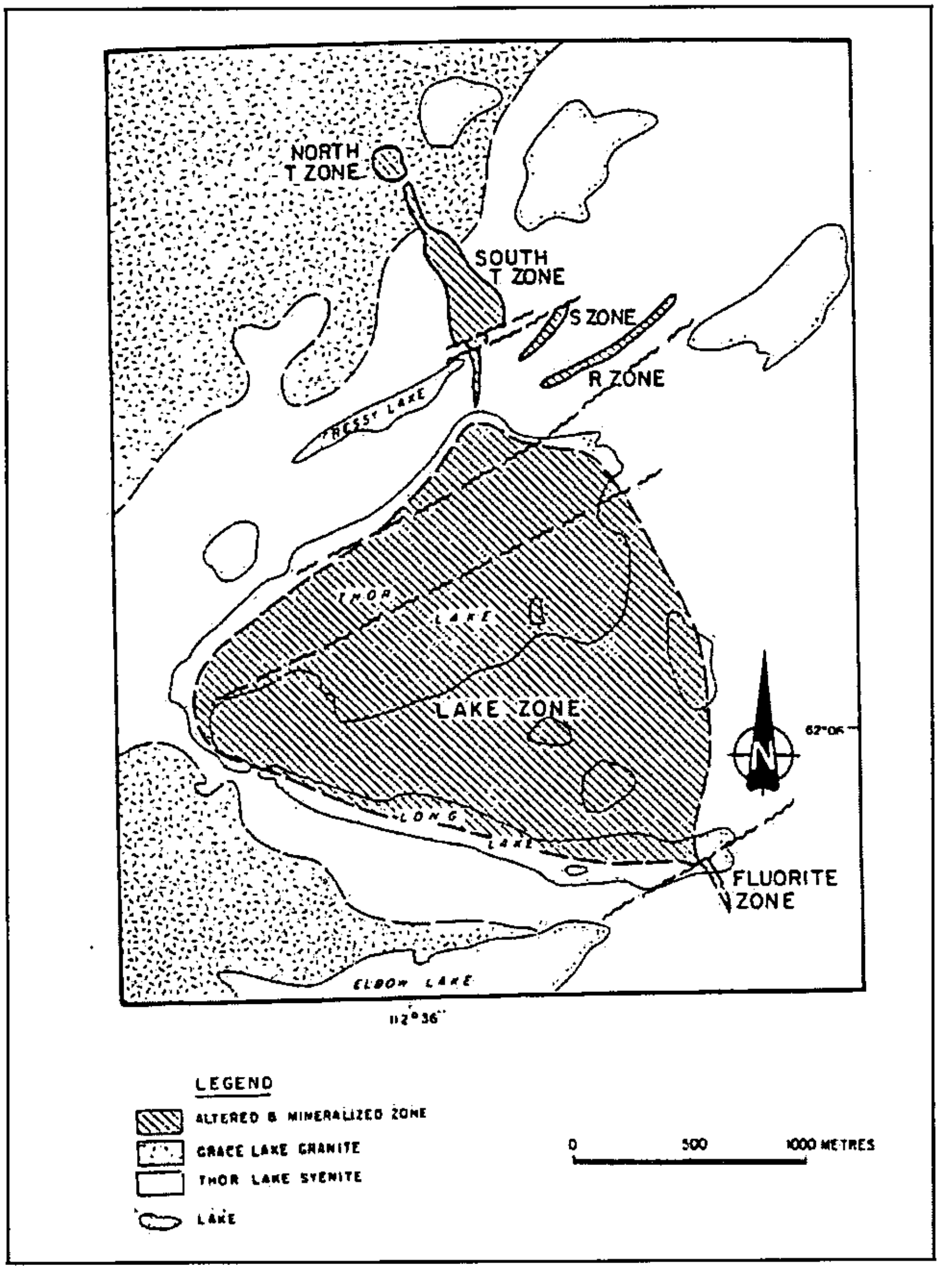
The T-Zone, one of six mineralized zones, which extends northwest for about one kilometre from Thor Lake, is the most studied and best understood of the six deposits. The zone transects both the Thor Lake syenite and Grace Lake granite (Figure 2.3).

Figure 2.2 Generalized Geology of the Thor Lake Property



Generalized Geological Map of the Blachford Lake intrusive suite showning the location of the T– and Lake– zones (after Davidson, 1978, 1982)

Figure 2.3 Thor Lake Mineralized Zones



The principal elements of interest within the T-Zone include: yttrium, light and heavy rare earth elements (see Appendix E) and beryllium. Yttrium closely associates with the HREE in the minerals xenotime and sparse gadolinite, the beryllium is found in phenacite and lesser bertrandite ($Be_4Si_2O_7$), gadolinite and helvite group minerals. The LREE are found in fluorocarbonate minerals throughout the North and South T Zones and are in particular enriched in the F sub-zone of the North T-Zone deposit. Niobium occurs in the mineral columbite throughout the T-Zone deposits with zirconium in zircon. Gallium shows exceptional enrichment in feldspathic wall rocks that mantle the deposits.

This report includes mineral resource estimates of the North T and Lake Zone of the Thor Lake Project and focuses on yttrium and the HREE that have in past been only considered as a by-product of beryllium production. It has been undertaken to quantify the resource at Thor Lake. The mineral resource and reserves have been generated in compliance with the CIM standards and best practices and the report complies with National Instrument 43-101 (NI 43-101) standards.

In the past a number of resource calculations have been undertaken for Thor Lake that were acceptable under the standards and definitions of the time. Since completion of these historic estimates, little new work has been conducted on the property, save for addition of a significant number of assays for the elements of interest. Metallurgical work that has been conducted since the last estimates has focused largely on the Lake Zone; but may have equal merit in application to the T-Zone.

Yttrium and the HREEs in the mineralized zones were previously only considered as potential by-products of primary beryllium or tantalum production. However, the yttrium and HREE potential at Thor Lake warrants a new consideration in view of a strengthened and growing demand for these elements with their concomitant price increases.

K. J. Palmer, P.Geo, a co-author of this report, visited the Thor Lake site in the company of Dr. D.L. Trueman, P.Geo.; J.C. Pedersen, P.Geo; Dr. A. Mariano; and Dr. M. Heiligman between the 22nd and the 25th of July 2006.

Trueman, Pederson, and Mariano have variously been involved in work on the Thor Lake deposits since 1979. Trueman has reviewed all geological and legal aspects of this work.

2.1 TERMS OF REFERENCE

Avalon commissioned Wardrop to prepare an NI 43-101 compliant report on the yittrium and rare earth element development potential of the T and Lake Zone deposits at Thor Lake. This work entailed estimating mineral resources in conformance with the CIM Mineral Resource and Mineral Reserve definitions referred to in NI 43-101 Standards and Disclosure for Mineral Projects. It also involved the preparation of a technical report as defined in NI 43-101 in compliance with Form 43-101F1 (Technical Reports). The inventory of the resources represents an update to existing historic resource estimates delineated from historical drilling data and the scoping study is based on these findings. The report further provides recommendations to advance the Thor Lake project to a scoping level.

3.0 RELIANCE ON OTHER EXPERTS

The ensuing report finds basis in exploration of the mineral deposits at Thor Lake in metallurgical work undertaken by, or on behalf of the former property owners and in ongoing work by Avalon. In the past, the work has been and is presently overseen by qualified professional geological, mining and metallurgical personnel under the definitions of NI 43-101. The results of this work, generated over a period of 29 years, have been tested and where found valid have been utilized extensively in this report.

The variety of metals found at Thor Lake, their metallurgy and their markets are not widely known outside of the mainstream of base or precious metal expertise. Accordingly, Avalon and Wardrop have retained the services of outside, accredited and professional personnel where experience, practice or expertise in a largely specialized business has been required.

Literature sources have also been extensively utilized and where used, are cited accordingly.

4.0 PROPERTY DESCRIPTION AND LOCATION

4.1 PROPERTY LOCATION

The Thor Lake property is located in Canada's Northwest Territories (NT), 100 km southeast of the capital city of Yellowknife and 5 km north of the Hearne Channel on the East Arm of Great Slave Lake. The property is within the Mackenzie Mining District of the NT and Thor Lake is located, but not identified, on NTS map sheet 85I/02 at approximately 62°06'30"N and 112°35'30"W.

4.2 PROPERTY DESCRIPTION

The Thor Lake property comprises five contiguous Mineral Leases totalling 4,249 hectares (10,449 acres); the pertinent data for which are shown in Table 4.1.

Table 4.1 Mining Leases – Thor Lake

Lease Number	Area (Hectares)	Legal Description	Effective Date	Expiration Date
3178	1,053	Lot 1001, 85 I/2	22/05/1985	22/05/2027
3179	939	Lot 1000, 85 I/2	22/05/1985	22/05/2027
3265	367	Lot 1005, 85 I/2	2/3/1987	2/3/2008
3266	850	Lot 1007, 85 I/2	2/3/1987	2/3/2008
3267	1,040	Lot 1006, 85 I/2	2/3/1987	2/3/2008
Total	**4,249**			

The mining leases have a 21-year life and each lease is renewable in 21-year increments.

Annual payments of $1.00 per acre per year ($2.47/hectare) are required to keep the leases in good standing.

Avalon owns 100% of all of the leases subject to those legal agreements described in Section 4.2.1 below.

4.2.1 *LEGAL AGREEMENTS, UNDERLYING ROYALTY INTERESTS*

Two underlying royalty agreements exist on the Thor Lake property: the Calabras/Lutoda Royalty Agreement and the Murphy Royalty Agreement.

The Murphy Royalty Agreement signed in 1977 entitles J. Daniel Murphy to a 2.5% NSR. The Calabras/Lutoda Royalty Agreement signed in 1997 entitles

Calabras (Canada) Ltd. (Calabras) to a 2% NSR and Lutoda Holding Ltd. (Lutoda) to a 1% NSR.

The Murphy Royalty applies to the entire Thor Lake property and is an escalating amount, which at present is estimated to be approximately $800,000.

4.2.2 *Legal Survey*

The Thor Lake Mineral Leases have been legally surveyed and are recorded on a Plan of Survey, Number 69408 M.C. in the Legal Surveys Division of the Federal Department of Energy, Mines and Resources, Ottawa. The perimeter boundaries of the lease lots were surveyed as part of the leasing requirements.

4.2.3 *Mineralized Zones*

Six zones, or deposits, have been identified within the Thor Lake property as having mineralization of potential economic interest: The North T-Zone, the South T-Zone, the S-Zone, the R-Zone, the Lake Zone, and the Fluorite Zone. The North and South T Zone deposits have been of a greater historical interest principally for their contained beryllium, yttrium, and HREEs.

The North and South T Zones transect both Thor Lake syenite and Grace Lake granite. In plan, the zones pinch and swell along strike from a few metres (m) up to 240 m in width and are separated into their respective zones by visibly unaltered, but mineralized granite.

4.2.4 *Environmental Liabilities*

Highwood held a land use permit that allowed for clean up, maintenance and exploration on the property. The permit expired on October 26, 2002. New permitting has been initiated by Avalon, which will accommodate several changes to the regulatory framework for environmental assessment, land use planning, and resource management that have since been legislated.

In past, the jurisdictional responsibility over certain lands, resources and land and water use had been governed by the Department of Indian Affairs and Northern Development (DIAND), Canada. Under the recently enacted Mackenzie Valley Land and Water Resources Act and Regulations, the Mackenzie Valley Land and Water Board (MVLWB), rather than the Federal Government, now administers land use permits. The Mackenzie Valley Resource Management Act (MVRMA) allows more local and particularly aboriginal, input into land and water use permitting. The MVRMA establishes a three part environmental assessment process:

- Preliminary screening.
- Environmental assessment.
- Environmental impact review (panel review).

The Thor Lake Project will probably require environmental assessment, as well as an environmental impact review.

Exploration on the Thor Lake property included underground bulk sampling, drilling and some minor trenching. Accordingly there is little surface disturbance from exploration activities. Apart from a trailer camp, miscellaneous buildings, a tent camp and a core storage area located on the property, there are no other environmental liabilities left by past exploration activities. The underground workings have been barricaded and allowed to flood.

Numerous baseline studies were conducted by Highwood to identify any potential environmental concerns. In addition to drainage issues which could potentially result in the contamination of area waters, radioactivity in the mineralization and potential health hazards from beryllium processing pose the greatest environmental concerns. Beryllium diseases have never been identified with beryllium minerals and processing of beryllium minerals in hazardous forms is not anticipated at Thor Lake.

A study commissioned by Highwood concluded that workers at a Thor Lake minesite would receive radiation doses well below average dose limits for radiation workers and within the guidelines for Naturally Occurring Radioactive Materials (NORMs). The procedures and processes anticipated during mining or concentrate production at Thor Lake were also designed to minimize radiation doses to workers and the release of effluents containing elevated radionucleides to the environment.

5.0 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 TOPOGRAPHY, ELEVATION AND VEGETATION

The Thor Lake area is characterized by low relief, between 230 m and 255 m Above Sea Level (ASL) and subdued topography. The area is typical boreal forest of the Canadian Shield and is primarily covered by open growths of stunted spruce, birch, poplar and jack pine which mantle isolated, glaciated rocky outcrop. Approximately one third of the property is occupied by lakes and swamps; the largest lake being Thor Lake at 238 Above Mean Sea Level (AMSL) and having a surface area of about 136 hectares.

Permafrost has not been identified in the immediate area of Thor Lake.

5.2 ACCESSIBILITY

The Thor Lake property is accessible by boat, winter road and seasonally by float or ski-equipped aircraft from either Yellowknife or Hay River located on the southwest shore of Great Slave Lake. The freeze-up and break-up periods preclude ready access to the area and a mining operation at Thor Lake would require a suitably sized permanent airstrip, which would allow for a minimum of Twin-Otter sized aircraft service from Yellowknife throughout the year.

In the summer or during ice free periods, equipment can be barged to a location on the Hearne Channel on Great Slave Lake and then transported by existing access road approximately 9 km to the mine site at the North T-Zone. During the winter months, heavy equipment and bulk materials can be brought in by winter roads on the ice cover over Great Slave Lake. During the freeze-up and break-up periods extra storage will be necessary for fuel and bulk supplies that cannot be brought in by aircraft.

Dock facilities will need to be constructed on Great Slave Lake to enable the loading and offloading of cargo going to or coming from Hay River. In addition, the access road from the wharf to the site will need to be upgraded and proper access roads will need to be constructed around the site.

5.3 CLIMATE

The climate is typical of Northern Canada with cold, dark winters and a fairly warm, short summer with long daylight hours. Temperatures range from around -50 degrees Celsius (°C) to +25°C, with normal winter temperatures from mid-November to mid-April of -15°C to -35°C, while temperatures from mid-May to the end of September range from 0°C to about +20°C. Precipitation is light and is similar to Yellowknife, which receives 15 centimetres (cm) of rain and 135 cm of snowfall annually.

Most lakes in the area do not freeze to the bottom and process water is readily available year-round. Freeze-up commences in late October and break-up of the majority of the lakes in the area is generally complete by late May.

5.4 INFRASTRUCTURE

Yellowknife, the capital city of the Northwest Territories, is located 100 km northwest of Thor Lake. The economy is centred on mining and mineral exploration and has a strong supporting infrastructure.

The aboriginal community of N'Dilo is located on Latham Island in the northern part of the City of Yellowknife. A second aboriginal community, Dettah, is located southeast of Yellowknife, across Yellowknife Bay. The area is served by air and road, less so by barge and the adjacent communities are accessible from Yellowknife by road.

The town of Hay River is located on the south shore of Great Slave Lake where the Hay River enters the lake. The town extends south from the lake along the west bank of the river. The largest aboriginal community in the Hay River area is the Hay River Reserve, which is located on the east bank of the Hay River across from the town. The other community, the West Point First Nation, is located primarily on the west end of Vale Island in the town of Hay River. Hay River is accessible from the south by air, rail and highway.

Fort Resolution is located on the southeast coast of the main body of Great Slave Lake in Resolution Bay. The community is serviced by road from Hay River.

Lutsel K'e is located on Christie Bay on the East Arm of Great Slave Lake. The community is accessed by air or boat.

Fort Providence is located on the Mackenzie River about 40 km downstream from the outflow of Great Slave Lake. The town is serviced by the road to Yellowknife from the South.

Mining operations in the North have typically drawn personnel from Edmonton, Yellowknife and the local First Nations communities. In the case of an operation at Thor Lake, local First Nations communities may include Dettah N'Dilo, Deninu Kue, Hay River Reserve, Fort Resolution, and Lutsel K'e. All of the mining operations in the North (outside of Yellowknife) have implemented policies related to maintaining a certain level of First Nation employment, Thor Lake will be no different and will need to develop hiring and training policies targeted at aboriginal employees.

The closest source of power to Thor Lake is Yellowknife, with the distance being such that it would be prohibitively expensive to build a power line to Thor Lake. As with other mining operations in the North, such as Lupin, Ekati and Diavik, it would be necessary to use diesel power generation for any mining operation at Thor Lake.

Fuel can be barged to the site in the summer and trucked to the site in the winter. During the transition periods in the spring and fall, neither barge nor winter road access would be possible. A minimum of four months fuel storage capacity would be considered necessary on site.

Bulk sampling via decline ramp was conducted in the North T-Zone of the Thor Lake Property in 1985. Exploration roads, a trailer camp, vehicle sheds, fuel tanks, vehicles and a miner's dry remain from this period of exploration. Necessary infrastructure and access will have to be constructed in order to support a larger scale mining operation.

Water supply is available from any one of the surrounding lakes, including Thor Lake or Long Lake. Water tankage may need to be built in the plant area to act as storage and as a reserve for fire protection. All water lines exposed to the elements will need to be insulated and heat traced. It will be necessary to install a satellite communications system.

6.0 HISTORY

The Thor Lake area was first mapped by J.F. Henderson and A.W. Joliffe of the Geological Survey of Canada (GSC) in 1937 and 1938. In 1971, the GSC commissioned an airborne radiometric survey over the Yellowknife region that outlined a radioactivity anomaly over the Thor Lake area (GSC Open File Report 124). Simultaneously, A. Davidson of the GSC commenced mapping of the Blatchford Lake Intrusive Complex.

According to National Mineral Inventory records of the Mineral Policy Sector, Department of Energy, Mines and Resources, the first staking activity at Thor Lake was in July 1970 when Odin 1-4 claims were staked by K.D. Hannigan. Shortly thereafter, the Odin claims were optioned to Giant Yellowknife Mines Ltd. and subsequently, in 1970 were acquired by Bluemount Minerals Ltd. Four more claims (Mailbox 1-4) were staked in the area in 1973. No detail of any work carried out on the claims is available. Both the Odin and Mailbox claims were allowed to lapse and no assessment work was filed.

In 1976, Highwood in the course of a uranium exploration program discovered niobium and tantalum on the Thor Lake property. The property was staked as the Thor 1-45 claims and the NB claims were added in 1976 to 1977. After some preliminary work was completed by Highwood between 1976 and 1979, which included the drilling of 22 diamond drill holes, Calabras acquired a 30% interest in the property through financing further exploration by Highwood.

Placer Development Ltd. (Placer) optioned the property from Highwood in March 1980, to further investigate the potential for rare earth elements, tantalum and niobium mineralization. Placer conducted magnetometer, very low frequency (VLF) and scintillometer surveys on the Lake Zone. Before dropping their option in April of 1982, Placer also completed 17 diamond drill holes and some preliminary metallurgical testing.

In 1983 Highwood discovered beryllium mineralization in the T-Zone and commenced an extensive drill program (127 drill holes) to delineate the beryllium resource. In 1984 Strathcona Mineral Services (Strathcona) was retained to oversee development of metallurgical processing of the beryllium and subsequently to design and oversee mining of a bulk sample. This work consisted primarily of driving a decline (500 m) in the North T-Zone. Bulk samples from the decline were used for metallurgical testing which consisted of bench scale tests followed by a pilot plant program at Lakefield Research Ltd. (Lakefield) in Ontario. At approximately the same time, Unocal Canada (Unocal) conducted a detailed evaluation of the property.

In August of 1986, the property was joint-ventured with Hecla Mining Company of Canada Limited (Hecla). By completing a feasibility study and arranging financing to bring the property into production, Hecla could earn a 50% interest in the property. However, in 1990, after completing considerable work on the T-Zone, including some limited in-fill drilling, extensive metallurgical testing conducted at Lakefield and Hazen Research Ltd. (Hazen) in Denver, conducting a marketing study on beryllium and exploratory drilling of the Lake Zone for yttrium, Hecla withdrew from the project. In 1990 control of Highwood passed to Mineral Resources International (MRI) and the Thor Lake project lay dormant until 1996.

In 1996, Mountain Minerals Limited, a company controlled by Royal Oak Mines Ltd. (Royal Oak) merged with Highwood, resulting in an extensive re-examination of Thor Lake that included a proposal to extract a bulk sample in 1997. Applications were submitted for permits that would allow for small-scale development of the T-Zone deposit, as well as for processing over a four to five year period. In late 1999, the application was withdrawn.

Royal Oak declared bankruptcy in 1999, resulting in the acquisition of the control block of Highwood stock by Dynatec Corporation (Dynatec). This ultimately resulted in a change of management, as well as a change in Thor Lake development strategy. In 2000, Highwood initiated metallurgical, marketing and environmental reviews by Dynatec.

In 2001, Navigator Exploration Corp. (Navigator) entered into an option agreement with Highwood. Navigator's efforts were focused on conducting additional metallurgical research at Lakefield in order to define a process for producing a marketable tantalum concentrate. These efforts produced a metallurgical grade tantalum/zirconium/niobium/rare earth element bulk concentrate. The option was dropped in 2004 however in view of falling tantalum prices and low tantalum contents in the bulk concentrate.

Beta Minerals Inc. (Beta) acquired Highwood's interest in the Thor Lake property in November, 2002 under a plan of arrangement with Dynatec. No work was conducted at Thor Lake by Beta and in May of 2005 Avalon purchased full title to the Thor Lake property from Beta.

Avalon has since conducted extensive sampling of archived drill core to further assess the yttrium and HREE resources on the property and some of this work has been incorporated into the present study.

6.1 Historical Mineral Resource and Mineral Reserve Estimates

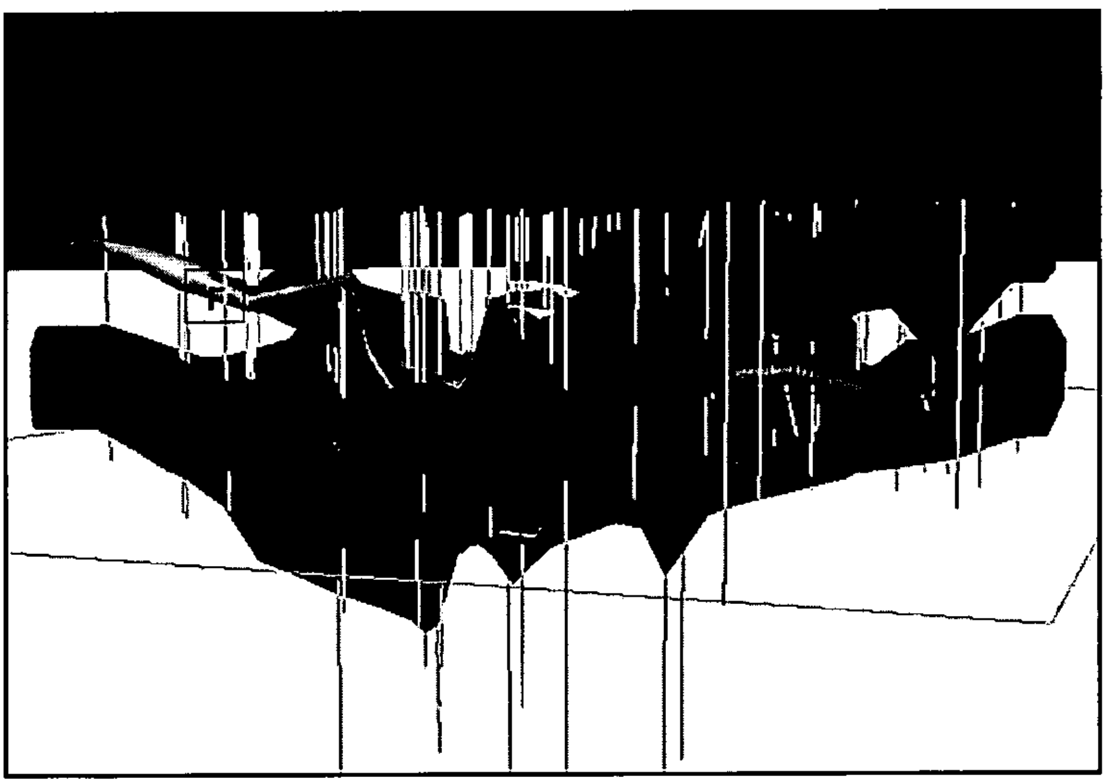
A number of resource estimates have been carried out at Thor Lake. Wardrop has generated current mineral resources for the North T and Lake Zones.

6.1.1 NORTH T-ZONE

The North T-Zone was nominally drilled on approximately 15 m centres. In the middle of the deposit however, drill hole spacing in places is as close as 7 m. This drilling has delineated a bowl-shaped configuration of alteration and mineralization, with a keel-like feeder zone beneath the deposit and extending south-easterly to and underlying the South T-Zone.

In the North T-Zone, the beryllium mineralization appears to stratify into three zones which tend to mimic the hemispherical shape of the enclosing alteration. These zones have been labeled the C, D, and E sub-zones (Figure 6.1). The E sub-zone is the uppermost, the D sub-zone is intermediate and the C sub-zone is the lowermost. Within these sub-zones, the beryllium mineralization is strongest in the E sub-zone, weakest in the D sub-zone and intermediate in the C sub-zone. Yttrium and HREE mineralization distribution is the inverse of beryllium distribution. The LREEs are particularly enriched in a distinct zone, the F sub-zone. Niobium mineralization increases downward in the sub-zones and outward from the centre of the hemisphere (i.e. from E toward C).

Figure 6.1 North T-Zone Mineralization



Beryllium, yttrium and HREE mineralization also occurs in visibly unaltered granite mantling the T-Zone and the underlying keel-like feature. The mantling mineralization has been designated the A sub-zone and where identified within the keel has been identified as the B sub-zone.

Unocal Estimate – 1985

A historical beryllium-yttrium-niobium resource estimate for the North T-Zone was first described by Unocal during their evaluation of the property in 1985. This calculation was based on information from surface work, drill holes and the underground workings which were open at the time. A polygonal estimation method was used. The configuration of the zone was based on both assay data and geological interpretations and the calculations were controlled by the following assumptions:

- Cut-off grades: 0.10% Y_2O_3, 0.3% BeO, 0.5% Nb_2O_5.
- Minimum mining width: 3 m.
- Maximum allowable width of waste within mineralized zone: 3 m.
- Tonnage blocks projected halfway to next section line (generally 7.6 m).
- Tonnage blocks on two outside sections were assumed to extend 9.1 m and 18.3 m respectively beyond the section lines.

The results of these calculations were as follows:

- 715,000 tonnes @ 0.91% BeO of which 640,000 tonnes @ 0.93% BeO is above the 100 m level (100 m below surface).
- 485,000 tonnes @ 0.29% Y_2O_3 with 246,000 tonnes @ 0.32% Y_2O_3 in the beryllium sub-zones.
- Approximately 400,000 tonnes @ 1.0% Nb_2O_5 in the beryllium zones although this estimate was based on very limited assay data.

These resource estimates are historical and do not meet the standard terminology criteria of the NI 43-101 or the CIM Standards on Mineral Resources and Reserves. Wardrop has not done the work necessary to verifiy this historical estimate. The estimate is no longer relevant as it is replaced by the current estimate prepared by Wardrop outlined in section 17 of this report. The historical estimate should not be relied upon.

Lindsey Estimate – 1986/1987

Although Highwood and its various partners had made several mineral resource estimates over the years, the most often cited estimate for the North and South T Zone deposits was calculated by E. Lindsey. This estimate was prepared in 1987 as part of a pre-feasibility study for Hecla, conducted shortly after Hecla optioned the property.

Ore reserves were manually estimated on several cross sections typified by Section 8545N. Mineralized zones were configured on the cross sections in a "best-fit" manner, conforming to geological/alteration boundaries. These configurations were compared to the same configurations on five longitudinal sections typified by 00+00E and with the ore intercept appearing on the decline plan map. Configurations were adjusted until a reasonable correlation was achieved between the three data sets.

The assumptions used in Lindsey's calculations were similar to those used in Unocal's historical resource estimates. However, Lindsey was more rigid in the application of his assumptions and had information from additional drilling and from the decline. A tonnage factor of 3.02 tonnes per cubic metre (10.6 cubic feet per ton) was used. Mineralized areas of influence were measured around each drill hole with a planimeter for each intercept with grade higher than the cut-off grade over a minimum mining width of 3 m. His "probable reserve" involved drill hole projections up to 50 m and his "possible reserve" category included intercepts in some isolated holes. Lindsey considered material to be proven ore if it was within 7 m of an intercept, probable ore between 7 m and 50 m from an intercept and possible ore beyond 50 m but within the limits of the geological boundaries.

Lindsey's reserves are tabulated in Table 6.1. In addition to these reserves, Lindsey calculated 242,500 tonnes of Possible reserves at a grade of 0.7 – 0.8% BeO.

Table 6.1 North T-Zone Proven and Probable Reserves

Category	Sub-Zone	Tonnes	BeO (%)	Y_2O_3 (%)	Ce_2O_3 (%)	Nb_2O_5 (%)
Proven	A/B	109,000	0.74	0.086	0.08	0.39
	C	134,000	1.06	0.193	0.104	1.243
	D	140,500	0.95	0.276	0.213	0.314
	E	77,000	2.02	0.04	0.162	0.154
	Sub-totals	460,000	1.11	0.167	0.141	0.575
Probable	All Sub-Zones	91,000	0.82	0.148	0.119	0.535
	Totals	551,500	1.06	0.164	0.137	0.568

This resource estimate is historical and does not meet the standard terminology criteria of the NI 43-101 or the CIM Standards on Mineral Resources and Reserves. Wardrop has not done the work necessary to verifiy this historical estimate. The estimate is no longer relevant as it is replaced by the current estimate prepared by Wardrop outlined in section 17 of this report. The historical estimate should not be relied upon.

HECLA ESTIMATE – 1988

In 1988, Hecla created a database and model for the E sub-zone that was further updated and verified by Royal Oak in 1998. These included a kriged estimate, an inverse distance squared estimate and a polygonal estimate.

In outlining of the beryllium at Thor Lake, all drill core in the North and South T Zones was scanned with a berylometer to select intervals to be sent for assay. This procedure is described in section 12.1. Intervals with berylometer measurements in excess of 0.2% BeO were sent to Chemex Ltd. (Chemex) for assay; those less than 0.2% BeO were not assayed and have been treated in previous mineral estimates as having zero grade.

In order to accommodate a computer generated block model, Hecla arbitrarily assigned a value of 0.1% BeO to all intervals within the mineralized zone that did not have assay values. However, drill hole intervals that were obviously in unmineralized zones were assigned a value of zero.

Classical statistical analyses were performed, which showed that while the drill hole data is slightly skewed, it was not lognormal and hence, regular interpolation methods could be employed.

Drill holes were composited using 3 m lengths and the block size used was 5 m x 5 m x 3 m high. Because of the variability of the data a co-variogram was used to filter out the high variance data. Results of the variogram modelling showed that the variogram was nested (Table 6.2).

Table 6.2 Variogram Parameters for E Sub-Zone

Direction	Range (Structure 1)	Range (Structure 2)
North-South	25 m	50 m
East-West	18 m	36 m
Vertical	9 m	18 m
Nugget	0.14	
Sill 1	0.4	
Sill 2	0.4	
Total Sill	0.94	

Hecla estimated the mineral resource for the E sub-zone using ordinary kriging, inverse distance squared, and polygonal methods. The results are tabulated in Table 6.3 for various cut-off grades of BeO.

Table 6.3 E Sub-Zone Mineral Inventory by Estimation Method

Cut-off Grade (%BeO)	Kriging		Inverse Distance		Polygonal	
	Tonnes	Grade (%BeO)	Tonnes	Grade (%BeO)	Tonnes	Grade (%BeO)
0.40	103,900	1.33	101,500	1.27	74,300	1.87
0.60	83,100	1.54	79,500	1.49	70,200	1.95
0.80	68,300	1.73	68,700	1.61	57,800	2.21
1.00	60,000	1.85	59,300	1.73	56,200	2.25

As might be expected, at any particular cut-off grade, kriging and inverse distance tend to smooth grades and as such will create more tonnes at a lower average grade.

This resource estimate is historical and does not meet the standard terminology criteria of the NI 43-101 or the CIM Standards on Mineral Resources and Reserves. Wardrop has not done the work necessary to verifiy this historical estimate. The estimate is no longer relevant as it is replaced by the current estimate prepared by Wardrop outlined in section 17 of this report. The historical estimate should not be relied upon.

Using some of the kriging methodology that was established for the E sub-zone, Hecla constructed a block model for the C and D sub-zones (Table 6.4).

Table 6.4 C and D Sub-Zone Mineral Inventory

Cut-off Grade (% BeO)	Tonnes	Grade (% BeO)
0.50	267,900	0.82
1.00	55,900	1.29
1.50	10,900	1.76
2.00	1,900	2.24

This resource estimate is historical and does not meet the standard terminology criteria of the NI 43-101 or the CIM Standards on Mineral Resources and Reserves. Wardrop has not done the work necessary to verifiy this historical estimate. The estimate is no longer relevant as it is replaced by the current estimate prepared by Wardrop outlined in section 17 of this report. The historical estimate should not be relied upon.

Hecla also constructed a block model for the F sub-zone, which is a LREE (bastnaesite) enriched unit of the Upper Intermediate Zone. It generally occurs in contact with the Quartz Zone and appears to be cut-off by an east-west vertical felsite dike. The beryllium content of this zone is quite low and the main product would be a LREE concentrate with up to 50% of the rare earth credits occurring as Ce_2O_3.

Construction of the block model for the F sub-zone involved utilizing the geological information and drill hole data as for previous models. Accordingly, block dimensions were sized at 5 m x 5 m x 3 m and composites were calculated on three metre lengths. Variograms were constructed for the F sub-zone (Table 6.5).

Table 6.5 F Sub-Zone Variogram Parameters

Direction	Range
Major Axis - N 18°E	20 m
Minor Axis - N 108°E	20 m
Vertical	5 m
Nugget	0.3
Sill	0.65
Total Sill	0.95

The mineral inventory for the F sub-zone was then calculated using the method of ordinary kriging (Table 6.6).

Table 6.6 F Sub-Zone Mineral Inventory

Cut-off Grade (% Ce_2O_3)	Tonnes	Grade (% Ce_2O_3)
0.8	152,900	2.03
1.0	129,200	2.24
1.4	94,700	2.63
1.8	73,300	2.93
2.0	61,000	3.14

This resource estimate is historical and does not meet the standard terminology criteria of the NI 43-101 or the CIM Standards on Mineral Resources and Reserves. Wardrop has not done the work necessary to verifiy this historical estimate. The estimate is no longer relevant as it is replaced by the current estimate prepared by Wardrop outlined in section 17 of this report. The historical estimate should not be relied upon.

FRYE AND PROUDFOOT – 2001

In 2001, the database created by Hecla was used for calculations in a computer-based historical resource estimate made by Highwood for the North T-Zone. The Frye Historical Resource Estimate (named after the third-party consultant, A. Frye), was calculated using Mintec's Medsystem program. This program was used to calculate mineable resources within an optimized pit model.

The assumptions and criteria used in his calculation were as follows:

- Cut-off grade: 0.27% BeO, determined from cost estimates prepared by Dynatec and Proudfoot.
- Drill hole assays composited into 3 m intervals.
- 3 m x 3 m x 3 m blocks.
- Used ordinary kriging.
- Pit wall slopes at 45° and 60°.
- Mining Dilution 50%.

This historical resource calculation was based on drilling at roughly 15 m centres with holes on 7 m centres near the centre of the deposit and data from the decline.

6.1.2 SOUTH T-ZONE

The South T-Zone is drilled, in part on 30 m centres. A historic estimate of the resource was generated by Lindsey (1987) and is tabulated below (Table 6.7).

Table 6.7 Historic Estimate of South T-Zone Potential Reserves

Cut-off	Cutting Element	Tonnes	Density	Y_2O_3%	BeO%	Ce_2O_3%	Nb_2O_5%
0.30	%BeO	1,135,499	3.02	<0.1	0.62	<0.1	0.484
0.10	%BeO	1,254,681	3.02	<0.1	0.18	0.152	0.362
Total		2,390,180	3.02	<0.1	0.39	0.104	0.410

This resource estimate is historical and does not meet the standard terminology criteria of the NI 43-101 or the CIM Standards on Mineral Resources and Reserves. Wardrop has not done the work necessary to verifiy this historical estimate. The estimate is no longer relevant as it is replaced by the current estimate prepared by Wardrop outlined in section 17 of this report. The historical estimate should not be relied upon.

6.1.3 LAKE ZONE

Placer Development Ltd generated a mineral resource estimate based on drilling carried out up to and including 1981 (Currie, 2004). The cut-off is not specified. This resource estimate is historical and does not meet the standard terminology criteria of the NI 43-101 or the CIM Standards on Mineral Resources and Reserves. Wardrop has not done the work necessary to verifiy this historical estimate. The estimate is no longer relevant as it is replaced by the current estimate prepared by Wardrop outlined in section 17 of this report. The historical estimate should not be relied upon.

7.0 GEOLOGICAL SETTING

7.1 REGIONAL GEOLOGY

The following section is summarized from Trueman et al. (1988) and LeCouteur (2002).

The Thor Lake deposits are located within the Aphebian Blatchford Lake Intrusive Complex intrusive into Archean Yellowknife Supergroup metasedimentary rocks of the southern Slave geologic province. The complex is of variably alkaline character and intrusions range successively from early pyroxenite and gabbro through leucoferrodiorite, quartz syenite and granite, to a peralkaline granite and a late syenite (Davidson, 1982). There appears to be three sub-circular centres; an early western centre that is truncated by the larger second centre consisting of the Grace Lake Granite and the Thor Lake Syenite. The youngest and smallest centre is a nepheline syenite that intrudes the Thor Lake Syenite on its western edge and is otherwise only known from drilling under Thor Lake.

Davidson (1978) subdivided the Blatchford Lake intrusions into six texturally and compositionally distinct plutonic units as follows: Caribou Lake gabbro, Whiteman Lake quartz syenite, Hearne Channel granite, Mad Lake granite, Grace Lake granite and Thor Lake syenite. Based on exposed crosscutting relationships of dykes and main contacts, Davidson (1978) recognized a sequence of five intrusive events. The rocks of the last intrusive event, being compositionally and spatially distinct, are subdivided into the Grace Lake granite and the Thor Lake syenite although they bear no obvious intrusive relationship to each other to indicate a significant difference in time of emplacement.

Davidson further showed that the intrusions were petrochemically related and he established a relative chronology from crosscutting relationships. Recent dating of the complex supports the view that all the intrusions are related as the main, eastern intrusive and the western intrusive centres exhibit comparable ages. The Hearne Channel Granite has been dated at 2175 ± 5 million years, the Whiteman Lake Syenite at 2185 ± 5 million years (Bowring et al, 1984) and the Grace Lake Granite at 2176 ± 1.3 million years (Sinclair and Richardson, 1994).

Henderson (1985) reports that small dioritic plugs assigned to the Compton Lake Intrusive Suite cut the Grace Lake granite and diabase dykes of the 1.2 million year old Mackenzie and 2.0 million year old Hearne dyke swarms cut most of the members of the Blatchford Lake Intrusive Complex intrusive complex.

Gravity modeling by Birkett et al (1994) indicates that the large area of granitic and syenitic rocks of the eastern intrusive centre form a thin tabular body with a maximum thickness of 1 km. In contrast, the Caribou Lake gabbro in the western centre is thought to have a deep root.

7.2 Local Geology

At Thor Lake, 83 mineral species have been identified. Additionally there are several unidentified species which are possibly new mineral species, and other minerals have only tentative identification because they are metamictic and devitrified. The following descriptions omit much of the detailed mineralogy of the various rock types and the reader is referred to Appendix E for further description.

Most of the Thor Lake property is underlain by the Thor Lake syenite where it occurs in the centre of the Grace Lake Granite and the T-Zone deposits are seen to cross both rock types which are only demarcated by the presence or absence of quartz (Figure 7.1).

The Grace Lake granite is a coarse-grained, massive, equigranular, riebeckite-perthite granite with about 25% interstitial quartz. Accessories include fluorite, zircon, monazite, apatite, sphene, iron (Fe) and titanium (Ti) oxides, astrophyllite, an alkali pyroxene and secondary biotite. Near the contact of the Grace Lake Granite with the Thor Lake Syenite the two units are texturally similar and the contact appears to be gradational over a few metres rather than intrusive. The presence of interstitial quartz is the main distinguishing feature although the granite is also pinker in colour and less readily weathered than the syenite. Because of their textural similarity and gradational contact relations, Davidson suggested that both rock types derive from the same magma.

The Thor Lake Syenite is completely enclosed by the Grace Lake Granite. It has been divided into five subunits, four of which are amphibole (ferrorichterite) syenites that differ mainly in texture. The fifth and most distinctive subunit is a narrow arc of fayalite-pyroxene mafic syenite, which is locally steeply dipping and lies close to the margin of the main amphibole syenite and the Grace Lake Granite. It forms a distinct semi-circular ridge, locally termed the rim syenite that can be traced for a distance of about 8 km and is thought to be a ring dyke.

7.3 T-Zone Geology

In plan view the North T-Zone is oval in shape and approximately 200 m by 120 m. (Figure 7.2)

Figure 7.1 General Geology of the T-Zone

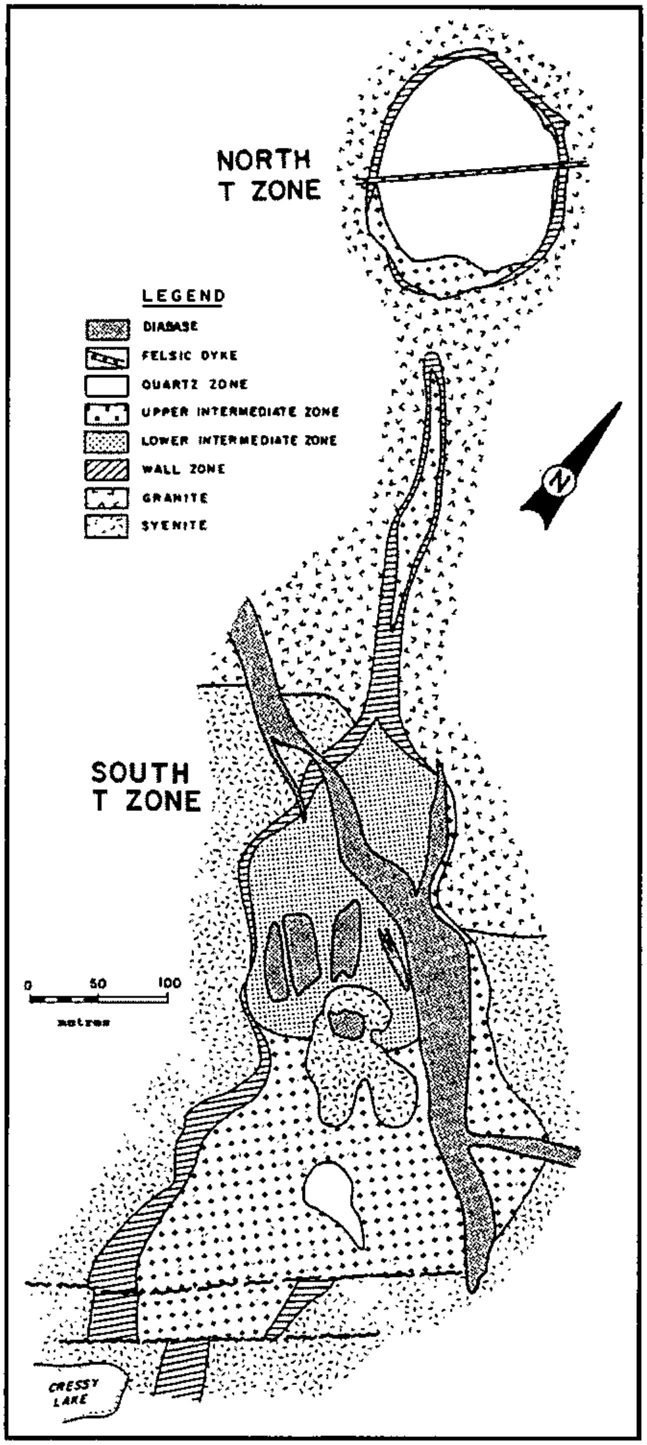
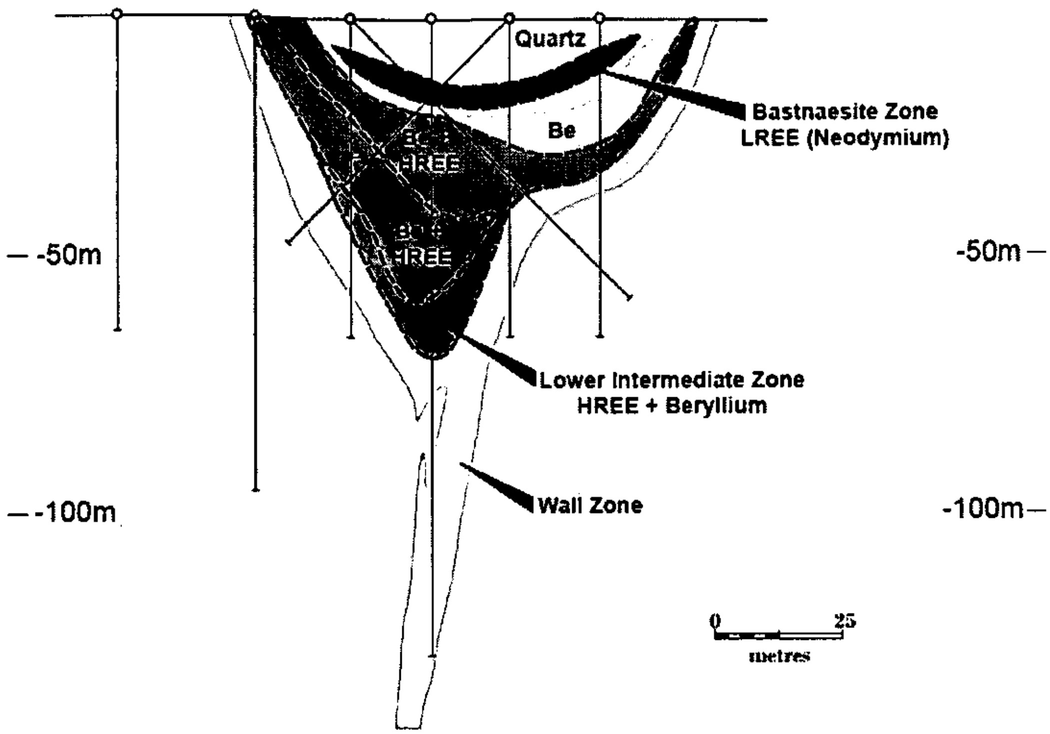


Figure 7.2 North T-Zone Be-REE Deposit Cross-Section



In cross-section it is shaped like the lower half of a wine glass; the stem of which is the keel or dyke dipping steeply westward. The underlying keel or dyke continues southward from the North T-Zone, under the South T-Zone and crops out in fault-uplifted segments in near contact with the Lake Zone.

In cross-section the T-Zones are concentrically zoned, the zones forming a succession of shells of distinctive lithologies centrally inward from the granitic or syenitic host rock. From their contacts with the host rocks these have been described using classic pegmatite terminology as a Wall Zone, a Lower Intermediate Zone, an Upper Intermediate Zone, and a Quartz Core.

The Wall Zone is comprised of massive medium- to coarse-grained albite (var. cleavlandite) with minor or accessory amounts of quartz, fluorite and columbite. The Lower Intermediate Zone is distinctive in that it has preserved original granitic or syenitic protolith texture obfuscated by alteration assemblages of biotite, unidentified mica polytypes, magnetite, quartz, phenacite, xenotime, thorite, bastnaesite, synchisite, fluorite and locally, patches of sulphides. It is generally massive, fine to coarse grained and brownish to black in colour and locally weakly schistose. Quartz is commonly black and metamict.

The Upper Intermediate Zone is a light greenish-buff rock characterized by abundant polylithionite, quartz, albite, fluorite, phenacite, columbite, xenotime, synchisite and rare sulphides. These rocks display subhorizontal banding on decametre scale of mica enrichment interpreted as pressure quenching features and miarolytic cavities are noted up to 2 m in size.

The centre or core of the T-Zone is occupied by massive quartz with minor accessory grey, green and purple fluorite and rare bastnaesite, synchisite and parasite. The quartz cuts into the Wall Zone assimilating and brecciating large k-feldspar crystals oriented perpendicularly to the walls. Polylithionite becomes abundant in these areas in near massive amounts with lesser phenacite and cleavlandite.

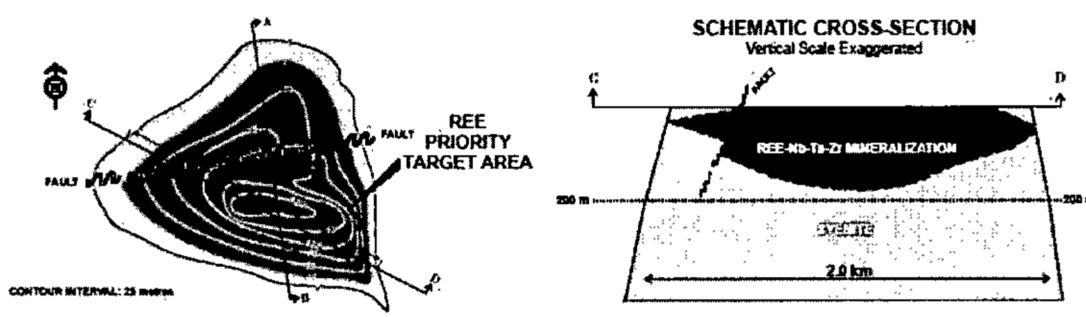
At the base of the quartz core, above the boundary with the Upper Intermediate Zone is a layer of badly brecciated but massive intergrown bastnaesite, synchisite and parasite, with lesser roentgenite, grey to purple fluorite and disseminated sulphides. This unit is termed the F or Bastnaesite Zone. It was not recognized in the drilling programs as a distinctive unit until it was intersected by the underground workings.

7.4 LAKE ZONE GEOLOGY

The Lake Zone is the largest mineralized zone on the property and has the greatest potential for niobium, tantalum, zircon, yttrium and REE's. The zone is triangular in shape and covers about four square kilometres.

Various people have described the Lake Zone as a core of "altered breccia" enveloped by a feldspathic "Wall Zone". Mineralization is disseminated and primarily consists of ferrocolumbite, allanite, fergusonite, monazite and zircon. Minor minerals include pyrite, magnetite, bastanaesite and xenotime. The highest grade of niobium and tantalum appear to occur in the magnetite rich areas of the zone.

Figure 7.3 North T-Zone Be-REE Deposit Cross Section



7.5 MINERALOGY OF THE T AND LAKE ZONES

To date, some 83 mineral species have been recognized at Thor Lake (Appendix B). Several remain unidentified and may represent new mineral species. Table 7.1 lists the principal minerals of interest in the T and Lake Zones with the elements or metals of interest.

Table 7.1 Minerals of Principal Economic Interest at Thor Lake

Element	T-Zone	Lake Zone
Y+HREE	xenotime	fergusonite
Ta		
LREE	bastnaesite, synchisite, parisite	allanite, monazite, bastnaesite, synchisite, parisite
Be	phenacite	
Nb	columbite	columbite
Zr	zircon	zircon
Ga	albite	albite

Thirteen mineralogical studies have described the above mineralogy, in whole or in part, and the reader is referred to the tabulated references accompanying this document for further detail. The most significant of these are the reports of LeCouteur (2002) who notes the columbite composition as ferro-columbite and Mariano (letter report of Nov.2006). Additionally, Mariano (pers com.) has observed an absence of Ta in columbite and its presence only in fergusonite.

Alkaline systems and their derived late magmatic phases exhibit little or no fractionation (Cerny, 1991). Accordingly, the compositions of constituent mineralogy in related mineral deposits remains essentially constant. This became evident to Highwood personnel in the course of drilling of the T-Zone at which time it was found that lanthanum, cerium and neodymium remained in fixed proportions. This behaviour has since been documented by Mariano and is shown in chondrite normalized signatures for the rare earths at Thor L. in accompanying Appendix B.

The chemistry of the relevant rare earth bearing species from Thor Lake are further described in the following section 18.6

8.0 DEPOSIT TYPE

The mineral deposits at Thor Lake are complex, probably originating as an apogranite (Beus, 1969) in a domal facies of the parental Grace Lake granite. It is extensively greisened and can also be described as a quartz-topaz-polylithionite-phenacite-fluorite greisen according to the nomenclature of Schirba (1970).

According to Richardson and Birkett (1996), other rare metal deposits associated with peralkaline rocks include:

- Strange Lake, Canada (zircon, yttrium, beryllium, niobium, REE).
- Mann, Canada (beryllium, niobium).
- Illimausaq, Greenland (zircon, yttrium, REE, niobium, uranium, beryllium).
- Motzfeldt, Greenland (niobium, tantalum, zircon).
- Lovozero, Russia (niobium, zircon, tantalum, REE).
- Brockman, Australia (zircon, yttrium, niobium, tantalum).

Richardson and Birkett state that some of the characteristics of this type of deposit are:

- Mineralizing processes are associated with peralkaline intrusives, generally specific phases of multiple-intrusion complexes.
- Elements of economic interest include tantalum, zircon, niobium, beryllium, uranium, thorium, REE, and yttrium; commonly with more than one of these elements in a deposit. Volatiles such as fluorine and carbon dioxide (CO_2) are usually elevated.
- End members may be magmatic or metasomatic, but deposits may show influences of both. Alteration in magmatic types is often deuteric and local, while alteration in metasomatic types can be extensive.
- This type of deposit is usually large, but of low grade. Grades of niobium, tantalum, beryllium, yttrium and REE are usually less than 1%, while the grade of zircon is typically from 1% to 5%.
- There are usually a variety of rare metal minerals in this type of deposit, including oxides, silicates, calcium phosphates and calcium fluorocarbonates. Niobium and tantalum mineralization is typically carried in pyrochlore and less commonly in columbite.
- The preferred genetic model is that of igneous differentiation in closed-system conditions, with the rare earth metals concentrating in residual magma, aided by depression of the freezing temperature of the magma by fluorine and possibly CO_2.

9.0 MINERALIZATION

9.1 T-ZONE

The T-Zone, which extends to the northwest for approximately 1 km from the Lake Zone, transects both the Thor Lake syenite and the Grace Lake granite. In plan view, the T-Zone pinches and swells from a few metres up to 240 m. The T-Zone can also be separated into two distinct portions. The North T-Zone and the South T-Zone are divided by a barren zone of mineralization that has pinched-out into the country rock.

The North T-Zone deposit occupies a circular area of intense alteration in cross section and long section; this deposit is bowl shaped where most of the mineralization occurs as a series of concentric layers or sub-zones stacked within the bowl. Underlying the bowl structure is another mineralized alteration zone in the shape of a narrow trough, which reaches the surface just south of the North T-Zone deposit and then trends southeasterly where it widens to form the South T-Zone deposit. The North T-Zone mineralization occurs over an area of 140 m in length by 100 m in width and is drilled to a maximum vertical depth of approximately 190 m.

The economic mineralization of interest has been divided into four sub-zones: C, D, E and F. The mineralogical sub-zones are not necessarily confined to any individual geological units and may extend to two or more of these units:

- The E sub-zone is at the top of the deposit and has a diameter of 40 m, with an approximate depth of 25 m. It straddles the south end of the Quartz Zone and the Upper Intermediate Zone. Mineralization in the E sub-zone is primarily beryllium and it is the highest grade area found thus far in the Thor Lake property.
- The F sub-zone is a bastnaesite-enriched unit of the Upper Intermediate Zone. It generally occurs in contact with the Quartz Zone and appears to be cut-off by an east-west vertical felsite dike.
- The C and D sub-zones are contained within the North T-Zone, usually within the Upper Intermediate Zone. The maximum depth below surface is 80 m. There are indications that the C sub-zone, which is at the bottom of the deposit, could extend further in the form of a keel shape.

The predominant beryllium mineral is phenacite with minor amounts of bertrandite and to a lesser extent, helvite and gadolinite. Yttrium occurs mainly in xenotime and gadolinite. Cerium and other LREEs occur mostly in syntaxial intergrowths of bastnaesite, synchisite and parasite. The principal niobium mineral is columbite, with minor amounts ixolite and pyrochlore.

9.2 LAKE ZONE

The Lake Zone is mainly underlain by sub-units of the Thor Lake syenite that have been intensely altered (metasomatic/hydrothermal) and contain rare-metal mineralization of several types including the elements tantalum, niobium, REE, yttrium, gallium, fluorine, uranium, thorium and zircon. On the east side of the Lake Zone, the Thor Lake Syenite has been intruded by a nepheline syenite, which is the latest phase of the Blatchford Complex Intrusives.

10.0 EXPLORATION

The Thor Lake Property has been systematically explored for several different metals over a period of 30 years. Exploration focus has shifted as new discoveries such as the beryllium were made or in response to price increases for tantalum, yttrium and HREE or for example, because of improved methods of recovery of tantalum.

The original claims at Thor Lake were staked in 1970 in a search for uranium. A shallow trench was reportedly opened over the main showing in the R-Zone, but the claims were eventually allowed to lapse. In 1972, a significant radioactivity anomaly was discovered in the area during in an airborne radiometric survey conducted by the Geological Survey of Canada (O.F.R. 124)

In 1976, the property was re-staked by Highwood Resources Ltd for its uranium potential. From 1976 to 1979, exploration programs included geological mapping, sampling, trenching and limited diamond drilling on the Lake, Fluorite, R, S, and T Zones. A total of 13 trenches and 22 diamond drill holes were completed, sampled and assayed. This work resulted in the discovery of significant concentrations of niobium, tantalum, yttrium and REEs. Results also indicated a general paucity of uranium mineralization on the property and showed that the anomalous radioactivity was due to thorium. In 1979, a lake bottom radiometric survey was conducted under Thor Lake and radon gas in soil surveys were conducted. The results were inconclusive.

In 1980 Placer acquired an option on the Thor Lake property for its tantalum and niobium potential. Placer focused its efforts on the Lake Zone, conducting magnetometer, scintillometer and VLF surveys, and drilled 13 drill holes in the Lake Zone. Placer drilled five additional holes in 1981, in the vicinity of Drill Hole 80-5 which had returned the best tantalum and niobium values in their earlier program. Metallurgical work commissioned by Placer established the refractory nature of the tantalum mineralization, and in 1982 Placer dropped their option on the project. Highwood resumed work on the property collecting a bulk sample for metallurgical testing.

In 1983, a pathfinder geochemical survey was initiated to identify a tool for prospecting for high grade, metallurgically amenable tantalum mineralization in the Lake Zone. The geochemical survey was conducted over the T-Zone and resulted in the discovery of significant beryllium mineralization. The discovery was followed by surface prospecting of the T-Zone with a berylometer; a portable geophysical tool used in the exploration and examination of beryllium deposits

(Brownell, 1959). The berylometer survey indicated that beryllium mineralization occurred throughout the T-Zone.

In the fall and winter of 1983-1984, more than 70 holes were drilled in T-Zone, which delineated beryllium within the North and South T Zone deposits. The drilling program also stimulated interest in yttrium and REE's as potential by-products of beryllium production.

In the summer of 1984, a 25 tonne bulk sample was collected from the outcropping beryllium section of the North T-Zone for initial metallurgical testing at Witteck Development Inc. (Witteck). Metallurgical work was subsequently transferred to Lakefield Research and in 1985, Strathcona on behalf of Highwood, contracted Canadian Mine Development Ltd (Canadian Mine) to drive a 500 m decline into the North T-Zone. The decline intersected all of the C, D, E, and F sub-zones in order to test their geological continuity and to collect bulk samples for metallurgical testing.

Drilling was continued on both the T-Zone and the Lake Zone until 1988 at which time 96 drill holes had been completed on the North T-Zone, 35 drill holes on the South T-Zone and 51 drill holes on the Lake Zone. The drilling conducted on the Lake Zone was principally targeted at yttrium mineralization in the southeast corner of the Lake Zone and drilling intended to intersect the Fluorite Zone failed.

Assay returns from five drill holes in the S-Zone were not considered significant and one drill hole under the R-Zone failed to intersect mineralization.

In 2005 and 2006, Avalon sampled archived drill cores from the Lake Zone to extend areas of known yttrium and HREEs. Assay data from this work has been entered into modelling of the Lake Zone resource and it will also serve to guide future drilling which is anticipated to commence from the winter ice cover on Thor Lake in 2007.

11.0 DRILLING

No drilling has been carried out by the current owner.

In 1977, five drill holes undercut surface mineralization in the S-Zone. Ongoing exploration at this time identified the T-Zone and the Lake Zone as larger targets with comparable mineralization and further work on the S-Zone was suspended.

Over 4,440 m of diamond drilling in 96 drill holes has been completed on the North T-Zone. Drilling was completed with BQ and NQ sized drill core. The NQ drilling twinned earlier holes to acquire metallurgical samples. Drill holes were oriented so that mineralized intersections represented their true thickness as closely as possible and in most cases, the drill holes are vertical. The drilling is closely spaced, nominally on 15 m centres and infill drill holes are spaced as closely as 7.5 m.

In the South T-Zone, approximately 3,065 m of diamond drilling has been completed in 37 drill holes. These holes have been mainly drilled at angles of 40° to 50° E and 40° to 50° W, in response to the plunging, "Y" shaped structure of this zone. Drilling has been done on 30 m sections along the deposit, with drilling along the section being between 30 m to 50 m.

A total of 5,648 m have been drilled in 51 holes in the Lake Zone by Highwood and Placer. In 1978 and 1979, Highwood drilled seven BQ holes in the Lake Zone, with hole 79-1 intersecting 0.67% Nb_2O_5 and 0.034% Ta_2O_5 over 24.99 m. In 1980, Placer drilled 13 widely spaced BQ holes and in 1981, drilled another five holes around drill hole 80-5 (43 m grading 0.52% Nb_2O_5 and 0.034% Ta_2O_5) to test the continuity of mineralization around this hole. Placer dropped their option in early 1982, as the fine-grained columbo-tantalite mineralization did not prove amenable to conventional metallurgical extraction. Highwood drilled five diamond drill holes in 1983 and 1984 to test for high grade tantalum-niobium mineralization and to determine zoning and geological continuity. In 1986, two holes were completed at the northeast end of Long Lake, in the vicinity of previous trenching, to evaluate high yttrium and REE values obtained from the trenches. In 1986 and 1987, re-assaying of Lake Zone core was undertaken to determine other areas of high yttrium and REE content. From January to March, 1988 an additional 19 BQ holes were completed in the Lake Zone to further test for yttrium and REE.

One drill hole, 1988R-1, was completed on the R-Zone undercutting the main high-grade yttrium showing. No mineralization was intersected and two further proposed holes were not started. Archived core remains at site and was last checked in September 2006, when it was found to be in a good condition with little sign of weathering and most markings legible. The core racks were found to be in a reasonable condition and brush considered a fire hazard had been cleared away.

12.0 SAMPLING METHOD AND APPROACH

12.1 DRILL HOLE SAMPLES

Drilling was carried out in all campaigns by experienced contractors such as Titan Diamond Drilling of Yellowknife and Connors Drilling of Kamloops, B.C. Drilling was undertaken with hydraulic, swivelhead equipment manufactured by Boyles Bros. and Longyear. Core drilled is BQ and NQ in size and recoveries were generally in excess of 95%.

The core drilled by Highwood was logged, split, and sampled on site. Placer drill holes were logged on site and the core was then shipped to Vancouver for splitting and sampling. Samples for analysis were otherwise taken in ten foot intervals or to lithologic boundaries where a sample crossed more than one rock type. A concerted effort was made in all programs to limit samples to one rock type to better determine mineralization boundaries and horizons.

To assist in the core logging and determination of sample boundaries, a binocular microscope, a scintillometer and a berylometer were utilized. Segments of the Placer drillcore were also logged with a four channel discriminating spectrometer and with a magnetic susceptibility metre.

Sampling was carried out by experienced geologists and technicians using accepted industry standards. Sample locations and geological observations were controlled by well-established grids and drill hole collars were surveyed by Thomson Underwood McLellan Surveys Ltd. of Yellowknife.

12.2 DECLINE SAMPLES

The 3.0 m by 3.5 m decline was driven for 500 m in the North T-Zone in the summer of 1985 under the supervision of Strathcona Mineral Services Ltd. Each 3.66 m round produced approximately 100 tonnes of muck.

The decline was geologically mapped and both longitudinal wall chip and rib chip samples were taken for each round with a pneumatic chisel. The muck from each round of advance was stored in a separate, labelled stockpile on surface and composite samples from each pile were taken for assay and comparison with the longitudinal and rib sampling assay results.

In September 1985, approximately 77 tonnes of mineralized material were shipped in one tonne bags to Lakefield for testing. A further 675 tonnes was crushed and shipped to Lakefield in April 1986.

13.0 SAMPLE PREPARATION, ANALYSES AND SECURITY

All samples were sent to independent commercial laboratories for sample preparation and analysis (Table 13.1). Samples were prepared using standard laboratory techniques and the samples were routinely analysed for beryllium, yttrium, niobium and tantalum. Select rare earths were assayed notably cerium and also zirconium.

Table 13.1 Assay Laboratories used for Thor Lake Samples

Year	Program	Operator	Primary Assay Lab	Check Lab
1977	77-1 to 77-5	Highwood	Bondar Clegg	
1978	78-1 to 78-12	Highwood	Chemex	
1979	79-1	Highwood	Chemex	
1980	80-1 to 80-13	Placer	X-Ray Assay Labs-Ta/Nb Placer-U Neutron Activation Services-Ta	Bondar Clegg Chemex
1981	81-1 to 81-5	Placer	X-Ray Assay Labs-Nb Neutron Activation Services-Ta	
1983	83-1 to 83-44	Highwood	Chemex	Bondar Clegg
1984	84-45 to 84-89 84L-1 to 84l-7	Highwood	Chemex	
1985	85-90 to 85-114 85L-6 Decline	Highwood	Chemex	Lakefield
1986	86-115 to 86-127 86L-7	Highwood	Chemex	
1988	88L-8 to 88L-26	Highwood/Hecla	Cominco Research Lab	

14.0 DATA VERIFICATION

14.1 General Validation

During the exploration programs at Thor Lake there were no systematic check assay programs. However, in 1985, splits from a number of samples from the Northern T-Zone that were assayed by Chemex were sent to other assay laboratories for check assaying. The result of these checks is listed in Table 14.1 and Table 14.2.

Table 14.1 Check Assays %BeO, 1985

Sample No.	Witteck Development	Chemex Labs	Cabot Corporation
4035.00	3.15	3.32	3.53
4040.00	0.15	0.16	0.15
4045.00	0.47	0.71	0.72
4050.00	0.66	0.73	0.73
4055.00	1.30	1.53	1.51
4060.00	2.37	2.53	2.63
4065.00	0.27	0.36	0.35
4374.00	0.10	0.00	0.08
4745.00	0.48	0.57	0.53
4748.00	4.28	4.63	4.63
85-90-1	2.48	2.64	2.72
85-90-3	1.33	1.49	1.49
85-90-5	0.76	0.86	0.88
85-90-7	0.76	0.80	0.83
85-90-9	0.11	0.11	0.11
85-90-11	1.04	1.22	1.25
85-90-13	0.05	0.05	0.05
Average	**1.16**	**1.28**	**1.31**

The tables indicate that the check assays for beryllium compare well between Cabot and Chemex, with Witteck being approximately 9% lower than Chemex. Chemex returned the highest yttrium grades while Witteck and Molycorp returned the lowest.

Table 14.2 Check Assays % Y_2O_3, 1985

Sample No.	Witteck Development	Chemex Labs	Molycorp	Lakefield Research	Skyline Labs
4035,36	0.013	0.036	0.022	0.024	0.024
4039,40	0.006	0.018	0.013	0.011	0.010
4043,44	0.003	0.015	0.008	0.008	0.007
4051,52	0.128	0.258	0.137	0.230	0.220
4055,56	0.820	0.180	0.780	0.150	0.150
4059,60	0.099	0.223	0.095	0.170	0.170
4061,62	0.033	0.071	0.038	0.063	0.058
4373	0.206	0.339	0.238	0.310	0.290
4742	0.455	0.887	0.357	0.780	0.790
4747	0.293	0.625	0.292	0.520	0.480
4843	0.061	0.152	0.107	0.210	0.190
4844	0.125	0.095	0.067	0.100	0.100
85-90-02	0.012	0.024	0.020	0.019	0.016
85-90-06	0.163	0.213	0.181	0.250	0.230
85-90-10	0.064	0.122	0.062	0.100	0.110
85-91-1	0.100	0.147	0.081	0.170	0.150
85-91-4	0.014	0.027	0.019	0.024	0.020
85-91-8	0.188	0.226	0.141	0.270	0.240
Average	**0.155**	**0.203**	**0.148**	**0.189**	**0.181**

The checks by Lakefield on the Chemex assays from the exploration ramp samples compare well (Table 14.4 on next page).

14.2 COLLAR POSITIONS

During Wardrop's site visit it was possible to positively identify three drill holes based on tags attached to stakes marking the position of the drill holes in the North T area. These collars were surveyed using a handheld Garmin Etrex, at a 7 m level of accuracy, Global Positioning System (GPS). The drill holes show acceptable differences when compared to the collars in the database (Table 14.3 below).

Table 14.3 Comparison of GPS and Survey Collars

BHID	GPS			Survey			Difference		
	Easting	Northing	Elevation	Easting	Northing	Elevation	Easting	Northing	Elevation
83-1	416,552	6,888,488	240	416,545	6,888,479	245	7	9	(5)
83-3	416,524	6,888,532	244	416,519	6,888,523	245	5	9	(1)
84-65	416,534	6,888,519	238	416,527	6,888,510	245	7	9	(7)

In general, the Eastings and the Northings were slightly higher for the GPS readings.

The collar positions were compared to the supplied topography file and no major discrepancies were noted.

Table 14.4 Check Assays, Underground Sampling Program

Sub-Zone	Round	Reference	%BeO Lakefield	Chemex	%Y_2O_3 Lakefield	Chemex
A	U20	6.4 m-9.5 m	0.350	0.352	0.260	0.211
		9.5 m-12.2 m	0.320	0.305	0.200	0.201
	U21	0.0 m-3.2 m	0.210	0.194	0.200	0.169
		3.2 m-6.4 m	0.350	0.339	0.110	0.118
B	T2	77.0 m-81.0 m	0.480	0.483	0.027	0.022
	U24	13.2 m-16.6 m	0.290	0.269	0.028	0.027
		16.6 m-20.0 m	0.480	0.458	0.025	0.025
Average-A/B			**0.354**	**0.343**	**0.121**	**0.110**
C	U30	16.2 m-19.5 m	0.250	0.255	0.076	0.087
		19.5 m-23.2 m	0.540	0.541	0.140	0.125
		23.2 m-26.2 m	1.040	1.016	0.300	0.287
		26.2 m-29.6 m	0.970	1.013	0.220	0.208
	U31	12.8 m-16.5 m	0.450	0.450	0.190	0.170
		20.0 m-23.5 m	0.300	0.286	0.130	0.134
		27.1 m-30.6 m	0.350	0.319	0.210	0.183
		34.1 m-37.6 m	0.250	0.255	0.096	0.110
Average C			**0.519**	**0.517**	**0.170**	**0.163**
D	U14	14.4 m-18.3 m	0.630	0.624	0.500	0.413
		22.2 m-26.1 m	1.560	1.551	0.180	0.158
		29.8 m-33.6 m	0.330	0.339	0.045	0.058
		37.4 m-41.4 m	0.340	0.341	0.067	0.079
	U16	7.1 m-10.7 m	0.330	0.361	0.130	0.109
		14.7 m-18.5 m	0.400	0.389	0.150	0.139
Average D			**0.598**	**0.601**	**0.179**	**0.159**
E	U2	16.0 m-21.0 m	2.740	2.717	0.075	0.082
		21.0 m-25.0 m	2.040	2.076	0.023	0.011
		25.0 m-30.0 m	2.490	2.548	0.026	0.027
		30.0 m-34.0 m	3.160	3.219	0.033	0.042
		34.0 m-39.0 m	1.260	1.232	0.046	0.053
		39.0 m-43.0 m	1.640	1.621	0.043	0.035
		43.0 m-48.0 m	2.530	2.548	0.066	0.079
Average E			**2.266**	**2.280**	**0.045**	**0.047**
F	U5	25.9 m-29.0 m	0.011	0.019	0.019	0.027
		32.6 m-35.2 m	0.021	0.028	0.016	0.018
		40.1 m-43.5 m	0.006	0.014	0.019	0.017
	U6	14.2 m-17.7 m	0.007	0.014	0.015	0.017
Average F			**0.011**	**0.019**	**0.017**	**0.020**

14.3 Assays

14.3.1 North T-Zone

A total of 1,915 entries were checked for BeO, Ce_2O_3, Nb_2O_5, Nd_2O_3 and Y_2O_3 grade out of a total database of 11,200 entries. Original assays from Chemex (Vancouver) were compared with the assay table used in the resource estimate. A total of 14 errors were detected (0.73%). The data was corrected prior to carrying out the estimation.

The database does not distinguish between trace values and where no samples were taken.

14.3.2 Lake Zone

A total of 1,422 entries were checked for BeO, Ce_2O_3, Ga_2O_5, La_2O_5, Nb_2O_3 Ta_2O_5, U, Y_2O_3 and ZrO_2. Wardrop was unable to find assay certificates for all of the values. Assay results were found for 1,027 entries. The remaining entries were checked against drill hole log sheets. A total of four errors were detected (0.28%). In the 1988 certificates all of the elements apart from Nb_2O_5 are reported in their elemental form. The factor for converting La to La_2O_5 was incorrectly applied. The data was corrected prior to carrying out the estimation.

The database does not distinguish between trace values and where no samples were taken.

14.4 Downhole Survey Review

Dip tests were carried out at the end of drill holes, however no historic record of these readings has been found and the readings have not been verified. There is no reason to assume that the survey results are not correct.

14.5 Independent Samples

A total of 14 samples from muck piles generated during the development of the exploration ramp in the North T-Zone, and core samples were submitted to Global Discovery Laboratory as an independent check by Wardrop on the mineralization of the Thor Lake property. The samples were assayed variously for Be, Ce, Nb, Nd and Y, and verified the presence of mineralization (Table 14.5).

Table 14.5 Independent Sampling Results (parts per million)

Lab No.	Field Number	Be	Ce	Nb	Nd	Y
R0639878	84L-1A-1	<5	1335	1180	564	39
R0639879	84L-1A-2	6	10600	11120	4830	315
R0639880	84L-1A-3	5	8830	17810	4040	3880
R0639881	88-26-1	18	357	1380	166	85
R0639882	88-26-2	<5	922	620	480	84
R0639883	88-26-3	<5	401	690	181	38
R0639884	C48120	12401	256	70	110	108
R0639885	C48121	25530	267	60	124	170
R0639886	C48122	28096	339	20	133	33
R0639887	C48123	53	>100000	120	57800	385
R0639888	C48125	20	>100000	80	57600	394
R0639889	C48126	7	>100000	70	53500	449
R0639890	C48127	11809	4180	2300	2080	>10000

15.0 ADJACENT PROPERTIES

At the time of writing there are no mineral claims or leases adjacent to the Thor Lake leases. All of the known rare metal deposits related to the Blatchford Lake Complex are owned by Avalon.

16.0 MINERAL PROCESSING AND METALLURGICAL TESTING

Between 1984 and 1989, considerable testwork was done on the North T-Zone samples by Witteck Development Ltd. (Witteck), SGS Lakefield Research Limited (Lakefield), and Hazen Research Inc. (Hazen) which culminated in pilot plant testing programs at Lakefield. The early programs were managed on behalf of the joint venture by Strathcona Mineral Services Ltd. The work programs focused on developing a process for the recovery of beryllium and rare earths into separate concentrates; a LREE concentrate comprised of bastnaesite from the F sub-zone, and an yttrium, HREE concentrate as by-products of the beryllium concentration.

The Hydrometallurgical Division of Dynatec Corporation performed a technical audit of the work done at Hazen and Lakefield in August 2000. Dynatec noticed the differences in concentrate quality used in the tests and indicated that the concentrate feed requires a better definition of the impurity range.

SGS Lakefield carried out a testing program on a composite sample from Lake Zone in 2001 and reported the results in its LR10302-001 – Progress Report No. 1. The composite used in the study assayed 0.56% Nb_2O_5, 0.047% Ta_2O_2, 5.2% ZrO_2, 0.12% Y_2O_5, and 1.55% TREO. A treatment process was developed in this study which could produce a bulk tantalum/niobium/zircon/RE/yttrium concentrate.

17.0 MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES

Wardrop conducted a mineral resource estimate of the Thor Lake REE deposit. Datamine Studio 3 was used to generate the mineral resource estimation.

Thor Lake is comprised of six zones: North T, South T, R, S, Lake and Flourite Zones (see Figure 2.3). The T-Zone, which extends northwest for about 1km from Thor Lake, is the most studied and best understood of the six deposits.

17.1 NORTH T-ZONE

17.1.1 *INTRODUCTION*

In order to carry out the evaluation on the property a digital database for collars, surveys and assays suitable for importing into Datamine Studio 3 was extracted from a database used for generating a historic resource estimate in MineSight. Historic sectional interpretations drawn in AutoCAD were converted to 3D Datamine strings. These sections were then compared to the drill hole data and the strings were snapped to the drill holes. There is a good correlation between the AutoCAD outlines and the drill hole grades.

The outlines define four sub-zones C, D, E and F.

Examination of the drill holes also indicated the presence of an yttrium halo around the previously defined mineralization. Strings were created around the yttrium mineralization but it was noted that there were some low-grade areas within the envelope. Categorical indicator kriging using a cut-off of 0.04% was carried out to define the high (HY) and low (LY) grade areas of Y_2O_3. The deposit measures approximately 225 m by 115 m by 80 m.

The database used to carry out the resource contains a total of 84 drill holes and 18,062 assay entries for Y_2O_3, La_2O_3, Ce_2O_3, Nd_2O_3, Gd_2O_3, BeO, Nb_2O_5, and Ga_2O_3,in the North T area.

17.1.2 *DATA*

DATABASE

The database, which includes information for both the North T and South T Zones, contains 1,099 data entries of BeO, 1,449 of Ce_2O_3, 108 of Ga_2O_3, 161 of Gd_2O_3, 181 of La_2O_3, 1,357 of Nb_2O_5, 346 of Nd_2O_3 and 1,504 of Y_2O_3 above trace. There is good correlation between Nd_2O_5 and La_2O_3 (0.87) and moderate correlation between Nd_2O_5 and Ce_2O_3 (0.76). Due to the low number of assays above trace for Ga_2O_3, Gd_2O_3 and La_2O_3 these elements were not interpolated into the model.

The extracted database uses the same coding for trace values and if no assay was requested. Both these were set to zero prior to interpolation into the block model. This is likely to lead to a conservative estimate.

BULK DENSITY

In 2006, density measurements were taken for drill hole 83-43 and averaged for each sub-zone (Table 17.1). The average density for each sub-zone has been applied to the model. Historic models used a density of 3.02 grams per cubed centimetre (g/cm^3).

Table 17.1 Bulk Density by Sub-Zone (g/cm^3)

Sub-Zone	Density	No. Samples
C	2.91	15
D	2.72	16
E	2.66	13
F	2.68	3
Y	2.72	15

17.1.3 GEOLOGICAL INTERPRETATION

The initial interpretation of sub-zones C, D, E and F was based on historic AutoCAD files. These files were converted to Datamine string files and the interpretation was validated against drill hole information. The interpretation correlates to the grades in the drill holes.

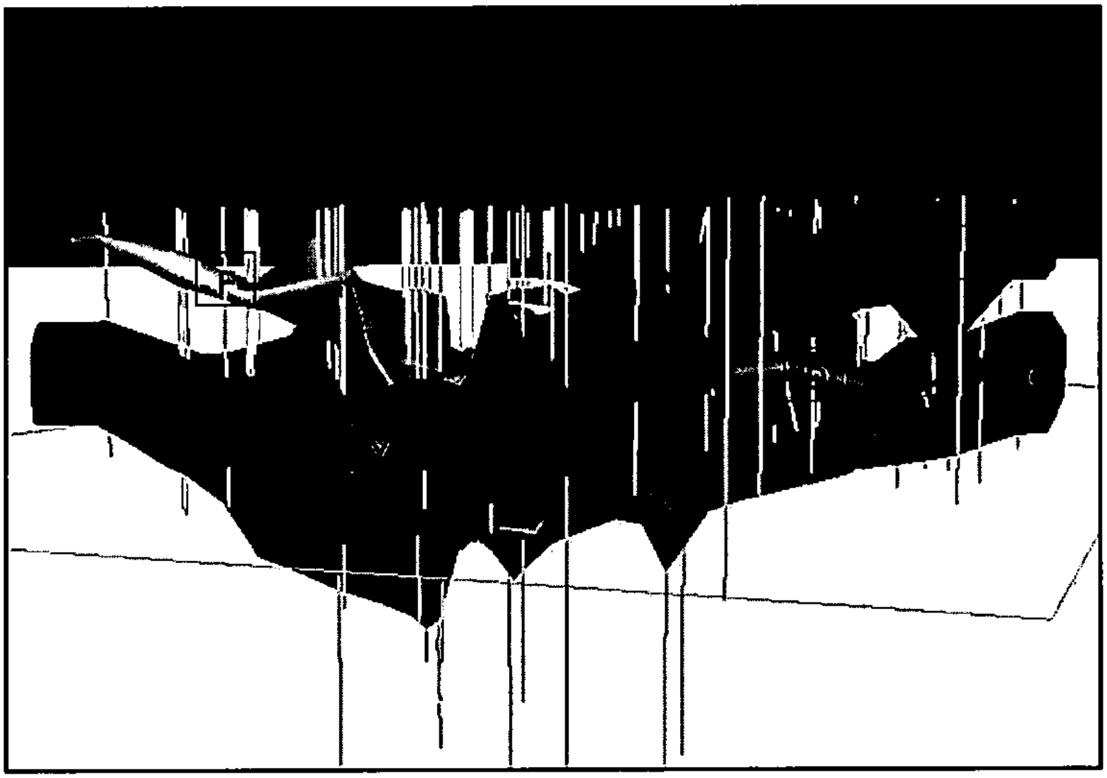
The C, D, E and F sub-zones are enriched in BeO while the F sub-zone is also enriched in Ce_2O_3. In Figure 17.2, the North T-Zone, C, D, E, F and Y sub-zones are displayed with drill holes looking north-east the distance from left to right of the deposit is approximately 225 m.

Wireframes were generated from the string files. Review of the wireframes indicated that some of the wireframes intersected. Steps were taken during the block modelling phase to ensure that blocks have not been counted more than once in the resource estimate.

During the validation of the AutoCAD files the presence of an yttrium halo around the previously interpreted zones was noted. Strings were created around the yttrium mineralization (Y sub-zone, Figure 17.2) but it was noted that there was some low-grade areas within the envelope. Categorical indicator kriging using a cut-off of 0.04% was carried out to define the high and low-grade areas of Y_2O_3.

Based on the mineralization it appears that the North T-Zone has had two or three stages of mineralization. The initial mineralization was yttrium and this was followed by beryllium. The fact that the F sub-zone is enriched in both beryllium and cerium suggests that cerium and the LREE were introduced during a third phase of mineralization and in turn, suffered later brecciation.

Figure 17.1 North T-Zone, C, D, E, F and Y Sub-Zones with Drill Holes



17.1.4 EXPLORATORY DATA ANALYSIS

ASSAYS

The North T-Zone was sampled by 84 drill holes. The basic statistics for the samples for total area by sub-zone are listed in Table 17.2 through to Table 17.6. Sub-zone OUT refers to the samples not lying within sub-zones C, D, E, F, HY and LY.

Table 17.2 North T-Zone Assay Statistics, BeO

BeO	All	C	D	E	F	HY	LY	Out
Valid cases	662	113	125	119	4	106	30	165
Mean	7387.64	8853.98	9187.20	14869.75	11150.00	2826.60	2513.33	3349.09
Std. error of mean	339.96	833.46	655.07	1095.05	1178.63	517.38	551.79	275.69
Variance	76510770.52	78496077.75	53638867.10	142695856.72	5556666.67	28373803.57	9134298.84	12540563.19
Std. Deviation	8747.04	8859.80	7323.86	11945.54	2357.26	5326.71	3022.30	3541.27
Variation Coefficient	1.18	1.00	0.80	0.80	0.21	1.88	1.20	1.06
rel. V. coefficient (%)	4.60	9.41	7.13	7.36	10.57	18.30	21.95	8.23
Skew	2.53	2.97	1.60	1.36	-0.10	7.17	3.87	2.77
Minimum	0.00	800.00	300.00	1000.00	8300.00	0.00	300.00	100.00
Maximum	63800.00	59000.00	41100.00	63800.00	13900.00	50000.00	16800.00	21800.00
Range	63800.00	58200.00	40800.00	FALSE	5600.00	50000.00	16500.00	21700.00
1st Percentile	100.00	856.00	378.00	1080.00	----	7.00	----	100.00
5th Percentile	515.00	1640.00	2500.00	2900.00	----	300.00	300.00	230.00
10th Percentile	1000.00	3040.00	3000.00	3700.00	----	400.00	430.00	500.00
25th Percentile	2100.00	3900.00	4150.00	6000.00	8850.00	1000.00	1050.00	1250.00
50th Percentile	4400.00	5800.00	6000.00	9600.00	11200.00	1900.00	1850.00	2300.00
75th Percentile	8900.00	10000.00	11850.00	23400.00	13400.00	2600.00	2900.00	4300.00
90th Percentile	19300.00	19180.00	19940.00	31800.00	----	4720.00	4600.00	6980.00
95th Percentile	26070.00	26490.00	22110.00	38200.00	----	9270.00	10310.00	10110.00
99th Percentile	42099.00	57222.00	38630.00	61660.00	----	47879.00	----	21602.00

Table 17.3 North T-Zone Assay Statistics, Nb_2O_5

Nb_2O_5	ALL	C	D	E	F	HY	LY	OUT
Valid cases	1063	108	126	78	11	259	101	380
Mean	5643.58	11025.37	3460.16	2081.79	364.55	6024.29	7315.84	5017.97
Std. error of mean	302.06	1722.80	579.69	370.57	82.16	554.02	1027.63	424.22
Variance	96991557.29	320549686.74	42340687.98	10711064.27	74247.27	79498212.19	106658468.53	68385758.68
Std. Deviation	9848.43	17903.90	6506.97	3272.78	272.48	8916.18	10327.56	8269.57
Variation Coefficient	1.75	1.62	1.88	1.57	0.75	1.48	1.41	1.65
rel. V. coefficient (%)	5.35	15.63	16.75	17.80	22.54	9.20	14.05	8.45
Skew	5.74	5.08	6.19	2.40	0.59	4.12	3.58	3.98
Minimum	0.00	200.00	40.00	0.00	60.00	270.00	70.00	0.00
Maximum	150900.00	150900.00	53900.00	14000.00	820.00	63100.00	61300.00	64900.00
Range	150900.00	150700.00	53860.00	14000.00	760.00	62830.00	61230.00	64900.00
1st Percentile	30.00	202.70	72.40	----	----	314.00	75.20	30.00
5th Percentile	272.00	904.50	297.00	0.00	----	500.00	820.00	200.50
10th Percentile	390.00	1218.00	414.00	39.00	68.00	740.00	1408.00	330.00
25th Percentile	1000.00	2552.50	1080.00	315.00	100.00	1630.00	2100.00	660.00
50th Percentile	2600.00	5265.00	2180.00	920.00	300.00	3620.00	4240.00	1915.00
75th Percentile	6300.00	13330.00	3600.00	1915.00	680.00	6700.00	7330.00	6137.50
90th Percentile	13260.00	24680.00	6400.00	8800.00	800.00	12100.00	14380.00	13490.00
95th Percentile	18760.00	44665.00	9985.50	11345.00	----	20500.00	28830.00	16395.00
99th Percentile	55236.00	142305.00	51767.00	----	----	57420.00	61260.00	52391.00

Table 17.4 North T-Zone Assay Statistics Ce_2O_3

Ce_2O_3	ALL	C	D	E	F	HY	LY	OUT
Valid cases	1189	115	130	122	26	269	108	419
Mean	1885.77	1348.35	1853.23	1225.90	34427.69	980.15	831.48	1069.36
Std. error of mean	205.50	94.41	215.73	258.38	5836.69	59.48	92.02	200.36
Variance	50210756.81	1024936.72	6050380.18	8144573.15	885741955.08	951769.38	914444.51	16821205.56
Std. Deviation	7085.95	1012.39	2459.75	2853.87	29761.42	975.59	956.27	4101.37
Variation Coefficient	3.76	0.75	1.33	2.33	0.86	1.00	1.15	3.84
rel. V. coefficient (%)	10.90	7.00	11.64	21.08	16.95	6.07	11.07	18.74
Skew	8.83	1.09	3.21	4.47	0.50	3.16	2.96	12.64
Minimum	10.00	60.00	100.00	50.00	170.00	20.00	30.00	10.00
Maximum	93000.00	5540.00	15100.00	21080.00	93000.00	8750.00	5410.00	66000.00
Range	92990.00	5480.00	15000.00	21030.00	92830.00	8730.00	5380.00	65990.00
1^{st} Percentile	50.00	60.00	106.20	52.30	----	47.00	31.80	42.00
5^{th} Percentile	100.00	142.00	175.50	80.00	954.00	150.00	164.50	90.00
10^{th} Percentile	160.00	210.00	261.00	110.00	2963.00	190.00	216.00	120.00
25^{th} Percentile	275.00	480.00	565.00	160.00	5470.00	335.00	310.00	220.00
50^{th} Percentile	600.00	1300.00	1090.00	215.00	30950.00	720.00	520.00	420.00
75^{th} Percentile	1310.00	1850.00	2312.50	935.00	56750.00	1300.00	880.00	940.00
90^{th} Percentile	2620.00	2674.00	3841.00	3683.00	80510.00	1960.00	1795.00	1640.00
95^{th} Percentile	4305.00	3198.00	7557.50	5660.00	90270.00	2565.00	2870.00	2880.00
99^{th} Percentile	43540.00	5290.40	14108.00	19405.60	----	4704.00	5380.30	10928.00

Table 17.5 North T-Zone Assay Statistics, Nd_2O_3

Nd_2O_3	ALL	C	D	E	F	HY	LY	OUT
Valid cases	307	56	35	24	19	44	29	100
Mean	2096.03	530.54	1011.43	347.92	21832.63	536.14	264.48	1239.40
Std. error of mean	418.04	42.82	207.69	109.06	4409.24	62.79	39.95	422.29
Variance	53651438.41	102685.16	1509677.31	285434.60	369386331.58	173480.07	46289.90	17833011.76
Std. Deviation	7324.71	320.45	1228.69	534.26	19219.43	416.51	215.15	4222.92
Variation Coefficient	3.49	0.60	1.21	1.54	0.88	0.78	0.81	3.41
rel. V. coefficient (%)	19.94	8.07	20.53	31.35	20.20	11.71	15.11	34.07
Skew	6.27	0.32	2.26	2.23	1.47	2.69	2.01	6.32
Minimum	10.00	60.00	30.00	20.00	1700.00	10.00	10.00	10.00
Maximum	79500.00	1160.00	5030.00	2160.00	79500.00	2540.00	1060.00	33600.00
Range	79490.00	1100.00	5000.00	2140.00	77800.00	2530.00	1050.00	33590.00
1st Percentile	10.80	----	----	----	----	----	----	10.40
5th Percentile	60.00	80.00	70.00	20.00	1700.00	92.50	20.00	80.00
10th Percentile	90.00	120.00	102.00	25.00	3280.00	125.00	60.00	90.00
25th Percentile	160.00	217.50	250.00	50.00	5740.00	272.50	140.00	140.00
50th Percentile	370.00	485.00	620.00	105.00	20100.00	510.00	210.00	270.00
75th Percentile	800.00	777.50	1340.00	427.50	35500.00	710.00	340.00	635.00
90th Percentile	2566.00	1040.00	2670.00	1215.00	38900.00	840.00	560.00	1700.00
95th Percentile	8228.00	1134.50	5030.00	1925.00	79500.00	1200.00	820.00	4317.50
99th Percentile	36492.00	----	----	----	----	----	----	33503.00

Table 17.6 North T-Zone Assay Statistics, Y_2O_3

Y_2O_3	ALL	C	D	E	F	HY	LY	OUT
Valid cases	1191	115	132	122	26	271	108	417
Mean	905.16	1205.57	2509.70	276.64	731.15	1517.60	280.74	272.85
Std. error of mean	52.44	168.78	330.01	29.49	206.15	102.95	23.23	25.09
Variance	3275459.11	3275835.43	14376025.86	106078.70	1104970.62	2872242.74	58270.48	262533.90
Std. Deviation	1809.82	1809.93	3791.57	325.70	1051.18	1694.77	241.39	512.38
Variation Coefficient	2.00	1.50	1.51	1.18	1.44	1.12	0.86	1.88
rel. V. coefficient (%)	5.79	14.00	13.15	10.66	28.20	6.78	8.27	9.20
Skew	6.80	2.53	4.37	3.91	3.12	3.08	2.57	5.72
Minimum	0.00	50.00	60.00	10.00	90.00	0.00	30.00	0.00
Maximum	31600.00	9490.00	31600.00	2120.00	4990.00	13550.00	1640.00	4480.00
Range	31600.00	9440.00	31540.00	2110.00	4900.00	13550.00	1610.00	4480.00
1st Percentile	0.00	50.00	63.30	14.60	----	87.20	30.00	0.00
5th Percentile	30.00	106.00	146.00	41.50	97.00	310.00	49.00	0.00
10th Percentile	60.00	130.00	200.00	60.00	117.00	420.00	70.00	30.00
25th Percentile	140.00	200.00	415.00	145.00	245.00	580.00	122.50	70.00
50th Percentile	310.00	400.00	1025.00	215.00	345.00	950.00	230.00	140.00
75th Percentile	840.00	1520.00	3657.50	282.50	737.50	1730.00	340.00	280.00
90th Percentile	2318.00	3578.00	5985.00	397.00	2124.00	3390.00	564.00	492.00
95th Percentile	4004.00	6268.00	8508.00	729.50	4129.00	5410.00	772.00	870.00
99th Percentile	7877.20	9230.80	27079.00	2069.40	----	8310.00	1584.20	3864.40

The majority of the histograms suggest that the elements in each sub-zone approximate a lognormal distribution. This is supported by the fact that nearly all of the elements in each sub-zone are positively skewed (mean value greater than median). Due to the small number of data points in the F sub-zone, the histograms were not clearly defined. In sub-zones C and D there appears to be two lognormal populations of Y_2O_3.

The statistics for the samples not contained within the solid (OUT) show that there are high values for Ce_2O_3 (6.6%), Nb_2O_5 (6.5%) and Nd_2O_3 (3.4%) that are not contained in the solid. There is also evidence of Y_2O_3 values greater than 0.04% occurring below the solids. This sub-zone is characterized by relatively high coefficients of variation (CV). This is probably due to the samples coming from several domains that have not as yet been identified.

The remainder of the sections deal with the statistics of the elements contained within the solids.

Sub-zones C, D, E and F are relatively enriched in BeO. The F sub-zone has the highest median value (1.1%) and E the highest mean (1.5%). All of the sub-zones are positively skewed except for F. The CV is lower than or equal to all sub-zones apart from HY (1.88).

The majority of the Ce_2O_3 mineralization is contained in the F sub-zone, which has a median value of 3.0% (mean 3.4%). The CV ranges from 0.75 to 2.33. Sub-zone E has a relatively high CV of 2.33.

The F sub-zone is significantly lower in Nb_2O_5 when compared to the other sub-zones. Sub-zone C contains the highest values with a median value of 0.5% (mean 1.1%). The CV ranges from 0.75 Y_2O_3 to a high in sub-zone E of 1.88.

The highest Y_2O3 value is contained within sub-zone D with a median value of 0.1% (mean 0.3%). The statistics also indicate that the categorical indicator method used to separate out the lower and higher grades in the yttrium was successful. Both sub-zone C and D have relatively CV of around 1.50. This may be due to there being two populations of yttrium within the defined solids as indicated by the histograms.

Box plots for the each element by sub-zone are contained in Appendix B.

CAPPING

All data sets with a coefficient of variation greater than 1.2, more than 40% of metal in the top decile or where the top decile had more than 2.3 times the amount of metal than the previous decile were investigated using statistics and rank disintegration techniques, to determine the potential risk of grade distortion from high-grade assays. Outliers (anomalously high values) were defined as values lying outside four standard deviations and having a P-value (statistical probability) of less than 5%. Capping levels and the effects of capping are shown in Table 17.7.

Table 17.7 Summary Statistics Showing Capping

Sub-Zone	Element	Metal % Last Decile	Decile Ratio	CV	Top Cut	Capping Level	Number Capped	Metal % Last Decile	Decile Ratio	CV
C	BeO	35	2.25	1.00	N			35	2.25	1.00
	Ce_2O_3	28	1.72	0.75	N			28	1.72	0.75
	Nb_2O_5	47	3.33	1.62	Y	63,710	1	44	2.86	1.24
	Nd_2O_3	22	1.49	0.60	N			22	1.49	0.60
	Y_2O_3	51	2.63	1.50	Y	9,051	1	51	2.61	1.49
D	BeO	28	1.38	0.79	N			28	1.38	0.79
	Ce_2O_3	45	3.01	1.33	Y	11,063	4	44	2.78	1.24
	Nb_2O_5	45	3.66	1.90	Y	20,815	2	35	2.14	1.16
	Nd_2O_3	44	2.69	1.20	Y	3,071	2	38	2.08	0.98
	Y_2O_3	42	2.02	1.51	Y	14,674	2	40	1.79	1.22
E	BeO	27	1.37	0.80	N			27	1.37	0.80
	Ce_2O_3	69	5.10	2.32	Y	8,269	4	62	3.65	1.81
	Nb_2O_5	55	3.89	1.49	Y	None Applied		55	3.89	1.49
	Nd_2O_3	53	2.19	1.50	Y	1,403	1	49	1.83	1.35
	Y_2O_3	38	2.92	1.17	N			38	2.92	1.17
F	BeO	21	0.66	NA	N			21	0.66	NA
	Ce_2O_3	36	2.74	0.85	N			36	2.74	0.85
	Nb_2O_5	36	1.62	0.71	N			36	1.62	0.71
	Nd_2O_3	26	1.13	0.86	N			26	1.13	0.86
	Y_2O_3	53	3.75	1.41	Y	2,910	1	46	2.81	1.13
HY	BeO	40	3.32	1.86	Y	22,655	1	38	3.15	1.26
	Ce_2O_3	33	2.01	0.99	N			33	2.01	0.99
	Nb_2O_5	47	3.36	1.51	Y	36,800	6	43	2.83	1.22
	Nd_2O_3	25	1.43	0.75	N			25	1.43	0.75
	Y_2O_3	37	2.24	1.11	N			37	2.24	1.11
LY	BeO	37	1.93	1.19	N			37	1.93	1.19
	Ce_2O_3	41	2.65	1.14	Y	None Applied		41	2.65	1.14
	Nb_2O_5	44	2.73	1.39	Y	41,400	3	41	2.43	1.21
	Nd_2O_3	28	1.59	0.79	N			28	1.59	0.79
	Y_2O_3	28	1.76	0.85	N			28	1.76	0.85

A total of 28 values were cut. In the majority of sub-zones contained within the solids the cutting was able to reduce the CV to close to 1.2. This was however not the case for sub-zone E.

COMPOSITES

Assays were composited to 3.05 m lengths based on the raw statistics for Length (Table 17.8). The minimum composite length allowed is 0.25. The compositing method chosen in Datamine is the one whereby all samples are included in one of the composites. This is achieved by adjusting the composite length but trying to keep the length as close as possible to the 3.05 m.

Compositing was controlled by the sub-zone codes assigned to the drill hole file (See Appendix A).

Table 17.8 North T-Zone Raw Statistics of Sample Length by Sub-Zone

Length	All	C	D	E	F	HY	LY	OUT
Valid cases	1537	116	134	128	28	276	126	729
Mean	3.61	2.68	2.40	2.31	3.00	2.67	3.17	4.66
Std. error of mean	0.13	0.06	0.07	0.08	0.37	0.05	0.12	0.26
Variance	24.83	0.49	0.63	0.73	3.79	0.69	1.72	49.17
Std. Deviation	4.98	0.70	0.79	0.85	1.95	0.83	1.31	7.01
Variation Coefficient	1.38	0.26	0.33	0.37	0.65	0.31	0.41	1.50
rel. V. coefficient (%)	3.52	2.42	2.84	3.26	12.29	1.87	3.69	5.57
Skew	7.37	-0.90	-0.15	0.43	2.49	0.20	3.17	5.13
Minimum	0.20	0.92	0.91	0.61	0.92	0.91	0.92	0.20
Maximum	64.92	3.97	4.27	5.49	10.52	6.40	11.28	64.92
Range	64.72	3.05	3.36	4.88	9.60	5.49	10.36	64.72
1st Percentile	0.91	0.97	0.91	0.70	----	0.91	0.96	0.90
5th Percentile	1.46	1.52	1.22	1.52	0.98	1.22	1.52	1.22
10th Percentile	1.52	1.52	1.52	1.52	1.20	1.52	1.53	1.53
25th Percentile	2.13	2.14	1.53	1.52	1.87	2.13	3.04	2.42
50th Percentile	3.05	3.05	2.74	2.14	2.67	3.04	3.05	3.05
75th Percentile	3.05	3.05	3.05	3.05	3.51	3.05	3.05	3.36
90th Percentile	4.00	3.05	3.05	3.05	4.82	3.35	3.96	7.32
95th Percentile	7.35	3.36	3.35	3.22	8.96	3.71	5.77	17.24
99th Percentile	26.87	3.97	4.27	5.14	----	5.29	10.70	41.96

17.1.5 *SPATIAL ANALYSIS*

Variography, using Sage2001 software, was completed for a grade indicator (YIND) and for BeO, Ce_2O_3, Nb_2O_5, Nd_2O_3 and Y_2O_3 in the low- and high-grade zones within the Y_2O_3 halo. The software was also used to compute correlograms for the same oxides in sub-zones C, D, E and F.

Downhole correlograms were used to determine nugget effect and then correlograms were modelled to determine spatial continuity of the grade indicator and oxides.

A two structure spherical model was used to model the correlograms. Tables 17.9 and 17.10 summarize the results of the variography. Sage was not able to define correlograms for all of the oxides in each sub-zone. In these instances, the correlograms from an adjacent sub-zone were used.

	Ce_2O_3	2	[illegible]	72	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	Ce_2O_3	3	059	02	0.15	0.46	17	0.39	22
	Nb_2O_5	1	311	02	0.00	0.50	64	0.51	243
C	Nb_2O_5	2	042	35	0.00	0.50	6	0.51	82
	Nb_2O_5	3	039	-55	0.00	0.50	32	0.51	32
	Nd_2O_3	1	332	-06	0.45	0.02	41	0.53	42
	Nd_2O_3	2	242	01	0.45	0.02	16	0.53	33
	Nd_2O_3	3	339	84	0.45	0.02	10	0.53	17
	Y_2O_3	1	357	-07	0.00	0.80	34	0.20	644
	Y_2O_3	2	342	82	0.00	0.80	9	0.20	138
	Y_2O_3	3	087	02	0.00	0.80	28	0.20	47
	BeO	1	330	00	0.10	0.77	13	0.14	42
	BeO	2	060	00	0.10	0.77	16	0.14	16
	BeO	3	090	90	0.10	0.77	13	0.14	13
	Ce_2O_3	1	023	25	0.05	0.62	17	0.33	89
	Ce_2O_3	2	298	-10	0.05	0.62	63	0.33	63
	Ce_2O_3	3	049	63	0.05	0.62	20	0.33	20
	Nb_2O_5	1	090	90	0.25	0.37	18	0.38	40
D	Nb_2O_5	2	330	00	0.25	0.37	17	0.38	26
	Nb_2O_5	3	060	00	0.25	0.37	15	0.38	18
	Nd_2O_3	1	332	-06	0.45	0.02	41	0.53	42
	Nd_2O_3	2	242	01	0.45	0.02	16	0.53	33
	Nd_2O_3	3	339	84	0.45	0.02	10	0.53	17
	Y_2O_3	1	330	00	0.55	0.27	15	0.18	46
	Y_2O_3	2	060	00	0.55	0.27	41	0.18	41
	Y_2O_3	3	090	90	0.55	0.27	14	0.18	29
	BeO	1	152	-51	0.35	0.37	25	0.28	198
	BeO	2	151	39	0.35	0.37	49	0.28	50
	BeO	3	062	00	0.35	0.37	6	0.28	26
	Ce_2O_3	1	043	-54	0.00	0.21	10	0.79	144
	Ce_2O_3	2	054	36	0.00	0.21	10	0.79	53
	Ce_2O_3	3	320	05	0.00	0.21	18	0.79	18
	Nb_2O_5	1	309	-34	0.00	0.10	5	0.90	130
E	Nb_2O_5	2	048	-14	0.00	0.10	14	0.90	118
	Nb_2O_5	3	337	53	0.00	0.10	8	0.90	8
	Nd_2O_3	1	332	-06	0.45	0.02	41	0.53	42
	Nd_2O_3	2	242	01	0.45	0.02	16	0.53	33
	Nd_2O_3	3	339	84	0.45	0.02	10	0.53	17
	Y_2O_3	1	093	-15	0.60	0.18	36	0.22	249
	Y_2O_3	2	007	14	0.60	0.18	122	0.22	122
	Y_2O_3	3	318	-70	0.60	0.18	5	0.22	31

	Nb_2O_5	2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	Nb_2O_5	3	060	00	0.25	0.37	15	0.38	18
	Nd_2O_3	1	332	-06	0.45	0.02	41	0.53	42
	Nd_2O_3	2	242	01	0.45	0.02	16	0.53	33
	Nd_2O_3	3	339	84	0.45	0.02	10	0.53	17
	Y_2O_3	1	009	-10	0.40	0.49	40	0.11	152
	Y_2O_3	2	297	62	0.40	0.49	2	0.11	69
	Y_2O_3	3	094	26	0.40	0.49	38	0.11	38
HY	BeO	1	359	04	0.60	0.02	20	0.38	250
	BeO	2	210	86	0.60	0.02	102	0.38	102
	BeO	3	089	02	0.60	0.02	49	0.38	49
	Ce_2O_3	1	311	02	0.20	0.60	47	0.20	133
	Ce_2O_3	2	044	55	0.20	0.60	7	0.20	63
	Ce_2O_3	3	219	35	0.20	0.60	13	0.20	36
	Nb_2O_5	1	352	-03	0.10	0.54	43	0.36	307
	Nb_2O_5	2	081	07	0.10	0.54	30	0.36	152
	Nb_2O_5	3	282	82	0.10	0.54	11	0.36	27
	Nd_2O_3	1	332	-06	0.45	0.02	41	0.53	42
	Nd_2O_3	2	242	01	0.45	0.02	16	0.53	33
	Nd_2O_3	3	339	84	0.45	0.02	10	0.53	17
	Y_2O_3	1	009	-10	0.40	0.49	40	0.11	152
	Y_2O_3	2	297	62	0.40	0.49	2	0.11	69
	Y_2O_3	3	094	26	0.40	0.49	38	0.11	38
LY	BeO	1	330	00	0.10	0.77	13	0.14	42
	BeO	2	060	00	0.10	0.77	16	0.14	16
	BeO	3	090	90	0.10	0.77	13	0.14	13
	Ce_2O_3	1	045	05	0.30	0.29	44	0.41	104
	Ce_2O_3	2	296	73	0.30	0.29	6	0.41	62
	Ce_2O_3	3	136	16	0.30	0.29	16	0.41	16
	Nb_2O_5	1	016	04	0.00	0.20	13	0.80	101
	Nb_2O_5	2	106	04	0.00	0.20	10	0.80	25
	Nb_2O_5	3	243	85	0.00	0.20	10	0.80	17
	Nd_2O_3	1	332	-06	0.45	0.02	41	0.53	42
	Nd_2O_3	2	242	01	0.45	0.02	16	0.53	33
	Nd_2O_3	3	339	84	0.45	0.02	10	0.53	17
	Y_2O_3	1	009	-10	0.40	0.49	40	0.11	152
	Y_2O_3	2	297	62	0.40	0.49	2	0.11	69
	Y_2O_3	3	094	26	0.40	0.49	38	0.11	38

The correlograms correspond reasonably well to the geology. There does appear to be a minor down hole effect in some of the correlograms.

The inverse distance models used search radii that were based on the modelled correlograms of the sub-zones.

17.1.6 BLOCK MODEL

Block models were established in Datamine for sub-zones C, D, E, F and Y. The block model for each sub-zone was sequentially added to obtain the correct block coding for the model and to ensure that there is no duplication of blocks. The block model has been cut to ensure that only blocks below the topography have been included. All areas used the same protomodel.

BLOCK SIZE

A standard block size of 5 x 5 x 3 m (Easting x Northing x Elevation) was used for the interpolation. This was based on the average sample spacing on the property. The block size is also the same as that used in the historic estimates. Sub-celling was allowed in order to improve the fill of the interpreted solids. The minimum cell sizes allowed were one metre in the X and Z directions and infinite splitting in the Y direction.

INTERPOLATION PLAN

A two-pass system was also used for the categorical indicator and grade interpolation grades into the sub-zones. The first was at the sill range and the second at twice the sill range. The grade interpolation plan is summarized in Table 17.11.

Table 17.11 Indicator and Grade Interpolation Plan

Parameter	Pass 1	Pass 2
Minimum Samples	4	3
Maximum Samples	12	12
Maximum per Hole	3	3
Search Distance		Pass 1*2
Search Type	Ellipsoidal	Ellipsoidal
Octant Search On/Off	Off	Off
Anistrophy	ZYZ Rotation	ZYZ Rotation
Discretisation	5 x 5 x 3	5 x 5 x 3
Negative Weight	Set to Zero	Set to Zero

Three methods of interpolation were used for grade estimation: ordinary kriging, inverse distance squared and nearest neighbour.

MINERAL RESOURCE CLASSIFICATION

Several factors are considered in the definition of a resource classification:

- CIM requirements and guidelines
- Experience with similar deposits
- Spatial continuity

- Confidence limit analysis

Mineral resources were classified according to a number of criteria. Table 17.12 summarizes those classification parameters.

In the block model, the sill range of the BeO correlogram model was used as one of the criteria to classify the Measured and Indicated in the C, D and E sub-zones. The range of the Ce_2O_3 model was used for the F sub-zone and Y_2O_3 was used for the Y sub-zone. Based on classification reported in Table 17.12, approximately 96.6% of the tonnes estimated in the North T-Zone model are Indicated Mineral Resources.

Table 17.12 Resource Classification Criteria

Indicated	Inferred
The range at sill elevation	Minimum of three composites
Minimum of two drill holes	Greater than range at sill elevation
Minimum of four composites	

MINERAL RESOURCE TABULATION

The Indicated and Inferred Mineral Resources are summarized in Table 17.13 to Table 17.16.

Table 17.13 North T-Zone Indicated Mineral Resources at Various Cut-offs

Cut-off	Cutting Element	Sub-Zone	Tonnes	Density	$\%Y_2O_3$	%BeO	$\%Ce_2O_3$	$\%Nb_2O_5$	$\%Nd_2O_3$
0.20	%BeO	C	213,037	2.91	0.13	0.85	0.14	0.95	0.027
0.40	%BeO	C	200,352	2.91	0.14	0.88	0.14	0.96	0.027
0.60	%BeO	C	124,376	2.91	0.17	1.11	0.15	1.05	0.028
0.80	%BeO	C	81,633	2.91	0.20	1.32	0.16	1.05	0.030
0.20	%BeO	D	159,754	2.72	0.22	0.86	0.18	0.29	0.019
0.40	%BeO	D	155,108	2.72	0.23	0.87	0.18	0.29	0.020
0.60	%BeO	D	128,451	2.72	0.24	0.95	0.19	0.29	0.022
0.80	%BeO	D	83,241	2.72	0.25	1.08	0.17	0.28	0.027
0.20	%BeO	E	142,949	2.66	0.03	1.23	0.09	0.10	0.004
0.40	%BeO	E	142,949	2.66	0.03	1.23	0.09	0.10	0.004
0.60	%BeO	E	131,440	2.66	0.03	1.29	0.09	0.11	0.004
0.80	%BeO	E	88,619	2.66	0.03	1.57	0.13	0.13	0.006
0.05	$\%Ce_2O_3$	F	43,877	2.68	0.06	0.16	3.14	0.01	1.552
0.10	$\%Ce_2O_3$	F	43,877	2.68	0.06	0.16	3.14	0.01	1.552
0.15	$\%Ce_2O_3$	F	43,877	2.68	0.06	0.16	3.14	0.01	1.552
0.20	$\%Ce_2O_3$	F	43,877	2.68	0.06	0.16	3.14	0.01	1.552
0.02	$\%Y_2O_3$	Y	730,332	2.72	0.12	0.07	0.09	0.62	0.007
0.04	$\%Y_2O_3$	Y	593,815	2.72	0.15	0.08	0.09	0.59	0.008
0.06	$\%Y_2O_3$	Y	591,361	2.72	0.15	0.08	0.09	0.59	0.007
0.08	$\%Y_2O_3$	Y	554,979	2.72	0.15	0.08	0.09	0.56	0.007

Table 17.14 North T-Zone Indicated Mineral Resources at Recommended Cut-offs

Cut-off	Cutting Element	Sub-Zone	Tonnes	Density	$\%Y_2O_3$	%BeO	$\%Ce_2O_3$	$\%Nb_2O5$	%Nd2O3
0.40	%BeO	C	200,352	2.91	0.14	0.88	0.14	0.96	0.027
0.40	%BeO	D	155,108	2.72	0.23	0.87	0.18	0.29	0.020
0.40	%BeO	E	142,949	2.66	0.03	1.23	0.09	0.10	0.004
0.10	$\%Ce_2O_3$	F	43,877	2.68	0.06	0.16	3.14	0.01	1.552
0.04	$\%Y_2O_3$	Y	593,815	2.72	0.15	0.08	0.09	0.59	0.008
Total			1,136,101	2.74	0.14	0.48	0.23	0.53	0.07

Table 17.15 North T-Zone Inferred Mineral Resources at Various Cut-offs

Cut-off	Cutting Element	Sub-Zone	Tonnes	Density	$\%Y_2O_3$	%BeO	$\%Ce_2O_3$	$\%Nb_2O_5$	$\%Nd_2O_3$
0.20	%BeO	D	2,906	2.72	0.37	0.70	0.19	0.41	0.001
0.40	%BeO	D	2,906	2.72	0.37	0.70	0.19	0.41	0.001
0.60	%BeO	D	2,311	2.72	0.40	0.74	0.18	0.40	0.001
0.80	%BeO	D	671	2.72	0.70	0.87	0.11	0.37	0.001
0.20	%BeO	E	2	2.66	0.03	0.81	0.04	0.00	0.000
0.40	%BeO	E	2	2.66	0.03	0.81	0.04	0.00	0.000
0.60	%BeO	E	2	2.66	0.03	0.81	0.04	0.00	0.000
0.80	%BeO	E	2	2.66	0.03	0.81	0.04	0.00	0.000
0.05	$\%Ce^2O^3$	F	1,338	2.68	0.06	0.16	2.41	0.03	0.558
0.10	$\%Ce^2O^3$	F	1,338	2.68	0.06	0.16	2.41	0.03	0.558
0.15	$\%Ce^2O^3$	F	1,338	2.68	0.06	0.16	2.41	0.03	0.558
0.20	$\%Ce^2O^3$	F	1,338	2.68	0.06	0.16	2.41	0.03	0.558

Table 17.16 North T-Zone Inferred Mineral Resources at Recommended Cut-offs

Cut-off	Cutting Element	Sub-Zone	Tonnes	Density	$\%Y_2O_3$	%BeO	$\%Ce_2O_3$	$\%Nb_2O_5$	$\%Nd_2O_3$
0.40	%BeO	D	2,906	2.72	0.37	0.70	0.19	0.41	0.001
0.40	%BeO	E	2	2.66	0.03	0.81	0.04	0.00	0.000
0.10	$\%Ce_2O_3$	F	1,338	2.68	0.06	0.16	2.41	0.03	0.558
Total			4,247	2.71	0.27	0.53	0.89	0.29	0.177

No known environmental, permitting, legal, title, taxation, socio-economic, marketing or other relevant issues are known to the writers that may affect the estimate of mineral resources.

A portion of the resources on the property has been categorized as Inferred. Due to the uncertainty of Inferred Mineral Resources it cannot be assumed that all or any part of this resource will be upgraded to an Indicated or Measured Resource as a result of continued exploration.

17.1.7 MODEL VALIDATION

The North T-Zone grade interpolation plan and model was validated using six methods:

- Visual comparison of search ellipses generated in Datamine to those output by Sage.
- Comparison of block model volumes to volumes within solids.
- Visual comparison of colour-coded block model grades with drill hole grades on section and plan plots.
- Comparison of the global mean block grades for ordinary kriging, nearest neighbour and inverse distance squared methods.
- Comparison of block model grades and drill hole grades using swath plots.
- Comparison of block model grades to historic estimates.

VISUAL COMPARISON OF SEARCH ELLIPSES

Sage generates 3-D views of the estimated search ellipses. These plots have compared to slices through the search ellipse made in Datamine to ensure that the correct rotation and dimensions have been inputted for grade interpolation.

BLOCK VOLUME/SOLID VOLUME COMPARISON

The block model volumes were compared to the volume within the interpreted mineralized envelopes. The results are shown by sub-zone in Table 17.17. Only minor differences were noted.

Table 17.17 Comparison of Block Model and Solid Volumes

Sub-Zone	Model Vol	Solid Vol	% Diff
C	73,599	74,035	-0.59
D	60,335	61,453	-1.82
E	53,790	53,806	-0.03
F	16,876	16,862	0.08
Y	385,251	385,236	0.00

VISUAL VALIDATION OF SECTIONS

The visual comparisons of block model grades with composite grades for the five veins show a reasonable correlation between the values. No significant discrepancies were apparent from the sections and plans reviewed. Appendix C contains representative plans and sections through the veins.

GLOBAL COMPARISONS

The global block grade statistics for the ordinary kriging model are compared to the declustered means for each sub-zone (Table 17.18). Percentage differences of greater than 10% have been highlighted. The higher differences are in general associated with low numbers of samples.

Table 17.18 Comparison of Top Cut Declustered Drill Holes with Ordinary Kriged Grades (g/t)

Sub-Zone	Data	BeO	Ce_2O_3	NB_2O_5	ND_2O_3	Y_2O_3
C	Drill Hole	8,078	1,329	9,865	237	1,212
	Model	8,489	1,398	9,512	267	1,313
% Difference		-5%	-5%	4%	-11%	-8%
D	Drill Hole	8,500	1,742	2,925	177	2,160
	Model	8,524	1,817	2,894	189	2,241
% Difference		0%	-4%	1%	-6%	-4%
E	Drill Hole	13,321	1,040	1,192	41	252
	Model	12,323	872	1,047	38	251
% Difference		8%	19%	14%	8%	1%
F	Drill Hole	1,087	28,994	126	13,418	483
	Model	1,572	31,221	136	15,222	620
% Difference		-31%	-7%	-7%	-12%	-22%
HY	Drill Hole	884	939	5,395	79	1,457
	Model	774	896	5,874	75	1,466
% Difference		14%	5%	-8%	6%	-1%
LY	Drill Hole	417	643	5,485	63	208
	Model	444	663	6,490	53	222
% Difference		-6%	-3%	-15%	19%	-6%

A further check was carried out on the interpolation where the ordinary kriged (OK) grades were compared to the nearest neighbour (NN) and inverse distance squared (ID^2) interpolation (Table 17.19). In general, there is agreement between the ordinary kriged model, inverse distance and nearest neighbour models for the elements. Only the F sub-zone shows consistent differences. This is probably due to the few samples in this sub-zone.

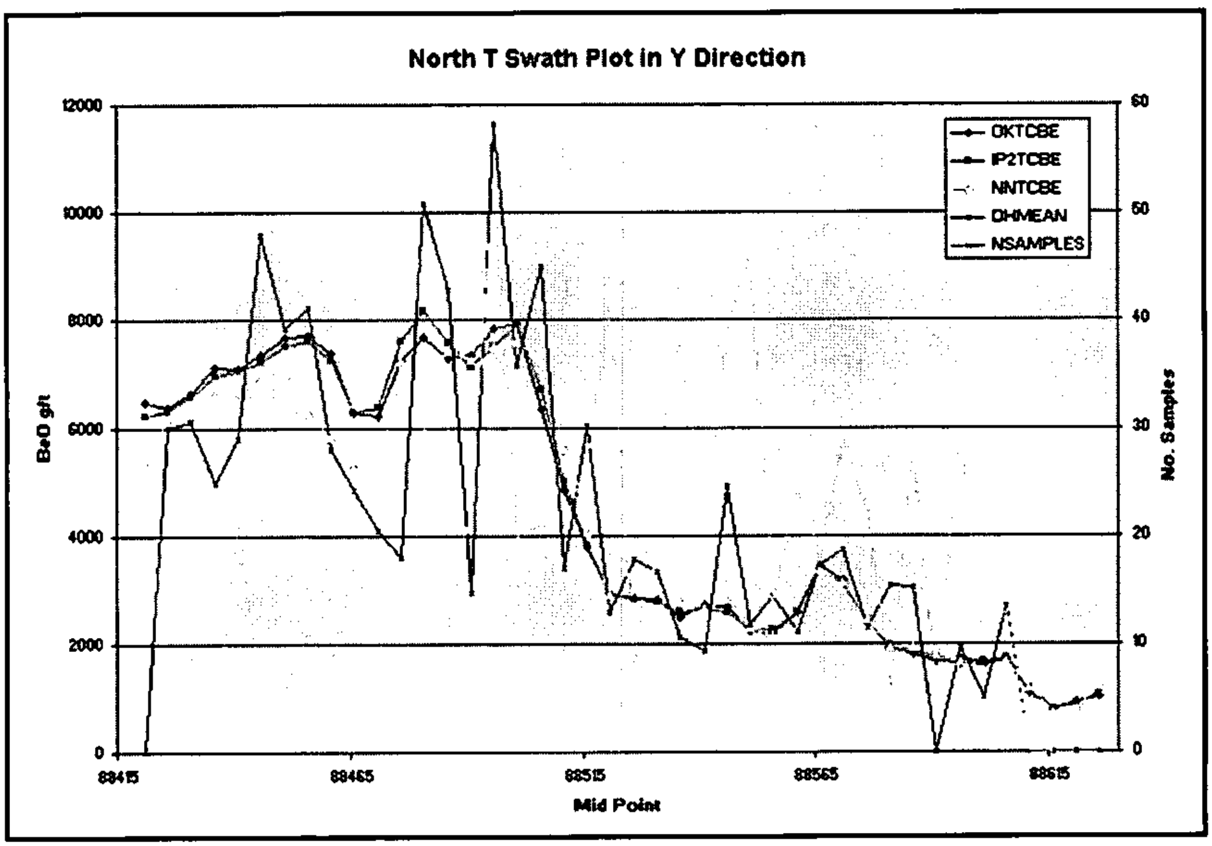
SWATH PLOTS

Swath plots have been generated for ordinary kriged, inverse distance and nearest neighbour for the total model. An example of a swath plot is present below (Figure 17.2). Appendix D contains swath plots for all of the interpolated elements.

Table 17.19 Comparison of Interpolation for Ordinary Kriging

Sub-Zone	Field	BeO	Ce_2O_3	Nb_2O_5	Nd_2O_3	Y_2O_3	% OK BeO	%OK Ce_2O_3	%OK Nb_2O_5	%OK Nd_2O_3	%OK Y_2O_3
C	OK	8,489	1,397	9,512	267	1,313					
C	ID2	8,316	1,422	9,998	279	1,290	-2%	2%	5%	4%	-2%
C	NN	8,699	1,359	9,560	269	1,454	2%	-3%	1%	1%	11%
D	OK	8,524	1,817	2,894	189	2,241					
D	ID2	8,623	1,805	2,921	96	2,203	1%	-1%	1%	4%	-2%
D	NN	8,823	1,811	2,730	177	2,279	4%	0%	-6%	-6%	2%
E	OK	12,323	872	1,047	38	250					
E	ID2	12,556	893	970	39	246	2%	2%	-7%	4%	-2%
E	NN	11,189	804	921	35	243	-9%	-8%	-12%	-7%	-3%
F	OK	1,572	31,220	136	15,222	620					
F	ID2	1,797	29,623	135	14,597	627	14%	-5%	-1%	-4%	1%
F	NN	1,296	30,287	147	15,553	560	18%	-3%	7%	2%	-10%
HY	OK	774	896	5,874	75	1,466					
HY	ID2	779	897	5,876	71	1,444	1%	0%	0%	-5%	-2%
HY	NN	828	914	6,110	72	1,451	7%	2%	4%	-4%	-1%
LY	OK	444	663	6,490	53	222					
LY	ID2	437	685	6,010	51	222	-1%	3%	-7%	-4%	0%
LY	NN	382	673	6,560	50	237	14%	2%	1%	-6%	7%

Figure 17.2 BeO Swath Plot in Y Direction



17.2 LAKE ZONE

17.2.1 INTRODUCTION

In order to carry out the evaluation on the property, a digital database for collars, surveys and assays was imported into Datamine Studio 3 from Excel databases supplied by Avalon. The geomorphology of Hoidas Lake, lithological data and Y_2O_3 assays were used to define the overall geometry of the mineralized zone. The interpretation was reviewed by Dr D. Trueman. The deposit is triangular in shape and measures approximately 2 km by 2 km with a maximum thickness of 200 m and covers an area of 2.3 km^2.

The database used to carry out the resource contains a total of 52 drill holes and 9,150 assay entries above trace for BeO, Ce_2O_3, Ga_2O_3, La_2O_3, Nb_2O_5, Ta_2O_3, U, Y_2O_5, and ZrO_2.

17.2.2 DATA

DATABASE

In 2006, six drill holes were assayed for the majority of REEs. The assay results for Ce_2O_3, La_2O_3 and Y_2O_3 were added to the initial database where they were coded as missing or trace. The final Lake Zone database contains 699 data entries of BeO, 1,641 of Ce_2O_3, 48 of Ga_2O_3, 371 of La_2O_3, 1,701 of Nb_2O_5, 1,615 of Ta_2O_5, 174 of U, 1,642 of Y_2O_3, and 1,289 of ZrO_2 above trace. There is a good correlation between Ce_2O_5 and La_2O_3 (0.94) and moderate correlation between Ta_2O_5, Nb_2O_5 and ZrO_2 (0.79 to 0.85). Due to the low number of assays above trace for Ga_2O_3 and U these oxide/elements have not been reported.

The supplied database uses the same coding for trace values and if no assay was requested. Both of these were set to zero prior to interpolation into the block model. This is likely to lead to a conservative estimate.

17.2.3 GEOLOGICAL INTERPRETATION

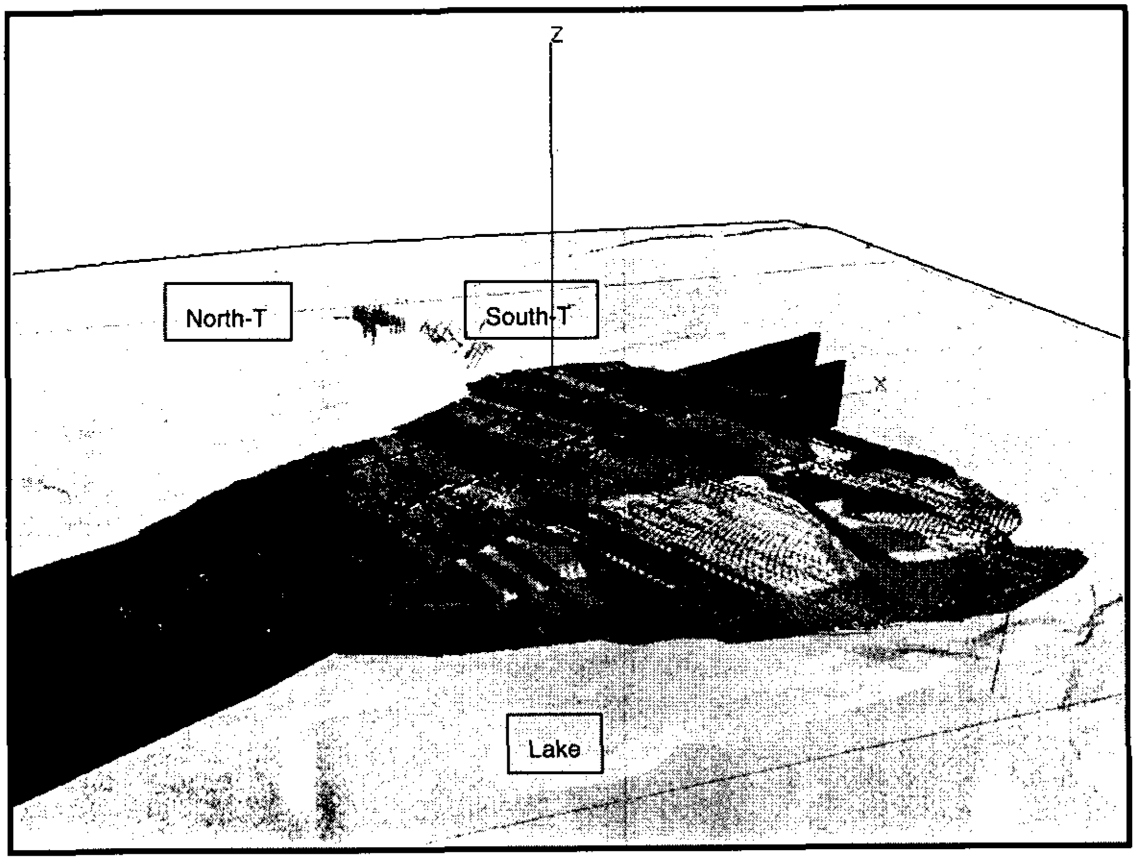
The geomorphology of Hoidas Lake, lithological data and Y_2O_3 assays were used to define the overall geometry of the deposit. A cut-off of 0.04% Y_2O_3 was used. Three dikes trending southwest-northeast have been intersected in the drill holes. The interpretation was reviewed by Dr D. Trueman.

The drill holes in the area defined by the interpretation contained mineralization below 0.04% Y_2O_3 (low grade). Categorical indicator kriging using a cut-off of 0.04% was carried out to define the high (MM) and low (LM) grade areas of Y_2O_3. The indicator model is shown below (Figure 17.3). Red indicates a high probability (>0.6) of the grade being above 0.04% Y_2O_3 while dark blue indicates a low probability (<0.4). The other colours reflect a range of between 0.4 and 0.6.

17.2.4 BULK DENSITY

In 2006, 214 density measurements were calculated for core taken from drill holes 80-06, 80-09, 81-01, 88L-15 and 88L-25. These densities were used to calculate densities for the sampled lithologies. A density of 2.80 g/cm^3 was used for diorite and syenite. The average bulk density was then calculated for the LM and MM categories. A density of 2.79 g/cm^3 was applied to the LM and 2.84 g/cm^3 to MM.

Figure 17.3 Lake Zone Indicator Model and Topography with Drill Holes



17.2.5 *EXPLORATORY DATA ANALYSIS*

ASSAYS

The Lake Zone was sampled by 52 drill holes. Table 17.20 lists the lithologies and their abbreviations. The basic statistics for the samples for total area by lithology are shown in Table 17.21 to Table 17.26.

The raw statistics by rock type show more samples than in the assay database. This would be due to samples being taken across lithological boundaries.

Table 17.20 Lithology Abbreviations Used in the Lake Zone

Lithology	Abbreviation
Altered Syenite	AS
Diabase Dyke	D
Lower Intermediate Zone	LIZ
Olivine-Pyroxene Syenite	OPS
Syenite	S
Wall Zone	WZ

Table 17.21 Lake Zone Assay Statistics by Lithology, Y_2O_3

Y_2O_3	All	AS	D	LIZ	OPS	S	WZ
Valid cases	1828	398	51	911	212	64	171
Mean	400.76	397.53	63.30	498.35	258.02	184.71	269.33
Std. error of mean	14.10	25.13	15.02	23.81	23.57	39.97	35.24
Variance	363245.89	251262.50	11501.15	516465.22	117769.92	102230.57	212374.42
Std. Deviation	602.70	501.26	107.24	718.66	343.18	319.74	460.84
Variation Coefficient	1.50	1.26	1.69	1.44	1.33	1.73	1.71
rel. V.coefficient (%)	3.52	6.32	23.72	4.78	9.13	21.64	13.08
Skew	5.09	4.20	4.23	4.71	2.97	3.96	5.94
Minimum	5.00	5.00	12.70	5.00	12.70	20.00	5.00
Maximum	7163.73	4909.59	655.29	7163.73	2594.49	2036.98	4665.76
Range	7158.73	4904.59	642.59	7158.73	2581.79	2016.98	4660.76
1st Percentile	10.08	12.70	----	12.70	12.70	----	5.00
5th Percentile	12.70	50.00	12.70	12.70	12.70	20.00	10.00
10th Percentile	33.02	72.39	12.70	40.64	12.70	30.00	12.70
25th Percentile	90.00	123.18	12.70	120.64	70.91	51.15	40.64
50th Percentile	220.00	241.29	40.64	299.71	140.00	75.56	150.00
75th Percentile	505.44	491.00	54.61	609.57	277.80	145.00	308.60
90th Percentile	895.82	887.31	112.55	1032.46	703.29	569.06	657.57
95th Percentile	1174.69	1139.01	331.45	1492.69	1004.52	749.26	941.28
99th Percentile	3121.13	2767.22	----	4113.18	1597.40	----	2684.35

Table 17.22 Lake Zone Assay Statistics by Lithology, La_2O_5

La_2O_5	All	AS	D	LIZ	OPS	S	WZ
Valid cases	423	114	0	203	53	2	46
Mean	1347.88	906.24	----	1844.64	1007.39	80.00	758.76
Std. error of mean	71.71	89.99	----	121.18	131.55	0.00	173.18
Variance	2175486.26	923166.31	----	2981044.81	917131.01	0.00	1379581.05
Std. Deviation	1474.95	960.82	----	1726.57	957.67	0.00	1174.56
Variation Coefficient	1.09	1.06	----	0.94	0.95	0.00	1.55
rel. V. coefficient (%)	5.32	9.93	----	6.57	13.06	0.00	22.82
Skew	1.77	2.19	----	1.15	1.12	----	4.93
Minimum	11.73	73.20	----	11.73	11.73	80.00	36.95
Maximum	8562.90	5689.05	----	8562.90	3542.46	80.00	7741.80
Range	8551.17	5615.85	----	8551.17	3530.73	0.00	7704.85
1^{st} Percentile	13.71	78.74	----	12.06	----	----	----
5^{th} Percentile	80.02	124.63	----	70.49	40.46	----	73.37
10^{th} Percentile	129.97	178.00	----	121.74	103.81	----	94.65
25^{th} Percentile	266.27	262.17	----	323.75	255.13	----	232.69
50^{th} Percentile	723.74	526.09	----	1501.44	709.67	80.00	381.81
75^{th} Percentile	2146.59	1182.09	----	2862.12	1562.25	----	995.00
90^{th} Percentile	3333.67	2205.24	----	4194.65	2587.64	----	1354.82
95^{th} Percentile	4358.87	3105.52	----	5222.20	3137.78	----	2250.40
99^{th} Percentile	6869.56	5444.48	----	7708.49	----	----	----

Table 17.23 Lake Zone Assay Statistics by Lithology, Ce_2O_3

Ce_2O_3	All	AS	D	LIZ	OPS	S	WZ
Valid cases	1827	398	51	912	212	64	169
Mean	2386.31	2045.12	300.98	3023.70	1651.96	583.24	1966.40
Std. error of mean	55.43	96.79	118.05	82.85	158.34	125.43	152.36
Variance	5612624.46	3728683.75	710751.95	6260040.61	5315230.18	1006813.92	3923158.56
Std. Deviation	2369.10	1930.98	843.06	2502.01	2305.48	1003.40	1980.70
Variation Coefficient	0.99	0.94	2.80	0.83	1.40	1.72	1.01
rel. V.coefficient (%)	2.32	4.73	39.22	2.74	9.59	21.50	7.75
Skew	1.95	2.19	3.93	1.45	4.69	2.87	1.63
Minimum	10.00	10.00	11.71	10.00	110.00	60.00	10.00
Maximum	22861.04	13224.92	4724.94	22861.04	19520.00	4589.08	9345.64
Range	22851.04	13214.92	4713.23	22851.04	19410.00	4529.08	9335.64
1st Percentile	23.75	119.90	----	121.30	120.69	----	17.00
5th Percentile	140.00	241.22	11.71	260.02	169.37	75.00	110.00
10th Percentile	245.73	342.37	11.71	368.37	235.98	100.00	200.00
25th Percentile	531.76	650.92	24.60	860.31	452.11	155.00	498.26
50th Percentile	1672.59	1429.21	37.48	2644.16	770.12	230.00	1398.51
75th Percentile	3500.96	2985.59	70.28	4642.35	2307.89	342.50	2656.46
90th Percentile	5631.75	4310.08	1102.41	6482.64	3855.03	2106.55	4495.37
95th Percentile	6977.52	5208.45	2553.39	7497.50	4675.28	3243.57	6377.03
99th Percentile	9396.24	10726.45	----	9742.79	17664.00	----	9215.69

Table 17.24 Lake Zone Assay Statistics by Lithology, Nb_2O_5

Nb_2O_5	All	AS	D	LIZ	OPS	S	WZ
Valid cases	1901	401	33	978	225	65	177
Mean	2118.06	1405.16	339.94	2765.98	1513.77	554.64	1930.07
Std. error of mean	43.24	59.01	145.34	63.92	112.65	127.75	132.98
Variance	3554809.12	1396482.01	697061.44	3996472.43	2855355.69	1060859.27	3129918.81
Std. Deviation	1885.42	1181.73	834.90	1999.12	1689.78	1029.98	1769.16
Variation Coefficient	0.89	0.84	2.46	0.72	1.12	1.86	0.92
rel. V.coefficient (%)	2.04	4.20	42.75	2.31	7.44	23.03	6.89
Skew	1.36	1.61	3.22	1.02	1.87	2.68	1.97
Minimum	5.00	50.00	5.00	5.00	82.00	30.00	39.00
Maximum	12300.00	7400.00	4000.00	12300.00	8400.00	4700.00	10800.00
Range	12295.00	7350.00	3995.00	12295.00	8318.00	4670.00	10761.00
1st Percentile	5.00	70.60	----	100.00	100.00	----	51.48
5th Percentile	120.40	179.10	5.00	300.00	100.00	40.00	200.00
10th Percentile	268.20	264.80	5.00	400.00	222.80	66.00	300.00
25th Percentile	566.50	490.50	5.00	1074.75	300.00	110.00	600.00
50th Percentile	1670.00	1098.00	5.00	2507.00	800.00	190.00	1486.00
75th Percentile	3200.00	1974.00	14.31	3945.80	2000.00	319.00	2646.50
90th Percentile	4600.00	2949.80	1420.00	5300.00	4100.00	2460.00	4300.00
95th Percentile	5700.00	3477.50	2684.03	6405.11	5007.00	3480.00	5360.00
99th Percentile	8200.00	6476.80	----	8621.00	8148.00	----	9396.00

Table 17.25 Lake Zone Assay Statistics by Lithology, ZrO_2

ZrO_2	All	AS	D	LIZ	OPS	S	WZ
Valid cases	1438	329	50	767	143	15	121
Mean	15851.32	11682.86	1849.14	20332.98	9078.26	12529.66	13314.07
Std. error of mean	400.34	591.04	894.78	602.87	777.99	3120.13	1283.83
Variance	230475418.82	114929612.71	40031388.80	278769384.52	86553465.58	146027895.46	199435447.92
Std. Deviation	15181.42	10720.52	6327.04	16696.39	9303.41	12084.20	14122.16
Variation Coefficient	0.96	0.92	3.42	0.82	1.02	0.96	1.06
rel. V.coefficient (%)	2.53	5.06	48.39	2.96	8.57	24.90	9.64
Skew	1.66	2.17	4.23	1.39	1.74	0.54	1.51
Minimum	43.23	349.86	43.23	341.75	317.44	490.34	140.48
Maximum	102444.67	95171.97	33380.97	102444.67	51487.09	31869.42	61231.77
Range	102401.44	94822.11	33337.74	102102.92	51169.65	31379.08	61091.29
1st Percentile	111.82	497.77	----	441.06	338.24	----	146.13
5th Percentile	520.13	838.17	64.37	1415.10	889.37	----	332.43
10th Percentile	1357.96	1500.74	92.12	2355.80	1427.53	524.38	590.03
25th Percentile	3578.27	3083.88	106.38	7347.00	2551.66	883.42	2326.08
50th Percentile	12791.40	9077.38	164.12	16729.66	5184.37	11368.33	8967.96
75th Percentile	22902.81	16786.39	232.34	29025.99	13063.59	21761.39	17488.81
90th Percentile	35539.55	26875.52	3562.33	41603.02	22452.19	31571.98	39608.42
95th Percentile	45113.48	31401.38	20418.83	51030.52	29609.81	----	44550.74
99th Percentile	69192.22	43405.12	----	78509.85	47126.33	----	60925.68

Table 17.26 Lake Zone Assay Statistics by Lithology, Ta_2O_5

Ta_2O_5	All	AS	D	LIZ	OPS	S	WZ
Valid cases	1808	391	23	951	185	65	173
Mean	145.54	110.66	32.00	180.51	101.95	51.32	134.05
Std. error of mean	3.64	5.74	9.33	5.43	9.41	13.42	12.48
Variance	23965.24	12904.51	2001.36	28023.03	16396.86	11710.96	26934.83
Std. Deviation	154.81	113.60	44.74	167.40	128.05	108.22	164.12
Variation Coefficient	1.06	1.03	1.40	0.93	1.26	2.11	1.22
rel. V. coefficient (%)	2.50	5.19	29.15	3.01	9.23	26.15	9.31
Skew	2.33	2.23	1.66	2.19	2.34	3.21	2.63
Minimum	5.00	5.00	5.00	5.00	5.00	5.00	5.00
Maximum	1590.00	930.44	160.00	1590.00	830.00	510.00	1130.00
Range	1585.00	925.44	155.00	1585.00	825.00	505.00	1125.00
1st Percentile	5.00	5.00	----	5.00	5.00	----	5.00
5th Percentile	10.00	12.21	5.00	10.00	10.00	5.00	10.00
10th Percentile	10.00	12.21	5.00	12.21	10.00	5.00	10.00
25th Percentile	30.00	28.08	5.00	60.00	20.00	10.00	20.00
50th Percentile	100.13	80.00	10.00	139.20	50.00	12.21	80.00
75th Percentile	208.49	150.00	50.00	251.54	130.00	30.00	155.00
90th Percentile	339.51	255.93	100.00	380.00	270.00	162.00	362.00
95th Percentile	430.00	331.39	148.00	496.72	361.00	403.00	525.00
99th Percentile	681.44	504.00	----	771.60	615.00	----	878.40

The LIZ has the highest mean for all of the oxides. The diorite dykes for the known oxides contain the lowest.

The categorical indicator kriging appears to have successfully separated out the samples above and below 0.04% Y_2O_3 based on the coefficient of variation as can be seen in the box plots in Appendix B.

The majority of the histograms suggest that that the elements in each zone approximate a lognormal distribution. Apart from Y_2O_3 and La_2O_3 there appears to be two populations in the oxides in the LM sub-zone.

CAPPING

All data sets with a coefficient of variation greater than 1.2 were investigated using statistics and rank disintegration techniques, to determine the potential risk of grade distortion from high-grade assays. Outliers (anomalously high values) were defined as values lying outside four standard deviations and having a P-value (statistical probability) of less than 5%.

A total of seven values were cut, all in the LM-Zone. The cutting was able to reduce the CV to either below or close to 1.2.

COMPOSITES

Assays were composited to 3.05 m lengths based on the raw statistics for Length (Figure 17.5). The minimum composite length allowed is 0.25. The compositing method chosen in Datamine is the one whereby all samples are included in one of the composites. This is achieved by adjusting the composite length but trying to keep the length as close as possible to the 3.05 m.

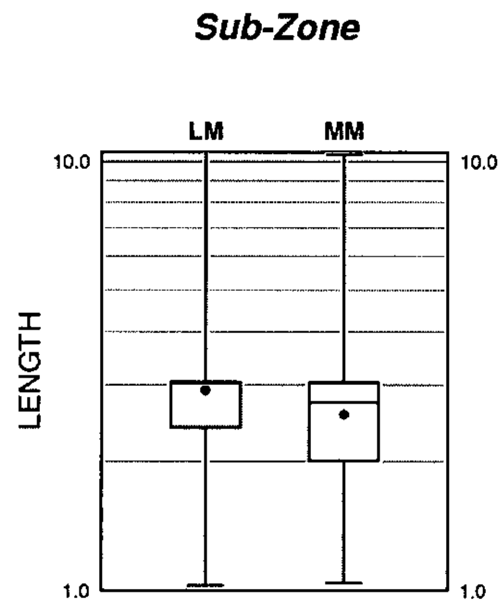
Compositing was controlled by the sub-zone codes assigned to the drill hole file (See Appendix A).

Although the YIND correlogram indicates a strong down dip continuity this is largely irrelevant due to the zone being only 200 m deep. The direction of the intermediate corresponds to the overall geometry of the deposits. This can be readily observed in Figure 17.4.

The inverse distance models used search radii that were based on the modelled correlograms of the sub-zones.

Ce_2O_3	LM	1	054	84	0.10	0.52	12	0.38	[illegible]
Ce_2O_3	LM	2	011	-04	0.10	0.52	72	0.38	73
Ce_2O_3	LM	3	101	-04	0.10	0.52	23	0.38	23
La_2O_3	LM	1	005	05	0.00	0.89	14	0.11	201
La_2O_3	LM	2	157	85	0.00	0.89	19	0.11	128
La_2O_3	LM	3	095	-02	0.00	0.89	9	0.11	17
Nb_2O_5	LM	1	067	-01	0.05	0.82	12	0.14	1021
Nb_2O_5	LM	2	157	01	0.05	0.82	16	0.14	338
Nb_2O_5	LM	3	012	88	0.05	0.82	22	0.14	246
Ta_2O_5	LM	1	033	36	0.15	0.67	15	0.18	480
Ta_2O_5	LM	2	091	-36	0.15	0.67	19	0.18	250
Ta_2O_5	LM	3	152	34	0.15	0.67	14	0.18	14
Y_2O_3	LM	1	301	84	0.15	0.83	12	0.02	649
Y_2O_3	LM	2	057	03	0.15	0.83	11	0.02	437
Y_2O_3	LM	3	147	05	0.15	0.83	61	0.02	196
ZrO_2	LM	1	060	07	0.05	0.89	357	0.06	580
ZrO_2	LM	2	101	-81	0.05	0.89	18	0.06	234
ZrO_2	LM	3	151	06	0.05	0.89	12	0.06	231
BeO	MM	1	097	02	0.10	0.71	12	0.19	316
BeO	MM	2	005	29	0.10	0.71	12	0.19	216
BeO	MM	3	190	61	0.10	0.71	10	0.19	13
Ce_2O_3	MM	1	342	-21	0.00	0.66	64	0.34	667
Ce_2O_3	MM	2	048	46	0.00	0.66	5	0.34	79
Ce_2O_3	MM	3	088	-36	0.00	0.66	18	0.34	37
La_2O_3	MM	1	326	89	0.05	0.47	11	0.48	53
La_2O_3	MM	2	348	00	0.05	0.47	10	0.48	35
La_2O_3	MM	3	078	00	0.05	0.47	16	0.48	32
Nb_2O_5	MM	1	047	03	0.05	0.66	44	0.30	838
Nb_2O_5	MM	2	227	87	0.05	0.66	11	0.30	128
Nb_2O_5	MM	3	137	00	0.05	0.66	26	0.30	26
Ta_2O_5	MM	1	337	13	0.05	0.78	18	0.17	1120
Ta_2O_5	MM	2	195	74	0.05	0.78	14	0.17	193
Ta_2O_5	MM	3	069	09	0.05	0.78	131	0.17	131
Y_2O_3	MM	1	294	06	0.10	0.69	21	0.21	860
Y_2O_3	MM	2	094	83	0.10	0.69	5	0.21	116
Y_2O_3	MM	3	024	-02	0.10	0.69	18	0.21	81
ZrO_2	MM	1	203	10	0.05	0.95	137	0.00	351
ZrO_2	MM	2	001	79	0.05	0.95	12	0.00	189
ZrO_2	MM	3	112	04	0.05	0.95	28	0.00	169

Figure 17.4 Boxplot of Lake Zone Sample Lengths by Sub-Zone



	LM	MM	
Number of data	992	475	Number of data
Mean	2.925	2.571	Mean
Maximum	15.5	10.363	Maximum
Upper quartile	3.048	3.048	Upper quartile
Median	3.048	2.743	Median
Lower quartile	2.4	2.006	Lower quartile
Minimum	1.025	1.042	Minimum
Variance	1.6712	0.5807	Variance
CV	0.442	0.296	CV
Skewness	4.276	1.936	Skewness

17.2.6 BLOCK MODEL

A block model for grade was constructed for the area lying between the topography and the base of the interpreted zone. Block models were also created from the dyke. These dyke blocks were then removed from the grade block model prior to interpolation.

BLOCK SIZE

A standard block size of 10 x 10 x 10 m (Easting x Northing x Elevation) was used for the interpolation. This was based on the minimum sample spacing on the property and to reflect the possible bench height as it is probable that this deposit would not be mined using open cast methods. Sub-celling was allowed in order to improve the fill of the interpreted solids. The minimum cell sizes allowed were one metre in the X and Z directions and infinite splitting in the Y direction.

INTERPOLATION PLAN

A two-pass system was also used for the categorical indicator and grade interpolation grades into the sub-zones. The first was at the sill range and the second at twice the sill range. The grade interpolation plan is summarized in Table 17.28 and Table 17.29.

Table 17.28 Indicator Interpolation Plan

Parameter	Pass 1	Pass 2	Pass 3
Minimum Samples	2	2	1
Maximum Samples	6	12	12
Maximum per Hole	3	3	3
Search Distance		Pass 1*5	Pass 1*15
Search Type	Ellipsiodal	Ellipsiodal	Ellipsiodal
Octant Search On/Off	Off	Off	Off
Anistrophy	ZXZ Rotation	ZXZ Rotation	ZXZ Rotation
Discretisation	2 x 2 x 2	2 x 2 x 2	2 x 2 x 2
Negative Weight	Set to Zero	Set to Zero	Set to Zero

Table 17.29 Grade Interpolation Plan

Parameter	Pass 1	Pass 2	Pass 3
Minimum Samples	4	4	3
Maximum Samples	12	12	12
Maximum per Hole	3	3	3
Search Distance		Pass 1*5	Pass 1*10, 12, 20 or 22
Search Type	Ellipsiodal	Ellipsiodal	Ellipsiodal
Octant Search On/Off	Off	Off	Off
Anistrophy	ZXZ Rotation	ZXZ Rotation	ZXZ Rotation
Discretisation	2 x 2 x 2	2 x 2 x 2	2 x 2 x 2
Negative Weight	Set to Zero	Set to Zero	Set to Zero

Three methods of interpolation were used for grade estimation: ordinary kriging, inverse distance squared and nearest neighbour.

Mineral Resource Classification

Several factors are considered in the definition of a resource classification:

- CIM requirements and guidelines
- Experience with similar deposits
- Spatial continuity
- Confidence limit analysis

Mineral resources were classified as an Inferred Mineral Resource if the block was within a radius of 200 m of a drill hole. This approximately doubles the distance of the intermediate range of the indicator.

Mineral Resource Tabulation

The Inferred Mineral Resources are summarized in Table 17.30 to Table 17.31.

Table 17.30 Lake Zone Inferred Mineral Resources at Various Cut-offs

Cut-off	Cutting Element	Tonnes	Density	%Y_2O_3	%Ce_2O_3	%La_2O_3	%Nb_2O_5	%Ta_2O_5	%ZrO_2
0.01	%Y_2O_3	375,410,000	2.79	0.03	0.19	0.03	0.22	0.014	1.19
0.02	%Y_2O_3	212,120,000	2.80	0.05	0.25	0.03	0.24	0.017	1.51
0.03	%Y_2O_3	127,030,000	2.82	0.07	0.32	0.05	0.28	0.021	1.77
0.04	%Y_2O_3	103,660,000	2.84	0.07	0.37	0.05	0.30	0.023	1.89
0.05	%Y_2O_3	83,224,000	2.84	0.08	0.40	0.06	0.31	0.025	1.96
0.06	%Y_2O_3	58,700,000	2.84	0.09	0.40	0.07	0.32	0.026	1.99
0.07	%Y_2O_3	39,257,000	2.84	0.10	0.40	0.07	0.32	0.026	1.95
0.08	%Y_2O_3	27,265,000	2.84	0.12	0.41	0.07	0.33	0.026	1.91
0.09	%Y_2O_3	18,326,000	2.84	0.13	0.42	0.08	0.33	0.025	1.81
0.10	%Y_2O_3	14,005,000	2.84	0.14	0.43	0.08	0.33	0.025	1.73

Table 17.31 Lake Zone Inferred Mineral Resources at Recommended Cut-offs

Cut-off	Cutting Element	Tonnes	Density	%Y_2O_3	%Ce_2O_3	%La_2O_3	%Nb_2O_5	%Ta_2O_5	%ZrO_2
0.04	%Y_2O_3	103,660,000	2.83	0.07	0.37	0.05	0.30	0.023	1.89

No known environmental, permitting, legal, title, taxation, socio-economic, marketing or other relevant issues are known to the writers that may affect the estimate of mineral resources.

The resources on the Lake Zone have been categorized as Inferred. Due to the uncertainty of Inferred Mineral Resources it cannot be assumed that all or any part of this resource will be upgraded to an Indicated or Measured Resource as a result of continued exploration.

17.2.7 *Model Validation*

The Lake Zone grade interpolation plan and model was validated using six methods:

- Visual comparison of search ellipses generated in Datamine to those output by Sage.
- Visual comparison of colour-coded block model grades with drill hole grades on section and plan plots.
- Comparison of the global mean block grades for ordinary kriging, nearest neighbour and inverse distance squared methods.
- Comparison of block model grades and drill hole grades using swath plots.
- Comparison of block model grades to historic estimates.

Visual Comparison of Search Ellipses

Sage generates 3-D views of the estimated search ellipses. These plots have compared to slices through the search ellipse made in Datamine to ensure that the correct rotation and dimensions have been input for grade interpolation.

Visual Validation of Sections

The visual comparisons of block model grades with composite grades for the five veins show a reasonable correlation between the values. No significant discrepancies were apparent from the sections and plans reviewed. Appendix C contains representative plans and sections.

Global and Inferred Comparisons

The global block grade statistics for the ordinary kriging model are compared to the declustered means for each sub-zone (Table 17.32). Percentage differences of greater than 10% have been highlighted.

The higher differences are associated with Y_2O_3 and Ce_2O_3 in the low-grade sub-zone. The fact that the drill hole average is higher than the model implies that the model may be conservative for these elements in this zone. Closer spaced drilling, which would permit an improved geological interpretation, will probably resolve this issue.

Table 17.32 Comparison of Top Cut Declustered Drill holes with Ordinary Kriged Grades (g/t)

Sub-Zone	Data	Y_2O_3	Ce_2O_3	La_2O_3	Nb_2O_5	ZrO_2
MM	Drill Hole	769	4,044	567	3,157	21,499
	Model	759	4,019	587	3,227	21,093
% Difference		1%	1%	-3%	-2%	2%
LM	Drill Hole	188	1,580	169	1,856	7,261
	Model	155	1,020	163	1,918	7,470
% Difference		22%	55%	3%	-3%	-3%

A further check was carried out on the interpolation where the ordinary kriged (OK) grades were compared to the nearest neighbour (NN) and inverse distance squared (ID^2) interpolation (Table 17.33) for blocks classified as an Inferred Mineral Resource. Differences of greater than 15% have been highlighted. In general, there is agreement between the ordinary kriged model, inverse distance and nearest neighbour models for the oxides. In general the results for OK compare favourably to the ID2 method. The poor comparison between OK and NN is believed to be due to the location of the drill holes for Y_2O_3 and La_2O_3.

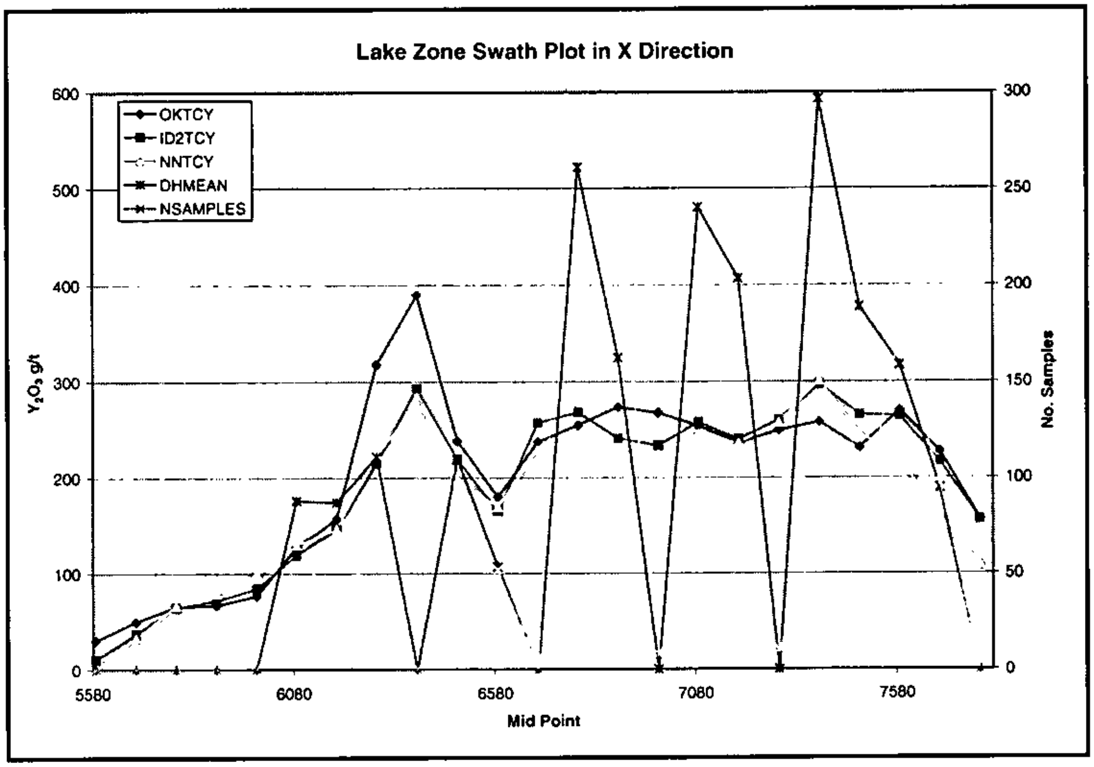
Table 17.33 Comparison of Interpolation for Ordinary Kriging

Sub-Zone	Method	Y_2O_3	Ce_2O_3	La_2O_3	Nb_2O_3	ZrO_2	%OK Y_2O_3	%OK Ce_2O_3	%OK La_2O_3	%OK Nb_2O_3	%OK ZrO_2
MM	OK	766	4,176	590	3,250	20,086					
MM	ID2	674	4,205	671	3,296	19,908	-12%	1%	14%	1%	-1%
MM	NN	555	3,645	662	3,126	17,635	-28%	-13%	12%	-4%	-12%
LM	OK	147	968	200	1,860	7,313					
LM	ID2	151	989	213	1,898	7,343	3%	2%	6%	2%	0%
LM	NN	156	852	305	1,889	7,801	6%	-12%	53%	2%	7%

SWATH PLOTS

Swath plots have been generated for ordinary kriged, inverse distance and nearest neighbour for the total model. An example of a swath plot is present below (Figure 17.5). Appendix D contains swath plots for all of the interpolated oxides.

Figure 17.5 Y_2O_3 Swath Plot in X Direction



18.0 OTHER DATA AND INFORMATION

Not Applicable

19.0 INTERPRETATIONS AND CONCLUSIONS

Three areas must be addressed before Avalon's Thor Lake property advances to the next level of study. These concern exploration, resource classification and data management.

19.1 GEOLOGY

Whereas resources have been defined in the North T and Lake Zones, there is considerable room to expand the yttrium and HREE resources in the Lake Zone and the R-Zone, both of which remain under tested.

The Lake Zone, to the extent it has been drilled, shows areas of higher grades of Y + HREE which could be expanded by stepout drilling. There is some indication in the resource modeling of the Lake Zone that there may be such areas paralleling strike of the T-Zone and lying west of its projection under Thor Lake. Additionally there is a large ovoid feature in the south central Lake Zone area, which is untested and is seen to be poorly skirted by drill holes with elevated Y+HREEs. Also there remain large areas of the Lake Zone in which the nearest drill holes exceed ½ km distances and could be considered unexplored.

Grades of Y+HREEs in the R-Zone are the highest encountered in the course of work at Thor Lake. When R-Zone grades are contrasted to those of ion exchange type clays, metallurgy for this zone might even consider a direct leach process without a prior concentration. The one drill hole on this zone failed to intersect the zone, and may either indicate a lens like nature to the zone similar to that of the S-Zone, or that the drill hole ran downdip in the footwall to the alteration.

A portion of the resource on the Thor Lake has been categorized as Inferred. Due to the uncertainty of Inferred Mineral Resources it cannot be assumed that all or any part of this resource will be upgraded to an Indicated or Measured Resource as a result of continued exploration. To justify an upgrading of the mineral resource demonstrated economic viability is required.

19.2 DATA MANAGEMENT

During the historic importing of assays into an Excel database no distinction was made between trace values and unsampled core. The assay certificates from drill core assays date from 1977 through to 2006. They have been generated by a number of different laboratories and the reporting of values on the certificates varies from laboratory to laboratory and is also dependent on the method used for analysis. Initial exploration concentrated on BeO, Y_2O_3, Ce_2O_3, Ta_2O_5 and ZrO_2.

In order to improve the database and to find out which sections of the drill holes have been sampled, Wardrop recommends that the data from the originally assay certificates be input into a recognized database software, preferably one that has been designed for assays or exploration such as acQuire and Datashed. A double entry system is recommended. Completion of this process would give Avalon an indication of what should be re-analyzed and for which particular elements.

All intersections that lie within the estimated pit shells should be sampled and analysed for all economic elements. There are indications from some drill holes that there is mineralization present below the established zones. This should be investigated to establish the extent of the mineralization.

During the importation of North T drill holes, it was noted that there are 12 fewer drill holes in the MineSight© database than there were reported by Currie (2004). The authors believe that the twinned holes were removed from the MineSight database.

In order to resolve this issue it is further recommended that the drill logs should be re-entered into a secure database. Adding additional information such as core size and recovery would permit the development of a more robust model.

Bulk density measurements determined in 2006 are approximately 10% lower than 3.02 g/cm^3 that was used historically. The 2006 information for the North T-Zone was obtained from one drill hole. This should be expanded.

20.0 RECOMMENDATIONS

20.1 GEOLOGY

Prior to any further economic evaluation of the property, it is recommended that the database be reconstructed from primary data sources. A double entry procedure is recommended. All intersections that lie within the estimated pit should be sampled and analyzed for all economic elements. There are indications from some drill holes that there is mineralization present below the established zones. This should be investigated to establish the extent of the mineralization.

20.2 ADDITIONAL RESOURCES

Historic resource estimates have been carried out on the South T-Zone. Digitally the South T drill holes have been preserved in MineSight. There are no indications of digital outlines in the supplied data. On completion of the new database a current mineral resource estimate should be carried out for this zone.

20.3 BUDGET

The estimated budget to complete this work is $125,000.

21.0 REFERENCES

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22.0 STATEMENT OF QUALIFIED PERSONS

22.1 STATEMENT OF KEVIN PALMER, P.GEO.

I, Kevin Palmer, of Nanaimo, British Columbia, do hereby certify that as the author of this "Technical Report on the Thor Lake Rare Metals Project, NT", dated March 12, 2007, I hereby make the following statements:

- At the date this report was prepared I was employed as a Senior Geologist with Wardrop Engineering Inc. with a business address at 555 West Hastings Street, Suite 800, Vancouver, British Columbia, V6B 1M1.
- I am a graduate of University of University of the Witwatersrand, Johannesburg, South Africa (B.Sc. (Honours) Geology, 1984).
- I am a member in good standing of the Association of Professional Engineers and Geoscientists of British Columbia, License #30020.
- I am a member in good standing of The South African Council for Natural Scientific Professions (4000320/04).
- I have practiced my profession continuously since graduation.
- I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that, by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purpose of NI 43-101.
- My relevant experience with respect to the Thor Lake Project includes over 21 years in both exploration, mining geology and grade estimation in Canada and southern Africa. Over the last three years I have carried out mineral resource estimates following CIM guidelines on a number of projects including the Great Western Minerals, Hoidas Lake REE project.
- I am responsible for the preparation of all portions of this technical report titled "Technical Report on the Thor Lake Rare Metals Property, NT", dated March 12, 2007, except for section 16. In addition, I visited the Property during the period July 22nd to 25th, 2006.
- I have no prior involvement with the Property that is the subject of the Technical Report.

APPENDIX A
DRILL HOLE SUMMARY

22.0 STATEMENT OF QUALIFIED PERSONS

22.1 STATEMENT OF KEVIN PALMER, P.GEO.

I, Kevin Palmer, of Nanaimo, British Columbia, do hereby certify that as the author of this "Technical Report on the Thor Lake Rare Metals Project, NT", dated March 12, 2007, I hereby make the following statements:

- At the date this report was prepared I was employed as a Senior Geologist with Wardrop Engineering Inc. with a business address at 555 West Hastings Street, Suite 800, Vancouver, British Columbia, V6B 1M1.
- I am a graduate of University of University of the Witwatersrand, Johannesburg, South Africa (B.Sc. (Honours) Geology, 1984).
- I am a member in good standing of the Association of Professional Engineers and Geoscientists of British Columbia, License #30020.
- I am a member in good standing of The South African Council for Natural Scientific Professions (4000320/04).
- I have practiced my profession continuously since graduation.
- I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that, by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purpose of NI 43-101.
- My relevant experience with respect to the Thor Lake Project includes over 21 years in both exploration, mining geology and grade estimation in Canada and southern Africa. Over the last three years I have carried out mineral resource estimates following CIM guidelines on a number of projects including the Great Western Minerals, Hoidas Lake REE project.
- I am responsible for the preparation of all portions of this technical report titled "Technical Report on the Thor Lake Rare Metals Property, NT", dated March 12, 2007, except for section 16. In addition, I visited the Property during the period July 22nd to 25th, 2006.
- I have no prior involvement with the Property that is the subject of the Technical Report.

- As of the date of this Certificate, to my knowledge, information and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

- I am independent of the Issuer as defined by Section 1.4 of the Instrument.

- I have read National Instrument 43-101 and the Technical Report has been prepared in compliance with National Instrument 43-101 and Form 43-101F1.

Signed and dated this 12th day of March, 2007 at Burnaby, British Columbia.

"Original Document, Revision 01 signed and sealed by Kevin Palmer, P.Geo."

Signature

22.2 STATEMENT OF PETER BROAD, P.ENG.

I, Peter Broad of London, Ontario do hereby certify that as the author of this "Technical Report on the Thor Lake Rare Metals Property, NT", dated March 12, 2007, I hereby make the following statements:

- I am a Senior Metallurgical Engineer/Metallurgist with Wardrop Engineering Inc. with a business address at 330 Bay Street, Suite 604, Toronto, Ontario, M5H 2S8
- I am a graduate of The Victoria University of Manchester (UK) with an Honours B.Sc. degree in Metallurgy, 1969.
- I am a member in good standing of the Association of Professional Engineers of Ontario, Registration #90344227.
- I have practiced my profession continuously since graduation.
- I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that, by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purpose of NI 43-101.
- My relevant experience with respect to Avalon's Thor Lake Project includes the flotation recovery of metallic ores, the hydrometallurgy of leaching metallic oxides, to extract pure metals, and the environmental issues necessary to avoid untreated waste from entering the local water systems. This experience comes from 30 years of process knowledge, and honed as a licensed professional in Northern Canada for the past twenty years.
- I am responsible for the preparation of section 16 of this technical report titled "Technical Report on the Thor Lake Rare Metals Project, NT", dated March 12, 2007.
- I have no prior involvement with the Property that is the subject of the Technical Report.
- As of the date of this Certificate, to my knowledge, information and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.
- I am independent of the Issuer as defined by Section 1.4 of the Instrument.
- I have read National Instrument 43-101 and the Technical Report has been prepared in compliance with National Instrument 43-101 and Form 43-101F1.

Signed and dated this 12th day of March, 2007 at Toronto, Ontario.

"Original Document, Revision 01 signed and sealed by Peter Broad, P.Eng."

Signature

APPENDIX A
DRILL HOLE SUMMARY

LAKE ZONE

BHID	FROM	TO	TA2O5_GT	NB2O5_GT	ZRO2_GT	Y2O3_GT	LA2O3_GT	CE2O3_GT	BEO_GT	GA2O3_GT	U_GT
78-11	0	53.6448	-6760.114	3941.194	-9999	-9999	-9999	-9999	-9999	-9999	-6781.136
78-12	0	28.956	-6159.379	2962.105	-9999	-9999	-9999	-9999	-9999	-9999	-6184.642
79-01	0	24.9936	336.3415	6743.903	-9999	-9999	-9999	-9999	-9999	-9999	-9999
79-02	0	28.59024	140.8529	2365.352	-9998.999	-9998.999	-9998.999	-9998.999	-9998.999	-9998.999	-9998.999
79-03	0	31.6992	139.1154	4175.77	-9998.999	-9998.999	-9998.999	-9998.999	-9998.999	-9998.999	-9998.999
79-04	0	26.2128	32.96512	2600.582	-9999.001	-9999.001	-9999.001	-9999.001	-9999.001	-9999.001	-9999.001
79-05	0	24.384	16.375	1732.5	-9999	-9999	-9999	-9999	-9999	-9999	-9999
80-01	0	39.0144	170.9233	4324.996	17900.53	112.8858	174.3046	416.0389	-9998.999	-9998.999	70.17044
80-01	39.0144	42.0624	80	4325.923	24688.57	426.6998	1110.613	1994.69	-9999	-9999	21
80-01	42.0624	60.96	137.742	2828.163	16308.41	-1455.597	258.8684	582.0099	-9999	-9999	58.61291
80-01	60.96	76.19999	296	3780.319	25965.62	587.7283	1877.37	3010.19	-9999	-9999	40.60001
80-01	76.2	124.968	189.6875	3612.293	11705.64	-3375.447	-3360.856	-3199.023	-9999.001	-9999.001	44.59378
80-03	0	15.24	130	4212.911	21627.65	200.6505	210	1024.87	-9999	-9999	16
80-03	15.24	21.336	170	4589.14	39590.6	773.3935	-9999	1635.693	-9999	-9999	13.5
80-03	21.336	72.54237	-399.059	404.5465	6173.185	-529.9296	-7917.278	844.6843	-9999	-9999	-585.2269
80-03	72.5424	76.2	297.5	4251.417	37318.23	1266.871	-9999	4910.886	-9999	-9999	-5832.349
80-03	76.2	79.248	150	1732.372	13522.86	379.7121	-9999	2212.548	-9999	-9999	1
80-03	79.248	82.296	220	3255.886	21565.52	626.0804	-9999	3704.758	-9999	-9999	14
80-03	82.296	85.344	160	2120.045	14475.17	373.3624	-9999	2391.754	-9999	-9999	-9999
80-03	85.344	92.964	205.9999	-2520.157	7693.166	1052.88	-9999.001	2804.764	-9999.001	-9999.001	10.40001
80-03	92.964	107.8992	17.95918	488.3156	2628.188	56.13652	-9999	389.2235	-9999	-9999	3.693877
80-04	0	30.48	-1236.316	272.7626	6096.165	-2519.395	-6558.815	-1762.936	-9999	-9999	11.86842
80-04	30.48	33.528	250	6400	38703.12	430.5097	-9999	1855.308	-9999	-9999	55
80-04	33.528	62.484	269.4737	3726.316	-6403.129	-8915.994	-8944.368	-8787.179	-9998.999	-9998.999	16.68421
80-05	0	15.24	215	4275	26460.48	307.008	-9999	4647.639	-9999	-9999	39.75
80-05	15.24	27.432	479.75	6147.5	52980.34	740.756	-9999	6264.24	-9999	-9999	36.65
80-05	27.432	36.576	303.3333	5866.667	24198.23	292.5095	-9999	3043.766	-9999	-9999	70.00001
80-05	36.576	38.4048	660	8300	57215.83	544.8043	-9999	8314.917	-9999	-9999	43
80-05	38.4048	42.672	251.4286	2385.714	13456.95	-2621.918	-9999	-190.5222	-9999	-9999	14
80-05	42.672	51.816	356.6667	3766.667	29752.72	638.3565	-9999	4366.532	-9999	-9999	11
80-05	51.816	64.008	133.75	1437.5	13148.01	268.4336	-9999.001	1611.095	-9999.001	-9999.001	9.000002
80-05	64.008	65.532	350	3300	30003.97	641.3197	-9999	2406.98	-9999	-9999	12
80-05	65.532	67.056	270	1700	18234.45	387.3317	-9999	920.626	-9999	-9999	6
80-05	67.056	85.34402	413.3334	3533.333	28524.17	763.2342	-9999	2496.584	-9999	-9999	12
80-05	85.344	91.44	58.7498	5	3427.644	107.6272	-9999	285.2057	-9999	-9999	8.499971
80-06	0	18.288	144	1880	15403.98	257.0359	1902.384	3108.812	-9999.001	-9999.001	12.8
80-06	18.288	24.384	230	2000	22147.71	444.479	2680.305	3423.651	-9999	-9999	8
80-06	24.384	48.76798	51.875	747.5001	4380.17	53.35338	644.6608	1608.212	-9999	-9999	-1364.626
80-06	48.768	51.816	139.9999	1649.999	2033.425	655.0541	1377.103	4070.849	-9999	-9999	3
80-06	51.816	74.06639	103.1507	1347.945	9437.206	47.66624	1328.623	1865.528	-9999	-9999	6.123287
80-06	74.0664	85.34399	393.7836	4140.541	25719.94	702.6801	-182.0485	5116.129	-9998.999	-9998.999	-2678.778
80-06	85.344	87.1728	100	1100	12673.21	257.7978	1958.91	2677.546	-9999	-9999	1
80-07	0	15.24	156.6667	2933.333	21580.83	193.8775	-9999	4737.828	-9999	-9999	-9999
80-07	15.24	24.384	206.6667	3300	26745.84	578.246	-9999	4814.742	-9999	-9999	-9999
80-07	24.384	27.1272	180	3400	17305.1	330.1844	-9999	3745.754	-9999	-9999	-9999
80-07	27.1272	32.004	270	4087.5	32337.98	720.2147	-9999	5195.505	-9999	-9999	-9999
80-07	32.004	37.7952	181.579	3173.684	19194.16	293.7572	-9999	3341.354	-9999	-9999	-9999
80-07	37.7952	54.86399	370	4883.93	31633.14	606.6005	-9999	5035.375	-9999	-9999	-9999
80-07	54.864	60.96	120	1200	10301.87	368.9176	-9999	1837.153	-9999	-9999	-9999
80-07	60.96	64.008	100	1300	7505.045	984.2035	-9999	2512.396	-9999	-9999	-9999
80-07	64.008	67.056	70	1100	9335.379	130.8038	-9999	2006.403	-9999	-9999	-9999
80-07	67.056	70.104	610	6600	45851.55	1286.449	-9999	4495.373	-9999	-9999	-9999
80-07	70.104	73.152	160	2700	14352.25	231.1291	-9999	1672.588	-9999	-9999	-9999
80-07	73.152	78.9432	177.3685	2978.948	16356.62	695.9942	-9999	3529.869	-9999	-9999	-9999
80-07	78.9432	86.2584	85.00001	1750	7827.886	191.761	-9999	1928.512	-9999	-9999	-9999
80-07	86.2584	112.1664	285.8823	3394.116	19260.34	669.4825	-9998.999	3141.097	-9998.999	-9998.999	-9998.999
80-07	112.1664	115.2144	130	2900	11368.33	171.4419	-9999	2000.546	-9999	-9999	-9999
80-07	115.2144	124.3584	776.667	6966.669	61334.44	4310.602	-9999	5923.554	-9999	-9999	-9999
80-07	124.3584	127.4064	170	1100	12270.67	382.2519	-9999	1329.403	-9999	-9999	-9999
80-07	127.4064	130.4544	230	2300	16990.36	408.9207	-9999	1760.434	-9999	-9999	-9999
80-07	130.4544	147.2184	59.09091	798.1818	6050.404	106.2593	-9999	657.6204	-9999	-9999	-9999
80-08	0	5.4864									
80-08	5.4864	8.5344	120	2600	17209.19	440.6692	-9999	7240.853	-9999	-9999	-9999
80-08	8.5344	14.0208	128.8889	3155.556	18728.7	308.5954	-9999	5226.122	-9999	-9999	-9999
80-08	14.0208	19.812	224.2105	4873.684	35010.81	1306.702	-9999	6133.871	-9999	-9999	-9999
80-08	19.812	29.2608	134.5161	3512.903	23812.99	189.7946	-9999	1475.246	-9999	-9999	-9999
80-08	29.2608	32.3088	200	4600	33375.57	570.2031	-9999	5282.473	-9999	-9999	-9999

BHID	FROM	TO	TA2O5_GT	NB2O5_GT	ZRO2_GT	Y2O3_GT	LA2O3_GT	CE2O3_GT	BEO_GT	GA2O3_GT	U_GT
80-08	32.3088	44.5008	57.5	1325	6259.606	41.59053	-9999	346.4061	-9999	-9999	-9999
80-08	44.5008	47.8536	20	1300	42244.92	1664.891	-9999	7732.791	-9999	-9999	-9999
80-08	47.8536	59.436	27.23685	618.4211	4773.018	141.7655	-9999.001	1003.171	-9999.001	-9999.001	-9999.001
80-08	59.436	78.63839	213.8095	4185.715	27861.09	854.6696	-9999	5055.376	-9999	-9999	-9999
80-08	78.6384	99.3648	26.61765	535.2943	2614.393	156.4267	-9999	1188.143	-9999	-9999	-9999
80-08	99.3648	105.7656	149.0476	1490.476	15162.67	685.1628	-9999	2034.234	-9999	-9999	-9999
80-08	105.7656	108.8136	430	5400	1471.021	125.7241	-9999	668.8009	-9999	-9999	-9999
80-08	108.8136	111.8616	10	400	35709.75	849.5898	-9999	3972.982	-9999	-9999	-9999
80-08	111.8616	118.2624	24.28571	480.9522	1541.263	64.58551	-9999	771.7617	-9999	-9999	-9999
80-08	118.2624	128.3208	408.1818	4012.122	42132.68	1548.365	-9999	4569.021	-9999	-9999	-9999
80-08	128.3208	135.636	20	300	3946.361	181.6014	-9999	788.2711	-9999	-9999	-9999
80-08	135.636	138.0744	70	1000	13786.27	1106.118	-9999	2533.479	-9999	-9999	-9999
80-08	138.0744	141.1224	20	400	2200.453	49.52766	-9999	536.4462	-9999	-9999	-9999
80-09	0	3.5052	20	400	2827.224	116.8345	1700.85	1741.693	-9999	-9999	-9999
80-09	3.5052	6.4008	120	1100	-9999	427.653	3565.92	6744.96	-9999	-9999	-9999
80-09	6.4008	24.9936	86.22949	1668.852	3201.279	284.5609	2087.363	2965.014	-9999	-9999	-9999
80-09	24.9936	63.70321	318.5827	4456.692	22416.43	851.6299	3941.002	5270.787	-9999	-9999	-9999
80-09	63.7032	66.7512	10	300	-9999	100.7586	906.729	1762.355	-9999	-9999	-9999
80-09	66.7512	106.68	285.7633	3180.152	16457.15	1186.187	2449.13	3507.782	-9998.999	-9998.999	-9998.999
80-09	106.68	118.872	75.00008	475.0003	4337.423	224.1444	384.4512	751.377	-9999.001	-9999.001	-9999.001
80-09	118.872	121.92	200	2000	3770.083	961.3445	559.521	1626.908	-9999	-9999	-9999
80-09	121.92	129.2352	22.50002	266.6669	-2564.883	146.8452	228.5396	457.8233	-9999	-9999	-9999
80-10	0	5.1816									
80-10	5.1816	7.9248	220	1300	13221.63	742.9149	-9999	1967.75	-9999	-9999	-9999
80-10	7.9248	10.3632	260	1300	-9999	-9999	-9999	-9999	-9999	-9999	-9999
80-10	10.3632	20.4216	479.0909	3845.455	30086.57	1237.422	-9999	3968.19	-9999	-9999	-9999
80-10	20.4216	39.3192	-1129.555	-209.5552	4348.241	-1723.594	-9999	-667.4578	-9999	-9999	-9999
80-10	39.3192	41.3004	610	8699.999	72401.53	1285.179	-9999	9767.305	-9999	-9999	-9999
80-10	41.3004	68.58	45.19552	-680.3457	4201.481	-851.4066	-9999	-341.5343	-9999	-9999	-9999
80-11	0	21.336	170	3100	12637.2	-1798.388	-9999	281.3843	-9999	-9999	-9999
80-11	21.336	28.956	211.2	3044	19074.16	470.8938	-9999.001	2655.338	-9999.001	-9999.001	-9999.001
80-11	28.956	31.6992	150	2100	-9999	-9999	-9999	-9999	-9999	-9999	-9999
80-11	31.6992	39.7764	369.8113	5367.924	25275.28	515.7873	-9999	3791.677	-9999	-9999	-9999
80-11	39.7764	41.7576	150	1800	9771.688	62.22706	-9999	2622.496	-9999	-9999	-9999
80-11	41.7576	44.8056	410	4700	30245.76	492.7367	-9999	3319.408	-9999	-9999	-9999
80-11	44.8056	51.2064	270.4761	3076.19	21507.05	330.7286	-9999	3539.943	-9999	-9999	-9999
80-11	51.2064	64.31281	428.1395	6693.022	41408.36	668.2837	-9999	6359.206	-9999	-9999	-9999
80-11	64.3128	66.7512	300	3600	-9999	-9999	-9999	-9999	-9999	-9999	-9999
80-11	66.7512	84.1248	417.8947	5268.42	33122.8	732.3988	-9999	4080.472	-9999	-9999	-9999
80-11	84.1248	93.1164	47.28809	1145.763	725.1966	-3262.89	-9999	-2556.081	-9999	-9999	-9999
80-12	0	65.2272	63.70212	676.4681	5163.035	-1607.022	-9999.001	1602.43	-9999.001	-9999.001	-9999.001
80-12	65.2272	66.4464	370	8400	51487.09	883.8782	-9999	7618.005	-9999	-9999	-9999
80-12	66.4464	69.7992	120	2300	-9999	-9999	-9999	-9999	-9999	-9999	-9999
80-12	69.7992	71.628	300	4800	46582.34	994.363	-9999	5776.752	-9999	-9999	-9999
80-12	71.628	73.4568	120	2200	16206.9	253.988	-9999	4059.656	-9999	-9999	-9999
80-12	73.4568	75.7428	110	1600	17572.56	424.16	-9999	4598.445	-9999	-9999	-9999
80-12	75.7428	80.01	120	2700	11384.54	327.6445	-9999	3271.385	-9999	-9999	-9999
80-12	80.01	83.058	180	3700	18749.1	612.1111	-9999	4010.463	-9999	-9999	-9999
80-12	83.058	91.44	87.99997	1449.091	9804.864	217.1828	-9999	2265.212	-9999	-9999	-9999
80-12	91.44	93.5736	260	3900	23548.5	697.197	-9999	5523.757	-9999	-9999	-9999
80-12	93.5736	97.8408	250	4000	-9999	-9999	-9999	-9999	-9999	-9999	-9999
80-12	97.8408	101.0412	350	6400	39452.82	921.9765	-9999	7402.49	-9999	-9999	-9999
80-12	101.0412	102.87	80	2000	6972.83	99.05532	-9999	3085.152	-9999	-9999	-9999
80-12	102.87	108.5088	339.7297	7583.783	31492.84	1207.336	-9999	6322.663	-9999	-9999	-9999
80-12	108.5088	111.0996	160	3900	13830.84	262.8776	-9999	3434.193	-9999	-9999	-9999
80-12	111.0996	113.3856	220	3300	26705.32	462.2581	-9999	8099.401	-9999	-9999	-9999
80-12	113.3856	118.872	330	7044.444	18620.03	373.0802	-9999	5185.777	-9999	-9999	-9999
80-12	118.872	121.0056	330	5500	31289.93	502.8962	-9999	4648.811	-9999	-9999	-9999
80-12	121.0056	126.0348	103.3334	1987.88	8221.261	198.7264	-9999	2450.069	-9999	-9999	-9999
80-12	126.0348	144.1704	426.3022	5105.043	32841.97	1207.51	-9999	4766.087	-9999	-9999	-9999
80-12	144.1704	146.304	350	5200	-9999	-9999	-9999	-9999	-9999	-9999	-9999
80-12	146.304	153.3144	243.9132	3217.393	26335.56	845.0624	-9999	3704.149	-9999	-9999	-9999
80-13	0	24.384	122.5	2825	17104.17	181.6014	-9999	648.5963	-9999	-9999	-9999
80-13	24.384	29.8704	246.6667	4711.111	28629.15	421.7611	-9999	520.8292	-9999	-9999	-9999
80-13	29.8704	49.68239	122.6154	3098.462	13151.41	227.1629	-9999	1301.075	-9999	-9999	-9999
80-13	49.6824	53.0352	210	2800	20599.7	770.8536	-9999	4168.585	-9999	-9999	-9999
80-13	53.0352	77.1144	155.6962	2820.253	16820.86	234.9871	-9998.999	1061.729	-9998.999	-9998.999	-9998.999

BHID	FROM	TO	TA2O5_GT	NB2O5_GT	ZRO2_GT	Y2O3_GT	LA2O3_GT	CE2O3_GT	BEO_GT	GA2O3_GT	U_GT
81-01	0	48	98.00002	2009.333	6979.688	135.5872	730.9249	1529.754	-9999	-9999	-9999
81-01	48	51.5	180	1900	21180.54	641.3197	2381.19	3254.987	-9999	-9999	-9999
81-01	51.5	53.6	120	1300	447.1148	326.3746	2568.87	3907.39	-9999	-9999	-9999
81-01	53.6	60	427.9687	3379.687	28989.24	2150.782	2682.596	3782.447	-9999	-9999	-9999
81-01	60	66.4	22.5	275	1747.598	57.46482	598.3035	1120.915	-9999	-9999	-9999
81-01	66.4	71.5	1182.156	8399.997	81434.15	5517.988	8144.299	8431.654	-9999	-9999	-9999
81-01	71.5	77	14.90909	149.0909	1869.532	251.4019	284.9109	845.7492	-9999	-9999	-9999
81-02	0	19.7	52.43655	2661.421	4681.291	161.1922	-9999	907.7005	-9999	-9999	-9999
81-02	19.7	23	130	3400	13863.26	561.3135	-9999	3089.837	-9999	-9999	-9999
81-02	23	27.1	50	900.0001	7533.412	119.3744	-9999	1505.095	-9999	-9999	-9999
81-02	27.1	28.6	180	3600	23094.63	730.2155	-9999	1011.986	-9999	-9999	-9999
81-02	28.6	53.9	105.4545	1654.15	11858.52	141.4151	-9999	1758.485	-9999	-9999	-9999
81-02	53.9	60.1	294.1936	3608.065	33079.38	780.4191	-9999	5592.089	-9999	-9999	-9999
81-02	60.1	63.2	160	1600	8967.962	308.5954	-9999	2656.463	-9999	-9999	-9999
81-02	63.2	68.6	274.8149	2866.668	22330.53	487.3279	-9999	4277.386	-9999	-9999	-9999
81-02	68.6	70.1	30	400	2794.805	46.98778	-9999	994.4167	-9999	-9999	-9999
81-02	70.1	74.7	473.9129	5278.26	35631.78	640.6847	-9999	5598.081	-9999	-9999	-9999
81-02	74.7	82.09999	111.081	1202.702	6872.203	199.4663	-9999	2597.056	-9999	-9999	-9999
81-02	82.1	83.6	130	1100	5338.362	1094.688	-9999	1888.103	-9999	-9999	-9999
81-02	83.6	89.6112	99.94411	1399.255	516.9919	181.067	-9999	2499.001	-9999	-9999	-9999
81-03	78	88.4	-9998.999	-9998.999	157.9786	21.40581	-9998.999	40.72449	-9998.999	-9998.999	-9998.999
81-04	0	3.5									
81-04	3.5	10.7	563.0555	7622.223	47984.68	561.3135	-9999	4118.693	-9999	-9999	-9999
81-04	10.7	14.6	375.3846	4769.23	31275.48	251.0574	-9999	3417.705	-9999	-9999	-9999
81-04	14.6	16.4	590	7400	56655.25	441.9391	-9998.999	2794.674	-9998.999	-9998.999	-9998.999
81-04	16.4	46.89999	132.2623	1704.59	10081.56	111.0052	-9999	1336.933	-9999	-9999	-9999
81-04	46.9	48.5	400	4600	34227.92	661.6387	-9999	3351.032	-9999	-9999	-9999
81-04	48.5	51.5	170	1500	12621.88	292.0862	-9999	1656.19	-9999	-9999	-9999
81-04	51.5	74.8	425.9656	3407.296	27856.42	921.5456	-9999.001	3363.192	-9999.001	-9999.001	-9999.001
81-04	74.8	92.39999	21.22157	403.409	3931.362	116.4448	-9999	641.2355	-9999	-9999	-9999
81-05	0	25.5	116.4189	1815.753	9595.489	118.9344	-9999	2119.798	-9999	-9999	-9999
81-05	25.5	44	648.973	7222.163	49177.54	1374.57	-9999	6318.335	-9999	-9999	-9999
81-05	44	46.5	220	1900	17067.36	327.6445	-9999	1502.752	-9999	-9999	-9999
81-05	46.5	51.6	463.1373	4076.471	34869.79	1164.535	-9999	3734.294	-9999	-9999	-9999
81-05	51.6	73.19998	41.71299	686.5746	6524.028	121.4498	-9999	599.934	-9999	-9999	-9999
81-05	73.2	74.8	280	2200	13575.54	499.0864	-9999	1357.514	-9999	-9999	-9999
81-05	74.8	86.6	44.0678	566.9492	5192.957	134.7428	-9998.999	602.0381	-9998.999	-9998.999	-9998.999
84L-01A	0	85.6	45.10159	1841.609	-9998.999	115.3491	678.5485	1284.453	-9998.999	-2520.617	-9998.999
84L-01A	85.6	88.7	110	3600	-9999	400	3096.72	6170	-9999	-9999	-9999
84L-01A	88.7	91.7	50	6700	-9999	280	1501.44	1720	-9999	-9999	-9999
84L-01A	91.7	107	157.451	5124.185	-9999	607.5165	3706.459	7775.298	-9999	-9999	-9999
84L-01A	107	125.3	30.32786	436.6119	-9999	132.2404	567.61	1389.289	-9999	-9999	-9999
84L-01A	125.3	128.3	70	600	-9999	480	-9999	7210	-9999	-9999	-9999
84L-01A	128.3	146.6	63.11478	1076.503	-9999	146.5027	828.6955	1572.021	-9999	-9999	-9999
84L-01A	146.6	149.7	90	2100	-9999	510	1360.68	2670	-9999	-9999	-9999
84L-01A	149.7	152.4									
84L-02	0	39	16.06667	602.9	-9999	43.1	-9999	451.8333	-9999	-3951.994	-9999
84L-02	39	42.1	100	5300	-9999	400	-9999	3070	-9999	-9999	-9999
84L-02	42.1	60.4	99.56284	3878.689	-9999	240.4918	-9999	3258.908	-9999	-9999	-9999
84L-02	60.4	69.5	160.4396	6027.473	-9999	516.1538	-9999	8024.725	-9999	-9999	-9999
84L-02	69.5	72.6	90.00001	1700	-9999	290	-9999	2010	-9999	-9999	-9999
84L-02	72.6	78.6	110	2900	-9999	560	-9999	4075	-9999	-9999	-9999
84L-02	78.6	109.1	136.5902	2130.165	-9999	196.5902	-9999	2176.82	-9999	-3931.634	-9999
84L-02	109.1	112.2	230	2100	-9999	970	-9999	20	-9999	150	-9999
84L-02	112.2	153.0096	125.7736	1385.133	-9999	74.33488	-9999	-968.5154	-9999	111.4457	-9999
84L-03	0	60.39999	74.83443	3378.564	-9999.001	78.0394	-9999.001	2095.661	-9999.001	-6345.555	-9999.001
84L-03	92.5	101.7	145.7609	3140.217	-9999	629.5652	-9999	4376.413	-9999	-9999	-9999
84L-03	101.7	113.8	78.51237	2314.049	-9999	207.0248	-9999	4333.388	-9999	-9999	-9999
84L-03	113.8	116.9	5	6300	-9999	440	-9999	8500	-9999	-9999	-9999
84L-03	116.9	141.3	51.68037	691.3942	-9999	76.06563	-9999	440.1234	-9999	-9999	-9999
84L-03	141.3	152.4	104.7748	4975.675	-9999	681.7117	-9999	4317.477	-9999	-9999	-9999
84L-04	0	1.2192									
85L-05	0	100	-9998.999	1162.356	-9998.999	103.615	-9998.999	927.843	-5268.479	-9998.999	-9998.999
85L-05	100	158.5	-9998.999	1847.949	-9998.999	153.8291	-9998.999	981.5043	-7809.568	-9998.999	-9998.999
85L-05	164.6	176.8	-9999.001	2607.212	-9999.001	144.6721	-9999.001	860.0817	-9999.001	-9999.001	-9999.001
85L-06	0	6.096									
85L-06	6.096	8.2296	30	5240	-9999	690	-9999	9160	-9999	-9999	-9999

BHID	FROM	TO	TA2O5_GT	NB2O5_GT	ZRO2_GT	Y2O3_GT	LA2O3_GT	CE2O3_GT	BEO_GT	GA2O3_GT	U_GT
85L-06	8.2296	17.3736	46.66666	4846.665	-9999	293.3333	-9999	4486.666	-9999	-9999	-9999
85L-06	17.3736	20.4216	190	2540	-9999	430	-9999	6530	-9999	-9999	-9999
85L-06	20.4216	38.7096	111.6667	4665	-9999	276.6667	-9999	3718.333	-9999	-9999	-9999
85L-06	38.7096	41.7576	190	3840	-9999	420	-9999	4320	-9999	-9999	-9999
85L-06	41.7576	44.8056	280	2520	-9999	280	-9999	3380	-9999	-9999	-9999
85L-06	44.8056	47.8536	650	3930	-9999	470	-9999	6420	-9999	-9999	-9999
85L-06	47.8536	87.47762	70.76924	1902.308	-9999	153.077	-9999	2377.693	-9999	-9999	-9999
86L-07	0	5.1816	580	4010	-9999	220	-9999	3870	-9999	-9999	-9999
86L-07	5.1816	20.4216	468	4420	-9999	1072	-9999	10484	-9999	-9999	-9999
86L-07	20.4216	23.4696	89.99999	1640	-9999	290	-9999	2100	-9999	-9999	-9999
86L-07	23.4696	26.5176	370	5340	-9999	919.9999	-9999	12860	-9999	-9999	-9999
86L-07	26.5176	60.96	73.9823	1090.443	-9999.001	193.0973	-9999.001	1632.301	-9999.001	-9999.001	-9999.001
88L-08	0	14.3256	154.9564	2743.021	32847.94	218.5378	-9999	2462.99	11.7035	-9999	-9999
88L-08	14.3256	23.4696	229.5574	3172	40153.88	928.3262	-9999	6198.023	14.06152	-9999	-9999
88L-08	23.4696	32.6136	122.919	1992.333	20147.63	235.3622	-9999	3756.685	9.251	-9999	-9999
88L-08	32.6136	37.4904	295.3415	4366.5	39619.64	674.973	-9999	7137.487	12.31539	-9999	-9999
88L-08	37.4904	40.2336	112.3366	884	8349.294	332.7243	-9999	2567.446	3.33036	-9999	-9999
88L-08	40.2336	47.5488	182.8522	2178.542	19200.27	850.9129	-9999	3931.06	7.377672	-9999	-9999
88L-08	47.5488	52.42559	12.2105	328.1875	2783.83	38.01884	-9999	377.8111	45.60164	-9999	-9999
88L-08	52.4256	70.7136	214.4978	2472.667	26645.66	1200.941	-9999	4317.144	23.86759	-9999	-9999
88L-08	70.7136	89.0016	70.77002	1003.5	8612.16	205.8361	-9999	815.162	1.905706	-9999	-9999
88L-08	89.0016	104.2416	331.6373	3344.2	33826.74	786.601	-9998.999	4489.751	12.21132	-9998.999	-9998.999
88L-08	104.2416	133.1976	32.20999	589.8945	5806.062	140.8697	-9999	743.134	7.81174	-9999	-9999
88L-08	133.1976	136.2456	112.3366	1078	16636.45	406.3808	-9999	708.6244	16.09674	-9999	-9999
88L-08	136.2456	151.4856	41.02727	563.1998	5115.208	223.2554	-9999.001	1322.609	15.37517	-9999.001	-9999.001
88L-09	0	26.5176	157.4342	2761.197	34640.59	55.69592	-9999	455.1345	7.780409	-9999	-9999
88L-09	26.5176	42.0624	251.5961	4230.882	38956.45	817.3559	-9999	6265.004	23.64175	-9999	-9999
88L-09	42.0624	47.8536	21.20771	577.8948	3160.871	117.3692	-9999	1207.035	11.83154	-9999	-9999
88L-09	47.8536	66.1416	242.7243	2814.467	28605.42	1160.789	-9999	5602.643	15.33816	-9999	-9999
88L-09	66.1416	74.5236	12.2105	154.4544	1613.836	47.68038	-9999	236.492	31.1086	-9999	-9999
88L-09	74.5236	78.3336	196.1496	2221.081	23454.12	1686.328	-9999	4198.478	40.05316	-9999	-9999
88L-09	78.3336	90.52559	23.81048	298.7499	1467.644	56.8298	-9999	446.8433	3.191595	-9999	-9999
88L-09	90.5256	93.5736	147.7471	1736	7463.17	462.2581	-9999	2534.65	5.27307	-9999	-9999
88L-09	93.5736	108.204	64.0034	1194.458	5063.827	169.7222	-9999	1234.822	4.463608	-9999	-9999
88L-09	108.204	112.1664	282.72	3606.23	20951.53	682.6415	-9999	2972.439	14.81583	-9999	-9999
88L-09	112.1664	123.1392	58.54256	972.1667	7296.456	195.2533	-9999	2179.264	4.98783	-9999	-9999
88L-09	123.1392	151.4856	405.6771	3228.208	30794.56	1451.281	-9999.001	4248.833	19.23609	-9999.001	-9999.001
88L-10	0	15.5448	97.9314	1676.837	14005.83	262.6949	-9999.001	2456.863	13.34865	-9999.001	-9999.001
88L-10	15.5448	21.6408	260.6942	4123	33704.48	446.3839	-9999	2322.062	17.76192	-9999	-9999
88L-10	21.6408	29.5656	96.83867	1635.077	6798.161	194.4962	-9999	2871.708	8.859612	-9999	-9999
88L-10	29.5656	32.6136	31.7473	619	2158.578	535.9147	-9999	452.1141	8.3259	-9999	-9999
88L-10	32.6136	53.9496	38.65496	846.8145	2945.787	178.4266	-9999	941.9101	6.906532	-9999	-9999
88L-10	53.9496	63.0936	108.6735	1369.667	9507.378	899.541	-9999	2600.632	6.66072	-9999	-9999
88L-10	63.0936	66.1416	105.0103	1834	9629.853	215.8898	-9999	2380.041	11.37873	-9999	-9999
88L-10	66.1416	72.2376	131.2629	1706.5	12178.14	1012.142	-9999	1336.43	9.991082	-9999	-9999
88L-10	72.2376	75.2856	79.36825	1903	7291.618	204.4603	-9999	1404.365	12.48885	-9999	-9999
88L-10	75.2856	81.0768	152.3099	1898.737	16890.9	886.8852	-9999	3025.292	17.9664	-9999	-9999
88L-10	81.0768	90.9828	66.31242	932.2158	7172.294	193.9882	-9999	1029.664	7.015105	-9999	-9999
88L-10	90.9828	102.7176	196.9538	2366.909	17260.35	556.2833	-9999	2902.903	13.84406	-9999	-9999
88L-10	102.7176	127.1016	119.3576	1657.75	7610.746	184.1413	-9999	1126.771	9.71355	-9999	-9999
88L-11	0	12.28344									
88L-11	12.28344	17.3736	143.3528	2006.198	17475.52	758.253	-9999	3810.594	12.20633	-9999	-9999
88L-11	17.3736	23.4696	95.85242	1780	17072.09	279.3868	-9999	3783.234	21.09228	-9999	-9999
88L-11	23.4696	26.0604	177.0522	2564	28738.27	415.2704	-9999	4530.511	16.6518	-9999	-9999
88L-11	26.0604	28.4988	140.4207	2143	21326.43	255.2579	-9999	3106.235	7.493309	-9999	-9999
88L-11	28.4988	38.7096	189.4632	2630.06	26602.17	513.795	-9998.999	5392.538	12.5924	-9998.999	-9998.999
88L-11	38.7096	41.7576	155.0733	2572	19899.98	257.7978	-9999	2801.702	13.32144	-9999	-9999
88L-11	41.7576	44.5008	224.6732	3428	26088	1040.081	-9999	4749.541	6.938251	-9999	-9999
88L-11	44.5008	49.53	12.2105	162.6667	976.6285	12.6994	-9999	190.5282	26.08782	-9999	-9999
88L-11	49.53	72.2376	276.3097	3667.309	29148.38	873.8466	-9999	6448.722	14.68301	-9999	-9999
88L-11	72.2376	74.8284	96.46295	1971	2562.468	283.1966	-9999	4666.379	12.48885	-9999	-9999
88L-11	74.8284	86.25839	267.4751	3063.788	22213.86	1399.034	-9999	5274.258	15.40847	-9999	-9999
88L-11	86.2584	111.8616	57.51286	847.8625	6387.825	158.8104	-9999	911.715	3.67562	-9999	-9999
88L-11	111.8616	127.1016	455.1588	3582.671	41724.62	2147.725	-9999	5440.938	38.68775	-9999	-9999
88L-11	127.1016	138.3792	46.38344	629.6492	4241.281	109.0948	-9998.999	1114.22	13.6177	-9998.999	-9998.999
88L-14	0	19.05	25.93447	595.3153	4635.333	72.0023	-9999.001	740.6405	14.32514	-9999.001	-9999.001
88L-14	19.05	20.4216	387.0728	6401	47356.34	900.3875	-9999	3926.131	48.56775	-9999	-9999

BHID	FROM	TO	TA2O5_GT	NB2O5_GT	ZRO2_GT	Y2O3_GT	LA2O3_GT	CE2O3_GT	BEO_GT	GA2O3_GT	U_GT
88L-14	20.4216	41.7576	37.34668	1164.229	5030.341	139.5482	-9999	2421.253	14.66945	-9999	-9999
88L-15	0	1.2192									
88L-15	1.2192	4.2672	240.5468	2393	25789.47	845.78	6005.76	8138.055	11.93379	-9999	-9999
88L-15	4.2672	5.9436	75.7051	3972	1014.451	96.51544	505.563	645.3752	6.38319	-9999	-9999
88L-15	5.9436	20.4216	344.9145	4218.737	37140.89	846.4484	2787.418	4758.726	15.38101	-9999.001	-9999.001
88L-15	20.4216	23.4696	74.48405	1673	7515.851	118.1044	323.748	872.6036	9.71355	-9999	-9999
88L-15	23.4696	25.6032	155.0733	2501	14681.84	415.2704	520.812	1090.462	15.26415	-9999	-9999
88L-15	25.6032	40.8432	66.00994	1221.62	954.0431	212.5117	884.3949	1666.474	5.511746	-9999	-9999
88L-15	40.8432	42.3672	12.2105	265	521.4088	750.5345	126.684	345.5276	11.1012	-9999	-9999
88L-15	42.3672	63.0936	14.90399	445.7942	1399.627	193.2924	262.7175	580.3348	5.285315	-9999	-9999
88L-15	63.0936	66.1416	36.6315	378	1475.074	448.2888	214.0725	428.6885	8.88096	-9999	-9999
88L-15	66.1416	72.2376	12.2105	506.0001	1695.254	252.7179	252.4883	511.264	5.828129	-9999	-9999
88L-15	72.2376	75.2856	12.2105	315	1811.423	443.209	338.997	351.384	5.5506	-9999	-9999
88L-15	75.2856	90.5256	24.42101	617.2001	2946.906	148.837	517.5276	968.6485	5.994648	-9999	-9999
88L-16	0	3.6576									
88L-16	3.6576	17.3736	176.6452	3261	20487.44	619.8718	-9999.001	6443.211	11.25538	-9999.001	-9999.001
88L-16	17.3736	35.66159	152.0208	2074	23310.31	259.9144	-9999	2331.336	13.73774	-9999	-9999
88L-16	35.6616	38.7096	167.2838	1555	14954.71	466.068	-9999	2423.378	12.48885	-9999	-9999
88L-16	38.7096	53.9496	112.0924	1386.2	12502.47	239.2567	-9999	2907.82	12.21132	-9999	-9999
88L-16	53.9496	56.9976	152.6313	1425	13274.31	431.7796	-9999	3702.416	10.26861	-9999	-9999
88L-16	56.9976	60.0456	100.1261	1022	15651.72	205.7303	-9999	2129.387	8.3259	-9999	-9999
88L-17	0	5.1816	113.5576	1457	13949.71	278.1169	-9999	5054.073	7.77084	-9999	-9999
88L-17	5.1816	14.3256	120.884	1918.667	18138.54	517.2889	-9999	5093.897	12.39634	-9999	-9999
88L-17	14.3256	29.5656	147.5517	2524.92	16571.29	225.9478	-9999	3576.012	10.74596	-9999	-9999
88L-17	29.5656	44.80559	217.1028	2223.201	19113.82	562.3295	-9999	4532.619	12.48885	-9999	-9999
88L-18	0	2.7432									
88L-18	2.7432	3.9624	76.31563	1003.5	12599.59	627.9854	-9999	3538.438	11.79503	-9999	-9999
88L-18	3.9624	5.4864	72.04195	1098	6691.863	349.2335	-9999	2654.12	5.5506	-9999	-9999
88L-18	5.4864	9.2964	106.2802	1268.88	10173.96	480.5453	-9999.001	3426.603	9.746854	-9999.001	-9999.001
88L-18	9.2964	12.192	91.57874	1132	10054	290.8163	-9999	3044.157	7.49331	-9999	-9999
88L-18	12.192	18.8976	161.8724	1667.432	24344.77	560.2169	-9999	5517.023	15.1317	-9999	-9999
88L-18	18.8976	20.8788	97.684	1432	12517.86	336.5341	-9999	3934.33	11.65626	-9999	-9999
88L-18	20.8788	32.9184	134.2537	1943.747	20502.39	513.104	-9999	5260.486	17.55465	-9999	-9999
88L-18	32.9184	44.8056	37.74296	773.4229	9983.188	231.7803	-9999	2641.086	9.617481	-9999	-9999
88L-19	0	8.2296	52.05743	427.3333	7032.085	260.4224	-9999	2300.863	3.404368	-9999	-9999
88L-19	8.2296	10.668	173.3891	1357	23740.31	622.2706	-9999	7326.356	12.21132	-9999	-9999
88L-19	10.668	18.5928	91.95447	1003.539	15855.59	313.1868	-9999	4079.568	8.518037	-9999	-9999
88L-19	18.5928	23.1648	173.8369	2416.433	23490.46	499.8484	-9999	5877.015	15.20865	-9999	-9999
88L-19	23.1648	53.94959	92.15905	1322.891	12038.88	184.4431	-9999	4560.222	9.653098	-9999	-9999
88L-19	53.9496	59.7408	99.09785	1493.421	13960.02	817.507	-9999	20793.42	20.50801	-9999	-9999
88L-19	59.7408	66.1416	125.303	1810.381	14465.91	231.3104	-9999	7939.66	9.911784	-9999	-9999
88L-19	66.1416	72.23761	216.2784	2854.124	50539.48	507.1822	-9999	8678.449	22.27177	-9999	-9999
88L-19	72.2376	75.2856	136.7576	1592	23709.24	245.0984	-9999	3711.787	9.43602	-9999	-9999
88L-20	0	2.7432									
88L-20	2.7432	26.8224	134.3696	2821.088	22262.62	579.1248	-9999.001	5956.346	11.55614	-9999.001	-9999.001
88L-20	26.8224	29.1084	108.6734	1071	18353.32	349.2335	-9999	4168.585	11.37873	-9999	-9999
88L-20	29.1084	32.004	228.3364	2000	21737.07	535.9147	-9999	3632.139	12.21132	-9999	-9999
88L-20	32.004	34.1376	172.168	1473	16521.63	380.982	-9999	2563.932	13.32144	-9999	-9999
88L-20	34.1376	44.8056	230.2901	2365.615	17539.76	560.1343	-9999	3261.914	10.53028	-9999	-9999
88L-21	0	2.7432									
88L-21	2.7432	7.1628	138.8207	1569.931	21942.44	767.7444	-9999.001	8763.556	19.89603	-9999.001	-9999.001
88L-21	7.1628	17.526	12.2105	278.7648	1523.146	66.85862	-9999	1071.204	4.75066	-9999	-9999
88L-21	17.526	20.4216	233.2206	3038	25584.15	575.2828	-9999	6820.363	21.36981	-9999	-9999
88L-21	20.4216	22.2504	115.9997	1864	15716.56	398.7612	-9999	4772.966	17.20686	-9999	-9999
88L-21	22.2504	24.384	114.7787	1876	17159.21	624.8105	-9999	4032.717	17.20686	-9999	-9999
88L-21	24.384	28.194	53.57973	1130.6	8709.8	389.008	-9999	4889.531	14.8201	-9999	-9999
88L-21	28.194	40.2336	117.1744	2661.924	14711.89	521.5595	-9999	4472.674	11.36819	-9999	-9999
88L-21	40.2336	44.8056	65.69248	1189.8	8331.734	289.0384	-9999	3572.248	9.158491	-9999	-9999
88L-22	0	9.2964									
88L-22	9.2964	14.0208	264.2982	5175.872	47367.46	502.6504	-9999	3558.764	21.41457	-9999	-9999
88L-22	14.0208	41.75759	113.7455	2750	16950.94	104.0933	-9999	1211.129	10.44855	-9999	-9999
88L-22	41.7576	43.2816	242.989	3216	22099.09	427.9698	-9999	569.2421	4.16295	-9999	-9999
88L-22	43.2816	56.9976	122.105	1856	2004.587	12.6994	-9999	650.0605	3.33036	-9999	-9999
88L-23	0	53.9496	94.27068	2286.516	18028.85	156.0642	-9999	676.5829	11.64148	-9999	-9999
88L-23	53.9496	56.9976	279.6205	4152	41501.98	419.0802	-9999	2951.625	9.15849	-9999	-9999
88L-23	56.9976	68.88481	215.2336	2946.244	14859.01	247.736	-9999	2076.184	5.9242	-9999	-9999
88L-23	68.8848	71.3232	202.6943	2646	19567.69	540.9944	-9999	2432.749	6.10566	-9999	-9999

BHID	FROM	TO	TA2O5_GT	NB2O5_GT	ZRO2_GT	Y2O3_GT	LA2O3_GT	CE2O3_GT	BEO_GT	GA2O3_GT	U_GT
88L-23	71.3232	90.5256	54.04607	1075.168	4828.023	214.0555	-9999	1114.046	9.867733	-9999	-9999
88L-23	90.5256	96.62159	75.09456	1433.5	4183.424	527.0249	-9999	2380.627	12.21132	-9999	-9999
88L-23	96.6216	101.346	52.38707	1201.55	6870.042	173.859	-9999	1368.848	8.827248	-9999	-9999
88L-23	101.346	103.7844	282.0626	3810	28634.26	576.5527	-9999	1759.262	12.21132	-9999	-9999
88L-23	103.7844	106.0704	12.2105	491.0001	472.78	44.4479	-9999	679.3424	4.99554	-9999	-9999
88L-23	106.0704	122.5296	312.6566	3197.444	33797.7	1187.982	-9999.001	3889.365	22.1356	-9999.001	-9999.001
88L-23	122.5296	128.6256	57.99987	1155	13404.67	189.2211	-9999	1096.904	6.66072	-9999	-9999
88L-24	0	10.3632									
88L-24	10.3632	37.1856	183.2962	2314.853	17796.91	574.6479	-9999.001	4517.827	11.11382	-9999.001	-9999.001
88L-24	37.1856	44.8056	116.0974	1607.68	9548.967	225.389	-9999.001	2554.233	9.746853	-9999.001	-9999.001
88L-24	44.8056	46.9392	212.4627	2599	31866.72	607.0313	-9999	4603.13	13.8765	-9999	-9999
88L-24	46.9392	48.4632	81.81035	1339	12189.62	320.0249	-9999	3249.131	12.48885	-9999	-9999
88L-24	48.4632	58.2168	191.5141	2828.469	21270.92	558.3768	-9999	3430.533	15.22946	-9999	-9999
88L-24	58.2168	63.5508	68.30903	1256.171	8867.386	157.7265	-9999	1209.464	9.15849	-9999	-9999
88L-24	63.5508	64.9224	205.1364	2338	28631.56	747.9947	-9999	4021.004	19.4271	-9999	-9999
88L-24	64.9224	69.4944	133.3387	2346.2	21107.6	304.7856	-9999	2171.786	13.65448	-9999	-9999
88L-24	69.4944	82.60081	348.8086	3850.884	43113.55	740.316	-9999	5289.813	21.76352	-9999	-9999
88L-24	82.6008	87.7824	200.3959	5294.766	4455.566	209.9881	-9999	2489.796	12.57047	-9999	-9999
88L-24	87.7824	90.52559	279.6205	4211	13197.32	519.4055	-9999	3076.952	15.26415	-9999	-9999
88L-24	90.5256	96.62159	143.4734	1900.5	9608.919	260.3378	-9999	846.8353	10.54614	-9999	-9999
88L-24	96.6216	99.66959	190.4838	2560	13801.12	720.056	-9999	2727.911	9.43602	-9999	-9999
88L-24	99.6696	103.0224	86.69455	2950	4857.477	270.4972	-9999	2342.56	9.43602	-9999	-9999
88L-24	103.0224	137.7696	336.6133	3193.41	32007.22	1121.851	-9999	3878.295	18.2707	-9999	-9999
88L-24	137.7696	139.2936	172.168	1333	12509.76	208.2702	-9999	1027.213	3.88542	-9999	-9999
88L-25	0	33.2232	119.3985	2744.129	7886.768	94.74123	729.289	1380.31	8.439273	-9999.001	-9999.001
88L-25	33.2232	40.8432	293.6381	3875.119	36916.54	850.0469	4883.434	5998.546	15.797	-9999	-9999
88L-25	40.8432	51.81601	127.7354	1692.5	6708.072	285.3837	1602.318	2999.778	3.623308	-9999	-9999
88L-25	51.816	55.4736	131.5681	1971.167	20530.81	752.5453	2158.809	3421.114	18.0857	-9999	-9999
88L-25	55.4736	65.532	100.0521	1378.879	12835.46	235.67	1124.48	2137.87	8.89778	-9999	-9999
88L-25	65.532	67.9704	260.0836	2669	26702.62	654.0191	2205.24	3202.28	15.54168	-9999	-9999
88L-25	67.9704	71.3232	111.1155	1590	13837.59	276.8469	1099.101	2380.041	6.93825	-9999	-9999
88L-25	71.3232	74.676	162.3996	1841.363	25804.7	664.7558	-4736.873	2754.424	14.6334	-9999.001	-9999.001
88L-25	74.676	77.4192	79.36825	1182	13729.53	241.2886	-9999	3235.075	7.77084	-9999	-9999
88L-25	77.4192	90.67799	186.0768	2191.471	22594.06	788.9681	2894.614	4226.342	13.3023	-9999	-9999
88L-25	90.678	97.23119	19.76396	416.9999	1118.493	118.5474	507.6632	1148.236	3.730519	-9999	-9999
88L-25	97.2312	114.9096	139.0103	1592.819	6601.561	1376.242	-614.5805	3159.537	6.163079	-9999.001	-9999.001
88L-25	114.9096	121.6152	145.5547	1788.477	535.5921	328.597	2418.725	4396.292	3.443896	-9999	-9999
88L-25	121.6152	127.1016	128.2103	1618	2357.296	3683.816	2046.234	3661.552	8.017532	-9999	-9999
88L-25	127.1016	128.9304	40.29465	818.9999	5295.136	292.0862	551.31	894.8579	7.77084	-9999	-9999
88L-25	128.9304	148.1328	251.5845	2307.491	25503.17	1101.631	2284.182	3473.568	16.35222	-9999	-9999
88L-25	148.1328	149.9616	702.1038	4646	87874.95	273.0371	6744.75	8382.852	98.52315	-9999	-9999
88L-25	149.9616	160.6296	323.0202	2560.915	28315.14	1804.876	2005.328	3267.504	33.37499	-9999	-9999
88L-25	160.6296	166.7256	47.01043	589.5	6625.674	198.1107	302.0475	668.8009	6.93825	-9999	-9999
88L-26	0	21.336	92.84052	2369.05	13668.14	166.8913	276.828	588.861	13.30294	-9999.001	-9999.001
88L-26	21.336	28.0416	134.5375	2376.955	21883.27	493.1985	2208.972	3583.211	8.868345	-9999	-9999
88L-26	28.0416	35.6616	147.0144	2893.4	19811.86	298.5375	670.346	1414.859	13.21043	-9999	-9999
88L-26	35.6616	38.7096	240.5468	3272	33892.92	704.8167	3436.89	5392.573	10.54614	-9999	-9999
88L-26	38.7096	41.7576	137.9787	1862	12655.64	382.2519	923.151	2169.21	9.43602	-9999	-9999
88L-26	41.7576	79.8576	278.8292	3515.48	30490.16	914.6111	584.6349	3417.345	14.92667	-9999	-9999
88L-26	79.8576	89.0016	29.30523	722.6671	5907.504	164.2457	335.478	731.6597	7.77084	-9999	-9999

NORTH T-ZONE

ZONE	BHID	FROM	TO	LENGTH	BEO	CE2O3	GA2O3	GD2O3	LA2O3	NB2O5	ND2O3	Y2O3
C	83-1	52.13	53.96	1.83	3400	210	0	0	100	1200	90	120
C	83-10	57.92	60.96	3.04	6450	2350	0	0	0	30800	750	210
C	83-15	36.58	38.1	1.52	1400	150	0	0	0	0	0	200
C	83-18	59.44	60.96	1.52	3000	1560	0	0	0	0	0	130
C	83-2	41.16	57.92	16.76	21305	1384	4	0	534	3429	499	1168
C	83-3	54.86	56.4	1.54	17800	1860	0	0	730	4300	830	5500
C	83-34	33.84	58.22	24.38	8777	1841	0	343	858	11418	598	1682
C	83-36	36.58	60.96	24.38	4400	844	0	0	0	2514	0	209
C	83-37	39.62	48.77	9.15	12200	1627	0	0	0	0	0	720
C	83-37	59.44	62.18	2.74	3300	590	0	0	0	0	0	50
C	83-38	54.86	60.96	6.10	4800	1550	0	0	0	2550	0	315
C	83-40	57.91	60.96	3.05	3600	1150	0	0	0	1540	0	200
C	83-42	28.96	56.39	27.43	5565	1516	0	0	772	8859	577	316
C	83-43	51.82	54.86	3.04	4400	2300	0	0	0	5230	0	9490
C	83-44	41.15	50.29	9.14	4967	360	0	0	0	983	0	380
C	84-51	48.77	60.96	12.19	4275	345	0	0	0	3187	0	135
C	84-52	45.72	57.91	12.19	6549	198	0	0	0	1252	0	300
C	84-54	59.44	60.96	1.52	4600	1510	0	0	0	2300	0	280
C	84-62	48.77	51.82	3.05	5300	1300	0	60	0	5300	510	290
C	84-65	53.34	60.96	7.62	4159	2612	0	0	798	5534	856	3653
C	84-75	44.2	47.25	3.05	0	940	0	120	0	2600	410	340
C	84-75	59.44	65.54	6.10	36850	1730	0	390	0	10900	735	4110
C	84-76	71.63	80.16	8.53	7720	3042	0	641	0	70386	242	3996
C	84-77	70.1	79.86	9.76	4556	1241	0	83	0	9744	354	1217
C	84-78	42.67	48.77	6.10	3800	450	0	45	0	3950	70	1315
C	84-79	64.92	80.77	15.85	12656	1618	0	17	0	11938	65	1946
C	84-80	23.77	51.82	28.05	6102	1457	0	68	0	9027	465	315
C	84-81	63.7	72.24	8.54	6274	3838	0	0	0	39887	0	533
C	84-82	67.67	70.1	2.43	8400	2100	0	0	0	9970	0	920
C	84-83	60.05	70.1	10.05	3894	1944	0	0	0	10594	0	1868
C	85-101	60.35	63.7	3.35	4400	460	0	0	0	9990	0	5110
C	85-102	53.34	56.99	3.65	10000	520	0	0	0	15700	0	270
C	85-103	50.59	51.51	0.92	19300	90	0	0	0	3550	0	170
C	85-105	64	68.58	4.58	5878	551	0	0	0	22599	0	1252
C	85-109	38.4	41.76	3.36	6200	360	0	0	0	13300	0	1080
C	85-110	41.45	50.59	9.14	6235	113	0	0	0	5988	0	373
C	85-111	66.14	67.36	1.22	8500	570	0	0	0	5200	0	300
C	85-114	75.28	80.77	5.49	20524	1150	0	0	0	43773	0	6954
C	85-115	88.41	89.94	1.53	4100	840	0	0	0	8270	0	1520
C	85-67	57.91	60.96	3.05	16600	2030	0	0	0	19100	0	330
C	85-99	44.19	48.16	3.97	6700	180	0	0	0	4100	0	460
D	83-1	35.96	39.02	3.06	13918	619	0	0	290	2290	340	709
D	83-10	42.68	47.25	4.57	9304	1825	0	0	0	1149	991	4237
D	83-11	41.15	47.24	6.09	4878	962	0	0	0	2905	0	880
D	83-12	38.1	41.15	3.05	0	0	0	0	0	0	0	0
D	83-16	38.1	50.29	12.19	9310	1555	0	0	0	1170	0	3459
D	83-17	44.2	45.72	1.52	2600	350	0	0	0	2490	0	300
D	83-2	32.01	36.58	4.57	6729	1723	0	0	673	5702	279	2474
D	83-3	28.96	41.16	12.20	12400	1625	0	0	629	1365	693	4099
D	83-35	30.48	45.72	15.24	5900	2480	0	0	0	1817	0	1438
D	83-38	42.67	45.72	3.05	5200	1100	0	0	0	3130	0	660

ZONE	BHID	FROM	TO	LENGTH	BEO	CE2O3	GA2O3	GD2O3	LA2O3	NB2O5	ND2O3	Y2O3
D	83-39	44.2	47.24	3.04	3600	700	0	0	0	0	0	90
D	83-40	32	38.1	6.10	5450	640	0	0	0	2200	0	65
D	83-43	30.48	45.72	15.24	9726	564	0	0	0	3123	0	646
D	83-9	33.23	41.16	7.93	10271	5199	0	0	2877	1494	3642	3630
D	84-46	33.53	45.72	12.19	3875	2035	0	0	0	6084	0	1146
D	84-48	33.53	36.58	3.05	0	630	0	0	0	1960	0	490
D	84-49	48.77	64.01	15.24	3362	698	0	0	0	0	0	552
D	84-50	35.05	41.15	6.10	6850	160	0	0	0	605	0	195
D	84-51	27.43	33.53	6.10	3450	750	0	0	0	1865	0	670
D	84-54	32.92	42.67	9.75	11572	500	0	0	0	1502	0	1175
D	84-55	29.57	41.15	11.58	5206	970	0	0	404	1664	231	581
D	84-56	32.31	44.2	11.89	15517	5323	0	0	0	833	0	4086
D	84-62	33.53	42.67	9.14	8653	2124	0	54	0	26673	648	529
D	84-65	35.05	41.15	6.10	15100	1290	0	0	555	1255	190	2555
D	84-66	32.31	39.62	7.31	12876	2043	0	0	0	2568	0	1856
D	84-68	44.2	46.33	2.13	3900	3100	0	0	0	2160	0	3670
D	84-75	32.31	38.11	5.80	31191	1825	0	880	0	1588	918	4290
D	84-76	35.66	47.24	11.58	16305	1622	0	170	0	2624	244	802
D	84-77	36.58	45.72	9.14	7829	2270	0	976	0	3400	450	5270
D	84-79	35.05	41.15	6.10	0	1355	0	0	0	2340	0	3850
D	84-81	35.66	49.07	13.41	8450	745	0	0	0	1304	0	731
D	84-82	37.49	47.55	10.06	8308	9874	0	0	0	1873	0	2062
D	84-83	40.23	43.89	3.66	4600	2980	0	0	0	4720	0	3560
D	85-101	42.97	44.19	1.22	12100	360	0	0	0	12400	0	350
D	85-102	34.14	42.67	8.53	3645	1379	0	0	0	2478	0	2774
D	85-103	37.03	40.38	3.35	4900	1620	0	0	0	6660	0	4830
D	85-104	34.14	37.49	3.35	3400	150	0	0	0	3580	0	460
D	85-107	39.62	42.97	3.35	10900	0	0	0	0	7730	0	180
D	85-108	41.15	42.06	0.91	10900	100	0	0	0	650	0	840
D	85-109	29.87	31.7	1.83	8000	790	0	0	0	1200	0	31600
D	85-110	30.78	35.66	4.88	16693	1505	0	0	0	3323	0	7105
D	85-111	42.06	45.11	3.05	4700	11500	0	0	0	1800	0	4000
D	85-112	50.29	51.2	0.91	10000	1480	0	0	0	18100	0	300
D	85-114	35.36	47.24	11.88	4600	453	0	0	0	1879	0	2902
D	85-115	38.72	49.09	10.37	11071	905	0	0	0	3204	0	1553
D	85-67	36.27	42.98	6.71	15233	2337	0	0	0	2569	0	4667
D	85-94	33.53	34.44	0.91	5100	690	0	0	0	1220	0	3840
D	85-94	39.62	42.06	2.44	11000	780	0	0	0	260	0	6470
D	85-98	34.14	50.59	16.45	5602	768	0	0	0	8729	0	724
D	85-99	33.83	38.1	4.27	6991	160	0	0	0	2174	0	709
E	83-1	0.91	22.26	21.35	22068	196	10	0	81	1420	80	132
E	83-12	12.19	15.24	3.05	7459	269	0	0	0	55	0	190
E	83-13	12.19	13.72	1.53	7300	1080	0	0	0	3980	0	400
E	83-15	0.91	32	31.09	6648	181	0	0	0	0	0	235
E	83-2	0	25.91	25.91	20524	2388	1	0	1198	4250	395	360
E	83-33	1.2	16.76	15.56	5994	145	0	0	0	241	0	213
E	83-35	18.29	21.34	3.05	27700	1820	0	0	0	1080	0	1510
E	83-38	1.83	15.85	14.02	3538	213	0	0	0	2027	0	67
E	83-39	3.05	33.53	30.48	23160	512	0	0	0	1059	0	266
E	83-4	1.22	10.67	9.45	6817	165	0	0	0	0	0	224
E	83-40	10.67	28.96	18.29	5417	435	0	0	0	1640	0	52

ZONE	BHID	FROM	TO	LENGTH	BEO	CE2O3	GA2O3	GD2O3	LA2O3	NB2O5	ND2O3	Y2O3
E	83-41	1.83	13.72	11.89	8040	160	0	0	0	361	0	288
E	83-43	9.14	21.34	12.20	14750	825	0	0	0	53	0	308
E	84-46	0	24.38	24.38	19266	5788	0	0	0	3303	0	239
E	84-47	0	25.91	25.91	16448	3535	0	0	0	0	0	403
E	84-49	11.28	30.48	19.20	15726	904	0	0	0	0	0	211
E	84-50	4.57	22.86	18.29	5152	167	0	0	0	523	0	262
E	84-62	9.14	12.19	3.05	5700	960	0	0	0	1900	0	50
E	84-65	3.96	8.23	4.27	24058	409	0	0	215	70	180	1003
E	84-75	17.07	20.12	3.05	0	260	0	30	0	1100	130	180
F	83-12	16.76	27.28	10.52	0	0	0	0	0	0	0	0
F	83-16	26.21	30.48	4.27	0	50900	0	0	0	250	0	440
F	84-54	21.03	27.43	6.40	9452	5147	0	0	0	699	0	2054
F	84-77	25.3	28.96	3.66	0	24900	0	230	0	300	9140	360
F	84-78	14.94	16.46	1.52	0	11700	0	30	0	310	79500	210
F	84-79	19.81	22.86	3.05	0	40000	0	0	0	100	0	310
F	84-81	24.69	27.43	2.74	0	29900	0	0	0	170	0	330
F	84-82	16.46	18.59	2.13	0	3200	0	0	0	60	0	410
F	85-100	2.4	9.45	7.05	0	0	0	0	0	0	0	0
F	85-101	18.59	20.73	2.14	0	48400	0	0	0	0	22300	420
F	85-102	14.78	20.27	5.49	12621	4398	0	0	0	0	3605	3894
F	85-103	14.17	15.39	1.22	0	5320	0	0	0	0	5740	230
F	85-104	18.44	20.42	1.98	0	46600	0	0	0	0	24100	310
F	85-109	4.57	7.47	2.90	0	85200	0	100	0	0	6770	400
F	85-110	8.23	15.39	7.16	0	54066	0	2025	0	0	25671	517
F	85-114	29.56	31.39	1.83	0	170	0	0	0	820	0	290
F	85-115	22.86	23.78	0.92	0	14800	0	0	0	0	7030	110
F	85-94	20.57	23.01	2.44	0	62300	0	0	0	0	31900	250
F	85-95	17.98	21.49	3.51	0	38300	0	0	0	0	19000	700
F	85-96	15.24	20.57	5.33	0	32587	0	0	0	0	18574	223
F	85-97	24.69	27.74	3.05	0	34828	0	0	0	260	18652	546
F	85-98	20.73	21.79	1.06	0	78500	0	0	0	0	36500	320
F	85-99	13.26	16.76	3.50	0	77800	0	0	0	0	36400	210
HY	83-1	34.45	48.17	13.72	2443	921	0	0	414	3647	422	922
HY	83-10	41.16	50.3	9.14	1233	844	0	475	0	3238	374	980
HY	83-11	33.53	41.15	7.62	0	1024	0	0	0	3322	0	992
HY	83-11	47.24	51.21	3.97	1118	954	0	0	0	7855	0	894
HY	83-12	35.05	38.1	3.05	0	3290	0	0	0	1660	0	5350
HY	83-12	54.86	60.96	6.10	686	715	0	0	0	3655	0	939
HY	83-16	50.29	54.86	4.57	469	1418	0	0	0	1434	0	2404
HY	83-17	36.58	42.67	6.09	0	1529	0	0	0	2767	0	1430
HY	83-18	32	34.44	2.44	0	1010	0	0	0	14700	0	450
HY	83-2	25.91	28.96	3.05	3300	850	0	0	310	4900	0	3390
HY	83-2	36.58	41.16	4.58	599	1519	0	0	453	2864	519	3105
HY	83-2	59.44	62.48	3.04	0	820	0	0	0	1200	0	550
HY	83-3	24.09	28.96	4.87	3753	1333	0	0	547	421	706	2752
HY	83-3	36.58	42.68	6.10	2249	781	0	0	315	752	401	1950
HY	83-3	48.78	60.96	12.18	298	1478	0	34	208	8690	588	2091
HY	83-35	15.24	36.58	21.34	1275	1067	0	0	0	4868	0	965
HY	83-35	45.72	48.77	3.05	1500	1320	0	0	0	6380	0	780
HY	83-38	27.43	30.48	3.05	1100	640	0	0	0	2390	0	440
HY	83-38	36.58	54.86	18.28	1700	1230	0	0	0	2130	0	976

ZONE	BHID	FROM	TO	LENGTH	BEO	CE2O3	GA2O3	GD2O3	LA2O3	NB2O5	ND2O3	Y2O3
HY	83-43	21.34	30.48	9.14	556	393	0	0	0	1269	0	731
HY	83-43	45.72	60.96	15.24	1275	2923	0	0	0	6128	0	4400
HY	83-6	36.58	54.86	18.28	0	1712	0	0	0	5855	0	3647
HY	83-8	34.44	51.82	17.38	302	1059	0	0	0	3731	0	1538
HY	83-9	41.16	46.34	5.18	117	917	0	42	311	1100	1247	627
HY	84-47	25.91	35.05	9.14	0	1223	0	0	0	0	0	1234
HY	84-47	41.15	46.94	5.79	0	824	0	0	0	0	0	1127
HY	84-48	27.43	39.32	11.89	0	710	0	0	0	4513	0	1026
HY	84-51	45.72	48.77	3.05	1800	640	0	0	0	1950	0	450
HY	84-54	27.43	32.92	5.49	167	811	0	0	0	944	0	1011
HY	84-54	54.86	59.44	4.58	533	871	0	0	0	10109	0	370
HY	84-55	56.39	60.05	3.66	0	860	0	120	0	2800	340	410
HY	84-56	44.2	50.29	6.09	0	1499	0	0	0	2860	0	2033
HY	84-56	57.91	60.96	3.05	0	800	0	0	0	5970	0	580
HY	84-62	15.24	18.29	3.05	2600	2730	0	0	0	2280	0	1920
HY	84-64	27.43	36.27	8.84	0	1318	0	0	0	3287	0	1465
HY	84-65	18.29	21.34	3.05	0	330	0	170	0	1430	130	1890
HY	84-65	32	35.05	3.05	0	2440	0	0	0	0	0	2990
HY	84-65	41.15	53.34	12.19	300	1136	0	110	333	4729	543	1239
HY	84-66	27.43	32.31	4.88	0	1051	0	0	0	1891	0	1331
HY	84-66	45.72	51.82	6.10	1400	795	0	0	0	5475	0	975
HY	84-68	41.76	57.91	16.15	4599	1980	0	0	0	3109	0	4466
HY	84-75	38.11	44.2	6.09	3953	961	0	230	0	1866	280	1677
HY	84-75	53.35	59.44	6.09	1248	1340	0	105	0	9730	510	1059
HY	84-75	65.54	74.68	9.14	4572	1547	0	453	0	9099	503	3332
HY	84-76	65.53	71.63	6.10	0	2865	0	430	0	29950	770	1525
HY	84-76	80.16	82.3	2.14	0	670	0	140	0	7100	370	650
HY	84-77	54.86	57.91	3.05	0	620	0	170	0	2600	270	1480
HY	84-77	64.01	70.1	6.09	4992	2777	0	175	0	33445	711	520
HY	84-78	36.58	42.67	6.09	1801	445	0	60	0	2654	55	1389
HY	84-78	48.77	56.39	7.62	881	1114	0	12	0	3762	36	1146
HY	84-79	24.99	35.05	10.06	0	939	0	0	0	806	0	731
HY	84-79	53.34	64.92	11.58	515	1862	0	0	0	25986	0	1326
HY	84-79	80.77	82.6	1.83	1800	1190	0	0	0	4720	0	840
HY	84-81	37.19	45.72	8.53	0	267	0	0	0	1630	0	557
HY	84-81	72.24	84.43	12.19	0	1017	0	0	0	9166	0	629
HY	84-82	47.55	57.91	10.36	0	556	0	0	0	1959	0	881
HY	84-82	64.62	67.67	3.05	0	2370	0	0	0	20500	0	430
HY	84-83	30.48	40.23	9.75	0	1025	0	0	0	0	0	3012
HY	84-83	55.17	60.05	4.88	0	1250	0	0	0	0	0	635
HY	85-100	22.1	39.62	17.52	1686	561	0	0	0	3515	0	1223
HY	85-101	32.15	42.97	10.82	59	1245	0	0	0	9636	0	1613
HY	85-101	48.16	53.64	5.48	0	945	0	0	0	3652	0	2521
HY	85-101	63.7	75.28	11.58	4955	365	0	0	0	10219	0	915
HY	85-102	42.67	45.72	3.05	2700	1220	0	0	0	1140	0	7960
HY	85-102	52.12	63.7	11.58	200	398	0	0	0	8659	0	719
HY	85-103	40.38	54.86	14.48	238	271	0	0	0	5925	0	1031
HY	85-104	31.09	49.98	18.89	1183	157	0	0	0	3997	0	603
HY	85-105	37.79	45.72	7.93	0	400	0	0	0	1344	0	527
HY	85-105	68.58	77.11	8.53	579	284	0	0	0	5243	0	1426
HY	85-106	19.96	42.67	22.71	46	243	71	205	0	3199	0	750

ZONE	BHID	FROM	TO	LENGTH	BEO	CE2O3	GA2O3	GD2O3	LA2O3	NB2O5	ND2O3	Y2O3
HY	85-107	36.88	39.62	2.74	1100	0	0	0	0	4110	0	1690
HY	85-108	34.14	64	29.86	496	374	0	0	0	3531	0	1080
HY	85-109	22.86	44.8	21.94	417	273	0	0	0	1838	0	1672
HY	85-110	29.56	41.45	11.89	832	318	0	0	0	3744	0	2893
HY	85-110	50.59	53.95	3.36	1400	250	0	0	0	10800	0	740
HY	85-111	45.11	66.14	21.03	199	869	0	0	0	15304	0	889
HY	85-112	17.37	32.31	14.94	945	1087	0	0	0	914	0	1881
HY	85-112	39.01	44.5	5.49	0	727	0	0	0	1231	0	2110
HY	85-112	52.73	59.43	6.70	874	337	0	0	0	6824	0	680
HY	85-114	47.24	51.81	4.57	0	300	0	0	0	1660	0	2880
HY	85-114	64	75.28	11.28	583	1350	0	0	0	35129	0	1766
HY	85-114	80.77	94.48	13.71	340	503	0	0	0	4443	0	798
HY	85-115	35.06	38.72	3.66	0	453	0	0	0	913	0	817
HY	85-115	82.01	88.41	6.40	257	1302	0	0	0	5810	0	3206
HY	85-67	32	40.54	8.54	0	1309	0	0	0	1160	0	1390
HY	85-67	48.77	57.91	9.14	100	823	0	0	0	5605	0	687
HY	85-94	27.43	39.62	12.19	0	364	0	0	0	675	0	1624
HY	85-94	44.8	47.7	2.90	0	260	0	0	0	4318	0	694
HY	85-95	40.84	53.64	12.80	0	202	0	0	0	2839	0	1006
HY	85-96	36.88	57.3	20.42	1293	1535	0	0	0	5897	0	740
HY	85-97	27.74	31.09	3.35	0	160	0	0	0	600	0	930
HY	85-98	30.63	44.5	13.87	678	242	0	0	0	8425	0	518
HY	85-98	50.59	68.88	18.29	1275	424	0	0	0	15295	0	1013
HY	85-99	38.1	44.19	6.09	2251	430	0	0	0	2328	0	1326
LY	83-1	24.54	34.45	9.91	247	291	151	0	9	2762	25	112
LY	83-12	41.15	54.86	13.71	921	354	0	0	0	1739	0	288
LY	83-16	30.48	38.1	7.62	0	0	0	0	0	0	0	0
LY	83-16	54.86	60.96	6.10	0	1210	0	0	0	5480	0	145
LY	83-2	28.96	32.01	3.05	300	510	0	0	250	4300	0	220
LY	83-2	57.92	59.44	1.52	1500	500	0	0	210	1700	200	250
LY	83-3	42.68	48.78	6.10	0	860	0	0	0	4145	300	265
LY	83-35	24.38	27.43	3.05	300	290	0	0	0	1710	0	140
LY	83-38	30.48	36.58	6.10	1100	915	0	0	0	1410	0	405
LY	83-8	36.42	39.47	3.05	0	0	0	0	0	0	0	0
LY	83-9	46.34	60.96	14.62	0	225	0	0	0	1824	86	131
LY	84-46	24.38	33.53	9.15	733	1803	0	0	0	1707	0	303
LY	84-47	35.05	41.15	6.10	0	1895	0	0	0	0	0	265
LY	84-47	46.94	53.34	6.40	0	0	262	0	0	1833	0	0
LY	84-49	30.48	48.77	18.29	5619	2452	0	0	0	0	0	320
LY	84-51	33.53	45.72	12.19	600	100	0	0	0	410	0	80
LY	84-54	42.67	54.86	12.19	1251	522	0	0	0	3509	0	177
LY	84-55	41.15	56.39	15.24	0	582	0	200	0	5899	294	182
LY	84-56	50.29	57.91	7.62	2021	702	0	0	0	4449	0	408
LY	84-62	18.29	33.53	15.24	1081	522	0	0	0	941	0	190
LY	84-65	21.34	32	10.66	0	371	0	21	0	5782	162	73
LY	84-66	39.62	45.72	6.10	0	1275	0	0	0	7660	0	290
LY	84-68	46.33	48.77	2.44	0	197	0	0	0	966	0	921
LY	84-75	20.12	32.31	12.19	0	297	0	30	0	3748	132	165
LY	84-75	47.25	53.35	6.10	0	1000	0	120	0	7400	405	195
LY	84-76	47.24	65.53	18.29	400	977	0	266	0	7635	312	330
LY	84-77	45.72	64.01	18.29	0	884	0	184	0	9063	300	322

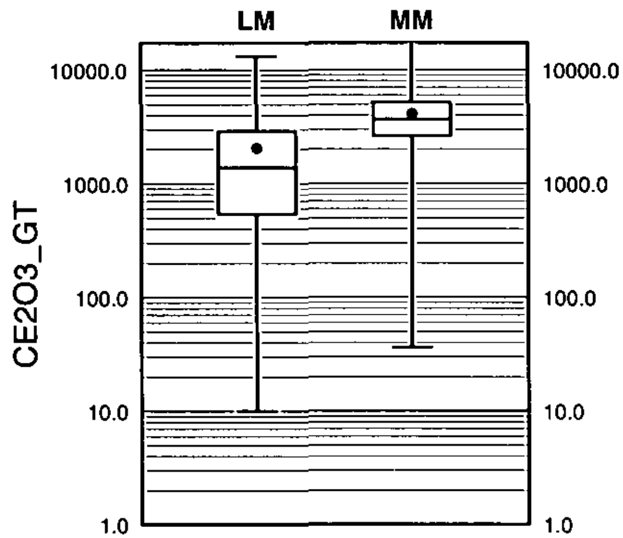
ZONE	BHID	FROM	TO	LENGTH	BEO	CE2O3	GA2O3	GD2O3	LA2O3	NB2O5	ND2O3	Y2O3
LY	84-79	28.04	31.7	3.66	0	0	0	0	0	0	0	0
LY	84-79	41.15	53.34	12.19	0	580	0	0	0	4054	0	230
LY	84-79	58.52	61.57	3.05	0	560	0	0	0	7330	0	200
LY	84-81	49.07	63.7	14.63	482	837	0	0	0	6872	0	434
LY	84-82	57.91	64.62	6.71	0	3585	0	0	0	43800	0	263
LY	84-83	43.89	55.17	11.28	0	0	0	0	0	0	0	0
LY	85-101	44.19	48.16	3.97	900	300	0	0	0	11400	0	280
LY	85-101	53.64	60.35	6.71	0	979	0	0	0	25545	0	296
LY	85-102	45.72	52.12	6.40	1067	493	0	0	0	5891	0	395
LY	85-103	43.89	46.17	2.28	0	0	0	0	0	0	0	0
LY	85-105	33.07	37.79	4.72	0	0	0	0	0	0	0	0
LY	85-105	45.72	64	18.28	0	386	0	0	0	14823	0	111
LY	85-106	22.86	25.91	3.05	0	490	0	0	0	1900	0	30
LY	85-108	44.19	54.86	10.67	48	286	0	0	0	13527	0	242
LY	85-112	32.31	39.01	6.70	0	107	0	0	0	327	0	7
LY	85-112	44.5	52.73	8.23	0	376	0	0	0	15876	0	238
LY	85-114	51.81	64	12.19	0	310	0	0	0	6295	0	250
LY	85-67	42.98	48.77	5.79	0	876	0	0	0	3990	0	99
LY	85-94	34.44	44.8	10.36	0	94	0	0	0	728	0	98
LY	85-95	48.77	51.81	3.04	0	160	0	0	0	810	0	290
LY	85-98	56.39	60.96	4.57	0	320	0	0	0	14466	0	163

APPENDIX B
BOX PLOTS

LAKE ZONE

RAW DATA

Sub-Zone

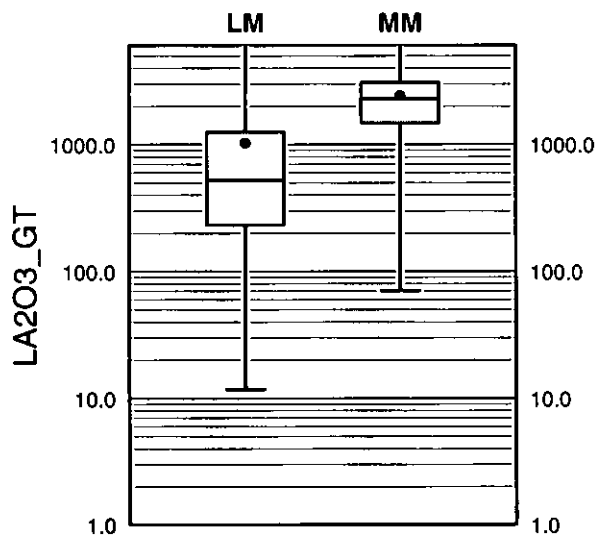


	LM	MM	
Number of data	960	524	Number of data
Mean	2055.28	4123.52	Mean
Maximum	13224.9	22861.0	Maximum
Upper quartile	2910.32	5192.86	Upper quartile
Median	1386.72	3667.28	Median
Lower quartile	539.98	2640.07	Lower quartile
Minimum	10.0	36.31	Minimum
Variance	4.05718e+06	6.51762e+06	Variance
CV	0.98	0.619	CV
Skewness	1.656	2.297	Skewness

Variable: CE2O3_GT
Acceptable range: 1.0 to 24004.1
Weights: --equal--

LM file: RKCELM.DAT
[illegible]M file: [illegible]MM.D[illegible]

Sub-Zone

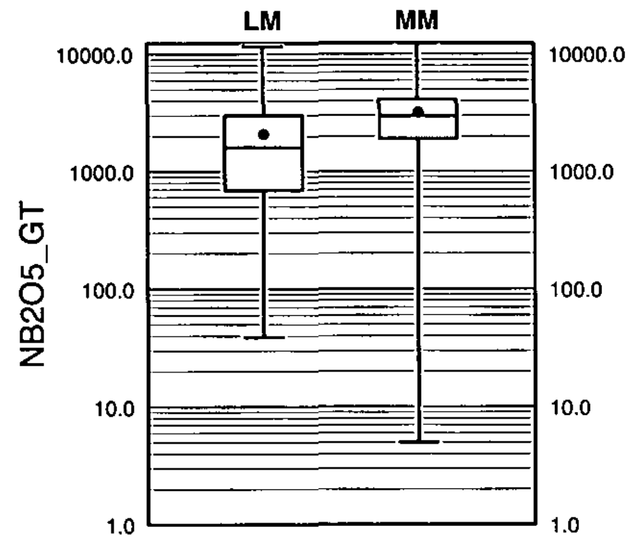


	LM	MM	
Number of data	235	126	Number of data
Mean	1024.95	2427.6	Mean
Maximum	8562.9	6908.97	Maximum
Upper quartile	1255.11	3096.72	Upper quartile
Median	520.81	2296.15	Median
Lower quartile	232.254	1477.98	Lower quartile
Minimum	11.728	70.497	Minimum
Variance	1.76737e+06	2.10391e+06	Variance
CV	1.297	0.597	CV
Skewness	2.841	0.725	Skewness

Variable: LA2O3_GT
Acceptable range: 1.0 to 8991.04
Weights: --equal--

LM file: RKLALM.DAT
MM file: RKLAMM.DAT

Sub-Zone

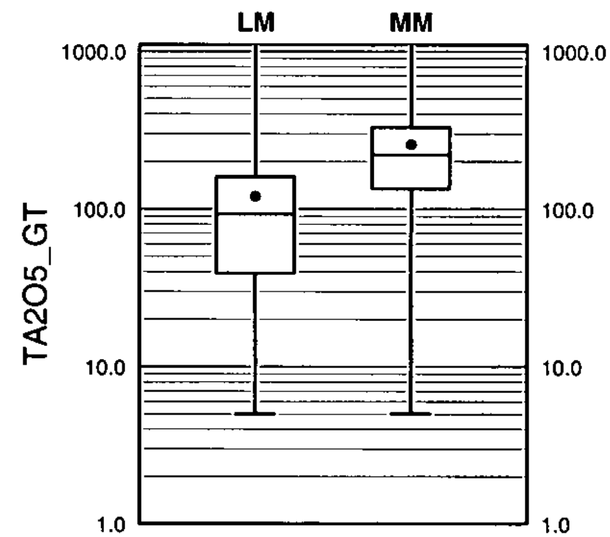


	LM	MM	
Number of data	1037	527	Number of data
Mean	2086.81	3185.55	Mean
Maximum	11620.0	12300.0	Maximum
Upper quartile	3009.84	4100.0	Upper quartile
Median	1600.0	2968.99	Median
Lower quartile	690.0	1900.75	Lower quartile
Minimum	39.0	5.0	Minimum
Variance	3.20876e+06	3.45248e+06	Variance
CV	0.858	0.583	CV
Skewness	1.405	1.307	Skewness

Variable: NB2O5_GT
Acceptable range: 1.0 to 12915.0
Weights: --equal--

LM file: RKNBLM.DAT
[redacted] file: [redacted]MM.D[redacted]

Sub-Zone

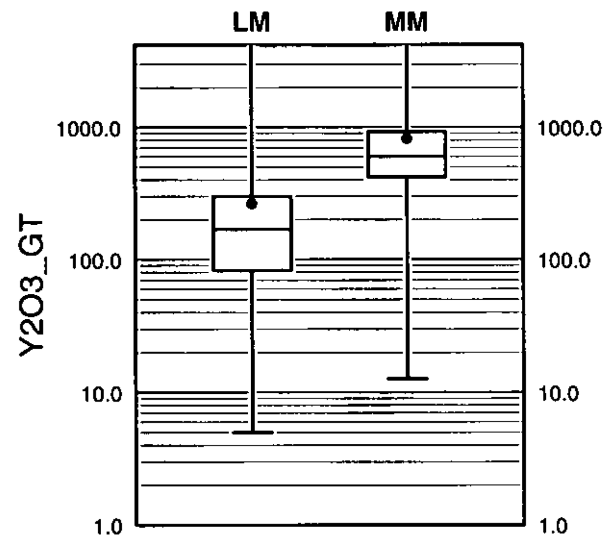


	LM	MM	
Number of data	967	527	Number of data
Mean	119.883	255.879	Mean
Maximum	1590.0	1170.0	Maximum
Upper quartile	160.0	330.0	Upper quartile
Median	92.8	220.0	Median
Lower quartile	39.074	134.316	Lower quartile
Minimum	5.0	5.0	Minimum
Variance	15201.0	30744.1	Variance
CV	1.028	0.685	CV
Skewness	3.543	1.574	Skewness

Variable: TA2O5_GT
Acceptable range: 1.0 to 1669.5
Weights: --equal--

LM file: RKTALM.DAT
MM file: RKTAMM.DAT

Sub-Zone

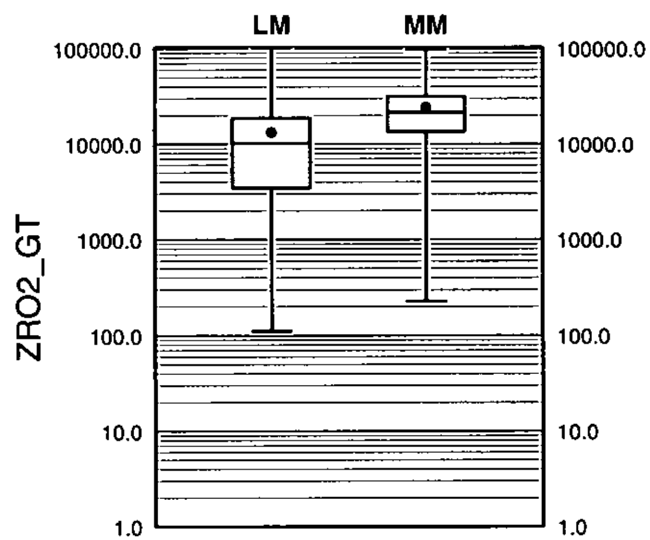


	LM	MM	
Number of data	962	523	Number of data
Mean	263.792	820.372	Mean
Maximum	6404.31	7163.73	Maximum
Upper quartile	299.999	926.418	Upper quartile
Median	168.902	600.681	Median
Lower quartile	82.546	419.716	Lower quartile
Minimum	5.0	12.699	Minimum
Variance	160023.0	697382.0	Variance
CV	1.516	1.018	CV
Skewness	7.689	3.717	Skewness

Variable: Y2O3_GT
Acceptable range: 1.0 to 7521.92
Weights: --equal--

LM file: RKYLM.DAT
[redacted] file: [redacted].DAT

Sub-Zone



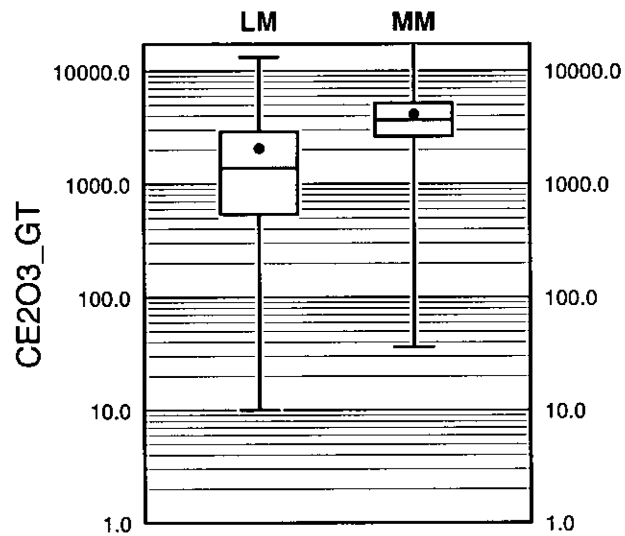
	LM	MM	
Number of data	730	494	Number of data
Mean	13297.8	24436.0	Mean
Maximum	102445.0	98632.7	Maximum
Upper quartile	18746.6	31661.4	Upper quartile
Median	10221.5	21479.7	Median
Lower quartile	3471.56	13533.7	Lower quartile
Minimum	110.766	226.934	Minimum
Variance	1.64119e+08	2.66087e+08	Variance
CV	0.963	0.668	CV
Skewness	1.973	1.321	Skewness

Variable: ZRO2_GT
Acceptable range: 1.0 to 107567.0
Weights: --equal--

LM file: RKZRLM.DAT
MM file: RKZRMM.DAT

TOP CUT

Sub-Zone

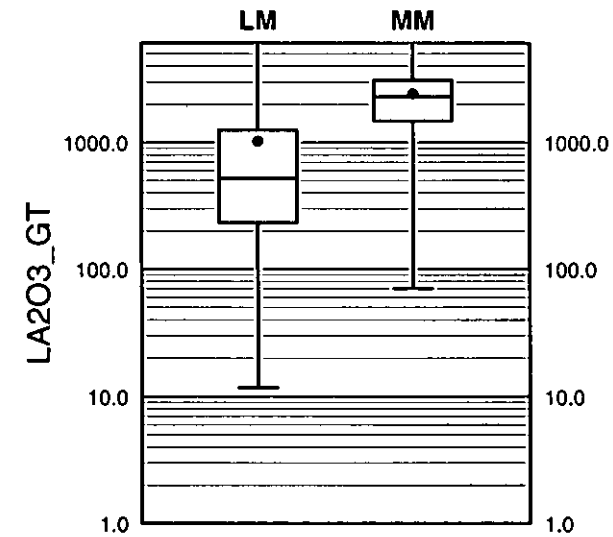


	LM	MM	
Number of data	960	524	Number of data
Mean	2055.28	4123.52	Mean
Maximum	13224.9	22861.0	Maximum
Upper quartile	2910.32	5192.86	Upper quartile
Median	1386.72	3667.28	Median
Lower quartile	539.98	2640.07	Lower quartile
Minimum	10.0	36.31	Minimum
Variance	4.05718e+06	6.51762e+06	Variance
CV	0.98	0.619	CV
Skewness	1.656	2.297	Skewness

Variable: CE2O3_GT
Acceptable range: 1.0 to 24004.1
Weights: --equal--

LM file: TCDHCELM.DAT
MM file: TCDHCEMM.DAT

Sub-Zone



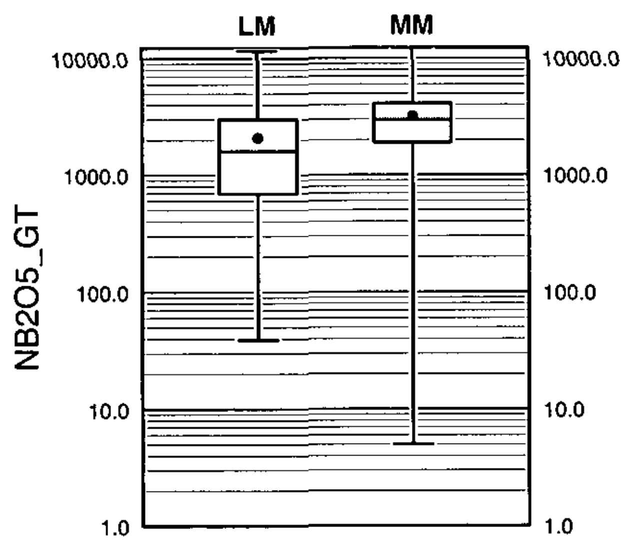
	LM	MM	
Number of data	235	126	Number of data
Mean	1024.95	2427.6	Mean
Maximum	8562.9	6908.97	Maximum
Upper quartile	1255.11	3096.72	Upper quartile
Median	520.81	2296.15	Median
Lower quartile	232.254	1477.98	Lower quartile
Minimum	11.728	70.497	Minimum
Variance	1.76737e+06	2.10391e+06	Variance
CV	1.297	0.597	CV
Skewness	2.841	0.725	Skewness

Variable: LA2O3_GT
Acceptable range: 1.0 to 8991.04
Weights: --equal--

LM file: TCDHLALM.DAT
[illegible] file: [illegible]AMM[illegible]

Wardrop NB2O5_GT Lake Zone Capped Stats by Sub-Zone

Sub-Zone

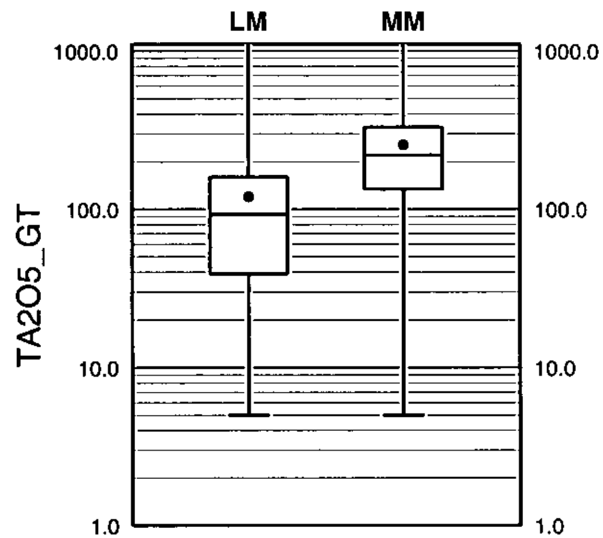


	LM	MM	
Number of data	1037	527	Number of data
Mean	2086.81	3185.55	Mean
Maximum	11620.0	12300.0	Maximum
Upper quartile	3009.84	4100.0	Upper quartile
Median	1600.0	2968.99	Median
Lower quartile	690.0	1900.75	Lower quartile
Minimum	39.0	5.0	Minimum
Variance	3.20876e+06	3.45248e+06	Variance
CV	0.858	0.583	CV
Skewness	1.405	1.307	Skewness

Variable: NB2O5_GT
Acceptable range: 1.0 to 12915.0
Weights: --equal--

LM file: TCDHNBLM.DAT
MM file: TCDHNBMM.DAT

Sub-Zone

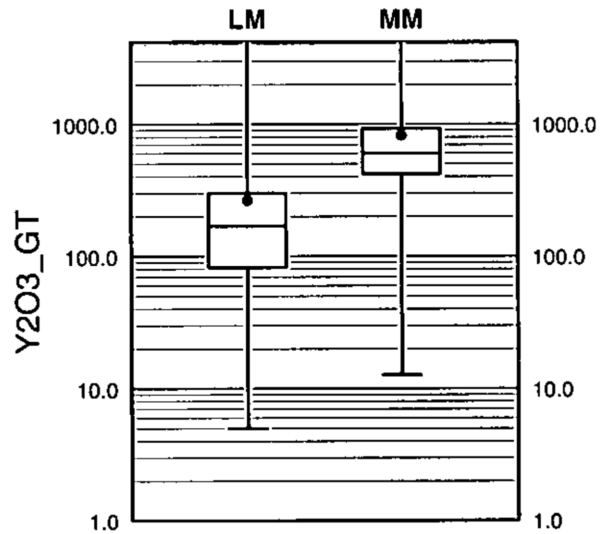


	LM	MM	
Number of data	967	527	Number of data
Mean	119.883	255.879	Mean
Maximum	1590.0	1170.0	Maximum
Upper quartile	160.0	330.0	Upper quartile
Median	92.8	220.0	Median
Lower quartile	39.074	134.316	Lower quartile
Minimum	5.0	5.0	Minimum
Variance	15201.0	30744.1	Variance
CV	1.028	0.685	CV
Skewness	3.543	1.574	Skewness

Variable: TA2O5_GT
Acceptable range: 1.0 to 1669.5
Weights: --equal--

LM file: TCDHTALM.DAT
[illegible] file: [illegible]TAMM[illegible]

Sub-Zone

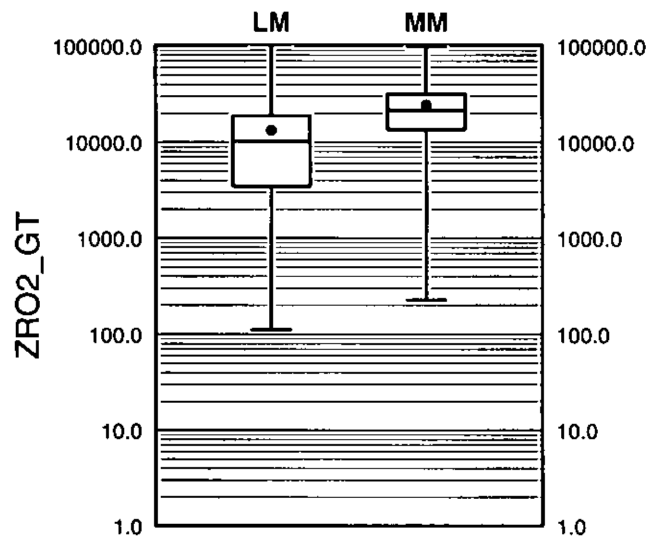


	LM	MM	
Number of data	962	523	Number of data
Mean	263.792	820.372	Mean
Maximum	6404.31	7163.73	Maximum
Upper quartile	299.999	926.418	Upper quartile
Median	168.902	600.681	Median
Lower quartile	82.546	419.716	Lower quartile
Minimum	5.0	12.699	Minimum
Variance	160023.0	697382.0	Variance
CV	1.516	1.018	CV
Skewness	7.689	3.717	Skewness

Variable: Y2O3_GT
Acceptable range: 1.0 to 7521.92
Weights: --equal--

LM file: TCDHYLM.DAT
MM file: TCDHYMM.DAT

Sub-Zone



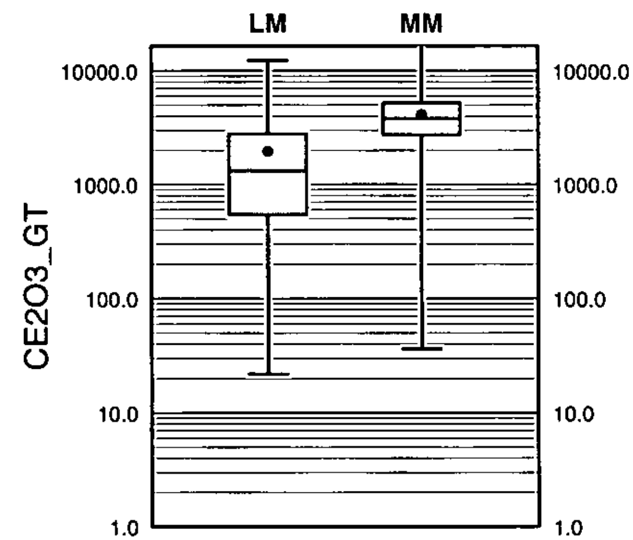
	LM	MM	
Number of data	730	494	Number of data
Mean	13297.8	24436.0	Mean
Maximum	102445.0	98632.7	Maximum
Upper quartile	18746.6	31661.4	Upper quartile
Median	10221.5	21479.7	Median
Lower quartile	3471.56	13533.7	Lower quartile
Minimum	110.766	226.934	Minimum
Variance	1.64119e+08	2.66087e+08	Variance
CV	0.963	0.668	CV
Skewness	1.973	1.321	Skewness

Variable: ZRO2_GT
Acceptable range: 1.0 to 107567.0
Weights: --equal--

LM file: TCDHZRLM.DAT
[redacted] file: [redacted]RMM[redacted]

Composite Data

Sub-Zone

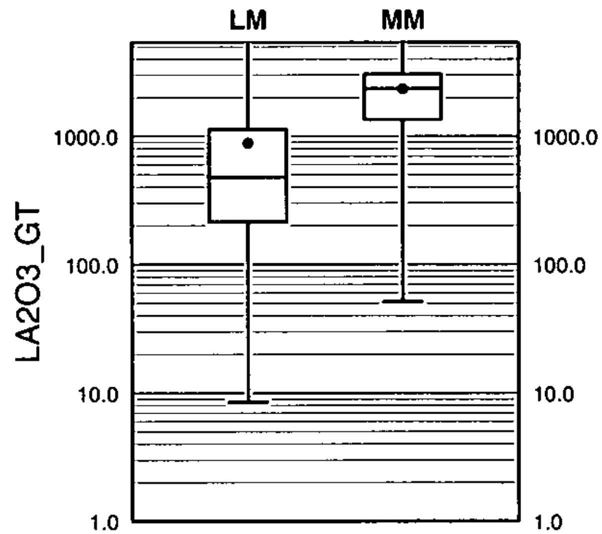


	LM	MM	
Number of data	812	402	Number of data
Mean	1960.29	4142.03	Mean
Maximum	12351.6	22302.9	Maximum
Upper quartile	2806.9	5234.65	Upper quartile
Median	1327.15	3812.85	Median
Lower quartile	543.327	2751.78	Lower quartile
Minimum	21.798	36.31	Minimum
Variance	3.46739e+06	6.1526e+06	Variance
CV	0.95	0.599	CV
Skewness	1.553	2.723	Skewness

Variable: CE2O3_GT
Acceptable range: 1.0 to 23418.1
Weights: --equal--

LM file: CPDHCELM.DAT
M file: CEMM

Sub-Zone

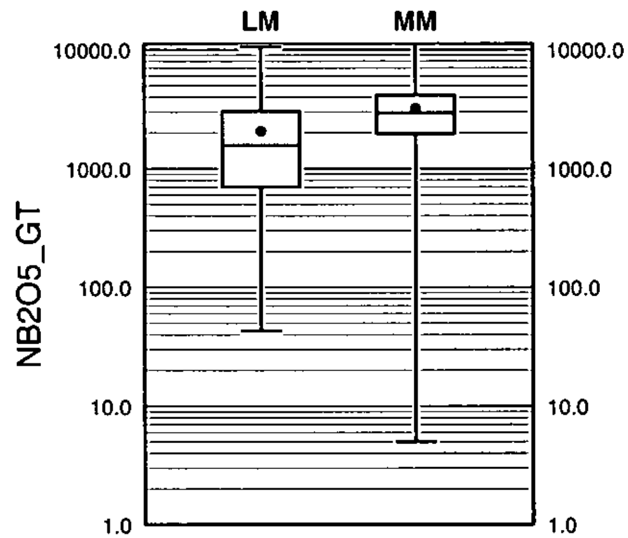


	LM	MM	
Number of data	201	96	Number of data
Mean	885.267	2346.19	Mean
Maximum	8314.49	6805.33	Maximum
Upper quartile	1131.17	3055.45	Upper quartile
Median	477.706	2360.61	Median
Lower quartile	213.871	1346.92	Lower quartile
Minimum	8.514	51.538	Minimum
Variance	1.18877e+06	1.91106e+06	Variance
CV	1.232	0.589	CV
Skewness	2.868	0.535	Skewness

Variable: LA2O3_GT
Acceptable range: 1.0 to 8730.21
Weights: --equal--

LM file: CPDHLALM.DAT
MM file: CPDHLAMM.DAT

Sub-Zone

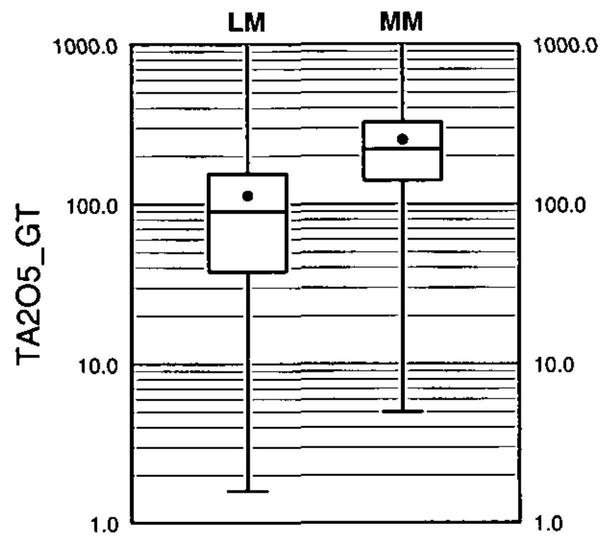


	LM	MM	
Number of data	894	402	Number of data
Mean	2064.11	3205.61	Mean
Maximum	10612.4	11167.0	Maximum
Upper quartile	3038.52	4133.42	Upper quartile
Median	1570.17	2931.17	Median
Lower quartile	700.0	1963.6	Lower quartile
Minimum	43.047	5.0	Minimum
Variance	2.93409e+06	2.94072e+06	Variance
CV	0.83	0.535	CV
Skewness	1.28	1.096	Skewness

Variable: NB2O5_GT
Acceptable range: 1.0 to 11725.4
Weights: --equal--

LM file: CPDHNBLM.DAT
[redacted] file: C[redacted]BMM[redacted]

Sub-Zone

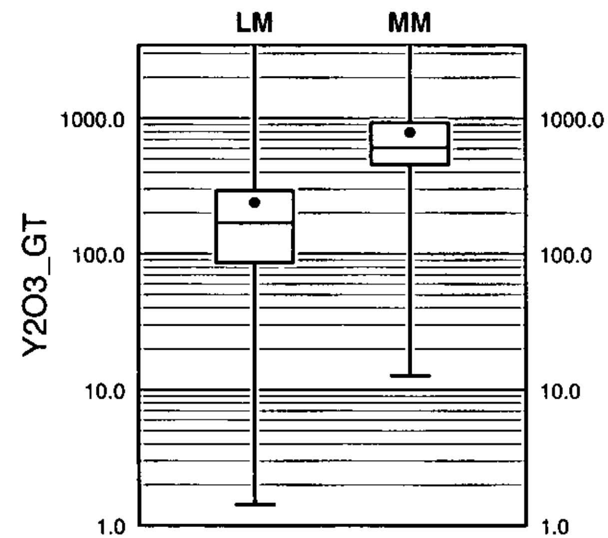


	LM	MM	
Number of data	829	402	Number of data
Mean	113.129	252.672	Mean
Maximum	1347.97	1108.8	Maximum
Upper quartile	154.897	325.003	Upper quartile
Median	90.0	220.035	Median
Lower quartile	37.852	140.578	Lower quartile
Minimum	1.586	4.993	Minimum
Variance	11659.5	24904.5	Variance
CV	0.954	0.625	CV
Skewness	3.282	1.359	Skewness

Variable: TA2O5_GT
Acceptable range: 1.0 to 1415.37
Weights: --equal--

LM file: CPDHTALM.DAT
MM file: CPDHTAMM.DAT

Sub-Zone

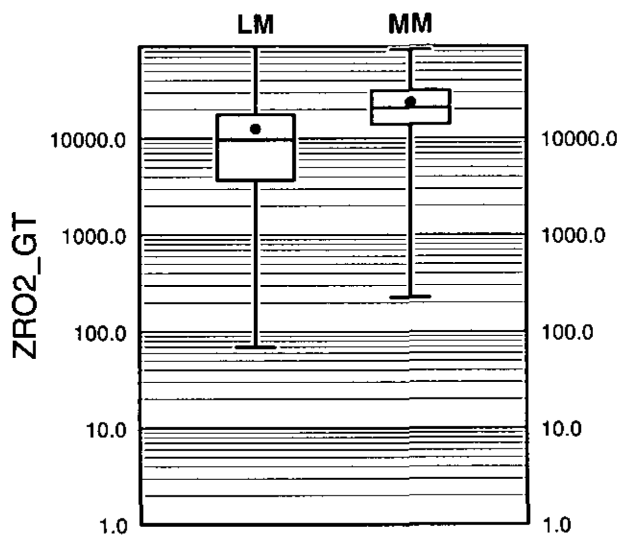


	LM	MM	
Number of data	813	402	Number of data
Mean	239.429	788.058	Mean
Maximum	5878.34	6038.97	Maximum
Upper quartile	291.579	931.211	Upper quartile
Median	168.903	608.294	Median
Lower quartile	85.921	454.639	Lower quartile
Minimum	1.431	12.699	Minimum
Variance	95596.9	445441.0	Variance
CV	1.291	0.847	CV
Skewness	8.726	3.285	Skewness

Variable: Y2O3_GT
Acceptable range: 1.0 to 6340.92
Weights: --equal--

LM file: CPDHYLM.DAT
[illegible] file: [illegible]YMM.[illegible]

Sub-Zone



	LM	MM	
Number of data	604	379	Number of data
Mean	12552.6	23808.1	Mean
Maximum	89976.4	83781.3	Maximum
Upper quartile	17747.7	31503.6	Upper quartile
Median	9761.29	20985.5	Median
Lower quartile	3692.41	14000.5	Lower quartile
Minimum	69.368	226.934	Minimum
Variance	1.27129e+08	2.00452e+08	Variance
CV	0.898	0.595	CV
Skewness	1.672	1.009	Skewness

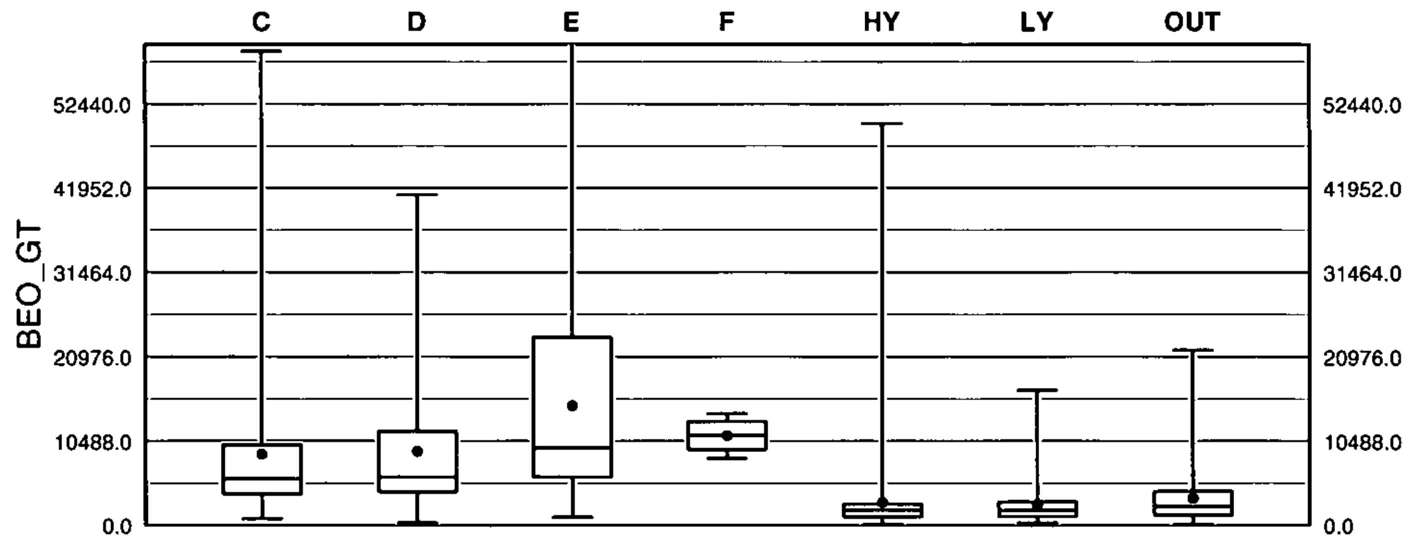
Variable: ZRO2_GT
Acceptable range: 1.0 to 94475.3
Weights: --equal--

LM file: CPDHZRLM.DAT
MM file: CPDHZRMM.DAT

NORTH T-ZONE

RAW DATA

Sub-Zone

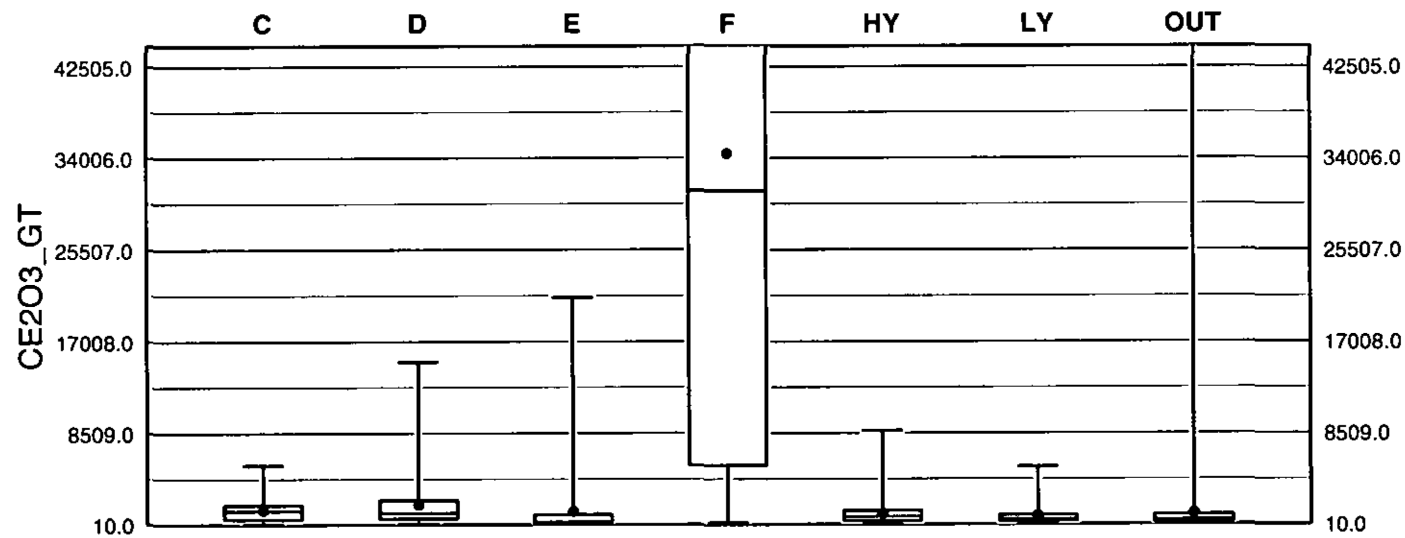


	C	D	E	F	HY	LY	OUT	
Number of data	113	125	119	4	105	30	165	Number of data
Mean	8853.98	9187.2	14869.8	11150.0	2853.52	2513.33	3349.09	Mean
Maximum	59000.0	41100.0	63800.0	13900.0	50000.0	16800.0	21800.0	Maximum
Upper quartile	10000.0	11725.0	23375.0	12900.0	2600.0	2900.0	4250.02	Upper quartile
Median	5800.0	6000.0	9600.0	11200.0	1900.0	1850.0	2300.0	Median
Lower quartile	3900.0	4175.0	6000.0	9400.0	1075.0	1100.0	1275.0	Lower quartile
Minimum	800.0	300.0	1000.0	8300.0	100.0	300.0	100.0	Minimum
Variance	7.78014e+07	5.32097e+07	1.41497e+08	4.1675e+06	2.8297e+07	8.82982e+06	1.24646e+07	Variance
CV	0.996	0.794	0.8	0.183	1.864	1.182	1.054	CV
Skewness	2.929	1.579	1.342	-0.065	7.049	3.677	2.74	Skewness

Variable: BEO_GT
Acceptable range: 10.0 to 66990.0
Weights: --equal--

C file: IOBEC.DAT
D file: IOBED.DAT
E file: IOBEE.DAT
F file: IOBEF.DAT
HY file: IOBEHY.DAT
LY file: IOBELY.DAT
[illegible] file: [illegible]UT.DA[illegible]

Sub-Zone

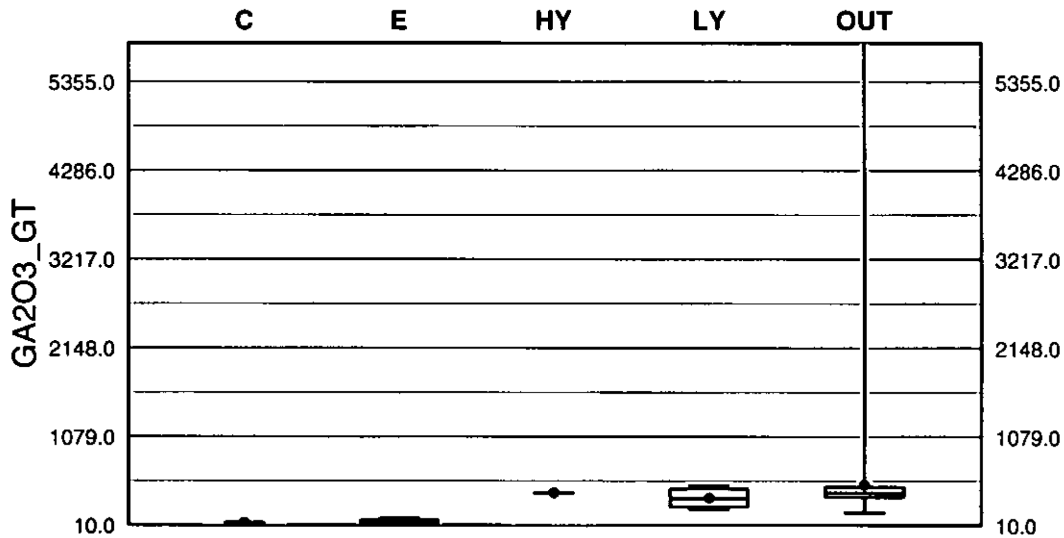


	C	D	E	F	HY	LY	OUT	
Number of data	115	130	122	26	269	108	419	Number of data
Mean	1348.35	1853.23	1225.9	34427.7	980.148	831.482	1069.36	Mean
Maximum	5540.0	15100.0	21080.0	93000.0	8750.0	5410.0	66000.0	Maximum
Upper quartile	1837.5	2279.98	930.001	54900.0	1300.0	869.998	937.505	Upper quartile
Median	1300.0	1090.0	215.0	30950.0	720.0	520.0	420.003	Median
Lower quartile	482.5	570.0	160.0	5520.0	337.5	310.0	220.0	Lower quartile
Minimum	60.0	100.0	50.0	170.0	20.0	30.0	10.0	Minimum
Variance	1.01602e+06	6.00384e+06	8.07781e+06	8.51675e+08	948232.0	905977.0	1.67811e+07	Variance
CV	0.748	1.322	2.318	0.848	0.993	1.145	3.831	CV
Skewness	1.071	3.177	4.42	0.473	3.145	2.919	12.59	Skewness

Variable: CE2O3_GT
Acceptable range: 10.0 to 97649.5
Weights: --equal--

C file: IOCEC.DAT
D file: IOCED.DAT
E file: IOCEE.DAT
F file: IOCEF.DAT
HY file: IOCEHY.DAT
LY file: IOCELY.DAT
OUT file: IOCEOUT.DAT

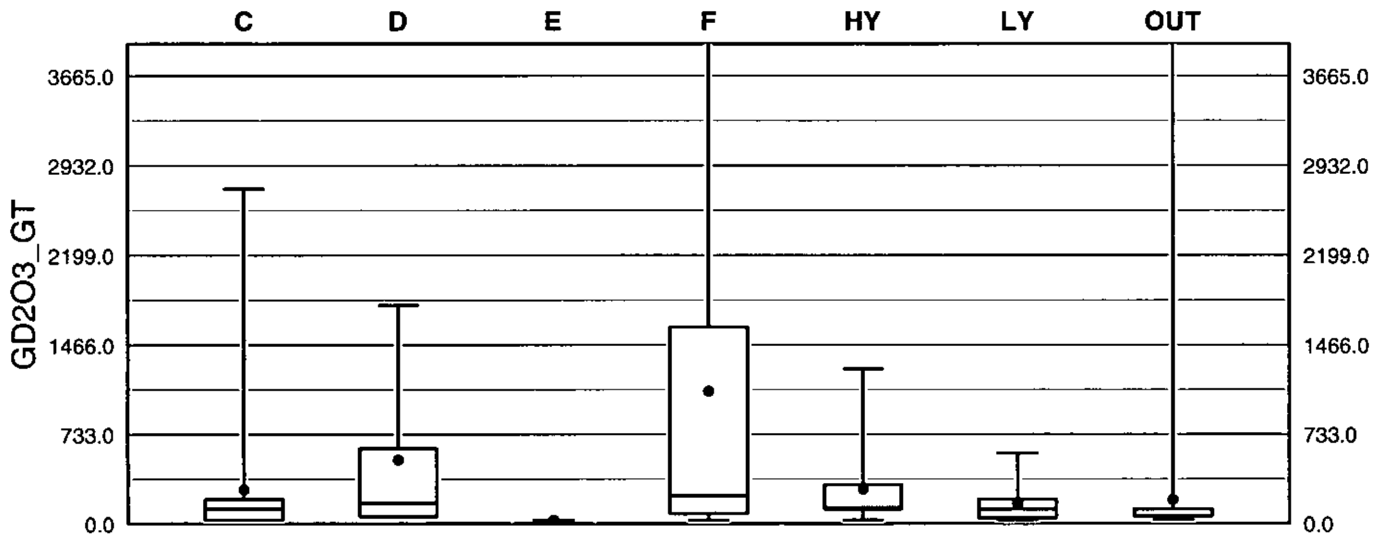
Sub-Zone



	C	E	HY	LY	OUT	
Number of data	1	4	1	3	92	Number of data
Mean	40.0	40.0	400.0	340.0	497.5	Mean
Maximum	40.0	90.0	400.0	490.0	9300.0	Maximum
Upper quartile	0.0	70.0	0.0	450.0	470.0	Upper quartile
Median	0.0	30.0	0.0	330.0	400.0	Median
Lower quartile	0.0	10.0	0.0	232.5	350.0	Lower quartile
Minimum	40.0	10.0	400.0	200.0	160.0	Minimum
Variance	0.0	1100.0	0.0	14066.7	860373.0	Variance
CV	0.0	0.829	0.0	0.349	1.864	CV
Skewness	0.0	0.493	0.0	0.126	9.285	Skewness

Variable: GA2O3_GT
Acceptable range: 10.0 to 9764.5
Weights: --equal--

C file: IOGAC.DAT
E file: IOGAE.DAT
HY file: IOGAHY.DAT
LY file: IOGALY.DAT
[illegible] file: [illegible]UT.D[illegible]

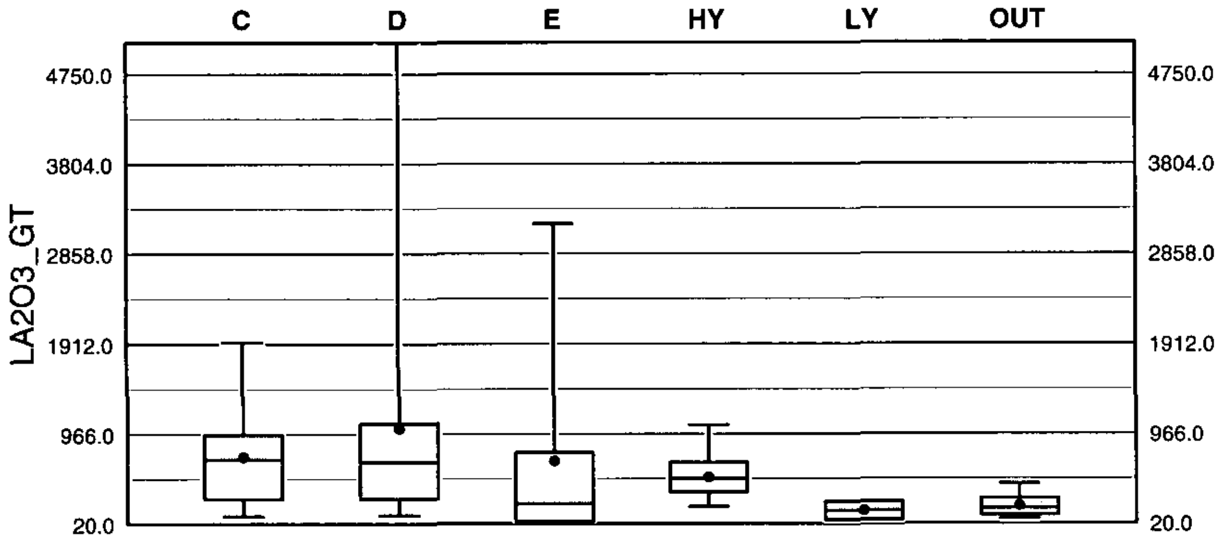


	C	D	E	F	HY	LY	OUT	
Number of data	24	11	1	5	26	24	64	Number of data
Mean	278.333	524.545	30.0	1086.0	280.769	164.167	195.938	Mean
Maximum	2740.0	1790.0	30.0	4380.0	1270.0	580.0	5070.0	Maximum
Upper quartile	200.0	617.5	0.0	1612.5	320.0	200.0	120.0	Upper quartile
Median	120.0	170.0	0.0	230.0	130.0	120.0	60.0	Median
Lower quartile	30.0	60.0	0.0	82.5	120.0	45.0	60.0	Lower quartile
Minimum	30.0	60.0	30.0	30.0	30.0	30.0	30.0	Minimum
Variance	314547.0	388679.0	0.0	2.76546e+06	110730.0	28532.6	402477.0	Variance
CV	2.015	1.189	0.0	1.531	1.185	1.029	3.238	CV
Skewness	3.595	1.213	0.0	1.431	1.933	1.716	7.136	Skewness

Variable: GD2O3_GT
Acceptable range: 10.0 to 5323.5
Weights: --equal--

C file: IOGDC.DAT
D file: IOGDD.DAT
E file: IOGDE.DAT
F file: IOGDF.DAT
HY file: IOGDHY.DAT
LY file: IOGDLY.DAT
OUT file: IOGDOUT.DAT

Sub-Zone



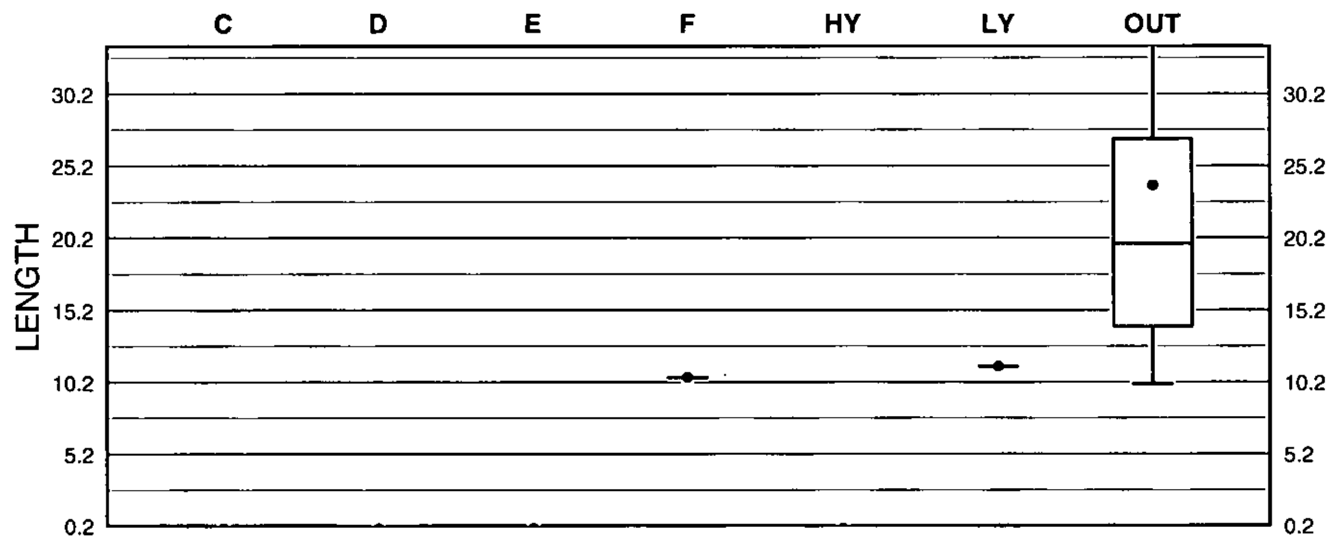
	C	D	E	HY	LY	OUT
Number of data	32	23	32	20	2	27
Mean	724.063	1027.39	680.313	510.5	155.0	207.778
Maximum	1930.0	5080.0	3170.0	1060.0	250.0	440.0
Upper quartile	960.0	1077.5	770.0	665.0	250.0	285.0
Median	700.0	670.0	230.0	495.0	155.0	180.0
Lower quartile	280.0	285.0	40.0	350.0	60.0	110.0
Minimum	100.0	110.0	20.0	200.0	60.0	70.0
Variance	212824.0	1.70654e+06	868259.0	43804.8	9025.0	11269.1
CV	0.637	1.272	1.37	0.41	0.613	0.511
Skewness	0.736	2.508	1.547	0.555	0.0	0.651

Variable: LA2O3_GT
Acceptable range: 10.0 to 5333.0
Weights: --equal--

C file: IOLAC.DAT
D file: IOLAD.DAT
E file: IOLAE.DAT
HY file: IOLAHY.DAT
LY file: IOLALY.DAT
file: UT.D

Wardrop LENGTH North T Raw Stats

Sub-Zone

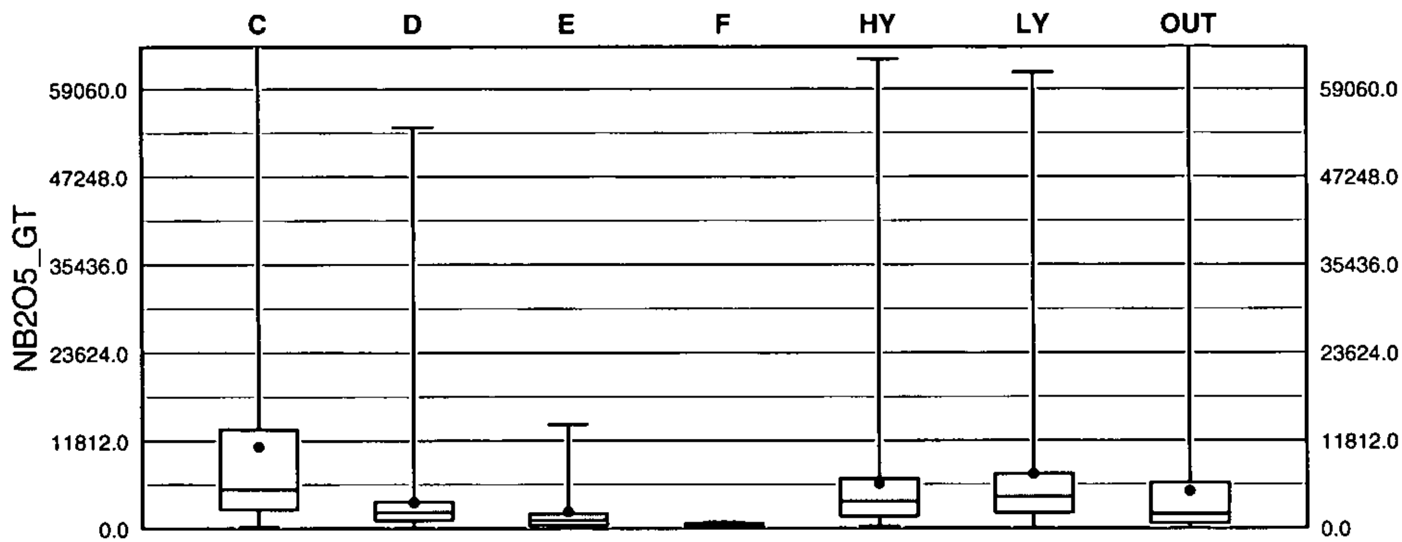


	C	D	E	F	HY	LY	OUT	
Number of data	0	0	0	1	0	1	59	Number of data
Mean	0.0	0.0	0.0	10.52	0.0	11.28	23.854	Mean
Maximum	0.0	0.0	0.0	10.52	0.0	11.28	64.92	Maximum
Upper quartile	0.0	0.0	0.0	0.0	0.0	0.0	27.077	Upper quartile
Median	0.0	0.0	0.0	0.0	0.0	0.0	19.81	Median
Lower quartile	0.0	0.0	0.0	0.0	0.0	0.0	14.063	Lower quartile
Minimum	0.0	0.0	0.0	10.52	0.0	11.28	10.06	Minimum
Variance	0.0	0.0	0.0	0.0	0.0	0.0	186.942	Variance
CV	0.0	0.0	0.0	0.0	0.0	0.0	0.573	CV
Skewness	0.0	0.0	0.0	0.0	0.0	0.0	1.586	Skewness

Variable: LENGTH
Acceptable range: 10.0 to 68.156
Weights: --equal--

C file: IOLNC.DAT
D file: IOLND.DAT
E file: IOLNE.DAT
F file: IOLNF.DAT
HY file: IOLNHY.DAT
LY file: IOLNLY.DAT
OUT file: IOLNOUT.DAT

Sub-Zone

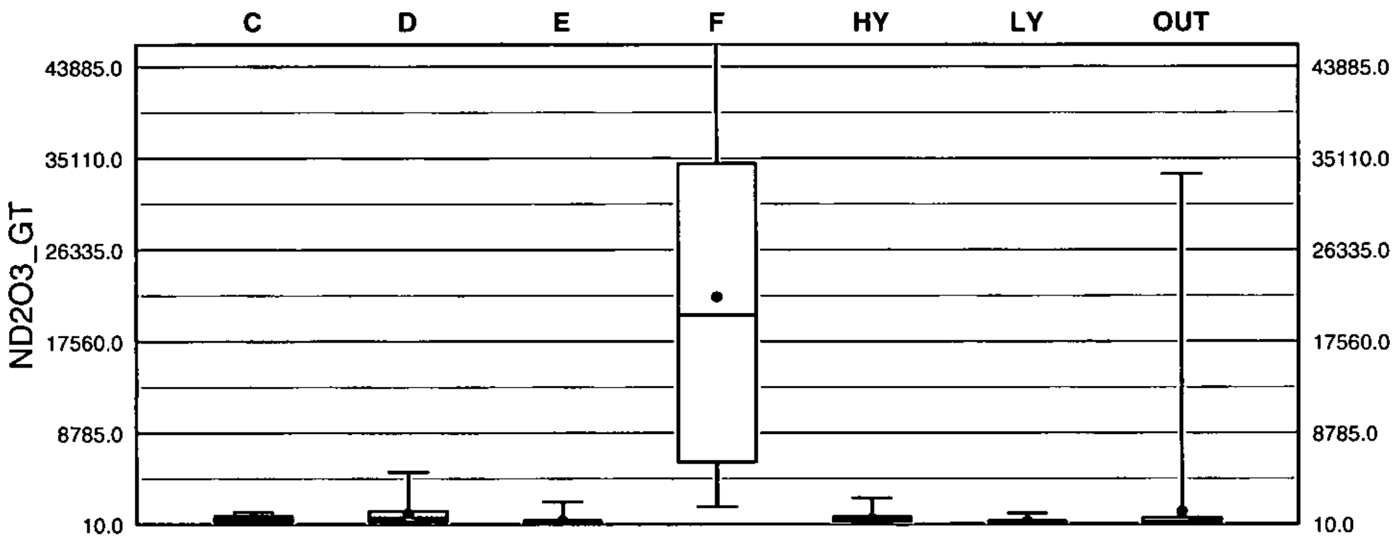


	C	D	E	F	HY	LY	OUT	
Number of data	108	126	73	11	259	101	379	Number of data
Mean	11025.4	3460.16	2224.38	364.546	6024.29	7315.84	5031.21	Mean
Maximum	150900.0	53900.0	14000.0	820.0	63100.0	61300.0	64900.0	Maximum
Upper quartile	13320.0	3600.0	1970.0	635.0	6674.98	7330.0	6137.59	Upper quartile
Median	5265.0	2180.0	1100.0	300.0	3619.99	4240.0	1930.01	Median
Lower quartile	2555.0	1090.0	375.0	117.5	1630.0	2100.0	667.503	Lower quartile
Minimum	200.0	40.0	30.0	60.0	270.0	70.0	20.0	Minimum
Variance	3.17582e+08	4.20046e+07	1.09808e+07	67497.5	7.91913e+07	1.05602e+08	6.83191e+07	Variance
CV	1.616	1.873	1.49	0.713	1.477	1.405	1.643	CV
Skewness	5.014	6.114	2.263	0.512	4.1	3.529	3.964	Skewness

Variable: NB2O5_GT
Acceptable range: 10.0 to 158445.0
Weights: --equal--

C file: IONBC.DAT
D file: IONBD.DAT
E file: IONBE.DAT
F file: IONBF.DAT
HY file: IONBHY.DAT
LY file: IONBLY.DAT
[illegible] file: [illegible]UT.D[illegible]

Sub-Zone



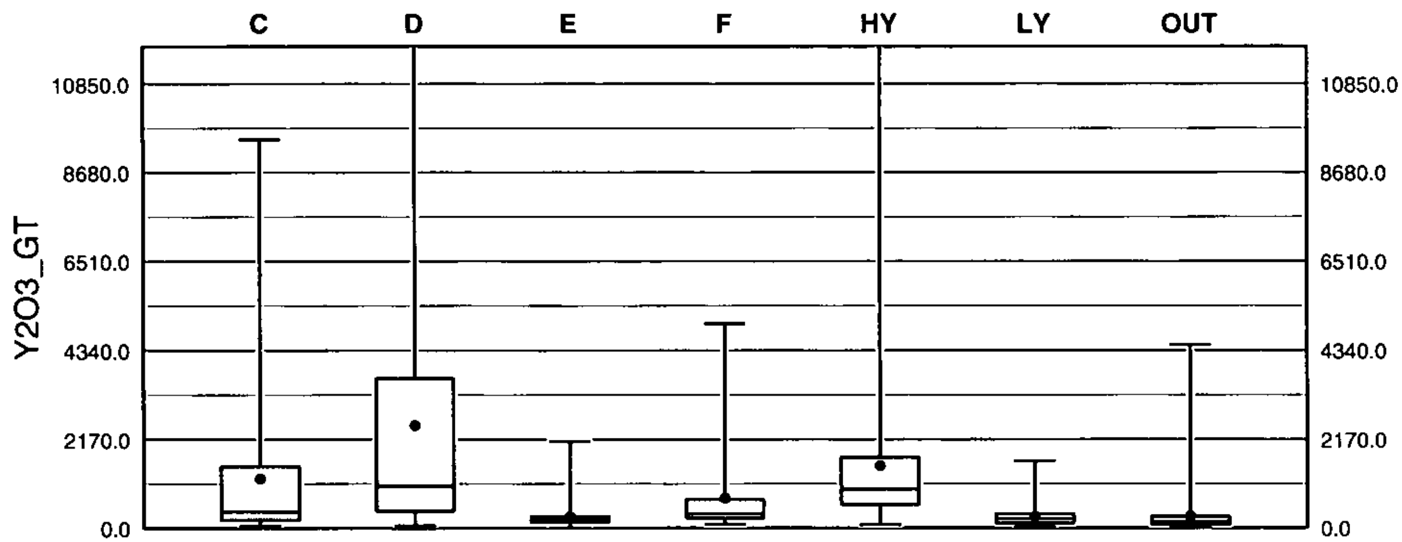
	C	D	E	F	HY	LY	OUT	
Number of data	56	35	24	19	44	29	100	Number of data
Mean	530.536	1011.43	347.917	21832.6	536.136	264.483	1239.4	Mean
Maximum	1160.0	5030.0	2160.0	79500.0	2540.0	1060.0	33600.0	Maximum
Upper quartile	775.0	1277.5	395.0	34600.0	710.0	320.0	630.001	Upper quartile
Median	485.0	620.0	105.0	20100.0	510.0	210.0	270.0	Median
Lower quartile	235.0	257.5	50.0	5997.5	275.0	145.0	140.0	Lower quartile
Minimum	60.0	30.0	20.0	1700.0	10.0	10.0	10.0	Minimum
Variance	100851.0	1.46654e+06	273542.0	3.49945e+08	169537.0	44693.7	1.76547e+07	Variance
CV	0.599	1.197	1.503	0.857	0.768	0.799	3.39	CV
Skewness	0.31	2.16	2.089	1.352	2.602	1.907	6.226	Skewness

Variable: ND2O3_GT
Acceptable range: 10.0 to 83474.5
Weights: --equal--

C file: IONDC.DAT
D file: IONDD.DAT
E file: IONDE.DAT
F file: IONDF.DAT
HY file: IONDHY.DAT
LY file: IONDLY.DAT
OUT file: IONDOUT.DAT

Wardrop Y2O3_GT North T Raw Stats

Sub-Zone



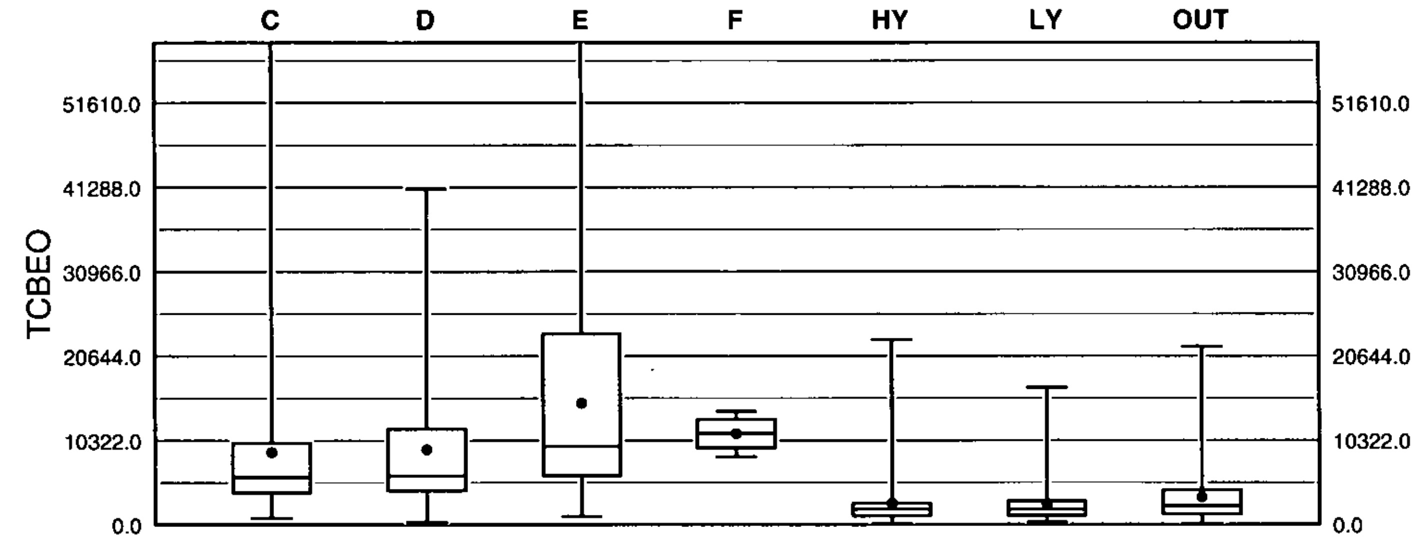
	C	D	E	F	HY	LY	OUT	
Number of data	115	132	122	26	270	108	394	Number of data
Mean	1205.56	2509.7	276.639	731.154	1523.22	280.741	288.782	Mean
Maximum	9490.0	31600.0	2120.0	4990.0	13550.0	1640.0	4480.0	Maximum
Upper quartile	1507.5	3655.0	280.001	699.999	1729.99	340.0	280.0	Upper quartile
Median	400.0	1025.0	215.0	345.0	950.0	230.0	154.995	Median
Lower quartile	200.0	420.0	150.0	250.0	580.0	125.0	80.0	Lower quartile
Minimum	50.0	60.0	10.0	90.0	80.0	30.0	10.0	Minimum
Variance	3.24735e+06	1.42671e+07	105209.0	1.06247e+06	2.86368e+06	57730.9	272594.0	Variance
CV	1.495	1.505	1.173	1.41	1.111	0.856	1.808	CV
Skewness	2.494	4.325	3.859	2.938	3.064	2.533	5.6	Skewness

Variable: Y2O3_GT
Acceptable range: 10.0 to 33180.0
Weights: --equal--

C file: IOYC.DAT
D file: IOYD.DAT
E file: IOYE.DAT
F file: IOYF.DAT
HY file: IOYHY.DAT
LY file: IOYLY.DAT
[illegible] file: [illegible]T.DAT

TOP CUT

Sub-Zone



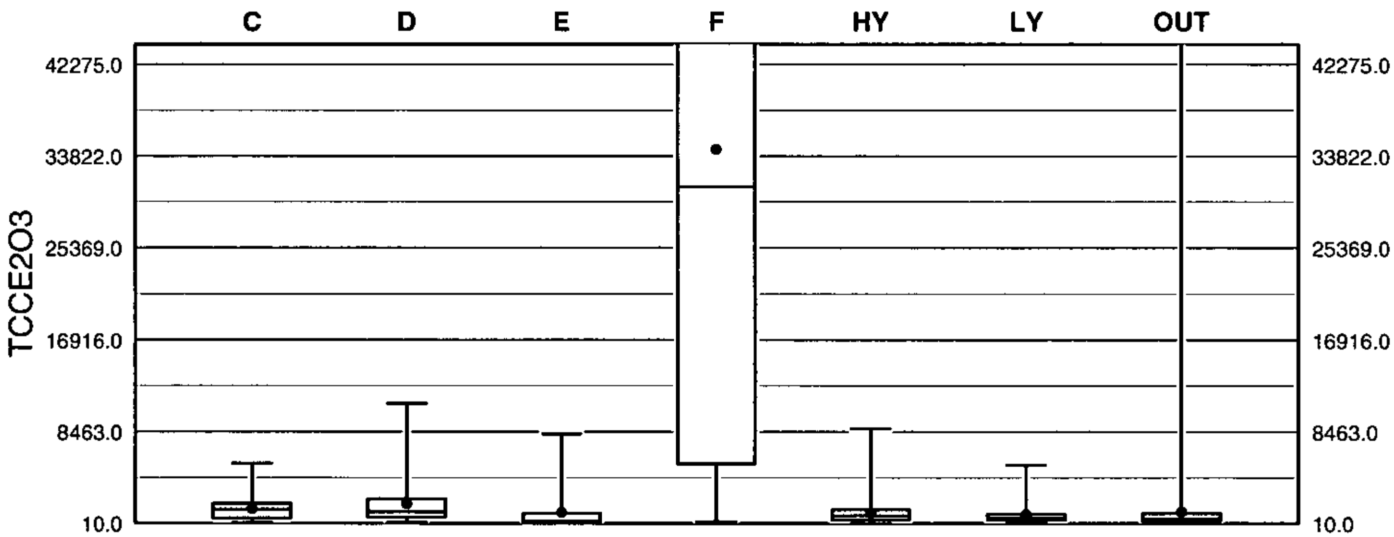
	C	D	E	F	HY	LY	OUT	
Number of data	113	125	119	4	105	30	165	Number of data
Mean	8853.98	9187.2	14869.8	11150.0	2593.1	2513.33	3349.09	Mean
Maximum	59000.0	41100.0	63800.0	13900.0	22655.0	16800.0	21800.0	Maximum
Upper quartile	10000.0	11725.0	23375.0	12900.0	2600.0	2900.0	4250.02	Upper quartile
Median	5800.0	6000.0	9600.0	11200.0	1900.0	1850.0	2300.0	Median
Lower quartile	3900.0	4175.0	6000.0	9400.0	1075.0	1100.0	1275.0	Lower quartile
Minimum	800.0	300.0	1000.0	8300.0	100.0	300.0	100.0	Minimum
Variance	7.78014e+07	5.32097e+07	1.41497e+08	4.1675e+06	1.0794e+07	8.82982e+06	1.24646e+07	Variance
CV	0.996	0.794	0.8	0.183	1.267	1.182	1.054	CV
Skewness	2.929	1.579	1.342	-0.065	4.101	3.677	2.74	Skewness

Variable: TCBEO
Acceptable range: 10.0 to 66990.0
Weights: --equal--

C file: TCTBEC.DAT
D file: TCTBED.DAT
E file: TCTBEE.DAT
F file: TCTBEF.DAT
HY file: TCTBEHY.DAT
LY file: TCTBELY.DAT
[illegible] file: [illegible]OUT[illegible]

Wardrop **TCCE2O3** **North T Capped in Solid**

Sub-Zone



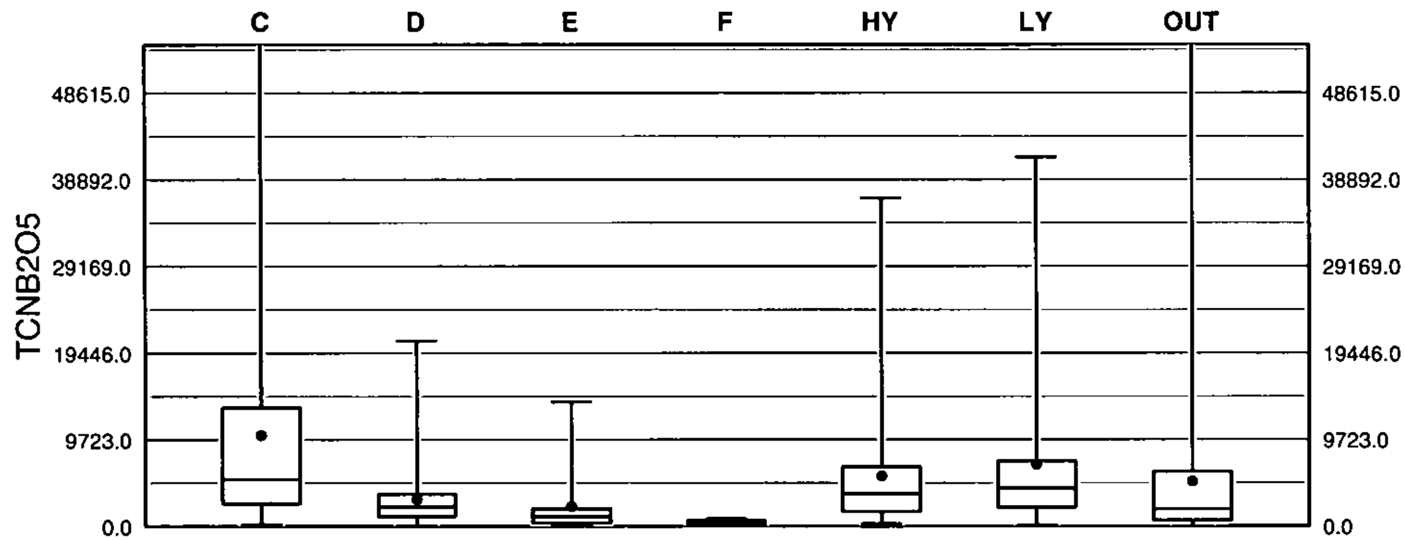
	C	D	E	F	HY	LY	OUT	
Number of data	115	130	122	26	269	108	419	Number of data
Mean	1348.35	1809.79	1023.82	34427.7	980.148	831.482	1069.36	Mean
Maximum	5540.0	11063.0	8269.0	93000.0	8750.0	5410.0	66000.0	Maximum
Upper quartile	1837.5	2279.98	930.001	54900.0	1300.0	869.998	937.505	Upper quartile
Median	1300.0	1090.0	215.0	30950.0	720.0	520.0	420.003	Median
Lower quartile	482.5	570.0	160.0	5520.0	337.5	310.0	220.0	Lower quartile
Minimum	60.0	100.0	50.0	170.0	20.0	30.0	10.0	Minimum
Variance	1.01602e+06	5.0686e+06	3.43086e+06	8.51675e+08	948232.0	905977.0	1.67811e+07	Variance
CV	0.748	1.244	1.809	0.848	0.993	1.145	3.831	CV
Skewness	1.071	2.818	2.702	0.473	3.145	2.919	12.59	Skewness

Variable: TCCE2O3
Acceptable range: 10.0 to 97649.5
Weights: --equal--

C file: TCTCEC.DAT
D file: TCTCED.DAT
E file: TCTCEE.DAT
F file: TCTCEF.DAT
HY file: TCTCEHY.DAT
LY file: TCTCELY.DAT
OUT file: TCTCEOUT.DAT

Wardrop TCNB2O5 North T Capped in Solid

Sub-Zone



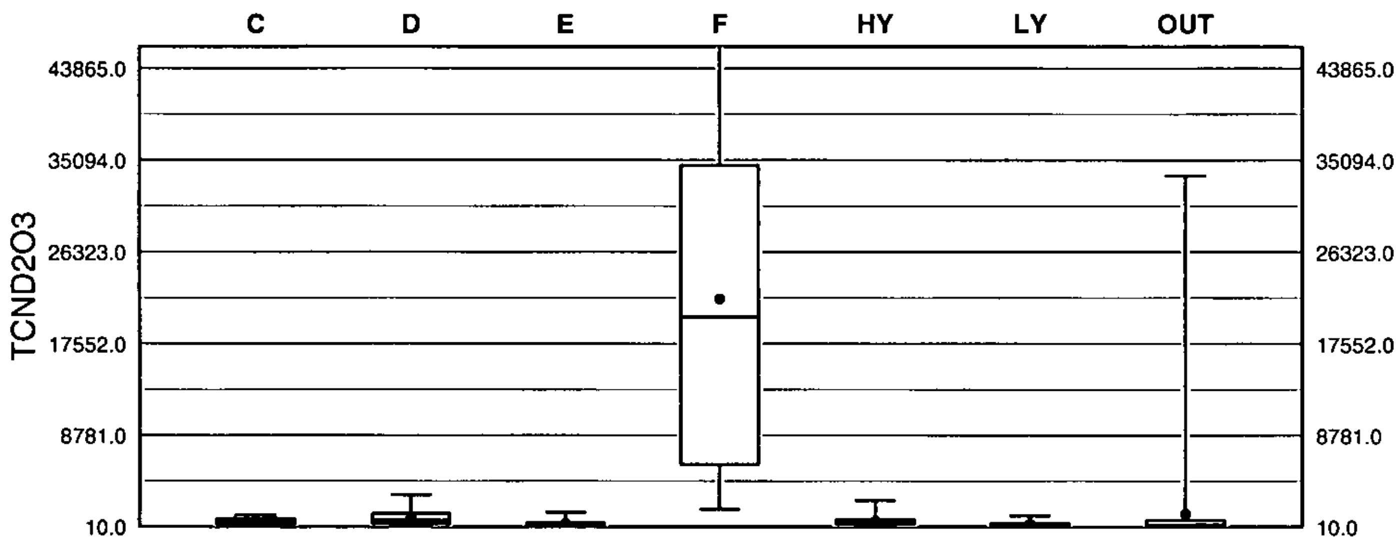
	C	D	E	F	HY	LY	OUT
Number of data	108	126	73	11	259	101	379
Mean	10218.1	2997.7	2224.38	364.546	5635.1	6920.79	5031.21
Maximum	63710.0	20815.0	14000.0	820.0	36800.0	41400.0	64900.0
Upper quartile	13320.0	3600.0	1970.0	635.0	6674.98	7330.0	6137.59
Median	5265.0	2180.0	1100.0	300.0	3619.99	4240.0	1930.01
Lower quartile	2555.0	1090.0	375.0	117.5	1630.0	2100.0	667.503
Minimum	200.0	40.0	30.0	60.0	270.0	70.0	20.0
Variance	1.61474e+08	1.20175e+07	1.09808e+07	67497.5	4.71383e+07	7.13796e+07	6.83191e+07
CV	1.244	1.156	1.49	0.713	1.218	1.221	1.643
Skewness	2.33	3.235	2.263	0.512	2.879	2.773	3.964

Variable: TCNB2O5
Acceptable range: 10.0 to 68145.0
Weights: --equal--

C file: TCTNBC.DAT
D file: TCTNBD.DAT
E file: TCTNBE.DAT
F file: TCTNBF.DAT
HY file: TCTNBHY.DAT
LY file: TCTNBLY.DAT
[illegible]T file: [illegible]BOUT[illegible]

Wardrop **TCND2O3** **North T Capped in Solid**

Sub-Zone

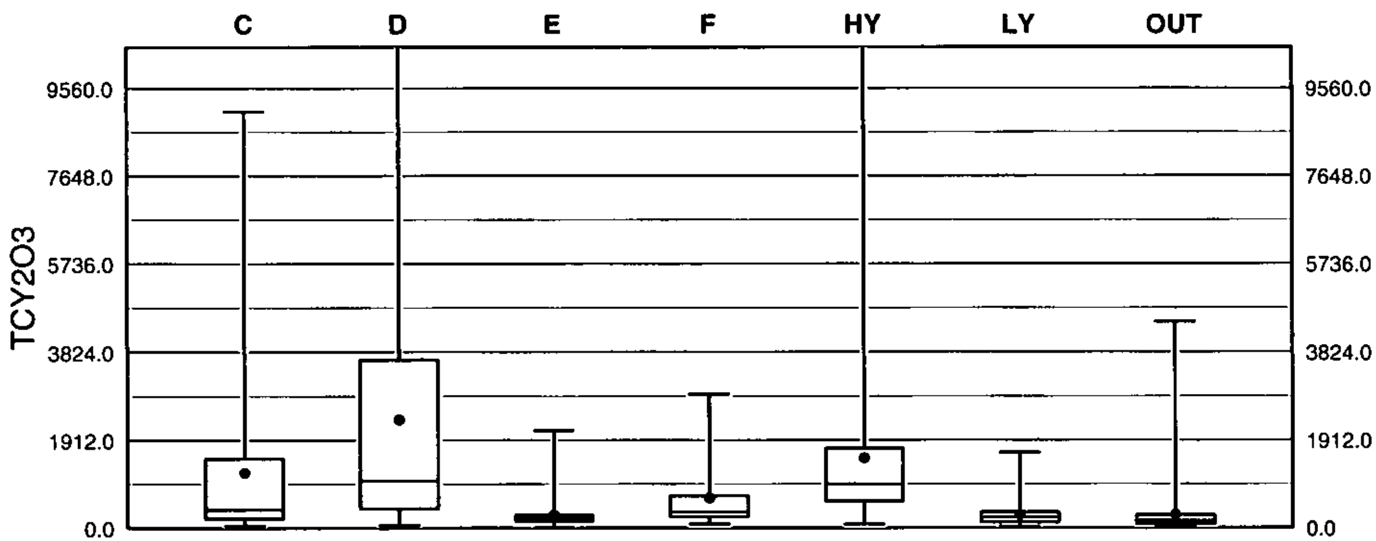


	C	D	E	F	HY	LY	OUT	
Number of data	56	35	24	19	44	29	100	Number of data
Mean	530.536	899.486	316.375	21832.6	536.136	264.483	1239.4	Mean
Maximum	1160.0	3071.0	1403.0	79500.0	2540.0	1060.0	33600.0	Maximum
Upper quartile	775.0	1277.5	395.0	34600.0	710.0	320.0	630.001	Upper quartile
Median	485.0	620.0	105.0	20100.0	510.0	210.0	270.0	Median
Lower quartile	235.0	257.5	50.0	5997.5	275.0	145.0	140.0	Lower quartile
Minimum	60.0	30.0	20.0	1700.0	10.0	10.0	10.0	Minimum
Variance	100851.0	773608.0	182111.0	3.49945e+08	169537.0	44693.7	1.76547e+07	Variance
CV	0.599	0.978	1.349	0.857	0.768	0.799	3.39	CV
Skewness	0.31	1.306	1.506	1.352	2.602	1.907	6.226	Skewness

Variable: TCND2O3
Acceptable range: 10.0 to 83474.5
Weights: --equal--

C file: TCTNDC.DAT
D file: TCTNDD.DAT
E file: TCTNDE.DAT
F file: TCTNDF.DAT
HY file: TCTNDHY.DAT
LY file: TCTNDLY.DAT
OUT file: TCTNDOUT.DAT

Sub-Zone



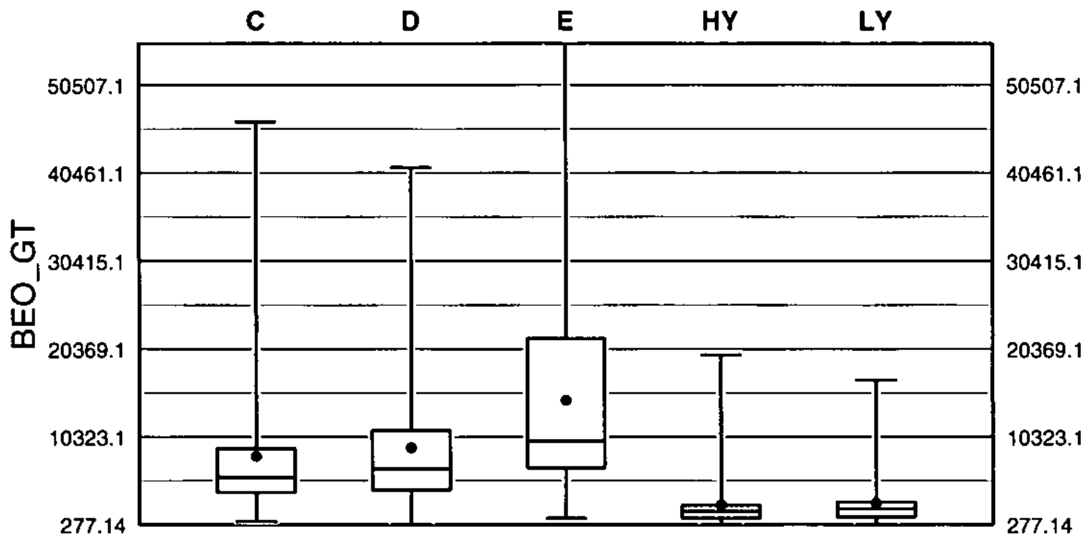
	C	D	E	F	HY	LY	OUT	
Number of data	115	132	122	26	270	108	394	Number of data
Mean	1201.75	2357.03	276.639	651.154	1523.22	280.741	288.782	Mean
Maximum	9051.0	14674.0	2120.0	2910.0	13550.0	1640.0	4480.0	Maximum
Upper quartile	1507.5	3655.0	280.001	699.999	1729.99	340.0	280.0	Upper quartile
Median	400.0	1025.0	215.0	345.0	950.0	230.0	154.995	Median
Lower quartile	200.0	420.0	150.0	250.0	580.0	125.0	80.0	Lower quartile
Minimum	50.0	60.0	10.0	90.0	80.0	30.0	10.0	Minimum
Variance	3.18576e+06	8.28042e+06	105209.0	541056.0	2.86368e+06	57730.9	272594.0	Variance
CV	1.485	1.221	1.173	1.13	1.111	0.856	1.808	CV
Skewness	2.442	2.099	3.859	1.947	3.064	2.533	5.6	Skewness

Variable: TCY2O3
Acceptable range: 10.0 to 15407.7
Weights: --equal--

C file: TCTYC.DAT
D file: TCTYD.DAT
E file: TCTYE.DAT
F file: TCTYF.DAT
HY file: TCTYHY.DAT
LY file: TCTYLY.DAT
[illegible] file: [illegible]UT.D[illegible]

COMPOSITE DATA

Zone



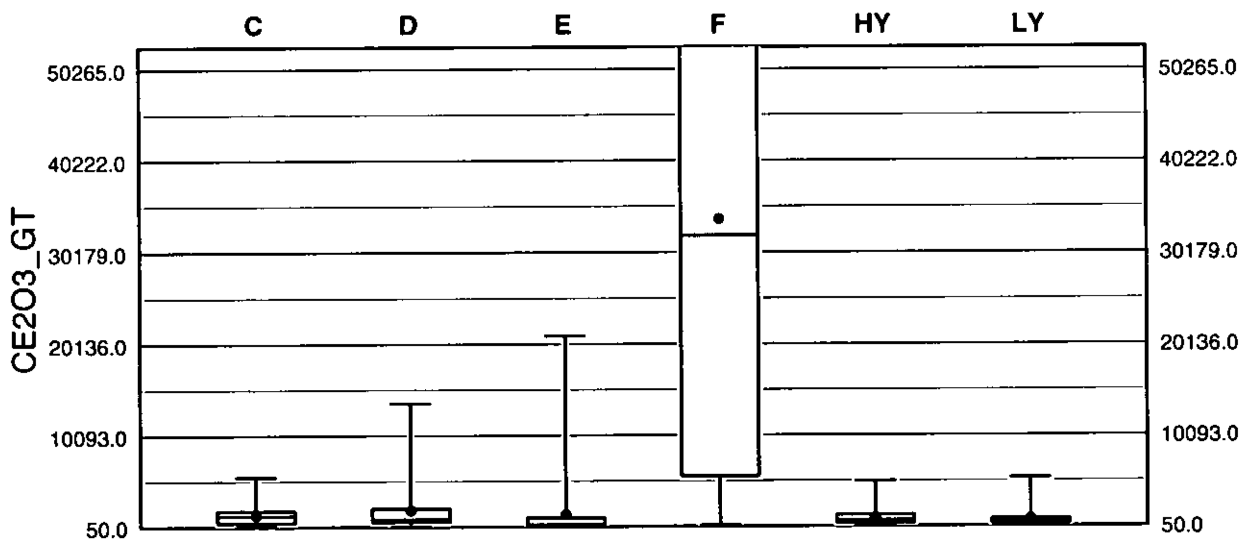
	C	D	E	HY	LY	
Number of data	104	100	88	75	23	Number of data
Mean	8085.17	9077.22	14498.3	2528.49	2730.18	Mean
Maximum	46300.0	41100.0	55213.6	19700.0	16800.0	Maximum
Upper quartile	8991.46	11064.7	21564.4	2500.74	2860.85	Upper quartile
Median	5685.88	6662.48	9843.53	1800.0	2090.06	Median
Lower quartile	3951.69	4257.17	6774.59	1006.43	1125.02	Lower quartile
Minimum	623.846	277.14	1009.02	300.0	300.0	Minimum
Variance	5.49875e+07	4.68816e+07	1.07417e+08	1.09049e+07	1.05946e+07	Variance
CV	0.917	0.754	0.715	1.306	1.192	CV
Skewness	2.669	1.689	1.266	3.539	3.465	Skewness

Variable: BEO_GT
Acceptable range: 10.0 to 57960.4
Weights: --equal--

C file: CPBEC.DAT
D file: CPBED.DAT
E file: CPBEE.DAT
HY file: CPBEHY.DAT
[illegible]Y file: [illegible]Y.DA[illegible]

Wardrop   CE2O3_GT   North T Cap Composites in Solid

Zone

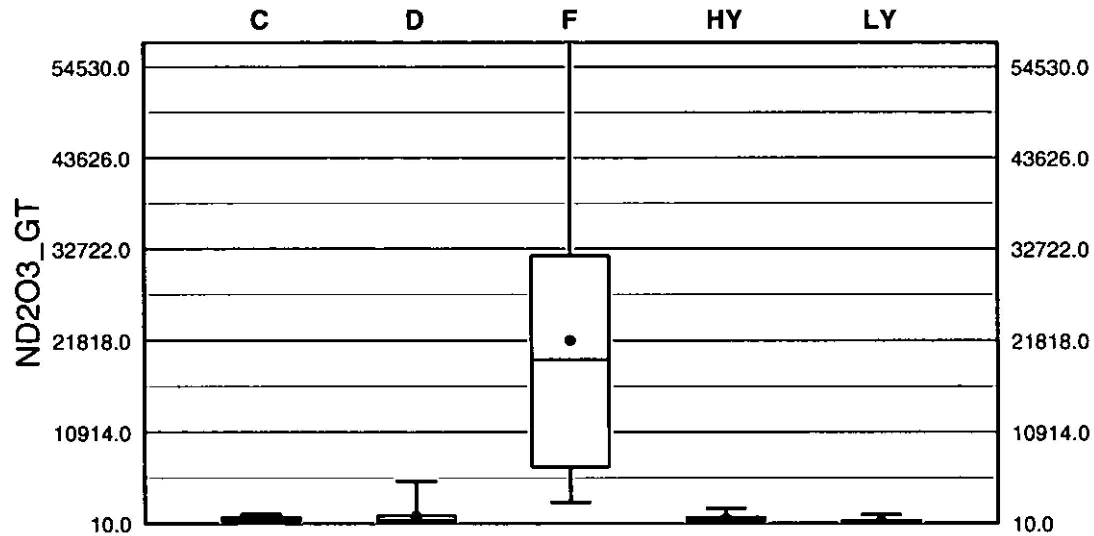


	C	D	E	F	HY	LY
Number of data	104	105	84	25	239	100
Mean	1334.33	1842.75	1398.75	33808.5	967.3	863.112
Maximum	5540.0	13649.5	21038.3	85200.0	5040.0	5410.0
Upper quartile	1796.59	2083.64	1030.3	53033.3	1307.5	882.691
Median	1310.0	870.0	264.721	32000.0	720.0	548.972
Lower quartile	481.336	587.585	170.008	5590.55	372.5	323.815
Minimum	60.0	100.0	50.033	170.0	50.0	50.0
Variance	994166.0	6.18021e+06	9.79957e+06	7.42128e+08	736439.0	951686.0
CV	0.747	1.349	2.238	0.806	0.887	1.13
Skewness	1.183	3.074	4.1	0.411	2.041	2.852

Variable: CE2O3_GT
Acceptable range: 10.0 to 89457.5
Weights: --equal--

C file: CPCEC.DAT
D file: CPCED.DAT
E file: CPCEE.DAT
F file: CPCEF.DAT
HY file: CPCEHY.DAT
LY file: CPCELY.DAT

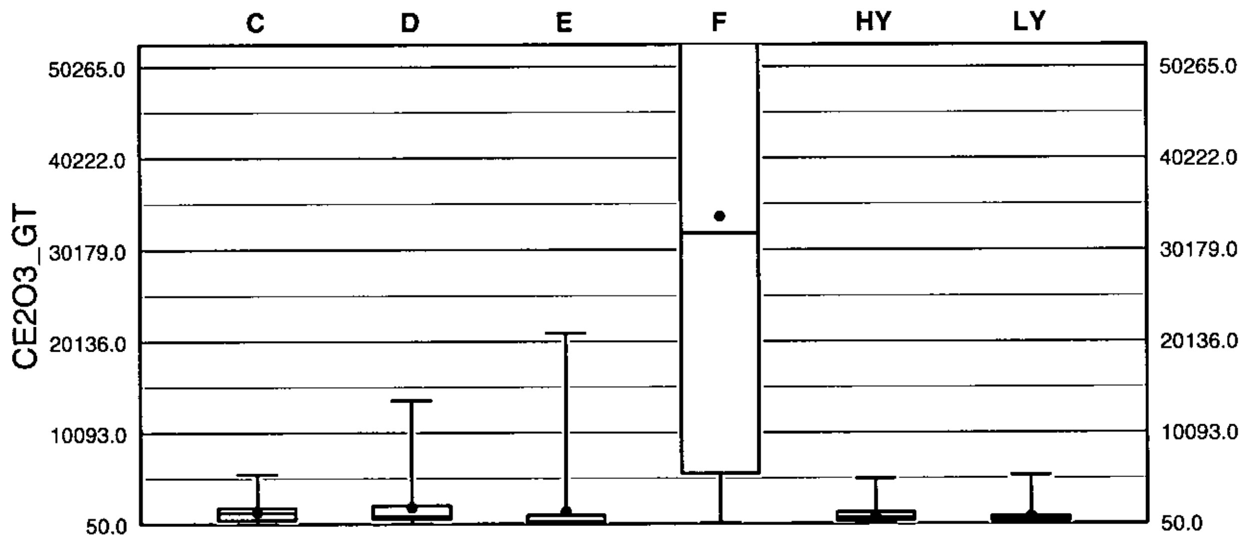
Zone



	C	D	F	HY	LY	
Number of data	46	24	18	36	28	Number of data
Mean	527.635	867.842	21818.5	520.181	274.088	Mean
Maximum	1140.9	5030.0	79500.0	1783.98	1060.0	Maximum
Upper quartile	749.92	907.509	31900.0	686.016	339.971	Upper quartile
Median	500.594	409.639	19550.0	486.739	210.082	Median
Lower quartile	310.0	133.921	6770.0	285.0	149.918	Lower quartile
Minimum	60.0	30.0	2530.49	10.0	30.0	Minimum
Variance	72564.7	1.35476e+06	3.32504e+08	119178.0	43790.3	Variance
CV	0.511	1.341	0.836	0.664	0.763	CV
Skewness	0.067	2.319	1.561	1.502	1.964	Skewness

Variable: ND2O3_GT
Acceptable range: 10.0 to 83474.5
Weights: --equal--

C file: CPNDC.DAT
D file: CPNDD.DAT
F file: CPNDF.DAT
HY file: CPNDHY.DAT
[illegible] file: [illegible]Y.DA[illegible]

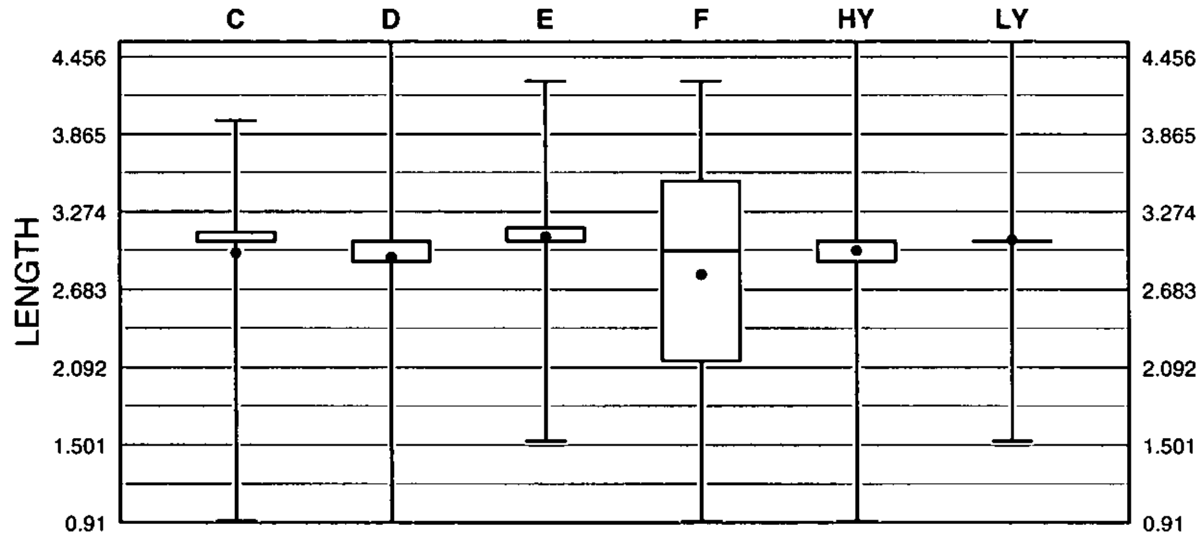


	C	D	E	F	HY	LY	
Number of data	104	105	84	25	239	100	Number of data
Mean	1334.33	1842.75	1398.75	33808.5	967.3	863.112	Mean
Maximum	5540.0	13649.5	21038.3	85200.0	5040.0	5410.0	Maximum
Upper quartile	1796.59	2083.64	1030.3	53033.3	1307.5	882.691	Upper quartile
Median	1310.0	870.0	264.721	32000.0	720.0	548.972	Median
Lower quartile	481.336	587.585	170.008	5590.55	372.5	323.815	Lower quartile
Minimum	60.0	100.0	50.033	170.0	50.0	50.0	Minimum
Variance	994166.0	6.18021e+06	9.79957e+06	7.42128e+08	736439.0	951686.0	Variance
CV	0.747	1.349	2.238	0.806	0.887	1.13	CV
Skewness	1.183	3.074	4.1	0.411	2.041	2.852	Skewness

Variable: CE2O3_GT
Acceptable range: 10.0 to 89457.5
Weights: --equal--

C file: CPCEC.DAT
D file: CPCED.DAT
E file: CPCEE.DAT
F file: CPCEF.DAT
HY file: CPCEHY.DAT
LY file: CPCELY.DAT

Sub-Zone

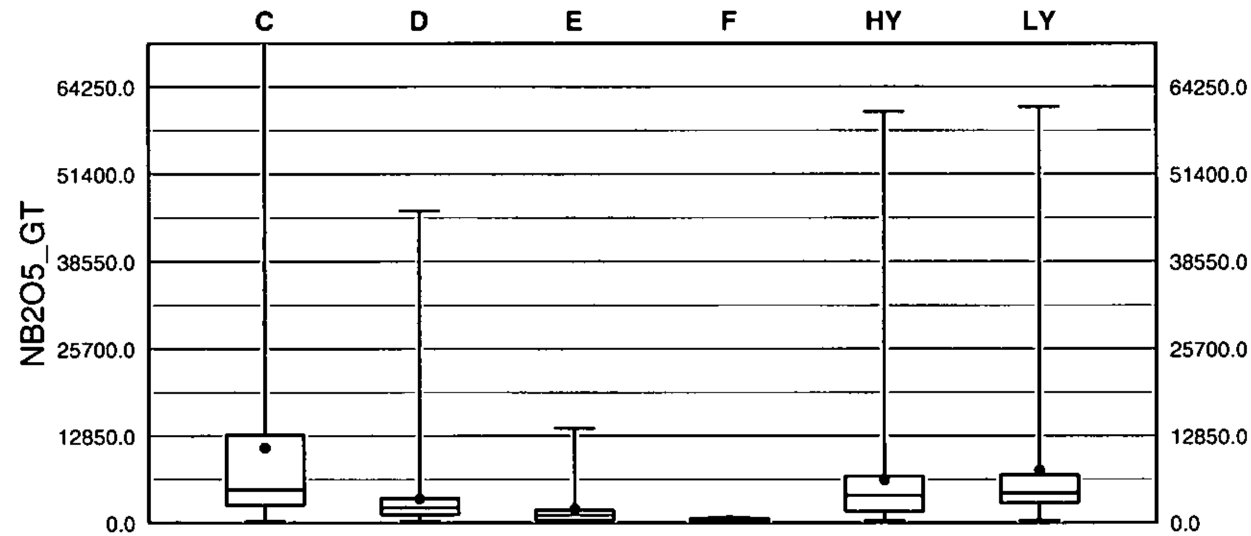


	C	D	E	F	HY	LY	
Number of data	105	110	96	30	251	129	Number of data
Mean	2.961	2.926	3.084	2.796	2.977	3.061	Mean
Maximum	3.97	4.57	4.27	4.27	4.57	4.57	Maximum
Upper quartile	3.117	3.05	3.15	3.507	3.05	3.05	Upper quartile
Median	3.048	3.047	3.05	2.975	3.047	3.048	Median
Lower quartile	3.047	2.895	3.048	2.14	2.895	3.047	Lower quartile
Minimum	0.92	0.91	1.53	0.92	0.92	1.53	Minimum
Variance	0.2452	0.3779	0.0501	0.7162	0.2488	0.1222	Variance
CV	0.167	0.21	0.073	0.303	0.168	0.114	CV
Skewness	-2.153	-1.171	-1.976	-0.678	-0.567	-0.604	Skewness

Variable: LENGTH
Acceptable range: 0.727 to 4.753
Weights: --equal--

C file: CPLNC.DAT
D file: CPLND.DAT
E file: CPLNE.DAT
F file: CPLNF.DAT
HY file: CPLNHY.DAT
[redacted] file: [redacted]Y.DA[redacted]

Zone

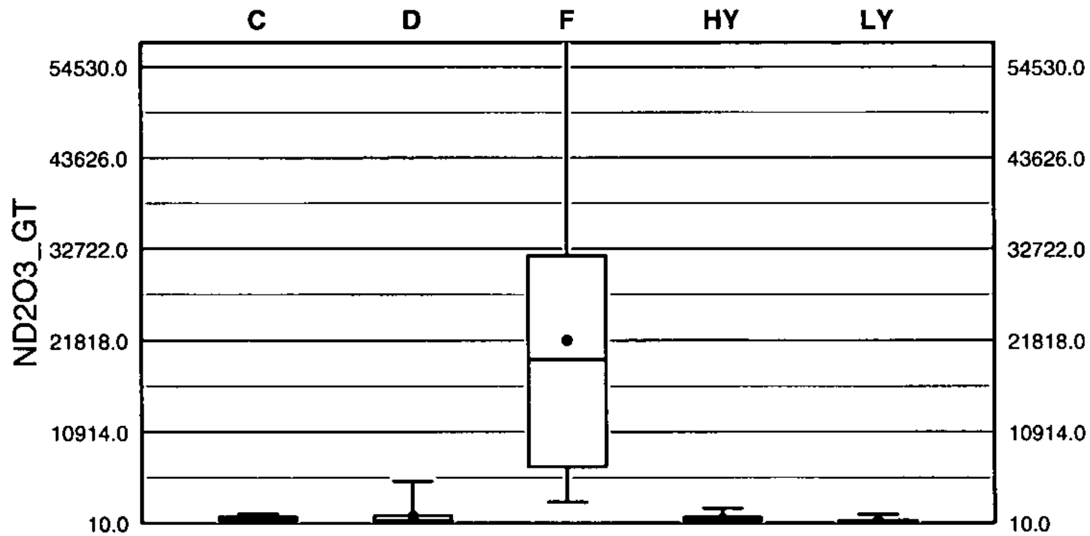


	C	D	E	F	HY	LY	
Number of data	98	102	55	10	230	93	Number of data
Mean	11104.5	3538.96	2054.27	366.813	6292.16	7789.0	Mean
Maximum	137353.0	46000.0	13977.7	820.0	60600.0	61300.0	Maximum
Upper quartile	13010.0	3599.12	1881.45	680.0	6900.07	7046.81	Upper quartile
Median	4901.48	2222.89	1100.0	280.0	4007.66	4407.49	Median
Lower quartile	2590.0	1185.54	382.389	170.0	1671.62	2931.09	Lower quartile
Minimum	205.81	260.0	50.0	60.0	270.0	330.0	Minimum
Variance	3.02436e+08	3.15861e+07	9.24273e+06	66368.9	8.21294e+07	1.15446e+08	Variance
CV	1.566	1.588	1.48	0.702	1.44	1.379	CV
Skewness	4.496	5.306	2.535	0.634	3.761	3.292	Skewness

Variable: NB2O5_GT
Acceptable range: 10.0 to 144221.0
Weights: --equal--

C file: CPNBC.DAT
D file: CPNBD.DAT
E file: CPNBE.DAT
F file: CPNBF.DAT
HY file: CPNBHY.DAT
LY file: CPNBLY.DAT

Zone



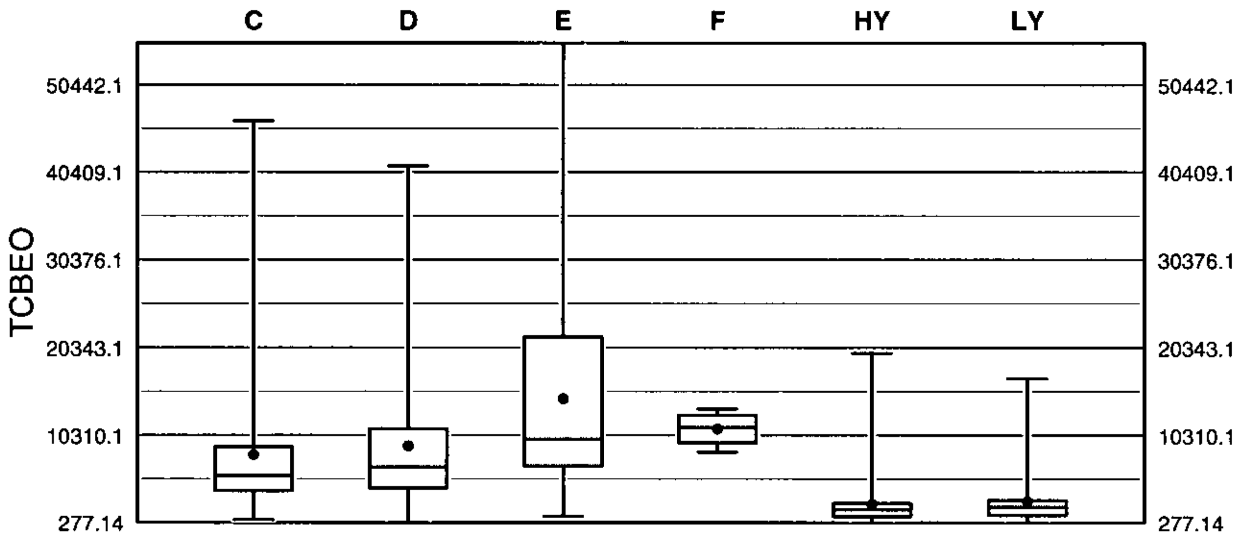
	C	D	F	HY	LY	
Number of data	46	24	18	36	28	Number of data
Mean	527.635	867.842	21818.5	520.181	274.088	Mean
Maximum	1140.9	5030.0	79500.0	1783.98	1060.0	Maximum
Upper quartile	749.92	907.509	31900.0	686.016	339.971	Upper quartile
Median	500.594	409.639	19550.0	486.739	210.082	Median
Lower quartile	310.0	133.921	6770.0	285.0	149.918	Lower quartile
Minimum	60.0	30.0	2530.49	10.0	30.0	Minimum
Variance	72564.7	1.35476e+06	3.32504e+08	119178.0	43790.3	Variance
CV	0.511	1.341	0.836	0.664	0.763	CV
Skewness	0.067	2.319	1.561	1.502	1.964	Skewness

Variable: ND2O3_GT
Acceptable range: 10.0 to 83474.5
Weights: --equal--

C file: CPNDC.DAT
D file: CPNDD.DAT
F file: CPNDF.DAT
HY file: CPNDHY.DAT
file: Y.DA

Wardrop TCBEO North T Cap Composites in Solid

Sub-Zone

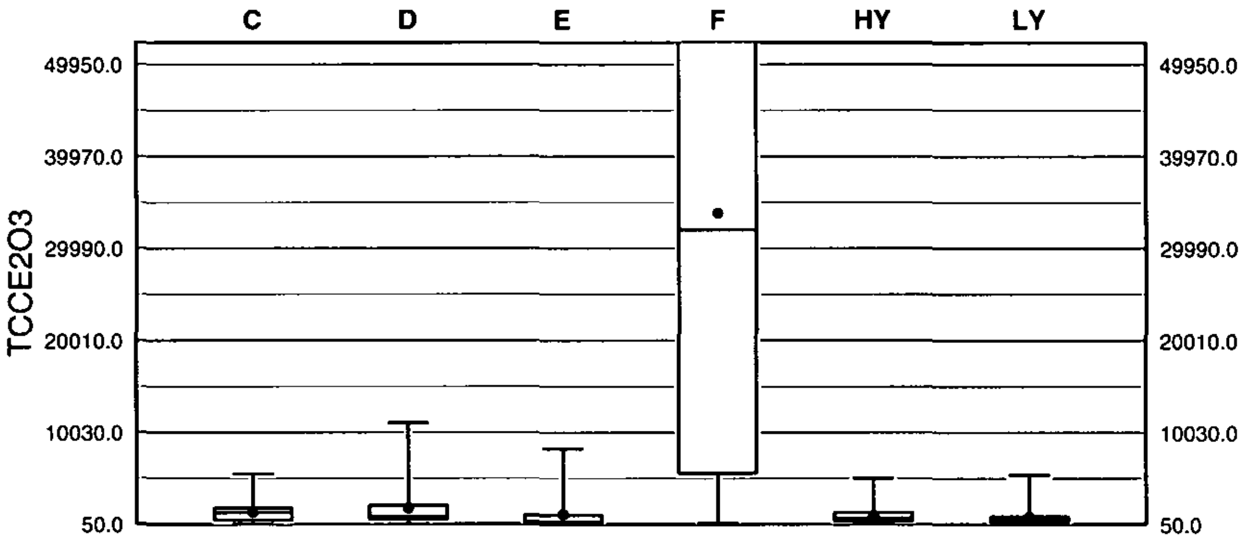


	C	D	E	F	HY	LY	
Number of data	104	100	88	4	75	23	Number of data
Mean	8085.17	9077.22	14498.3	11036.4	2413.89	2730.18	Mean
Maximum	46300.0	41100.0	55213.6	13342.6	19700.0	16800.0	Maximum
Upper quartile	8991.46	11064.7	21564.4	12621.3	2500.74	2860.85	Upper quartile
Median	5685.88	6662.48	9843.53	11200.0	1800.0	2090.06	Median
Lower quartile	3951.69	4257.17	6774.59	9451.56	1006.43	1125.02	Lower quartile
Minimum	623.846	277.14	1009.02	8403.12	300.0	300.0	Minimum
Variance	5.49875e+07	4.68816e+07	1.07417e+08	3.32159e+06	8.59989e+06	1.05946e+07	Variance
CV	0.917	0.754	0.715	0.165	1.215	1.192	CV
Skewness	2.669	1.689	1.266	-0.227	3.723	3.465	Skewness

Variable: TCBEO
Acceptable range: 10.0 to 57960.4
Weights: --equal--

C file: CPTBEC.DAT
D file: CPTBED.DAT
E file: CPTBEE.DAT
F file: CPTBEF.DAT
HY file: CPTBEHY.DAT
LY file: CPTBELY.DAT

Sub-Zone

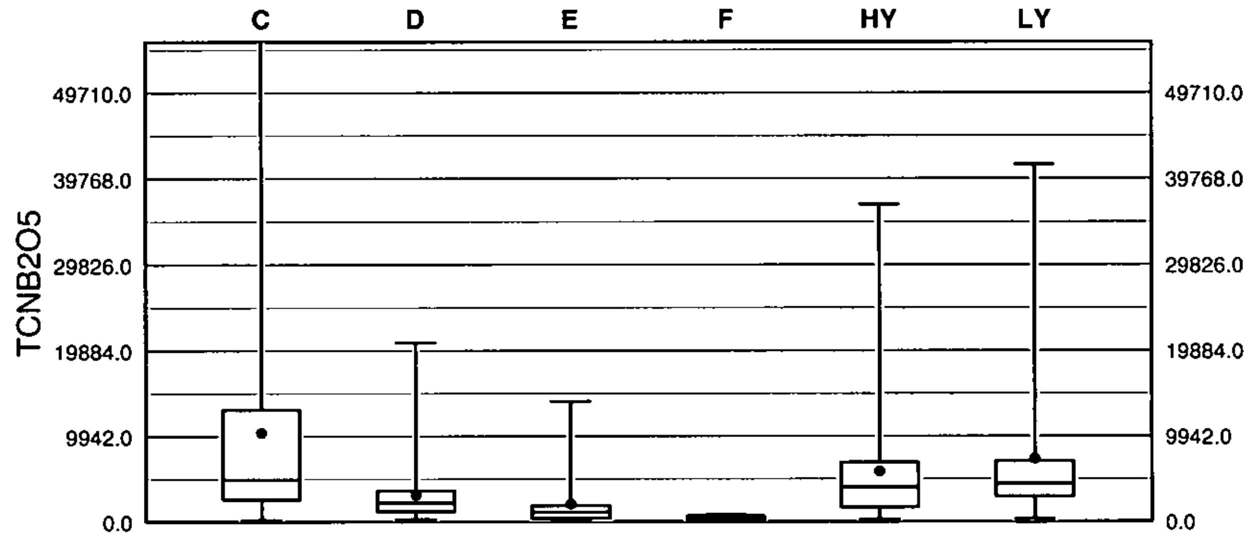


	C	D	E	F	HY	LY
Number of data	104	105	84	25	239	100
Mean	1334.33	1783.06	1111.64	33808.5	967.3	863.112
Maximum	5540.0	11063.0	8269.0	85200.0	5040.0	5410.0
Upper quartile	1796.59	2083.64	1030.3	53033.3	1307.5	882.691
Median	1310.0	870.0	264.721	32000.0	720.0	548.972
Lower quartile	481.336	587.585	170.008	5590.55	372.5	323.815
Minimum	60.0	100.0	50.033	170.0	50.0	50.0
Variance	994166.0	5.02236e+06	3.66829e+06	7.42128e+08	736439.0	951686.0
CV	0.747	1.257	1.723	0.806	0.887	1.13
Skewness	1.183	2.771	2.592	0.411	2.041	2.852

Variable: TCCE2O3
Acceptable range: 10.0 to 89457.5
Weights: --equal--

C file: CPTCEC.DAT
D file: CPTCED.DAT
E file: CPTCEE.DAT
F file: CPTCEF.DAT
HY file: CPTCEHY.DAT
[illegible] file: [illegible]LY.D[illegible]

Sub-Zone

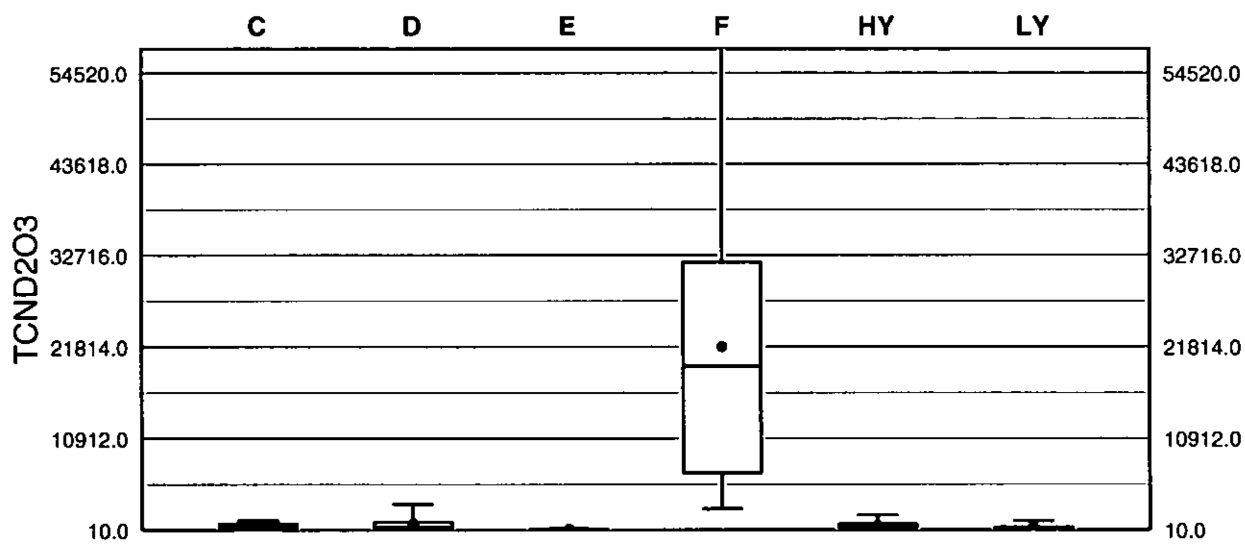


	C	D	E	F	HY	LY	
Number of data	98	102	55	10	230	93	Number of data
Mean	10341.0	3098.01	2054.27	366.813	5846.69	7331.52	Mean
Maximum	62531.2	20815.0	13977.7	820.0	36800.0	41400.0	Maximum
Upper quartile	13010.0	3599.12	1881.45	680.0	6900.05	7046.81	Upper quartile
Median	4901.48	2222.89	1100.0	280.0	4007.66	4407.49	Median
Lower quartile	2590.0	1185.54	382.389	170.0	1671.62	2931.09	Lower quartile
Minimum	205.81	260.0	50.0	60.0	270.0	330.0	Minimum
Variance	1.662e+08	1.08989e+07	9.24273e+06	66368.9	4.89277e+07	7.76935e+07	Variance
CV	1.247	1.066	1.48	0.702	1.196	1.202	CV
Skewness	2.279	3.053	2.535	0.634	2.81	2.605	Skewness

Variable: TCNB2O5
Acceptable range: 10.0 to 65657.8
Weights: --equal--

C file: CPTNBC.DAT
D file: CPTNBD.DAT
E file: CPTNBE.DAT
F file: CPTNBF.DAT
HY file: CPTNBHY.DAT
LY file: CPTNBLY.DAT

Sub-Zone



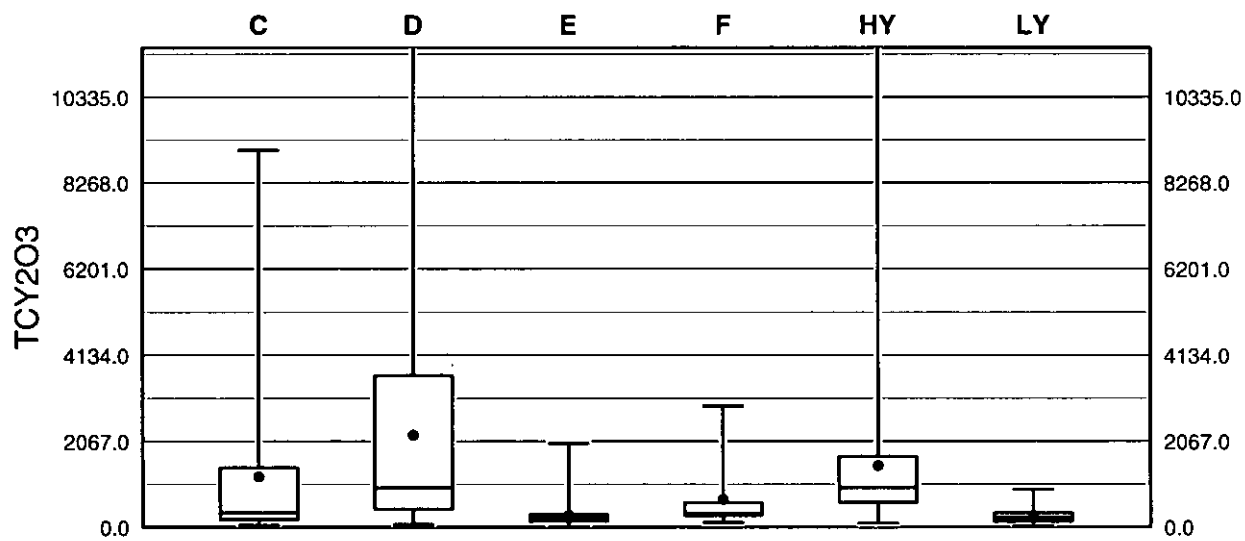
	C	D	E	F	HY	LY	
Number of data	46	24	9	18	36	28	Number of data
Mean	527.635	764.395	96.598	21818.5	520.181	274.088	Mean
Maximum	1140.9	3071.0	179.649	79500.0	1783.98	1060.0	Maximum
Upper quartile	749.92	907.509	147.5	31900.0	686.016	339.971	Upper quartile
Median	500.594	409.639	79.803	19550.0	486.739	210.082	Median
Lower quartile	310.0	133.921	45.0	6770.0	285.0	149.918	Lower quartile
Minimum	60.0	30.0	20.0	2530.49	10.0	30.0	Minimum
Variance	72564.7	729727.0	3194.63	3.32504e+08	119178.0	43790.3	Variance
CV	0.511	1.118	0.585	0.836	0.664	0.763	CV
Skewness	0.067	1.629	0.134	1.561	1.502	1.964	Skewness

Variable: TCND2O3
Acceptable range: 10.0 to 83474.5
Weights: --equal--

C file: CPTNDC.DAT
D file: CPTNDD.DAT
E file: CPTNDE.DAT
F file: CPTNDF.DAT
HY file: CPTNDHY.DAT
[illegible]Y file: [illegible]DLY.D[illegible]

Wardrop TCY2O3 North T Cap Composites in Solid

Sub-Zone

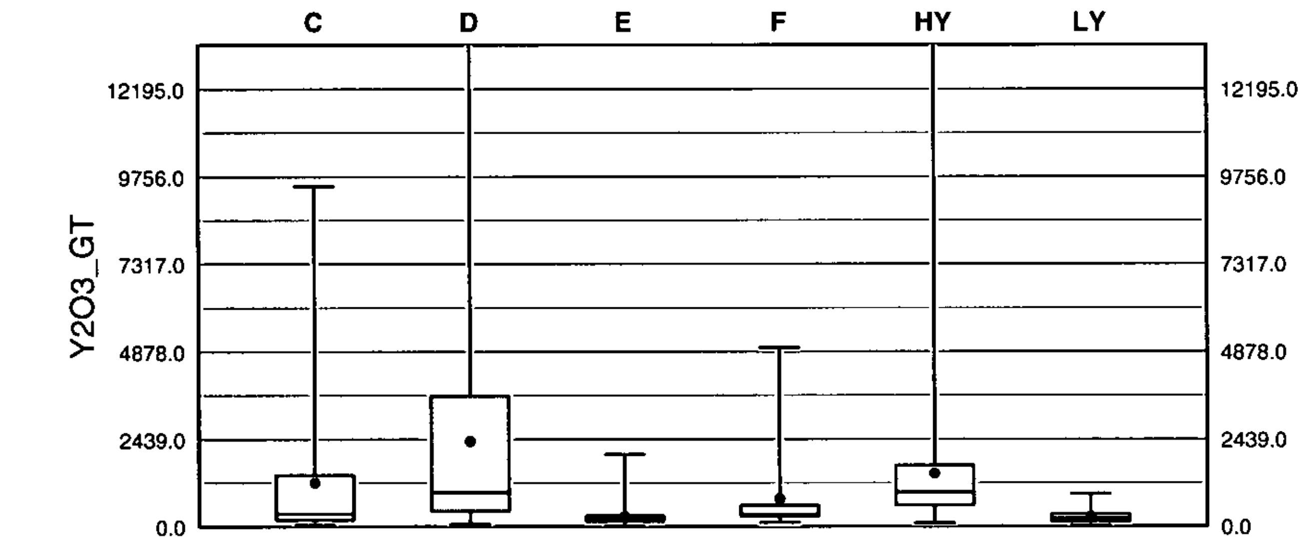


	C	D	E	F	HY	LY	
Number of data	104	107	84	25	241	100	Number of data
Mean	1213.94	2210.7	281.236	662.412	1476.71	260.527	Mean
Maximum	9051.0	14674.0	2014.52	2910.0	13550.0	910.0	Maximum
Upper quartile	1433.41	3642.51	299.653	584.5	1702.67	340.044	Upper quartile
Median	349.874	945.691	222.536	330.0	950.0	230.0	Median
Lower quartile	185.082	435.039	140.338	280.0	593.529	137.755	Lower quartile
Minimum	50.0	60.0	10.238	110.0	90.0	30.0	Minimum
Variance	3.35725e+06	6.51827e+06	94153.5	571814.0	2.48094e+06	29229.3	Variance
CV	1.509	1.155	1.091	1.142	1.067	0.656	CV
Skewness	2.38	1.966	3.655	1.944	3.422	1.239	Skewness

Variable: TCY2O3
Acceptable range: 10.0 to 15407.7
Weights: --equal--

C file: CPTYC.DAT
D file: CPTYD.DAT
E file: CPTYE.DAT
F file: CPTYF.DAT
HY file: CPTYHY.DAT
LY file: CPTYLY.DAT

Zone

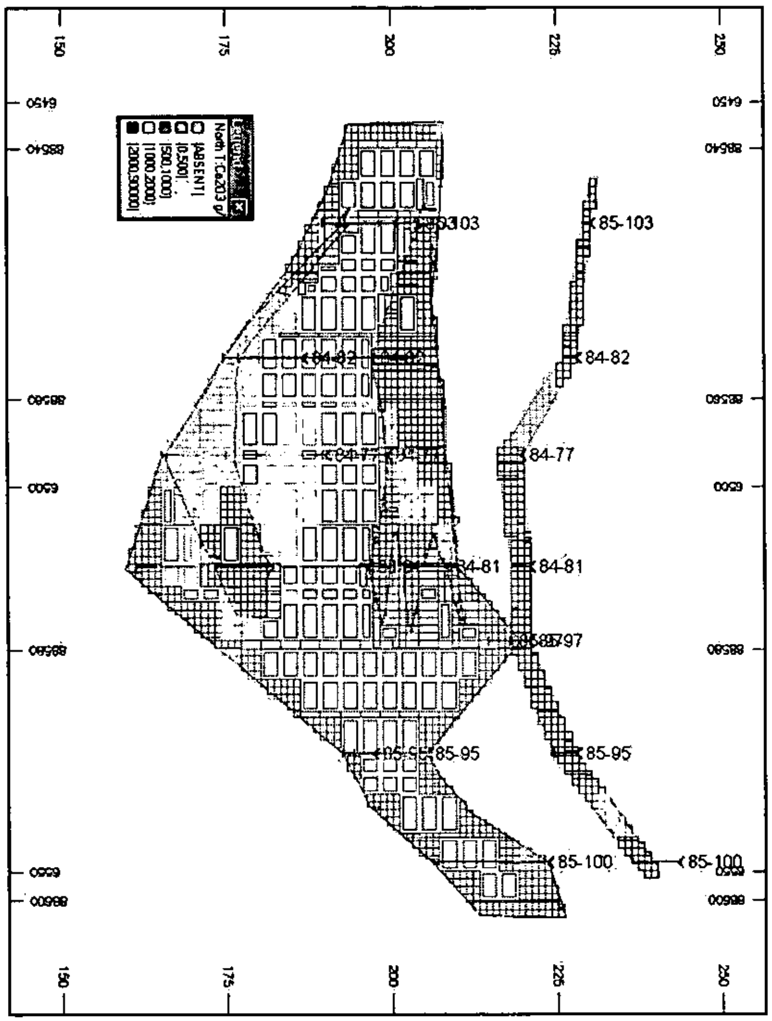


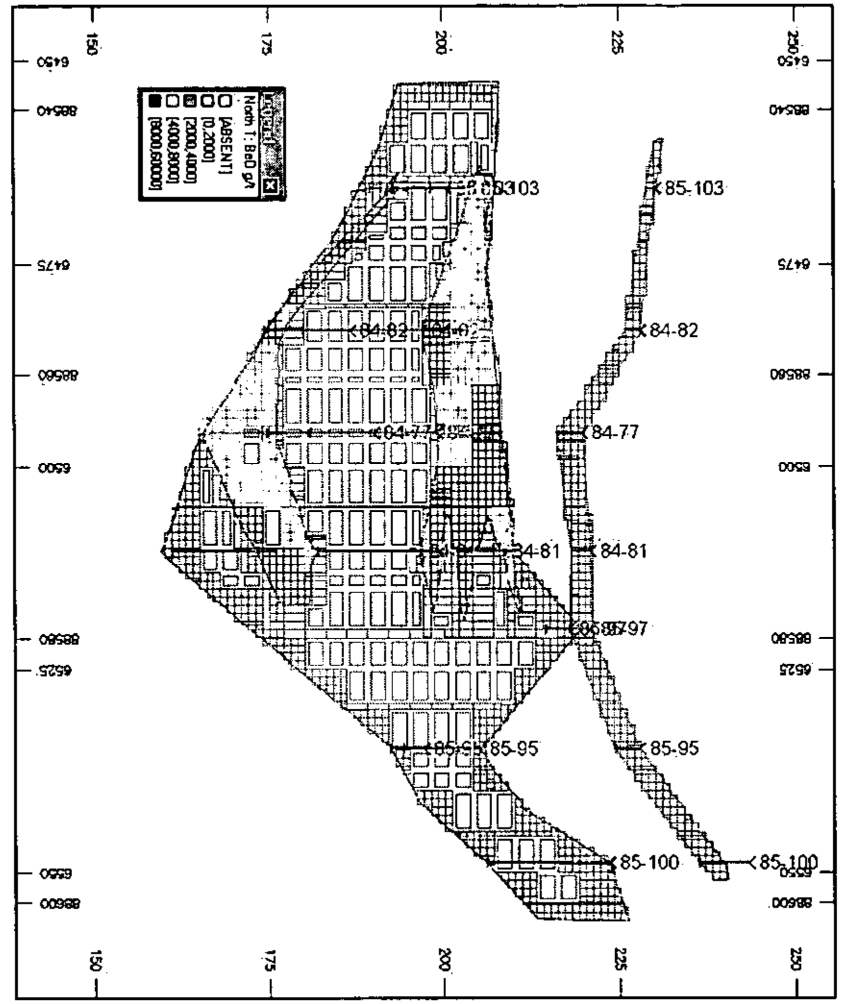
	C	D	E	F	HY	LY	
Number of data	104	107	84	25	241	100	Number of data
Mean	1218.16	2378.12	281.236	768.799	1476.71	260.527	Mean
Maximum	9490.0	31600.0	2014.52	4990.0	13550.0	910.0	Maximum
Upper quartile	1433.41	3642.51	299.653	584.5	1702.67	340.044	Upper quartile
Median	349.874	945.691	222.536	330.0	950.0	230.0	Median
Lower quartile	185.082	435.039	140.338	280.0	593.529	137.755	Lower quartile
Minimum	50.0	60.0	10.238	110.0	90.0	30.0	Minimum
Variance	3.42525e+06	1.3179e+07	94153.5	1.19311e+06	2.48094e+06	29229.3	Variance
CV	1.519	1.527	1.091	1.421	1.067	0.656	CV
Skewness	2.432	5.134	3.655	2.674	3.422	1.239	Skewness

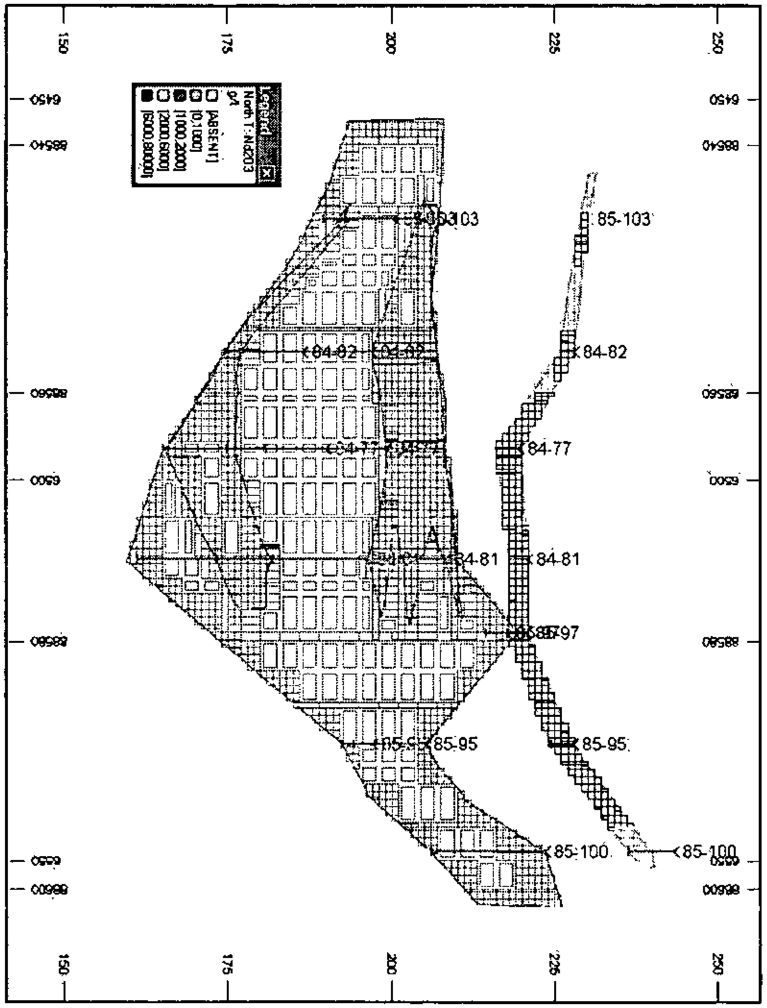
Variable: Y2O3_GT
Acceptable range: 10.0 to 33180.0
Weights: --equal--

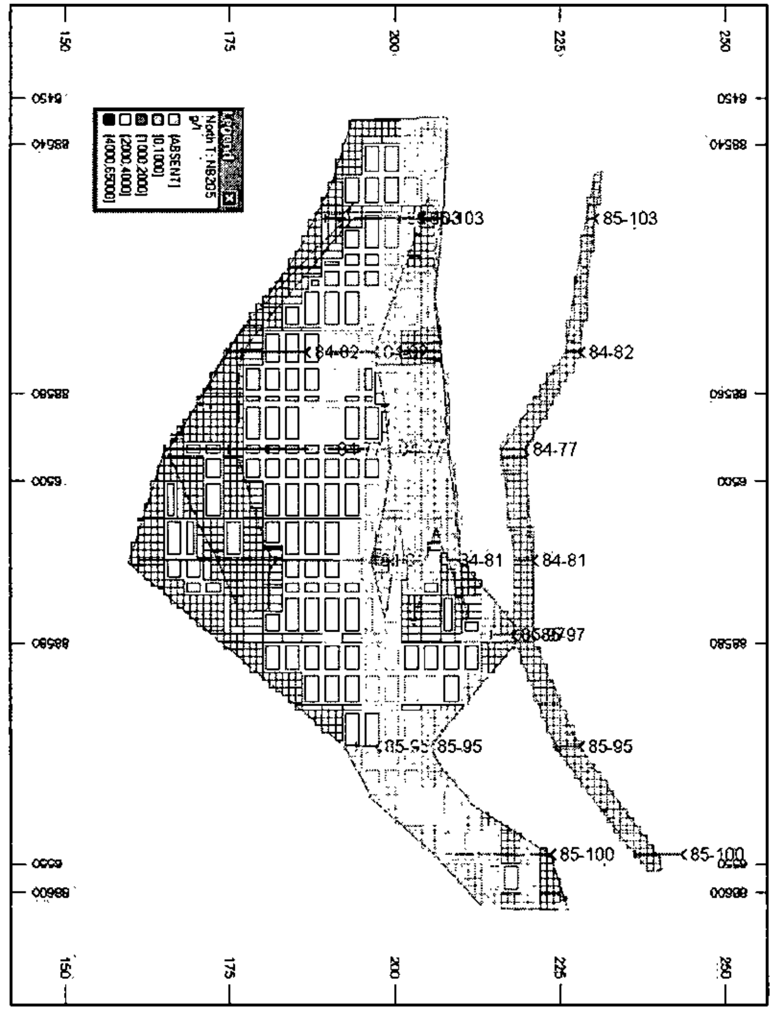
C file: CPYC.DAT
D file: CPYD.DAT
E file: CPYE.DAT
F file: CPYF.DAT
HY file: CPYHY.DAT
[illegible]Y file: [illegible]Y.DAT

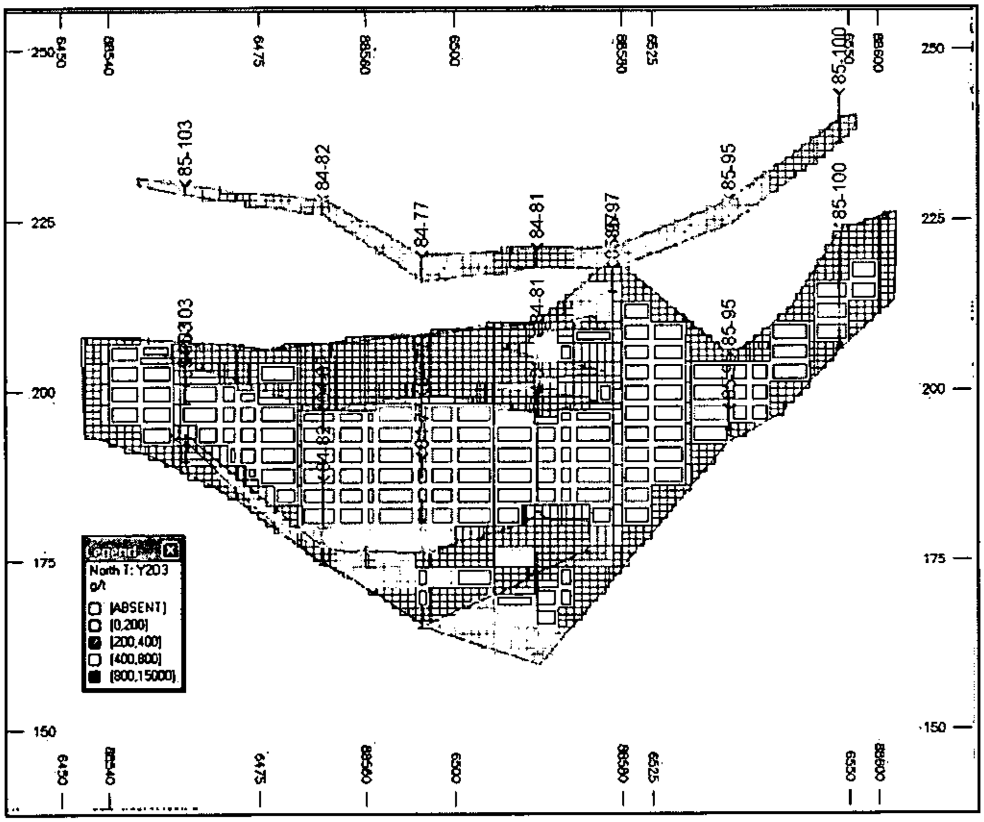
APPENDIX C
SECTIONS


Legend
North T:Ce2O3 g/t
[ABSENT]
[0,500)
[500,1000)
[1000,2000)
[2000,90000]
85-103
84-82
84-77
84-81
85-95
85-100
150
175
200
225
250
6450
88540
88560
6500
88580
6550
88600


Legend
North T: BeO g/t
[ABSENT]
[0,2000)
[2000,4000)
[4000,8000)
[8000,60000]
85-103
84-82
84-77
84-81
85-95
85-100
150
175
200
225
250
6450
88540
6475
88560
6500
88580
6525
6550
88600


Legend
North T: Nd2O3
g/t
[ABSENT]
[0,1000]
[1000,2000]
[2000,6000]
[6000,80000]
85-103
84-82
84-77
84-81
85-95
85-100
150
175
200
225
250
6450
88540
88560
6500
88580
6550
88600

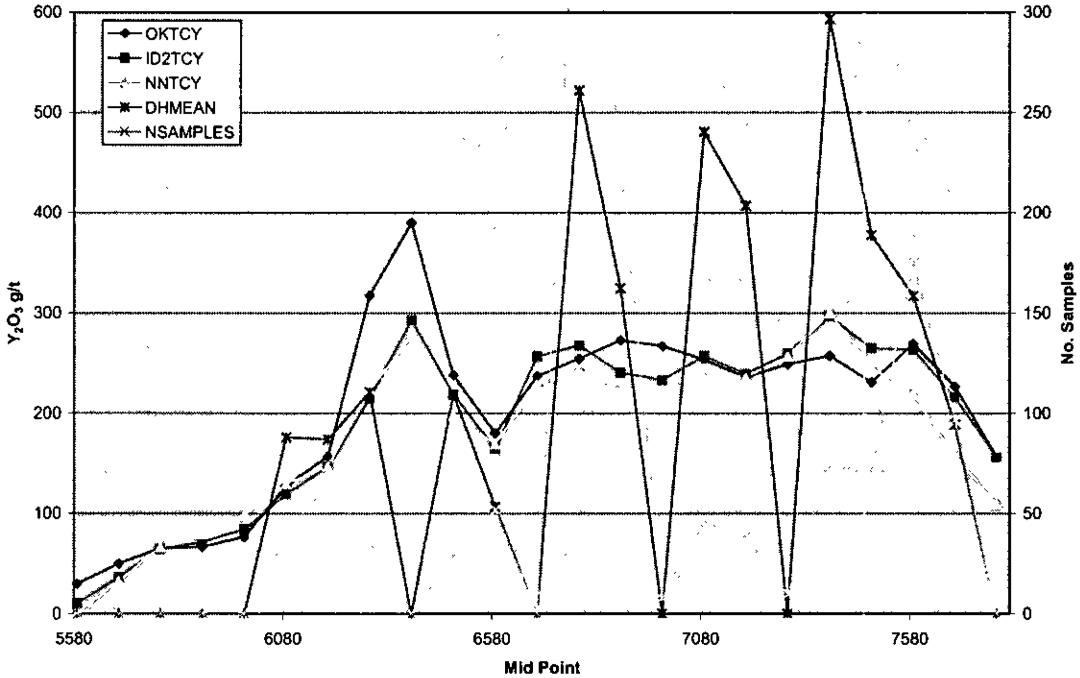

Legend
North T: NB2O5
g/t
[ABSENT]
[0,1000]
[1000,2000]
[2000,4000]
[4000,65000]
85-103
84-82
84-77
84-81
85-95
85-100
150
175
200
225
250
6450
88540
88560
6500
88580
6550
88600


Legend
North T: Y203
g/t
[ABSENT]
[0,200]
[200,400]
[400,800]
[800,15000]
250
225
200
175
150
6450
88540
6475
88560
6500
88580
6525
6550
88600
85-103
84-82
84-77
84-81
85-95
85-100

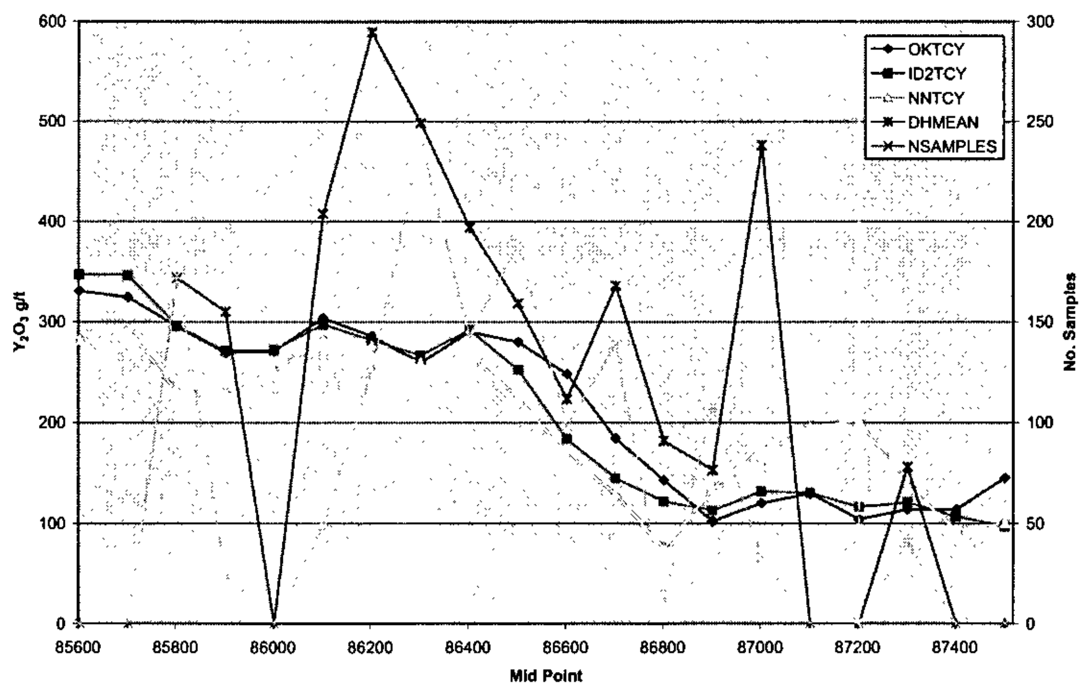
APPENDIX D
SWATH PLOTS

LAKE ZONE

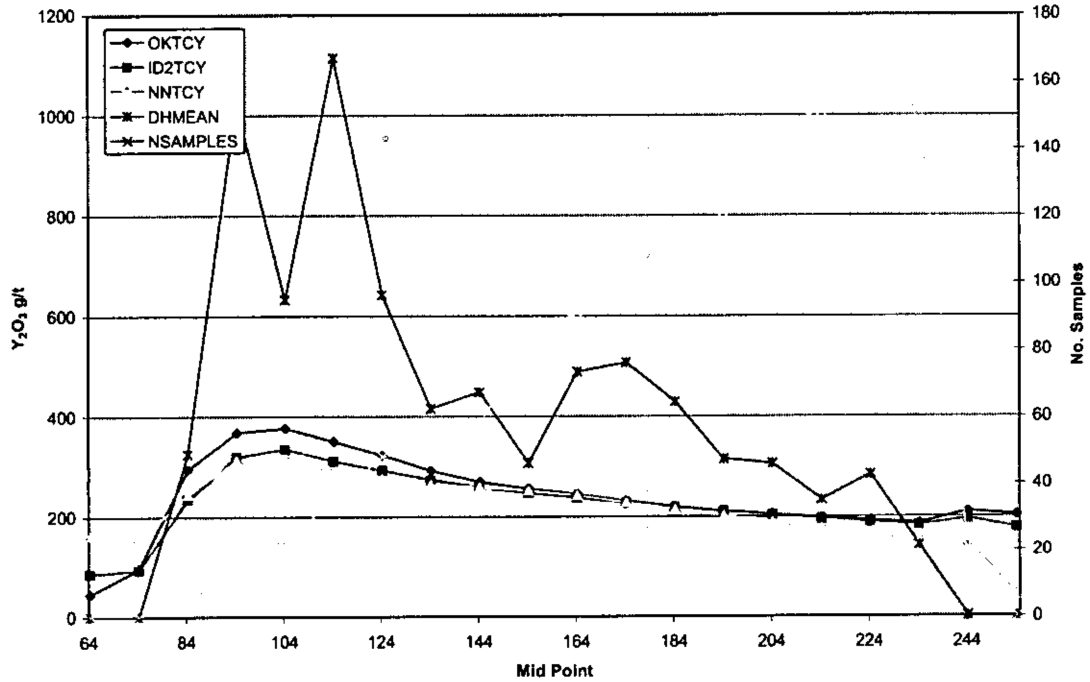
Lake Zone Swath Plot in X Direction



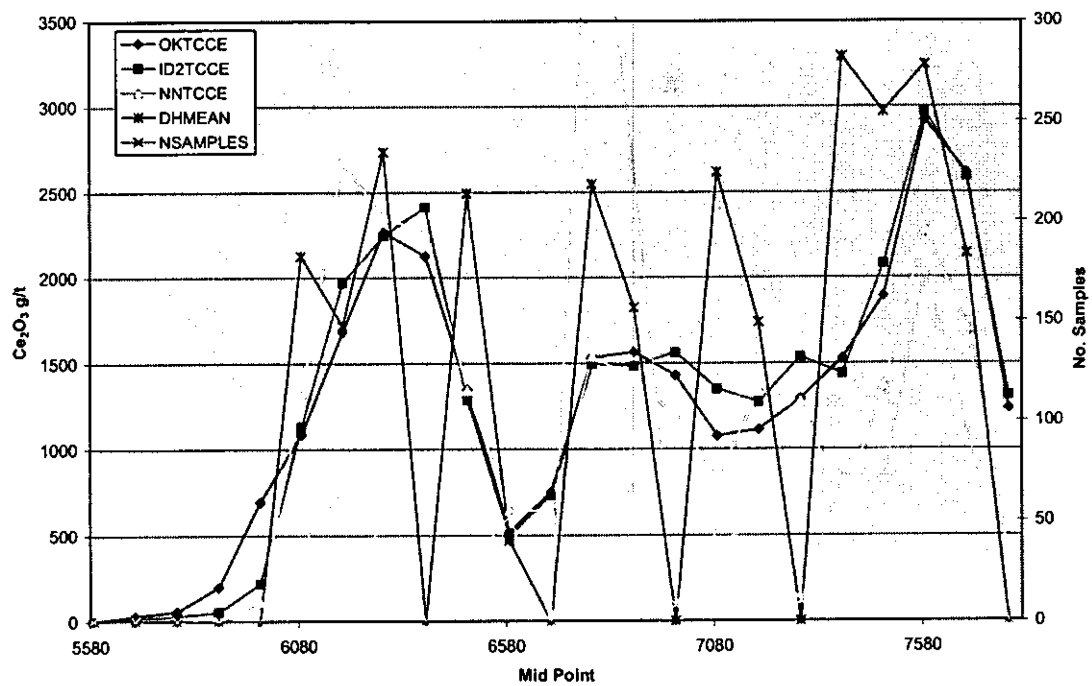
Lake Zone Swath Plot in Y Direction



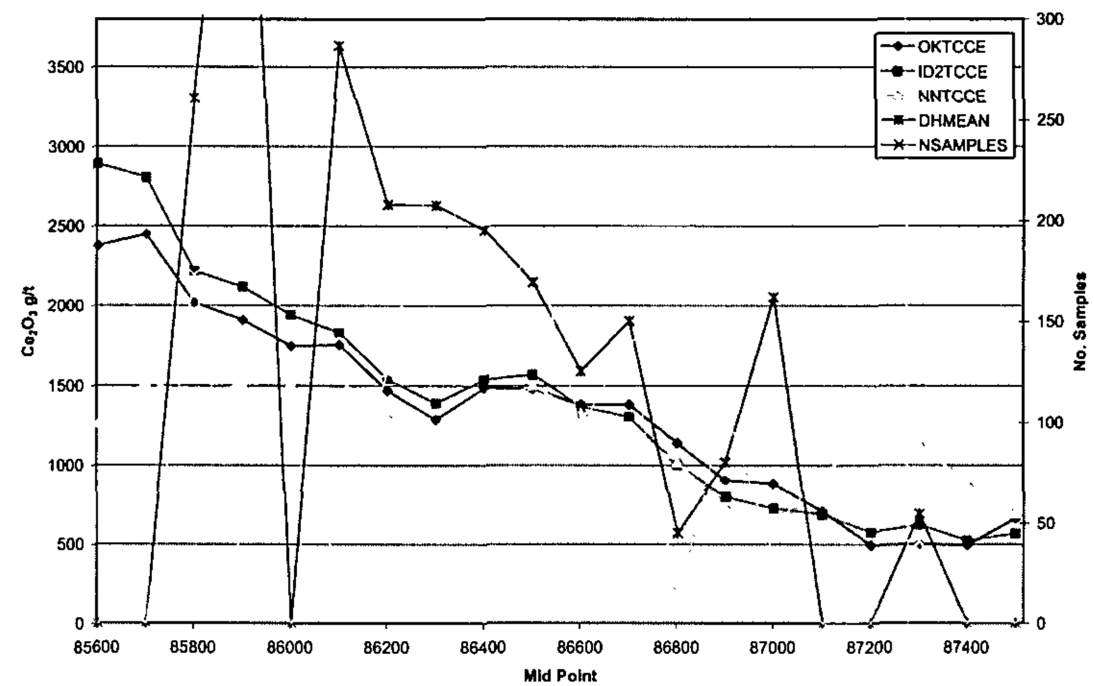
Lake Zone Swath Plot in Z Direction



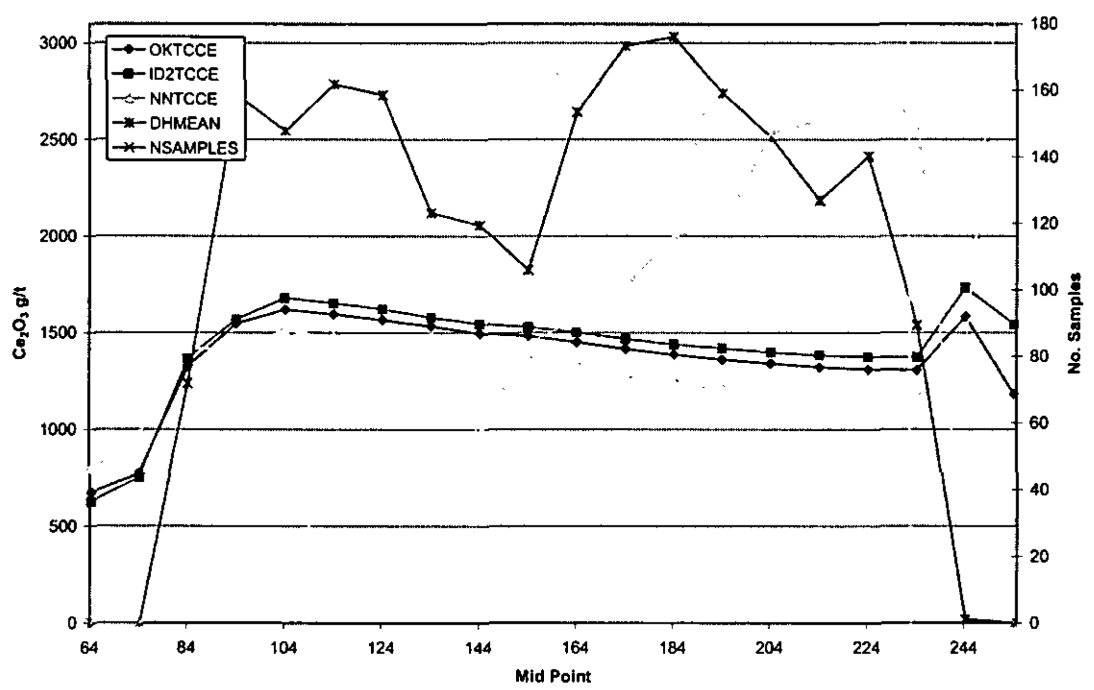
Lake Zone Swath Plot in X Direction



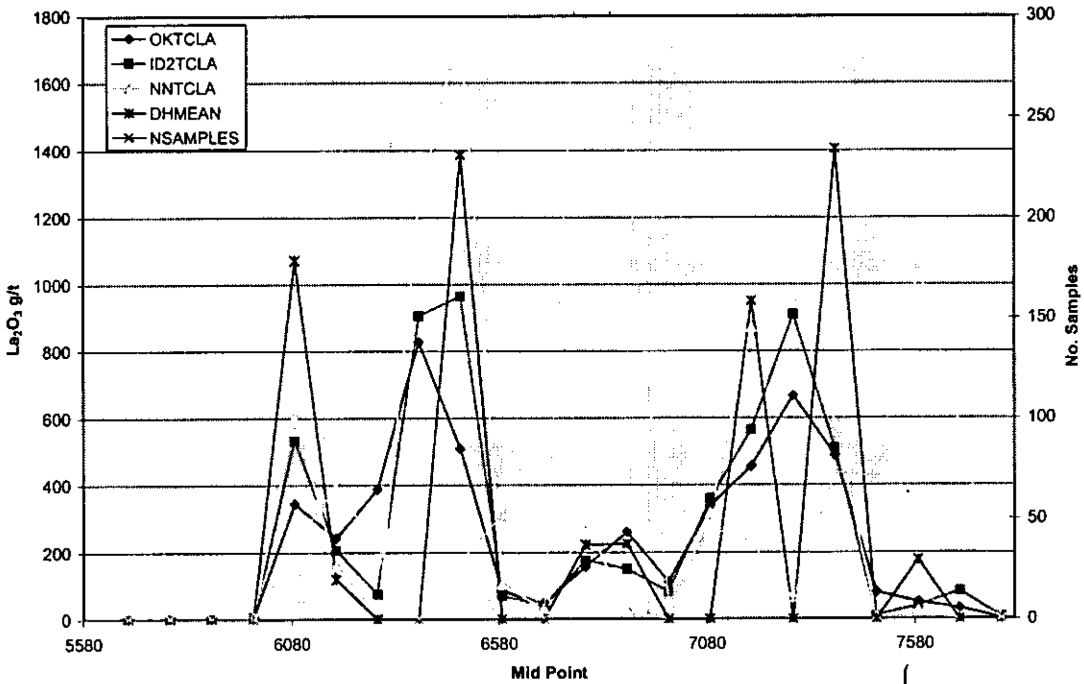
Lake Zone Swath Plot in Y Direction



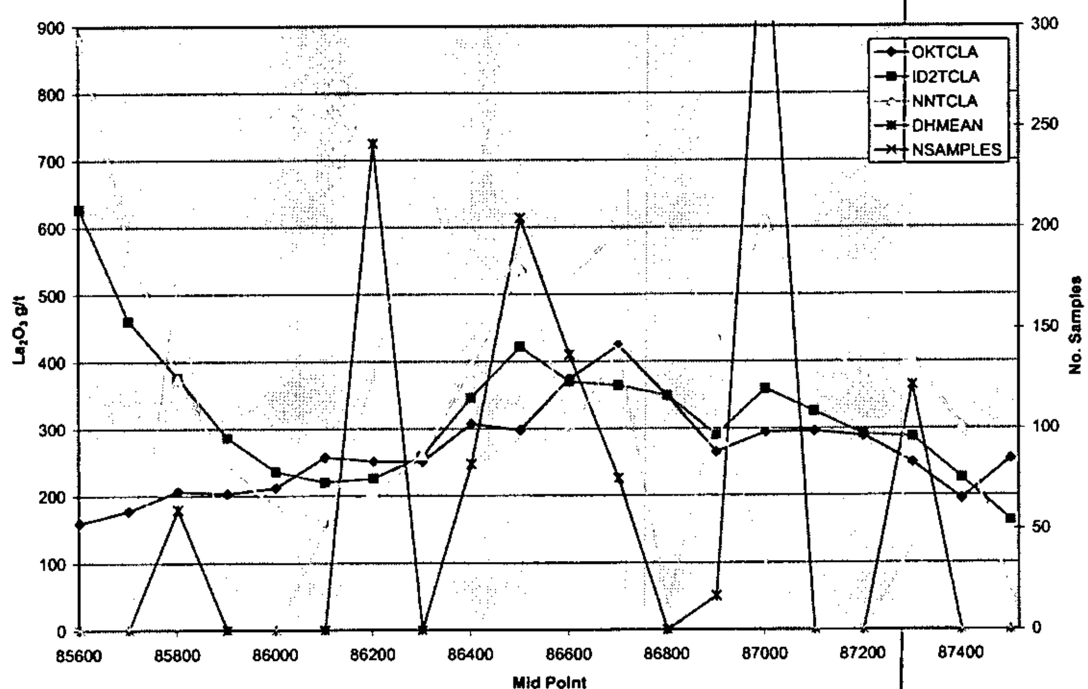
Lake Zone Swath Plot in Z Direction

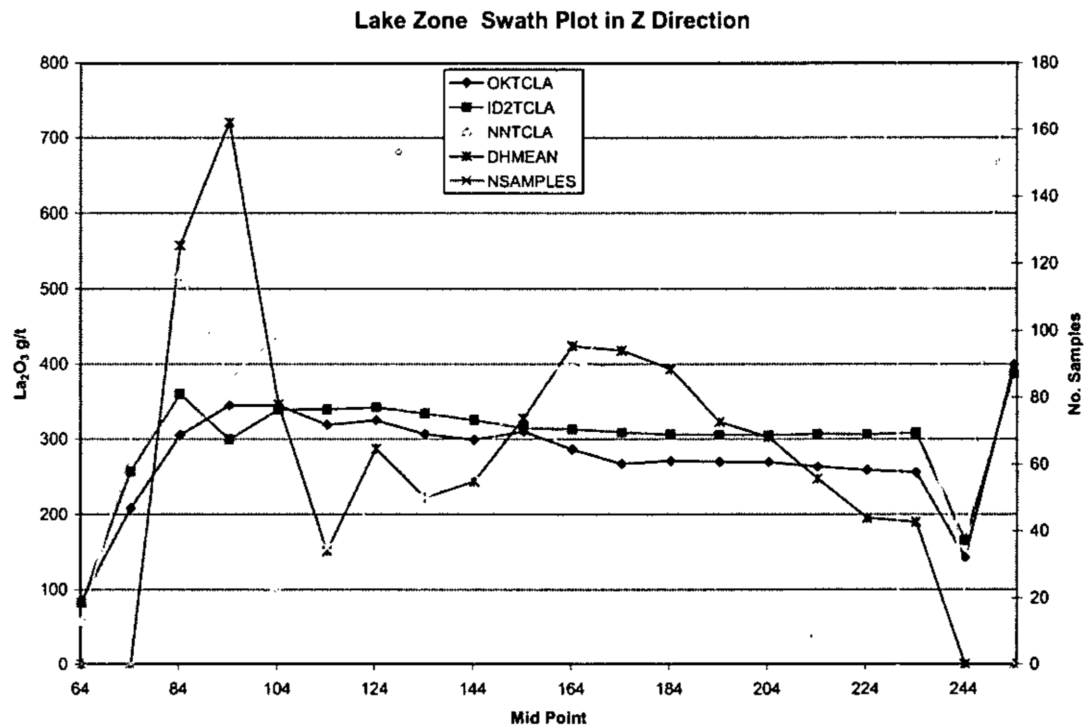


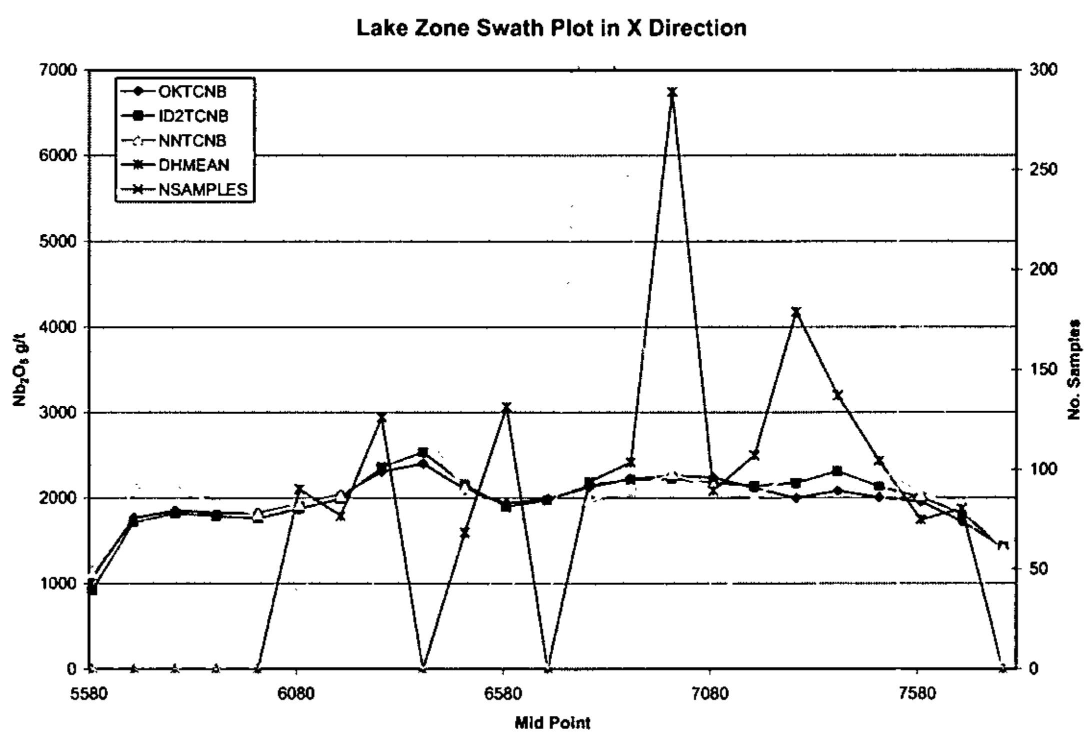
Lake Zone Swath Plot in X Direction



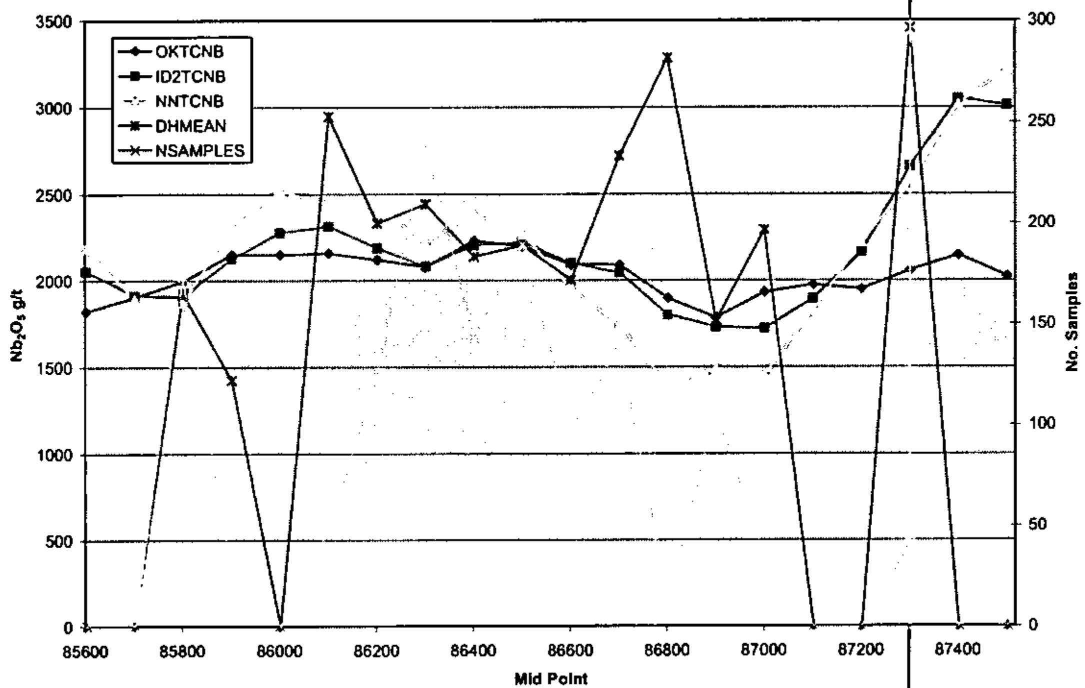
Lake Zone Swath Plot in Y Direction



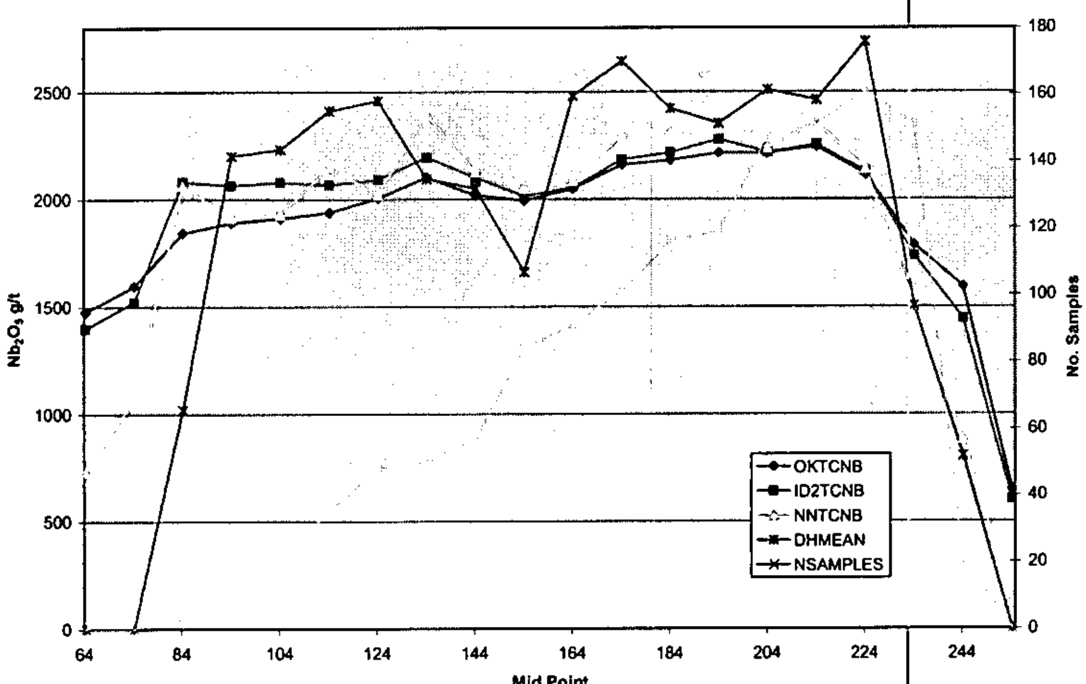

Lake Zone Swath Plot in Z Direction
OKTCLA
ID2TCLA
NNTCLA
DHMEAN
NSAMPLES
La2O3 g/t
No. Samples
Mid Point


Lake Zone Swath Plot in X Direction
OKTCNB
ID2TCNB
NNTCNB
DHMEAN
NSAMPLES
Nb2O5 g/t
No. Samples
Mid Point

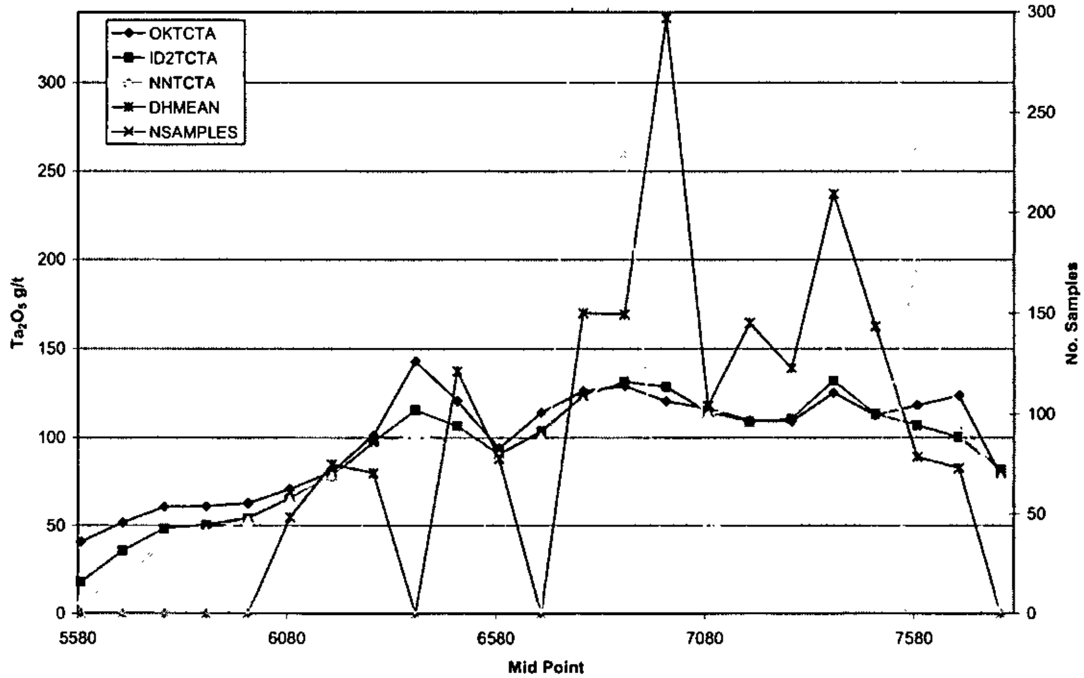
Lake Zone Swath Plot in Y Direction



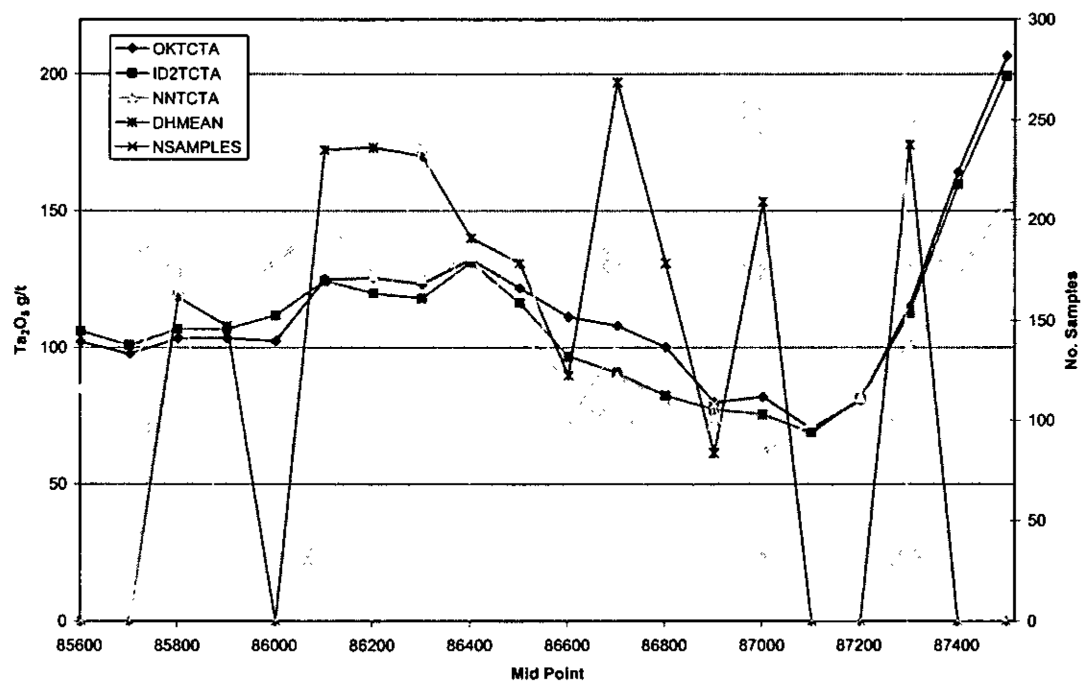
Lake Zone Swath Plot in Z Direction

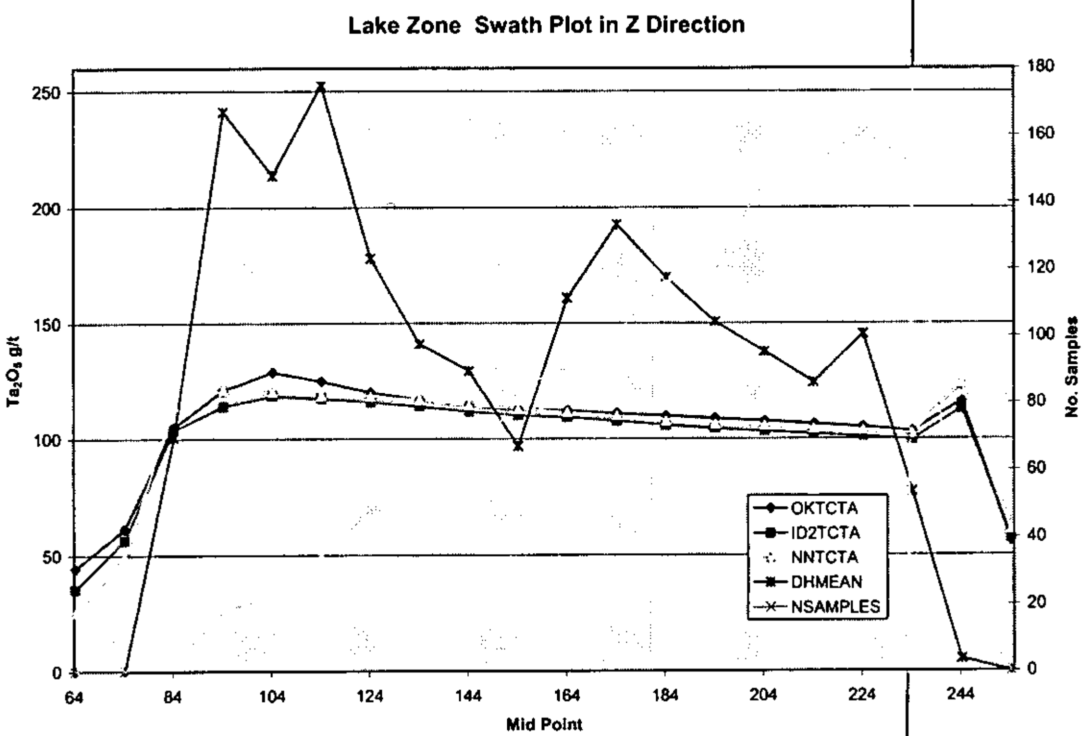


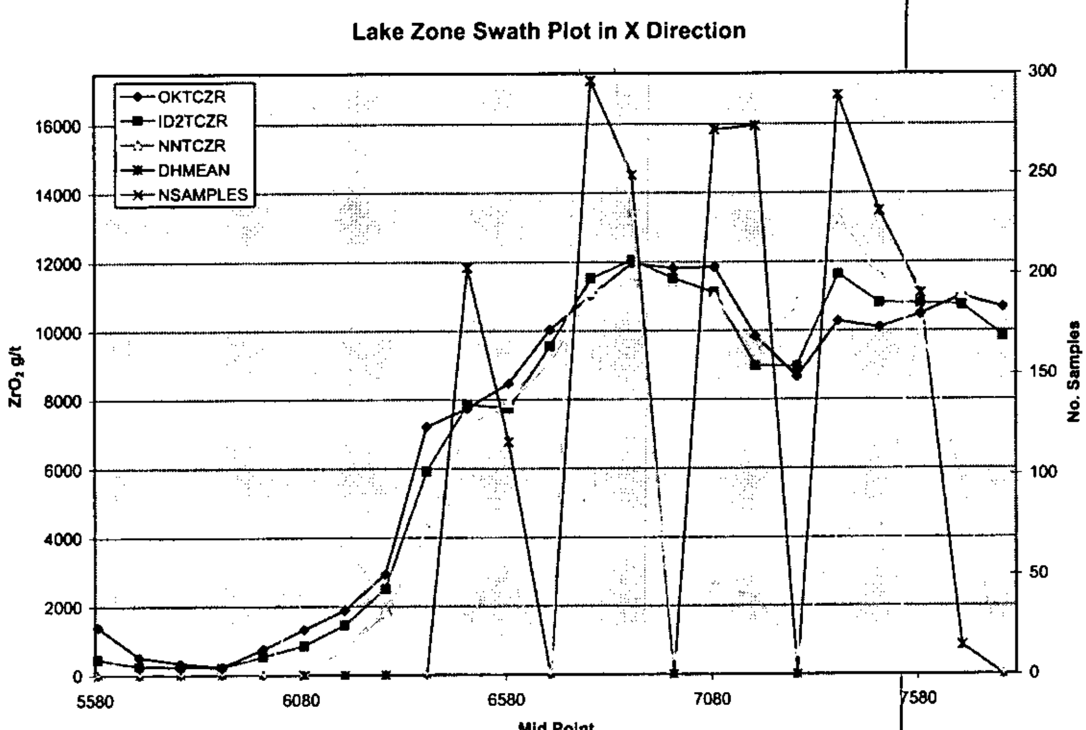
Lake Zone Swath Plot in X Direction

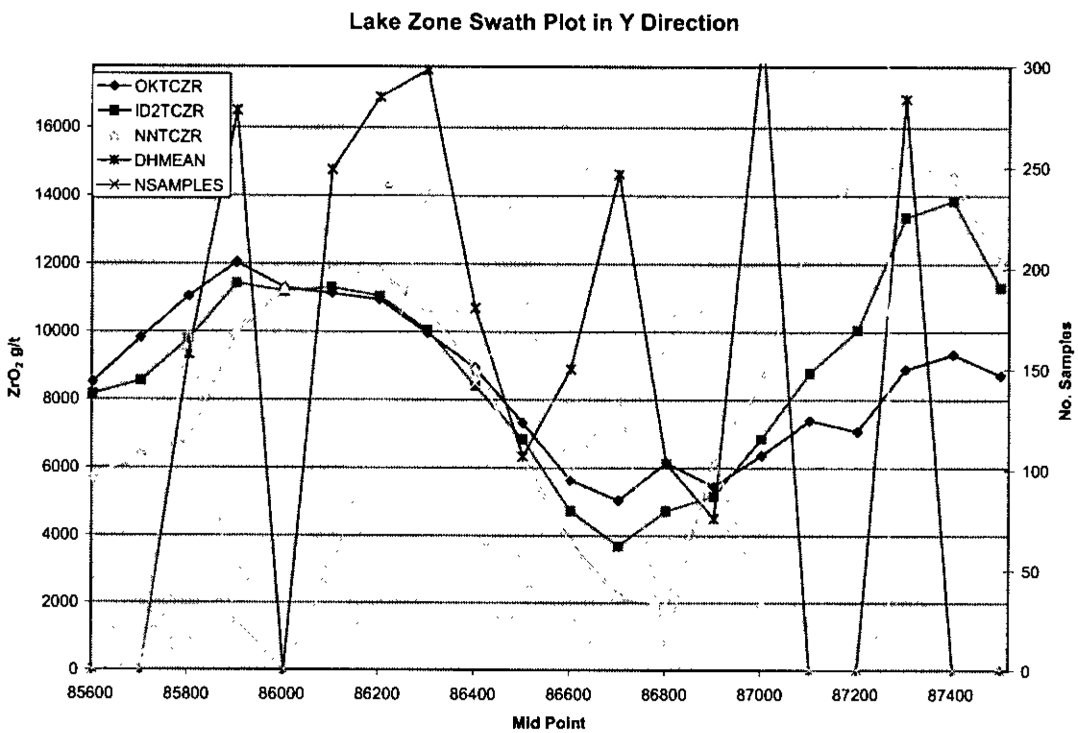


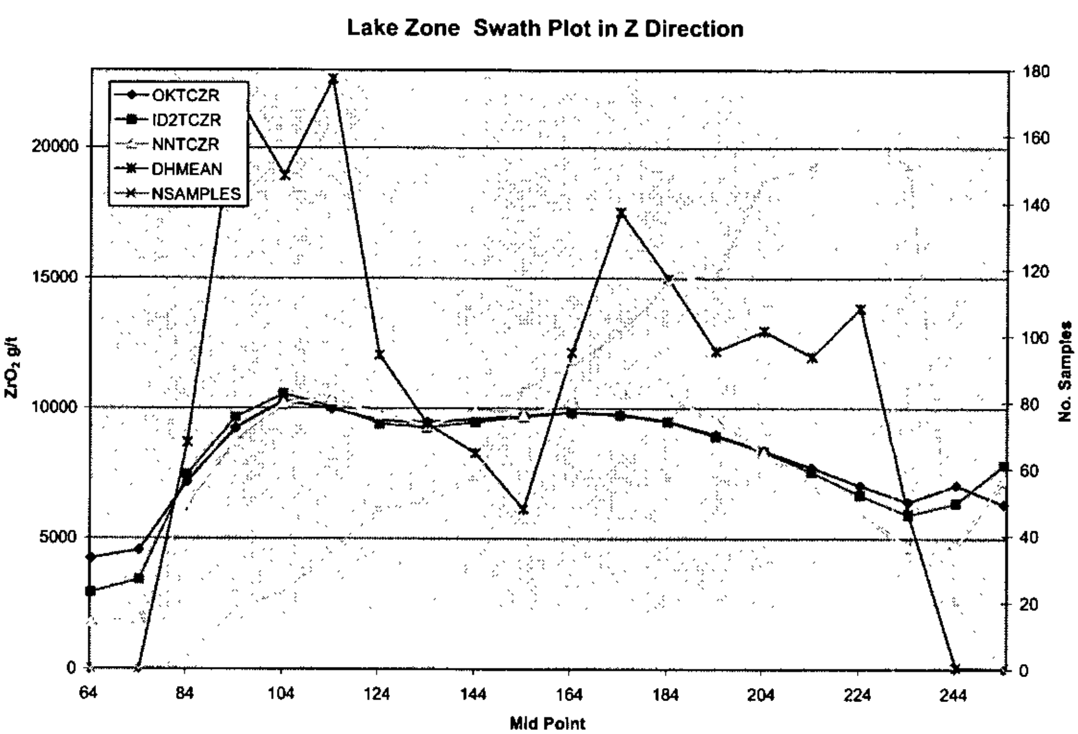
Lake Zone Swath Plot in Y Direction



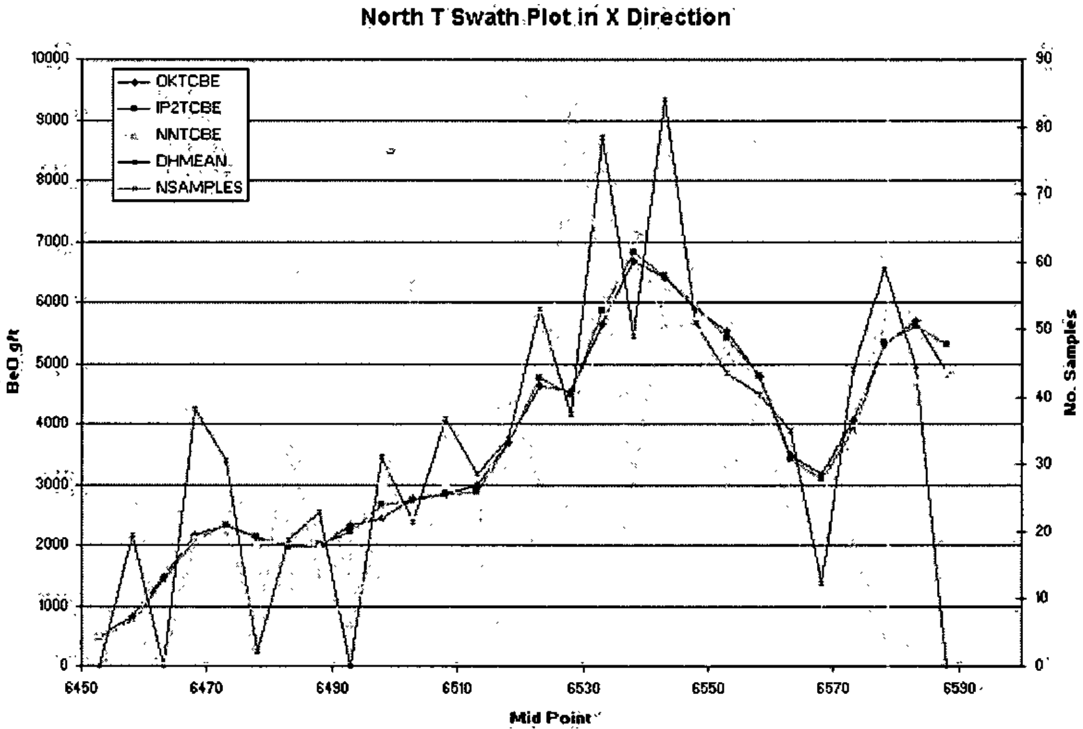

Lake Zone Swath Plot in Z Direction
Ta2O5 g/t
No. Samples
Mid Point
OKTCTA
ID2TCTA
NNTCTA
DHMEAN
NSAMPLES
0
50
100
150
200
250
0
20
40
60
80
100
120
140
160
180
64
84
104
124
144
164
184
204
224
244

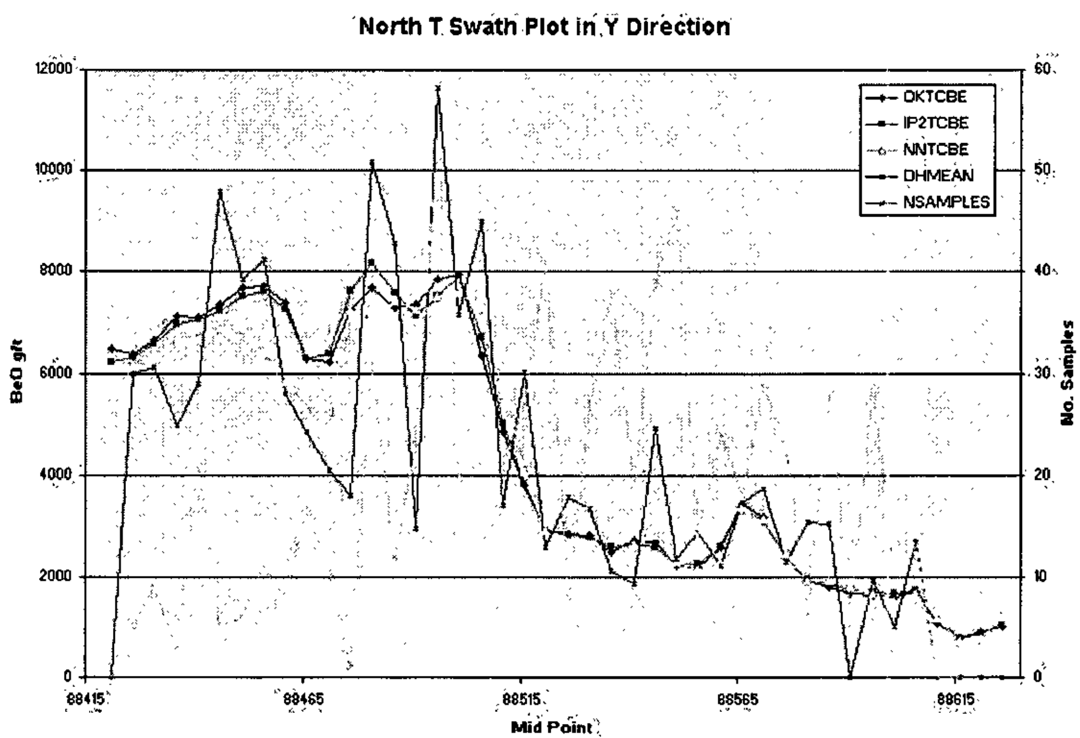

Lake Zone Swath Plot in X Direction
ZrO2 g/t
No. Samples
Mid Point
OKTCZR
ID2TCZR
NNTCZR
DHMEAN
NSAMPLES
0
2000
4000
6000
8000
10000
12000
14000
16000
0
50
100
150
200
250
300
5580
6080
6580
7080
7580


Lake Zone Swath Plot in Y Direction
OKTCZR
ID2TCZR
NNTCZR
DHMEAN
NSAMPLES
ZrO2 g/t
No. Samples
Mid Point
0
2000
4000
6000
8000
10000
12000
14000
16000
0
50
100
150
200
250
300
85600
85800
86000
86200
86400
86600
86800
87000
87200
87400

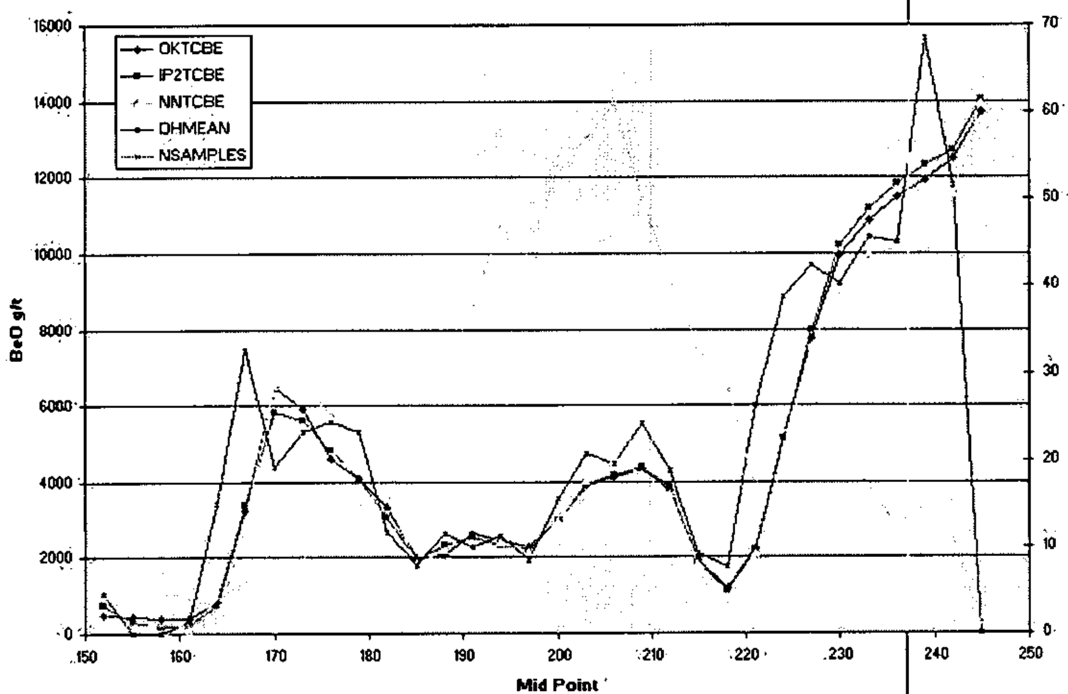

Lake Zone Swath Plot in Z Direction
OKTCZR
ID2TCZR
NNTCZR
DHMEAN
NSAMPLES
ZrO2 g/t
No. Samples
Mid Point
0
5000
10000
15000
20000
0
20
40
60
80
100
120
140
160
180
64
84
104
124
144
164
184
204
224
244

NORTH T-ZONE

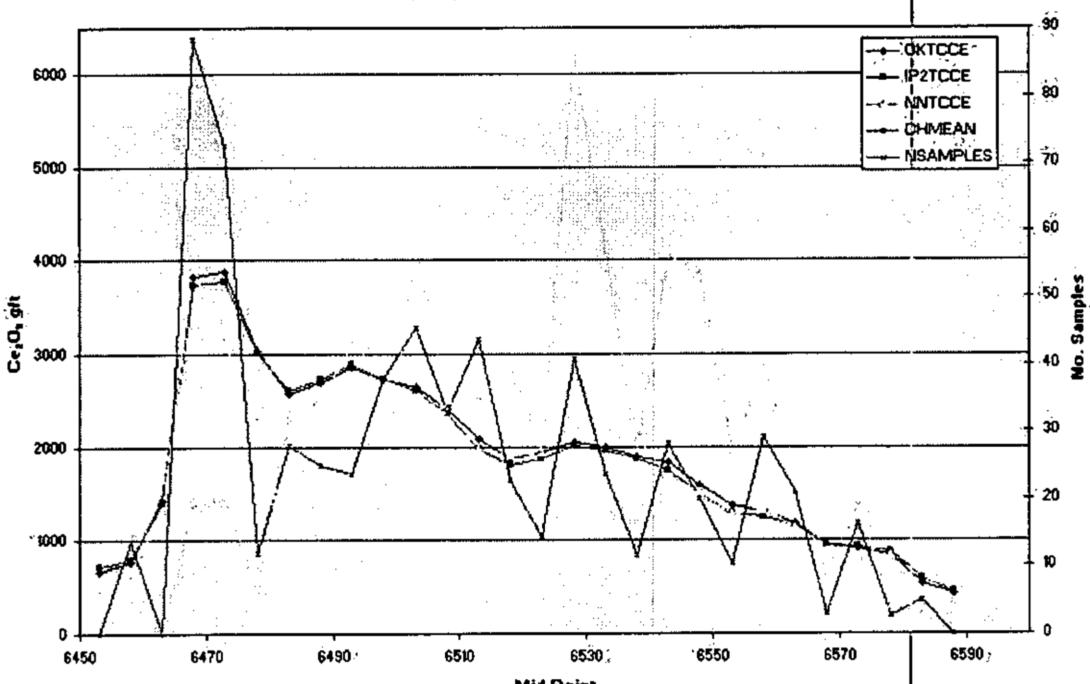

North T Swath Plot in X Direction
OKTCBE
IP2TCBE
NNTCBE
DHMEAN
NSAMPLES
BeO g/t
No. Samples
Mid Point
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
90
80
70
60
50
40
30
20
10
0
6450
6470
6490
6510
6530
6550
6570
6590


North T Swath Plot in Y Direction
OKTCBE
IP2TCBE
NNTCBE
DHMEAN
NSAMPLES
BeO g/t
No. Samples
Mid Point
12000
10000
8000
6000
4000
2000
0
60
50
40
30
20
10
0
88415
88465
88515
88565
88615

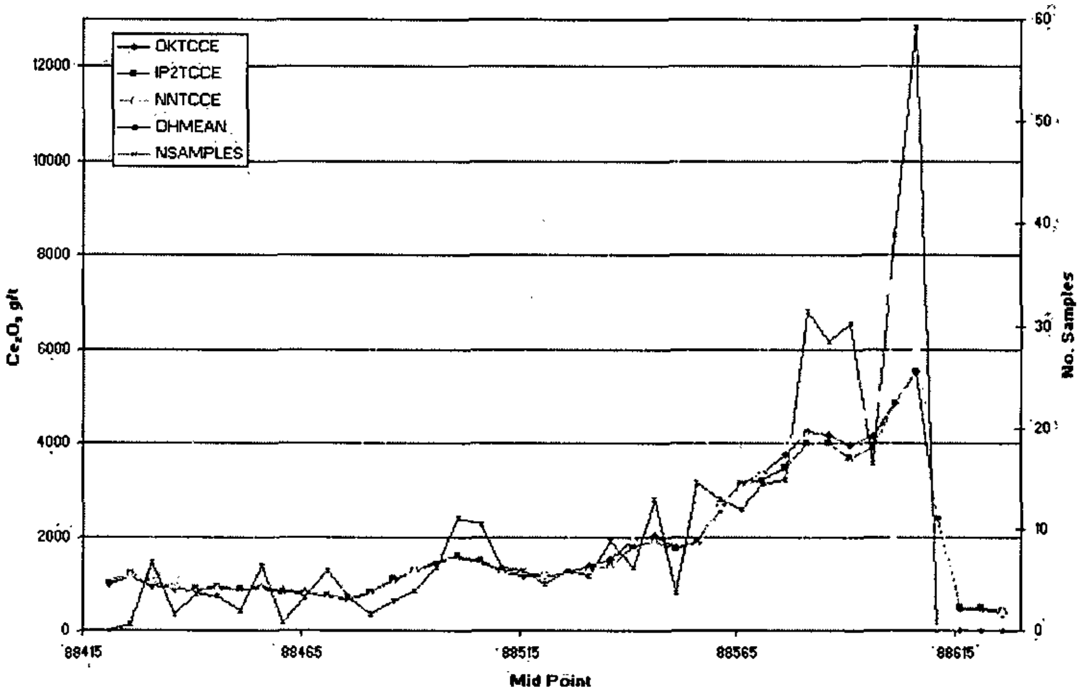
North T Swath Plot in Z Direction



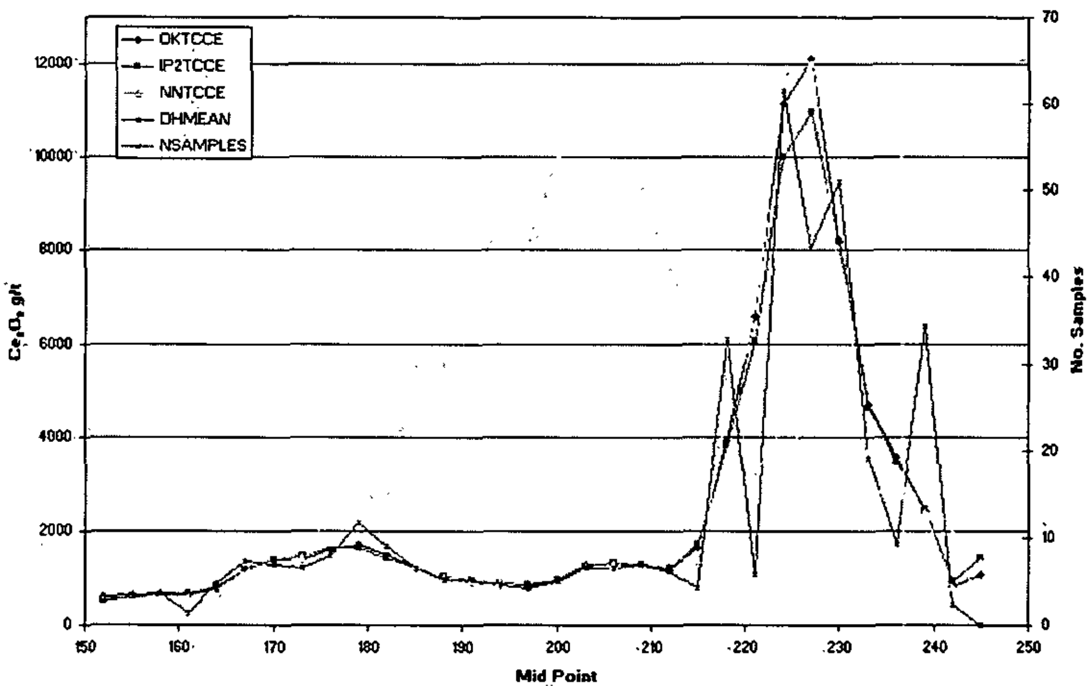
North T Swath Plot in X Direction



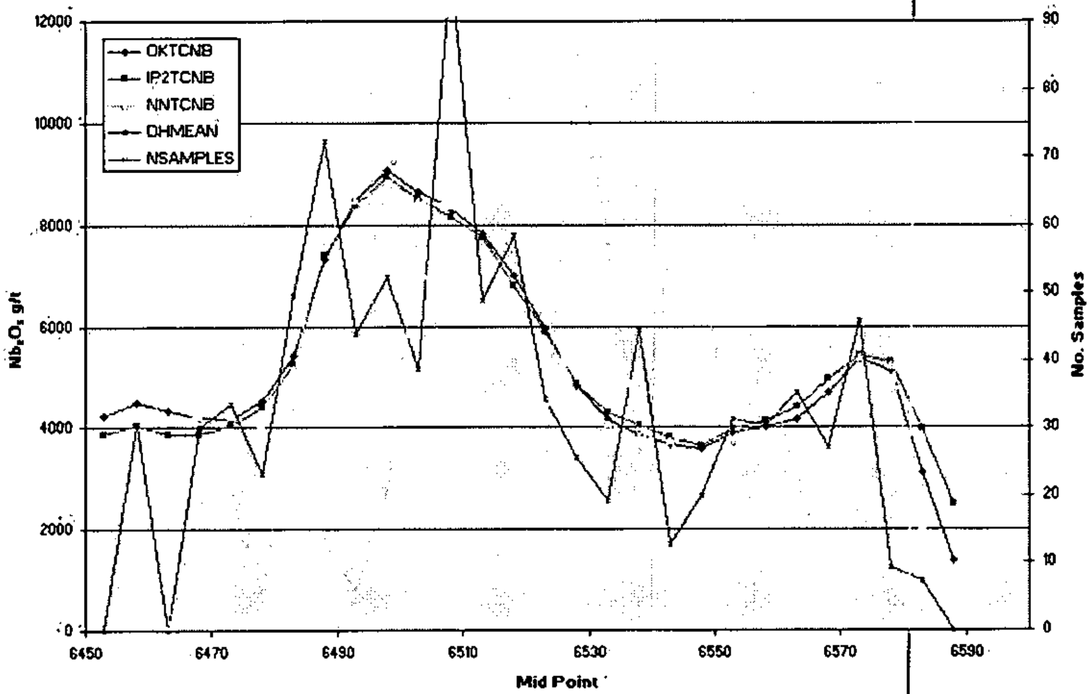
North T Swath Plot in Y Direction



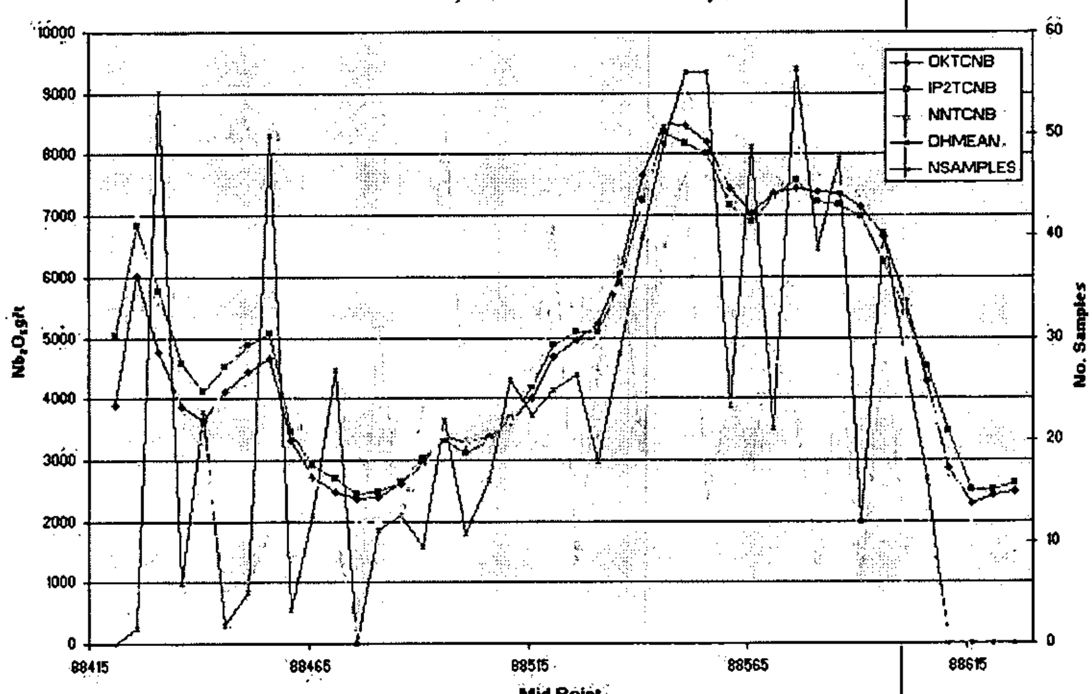
North T Swath Plot in Z Direction



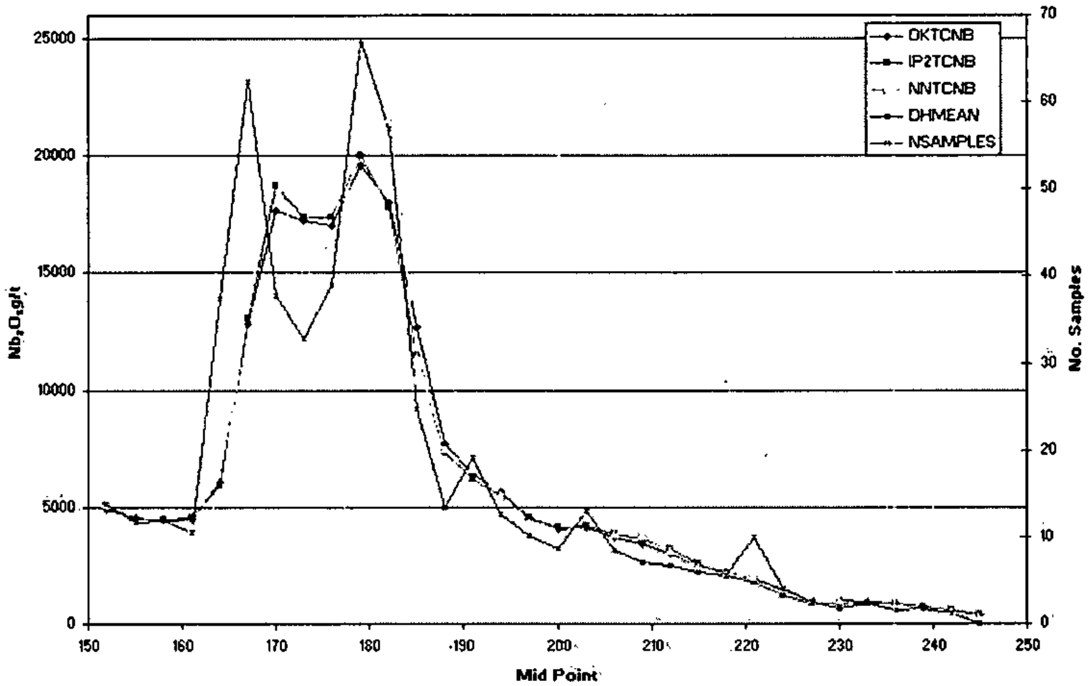
North T Swath Plot in X Direction



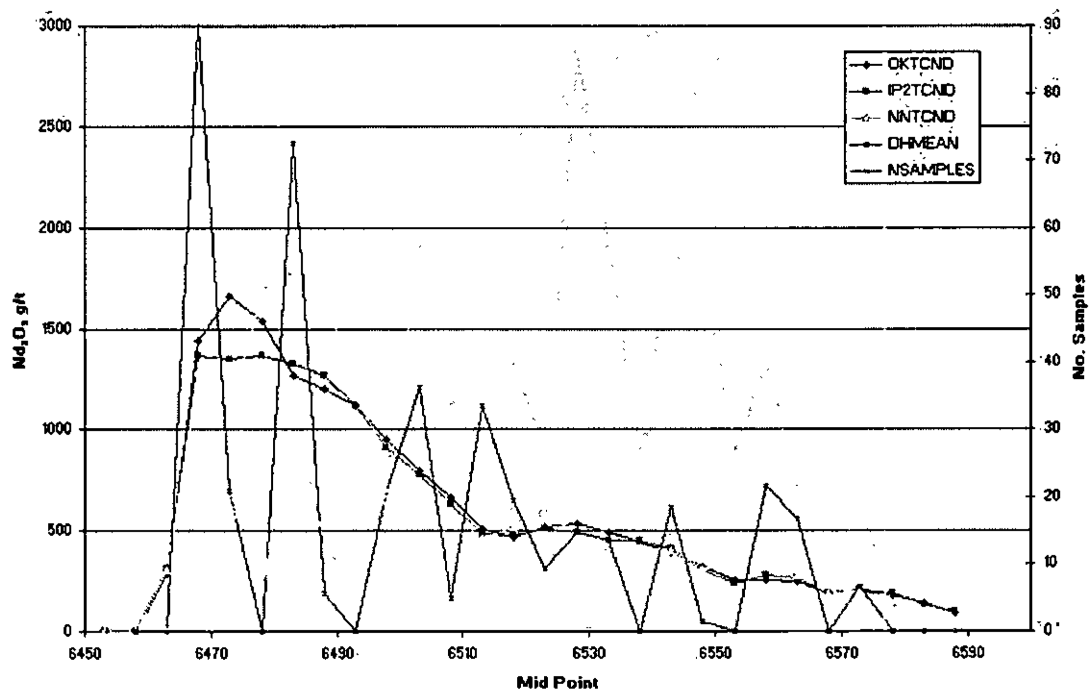
North T Swath Plot in Y Direction



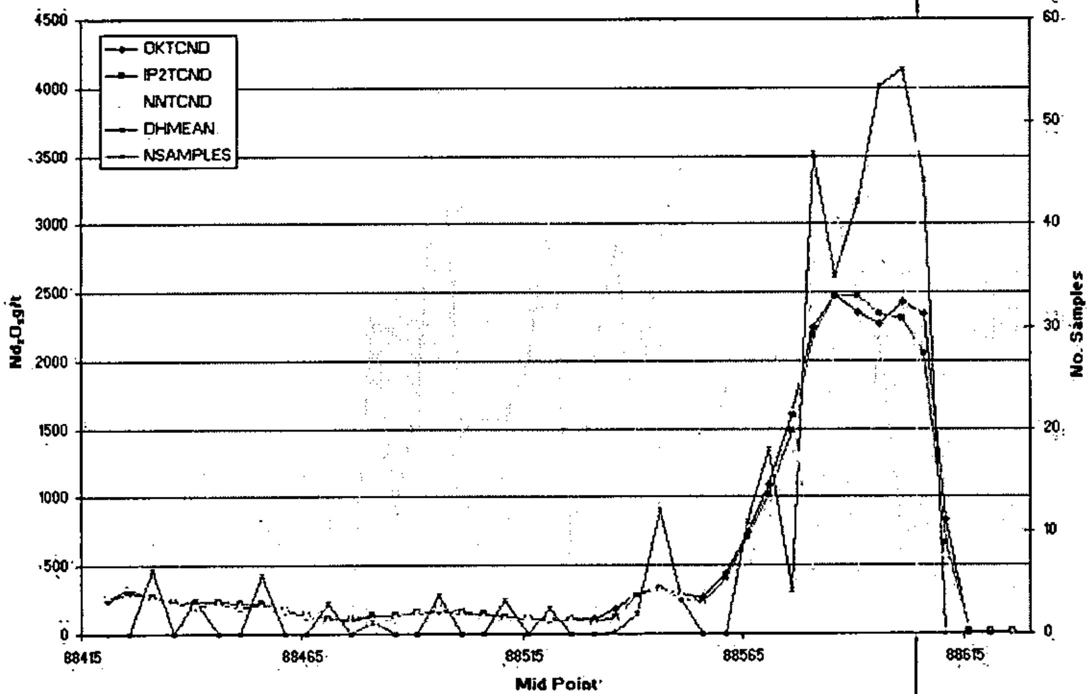
North T Swath Plot in Z Direction



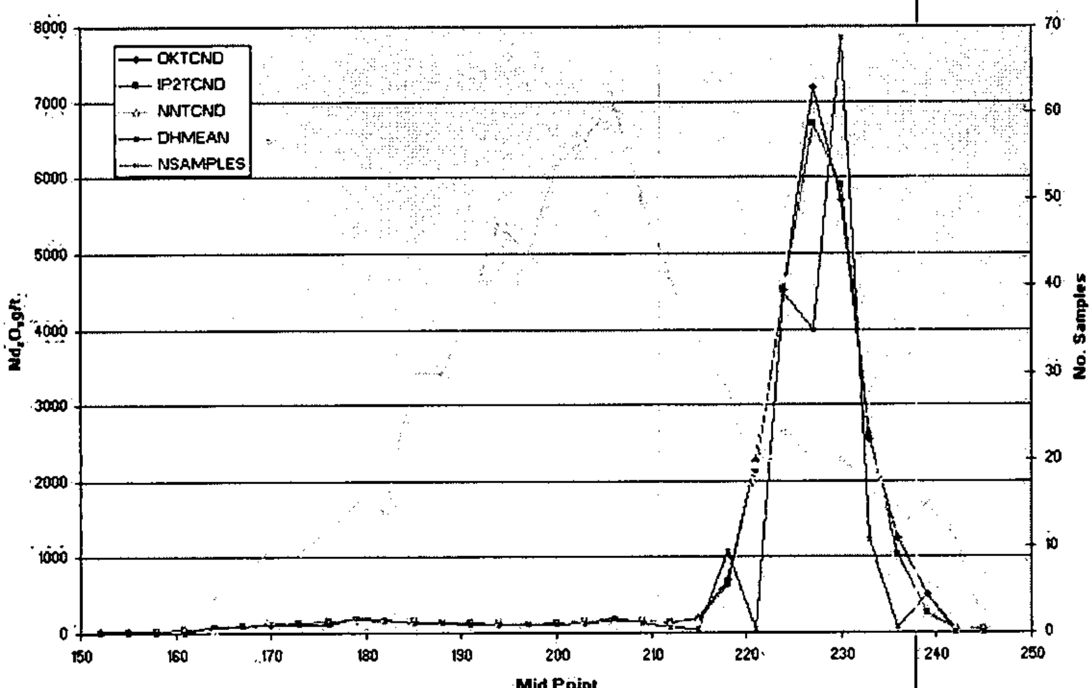
North T Swath Plot in X Direction



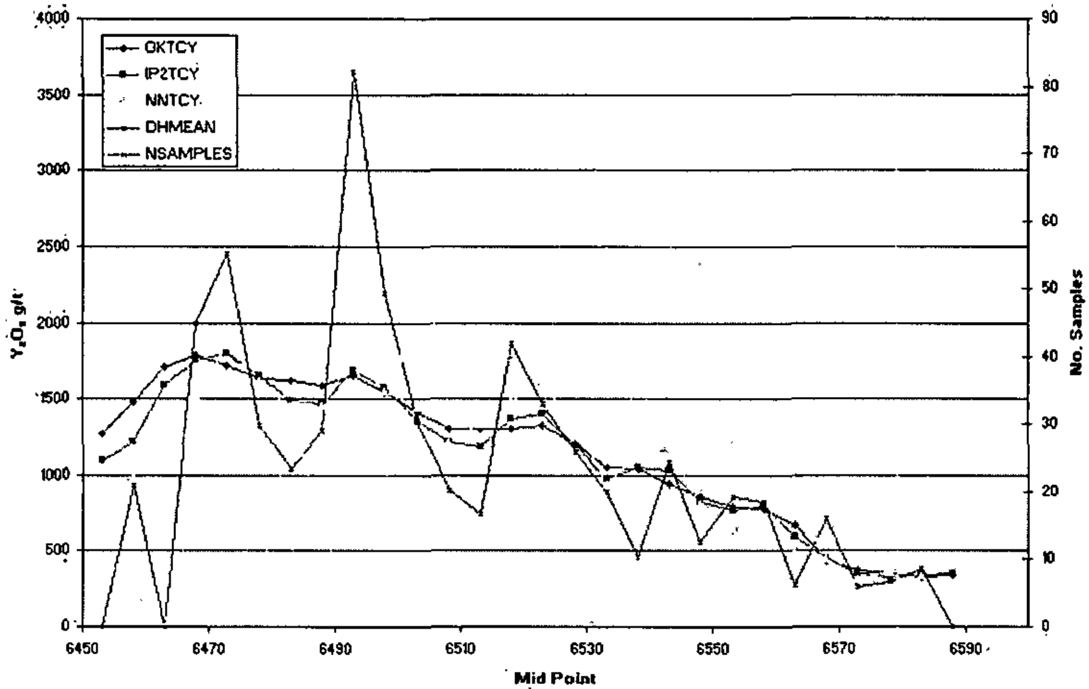
North T Swath Plot in Y Direction



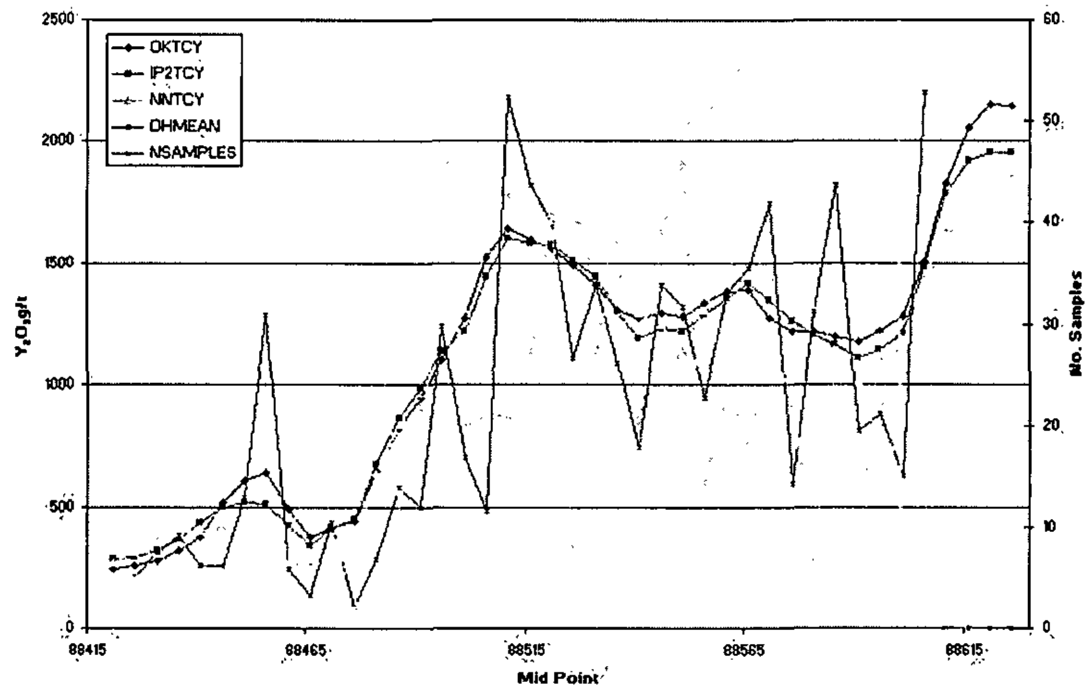
North T Swath Plot in Z Direction



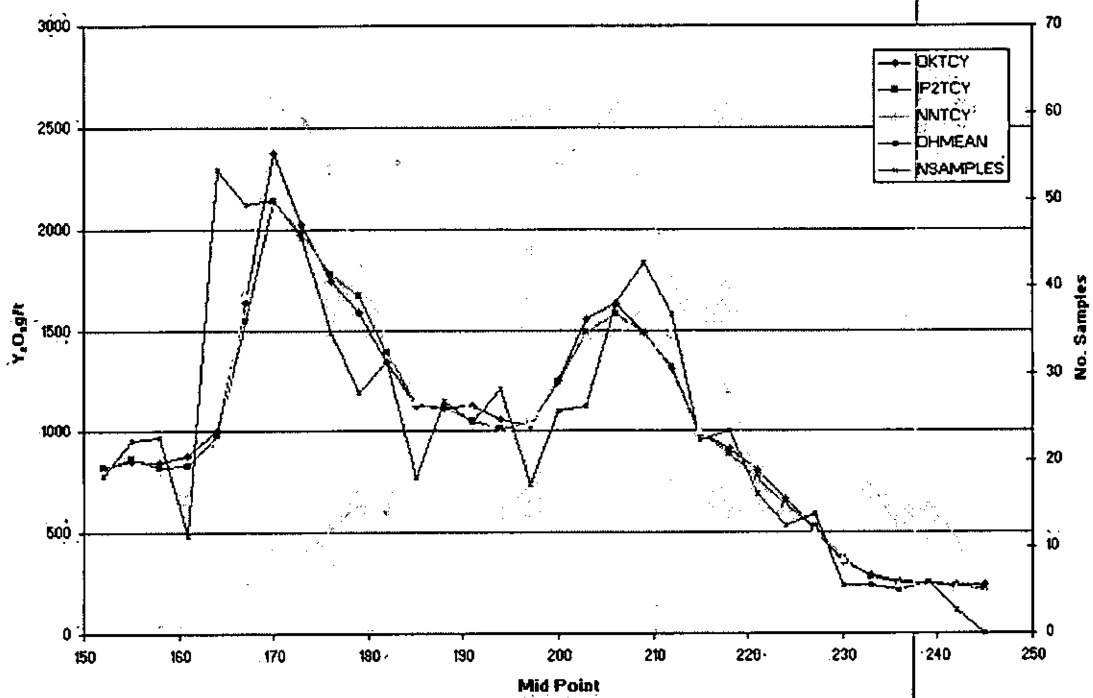
North T Swath Plot in X Direction



North T Swath Plot in Y Direction



North T Swath Plot in Z Direction



APPENDIX E
MINERALOGY

				Lake Zone		T-Zone			
Zone/Lithology		Syenite	Granite	Wall	Core	Wall	Lower	Upper	Quartz
Silicates									
quartz	SiO_2	X	X	X	X	X	X	X	X
k-spar 1	$K[AlSi_3O_8]$	X	X						
k-spar 2	$K[AlSi_3O_8]$			X		X	X	X	
plagioclase 1	$Na[AlSi_3O_8]$-$Ca[Al_2Si_2O_8]$	?							
plagioclase 2	$Na[AlSi_3O_8]$-$Ca[Al_2Si_2O_8]$			X		X	X	X	X
riebeckite-arfvedsonite	$[][Na_2](Fe^{2+})_3(Fe^{3+})_2[(OH)_2\|Si_8O_{22}]$- $[Na][Na_2](Fe^{2+})_4(Fe^{3+})[(OH)_2\|Si_8O_{22}]$	T	X				T		
barkevikite	$Ca_2(Fe,Mg,Al)_5(Si,Al)_8O_{22}(OH)_2$				X				
aegirine	$NaFe^{3+}(Si_2O_6)$		X		X			X	X
fayalite	Fe_2SiO_4	X							
topaz	$Al_2SiO_4(OH,F)_2$						T		
polylithionite	$KLi_2Al(Si_4O_{10})(F,OH)_2$							X	X
lepidolite	$K(Li,Al)_3(Si,Al)_4O_{10}(OH,F)_2$						T	T	
muscovite	$KAl_2(Si,Al)_4O_{10}(OH,F)_2$							X	
zinnwaldite	$K(Li,Fe,Al)_3(Si,Al)_4O_{10}(OH)F$							T	
biotite	$K(Mg,Fe)_3(AlSi_3O_{10})(OH)_2$		X		X		X	X	
phlogopite	$K(Mg,Fe)_3(AlSi_3O_{10})(F,OH)_2$						T		
phenakite	Be_2SiO_4		X			X	X	X	X
bertrandite	$Be_4(Si_2O_7)(OH)_2$						X	X	
helvite-danalite	$Fe^{2+}{}_4Be_3(S(SiO_4)_3)$ – $Mn^{2+}{}_4Be_3(S(SiO_4)_3)$						X		
gadolinite	$(Ce,La,Nd,Y)_2Fe^{2+}Be_2[O\|SiO_4]_2$						X	X	
gugiaite	$Ca_2BeSi_2O_7$						X		
zircon-var. oyamalite hagatalite	$(Zr,Th,Nd,Ta,REE)[SiO_4]$	X	X		X	X	X	X	X
Nb, Ut, Ti, silicate							X		
yttrialite-thalenite	$(Y,Th)_2[Si_2O_7]$-$Y_3Si_3O_{10}(OH)$						X		
uranothorite	$(Th,U)SiO_4$				X				
Th, Fe, (Y, Nb), silicate							X	X	
spencite	$(Y,Ca,La)_5(Si,B,Al)_3(O,OH)_{13}$						X		
allanite	$Ca(La,Y,Ce)(Al_2Fe^{2+})[O\|OH\|SiO_4\|Si_2O_7]$				X				
astrophyllite	$(K,Na)_3(Fe,Mn)_7Ti_2Si_8O_{24}(O,OH)_7$		X						
brunsvigite	$(Fe^{2+},Mg,Al)_6(Si,Al)_4O_{10}(OH)_8$					X			
penninite (clinochlore)	$(Mg,Fe^{2+})_5Al[(OH)_8\|AlSi_3O_{10}]$						X		
berthierine	$(Fe,Fe,Mg)_{2-3}(Si,Al)_2O_5(OH)_4$							T	
serpentine	$D_{2-3}Si_2O_5(OH)_4$	T			X				
sericite	$KAl_2(AlSi_3O_{10})(OH)_2$						X	X	
nepheline	$(Na,K)(AlSiO_4)$	X							
sodalite	$Na_8(Cl_2\|Al_6Si_6O_{24})$	X							
Carbonates									
dolomite	$CaMg(CO_3)_2$				T		X	X	
ankerite	$Ca(Fe^{2+},Mg,Mn^{2+})(CO_3)_2$				X	X	X	X	X
siderite	$FeCO_3$				X	X	X	X	X
calcite	$CaCO_3$				T			X	
rhodochrosite	$MnCO_3$						T		
bastnaesite	$(Ce,La,Y)F(CO_3)$		X		X		X	X	
lanthanite	$(Ce,La,Nd)_2[CO_3]_3\cdot 8H_2O$				X				
kainosite-(Y)	$Ca_2(Y,Ce)_2(SiO_3)_4(CO_3)\cdot H_2O$						T	T	
parisite-(Ce)	$Ca(Ce,La)_2(CO_3)_3F_2$					X	X	X	X
synchysite	$Ca(Y,Ce,La,Nd,Gd)[F\|(CO_3)_2]$					X	X	X	X
Röntgenite-(Ce)	$Ca_2(Ce,La)_3F_3(CO_3)_5$					X	X	X	X
vaterite	$CaCO_3$						T	T	
malachite	$Cu_2(OH)_2(CO_3)$						X		

***Table 1:** Mineralogy of the Thor Lake area. 'X' denotes identified,' ? ' denotes uncertain, 'T' denotes tentative identification.*

				Lake Zone			T-Zone		
Lithology/Zone		Syenite	Granite	Wall	Core	Wall	Lower	Upper	Quartz
Phosphates									
xenotime-(Y)	YPO_4						X	X	
monazite	$(Ce,La,Nd,Th,Sm,Gd)PO_4$				X		X		
apatite	$Ca_5(PO_4)_3(F,Cl,OH)$						X	X	
Halides									
fluorite	CaF_2	X	X	X	X	X	X	X	X
yttro-fluorite	$(Ca,Y)F_{2-3}$							T	T
hsianghualite	$Ca_3Li_2Be_3(F_2(SiO_4)_3)$						T	T	
Oxides									
magnetite	Fe_3O_4	X	X	X	X	X	X	X	
hematite	Fe_2O_3				X		X	X	X
specularite	Fe_2O_3				X				
limonite	$FeO(OH)\cdot n(H_2O)$		X	X	X	X	X	X	
goethite	α-$FeO(OH)$							X	
columbite	$(Fe,Mn)(Nb,Ta)_2O_6$			X	X	X	X	X	
columbo-tantalite	$(Fe,Mn)(Nb,Ta)_2O_6$				X				
ashanite	$(Nb,Ta,V,Fe,Mn)_4O_8$							X	
pyrochlore	$(Ca,Na)_2Nb_2(O,OH,F)_7$						X	X	
aeschynite	$(Ce,Nd,Y,Ca,Fe,Th)(Ti,Nb)_2(O,OH)_6$				T				
fersmite	$(Ca,Ce,Na)(Nb,Ta,Ti)_2(O,OH,F)_6$						T	T	
uraninite	UO_2				X		X		
ilmenite	$Fe^{2+}TiO_3$				X	X	X	X	
rutile	TiO_2						X	X	
anatase	TiO_2						X	X	
brookite	TiO_2							X	
samarskite-(Y)	$(Y,Ce,U,Fe,Nb)(Nb,Ta,Ti)O_4$				X				
microlite	$(Ca,Na)_2Ta_2(O,OH,F)_7$						T		
tantalite	$(Fe,Mn)(Ta,Nb)_2O_6$						T		
thorianite	ThO_2						X		
fergusonite	$(Ce,La,Nd,Y)NbO_4$				X				
Sulphides, Sulpharsenides									
pyrite	FeS_2				X	X	X	X	X
marcasite	FeS_2						X	X	
pyrrhotite	$Fe_{1-x}S$				X		X	X	
sphalerite	ZnS						X	X	X
galena	PbS						X	X	
molybdenite	MoS_2						X	X	
chalcopyrite	$CuFeS_2$				X		X	X	X
arsenopyrite	$FeAsS$						X		
gersdorffite	$NiAsS$						X		

Table 1 (cont'd)

Table Sources:
Deer, Howie, Zussman. *An Introduction to the Rock Forming Minerals.* 6th Ed. 1970
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WARDROP

March 12th, 2007 0551530201-LTR-R0001-00

British Columbia Securities Commission
Alberta Securities Commission
Saskatchewan Securities Commission
Ontario Securities Commission
Quebec Securities Commission
Nova Scotia Securities Commission

Dear Sir/Madame:

Subject Avalon Ventures Ltd. Technical Report on the Thor Lake Rare Metals Project, NT

I, Kevin Palmer, P.Geo., on behalf of Wardrop Engineering Inc., do hereby consent to the public filing with the above listed commissions and with any other applicable regulatory authorities, of the technical report entitled "Technical Report on the Thor Lake Rare Metals Project, NT", dated March 12th, 2007 (Document No.0551530201-REP-R0001-01) in support of the news release titled "Avalon Announces Thor Lake REE Resource Estimates" by Avalon Ventures Ltd. dated January 22nd, 2007.

I also certify that I have read the news release titled "Avalon Announces Thor Lake REE Resource Estimates" being filed by Avalon Ventures Ltd. dated January 22nd, 2007 and I do not have any reason to believe that there are any misrepresentations in the information derived from the report titled "Technical Report on the Thor Lake Rare Metals Project, NT".

Dated this 12th day of March, 2007.

"Original Document, Revision 01 signed and sealed by Kevin Palmer, P.Geo."

Kevin Palmer, P.Geo.

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WARDROP

March 12th, 2007 0551530201-LTR-R0002-00

British Columbia Securities Commission
Alberta Securities Commission
Saskatchewan Securities Commission
Ontario Securities Commission
Quebec Securities Commission
Nova Scotia Securities Commission

Dear Sir/Madame:

Subject Avalon Ventures Ltd. Technical Report on the Thor Lake Rare Metals Project, NT

I, Peter Broad, P.Eng., of Wardrop Engineering Inc., do hereby consent to the public filing with the above listed commissions and with any other applicable regulatory authorities, of the technical report entitled "Technical Report on the Thor Lake Rare Metals Project, NT", dated March 12th, 2007 (Document No.0551530201-REP-R0001-01) in support of the news release titled "Avalon Announces Thor Lake REE Resource Estimates" by Avalon Ventures Ltd. dated January 22nd, 2007.

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Dated this 12th day of March, 2007.

"Original Document, Revision 01 signed and sealed by Peter Broad, P.Eng."

Peter Broad, P.Eng.
Senior Metallurgist
Wardrop Engineering Inc.

END

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