Rock solid resources.
Proven advice.™

ZENYATTA VENTURES LTD.

TECHNICAL REPORT ON THE PRELIMINARY ECONOMIC ASSESSMENT OF THE ALBANY GRAPHITE PROJECT, NORTHERN ONTARIO, CANADA

NI 43-101 Report

Qualified Persons:
Jason J. Cox, P.Eng.
David Ross, P.Geo.
Katharine M. Masun, P.Geo.
Marc Lavigne, ing.
Brenna J.Y. Scholey, P.Eng.
Derek Chubb, P.Eng.

July 9, 2015

Report Control Form

Document Title	Technical Report on the Preliminary Economic Assessment of the Albany Graphite Project, Northern Ontario, Canada		
Client Name & Address	Zenyatta Ventures Ltd. 1244 Amber Drive Thunder Bay, ON P7B 6M5		
Document Reference	Project #2248	***Status & Issue No.***	FINAL Version **0**
Issue Date	July 9, 2015		
Lead Author	Jason J. Cox David Ross Katharine M. Masun Marc Lavigne Brenna J.Y. Scholey Derek Chubb	(Signed) (Signed) (Signed) (Signed) (Signed) (Signed)	
Peer Reviewer	Torben Jensen	(Signed)	
Project Manager Approval	Jason J. Cox	(Signed)	
Project Director Approval	Deborah A. McCombe	(Signed)	

Report Distribution

Name	No. of Copies
Client	3
RPA Filing	1 (project box)

Roscoe Postle Associates Inc.
55 University Avenue, Suite 501
Toronto, ON M5J 2H7
Canada
Tel: +1 416 947 0907
Fax: +1 416 947 0395
mining@rpacan.com

TABLE OF CONTENTS

PAGE

LIST OF TABLES

PAGE

LIST OF FIGURES

PAGE

1 SUMMARY

EXECUTIVE SUMMARY

Roscoe Postle Associates Inc. (RPA) and Environmental Resources Management Consultants Canada Limited (ERM) were retained by Zenyatta Ventures Ltd. (Zenyatta) to prepare a Preliminary Economic Assessment (PEA) on the Albany Graphite Project (the Project), located in northern Ontario, Canada. The purpose of this report is to summarize the results of the PEA. This Technical Report conforms to NI 43-101 Standards of Disclosure for Mineral Projects.

Zenyatta is a Thunder Bay, Ontario based mineral development company currently developing a hydrothermal graphite deposit on the Albany Project. The Project can potentially produce 30,000 tonnes per year (tpa) of 99.94% purity graphite, for sale in the premium-priced high-purity graphite market. The PEA is based on open pit mining and processing of approximately 2,800 tonnes per day (tpd) via flotation, followed by purification. The PEA mine life is 22 years, with good potential for more via pit expansions, processing of low-grade stockpiles, or underground mining. The Project is located west of the communities of Constance Lake First Nation and Hearst, Ontario, within 30 km of the Trans-Canada Highway, close to established infrastructure including roads, rail, power transmission lines, and a natural gas pipeline.

This report is considered by RPA to meet the requirements of a Preliminary Economic Assessment as defined in Canadian NI 43-101 regulations. The economic analysis contained in this report is preliminary in nature and based on Mineral Resources that are not Mineral Reserves, and therefore do not have demonstrated economic viability. There is no certainty that economic forecasts on which this PEA is based will be realized.

CONCLUSIONS

In RPA's opinion, the PEA indicates that positive economic results can be obtained for the Project, in a scenario that includes open pit mining and graphite recovery by flotation followed by purification at the mine site.

The PEA consists of technical and cost assumptions outlined in this report. The economic analysis shows post-tax internal rate of return (IRR) and net present value (NPV) (10%) of

23.9% and US$438.4 million respectively at a long term price of US$7,500/t of purified final product.

The Project is most sensitive to the realized price of graphite. Since sales of graphite have been capped at 30,000 tpa based on market studies, the remaining variables have less of an impact than if sales were uncapped. In RPA's opinion, should market conditions warrant, the Mineral Resources are capable of supporting higher production rates.

RPA offers the following conclusions by area:

GEOLOGY AND MINERAL RESOURCES

The epigenetic deposit contains a large volume of highly crystalline, fluid-deposited graphite within an igneous host. Graphite occurs both in the matrix, as disseminated crystals, clotted to radiating crystal aggregates and veins, and along crystal boundaries and as small veins within the breccia fragments. The deposit is interpreted as a vent pipe breccia that formed from CO_2-rich fluids that evolved due to pressure-related degassing of syenites of the Albany Alkalic Complex.

Diamond drilling has outlined two graphite mineralized breccia pipes with three-dimensional continuity, and size and grades that can potentially be exploited economically. Zenyatta's protocols for drilling, sampling, analysis, security, and database management meet industry accepted practices. The drill hole database was verified by RPA and is suitable for Mineral Resource estimation work.

RPA estimated Mineral Resources for the Albany graphite deposit using drill hole data available as of November 15, 2013 and economic assumptions current to June 1, 2015. The Mineral Resource estimate is based on a potential combined open pit and underground mining scenario. Indicated Mineral Resources are estimated to total 24.3 million tonnes (Mt) at an average grade of 3.98% graphitic carbon (Cg), containing 968,000 tonnes of Cg. Inferred Mineral Resources are estimated to total 16.9 Mt at an average grade of 2.64% Cg, containing 445,000 tonnes of Cg.

MINING

RPA investigated production rates in the 2,500 tpd to 3,500 tpd range using open pit mining methods. Within 260 m of surface, strip ratios remain low enough for open pit methods to produce favourable results. Although it is not included in the PEA, underground mining of Inferred Resources remains worth consideration for the portion of both mineralized breccia pipes beneath an unmineralized dyke dipping southeast (from approximately 250 m to 300 m depth and below), as incorporated into the resource estimate.

The PEA production rate is 982,500 tpa, or 2,807 tpd, of graphite bearing material via open pit mining. Mining of ore and waste would be carried out by the owner and by contractor to balance mining equipment requirements over the life of the operation. The overburden removal will be exclusively done by a contractor with a dedicated mining fleet (larger equipment) given the total volume to be excavated and the higher production rate to be achieved.

A PEA level mine plan has been developed using 20.9 Mt of Indicated Mineral Resources, at an average grade of 4.05% Cg. The production schedule reflects mining at an elevated cut-off grade of 1.65% Cg. Beyond the PEA Life of Mine (LOM) plan, there is potential to extend purified graphite production via:

- Larger pits.
- Underground mining.
- Processing of low-grade stockpile (material between 0.9% Cg and 1.65% Cg).

The combination of owner-operated mining and contractor mining will be carried out using a conventional open pit method consisting of the following activities:

- Drilling performed by conventional production drills.
- Blasting using ammonium-nitrate fuel oil (ANFO) and a down-hole delay initiation system.
- Loading and hauling operations performed with hydraulic shovel, front-end loader, and rigid frame haulage trucks.

Geotechnical, hydrogeological/hydrological, and pit design parameters are based either on the open pit preliminary geotechnical evaluation or on assumptions derived from comparable operations, and require site-specific investigation as the Project advances.

MINERAL PROCESSING AND METALLURGICAL TESTING

Metallurgical test results at a bench scale level have demonstrated the following:

- Graphite concentrate can be produced via flotation targeting 88.6% Cg and 84.54% recovery.
- Graphite concentrate can be purified to yield a final graphite product grading 99.94% Cg and 89.13% recovery, for an overall recovery of 75.40%.

The metallurgical testwork completed to date has focused on achieving product purity and not on optimization of the process. Further improvements in process design, performance, and cost estimation are to be expected with advanced levels of study.

Ore samples for metallurgical testwork should be representative of the ore blend for each year in the LOM plan. The metallurgical complexity of the deposit has been evaluated using two composite samples (East Pipe and West Pipe) for flotation testing, and using East Pipe composite material for purification testing.

Ore variability needs to be investigated through mineralogical analysis and flotation testing.

ENVIRONMENTAL AND SOCIOLOGICAL CONSIDERATIONS

ERM has not identified any material environmental and social risks that prevent the Project's advancement to the next stage of study.

Zenyatta has conducted some preliminary environmental studies to support its exploration program and to characterize environmental features present within its property. A comprehensive, Project-specific baseline study program will be required to further the understanding of the local and regional environmental and social context for the Project, thereby contributing to the optimization of the engineering and the identification and mitigation of potential impacts of the Project on its receiving environment.

HIGH-PURITY GRAPHITE MARKETS

Unlike metamorphic flake deposits, testwork has demonstrated that Zenyatta's hydrothermal (vein) type graphite can be processed into a high-purity substance, suitable to compete against synthetic graphite producers for market share.

The high-purity graphite market that Zenyatta is focusing on is expected to require in the order of 426 ktpa by 2017, and grow at a rate of 4% thereafter. RPA has selected US$7,500 per tonne as the base case price for this PEA, with sensitivity analysis in the range of US$5,000 per tonne to US$10,000 per tonne. Zenyatta will target marketing activities around industries such as lithium-ion batteries, powder metallurgy, specialized lubricants, fuel cells for energy storage, and nuclear reactors that all demand high-purity graphite.

RECOMMENDATIONS

RPA recommends that Zenyatta advance the Project to the pre-feasibility stage, and offers the following recommendations by area:

GEOLOGY AND DRILLING

- Consider upgrading areas of Inferred Mineral Resources to Indicated Mineral Resources. RPA notes that this is not required to advance to the pre-feasibility stage – current Indicated Resources are adequate for the open pit production scenario described in this PEA.

MINING

- Carry out a geotechnical drill program at pit wall locations to enhance geomechanical and rock mechanics assessments to confirm appropriate pit wall slope angles and stability.
- Carry out specific hydrological/hydrogeological studies to refine dewatering needs in the open pit over the LOM.
- Improve the mining plan and develop an estimate of the mining costs based on first principles.

MINERAL PROCESSING AND METALLURGICAL TESTING

- Additional metallurgical testwork should be carried out to scale up the process flowsheet for the production of a high-purity graphite product with the specifications targeted based on research and dialogue with end-users.
    - Continued mineralogical characterization and mineral deportment analysis on a broad range of ore samples representative of the areas to be mined (across the Mineral Resources and at depth)
    - Ore variability testing
    - Confirmatory tests on regrinding, liquid-solid separation and thickening under the various stages of cleaner flotation
    - Confirm that grinding media selection does not affect the quality of the product
    - Optimization of the purification circuit, including materials handling, liquid-solid separation, and thickening
    - Off-gas handling and scrubbing requirements in low-temperature bake treatment
    - Dust collection and recycle
    - Analysis and characterization of all waste streams and determination of the appropriate methods of disposal
    - Methods for effective drying and handling of the final graphite product
    - Detailed water balance for the entire process flowsheet
    - Materials of construction requirements

ENVIRONMENTAL AND SOCIOLOGICAL CONSIDERATIONS

- Continue to engage with potentially interested parties.
- Begin the environmental baseline study program as an important input into future study and Project permitting.

HIGH-PURITY GRAPHITE MARKETS

- Continue discussions with end-users who are potential customers for the product and work towards securing off-take or strategic partnership agreements.
- Continue research into new markets for high-purity graphite by monitoring current research initiatives and support new research initiatives into potential future applications of the unique Albany high-purity graphite product.
- Participate in technical conferences on graphite and energy storage whenever possible to stay current on market developments and identify potential partners.

PROPOSED BUDGET

RPA and ERM propose the following budget for work carrying through to the end of a Pre-Feasibility Study:

TABLE 1-1 PROPOSED BUDGET
Zenyatta Ventures Ltd. – Albany Project

Item	C$'000s
Geotechnical Drilling and Analysis (including hydrogeology)	600
Market Development Work	1,000
Metallurgical Testwork	1,600
Community Engagement	200
Environmental Baseline Studies (one year of a multi-year program including geochemistry)	600
Pre-Feasibility Study	500
Total	**4,500**

ECONOMIC ANALYSIS

The overall LOM plan and resulting cash flow model were designed to generate saleable high-purity graphite in the amount of 30,000 tpa. Zenyatta is targeting a specialized market with a distinct product, not selling into an open market. Any graphite produced in excess of 30,000 tpa will be kept as finished inventory for sale in future periods.

Economic criteria that were used in the cash flow include:

- Price of saleable graphite of US$7,500 per tonne

- Exchange rate of 0.82 US$/C$
- Life of mine processing of 20,927 kt grading 4.05% Cg
- Nominal 983 kt of processed material per year during steady state operations
- Life of mine of 22 years
- Flotation recovery of 84.54%, and purification recovery of 89.13%
- Final product graphite grade of 99.94% Cg
- Sales capped at 30 ktpa, with life of mine sales totalling to 634 kt
- Transportation costs of US$82.00 per tonne
- Net Smelter Return (NSR) royalties of 1.25%
- Unit operating costs of US$62 per tonne of processed material, or US$2,046 per tonne of finished product
- Pre-production capital costs of US$411.4 million, spread over two years
- Sustaining capital costs (including reclamation) of US$291.4 million, spread over the mine life

A summary of the cash flow model is shown in Table 1-2.

TABLE 1-2 CASH FLOW SUMMARY
Zenyatta Ventures Inc. - Albany Project

	INPUTS	UNITS	TOTAL	Year -2	Year -1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
MINING												
Open Pit												
Operating Days	350	days	350	350	350	350	350	350	350	350	350	350
Ore Tonnes mined per day		tpd	2,736	-	-	2,055	2,101	2,727	2,807	2,807	2,807	2,807
Total Tonnes moved per day		tpd	32,231	12,000	42,479	54,438	55,659	48,328	29,100	28,822	28,535	25,405
Ore Tonnes mined per year	See Material Movement	ktpa	20,927	-	-	719	735	954	982	983	982	983
Cg Grade	See Material Movement	%	4.05%	0.00%	0.00%	6.12%	5.61%	4.16%	4.00%	4.02%	4.01%	3.99%
Overburden	See Material Movement	kt	57,699	4,200	14,000	14,000	14,000	11,499	-	-	-	-
Waste Rock	See Material Movement	kt	84,684	-	868	4,334	4,745	4,461	9,203	9,105	9,005	7,909
Total Moved		**kt**	**163,310**	**4,200**	**14,868**	**19,053**	**19,481**	**16,915**	**10,185**	**10,088**	**9,987**	**8,892**
Stripping Ratio (incl. OVB)		W:O	6.80	-	-	25.49	25.49	16.72	9.37	9.27	9.17	8.05
Stripping Ratio (w/o OVB)		W:O	4.05	-	-	6.03	6.45	4.67	9.37	9.27	9.17	8.05
PROCESSING												
Mill Feed												
Tonnes Processed		kt	20,927	-	-	719	735	954	982	983	982	983
Cg Grade		%	4.05%	0.00%	0.00%	6.12%	5.61%	4.16%	4.00%	4.02%	4.01%	3.99%
Contained Cg		t	847,019	-	-	44,036	41,292	39,743	39,295	39,504	39,380	39,157
Flotation												
Recovery	84.54%	%	85%	84.54%	84.54%	84.54%	84.54%	84.54%	84.54%	84.54%	84.54%	84.54%
Graphite Concentrate		t		-	-	42,018	39,400	37,922	37,495	37,694	37,575	37,362
Cg grade within con	88.60%	%		88.60%	88.60%	88.60%	88.60%	88.60%	88.60%	88.60%	88.60%	88.60%
Contained Cg		t		-	-	37,228	34,908	33,599	33,220	33,397	33,292	33,103
Carbon Purification												
Ramp Up on Purification	100%	%				85.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Recovery	89.13%	%		89.13%	89.13%	89.13%	89.13%	89.13%	89.13%	89.13%	89.13%	89.13%
Product		t	633,636	-	-	28,221	31,133	29,965	29,627	29,785	29,691	29,522
Grade	99.94%	%		99.94%	99.94%	99.94%	99.94%	99.94%	99.94%	99.94%	99.94%	99.94%
Final Product Moisture Content	0%			0%	0%	0%	0%	0%	0%	0%	0%	0%
REVENUE												
Metal Prices		**Input Units**										
Cg	$ 7,500	US$ / t Cg	$ 7,500			$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 7,500
Exchange Rate	$ 0.82	US$ / C$	$ 0.82			$ 0.82	$ 0.82	$ 0.82	$ 0.82	$ 0.82	$ 0.82	$ 0.82
Price Ramp Up	100%	%				100%	100%	100%	100%	100%	100%	100%
Realized Price		C$ / t Cg	$ 9,146			$ 9,146	$ 9,146	$ 9,146	$ 9,146	$ 9,146	$ 9,146	$ 9,146
Ramp Up of Realized Cg Price	100%	%				100%	100%	100%	100%	100%	100%	100%
Ramp Up of Cg Sales Volume	100%	%				90%	100%	100%	100%	100%	100%	100%
Finished Product Stockpile												
Opening Balance	-	t		-	-	-	1,221	2,354	2,318	1,945	1,730	1,421
+ Add Production		t		-	-	28,221	31,133	29,965	29,627	29,785	29,691	29,522
= Available For Sale		t		-	-	28,221	32,354	32,318	31,945	31,730	31,421	30,943
- Less Sales	30,000	**t**	**633,636**	**-**	**-**	**27,000**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**
= Closing Balance				-	-	1,221	2,354	2,318	1,945	1,730	1,421	943
Total Gross Revenue		**US$ '000**	**$ 4,752,271**			**$ 202,500**	**$ 225,000**	**$ 225,000**	**$ 225,000**	**$ 225,000**	**$ 225,000**	**$ 225,000**
Transportation	$82.00 US$/t product	US$ '000	$ 51,958			$ 2,214	$ 2,460	$ 2,460	$ 2,460	$ 2,460	$ 2,460	$ 2,460
Net Smelter Return		**US$ '000**	**$ 4,700,312**			**$ 200,286**	**$ 222,540**	**$ 222,540**	**$ 222,540**	**$ 222,540**	**$ 222,540**	**$ 222,540**
Royalty												
Cliffs Royalty (0.25%)	0.25%	US$ '000	$ 11,751			$ 501	$ 556	$ 556	$ 556	$ 556	$ 556	$ 556
EGC Royalty (1%)	1%	US$ '000	$ 47,003			$ 2,003	$ 2,225	$ 2,225	$ 2,225	$ 2,225	$ 2,225	$ 2,225
Total Royalties		**US$ '000**	**$ 58,754**			**$ 2,504**	**$ 2,782**	**$ 2,782**	**$ 2,782**	**$ 2,782**	**$ 2,782**	**$ 2,782**
Net Revenue		**US$ '000**	$ 4,641,559			**$ 197,782**	**$ 219,758**	**$ 219,758**	**$ 219,758**	**$ 219,758**	**$ 219,758**	**$ 219,758**
Unit NSR		**US$ / t proc**	$ 222			**$ 275**	**$ 299**	**$ 230**	**$ 224**	**$ 224**	**$ 224**	**$ 224**
OPERATING COSTS (US$)												
Mining (Ore and Waste)		US$ '000	$ 237,362	$ -	$ -	$ 13,674	$ 14,831	$ 14,655	$ 15,287	$ 15,075	$ 14,862	$ 14,649
Beneficiation		US$ '000	$ 286,688	$ -	$ -	$ 9,853	$ 10,076	$ 13,076	$ 13,460	$ 13,460	$ 13,460	$ 13,460
Purification		US$ '000	$ 557,577	$ -	$ -	$ 28,988	$ 27,182	$ 26,162	$ 25,867	$ 26,005	$ 25,923	$ 25,776
G&A		US$ '000	$ 215,037	$ -	$ -	$ 9,774	$ 9,774	$ 9,774	$ 9,774	$ 9,774	$ 9,774	$ 9,774
Total Operating Cost		**US$ '000**	**$ 1,296,664**	**$ -**	**$ -**	**$ 62,290**	**$ 61,863**	**$ 63,668**	**$ 64,389**	**$ 64,314**	**$ 64,019**	**$ 63,659**
UNIT OPERATING COSTS (US$)												
Mining (Ore and Waste)		US$ / t proc	$ 11.34			$ 19.01	$ 20.16	$ 15.35	$ 15.56	$ 15.34	$ 15.13	$ 14.91
Beneficiation		US$ / t proc	$ 13.70			$ 13.70	$ 13.70	$ 13.70	$ 13.70	$ 13.70	$ 13.70	$ 13.70
Purification		US$ / t proc	$ 26.64			$ 40.30	$ 36.96	$ 27.41	$ 26.33	$ 26.47	$ 26.38	$ 26.24
G&A		US$ / t proc	$ 10.28			$ 13.59	$ 13.29	$ 10.24	$ 9.95	$ 9.95	$ 9.95	$ 9.95
Total Operating Cost		**US$ / t proc**	**$ 61.96**			**$ 86.6**	**$ 84.1**	**$ 66.7**	**$ 65.5**	**$ 65.5**	**$ 65.2**	**$ 64.8**
Mining (Ore and Waste)		US$ / t prod	**$ 375**			$ 485	$ 476	$ 489	$ 516	$ 506	$ 501	$ 496
Beneficiation		US$ / t prod	**$ 452**			$ 349	$ 324	$ 436	$ 454	$ 452	$ 453	$ 456
Purification		US$ / t prod	**$ 880**			$ 1,027	$ 873	$ 873	$ 873	$ 873	$ 873	$ 873
G&A		US$ / t prod	**$ 339**			$ 346	$ 314	$ 326	$ 330	$ 328	$ 329	$ 331
Unit Operating Cost		**US$ / t prod**	**$ 2,046**			**$ 2,207**	**$ 1,987**	**$ 2,125**	**$ 2,173**	**$ 2,159**	**$ 2,156**	**$ 2,156**
Operating CashFlow		US$ '000	**$ 3,344,895**	**$ -**	**$ -**	**$ 135,492**	**$ 157,895**	**$ 156,090**	**$ 155,369**	**$ 155,445**	**$ 155,739**	**$ 156,099**
		US$ / t proc	$ 160									
CAPITAL COST												
Direct Cost												
Mining		US$ '000	$ 81,158	$ 12,743	$ 68,415	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Processing		US$ '000	$ 111,495	$ 44,598	$ 66,897	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Infrastructure		US$ '000	$ 70,255	$ 14,908	$ 55,347	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Direct Cost		**US$ '000**	**$ 262,908**	**$ 72,249**	**$ 190,659**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Indirect Costs												
EPCM / Owners / Indirect Cost		US$ '000	$ 68,732	$ 21,902	$ 46,829	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Subtotal Costs		**US$ '000**	**$ 331,639**	**$ 94,151**	**$ 237,488**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Contingency		US$ '000	$ 79,826	$ 25,064	$ 54,762	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Initial Capital Cost		**US$ '000**	**$ 411,465**	**$ 119,215**	**$ 292,250**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Sustaining		US$ '000	$ 268,073	$ -	$ -	$ 44,600	$ 44,600	$ 39,078	$ 18,941	$ 22,298	$ 18,793	$ 20,237
Reclamation and Closure		US$ '000	$ 22,140	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Misc - Buy Out Royalties		US$ '000	$ 1,230	$ -	$ 1,230	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Capital Cost		**US$ '000**	**$ 702,908**	**$ 119,215**	**$ 293,480**	**$ 44,600**	**$ 44,600**	**$ 39,078**	**$ 18,941**	**$ 22,298**	**$ 18,793**	**$ 20,237**
CASH FLOW												
Pre-Tax Cashflow		US$ '000	$ 2,641,987	$ (119,215)	$ (293,480)	$ 90,892	$ 113,295	$ 117,012	$ 136,428	$ 133,147	$ 136,946	$ 135,862
Cumulative Pre-Tax Cashflow		US$ '000		$ (119,215)	$ (412,695)	$ (321,803)	$ (208,508)	$ (91,496)	$ 44,932	$ 178,079	$ 315,025	$ 450,886
EBITDA		US$ '000	$ 3,344,895	$ -	$ -	$ 135,492	$ 157,895	$ 156,090	$ 155,369	$ 155,445	$ 155,739	$ 156,099
Less Deductions		US$ '000	$ 707,953	$ -	$ -	$ 135,492	$ 157,895	$ 75,130	$ 56,384	$ 47,612	$ 40,105	$ 34,754
Taxable Earnings		US$ '000	$ 2,636,942	$ -	$ -	$ -	$ -	$ 80,960	$ 98,985	$ 107,832	$ 115,634	$ 121,345
Taxes	24.4%	US$ '000	$ 642,095	$ -	$ -	$ -	$ -	$ 19,714	$ 24,103	$ 26,257	$ 28,157	$ 29,547
Net Profit		US$ '000	$ 1,994,847	$ -	$ -	$ -	$ -	$ 61,246	$ 74,882	$ 81,575	$ 87,477	$ 91,797
After-Tax Cashflow		US$ '000	$ 1,999,891	$ (119,215)	$ (293,480)	$ 90,892	$ 113,295	$ 97,298	$ 112,325	$ 106,890	$ 108,789	$ 106,314
Cumulative After-Tax Cashflow		US$ '000		$ (119,215)	$ (412,695)	$ (321,803)	$ (208,508)	$ (111,210)	$ 1,115	$ 108,005	$ 216,794	$ 323,108
PROJECT ECONOMICS												
Pre-Tax Payback Period		yrs	3.7	0	0	1.00	1.00	1.00	0.67	-	-	-
Pre-Tax IRR		%	27.3%									
Pre-tax NPV @ 8%	8%	US$ '000	$814,717									
Pre-tax NPV @ 10%	10%	US$ '000	$614,676									
Pre-tax NPV @ 12%	12%	US$ '000	$462,942									
Post-Tax Payback Period		yrs	4.0	0	0	1.00	1.00	1.00	0.99	-	-	-
Post-Tax IRR		%	23.9%									
Post-Tax NPV @ 8%	8%	US$ '000	$593,115									
Post-Tax NPV @ 10%	10%	US$ '000	$438,434									
Post-Tax NPV @ 12%	12%	US$ '000	$320,967									

	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22
MINING															
Open Pit															
Operating Days	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350
Ore Tonnes mined per day	2,807	2,807	2,807	2,807	2,807	2,807	2,807	2,807	2,807	2,807	2,807	2,807	2,807	2,807	2,378
Total Tonnes moved per day	15,247	14,647	14,250	13,432	12,426	11,266	10,088	8,972	8,103	7,322	6,476	6,099	5,670	4,566	3,269
Ore Tonnes mined per year	983	983	983	982	982	982	983	982	982	982	983	982	983	983	832
Cg Grade	3.99%	4.01%	4.08%	4.07%	4.04%	4.03%	4.04%	4.05%	4.06%	4.10%	4.06%	3.97%	3.48%	3.00%	2.95%
Overburden	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Waste Rock	4,354	4,144	4,005	3,719	3,367	2,961	2,548	2,158	1,853	1,580	1,284	1,152	1,002	616	312
Total Moved	**5,336**	**5,126**	**4,988**	**4,701**	**4,349**	**3,943**	**3,531**	**3,140**	**2,836**	**2,563**	**2,267**	**2,135**	**1,985**	**1,598**	**1,144**
Stripping Ratio (incl. OVB)	4.43	4.22	4.08	3.78	3.43	3.01	2.59	2.20	1.89	1.61	1.31	1.17	1.02	0.63	0.37
Stripping Ratio (w/o OVB)	4.43	4.22	4.08	3.78	3.43	3.01	2.59	2.20	1.89	1.61	1.31	1.17	1.02	0.63	0.37
PROCESSING															
Mill Feed															
Tonnes Processed	983	983	983	982	982	982	983	982	982	982	983	982	983	983	832
Cg Grade	3.99%	4.01%	4.08%	4.07%	4.04%	4.03%	4.04%	4.05%	4.06%	4.10%	4.06%	3.97%	3.48%	3.00%	2.95%
Contained Cg	39,223	39,359	40,056	40,026	39,675	39,631	39,734	39,748	39,909	40,239	39,888	39,004	34,144	29,452	24,522
Flotation															
Recovery	84.54%	84.54%	84.54%	84.54%	84.54%	84.54%	84.54%	84.54%	84.54%	84.54%	84.54%	84.54%	84.54%	84.54%	84.54%
Graphite Concentrate	37,425	37,556	38,220	38,192	37,857	37,815	37,913	37,927	38,081	38,395	38,060	37,217	32,579	28,103	23,398
Cg grade within con	88.60%	88.60%	88.60%	88.60%	88.60%	88.60%	88.60%	88.60%	88.60%	88.60%	88.60%	88.60%	88.60%	88.60%	88.60%
Contained Cg	33,159	33,275	33,863	33,838	33,541	33,504	33,591	33,603	33,739	34,018	33,721	32,974	28,865	24,899	20,731
Carbon Purification															
Ramp Up on Purification	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Recovery	89.13%	89.13%	89.13%	89.13%	89.13%	89.13%	89.13%	89.13%	89.13%	89.13%	89.13%	89.13%	89.13%	89.13%	89.13%
Product	29,572	29,675	30,200	30,178	29,913	29,880	29,958	29,968	30,090	30,339	30,074	29,407	25,743	22,206	18,488
Grade	99.94%	99.94%	99.94%	99.94%	99.94%	99.94%	99.94%	99.94%	99.94%	99.94%	99.94%	99.94%	99.94%	99.94%	99.94%
Final Product Moisture Content	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
REVENUE															
Metal Prices															
Cg	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 7,500	$ 7,500	7,500
Exchange Rate	$ 0.82	$ 0.82	$ 0.82	$ 0.82	$ 0.82	$ 0.82	$ 0.82	$ 0.82	$ 0.82	$ 0.82	$ 0.82	$ 0.82	$ 0.82	$ 0.82	0.82
Price Ramp Up	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Realized Price	$ 9,146	$ 9,146	$ 9,146	$ 9,146	$ 9,146	$ 9,146	$ 9,146	$ 9,146	$ 9,146	$ 9,146	$ 9,146	$ 9,146	$ 9,146	$ 9,146	9,146
Ramp Up of Realized Cg Price	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Ramp Up of Cg Sales Volume	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Finished Product Stockpile															
Opening Balance	943	515	191	391	569	482	362	320	289	379	717	791	199	-	-
+ Add Production	29,572	29,675	30,200	30,178	29,913	29,880	29,958	29,968	30,090	30,339	30,074	29,407	25,743	22,206	18,488
= Available For Sale	30,515	30,191	30,391	30,569	30,482	30,362	30,320	30,289	30,379	30,717	30,791	30,199	25,942	22,206	18,488
- Less Sales	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**25,942**	**22,206**	**18,488**
= Closing Balance	515	191	391	569	482	362	320	289	379	717	791	199	-	-	-
Total Gross Revenue	**$ 225,000**	**$ 225,000**	**$ 225,000**	**$ 225,000**	**$ 225,000**	**$ 225,000**	**$ 225,000**	**$ 225,000**	**$ 225,000**	**$ 225,000**	**$ 225,000**	**$ 225,000**	**$ 194,564**	**$ 166,543**	**138,664**
Transportation	$ 2,460	$ 2,460	$ 2,460	$ 2,460	$ 2,460	$ 2,460	$ 2,460	$ 2,460	$ 2,460	$ 2,460	$ 2,460	$ 2,460	$ 2,127	$ 1,821	1,516
Net Smelter Return	**$ 222,540**	**$ 222,540**	**$ 222,540**	**$ 222,540**	**$ 222,540**	**$ 222,540**	**$ 222,540**	**$ 222,540**	**$ 222,540**	**$ 222,540**	**$ 222,540**	**$ 222,540**	**$ 192,436**	**$ 164,723**	**137,147**
Royalty															
Cliffs Royalty (0.25%)	$ 556	$ 556	$ 556	$ 556	$ 556	$ 556	$ 556	$ 556	$ 556	$ 556	$ 556	$ 556	$ 481	$ 412	343
EGC Royalty (1%)	$ 2,225	$ 2,225	$ 2,225	$ 2,225	$ 2,225	$ 2,225	$ 2,225	$ 2,225	$ 2,225	$ 2,225	$ 2,225	$ 2,225	$ 1,924	$ 1,647	1,371
Total Royalties	**$ 2,782**	**$ 2,782**	**$ 2,782**	**$ 2,782**	**$ 2,782**	**$ 2,782**	**$ 2,782**	**$ 2,782**	**$ 2,782**	**$ 2,782**	**$ 2,782**	**$ 2,782**	**$ 2,405**	**$ 2,059**	**1,714**
Net Revenue	**$ 219,758**	**$ 219,758**	**$ 219,758**	**$ 219,758**	**$ 219,758**	**$ 219,758**	**$ 219,758**	**$ 219,758**	**$ 219,758**	**$ 219,758**	**$ 219,758**	**$ 219,758**	**$ 190,031**	**$ 162,664**	**135,433**
Unit NSR	**$ 224**	**$ 224**	**$ 224**	**$ 224**	**$ 224**	**$ 224**	**$ 224**	**$ 224**	**$ 224**	**$ 224**	**$ 224**	**$ 224**	**$ 193**	**$ 166**	**163**
OPERATING COSTS (US$)															
Mining (Ore and Waste)	$ 14,440	$ 13,872	$ 13,496	$ 12,722	$ 11,768	$ 10,670	$ 9,554	$ 8,498	$ 7,674	$ 6,935	$ 6,133	$ 5,776	$ 5,370	$ 4,324	3,096
Beneficiation	$ 13,460	$ 13,460	$ 13,460	$ 13,460	$ 13,460	$ 13,460	$ 13,460	$ 13,460	$ 13,460	$ 13,460	$ 13,460	$ 13,460	$ 13,460	$ 13,460	11,404
Purification	$ 25,820	$ 25,910	$ 26,368	$ 26,349	$ 26,117	$ 26,089	$ 26,156	$ 26,165	$ 26,272	$ 26,489	$ 26,258	$ 25,676	$ 22,476	$ 19,388	16,142
G&A	$ 9,774	$ 9,774	$ 9,774	$ 9,774	$ 9,774	$ 9,774	$ 9,774	$ 9,774	$ 9,774	$ 9,774	$ 9,774	$ 9,774	$ 9,774	$ 9,774	9,774
Total Operating Cost	**$ 63,494**	**$ 63,016**	**$ 63,099**	**$ 62,304**	**$ 61,120**	**$ 59,993**	**$ 58,945**	**$ 57,897**	**$ 57,180**	**$ 56,658**	**$ 55,625**	**$ 54,686**	**$ 51,081**	**$ 46,946**	**40,416**
UNIT OPERATING COSTS (US$)															
Mining (Ore and Waste)	$ 14.70	$ 14.12	$ 13.74	$ 12.95	$ 11.98	$ 10.86	$ 9.72	$ 8.65	$ 7.81	$ 7.06	$ 6.24	$ 5.88	$ 5.47	$ 4.40	3.72
Beneficiation	$ 13.70	$ 13.70	$ 13.70	$ 13.70	$ 13.70	$ 13.70	$ 13.70	$ 13.70	$ 13.70	$ 13.70	$ 13.70	$ 13.70	$ 13.70	$ 13.70	13.70
Purification	$ 26.28	$ 26.37	$ 26.84	$ 26.82	$ 26.58	$ 26.55	$ 26.62	$ 26.63	$ 26.74	$ 26.96	$ 26.73	$ 26.13	$ 22.88	$ 19.73	19.39
G&A	$ 9.95	$ 9.95	$ 9.95	$ 9.95	$ 9.95	$ 9.95	$ 9.95	$ 9.95	$ 9.95	$ 9.95	$ 9.95	$ 9.95	$ 9.95	$ 9.95	11.74
Total Operating Cost	**$ 64.6**	**$ 64.1**	**$ 64.2**	**$ 63.4**	**$ 62.2**	**$ 61.1**	**$ 60.0**	**$ 58.9**	**$ 58.2**	**$ 57.7**	**$ 56.6**	**$ 55.7**	**$ 52.0**	**$ 47.8**	**48.6**
Mining (Ore and Waste)	$ 488	$ 467	$ 447	$ 422	$ 393	$ 357	$ 319	$ 284	$ 255	$ 229	$ 204	$ 196	$ 209	$ 195	167
Beneficiation	$ 455	$ 454	$ 446	$ 446	$ 450	$ 450	$ 449	$ 449	$ 447	$ 444	$ 448	$ 458	$ 523	$ 606	617
Purification	$ 873	$ 873	$ 873	$ 873	$ 873	$ 873	$ 873	$ 873	$ 873	$ 873	$ 873	$ 873	$ 873	$ 873	873
G&A	$ 331	$ 329	$ 324	$ 324	$ 327	$ 327	$ 326	$ 326	$ 325	$ 322	$ 325	$ 332	$ 380	$ 440	529
Unit Operating Cost	**$ 2,147**	**$ 2,124**	**$ 2,089**	**$ 2,065**	**$ 2,043**	**$ 2,008**	**$ 1,968**	**$ 1,932**	**$ 1,900**	**$ 1,868**	**$ 1,850**	**$ 1,860**	**$ 1,984**	**$ 2,114**	**2,186**
Operating CashFlow	**$ 156,264**	**$ 156,742**	**$ 156,660**	**$ 157,454**	**$ 158,638**	**$ 159,765**	**$ 160,814**	**$ 161,861**	**$ 162,578**	**$ 163,100**	**$ 164,133**	**$ 165,072**	**$ 138,950**	**$ 115,717**	**95,017**
CAPITAL COST															
Direct Cost															
Mining	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	-
Processing	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	-
Infrastructure	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	-
Total Direct Cost	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**-**
Indirect Costs															
EPCM / Owners / Indirect Cost	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	-
Subtotal Costs	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**-**
Contingency	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	-
Initial Capital Cost	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**-**
Sustaining	$ 3,853	$ 11,266	$ 12,424	$ 6,545	$ 2,446	$ 2,446	$ 9,801	$ 3,410	$ 2,446	$ 2,446	$ 2,446	$ -	$ -	$ -	-
Reclamation and Closure	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,535	$ -	$ -	$ 5,535	$ -	$ -	$ -	11,070
Misc - Buy Out Royalties	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	-
Total Capital Cost	**$ 3,853**	**$ 11,266**	**$ 12,424**	**$ 6,545**	**$ 2,446**	**$ 2,446**	**$ 9,801**	**$ 8,945**	**$ 2,446**	**$ 2,446**	**$ 7,981**	**$ -**	**$ -**	**$ -**	**11,070**
CASH FLOW															
Pre-Tax Cashflow	$ 152,412	$ 145,477	$ 144,236	$ 150,909	$ 156,193	$ 157,319	$ 151,013	$ 152,916	$ 160,133	$ 160,655	$ 156,152	$ 165,072	$ 138,950	$ 115,717	83,947
Cumulative Pre-Tax Cashflow	$ 603,298	$ 748,775	$ 893,011	$ 1,043,920	$ 1,200,113	$ 1,357,432	$ 1,508,445	$ 1,661,361	$ 1,821,494	$ 1,982,148	$ 2,138,301	$ 2,303,373	$ 2,442,323	$ 2,558,040	2,641,987
EBITDA	$ 156,264	$ 156,742	$ 156,660	$ 157,454	$ 158,638	$ 159,765	$ 160,814	$ 161,861	$ 162,578	$ 163,100	$ 164,133	$ 165,072	$ 138,950	$ 115,717	95,017
Less Deductions	$ 26,115	$ 21,886	$ 19,036	$ 15,574	$ 12,054	$ 9,486	$ 9,571	$ 9,573	$ 7,625	$ 6,214	$ 6,851	$ 4,999	$ 3,651	$ 2,670	5,275
Taxable Earnings	$ 130,150	$ 134,856	$ 137,624	$ 141,880	$ 146,584	$ 150,279	$ 151,242	$ 152,288	$ 154,953	$ 156,886	$ 157,282	$ 160,074	$ 135,299	$ 113,047	89,742
Taxes	$ 31,691	$ 32,838	$ 33,511	$ 34,548	$ 35,693	$ 36,593	$ 36,828	$ 37,082	$ 37,731	$ 38,202	$ 38,298	$ 38,978	$ 32,945	$ 27,527	21,852
Net Profit	$ 98,458	$ 102,019	$ 104,112	$ 107,332	$ 110,891	$ 113,686	$ 114,415	$ 115,206	$ 117,222	$ 118,684	$ 118,983	$ 121,096	$ 102,354	$ 85,520	67,890
After-Tax Cashflow	$ 120,720	$ 112,639	$ 110,724	$ 116,361	$ 120,499	$ 120,726	$ 114,185	$ 115,834	$ 122,402	$ 122,453	$ 117,854	$ 126,094	$ 106,005	$ 88,190	62,095
Cumulative After-Tax Cashflow	$ 443,829	$ 556,468	$ 667,192	$ 783,554	$ 904,053	$ 1,024,780	$ 1,138,965	$ 1,254,799	$ 1,377,200	$ 1,499,653	$ 1,617,508	$ 1,743,602	$ 1,849,606	$ 1,937,796	1,999,891
PROJECT ECONOMICS															
Pre-Tax Payback Period	-	-													
Post-Tax Payback Period	-	-													

CASH FLOW ANALYSIS

Based on the economic criteria discussed previously, a summary of cash flow is shown in Table 1-3.

TABLE 1-3 SUMMARY OF CASH FLOW
Zenyatta Ventures Ltd. – Albany Project

Description	Units	Value
Gross Revenue	US$ millions	4,752.3
Less: Transportation	US$ millions	(52.0)
Net Smelter Return	US$ millions	4,700.3
Less: Royalties	US$ millions	(58.8)
Net Revenue	US$ millions	4,641.6
Less: Total Operating Costs	US$ millions	(1,296.7)
Operating Cash Flow	US$ millions	3,344.9
Less: Total Capital Costs	US$ millions	(702.9)
Pre-Tax Cash Flow	US$ millions	2,642.0
Less: Taxes Paid	US$ millions	(642.1)
After Tax Cash Flow	US$ millions	1,999.9

ECONOMIC ANALYSIS

Based on the input parameters, a summary of the Project economics is shown in Table 1-4.

TABLE 1-4 SUMMARY OF ECONOMIC RESULTS
Zenyatta Ventures Ltd. – Albany Project

Description	Units	Value
Pre-Tax		
Net Present Value at 8%	US$ millions	814.7
Net Present Value at 10%	US$ millions	614.7
Net Present Value at 12%	US$ millions	462.9
Internal Rate of Return	%	27.3
Payback Period	years	3.7
Post-Tax		
Net Present Value at 8%	US$ millions	593.1
Net Present Value at 10%	US$ millions	438.4
Net Present Value at 12%	US$ millions	321.0
Internal Rate of Return	%	23.9
Payback Period	years	4.0

SENSITIVITY ANALYSIS

The cash flow model was tested for sensitivity to variances in the head grade, process recovery, realized sales price, Canadian to United States dollar exchange rate, overall operating costs, and overall capital costs. The resulting post-tax $NPV_{10\%}$ sensitivity is shown in Figure 1-1, and Table 1-5.

FIGURE 1-1 SENSITIVITY ANALYSIS

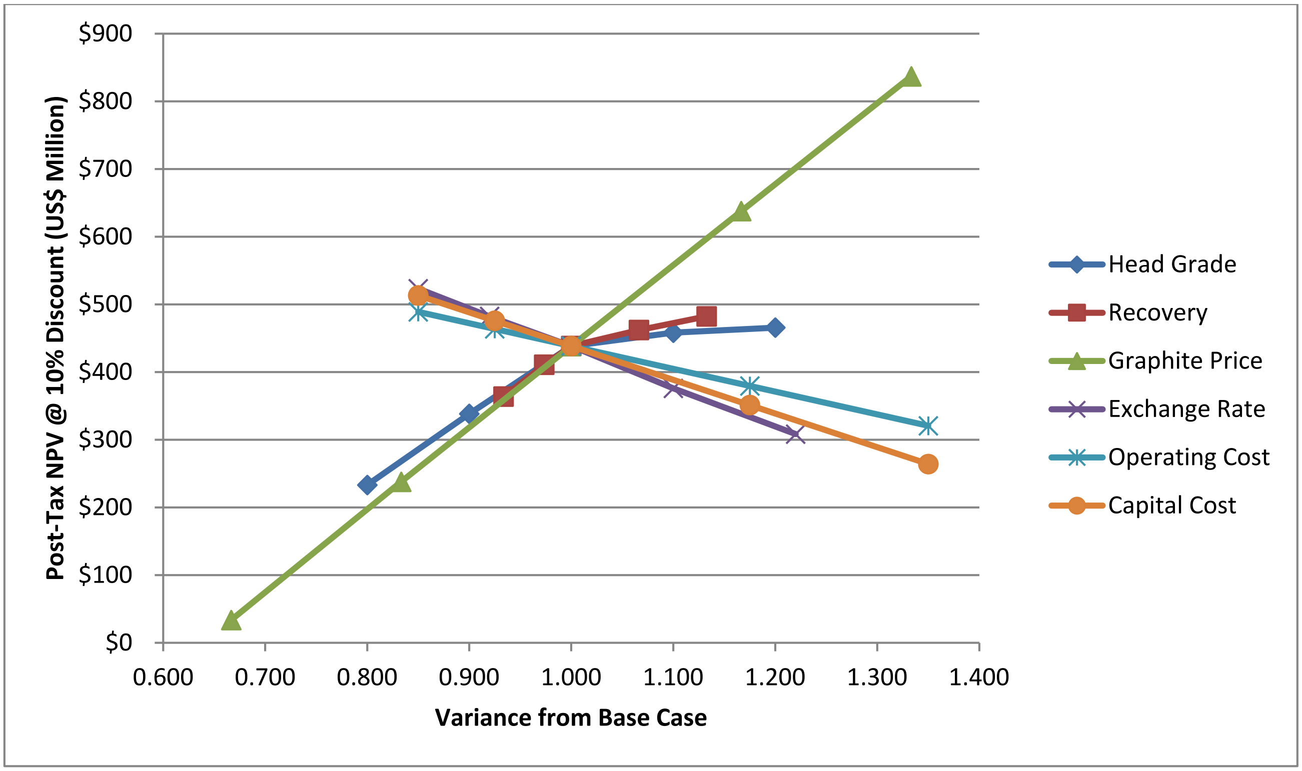


TABLE 1-5 SUMMARY OF SENSITIVITY ANALYSIS
Zenyatta Ventures Ltd. – Albany Project

Description	Units	Low Case	Mid-Low Case	Base Case	Mid-High Case	High Case
Head Grade	%	3.24	3.64	4.05	4.45	4.86
Overall Recovery	%	70.4	73.4	75.4	80.4	85.4
Graphite Price	US$ / t	5,000	6,250	7,500	8,750	10,000
Exchange Rate	US$ / C$	0.70	0.75	0.82	0.90	1.00
Operating Costs	US$ / t	52.67	57.32	61.96	72.81	83.65
Capital Cost	US$ million	597	650	703	826	949
Adjustment Factor						
Head Grade	%	-20	-10	NA	+10	+20
Overall Recovery	%	-5	-2	NA	+5	+10
Graphite Price	%	-33	-17	NA	+17	+33
Exchange Rate	%	-15	-8	NA	+10	+22
Operating Costs	%	-15	-7.5	NA	+17.5	+35
Capital Cost	%	-15	-7.5	NA	+17.5	+35
Post-Tax NPV @ 10%						
Head Grade	US$ million	233.2	338.2	438.4	458.2	465.7
Overall Recovery	US$ million	363.8	410.7	438.4	462.1	482.3
Graphite Price	US$ million	33.6	237.8	438.4	637.7	836.8
Exchange Rate	US$ million	523.2	482.2	438.4	375.9	308.4
Operating Costs	US$ million	488.9	463.7	438.4	379.5	320.6
Capital Cost	US$ million	513.2	475.8	438.4	351.2	264.1

As shown in Figure 1-1, the Project cash flow is equally and most sensitive to the realized price of graphite, the head grade, and the overall process recovery. However, head grade and overall process recovery variations above the Base Case have almost no impact on the post-tax NPV as sales of graphite were capped at 30,000 tpa. Exchange rate, capital costs, and operating costs have lesser and almost equal impacts on the Project.

TAXES AND DEPRECIATION

Taxes and depreciation were applied following the guidelines of *"A Guide to Canadian Mining Taxation*", published by KPMG Canada. Depreciation was calculated based on examining the different capital expenditures made over the life of the Project. Capital costs were assigned to one of:

- Canadian Exploration Expense (CEE)
- Canadian Development Expense (CDE)
- Capital Cost Allowance (CCA)

CEE includes exploration expenses and pre-production mine development, however, it excludes the cost of depreciable property such as equipment and machinery. Zenyatta has an opening CEE balance of US$16.4 million that is applicable to the Project. Up to 100% of the CEE balance can be applied against income in any given year.

CDE includes both the costs to acquire a mining property and the capital costs incurred after a mine has come into production. Similar to CEE, CDE excludes the costs of depreciable property such as equipment and machinery. Zenyatta has an opening CDE balance of US$1.1 million that is applicable to the Project. Up to 30% of the CDE balance can be applied against income in any given year.

CCA covers all depreciable property, including equipment, machinery, and buildings. Zenyatta does not have an opening balance of CCA credits. All capital spending allocated to CCA was counted as Class 41 assets under applicable Canadian tax codes. Class 41 assets can be depreciated at a rate of up to 25% of the balance per year.

Federal and provincial taxes were then applied to remaining operating income after the previously discussed deductions were applied. Federal and provincial taxes of 15% and 11%, respectively, were applied to the Project. Total taxes paid over the life of the Project amount to US$642 million.

TECHNICAL SUMMARY

PROPERTY DESCRIPTION AND LOCATION

Zenyatta originally held a group of claim blocks (the Property) located in a large area of twenty townships north of Lake Superior and west of James Bay, Canada, within the Porcupine Mining District of northern Ontario, Canada. The claim blocks were originally staked under an agreement between Cliffs Natural Resources Exploration Canada Inc. (CNRECI), an affiliate of Cliffs Natural Resources Inc. (Cliffs), and Eveleigh Geological Consulting Inc. (EGC) to explore for copper-nickel-platinum group metal (PGM) mineralization. The claim blocks were all located north of the Trans-Canada Highway (Highway 11). The Town of Hearst is situated approximately 86 km to the east of the southernmost claim block, 4B. The claim blocks were unpatented, non-contiguous and consisted of seven groups of claims containing 279 claims and 4,273 claim units, totalling 683.68 km^2, or 68,368 ha.

This Technical Report covers a group of claims known as Claim Block 4F, which contains the Albany graphite deposit and is 100% owned by Zenyatta. Claim Block 4F has a total of 61 claims and 826 claim units, for a total area of 13,216 ha, and is subject to two NSR royalties as described in the following subsection. Most claims making up Claim Block 4F are located in the Pitopiko River Area (G-1706), with the westernmost claims located in the Feagan Lake Area (G-1691).

All claims are in good standing until 2016; claim P4255105 which hosts the graphite deposit has a 2021 due date.

ROYALTIES, HISTORY OF OWNERSHIP, AND AGREEMENT WITH CLIFFS

In November 2012, Zenyatta reached an agreement with Cliffs and acquired 100% ownership of Claim Block 4F. Pursuant to the terms of the transaction, Zenyatta and Cliffs agreed to the following with respect to Claim Block 4F:

a. Zenyatta will issue to Cliffs (or its designated affiliate) a total of 1,250,000 Zenyatta shares as follows: (i) 500,000 shares upon signing the agreement (completed); (ii) 250,000 shares to be issued upon completion of a Pre-Feasibility Study; and (iii) 500,000 shares to be issued upon completion of a Feasibility Study; and

b. Zenyatta will grant Cliffs an NSR royalty of 0.75% on Claim Block 4F, of which 0.5% can be purchased at any time for C$500,000.

There is an additional 2% NSR royalty on Claim Block 4F that was granted to EGC, of which 1.0% can be purchased at any time for C$1,000,000. This royalty was part of the original 2009 Project Agreement between CNRECI and EGC, which subsequently became a part of the 2010 Amended Albany Option and Joint Venture Agreement between Zenyatta, Cliffs, CNRECI, and EGC.

FIRST NATION AGREEMENT

The Project claim blocks and more particularly the Claim Block 4F Property are located in Constance Lake First Nations' (CLFN) Traditional Territory. On July 18, 2012, Zenyatta and CLFN announced that they had signed an Exploration Agreement for a mutually beneficial and co-operative relationship regarding exploration and pre-feasibility activities on the Project. Among other things, CLFN will participate in an implementation committee and receive, along with certain other First Nation communities, preferential opportunities for employment and contracting. Zenyatta also agreed to contribute to a social fund for the benefit of CLFN children, youth, and elders, which was completed in 2012 and 2013.

EXISTING INFRASTRUCTURE

There is currently no permanent infrastructure on the Property. An all-weather logging road runs within approximately five kilometres of the graphite deposit – access from that point is via winter trail. The Project is near the communities of Constance Lake First Nation and Hearst. For private charter flights, the nearest airport is in Hearst, approximately one hour away by road. For regularly scheduled commercial flights, the Timmins airport is approximately four hours away by road.

A power transmission line and a natural gas pipeline run along the Trans-Canada Highway, 30 km south of the Project. An active rail line is located 70 km away via road, while the abandoned Ontario Northland Railway passes to the south within 26 km.

HISTORY

The Project was staked by CNRECI during the late summer and fall of 2009, followed by additional staking in the winter and spring of 2010. The Project claims cover sections of ground that are reported to have been explored by eight exploration companies, exploring for commodities other than graphite: Nagagami River Prospecting Syndicate, Algoma Ore Properties Ltd. (Algoma), Satellite Metal Mines Limited, Keevil Mining, Cedam Limited, Shell Canada Explorations Limited (Shell Canada), East-West Resource Corporation, and Gowest Amalgamated Resources Limited. GTA Resources and Mining Inc. holds a group of claims adjacent to and south of Claim Block 4F.

The majority of the Project claim blocks have not been previously explored.

Limited historical exploration within Claim Block 4F included mostly geophysical surveys and drilling. Airborne magnetic and electromagnetic (EM) surveys identified a number of magnetic anomalies and electromagnetic conductors, verified by ground surveys and drilling. A total of three drill holes were completed at the Property by previous owners Algoma and Shell Canada, which confirmed the results of the geophysical surveys, however, did not intersect any mineralization. Algoma concluded that mineralization could possibly be associated with other parts of the structure and recommended that the Property be referred to other companies interested in intrusive structures.

There are no historical mineral resource estimates known for the Property.

GEOLOGY AND MINERALIZATION

The Claim Block 4F area is covered by a layer of overburden averaging 44 m, and there are no surface exposures of bedrock. Consequently, no surface geological mapping has been reported for the area and interpretation of the Precambrian geology is based mainly on available re-processed aeromagnetic data and limited drill hole information. The results provide a general framework of interpreted supracrustal belts, plutonic subdivisions, major faults, and Proterozoic mafic dykes.

The Albany graphite deposit is hosted within gneissic to unfoliated syenite, granite, diorite, and monzonite of the Albany Alkalic Complex. The rocks of the complex are cross-cut by younger dykes, ranging from felsic to mafic in composition. The Precambrian basement rocks are overlain with Paleozoic limestone and are overprinted by graphite near the margins of the graphite breccia pipes.

Preliminary petrography indicates that the graphite-hosting breccias range in composition from diorite to granite, and are generally described as “syenite”. Graphite occurs both in the matrix, as disseminated crystals, clotted to radiating crystal aggregates and veins and along crystal boundaries, and as small veins within the breccia fragments. In addition to graphite, the matrix consists primarily of quartz, alkali feldspar, and plagioclase feldspar with minor phlogopite and amphibole and trace amounts of pyrite-pyrrhotite and magnetite.

EXPLORATION STATUS

Zenyatta commenced exploration on the claim blocks in 2010. Geotech airborne electromagnetic (EM) surveys identified 22 targets for follow-up modelling and drill testing, two (Victor and Uniform) situated on Claim Block 4F. Drilling at the Uniform target led to the discovery of the Albany graphite deposit.

In 2013, a Crone surface time-domain EM (TDEM) survey was conducted on the Property targeting the drill-confirmed East and West graphitic breccia pipes that were initially identified in the 2010 airborne survey. The TDEM ground survey appears to have outlined the lateral extent of the two graphite breccia pipes, although the boundary of the model is considered roughly approximate.

As of June 1, 2015, the effective date of the current Mineral Resource estimate, Zenyatta had drilled 63 holes totalling 26,011 m in the deposit area, of which 60 were used to estimate resources.

MINERAL RESOURCES

RPA estimated Mineral Resources for the Albany graphite deposit (Table 1-6) with an effective date of June 1, 2015. The Mineral Resource estimate is based on a potential combined open pit and underground mining scenario. Only the open pit portion was considered in the PEA.

TABLE 1-6 MINERAL RESOURCE ESTIMATE – JUNE 1, 2015
Zenyatta Ventures Ltd. – Albany Project

	Cut-off Grade (% Cg)	Tonnage (Mt)	Grade (% Cg)	Contained Graphitic Carbon (t Cg)
OP				
Indicated	0.9	24.3	3.98	968,000
Inferred	0.9	5.4	2.58	138,000
UG				
Indicated	-	-	-	-
Inferred	1.5	11.5	2.67	307,000
Total Indicated	**Variable**	**24.3**	**3.98**	**968,000**
Total Inferred	**Variable**	**16.9**	**2.64**	**445,000**

Notes:
1. CIM definitions were followed for Mineral Resources.
2. Cg – graphitic carbon.
3. Mineral Resources are estimated using a long-term price of US$7,500 per tonne Cg, and an exchange rate of US$0.82 = C$1.00.
4. Bulk density is 2.6 t/m^3 in the pipes and 2.65 t/m^3 in the halo of the East Pipe.
5. OP Mineral Resources are constrained by a pit-shell generated in Whittle software.
6. UG Mineral Resources are constrained by a nominal 1.5% Cg wireframe, which includes some material below cut-off to preserve continuity.
7. Numbers may not add due to rounding.

Mineral Reserves have not yet been estimated for the Albany graphite deposit.

MINING METHOD

RPA investigated the potential for open pit mining of the Indicated and Inferred Mineral Resources, using graphite prices and saleable purified product quantities appropriate for a PEA. Open pit mining was evaluated with run-of-mine (ROM) material being processed at a rate of 982,500 tpa in flotation and purification plants on site, producing approximately 30,000 tonnes of purified graphite product at an average grade of 99.94% Cg. Infrastructure requirements, for road access, power, natural gas, and for accommodation facilities were also considered. Environmental considerations include the impact of the pit, waste rock dump, overburden pile, and tailings storage.

The targeted production rate enables the open pit option to be evaluated with a year-round owner operated approach. The ROM material would be transported directly to the crusher or would occasionally be stockpiled and re-handled.

Mining of mineralized material and waste is proposed to be carried out by the owner, with contractor assistance to balance mining equipment requirements over the life of the operation. The overburden stripping will be exclusively done by a contractor with a dedicated mining fleet (larger equipment) given the total volume to be excavated and the higher production rate required.

The combination of owner-operated mining and contractor mining will be carried out using conventional open pit methods consisting of the following activities:

- Drilling performed by conventional production drills.
- Blasting using ANFO and a down-hole delay initiation system.
- Loading and hauling operations performed with hydraulic shovels, front-end loaders, and rigid frame haulage trucks.

The production equipment will be supported by bulldozers, a grader, and a water truck.

MINERAL PROCESSING

Development testwork that forms the basis of the PEA conceptual flowsheet and design was carried out at SGS Canada Inc. (SGS) in Lakefield, Ontario. The testwork programs used representative mineralized samples from the Albany graphite deposit.

The Mineral Resources for the Project will be mined and beneficiated to recover a flotation concentrate, which will be purified to a graphite product at an onsite processing facility.

The primary steps in beneficiation include crushing, grinding, and concentration by flotation. The primary steps in purification include alkaline (NaOH) treatment (one caustic leaching stage on each side of a low temperature baking (350°C) stage, followed by a mild hydrochloric acid

(HCl) leach to produce a purified graphite product. The graphite product will be filtered, washed, dried, and bagged for sale and transportation to market.

The crushing, grinding, flotation, and purification processing facility is designed to operate for 350 days per year at a design throughput of 983,000 tpa for the first 22 years of the mine life. The average design throughput of the processing facility is 270 tpd of flotation concentrate.

The average graphite purity and recovery achieved in various stages of metallurgical testing are presented in Table 1-7. This information was used for PEA design and economic analysis.

TABLE 1-7 GRAPHITE PURITY AND RECOVERY
Zenyatta Ventures Ltd. – Albany Project

	Flotation Overall	Stage 1 Leach	Stage 2 Leach	Stage 3 Leach	Purification Overall	Process Overall
Purity, % Cg	88.6	97.96	99.27	99.94	99.94	99.94
% Recovery	84.54	91.43	90.18	99.90	89.13	75.40

PROJECT INFRASTRUCTURE

Project infrastructure consists of the following:

- Establishing a 37 km road access to the Trans-Canada Highway, by upgrading existing roads and building a short length of new road.
- Power supply by connection to the grid, a distance of 47 km.
- Connection to a natural gas pipeline, 37 km away.
- Multiple surface buildings will be constructed for the Project, including a maintenance shop, permanent camp, process building, dry facility, warehousing, and administration building.
- Allowances were made for miscellaneous services such as a diesel fuel storage and pumping system, a site-wide fire protection system, sanitary waste disposal system, and potable water system.
- A tailings facility will be constructed to accommodate the estimated 10 million m^3 of tailings generated over the LOM.
- Separate waste rock and overburden dumps will be built adjacent to the open pit. The waste dump and overburden dump will have estimated capacities of 85 Mt and 58 Mt, respectively.

HIGH-PURITY GRAPHITE MARKET

Graphite has diverse and unique chemical, electrical, and thermal characteristics that make it suitable for use in a wide variety of commercial applications. The application of different forms of graphite is largely dependent on the purity, type, shape, and size of the particle available. Some traditional industrial applications such as steel making and refractory applications require low quality (flake and amorphous) graphite, while other new clean-tech applications like fuel cells and lithium-ion batteries (LIBs) demand high-purity graphitic material with tight specifications. Consequently, there exists a wide price spread between various forms of graphite. Zenyatta's hydrothermal (vein) type deposit has demonstrated the ability to be processed into a high-purity substance that will be competing against synthetic graphite producers for market share in areas noted in Table 1-8, below.

High-purity graphite products attract premium prices, as they are competing with the synthetic market for customers. In 2014, Zenyatta commenced a market development program to initiate validation of Albany graphite in high-purity graphite applications. Since the start of this program, Zenyatta has had detailed conversations with more than 35 graphite end-users, academic laboratories, and third party testing facilities in Europe, North America, and Asia, under confidentiality agreements.

Zenyatta has also previously reported that preliminary testing has indicated that the performance of Albany graphite is within the range of anode materials that are presently used for LIBs (Zenyatta News Release of February 12, 2015). Independent testing has also indicated that it is suitable for use in hydrogen fuel cells (Zenyatta News Release of March 9, 2015) and in powder metallurgy (PM) (Zenyatta News Release of May 19, 2015) applications. At this time, Zenyatta anticipates having a targeted market application segmentation which includes 25% to 30% in LIBs, 20% to 25% for Fuel Cell products, 25% to 30% for high-purity graphite in PM, and 15% to 30% from other applications in the table below. Zenyatta is in discussion with end-users on other types of high-purity applications that could possibly change the market segmentation.

TABLE 1-8 HIGH-PURITY GRAPHITE MARKET
Zenyatta Ventures Ltd. – Albany Project

Market Segment	Expected 2017 Market Demand (kt)	Price Range (US$/kg)	Average Price (US$/kg)
Batteries[1]	160	4 -> 20	12
Powder Metallurgy[2]	20	3 -> 12	7
Fuel Cells[3]	15	5 -> 10	8
Conductive Polymers	6	3 -> 5	4
Carbon Brushes	90	3 -> 5	4
Nuclear	30	10 -> 35	23
Lubricants[4]	80	3 -> 5	4
Super-Capacitors	2	5 -> 10	8
Graphite Artifacts	15	3 -> 10	7
Electronics	8	30 -> 40	35
Total	**426**		**8.7**

Sources and Notes:
1. Includes lithium-ion and additives for primary and secondary batteries. Source: Roskill and BCC Research
2. Source: Roskill and end-User data provided to Zenyatta market development personnel under a confidentiality agreement
3. Source: Roskill, BCC Research
4. Volume includes only high-purity (>99.0% Cg) graphite. Source: Roskill

The high-purity graphite market that Zenyatta is focusing on is forecast to need in the order of 426 ktpa by the year 2017, and grow at 4% thereafter. Based on the targeted market applications, RPA has selected US$7,500 per tonne as the base case price for this PEA, with sensitivity analysis between the ranges of US$5,000 per tonne to US$10,000 per tonne.

ENVIRONMENTAL, PERMITTING, AND SOCIAL CONSIDERATIONS

The Albany Project is located within the Hudson Bay-James Bay Lowlands, a vast wetland of peat lands where the topography is generally flat. There are many creeks flowing between peat bogs throughout the Property. The Nagagami River is a prominent local landscape feature that flows north through the Property with several meandering tributaries flowing in from the east and west, including the Pitopiko River. The general area in which the Property is situated hosts two Boreal Forest Region forest types, the Northern Clay Forest and the Central Plateau Forest. The terrestrial and aquatic habitats within this general area are home to healthy populations of fish and wildlife.

Zenyatta has undertaken some preliminary environmental studies to support its exploration program and to characterize environmental features present within its Property.

Comprehensive environmental and social baseline studies will be required as the Project advances to further the understanding of the local and regional environmental and social context for the Project, thereby contributing to the optimization of the engineering and the mitigation of potential impacts of the Project on its receiving environment. It is expected that a minimum of two field seasons will be required to complete the recommended scope of work.

The effective management of water and waste is a key consideration of a mining project. While the water balance for the Project is at an early stage of development, screening level evaluations have been undertaken and suggest that the Pitopiko River has the capacity to supply sufficient volumes of freshwater to the Project while being protective of the environment. With regard to the management of wastes, a tailings storage facility (TSF) will need to be constructed to accommodate an estimated 10 million m^3 of tailings generated over the life of the Project. Separate waste rock and overburden dumps will also be required and are currently assumed in the PEA to be constructed adjacent to the open mining pit. The waste dump and overburden dump will have estimated capacities of 85 Mt and 58 Mt, respectively.

Zenyatta has completed a preliminary environmental characterization of tailings generated by the metallurgical testwork that was conducted on the Albany graphite deposit mineralization. The purpose of the environmental test program was to assess the geochemical, acid rock drainage (ARD), and contaminant release potential associated with the tailings materials. The elemental composition of the tailings and related testwork on tailings supernatant indicates that the expected effluent from a tailings impoundment area would likely comply with applicable discharge standards without further treatment. Further testwork will need to be undertaken as the Project advances, however, at this stage of planning, it is ERM's opinion that tailings are not likely to pose a significant risk to the environment provided generally accepted management practices are implemented. Further characterization of the overburden and waste rock that will be generated over the life of the Project is also required.

Notwithstanding the time required to collect sufficient multi-season environmental and social baseline data, it is expected that an estimated approximately 18 months will be required to develop and submit the Class Environmental Assessment reports and permit applications and to be granted approvals to enable construction. A federal environmental assessment is not likely to be required and this has the potential to positively influence the overall regulatory permitting timeline for the Albany Project in comparison to other mining projects in Ontario.

The Town of Hearst, the District of Cochrane, and Constance Lake First Nation represent the parties that are located in closest proximity to the Project. Zenyatta has engaged with these and other potentially interested parties in the course of its exploration activities and has developed a working relationship with the Constance Lake First Nation which is documented in an executed Exploration Agreement. The Exploration Agreement provides the basis for Zenyatta and Constance Lake First Nation to have a cooperative and mutually beneficial relationship regarding exploration related activities at the Albany Project. Continued engagement with the individuals and groups with interest in, and influence over, the Project will enable Zenyatta to meet legal obligations and address potential stakeholder concerns.

CAPITAL AND OPERATING COST ESTIMATES

Capital costs have been estimated for the Project based on comparable projects, subscription-based cost services, and information within RPA's project database. Broadly, capital costs are divided among four areas: mining, processing, general infrastructure, and project indirect expenses. The breakdown of capital costs between mining, processing, and infrastructure is shown in Table 1-9.

TABLE 1-9 SUMMARY OF CAPITAL COSTS
Zenyatta Ventures Ltd. – Albany Project

Description	Units	Cost
Mining	US$ millions	81.2
Processing	US$ millions	111.5
Infrastructure	US$ millions	70.3
Subtotal Direct Costs	**US$ millions**	**262.9**
Indirect Costs	US$ millions	68.7
Subtotal Direct and Indirect	US$ millions	331.6
Contingency	US$ millions	79.8
Initial Capital Cost	**US$ millions**	**411.5**
Sustaining, Closure, and Misc.	US$ millions	291.4
Total	**US$ millions**	**702.9**

Further, capital is divided between initial expenditures incurred to bring the Project into production, and sustaining capital that is incurred over the life of mine.

Operating costs have been estimated for the Project and allocated to mining, process, and general and administration (G&A). Operating costs are summarized in Table 1-10.

TABLE 1-10 SUMMARY OF OPERATING COSTS
Zenyatta Ventures Ltd. – Albany Project

Description	LOM Cost US$ millions	Unit Cost US$/t processed	Unit Cost US$/t final product
Mining	237.4	11.34	375
Process – Beneficiation	286.7	13.70	452
Process – Purification	557.6	26.64	880
G&A	215.0	10.28	339
Total	**1,296.7**	**61.96**	**2,046**

2 INTRODUCTION

Roscoe Postle Associates Inc. (RPA) and Environmental Resources Management Consultants Canada Limited (ERM) were retained by Zenyatta Ventures Ltd. (Zenyatta) to prepare a Preliminary Economic Assessment (PEA) on the Albany Graphite Project (the Project), located in northern Ontario, Canada. The purpose of this report is to summarize the results of the PEA. This Technical Report conforms to NI 43-101 Standards of Disclosure for Mineral Projects.

Zenyatta is a Thunder Bay, Ontario based mineral development company currently developing a hydrothermal graphite deposit on the Project. The Project can potentially produce 30,000 tonnes per year (tpa) of 99.94% purity graphite, for sale in the premium-priced high-purity graphite market. The PEA is based on open pit mining and processing of approximately 2,800 tonnes per day (tpd) via flotation, followed by purification. The PEA projected mine life is 22 years, with good potential for more via pit expansions, processing of low-grade stockpiles, or underground mining. The Project is located west of the communities of Constance Lake First Nation and Hearst, Ontario, within 30 km of the Trans-Canada Highway, close to established infrastructure including roads, rail, power transmission lines, and a natural gas pipeline.

This report is considered by RPA to meet the requirements of a Preliminary Economic Assessment as defined in Canadian NI 43-101 regulations. The economic analysis contained in this report is preliminary in nature and based on Mineral Resources that are not Mineral Reserves, and therefore do not have demonstrated economic viability. There is no certainty that economic forecasts on which this PEA is based will be realized.

SOURCES OF INFORMATION

A site visit was carried out by Mr. David Ross, P.Geo., RPA Principal Geologist, on July 15 to 18, 2013.

Discussions were held with personnel from Zenyatta:

- Mr. Aubrey Eveleigh, P.Geo., President & CEO
- Mr. Peter Wood, P.Eng., P.Geo., VP Exploration
- Dr. Bharat Chahar, Ph.D., P.E., VP Market Development
- Mr. Barry Allan, B.Sc., MBA, Director
- Mr. Kenneth Stowe, B.Sc., M.Sc., Director

- Mr. Don Hains, P.Geo., MBA, Advisory Board Member
- Dr. John Morganti, Ph.D., P.Geo., Advisory Board Member

Mr. Jason J. Cox, P.Eng., RPA Principal Mining Engineer, is responsible for Sections 2, 18, 19, 22, 23, and 24, and shares responsibility with his co-authors for Sections 1, 3, 21, 25, 26, and 27 of this report. Mr. Ross is responsible for Sections 4 through 12, and 14, and shares responsibility with his co-authors for Sections 1, 3, 25, 26, and 27 of this report. Mr. Marc Lavigne, ing., RPA Principal Mining Engineer, is responsible for Sections 15 and 16, and shares responsibility with his co-authors for Sections 1, 3, 21, 25, 26, and 27 of this report. Ms. Brenna Scholey, P.Eng., RPA Principal Metallurgist, is responsible for Sections 13 and 17, and shares responsibility with her co-authors for Sections 1, 3, 21, 25, 26, and 27 of this report. Mr. Derek Christopher Chubb, P.Eng., Partner, ERM, is responsible for Section 20, and shares responsibility with his co-authors for Sections 1, 3, 25, 26, and 27 of this report.

Recommendations for pit slope angles were provided by BGC Engineering. Metallurgical testwork and process development was carried out by SGS Canada Inc. A report on the high-purity graphite market by Roskill Information Services was one source of information on marketing used in this PEA.

The documentation reviewed, and other sources of information, are listed at the end of this report in Section 27 References.

LIST OF ABBREVIATIONS

Units of measurement used in this report conform to the metric system. All currency in this report are expressed in US dollars (US$) unless otherwise noted.

A	annum	kWh	kilowatt-hour
A	ampere	L	litre
bbl	barrels	lb	pound
btu	British thermal units	L/s	litres per second
°C	degree Celsius	m	metre
C$	Canadian dollars	M	mega (million); molar
cal	calorie	m^2	square metre
cfm	cubic feet per minute	m^3	cubic metre
cm	centimetre	µ	micron
cm^2	square centimetre	MASL	metres above sea level
d	day	µg	microgram
dia	diameter	m^3/h	cubic metres per hour
dmt	dry metric tonne	mi	mile
dwt	dead-weight ton	min	minute
°F	degree Fahrenheit	µm	micrometre
ft	foot	mm	millimetre
ft^2	square foot	mph	miles per hour
ft^3	cubic foot	MVA	megavolt-amperes
ft/s	foot per second	MW	megawatt
g	gram	MWh	megawatt-hour
G	giga (billion)	oz	Troy ounce (31.1035g)
Gal	Imperial gallon	oz/st, opt	ounce per short ton
g/L	gram per litre	ppb	part per billion
Gpm	Imperial gallons per minute	ppm	part per million
g/t	gram per tonne	psia	pound per square inch absolute
gr/ft^3	grain per cubic foot	psig	pound per square inch gauge
gr/m^3	grain per cubic metre	RL	relative elevation
ha	hectare	s	second
hp	horsepower	st	short ton
hr	hour	stpa	short ton per year
Hz	hertz	stpd	short ton per day
in.	inch	t	metric tonne
in^2	square inch	tpa	metric tonne per year
J	joule	tpd	metric tonne per day
k	kilo (thousand)	US$	United States dollar
kcal	kilocalorie	USg	United States gallon
kg	kilogram	USgpm	US gallon per minute
km	kilometre	V	volt
km^2	square kilometre	W	watt
km/h	kilometre per hour	wmt	wet metric tonne
kPa	kilopascal	wt%	weight percent
kVA	kilovolt-amperes	yd^3	cubic yard
kW	kilowatt	yr	year

3 RELIANCE ON OTHER EXPERTS

This report has been prepared by Roscoe Postle Associates Inc. (RPA) and Environmental Resources Management Consultants Canada Limited (ERM) for Zenyatta Ventures Ltd. (Zenyatta). The information, conclusions, opinions, and estimates contained herein are based on:

- Information available to RPA and ERM at the time of preparation of this report,
- Assumptions, conditions, and qualifications as set forth in this report, and
- Data, reports, and other information supplied by Zenyatta and other third party sources.

For the purpose of this report, RPA has relied on ownership information provided by Zenyatta. RPA has not researched property title or mineral rights for the Albany Graphite Project and expresses no opinion as to the ownership status of the property.

RPA has relied on Zenyatta for guidance on applicable taxes, royalties, and other government levies or interests, applicable to revenue or income from the Project.

RPA has relied on Zenyatta for information on markets and pricing for high-purity graphite, sourced from independent reports provide by Roskill and BCC Research, and from end-user data provided to Zenyatta under confidentiality agreements.

Except for the purposes legislated under provincial securities laws, any use of this report by any third party is at that party's sole risk.

4 PROPERTY DESCRIPTION AND LOCATION

Zenyatta originally held a group of claim blocks (the Property) located in a large area of twenty townships north of Lake Superior and west of James Bay, Canada, within the Porcupine Mining District of northern Ontario, Canada (Figure 4-1). The claim blocks were originally staked under an agreement between Cliffs Natural Resources Exploration Canada Inc. (CNRECI), an affiliate of Cliffs Natural Resources Inc. (Cliffs) and Eveleigh Geological Consulting Inc. (EGC) to explore for Cu-Ni-PGM mineralization. The claim blocks were all located north of the Trans-Canada Highway (Highway 11). The Town of Hearst is situated approximately 86 km to the east of the southernmost claim block, 4B. The claim blocks were unpatented, non-contiguous and consist of seven groups of claims containing 279 claims and 4,273 claim units, totalling 683.68 km^2, or 68,368 ha. The entire group of 279 claims was referred to by Zenyatta as the "Albany Project".

This Technical Report covers a group of claims known as Claim Block 4F, which contains the Albany graphite deposit and is 100% owned by Zenyatta (Figures 4-2 and 4-3). Claim Block 4F is subject to two net smelter return (NSR) royalties as described later in this section.

Most claims making up Claim Block 4F are located in the Pitopiko River Area (G-1706), with the westernmost claims located in the Feagan Lake Area (G-1691). The claims are unpatented and contiguous, and are situated within NTS blocks 42K/01, 02 and 42F/15, 16 and centred on 682,400 mE and 5,544,514 mN, UTM Zone 16, NAD 83.

All of Claim Block 4F was staked during the months of March and May of 2010. Presently, Claim Block 4F has a total of 61 claims and 826 claim units, for a total of 13,216 ha. The yearly work required to keep the total claims in good standing amounts to $330,400. A list of claims making up Claim Block 4F is shown in Table 4-1. All claims are in good standing until 2016; claim P4255105 which hosts the graphite deposit has a 2021 due date.

RPA and ERM are not aware of any environmental liabilities on the Property. Zenyatta has advised that all required access agreements, consents, and permits to conduct the work completed to date on the Property are in hand. RPA and ERM are not aware of any significant factors and risks outside of normal approvals processes that may affect continued access, title, or the right or ability to perform the proposed pre-feasibility stage work program on the Property.

TABLE 4-1 LIST OF CLAIMS IN BLOCK 4F
Zenyatta Ventures Ltd. – Albany Project

Township/Area	Claim Number	Holders	No. of Units	Area (ha)	Recorded Date	Claim Due Date	Status	Percent Option
FEAGAN LAKE	4257701	Zenyatta	16	256	10-May-10	28-Feb-16	A	100%
FEAGAN LAKE	4257702	Zenyatta	16	256	10-May-10	28-Feb-16	A	100%
FEAGAN LAKE	4257703	Zenyatta	16	256	10-May-10	28-Feb-16	A	100%
FEAGAN LAKE	4257704	Zenyatta	16	256	10-May-10	28-Feb-16	A	100%
FEAGAN LAKE	4257705	Zenyatta	16	256	10-May-10	28-Feb-16	A	100%
FEAGAN LAKE	4257706	Zenyatta	16	256	10-May-10	28-Feb-16	A	100%
FEAGAN LAKE	4257707	Zenyatta	12	192	10-May-10	28-Feb-17	A	100%
FEAGAN LAKE	4257708	Zenyatta	12	192	10-May-10	28-Feb-17	A	100%
FEAGAN LAKE	4257709	Zenyatta	16	256	10-May-10	28-Feb-17	A	100%
FEAGAN LAKE	4257710	Zenyatta	16	256	10-May-10	28-Feb-16	A	100%
FEAGAN LAKE	4257711	Zenyatta	16	256	10-May-10	28-Feb-16	A	100%
FEAGAN LAKE	4257712	Zenyatta	16	256	10-May-10	28-Feb-16	A	100%
FEAGAN LAKE	4257713	Zenyatta	16	256	10-May-10	28-Feb-16	A	100%
FEAGAN LAKE	4257714	Zenyatta	16	256	10-May-10	28-Feb-16	A	100%
PITOPIKO RIVER	3002472	Zenyatta	4	64	10-May-10	28-Feb-16	A	100%
PITOPIKO RIVER	3002473	Zenyatta	4	64	10-May-10	28-Feb-16	A	100%
PITOPIKO RIVER	4248214	Zenyatta	4	64	4-Jun-10	28-Feb-17	A	100%
PITOPIKO RIVER	4255101	Zenyatta	16	256	17-Mar-10	28-Feb-16	A	100%
PITOPIKO RIVER	4255102	Zenyatta	16	256	17-Mar-10	28-Feb-16	A	100%
PITOPIKO RIVER	4255103	Zenyatta	16	256	17-Mar-10	28-Feb-17	A	100%
PITOPIKO RIVER	4255104	Zenyatta	16	256	17-Mar-10	28-Feb-17	A	100%
PITOPIKO RIVER	4255105	Zenyatta	16	256	17-Mar-10	28-Feb-21	A	100%
PITOPIKO RIVER	4255106	Zenyatta	16	256	17-Mar-10	28-Feb-17	A	100%
PITOPIKO RIVER	4255107	Zenyatta	16	256	17-Mar-10	28-Feb-17	A	100%
PITOPIKO RIVER	4255108	Zenyatta	16	256	17-Mar-10	28-Feb-16	A	100%
PITOPIKO RIVER	4255109	Zenyatta	16	256	17-Mar-10	28-Feb-16	A	100%
PITOPIKO RIVER	4255110	Zenyatta	13	208	17-Mar-10	28-Feb-17	A	100%
PITOPIKO RIVER	4255111	Zenyatta	7	112	17-Mar-10	28-Feb-16	A	100%
PITOPIKO RIVER	4255112	Zenyatta	10	160	17-Mar-10	28-Feb-16	A	100%
PITOPIKO RIVER	4257715	Zenyatta	16	256	10-May-10	28-Feb-16	A	100%
PITOPIKO RIVER	4257716	Zenyatta	16	256	10-May-10	28-Feb-17	A	100%
PITOPIKO RIVER	4257717	Zenyatta	16	256	10-May-10	28-Feb-17	A	100%
PITOPIKO RIVER	4257718	Zenyatta	16	256	10-May-10	28-Feb-17	A	100%
PITOPIKO RIVER	4257719	Zenyatta	16	256	10-May-10	28-Feb-17	A	100%
PITOPIKO RIVER	4257720	Zenyatta	16	256	10-May-10	28-Feb-17	A	100%
PITOPIKO RIVER	4257721	Zenyatta	9	144	10-May-10	28-Feb-17	A	100%
PITOPIKO RIVER	4257722	Zenyatta	4	64	10-May-10	28-Feb-17	A	100%
PITOPIKO RIVER	4257723	Zenyatta	16	256	10-May-10	28-Feb-17	A	100%
PITOPIKO RIVER	4257724	Zenyatta	16	256	10-May-10	28-Feb-17	A	100%
PITOPIKO RIVER	4257725	Zenyatta	16	256	10-May-10	28-Feb-17	A	100%
PITOPIKO RIVER	4257726	Zenyatta	11	176	10-May-10	28-Feb-17	A	100%
PITOPIKO RIVER	4257727	Zenyatta	9	144	10-May-10	28-Feb-17	A	100%
PITOPIKO RIVER	4257728	Zenyatta	6	96	10-May-10	28-Feb-17	A	100%
PITOPIKO RIVER	4257730	Zenyatta	14	224	10-May-10	28-Feb-16	A	100%
PITOPIKO RIVER	4257731	Zenyatta	12	192	10-May-10	28-Feb-16	A	100%

Township/Area	Claim Number	Holders	No. of Units	Area (ha)	Recorded Date	Claim Due Date	Status	Percent Option
PITOPIKO RIVER	4257732	Zenyatta	12	192	10-May-10	28-Feb-16	A	100%
PITOPIKO RIVER	4257733	Zenyatta	14	224	10-May-10	28-Feb-16	A	100%
PITOPIKO RIVER	4257734	Zenyatta	4	64	10-May-10	28-Feb-17	A	100%
PITOPIKO RIVER	4257735	Zenyatta	7	112	10-May-10	28-Feb-16	A	100%
PITOPIKO RIVER	4257736	Zenyatta	16	256	10-May-10	28-Feb-16	A	100%
PITOPIKO RIVER	4257737	Zenyatta	16	256	10-May-10	28-Feb-16	A	100%
PITOPIKO RIVER	4257738	Zenyatta	16	256	10-May-10	28-Feb-16	A	100%
PITOPIKO RIVER	4257739	Zenyatta	16	256	10-May-10	28-Feb-16	A	100%
PITOPIKO RIVER	4257740	Zenyatta	16	256	10-May-10	28-Feb-16	A	100%
PITOPIKO RIVER	4257741	Zenyatta	16	256	10-May-10	28-Feb-16	A	100%
PITOPIKO RIVER	4257742	Zenyatta	16	256	10-May-10	28-Feb-16	A	100%
PITOPIKO RIVER	4257743	Zenyatta	16	256	10-May-10	28-Feb-16	A	100%
PITOPIKO RIVER	4257744	Zenyatta	16	256	10-May-10	28-Feb-16	A	100%
PITOPIKO RIVER	4257745	Zenyatta	16	256	10-May-10	28-Feb-16	A	100%
PITOPIKO RIVER	4257746	Zenyatta	16	256	10-May-10	28-Feb-16	A	100%
PITOPIKO RIVER	4257747	Zenyatta	2	32	10-May-10	28-Feb-16	A	100%

ROYALTIES, HISTORY OF OWNERSHIP, AND AGREEMENT WITH CLIFFS

During the years 2010 to 2012, Claim Block 4F was part of a larger group of 28 claim blocks totalling 495 claims, 7,757 claim units, and 124,112 ha. At the time of Zenyatta's Initial Public Offering (IPO) in December 2010, the Albany claims were 25% owned by Zenyatta and 75% owned by CNRECI, as defined by the 2010 Amended Albany Option and Joint Venture Agreement. The majority of the claims were staked during the late summer and fall of 2009, followed by additional staking in the winter and spring of 2010.

Most claim blocks were dropped in February 2013, except for Albany blocks 1C, 2C, 3A, 3B, 4A, 4B, and 4F. Four claims were also re-staked on Block 4E and additional seven buffer claims were also staked to the west and south. Zenyatta has subsequently allowed bocks 3A and 3B to lapse due to negative exploration results. An airborne EM target was also tested on block 4E and the single drill hole did not yield any significant mineralization. To date, Zenyatta has completed a total of 3,009 m of diamond drilling on claim blocks 3A, 3B, and 4E and has now fulfilled its obligations according to the 2012 Albany North and South Second Amended and Restated Option Agreement. Zenyatta currently owns an 80% interest in the remaining claims (other than Block 4F).

In November 2012, Zenyatta reached an agreement with CNRECI and acquired 100% ownership of Claim Block 4F. Prior to this date and according to the agreement, Zenyatta had already exercised its right and acquired an 80% interest in Claim Block 4F by having spent a total of $10 million on exploration on the larger group of Albany Project claims. After acquiring

Cliffs' remaining 20% interest in Claim Block 4F, Zenyatta now holds a 100% interest. Pursuant to the terms of the transaction, Zenyatta and Cliffs agree to the following with respect to the Claim Block 4F:

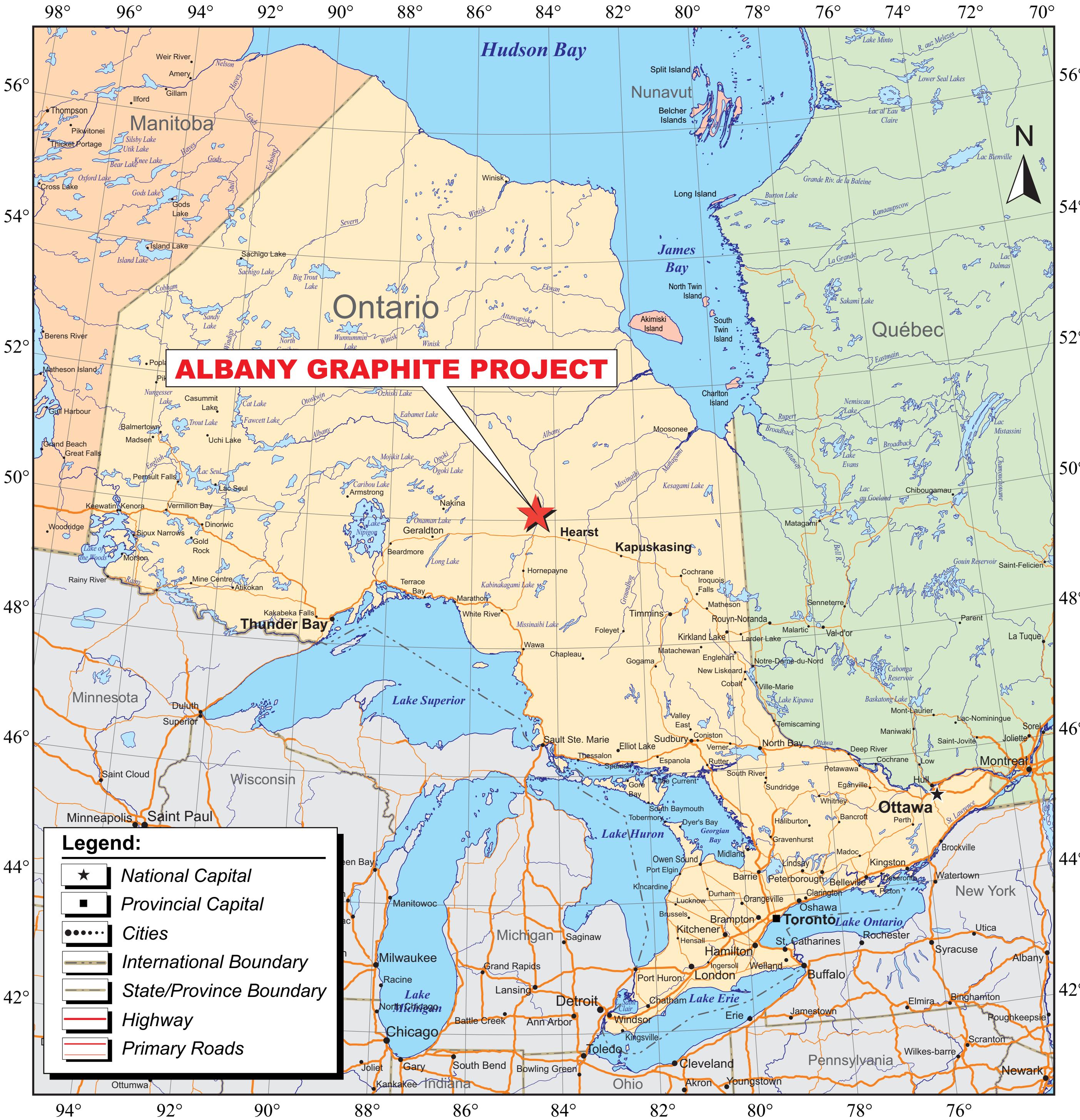
a. Zenyatta will issue to Cliffs (or its designated affiliate) a total of 1,250,000 Zenyatta shares as follows: (i) 500,000 shares upon signing the agreement (completed); (ii) 250,000 shares to be issued upon completion of a pre-feasibility study; and (iii) 500,000 shares to be issued upon completion of a feasibility study; and

b. Zenyatta will grant Cliffs an NSR royalty of 0.75% on the Claim Block 4F, of which 0.5% can be purchased at any time for C$500,000.

There is an additional underlying 2% NSR royalty on Claim Block 4F that was granted to Eveleigh Geological Consulting Inc. (EGC) of which 1.0% can be purchased at any time for C$1,000,000. This royalty was part of the original 2009 Project Agreement between CNRECI and EGC, which subsequently became a part of the 2010 Amended Albany Option and Joint Venture Agreement between Zenyatta, Cliffs, CNRECI, and EGC.

FIRST NATION AGREEMENT

The claim blocks, and more particularly Claim Block 4F, are located in Constance Lake First Nations' (CLFN) Traditional Territory. On July 18, 2012, Zenyatta and CLFN announced that they had signed an Exploration Agreement for a mutually beneficial and co-operative relationship regarding exploration and Pre-Feasibility activities on the Project. Among other things, CLFN will participate in an implementation committee and receive, along with certain other First Nation communities, preferential opportunities for employment and contracting. Zenyatta also agreed to contribute to a social fund for the benefit of CLFN children, youth, and elders, which was completed in 2012 and 2013.



0 65 130 Miles

0 65 130 Km

July 2015

Figure 4-1

Zenyatta Ventures Ltd.

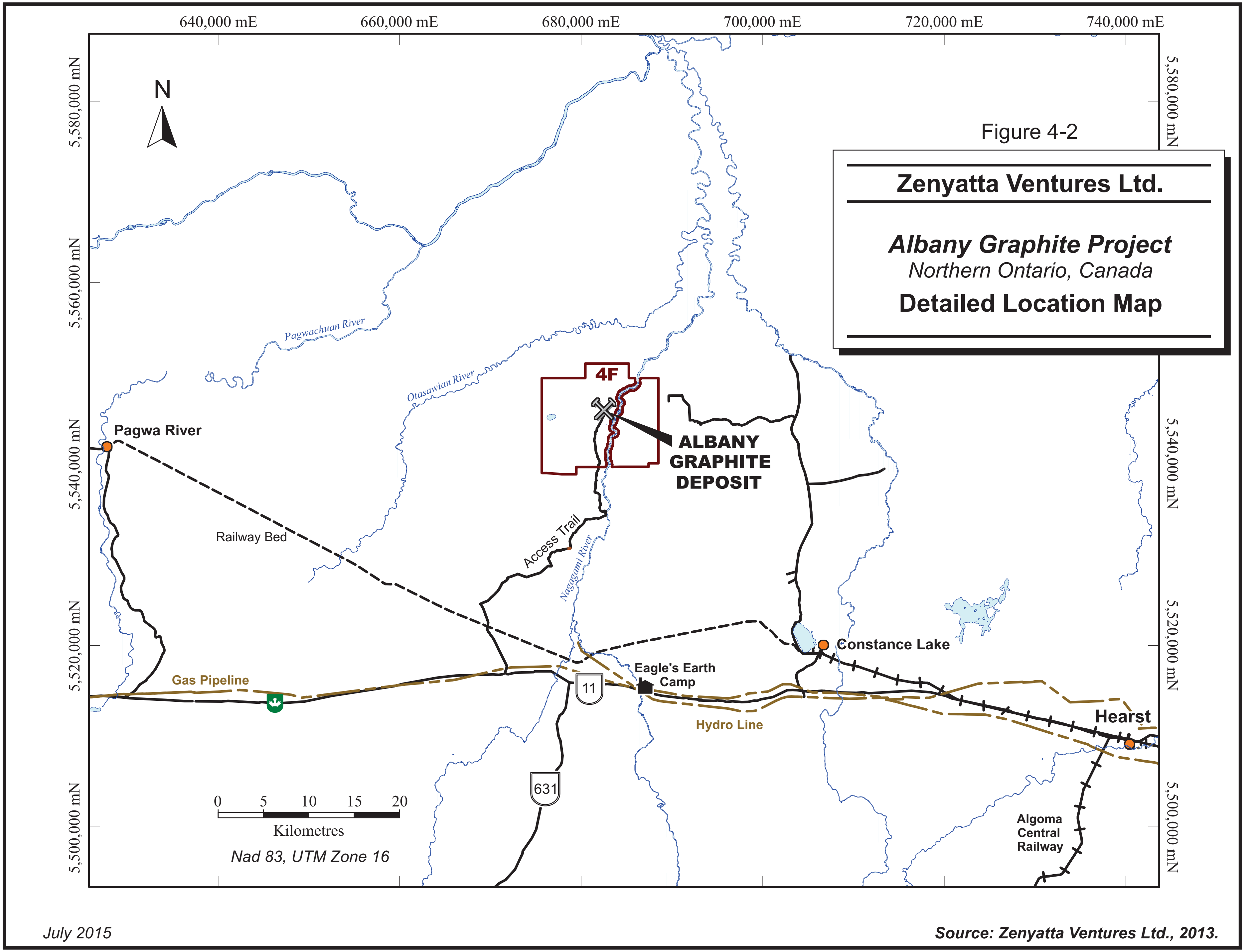
Albany Graphite Project

Porcupine Mining District

Northern Ontario, Canada

Location Map

Figure 4-2


Zenyatta Ventures Ltd.
Albany Graphite Project
Northern Ontario, Canada
Detailed Location Map
640,000 mE
660,000 mE
680,000 mE
700,000 mE
720,000 mE
740,000 mE
5,580,000 mN
5,560,000 mN
5,540,000 mN
5,520,000 mN
5,500,000 mN
N
Pagwachuan River
Otasawian River
4F
ALBANY GRAPHITE DEPOSIT
Pagwa River
Railway Bed
Access Trail
Nagagami River
Constance Lake
Eagle's Earth Camp
Gas Pipeline
11
Hydro Line
Hearst
631
Algoma Central Railway
0 5 10 15 20
Kilometres
Nad 83, UTM Zone 16
July 2015
Source: Zenyatta Ventures Ltd., 2013.

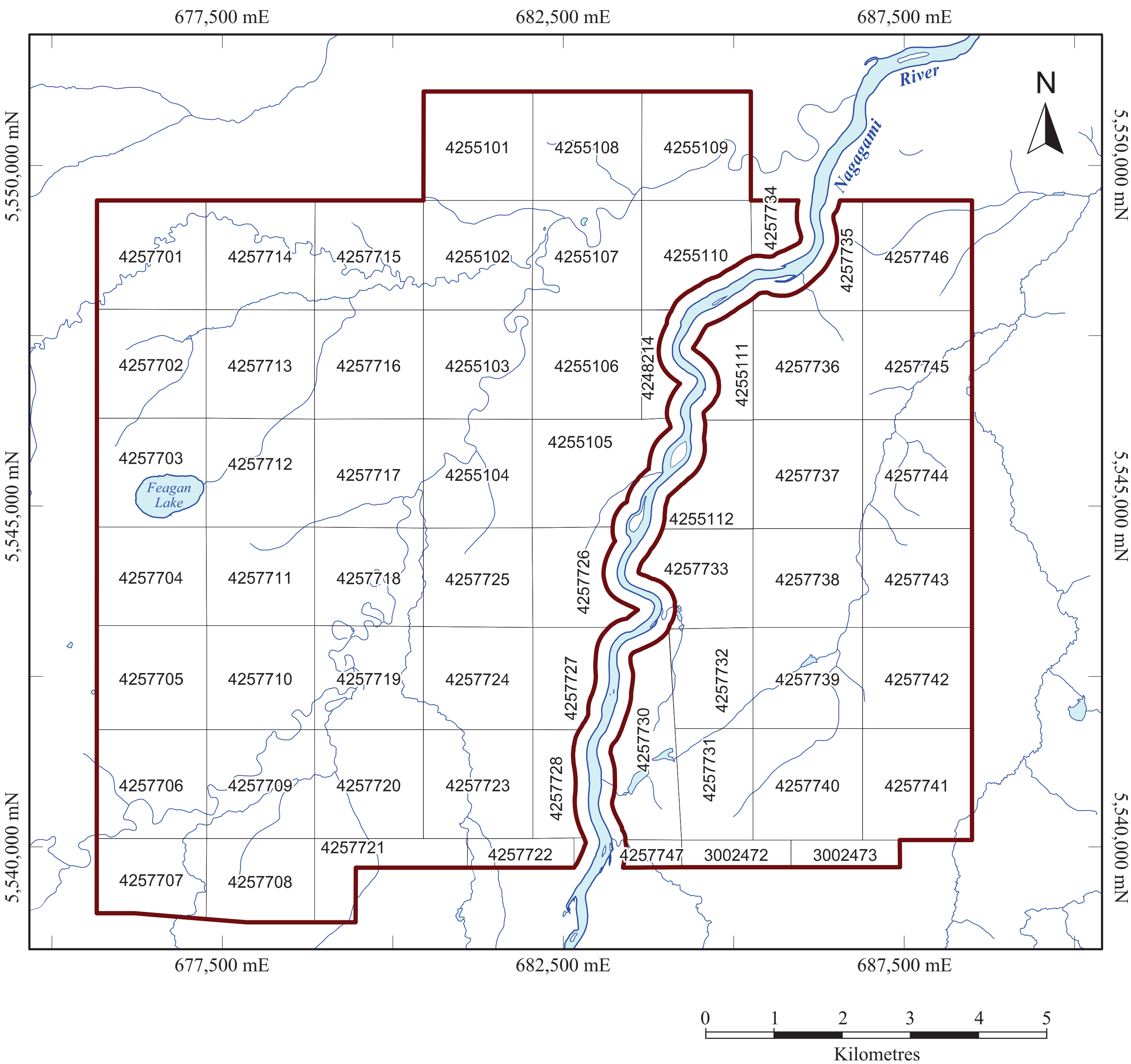


Figure 4-3

Zenyatta Ventures Ltd.

Albany Graphite Project

Northern Ontario, Canada

Map of Claim Block 4F

July 2015

Source: Zenyatta Ventures Ltd., 2014.

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

The following section is based on Carey (2012).

ACCESSIBILITY

The Property is approximately 30 km to the north of the Trans-Canada Highway (Highway 11), however, access to most of the Property was best achieved via helicopter in the summer and a trail during the winter. Helicopter access was also used for environmental reasons (i.e., to minimize damage to the forest and/or vegetation). Boat or canoe access can also be used along the Nagagami River in the central area of the Property. Old forestry logging roads reach the southeast boundary of the Property, leading to several old ATV (all-terrain vehicle) trails through previously harvested forests just east of the Nagagami River. The winter access trail joins the end of the all-weather forestry road to the drill site and it can be reached by travelling northwards up the Pitopiko Road from the Trans-Canada Highway. This was added as a safety route to be used in emergency situations.

CLIMATE

Most of the region has a continental climate with warm to hot summers (June to August; 25ºC to 35ºC) and cold winters (December to March, -10ºC to -30ºC with lows down to -45ºC). Annual precipitation ranges from 600 mm to 900 mm.

Lakes and swamps are typically frozen and suitable for diamond drilling from December to April. Exploration can take place year round with minor breaks during the spring thaw and winter freeze-up. Mining operations can take place all year round.

LOCAL RESOURCES

The Town of Hearst (population approximately 5,000), located approximately 50 km to the southeast of Claim Block 4F, has many facilities to keep an exploration camp well supplied. These include hotels, restaurants, a hospital, hardware stores, gas stations, mining supply store, and an airport. Float plane and helicopter services are also available in Hearst. Mining personnel, equipment, and supplies can also be accessed from Timmins, a major mining and exploration centre.

INFRASTRUCTURE

There is currently no permanent infrastructure on the Property. An all-weather logging road runs within approximately five kilometres of the graphite deposit – access from that point is via winter trail. The Project is near the communities of Constance Lake First Nation and Hearst. The nearest airport is in Hearst, approximately one hour by car. The Timmins airport with scheduled flights is approximately four hours away by road.

A power transmission line and a natural gas pipeline run along the Trans-Canada Highway, 30 km south of the Project. A rail line is located 70 km away.

The Property is in the early stages of the exploration and development cycle. It is considered to have sufficient area for a potential future mining operation; however, appropriate surface rights will need to be secured from the government. Sources of water, grid power, mining personnel, potential tailings storage areas, potential waste disposal areas, and potential processing plant sites are all available on or near the Property.

PHYSIOGRAPHY

The Property is located within the Hudson Bay-James Bay Lowlands, a vast wetland of peat lands, both bogs and fens, where the topography is essentially flat, low-lying, and swampy. Overburden is thick, averaging 44 m in the Claim Block 4F area with little or no outcrop exposure; Paleozoic limestone cover rocks are exposed along the banks of the Nagagami River. There are many creeks flowing between peat bogs throughout the area. The Nagagami River flows north through the Property with several meandering tributaries flowing in from the east and west. The Pitopiko River flows into the west side of the Nagagami River. Vegetation is dominated by wetlands with some areas of spruce and alder trees, and cedar swamps. Spruce and alder trees are also abundant along the banks of the Nagagami River and other smaller rivers.

6 HISTORY

PRIOR OWNERSHIP

The Albany Project consisted of 28 claim blocks and covered large amounts of ground, a majority of which were staked by CNRECI during the late summer and fall of 2009, followed by additional staking in the winter and spring of 2010. The claims cover sections of ground that are reported to have been explored by eight exploration companies: Nagagami River Prospecting Syndicate, Algoma Ore Properties Ltd., Satellite Metal Mines Limited, Keevil Mining, Cedam Limited, Shell Canada Explorations Limited, East-West Resource Corporation, and Gowest Amalgamated Resources Limited. GTA Resources and Mining Inc. has held a group of claims adjacent to and south of Claim Block 4F on which they have been exploring for gold mineralization since 2010.

The areas were initially selected by EGC for their potential to host nickel, copper, and platinum group elements (PGM) mineralization and this was based on geophysical information from Ontario Geological Survey (OGS) airborne magnetic maps, the geological interpretation (Stott, 2008) of these maps, and additional geological and geophysical data from historical exploration reports provided by Ontario Ministry of Northern Development and Mining (MNDM). Historical exploration work has been limited in this area of the James Bay Lowlands and mostly consists of geophysical surveys and diamond drill projects. The following section presents information related to prior ownership, exploration, development, and past production of Claim Block 4F, and is summarized from Geotech (2010) and Carey (2012).

EXPLORATION AND DEVELOPMENT HISTORY

The majority of the claim blocks have not been previously explored. Historical exploration on a very small number of the claims has been minor: the Archean basement terrane is covered with thick glacial till that blankets Paleozoic limestone cover rocks. There is no outcrop exposure on the claim blocks and any targeted mineralization can only be observed from drill core. Table 6-1 summarizes exploration conducted on Claim Block 4F and Table 6-2 includes detailed location information on historical drilling.

TABLE 6-1 SUMMARY OF EXPLORATION
Zenyatta Ventures Ltd. – Albany Project

Year	Company	Type of Work	Summary Result
1959	Nagagami River Prospecting Syndicate	A ground magnetic and electromagnetic (EM) survey initiated in the Feagan Lake/Pitopiko River Township area by Koulomzine and Brossard Ltd. The survey was not fully completed because of an early spring breakup.	Results showed three magnetic anomalies defining basement geology contacts and several lenticular-shaped electromagnetic conductors. It was concluded that the shape of the conductors and their occurrence in the vicinity of a diabase dyke may be indicative of sulphide lenses that could contain base metals. One coincident magnetic and EM anomaly could be caused by disseminated mineralization (Koulomzine, 1959). Four drill holes were recommended to follow up EM anomalies: no record of follow-up drilling has been found.
1961	Algoma Ore Properties Ltd.	Aeromagnetic survey flown in the Nagagami River and Pitopiko Township area.	The survey outlined a horseshoe-shaped anomaly which was ground confirmed in the same year. Led to further exploration in 1963.
1963	Algoma Ore Properties Ltd.	Airborne magnetometer survey flown in the Nagagami River area by Hunting Survey Corp.	The survey results indicated two large low intensity circular shaped anomalies (Anomalies #1 and #2), underlying the Paleozoic limestone. Interpretation suggested that the anomalies were caused by a complex syenitic to gabbroic intrusion. Anomaly #2 was reportedly near the northern boundary of Claim Block 4F and thought to potentially be associated with an alkaline and carbonatite complex, hosting columbium (Cb_2O_5) and other rare earth elements (REEs). Algoma recommended follow-up work to include a ground magnetometer survey over the anomalies and a diamond drill program (Venn, 1964).
1964-1967	Algoma Ore Properties Ltd.	Exploration in the Nagagami River area. Ground magnetometer survey completed and claims staked. Nine drill holes completed, two in Claim Block 4F. Core was sporadically sampled and petrographic studies were undertaken. The core was tested with scintillometer, and samples were taken where radioactive responses occurred.	Assay results on the radioactive core samples indicated Cb_2O_5 content of 0.02% to 0.04%. Drilling intersected coarse syenite rock with 3-5% magnetite. Algoma concluded that the ground magnetometer survey and the diamond drilling verified the airborne survey, and although drilling did not intersect any ore minerals, mineralization could possibly be associated with other parts of the structure. Algoma recommended that the property be referred to other companies interested in intrusive structures (Venn, 1964).
1978	Shell Canada Explorations Ltd.	Initiated a diamond drill program in the area based on airborne survey results.	A single hole, DDH 7609-78-1, was drilled within Claim Block 4F and intersected “graphitic syenite breccia”. Drill log is available from MNDM, but an accompanying report was not submitted.
1999	Ontario Geological Survey	Aeromagnetic geophysical maps released for the Hudson Bay and James Bay Lowlands areas, Geophysical Data Set 1036	Regional aeromagnetic survey data available for Claim Block 4F.
2008	Ontario Geological Survey	Precambrian Geology Map P.3599 published: Hudson Bay and James Bay Lowlands Region Interpreted from Aeromagnetic Data, G.M. Stott, 2007-2008.	Interpretation of regional aeromagnetic survey data available for Claim Block 4F.

TABLE 6-2 HISTORICAL DRILLING
Zenyatta Ventures Ltd. – Albany Project

Year	Company	Drill Hole ID	NTS	Datum	UTM-East	UTM-North
1964	Algoma Ore Properties Ltd.*	DDH-8-64	42K01	NAD 83	685,792	5,551,132
1964	Algoma Ore Properties Ltd.*	DDH-9-64	42K01	NAD 83	685,237	5,550,906
1978	Shell Canada Explorations Ltd.*	7609-78-1	42K01	NAD 83	682,954	5,545,616

*Approximate location of drill hole collar

HISTORICAL RESOURCE ESTIMATES

There have been no resource estimates prepared by previous owners.

PAST PRODUCTION

There has been no known production from the Property up to the effective date of this report.

7 GEOLOGICAL SETTING AND MINERALIZATION

REGIONAL GEOLOGY

The claims were staked based on geological information acquired from OGS Map P3599, Precambrian Geology of the Hudson Bay and James Bay Lowlands Region. Stott et al. (2007) interpreted the regional tectonic subdivisions and mapped the claim blocks as part of the English River Basins, the Marmion Terrane, and the Quetico Basins of the Superior Province of the Canadian Shield (Figure 7-1). Based on the interpretation of Sage (1988), it appears that the Nagagami Alkalic Rock Complex underlies most of Claim Blocks 4E and 4F.

The following is a summary of the major rock units in the area, as cited in Geotech (2010):

The relatively flat-lying Hudson Bay and James Bay Lowlands consist mostly of carbonate rocks of Paleozoic to Mesozoic age. These sedimentary rocks cover a significant portion of the Precambrian rocks of northern Ontario and, therefore, have impeded the understanding of the Precambrian geology and the tectonic framework across this region of Ontario. The region's Precambrian geology is based mainly on available re-processed aeromagnetic data and limited drill hole information. The results provide a general framework of interpreted supracrustal belts, plutonic subdivisions, major faults, and Proterozoic mafic dykes (Figure 7-1).

THE QUETICO SUBPROVINCE

The Quetico Subprovince is an east-northeast trending, 10 km to 100 km wide by 1,200 km long belt of variably metamorphosed and deformed clastic metasedimentary rocks and granitoids located in the west-central part of the Superior Province. The metamorphic grade varies from greenschist to amphibolite to local granulite facies. The metasedimentary rocks were deposited before 2696 Ma. The Quetico intrusions near Atikokan are typically small (<1 km^2) and form sills, plugs, and small stocks composed of a variety of lithologies, mainly wehrlites, clinopyroxenites, hornblendites, monzodiorites, syenites, foidites, and silicocarbonatites. They are locally enriched in Ni-Cu and PGEs (Vaillancourt et al., 2003).

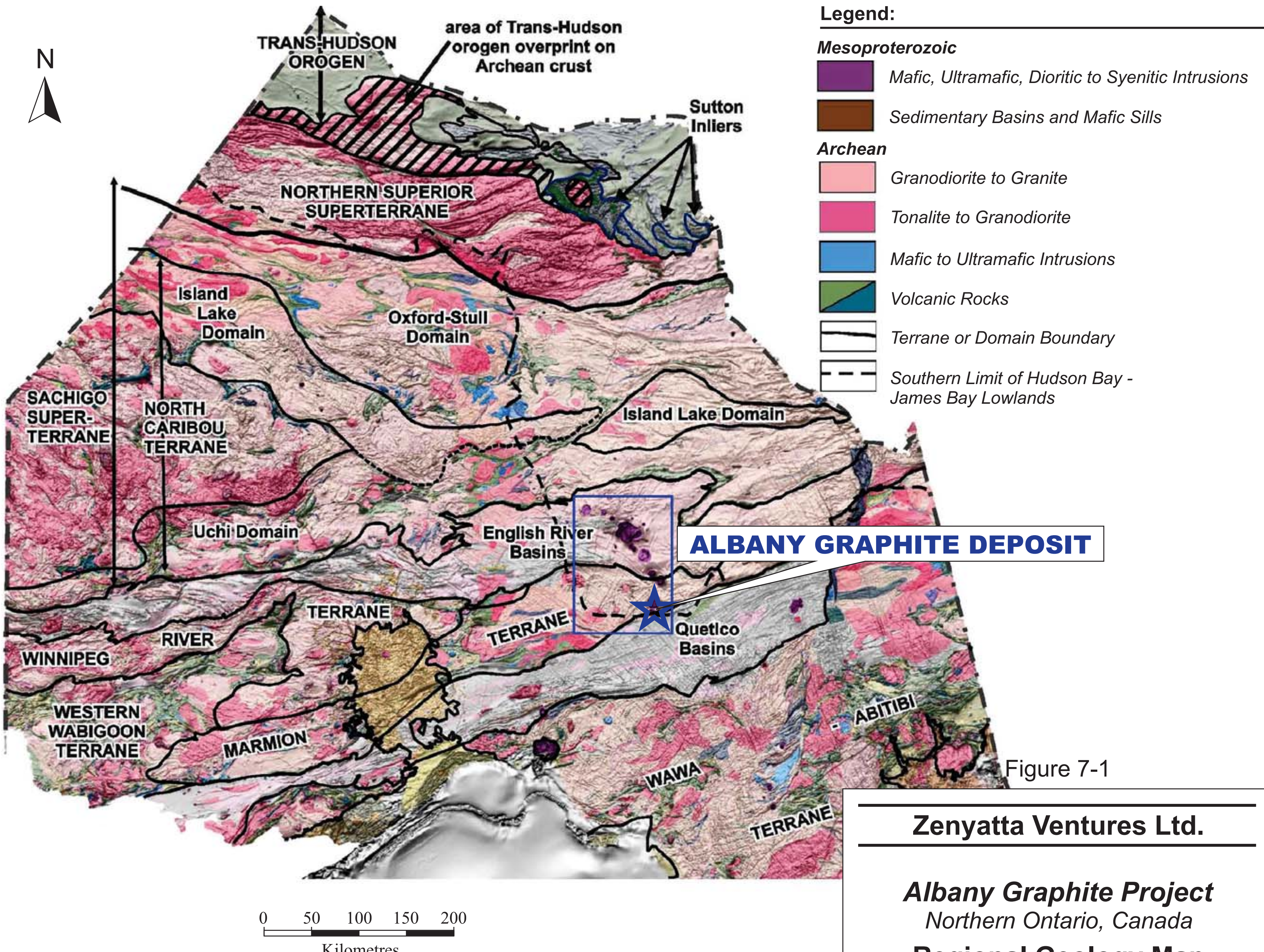


Figure 7-1

Zenyatta Ventures Ltd.

Albany Graphite Project

Northern Ontario, Canada

Regional Geology Map

July 2015

Source: After Stott et al, 2007.

RPA

www.rpacan.com

THE ENGLISH RIVER SUBPROVINCE

The English River Subprovince is an east-trending 30 km to 100 km wide by 650 km long belt of metasedimentary and granitoid rocks located in the west-central Superior Province. The metasedimentary rocks contain detrital zircons as young as 2698 Ma and the granitoid rocks range between 2.65 and 2.70 Ga (Vaillancourt et al., 2003).

MARMION TERRANE/SUBPROVINCE

This terrane consists predominately of metamorphosed felsic intrusive rocks. The 3.0 to 2.7 billion year old rocks are interpreted as an assemblage of continental fragments. These rocks were once also interpreted as part of the Western Wabigoon and Winnipeg River terranes.

NAGAGAMI ALKALIC ROCK COMPLEX

Limited data and observations obtained from drill logs and drill core, together with aeromagnetic data, suggest that the Nagagami River Alkalic Rock Complex (NRARC) is composed of two ring-shaped subcomplexes with more mafic rims and more leucocratic cores. Aeromagnetic data interpretation may indicate that the northern subcomplex is cut by the southern subcomplex, indicating the southern subcomplex is younger. The middle-to-late Precambrian diabase dykes, which are characterized by linear northwest-trending aeromagnetic patterns, do not crosscut the aeromagnetic signature of the NRARC. This indicates that the complex is younger than the regional diabase dyke swarm. Sage (1988) concluded that this observation, together with the fresh and unmetamorphosed nature of the rock point to a Late Precambrian age, is equivalent to the dominant period of alkali magmatism in Ontario. Regional structural controls on the emplacement of the subcomplexes have not been unambiguously identified, but the NRARC lies on trend with the extension of the northeast-striking Gravel River Fault.

The dominant rock type is an amphibole-pyroxene syenite which varies from fine to coarse-grained, and locally displays a trachytoidal texture. A coarse-grained nepheline-bearing phase appears restricted to the southern subcomplex. A very coarse-grained pegmatitic phase and a minor granite phase have also been identified. Petrographic analysis indicates that the NRARC has strong similarities to the pyroxene- bearing syenites of the Port Coldwell Alkalic Rock Complex.

Based on the fact that the intrusion underwent unsuccessful testing for iron and niobium in 1964 by the Algoma Ore Properties Division of Algoma Steel Corporation, it was previously recommended that future exploration of the complex should be directed towards the type of mineralization found in equivalent syenitic rocks of the Port Coldwell Alkalic Rock Complex.

ALBANY ALKALIC ROCK COMPLEX

The Albany Alkalic Complex (AAC) (Conly, 2014), which hosts the graphitic breccia pipes, occurs to the south of the two Nagagami Alkalic sub-complexes. This intrusion appears to be cross-cut by the northwest-trending middle-to-late Precambrian diabase dykes suggesting that it predates the dyke swarm. Initial work by Dr. Conly indicates that the AAC "syenite" corresponds to a range of quartz-poor to moderate quartz-bearing felsic rocks that are albite dominant. All drilling by Zenyatta has focused on the immediate area which hosts the graphite deposit. The limits of the intrusion are based on geophysical interpretation.

PROPERTY GEOLOGY

The Albany graphite deposit is centred on Claim Block 4F (Figure 7-2). The area is covered by a layer of overburden (ranging from 28 m to 55 m, averaging 44 m) and there are no surface exposures of bedrock. Consequently, no surface geological mapping projects are reported for the area.

Precambrian rocks in the southern section of Claim Block 4F primarily comprise paragneissitic and migmatitic metasedimentary rocks, and mafic rocks together with related intrusive rocks of the Quetico Subprovince (Stott, 2007). The northern section of Claim Block 4F is underlain by metamorphosed tonalite to granodiorite, foliated to gneissic with minor supracrustal inclusions of the Marmion Terrane/Subprovince. Both subprovinces have been intruded with a younger alkalic intrusive suite made up of alkalic syenite, ijolite, and associated mafic and ultramafic rocks and carbonatite (Stott, 2007).

Precambrian basement rocks are unconformably overlain by Paleozoic limestone, and drilling on the property by Zenyatta suggests that thicknesses can range from zero metres to greater than fifteen metres. The Albany graphite deposit is hosted within gneissic to unfoliated syenite, granite, diorite, and monzonite (Albany Alkalic Complex) that are cross-cut by younger dykes, ranging from felsic to mafic in composition. The basement rocks are overprinted by graphite near the margins of the graphite breccia pipes.

Zenyatta is currently supporting a multi-year research program under the direction of Dr. A. Conly and this research is also being supported through a NSERC-CRD (Natural Sciences and Engineering Research Council of Canada, Collaborative Research and Development) grant. The research will focus on the genesis of the Albany graphite deposit including: the age of mineralization, the source, and chemical nature of the graphite-forming fluids, and the mineralogical and geochemical characteristics of the hydrothermal graphite.

OVERBURDEN

The Project is on the edge of glacial Lake Barlow-Ojibway, a prehistoric lake formed during the retreat of the last glaciation 8,500 years ago. The former lakebed features varved sediments that present challenges to mining, as encountered at Agrium Inc.'s Kapuskasing Phosphate Mine.

Zenyatta did not observe any clay while drilling through the overburden.

The Ontario Geological Survey (OGS) carried out field campaigns in the area. Dr. Andy F. Bajc, Ph.D., P.Geo., Senior Science Leader, Quaternary Geology, reports:

"The stratigraphic sequence generally observed along river cuts consists of variable thicknesses (0-11 m) of what are likely marine sands, silts and clays overlying dense, silty to sandy till to river level. Varved sediments as occur in glacial Lake Barlow-Ojibway to the east and south were not observed at any of the sections visited as part of the 2012 or 2014 field campaigns. The underlying till is typically blocky and overconsolidated and not prone to landsliding. Paleozoic bedrock was commonly exposed below the till along the Otasawian River to the northwest as well as at a site (2014AFB051) along the Nagagami River and another along the Kabinakagami River near site MR053. Older stratigraphic units of stratified silt, sand, and gravel were occasionally observed beneath the surface till. Given the limited data, I would suggest that field verification of critical sites be undertaken."

For the PEA, RPA assumed that no varved clays will be encountered in the pit.

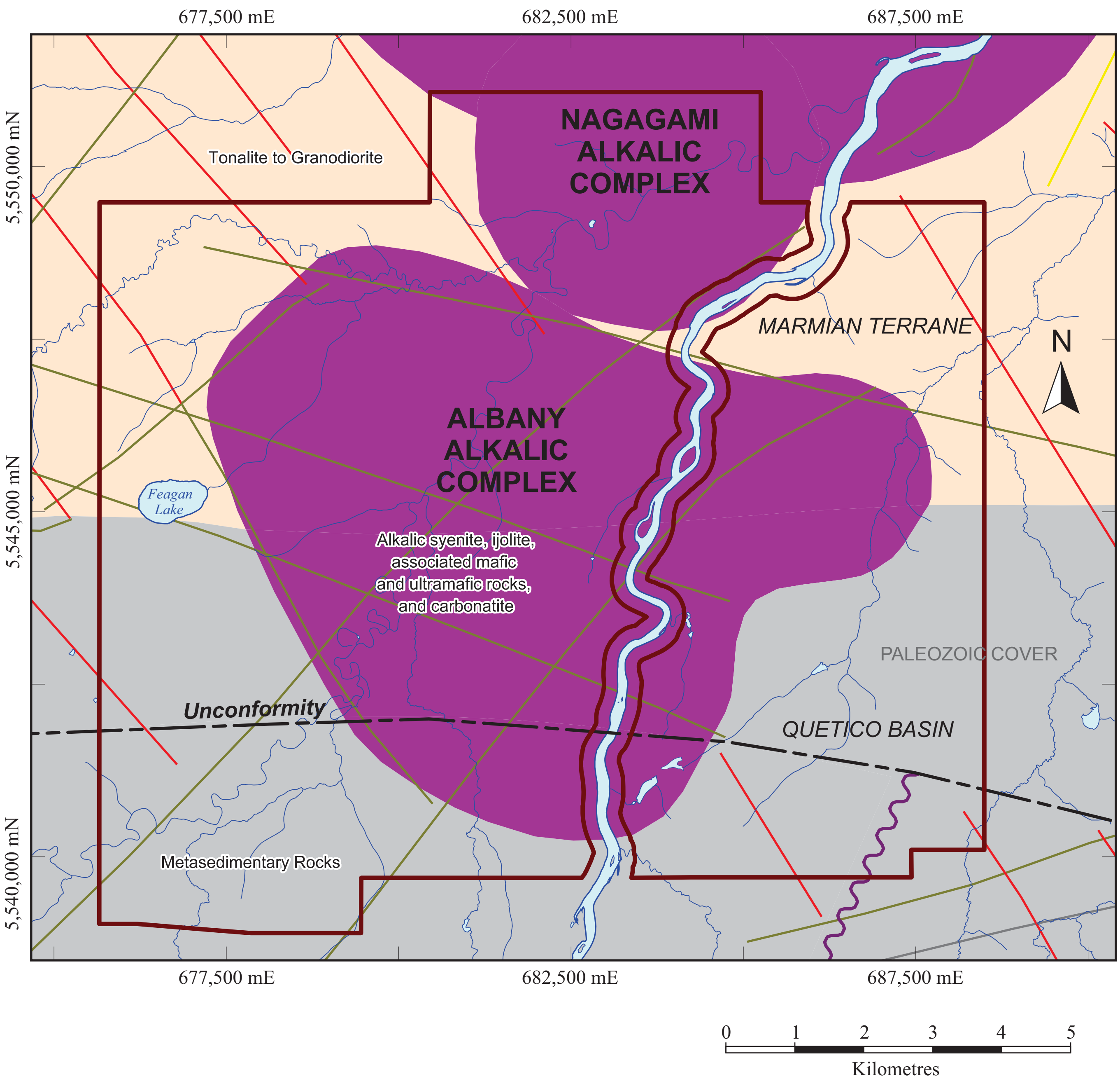


Figure 7-2

Zenyatta Ventures Ltd.

Albany Graphite Project

Northern Ontario, Canada

Property Geology Map

Projection: UTM Zone 16 (NAD 83)

July 2015

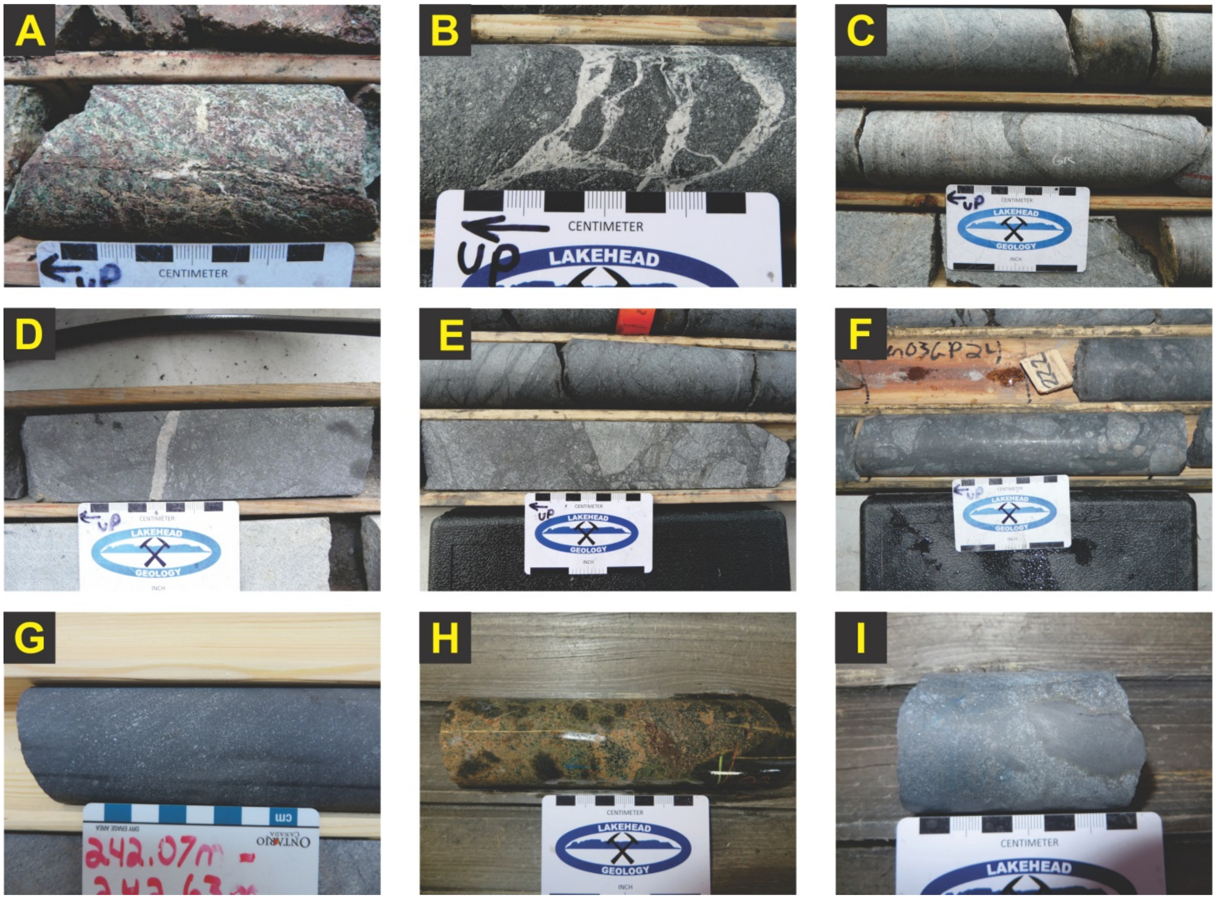
Source: Zenyatta Ventures Ltd., 2014.

MINERALIZATION

Preliminary petrography indicates that the graphite-hosting breccias range in composition from diorite to granite, and are generally described as “syenite”. Graphite occurs both in the matrix, as disseminated crystals, clotted to radiating crystal aggregates and veins and along crystal boundaries, and as small veins within the breccia fragments. In addition to graphite, the matrix consists primarily of quartz, alkali feldspar, and plagioclase feldspar with minor phlogopite and amphibole and trace amounts of pyrite-pyrrhotite and magnetite. Alteration is minor, and is most pronounced as a paleo-weathering profile in the upper 20 m of the breccia pipes where bleaching and late, carbonate-filled fractures are common. The stockwork graphitic veins can be several centimetres wide while the veinlets and hairline fractures are millimetre and submillimetre scale. Breccia fragments are dominantly massive to weakly foliated AAC syenite (>95%) with minor to trace chlorite-biotite-rich schist fragments, and mafic to intermediate dyke fragments. Occasional solid graphite fragments and rare altered fragments of unknown origin were also observed. Breccia fragments are angular to subangular to subrounded and range in size from subcentimetre to approximately one metre, most being between three centimetres and 30 cm. Dyke and graphite fragments range from one centimetre to five centimetres.

Representative core photographs of key features of the Albany graphite mineralization are provided in Figure 7-3.

FIGURE 7-3 CORE PHOTOGRAPHS OF ALBANY GRAPHITE MINERALIZATION



Description of the photographs (provided by Dr. Conly):

A) Weathering-related alteration of brecciated and carbonate-veined syenite just below the unconformity with the overlying Paleozoic carbonate rocks (Z12-4F2, West Pipe).

B) Carbonate veining in weakly to moderately brecciated syenite with weak graphite overprint (Z13-4F10, East Pipe). Sample is taken just below the highly weathered zone.

C) Graphite veining in barren syenite (Z12-4F6, West Pipe).

D) Aplite dyke cross-cutting moderately brecciated syenite with weak to moderate graphite overprint of syenite fragments (Z12-4F9, East Pipe).

E) Typical angular breccia texture of graphite mineralization (Z12-4F10, East Pipe).

F) Rounded syenite breccia fragments indicating more extensive mechanic erosion due to turbulent flow within the vent complex (Z12-4F3, West Pipe).

G) Laminated graphite intercalated with finely milled fragments (Z13-4F51, West Pipe). The laminated texture is interpreted to be the result of flow banding.

H) Highly altered syenite breccia with weak to no graphite mineralization (Z13-4F26, West Pipe). This style of alteration occurs at depth and is not associated with weathering-related alteration observed at the top of the breccia pipes.

I) Graphite mineralized breccia fragment partially rimmed by pyrite-pyrrhotite in a graphite and milled silicate matrix (Z13-4F26, West Pipe).

8 DEPOSIT TYPES

Most economic geologists and geophysicists are familiar with graphite as a nuisance in geophysical exploration due to its excellent electric conductivity that produces an identical geophysical response to that of targeted massive sulphide mineralization. Syngenetic graphite (flake or amorphous) commonly occurs in metasedimentary rocks as a result of the conversion of organic matter through regional or contact metamorphism. Graphitization of organic matter is well understood, however, the heating and compression of organic matter *in situ* is only one of the ways in which graphite is produced in nature. The epigenetic (hydrothermal) graphite type forms as a result of the precipitation of solid carbon (i.e., graphite) from natural carbon-fluids such as those containing CO_2, CO, and/or CH_4.

Somewhat simplified, there are three different processes leading to the formation of economic graphite deposits (Harben and Kuzvart, 1996):

1. Contact metamorphism of coal deposits. Graphite formed under these conditions is characterized by incomplete structural ordering and crystallization, resulting in low value “amorphous” graphite with its main market in foundry applications.
2. Syngenetic flake graphite deposits. The formation of these deposits involves the alteration of carbonaceous organic matter to graphite during regional metamorphism.
3. Epigenetic graphite deposits. The formation of these deposits is associated with migrating supercritical carbon-bearing (C-O-H) fluids or fluid-rich magmas. The formation of the carbon-bearing fluids is most often a consequence of high temperature (granulite facies) metamorphism, but magmatic degassing can also produce graphite. Fluid precipitated graphite is well-ordered and can be a source of highly valued crystalline lump or vein-type (hydrothermal) graphite.

The Albany graphite deposit is a unique example of an epigenetic graphite deposit in which a large volume of highly crystalline, fluid-deposited graphite occurs within an igneous host. The deposit is interpreted as a vent pipe breccia that formed from CO_2-rich fluids that evolved due to pressure-related degassing of syenites of the Albany Alkalic Complex and is described in the following subsections (Conly, 2014a; Conly, 2014b; Conly and Moore, 2015).

STAGE 1 – EMPLACEMENT OF HOST SYENITES FORMING THE ALBANY ALKALIC COMPLEX

Emplacement of the Albany breccia pipes is estimated to be Mesoproterozoic to Neoproterozoic, based on cross-cutting relationship with the Paleoproterozoic Matachewan and Hearst quartz diabase dyke swarms and Mesoproterozoic Sudbury olivine tholeiite dyke swarm. Magma emplacement may also be structurally controlled by the Gravel River Fault, which in part defines the southern margin AAC and separates the Marmion Terrane (to the north) and the Quetico Subprovince (to the south).

STAGE 2 – FLUID GENERATION AND BRECCIA PIPE DEVELOPMENT

The two breccia pipes formed as a result of a degassing magma, resulting in segregation of a CO_2-bearing fluid, occurred in response to depressurization of the magma at mid to shallow crustal levels, and accumulation of CO_2 at the top of the ascending dyke. Possible sources for the carbon include: i) generation of primary CO_2-rich syenite; and ii) assimilation of carbonaceous Quetico metasedimentary rock by syenitic magmas. The co-existence of angular to rounded breccia fragments is evidence of mixing of juvenile fragments with earlier entrained material, which has been subject to a greater extent of mechanical erosion due to rapid and turbulent upflow of the CO_2-fluid.

STAGE 3 – GRAPHITE DEPOSITION

Graphite deposition likely occurred rapidly due to the sudden depressurization and quenching (from supercritical fluid to gas) of the CO_2-fluid which, in turn, is due to the dyke head breaking the surface and venting CO_2 gas. Surface venting is evidenced from the extent of the graphite breccias to the unconformity with the overlying Paleozoic rock. Such rapid depressurization would have also imploded the walls of the vent complex; it is consistent with the higher proportion of angular syenite fragments relative to rounded syenite fragments and fragments of Archean country rock, and with localized production of xenoliths with minimal transport. Rapid deposition of graphite inferred from its fine-crystal size (laths typically 100 µm to 300 µm long) and high abundances of discrete crystals and fine crystal aggregates. Coinciding with the changes in pressure, a rapid decrease in temperature would have inhibited growth of coarser-crystalline graphite and led to the crystallizing of the degassing syenite magma at depth.

STAGE 4 – POST-MINERALIZATION MAGMATIC AND EROSIONAL EVENTS

Post-mineralization magmatic and erosional events include the following (listed in temporal succession):

- Emplacement of late-stage barren olivine-aegirine syenite sills

- Intrusion of aplite and other felsic dykes
- Erosion of upper levels of the AAC and supergene alteration
- Deposition of Paleozoic carbonate rocks and Quaternary glacial sediments

The Albany graphite deposit model is shown in Figure 8-1.

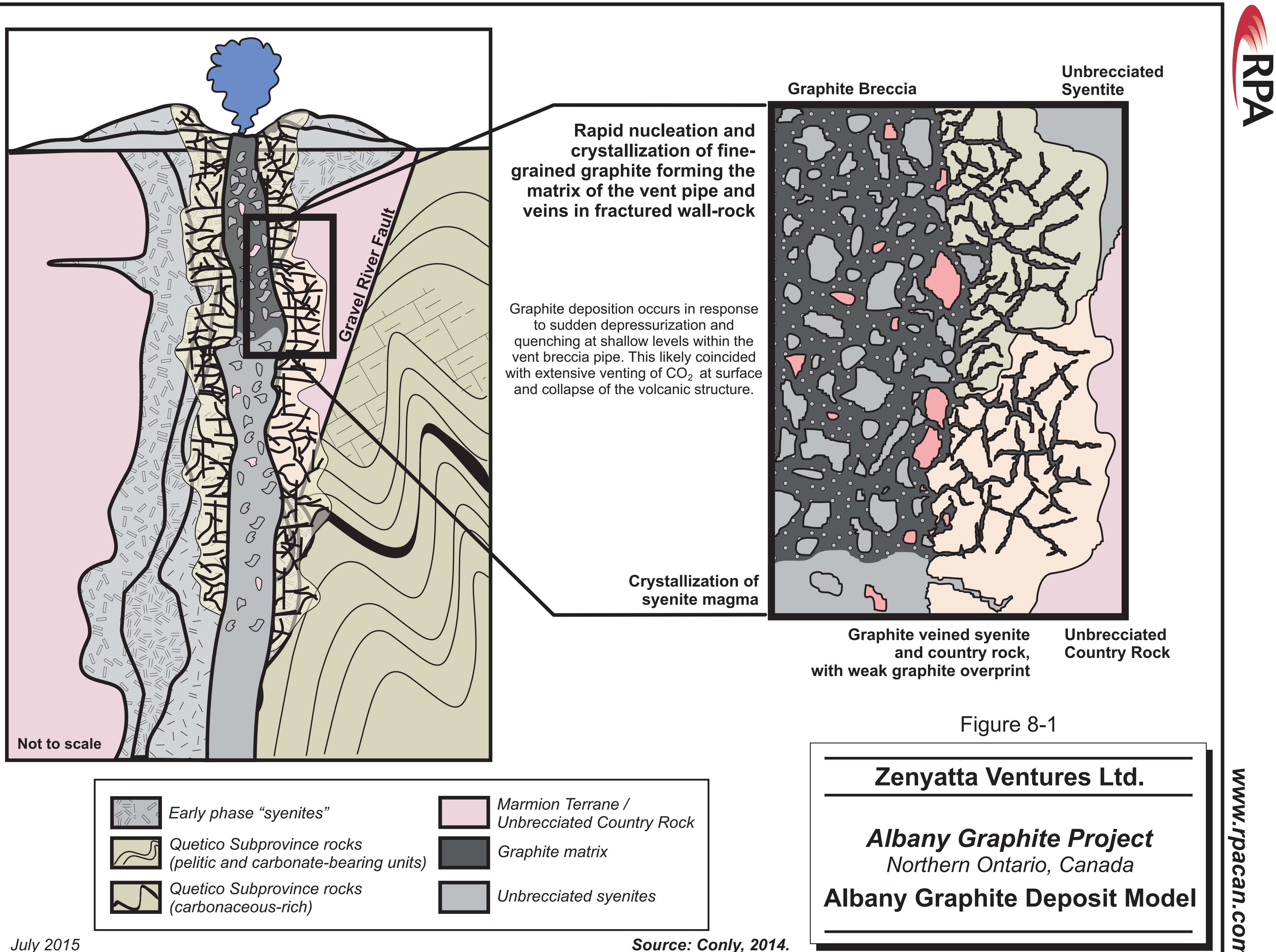


Figure 8-1

Zenyatta Ventures Ltd.

Albany Graphite Project

Northern Ontario, Canada

Albany Graphite Deposit Model

9 EXPLORATION

Zenyatta commenced exploration on the Albany Project claim blocks in 2010. All prior exploration conducted by other companies and government agencies is summarized in Section 6. Zenyatta was targeting nickel, copper, and PGM on the claim blocks, prior to the discovery of extensive graphite mineralization on Claim Block 4F.

2010

As part of a staged approach, preliminary exploration began in March 2010 with a helicopter borne versatile time domain electromagnetic (VTEM) and aeromagnetic (cesium magnetometer) geophysical survey flown by Geotech Ltd. (Geotech) of Aurora, Ontario, over the 28 claim blocks. Ancillary equipment included a GPS navigation system and a radar altimeter.

The survey operations were based out of the Town of Hearst. In-field data quality assurance and preliminary processing were carried out on a daily basis during the acquisition phase. Preliminary and final data processing, including generation of final digital data and map products, was undertaken from the office of Geotech in Aurora, Ontario.

The VTEM system has the highest signal to noise ratio of any airborne electromagnetic (EM) system resulting in the deepest possible depth of investigation. This technology enabled a more effective means to explore the Albany claim blocks, where thick glacial overburden and Fe-deficient shallow marine carbonate/clastic sediments cover prospective geological and structural settings within the underlying Archean basement terrane. Furthermore, processing of the VTEM data allowed for the derivation of multiple products used collectively in identifying priority targets for follow-up work.

The field portion of the survey commenced on March 17, 2010 and ended on May 19, 2010, with lines flown in a north-south direction using 150 m line spacing. The survey covered an area of 2,485 km^2 and totalled approximately 9,450 line km over 28 claim blocks. A final survey report was prepared by Geotech (Geotech, 2010) describing the procedures for data acquisition, processing, final image presentation, and the specifications for the digital data set.

EM time-constant (Tau) and magnetic derivative analyses were performed and Geotech provided Zenyatta with a list of EM anomalies.

Results of this survey were used to identify several high priority geophysical EM targets for follow-up drilling under the recommended Phase I and II Drill Budgets, commencing in 2011. A total of 22 EM and magnetic targets were identified for follow-up modelling and drill testing, two (Victor and Uniform) situated on Claim Block 4F (Figure 9-1). Drilling at the Uniform target led to the discovery of the Albany graphite deposit. Inversion modelling analyses, both 2D and 3D and magnetic derivative analysis was recommended prior to ground follow-up and drill testing.

2011 AND 2012

Excluding drilling, which is described in Section 10, no exploration work was conducted on the Property in 2011-2012.

2013

Crone Geophysics & Exploration Ltd. (Crone) was contracted by Zenyatta to perform surface time-domain EM (TDEM) surveys on the Property during February and March 2013. Crone targeted the drill-confirmed East and West graphitic breccia pipes that were initially identified in Geotech's 2010 airborne VTEM survey. Crone anticipated that surface TDEM surveys could be influenced by the top, presumably flat edge of the pipe as well as any of the vertical faces if the pipe had a significant depth extent. The survey design incorporated both an in-loop mode (Loop 1) to couple with the top, flat edge of the body and an out-of-loop mode (Loop 2) to couple with the steeply dipping edges (Crone, 2013).

The processed data from Loop 1 showed two separate isolated response patterns, apparently the result of two separate breccia pipes (Figure 9-2). The response pattern of the in-loop surveys is dominated by the top edge of these conductive sources and in the modelling results, excellent fits were obtained with the assumption of these being due to thin units. Bodies of varying thicknesses were utilized as well, but gave little appreciable difference in the modelling studies, suggesting the response patterns were indeed dominated by the relatively flat-lying tops of these bodies.

Overall, the modelled plates from Loop 1 and Loop 2 provided a robust model for targeting purposes. After drilling the first few holes, it was concluded that the channel 22 contoured plan map of the TDEM data provided a close correspondence to the actual outline of the breccia pipes for drill planning purposes (Legault et al., 2015).

Subsequent to Loop 1, Loop 2 was positioned with the loop located just north of the conductive features/breccia pipe identified from TDEM results. This loop was positioned to provide optimal coupling with any near vertical or steeply dipping edges. As with Loop 1, the Loop 2 results suggest the presence of two isolated bodies.

Crone completed numerical modelling on Loop 1 and 2 datasets. The results provided excellent fits with the observed data.

The TDEM ground survey appears to have outlined the lateral extent of two graphite breccia pipes (inferred from previous drilling results), although the boundary of the model is considered roughly approximate. The Western anomalous zone (West Pipe) is characterized by a rough circular response pattern with a slight elongation in the northeast-southwest direction and the Eastern anomalous zone (East Pipe) is characterized by an ovoid shaped source with its long axis oriented in a north-northwest–south-southeast sense.

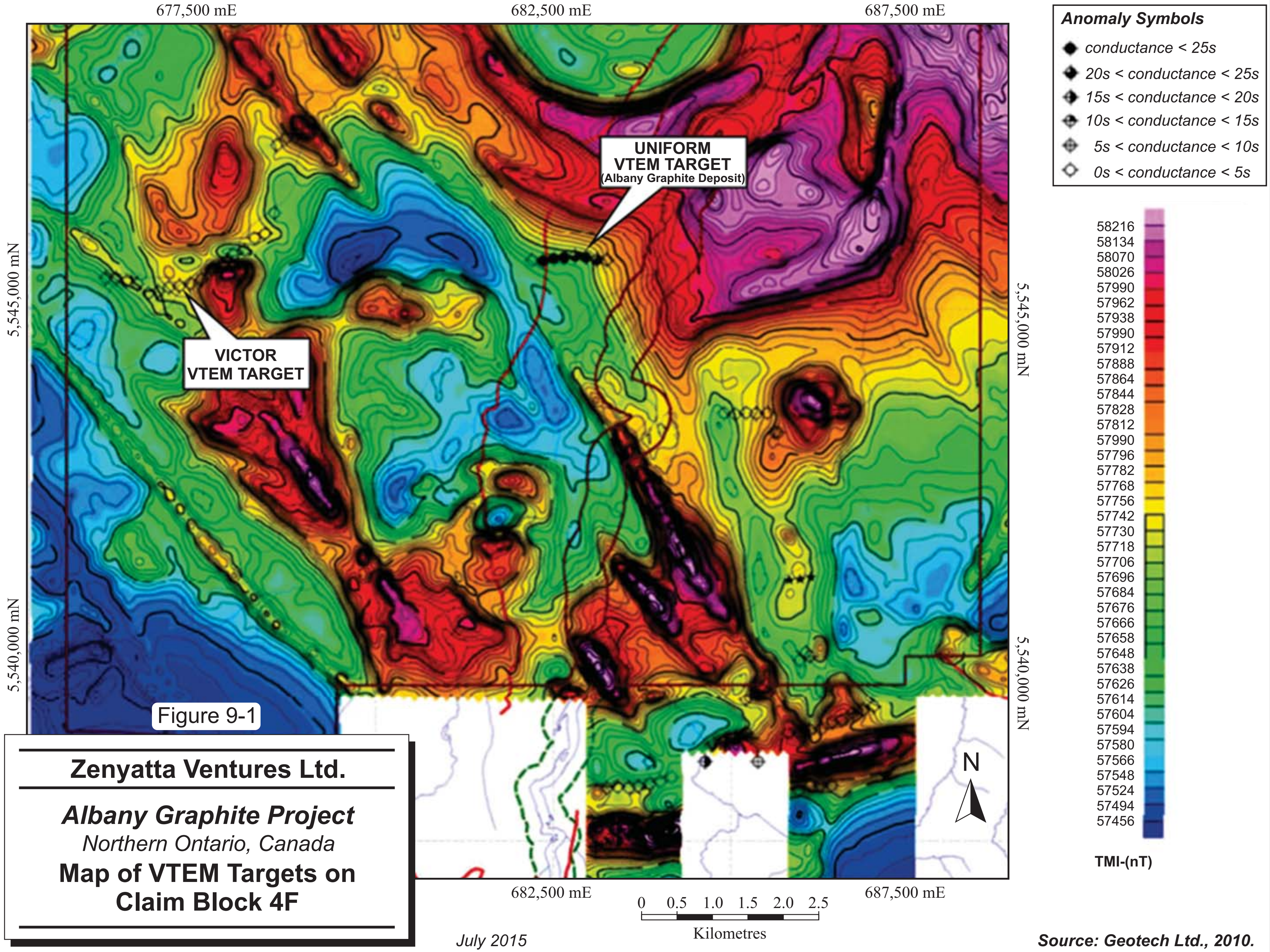


Figure 9-1

Zenyatta Ventures Ltd.

Albany Graphite Project

Northern Ontario, Canada

Map of VTEM Targets on Claim Block 4F

July 2015

Source: Geotech Ltd., 2010.

RPA

www.rpacan.com

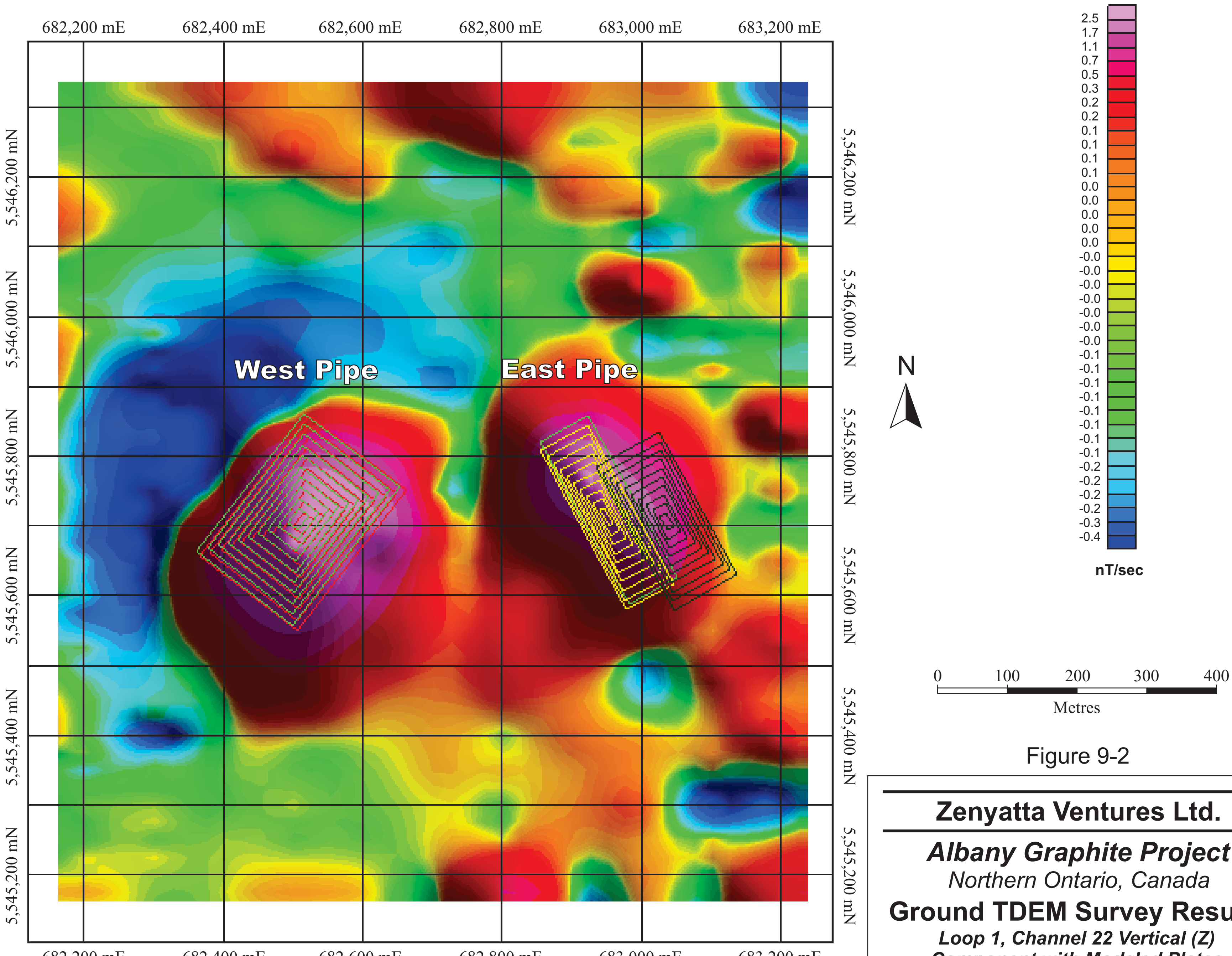


Figure 9-2

Zenyatta Ventures Ltd.

Albany Graphite Project

Northern Ontario, Canada

Ground TDEM Survey Results

Loop 1, Channel 22 Vertical (Z) Component with Modeled Plates

July 2015

Source: Crone, 2013.

10 DRILLING

Zenyatta has drilled 63 holes totalling 25,991 m in the deposit area (Table 10-1), however, only 60 of these holes were used to estimate Mineral Resources. The three metallurgical holes that were drilled on the West Pipe were excluded as the assay data were pending on November 15, 2013, the data cut-off date of the Mineral Resource estimate. As noted in Section 14, RPA has since received assay results for these drill holes and visually confirmed that the Cg grades correspond to the current block model, and therefore these new assays would have only a minor effect when updating the block model. The single historic drill hole thought to be in the area of the deposit was never located, and was not used to estimate Mineral Resources. The drill hole collar locations and hole traces are shown Figure 10-1.

TABLE 10-1 SUMMARY OF DRILLING
Zenyatta Ventures Ltd. – Albany Project

Pipe	Year	Number of Holes	Total Length (m)	No. of Assay Samples
East	2011	0	0	0
	2012	4	1,295	584
	2013	27	10,968	9132
	Total	**31**	**12,263**	**9,716**
West	2011	1	543	380
	2012	4	1,690	804
	2013	27	11,495	8,178
	Total	**32**	**13,728**	**9,362**

Note: assay samples from holes Z13-4FM04 to -4FM06 are excluded

Drilling was contracted to Chibougamau Diamond Drilling Ltd. (Chibougamau) of Chibougamau, Quebec. At the time of RPA's site visit in July 2013, Chibougamau was operating one drill on the Property, however, later added a second rig in August 2013 to drill holes required for metallurgical testwork.

Diamond drill holes were collared using NQ (47.6 mm core diameter) equipment for the 57 resource drill holes and HQ (63.5 mm core diameter) for the six metallurgical drill holes. Most collar locations were surveyed using a Reflex North Finder Azimuth Pointing System (APS) and reported in the coordinate system UTM Zone 16 NAD 83. The orientation of the drill collar was measured using the APS and downhole orientations were monitored using a Reflex multishot instrument with most readings taken at three metre intervals.

A Zenyatta geologist was at the drill to end each hole. Once the hole was completed, all casings were left in place, capped, and the collar was identified with labelled pickets. Drill core was delivered via helicopter to the core shack twice daily at crew change.

At the West Pipe, most holes we drilled to either the northwest or southeast, with dips ranging from -50º to -75º. Drill sections were spaced at 40 m to 50 m along strike, with intercepts on each section averaging 70 m apart down dip. At the East Pipe, most holes were drilled to either the northeast or southwest, with dips ranging from -48º to -78º. Drill sections were spaced at 40 m to 50 m along strike, with intercepts on each section averaging 60 m apart down dip. Holes drilled for metallurgical purposes, on both the East and West pipes, were angled at -85º. Drill hole recoveries are mostly greater than 99%.

RPA has not identified any drilling, sampling, or core recovery issues that could materially affect the accuracy or reliability of the core samples.

DRILL HOLE TARGETING AND RESULTS

All holes drilled in the deposit area intersected graphitic carbon (Cg) mineralization. A list of select drill hole intercepts are listed in Table 10-2. The resource modelling method used by RPA manages the relationship between core length and true thickness. A detailed description of the grade, thickness, depth, and general geometry of the pipes is provided in Section 14 under Geological Interpretation.

The initial phase (Phase I) of drilling began in February 2011 and was completed on December 17, 2011. Twenty-six drill holes were completed, totalling approximately 10,000 m, and tested 21 targets identified by Geotech's VTEM survey. In September, drill hole Z11-4F1 (543 m) tested a strong, large airborne EM conductor measuring 1,400 m by 800 m on Claim Block 4F located in what is now referred to as the West Pipe. The hole intersected eight separate and extensive breccia zones consisting of variably sized granitic clasts set in a black matrix containing graphite.

In 2012, Zenyatta drilled between March and June. Eight holes were completed: Z12-4F2 through Z12-4F9, for a total of 2,985 m of drilling. The Phase II drill holes were designed to test EM conductors/graphite mineralization within the brecciated graphitic zone, and to determine the extent of the graphite mineralization. The drill holes delineated two discrete bodies associated with the EM anomalies: the West Pipe and the East Pipe. Four drill holes targeted the West Pipe and four drill holes targeted the East Pipe.

Based on the results of metallurgical testing, Zenyatta commenced a third drilling program in March 2013. Drilling was focused on defining the size and grade of the graphite deposit, expanding on the 2012 drilling campaign. Drilling helped define and constrain both pipes. The drill program ran between March and November, with 54 drill holes completed: Z13-4F10 through Z13-4F57 and six metallurgical drill holes Z13-4FM01 through Z13-4FM06, for a total of 22,463 m of drilling.

DOWNHOLE PROBING

In late 2013, Zenyatta contracted DGI Geoscience Inc. (DGI) to survey seven boreholes (Z13-4F14, -4F16, -4F17, -4F18, -4F26, -4F27, and -4F34) with three probes: an Acoustic Televiewer (ATV), a Focused Density probe, and a Full Waveform Sonic probe. Two of the seven holes (Z13-4F18 and Z13-4F34) were also surveyed for magnetic susceptibility, inductive conductivity, apparent resistivity, natural gamma, and fluid temperature. A total of 3,192 m was logged. Results were provided as strip logs and Wulff stereoplots and will be incorporated into the Preliminary Economic Assessment (PEA). Density and rock quality designation (RQD) data correlated well with Zenyatta's drill logs.

RECONNAISSANCE DRILLING

In 2013, Zenyatta also drilled two reconnaissance drill holes on Block 4F to test two weaker conductive zones which were defined by the 2010 VTEM survey. No graphite was intersected and the EM conductors were most likely explained by zones of disseminated pyrrhotite and/or by zones of massive pyrrhotite mineralization (Carey, 2014).

TABLE 10-2 SELECT DRILL HOLE INTERSECTIONS
Zenyatta Ventures Ltd. – Albany Project

Pipe	Hole ID	From (m)	To (m)	Length (m)	Grade (Cg%)
West	Z13-4F39	63.22	294.00	230.78	3.63
West	Z13-4F41	64.05	304.90	240.85	3.15
West	Z13-4F50	80.36	239.71	159.35	3.59
West	Z13-4F55	67.87	264.15	196.28	2.81
West	Z13-4F46	72.01	296.00	223.99	2.35
West	Z13-4F32	115.00	302.97	187.97	2.76
West	Z13-4F57	106.80	345.00	238.20	2.11
West	Z13-4F30	62.77	198.85	136.08	3.33
West	Z13-4F40	82.00	234.00	152.00	2.97
West	Z13-4F49	64.00	203.64	139.64	3.11
West	Z13-4F26	100.57	226.07	125.50	3.32
West	Z13-4F54	64.82	281.00	216.18	1.80
West	Z13-4F34	166.00	306.15	140.15	2.54
West	Z13-4F29	59.90	186.85	126.95	2.69
West	Z13-4F33	155.62	320.23	164.61	1.93
West	Z11-4F1	329.90	542.92	213.02	1.47
East	Z13-4F45	55.48	330.25	274.77	5.85
East	Z13-4F10	48.34	341.56	293.22	5.37
East	Z13-4FM03	46.78	307.00	260.22	5.36
East	Z13-4FM01	45.59	304.33	258.74	5.40
East	Z13-4FM02	48.97	301.64	252.67	5.27
East	Z13-4F43	62.06	231.00	168.94	6.98
East	Z12-4F5	47.82	214.30	166.48	6.44
East	Z13-4F13	147.53	315.00	167.47	5.57
East	Z13-4F14	185.85	374.75	188.90	4.64
East	Z12-4F9	168.60	326.49	157.89	5.14
East	Z13-4F28	94.59	209.80	115.21	6.93
East	Z13-4F12	123.89	240.20	116.31	6.39
East	Z13-4F22	90.10	187.30	97.20	6.49
East	Z13-4F11	395.09	596.04	200.95	3.00
East	Z13-4F25	61.76	164.36	102.60	5.48
East	Z13-4F15	172.00	256.74	84.74	6.48
East	Z13-4FM01	383.00	512.22	129.22	4.16

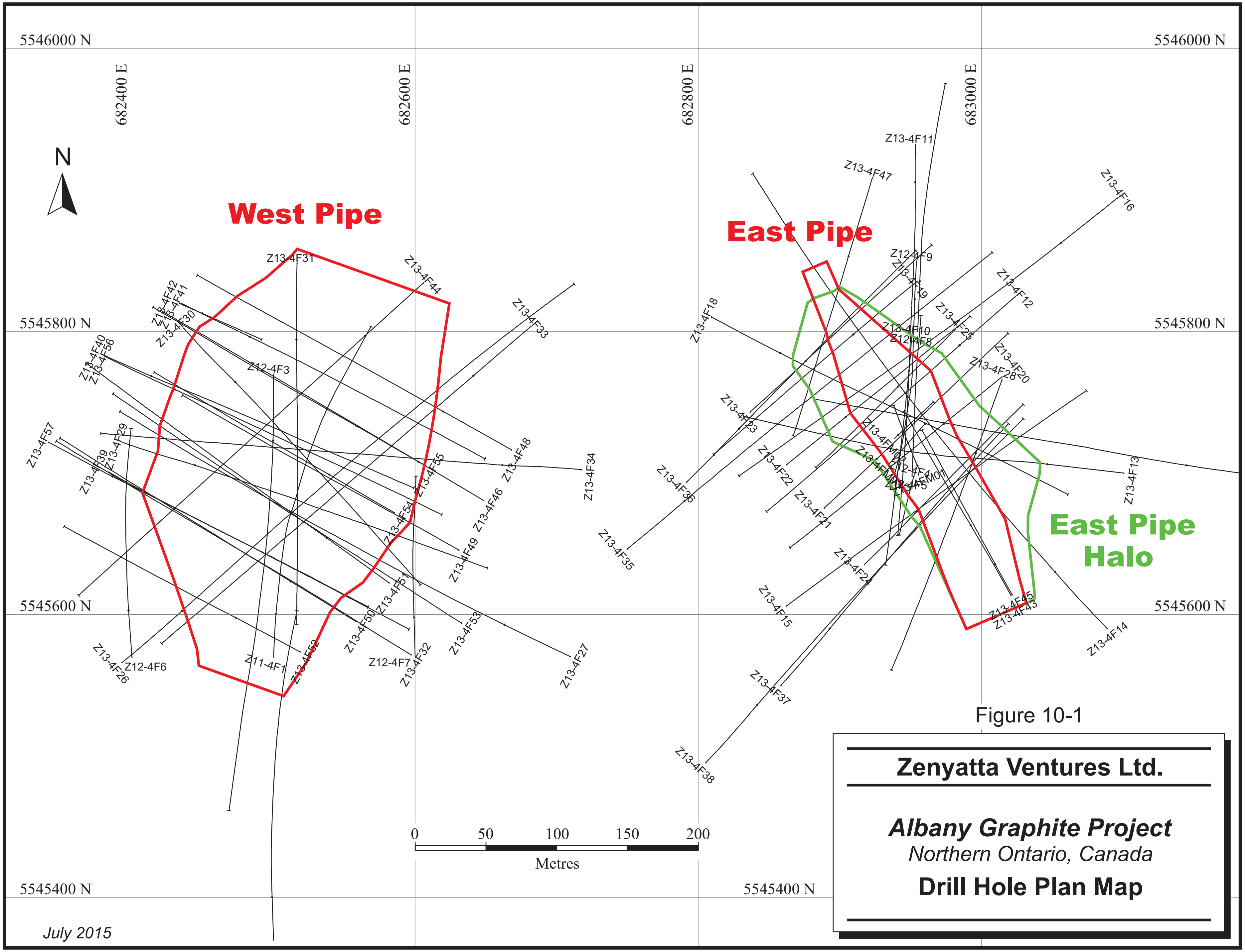


Figure 10-1

Zenyatta Ventures Ltd.

Albany Graphite Project

Northern Ontario, Canada

Drill Hole Plan Map

RPA

www.rpacan.com

11 SAMPLE PREPARATION, ANALYSES AND SECURITY

Zenyatta uses industry standard sample preparation, analysis, data management, and security procedures. A total of 22,448 samples, including quality control (QC) samples from drill holes Z11-4F1 to Z13-4F57 and metallurgical holes Z13-4FM01 to Z13-4FM06, were submitted to ALS Group (ALS)), an independent laboratory. ALS has ISO 9001:2008 and ISO 17025 Accreditation as per the Standards Council of Canada at all of its global laboratories.

In summary, RPA concurs with the adequacy of the samples taken, the security of the storage and shipping procedures, the sample preparation, analytical procedures used, and data management practices.

SAMPLING METHOD AND APPROACH

Drill core was delivered twice daily via helicopter to Zenyatta's core logging facility located at the Eagle's Earth camp on Highway 11. Prior to sampling, the drill core was logged into an Xlogger software database. Lithological names were standardized and drop down menus used to reduce data input errors. Core boxes were labelled with aluminum tags showing the drill hole number, box number, and from-to metres and photos of the core are taken with a digital camera. A Zenyatta geologist marked the sample intervals in the core box.

Most drill core was sampled using one metre intervals. Less than 10% was sampled at greater than 1.5 m. A four part sample book was used. All core samples were identified with a unique sample identification (ID) number tag: two sample tags were inserted in the plastic bag with the split core, one sample tag was affixed within the core box at the start of the sample run, and one remained in the sample book. The sample ID number was also written on the outside of each sealed sample bag with a permanent marker. The sample bags were zip tied and placed in groups of ten in larger rice bags. The rice bags were also sealed before being transported to the ALS facility in Thunder Bay, Ontario, by Zenyatta company employees. Shipping information was recorded and stored digitally.

Once the sampling was completed, both the sampled and unsampled core was stored sequentially in core racks at Zenyatta's core handling facility.

SAMPLE PREPARATION

ALS received the samples, verified them against the shipping documents, and logged them into their tracking system.

Preparation was carried out under ALS protocol PREP-31B. Each bagged core sample was dried, crushed to better than 70% passing 2 mm, and a 1,000 g split of the crushed material was pulverized to better than 85% passing 75 µm for assaying. Samples from the high grade graphite breccia were noted on the sample submittal sheet and ALS cleaned the crushers and pulverizers with barren material after every sample to avoid contamination. The sample pulps were then shipped to the ALS laboratory in Vancouver, British Columbia, for assay. Prior to June 3, 2013, ALS shipped the sample pulps to their laboratory in Brisbane, Australia, for assay.

SAMPLE ANALYSIS

Samples were analyzed for graphitic carbon using ALS protocol C-IR18. A 0.1 g sample was leached with dilute hydrochloric acid to remove inorganic carbon (carbonate). After filtering, washing and drying, the remaining sample residue was roasted at 425°C to remove any organic carbon. The roasted residue was finally analyzed for graphitic carbon using a high temperature LECO furnace with infra-red (IR) detection. Sulphur dioxide released from the sample was also measured by IR detection and the total sulphur result was provided following ALS protocol S-IR 08.

The drill core samples taken in 2011 and 2012 from holes Z11-4F1, Z12-4F2, and Z12-4F3 were shipped to Activation Laboratories Ltd. (Actlabs), an independent laboratory in Thunder Bay for preparation and analysis for total carbon by combustion and IR analysis (Actlabs protocol 4F-C). The sample pulps, some reject material and split core were re-assayed by ALS for graphitic carbon and sulphur in 2013 and the database was updated accordingly.

QUALITY ASSURANCE AND QUALITY CONTROL

Quality assurance (QA) consists of evidence to demonstrate that the assay data has precision and accuracy within generally accepted limits for the sampling and analytical method(s) used in order to have confidence in future resource estimations. Quality control (QC) consists of procedures used to ensure that an adequate level of quality is maintained in the process of sampling, preparing, and assaying the exploration drilling samples. In general, QA/QC programs are designed to prevent or detect contamination and allow assaying (analytical) precision (repeatability) and accuracy to be quantified. In addition, a QA/QC program can disclose the overall sampling – assaying variability of the sampling method itself.

The QA/QC program exceeds industry standards. From an early stage, Zenyatta has implemented a comprehensive QC program that includes blanks, CRMs, duplicates, and check samples. Moreover, a QA monitoring system is used to detect failed batches and identify samples and/or sample batches for follow-up and reanalysis.

CERTIFIED REFERENCE MATERIAL

Results of the regular submission of Certified Reference Materials (CRMs) are used to identify problems with specific sample batches and long-term biases associated with the regular assay laboratory. Zenyatta prepared custom in-house standards. Four different CRMs were prepared by CDN Resource Laboratories Ltd. in Langley, British Columbia and certified for both graphitic carbon (Cg) and sulphur (S): ZEN-1, ZEN-2, ZEN-3, and ZEN-4. Table 11-1 lists the mean and standard deviation for each CRM. A total of 1,134 CRMs were inserted with the 22,932 regular core samples submitted by Zenyatta to ALS, for a rate of approximately 1 in 20 samples.

TABLE 11-1 EXPECTED VALUES FOR CUSTOM CRMS
Zenyatta Ventures Ltd. – Albany Project

CRM ID	Cg (%)		S (%)	
	Mean	Std. Dev.	Mean	Std. Dev.
ZEN-1	0.91	0.045	0.316	0.025
ZEN-2	3.13	0.125	0.374	0.018
ZEN-3	7.42	0.415	0.305	0.017
ZEN-4	14.12	0.99	0.306	0.016

A QC failure for a CRM was defined as an assay that fell outside either three standard deviations (±3SD) or ±10% of the expected value. The CRM assay results are illustrated in Figure 11-1 and data are summarized in Table 11-2.

FIGURE 11-1 CERTIFIED REFERENCE MATERIAL RESULTS

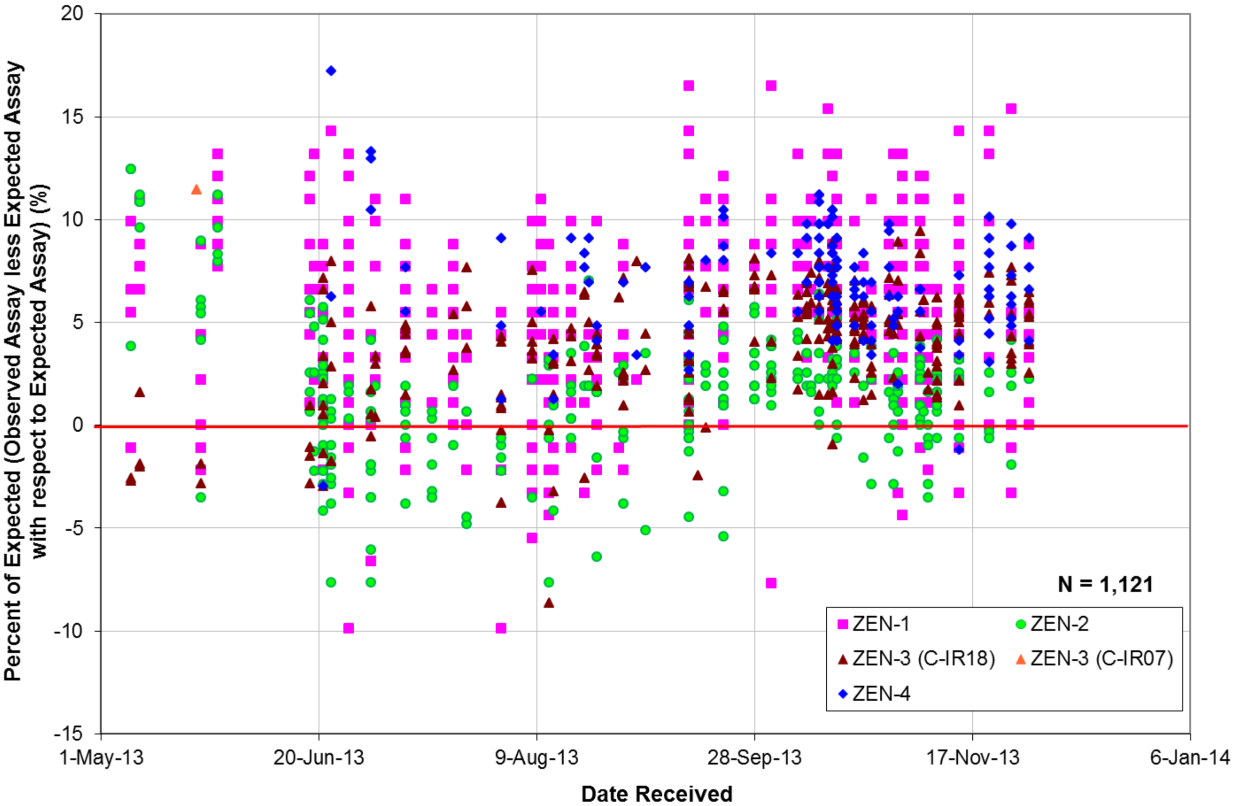


TABLE 11-2 SUMMARY OF CRM RESULTS
Zenyatta Ventures Ltd. – Albany Project

CRM	No.	Expected Cg (%)		Observed Cg (%)		% of Expected	Mislabels
		Average	Std. Dev.	Average	Std. Dev.		
ZEN-1	489	0.91	0.045	0.96	0.04	105.3	4
ZEN-2	272	3.13	0.125	3.18	0.10	101.4	7
ZEN-3	243	7.42	0.415	7.71	0.21	103.9	1
ZEN-4	130	14.12	0.99	15.08	0.39	106.8	2
Total	**1,134**	*-Weighted Average				**104.2***	**14**

Fourteen cases were identified where either the CRM code was recorded incorrectly or there was a sample mix-up with an adjacent sample. Two CRMs (representing <1% of the submitted CRMs) where identified as QC failures based on sulphur results. As sulphur is of secondary interest, Zenyatta chose not to re-assay results based on these failures.

Figure 11-1 and Table 11-2 suggest that results may be biased high for three of the four CRMs. Additional discussion on this potential bias is provided below in the subsection titled Assay

Check Samples. Overall, the average results are generally within ±10% and RPA considers the CRM results acceptable, but recommends that the expected values for the in-house CRMs be re-evaluated prior to the next drilling campaign.

BLANKS

Contamination and sample numbering errors are assessed through blank samples, on which the presence of the elements undergoing analysis has been confirmed to be below the corresponding detection limit. A significant level of contamination is identified when the blank sample yields values exceeding 0.2% Cg, which is ten times detection limit of 0.02% Cg. The matrix of the blank sample should be similar to the matrix of the material being routinely analyzed.

A blank consisting of coarse-grained granite was purchased from Analytical Solutions Ltd., Toronto. A total of 1,128 blanks were submitted with the 22,932 field and QC samples for an insertion rate of about 5%, or approximately 1 in 20 samples. Blank assay results are plotted in Figure 11-2, and statistics are listed in Table 11-3. Based on these results, there is no evidence of systematic sample contamination.

FIGURE 11-2 BLANK RESULTS

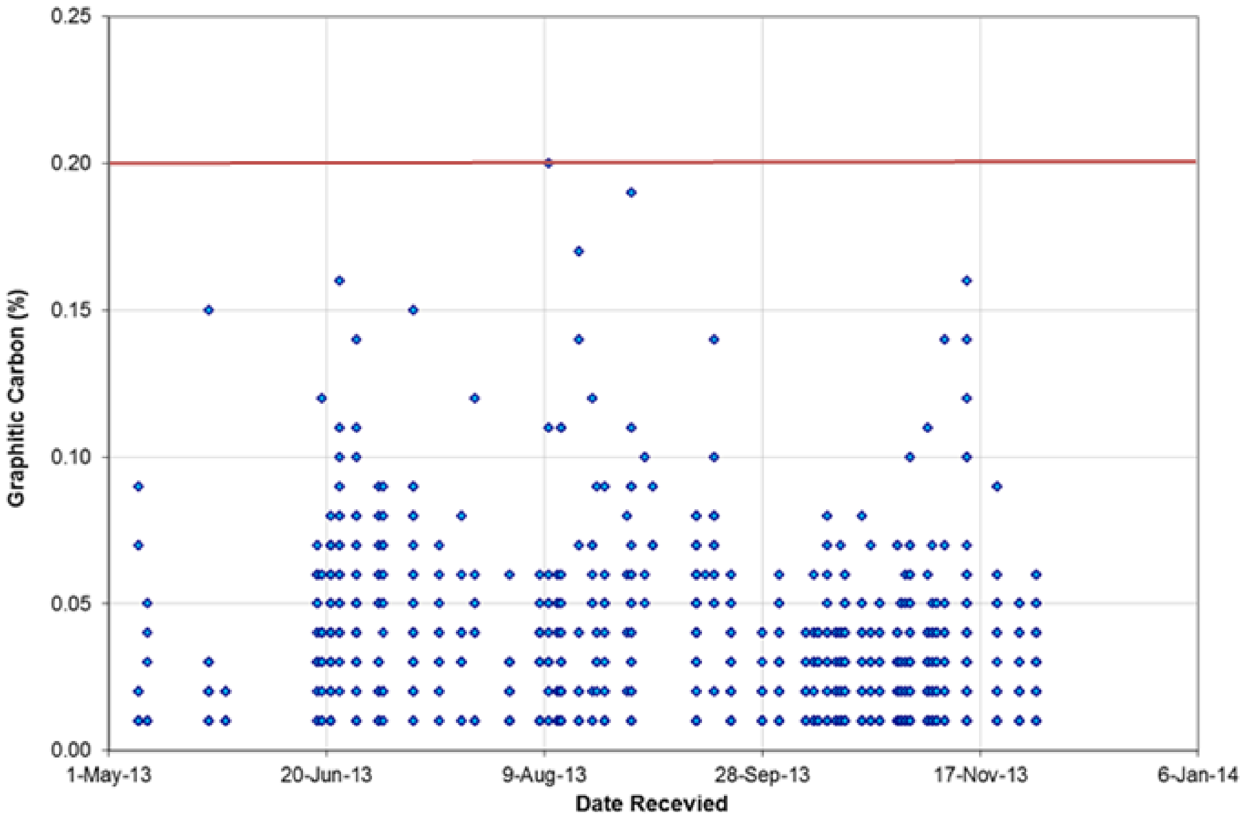


TABLE 11-3 SUMMARY OF BLANK RESULTS
Zenyatta Ventures Ltd. – Albany Project

Criteria	Cg	S
No. of Cases	1,128	1,128
Minimum (%)	0.010	0.030
Maximum (%)	0.200	0.160
Arithmetic Mean (%)	0.030	0.110
Standard Deviation (%)	0.026	0.020
No. of Mislabelled Samples	1	1
No. of Failures	2	1

DUPLICATES

Field duplicates assess the variability introduced by sampling the same drill core interval. The duplicate splits are bagged separately with separate sample numbers so as to be blind to the sample preparation laboratory. The duplicates contain all levels of sampling and analytical error and are used to calculate field, sample preparation, and analytical precision. They are also a check on possible sample over selection, that is, the sampler has either purposely or inadvertently sampled the drill core so as to preferentially place visible mineralization in the sample bag sent for analysis.

Coarse duplicates (or coarse reject duplicates) are duplicate samples taken immediately after the first crushing and splitting step. At Zenyatta's request, the coarse duplicates pairs were created by splitting the crushed sample in two equal parts. The coarse duplicates will inform about the subsampling precision, that is, they report the errors due to sample size reduction after crushing, and the errors associated with weighing and analysis of the pulp. In order to ensure repeatability conditions, both the original and the coarse duplicate samples should be submitted to the primary laboratory, in the same sample batch and under a different sample number, so that pulverization and assaying follow the same procedure.

Pulp duplicates consist of second splits of final prepared pulverized samples, analyzed by the same laboratory as the original samples under different sample numbers. The pulp duplicates are indicators of the analytical precision, which may also be affected by the quality of pulverization and homogenization. In order to ensure repeatability conditions, both the original and the pulp duplicate samples should be submitted to the primary laboratory, in the same sample batch, and under a different sample number, so that assaying follows a similar procedure.

Zenyatta incorporated core, reject, and pulp duplicates into the sample stream. Results are summarized below.

DRILL CORE DUPLICATES

Drill core duplicates consist of two quarter core samples; the other half of the drill core is left in the box. RPA recommends that Zenyatta instead submit two half core samples instead of quarter core, to maintain a consistent sample size.

Ninety-four pairs of drill core duplicate samples were submitted for analysis. The original and duplicate sample assay results are plotted in Figure 11-3 and statistics are summarized in Table 11-4. Results confirm that there has been no bias introduced by preferentially submitting the more mineralized half of the core for assay.

FIGURE 11-3 SCATTERPLOT OF DRILL CORE DUPLICATES

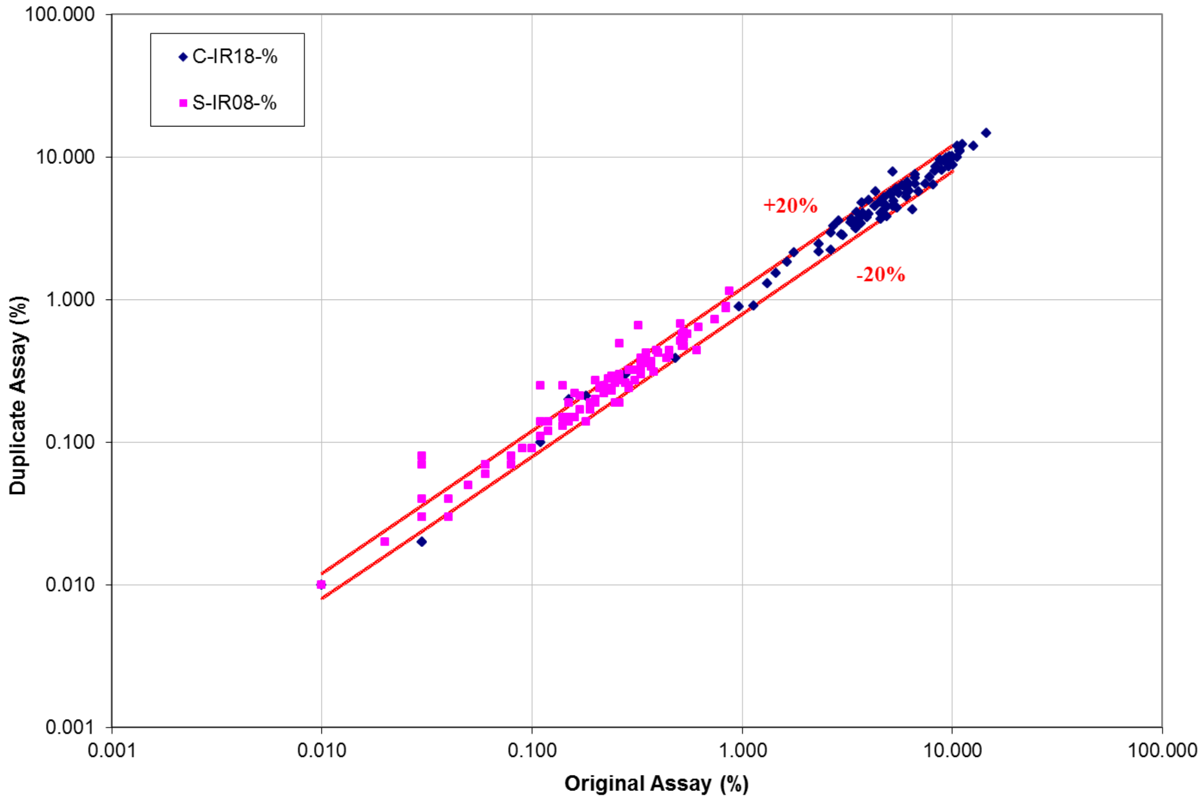


TABLE 11-4 DRILL CORE DUPLICATE RESULTS
Zenyatta Ventures Ltd. – Albany Project

Element (units)	Criteria	No.	Original > Duplicate	Original < Duplicate	Original = Duplicate
Cg (%)	all samples	94	46	47	1
			49%	50%	1%
	> 5 x DL*	91	44	47	0
			48%	52%	0%
S (%)	all samples	94	28	45	21
			30%	48%	22%
	> 5 x DL*	85	27	43	15
			32%	50%	18%

*Detection Limit

REJECT DUPLICATES

A total of 992 pairs of reject duplicate samples were submitted for analysis. The original and duplicate sample assay results are plotted in Figure 11-4 and statistics are summarized in Table 11-5.

FIGURE 11-4 SCATTERPLOT OF REJECT DUPLICATES

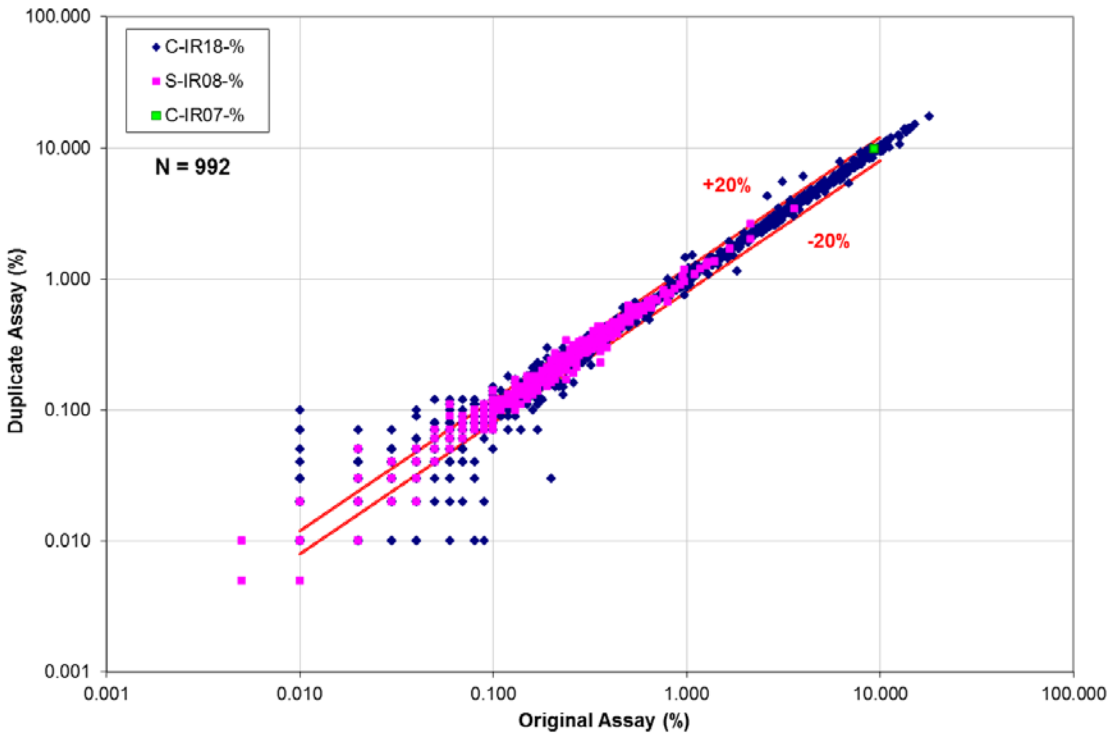


TABLE 11-5 SUMMARY OF REJECT DUPLICATE RESULTS
Zenyatta Ventures Ltd. – Albany Project

Element (units)	Criteria	No.	Original > Duplicate	Original < Duplicate	Original = Duplicate
Cg (%)	all samples	992	414	426	152
			42%	43%	15%
	> 5 x DL*	679	319	311	49
			47%	46%	7%
S (%)	all samples	992	310	286	396
			31%	29%	40%
	> 5 x DL*	795	275	259	261
			35%	32%	33%

*Detection Limit

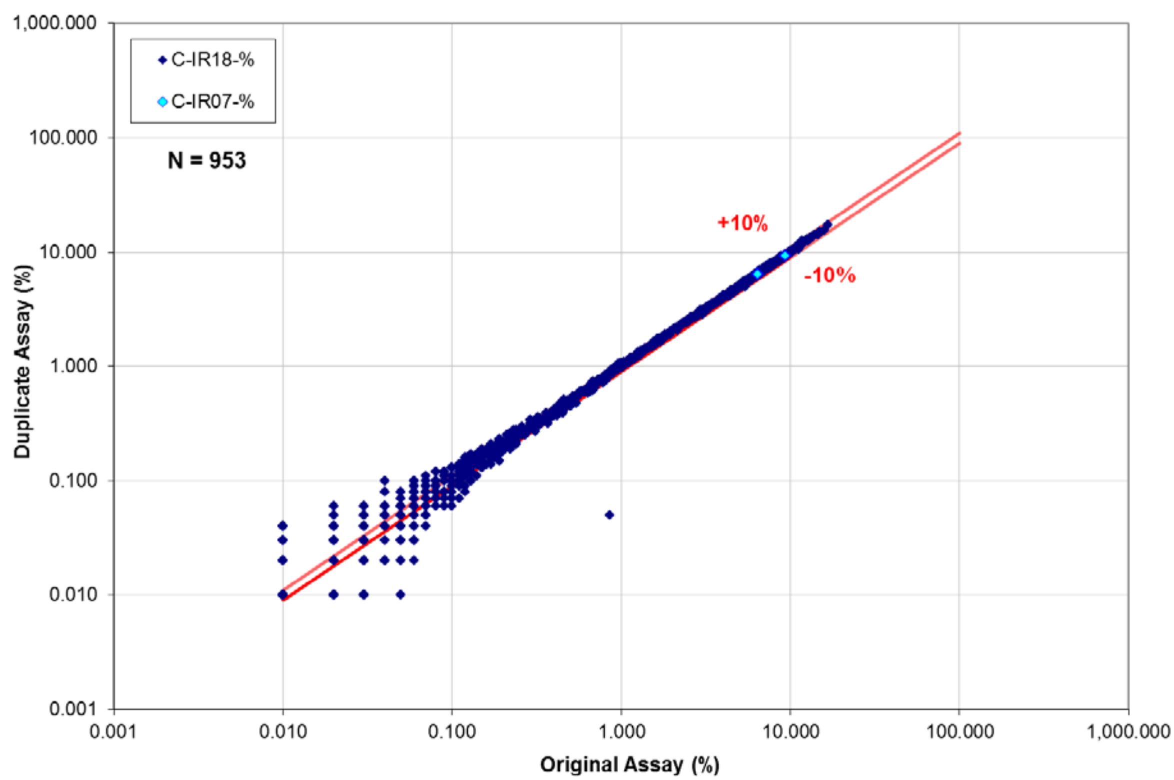
One case was identified where the difference between reject duplicates was greater than ±100% and average assays were greater than 0.1% Cg.

It is RPA's opinion that there is no bias evident between original and duplicate halves of the drill core. That is, there has been no selection bias introduced.

LABORATORY PULP DUPLICATES

A total of 953 pairs of laboratory pulp duplicate samples were assayed for graphitic carbon and 809 for sulphur. The original and duplicate sample assay results are plotted in Figure 11-5 and statistics are summarized in Table 11-6.

FIGURE 11-5 SCATTERPLOT OF PULP DUPLICATES



It is RPA's opinion that laboratory reproducibility of assays on the same pulp and at the same laboratory fall within the expected ranges. Overall, the precision for the field, reject, and pulp duplicates is very good. Most duplicates are well within ±10% to ±20%.

ASSAY CHECK SAMPLES

Check samples consist of second splits of the final prepared pulverized samples routinely analyzed by the primary laboratory and re-submitted to a secondary laboratory under a different sample number. These samples are used to assess the assay accuracy of the primary laboratory relative to the secondary laboratory.

Zenyatta's QA/QC protocol calls for check samples to be taken at a rate of approximately 3% (1 in every 35 to 40 samples) and submitted to a secondary laboratory. RPA received the results for 555 check samples, which covered the entire Albany drilling campaign to date. Zenyatta used ISO/IEC 17025 accredited SGS Mineral Services in Lakefield, Ontario (SGS), as the secondary laboratory.

SGS employed the following methods:

- Carbon: graphitic carbon by LECO furnace/IR (GE CSA05V), with a 0.01% detection limit, and
- Sulphur: total sulphur by LECO furnace/IR (GE CSA06V), with a 0.005% detection limit.

Along with the 555 check samples submitted to SGS, Zenyatta inserted 22 blanks and 22 CRMs. No blank failures were identified, although a mislabelled sample was noted. Four QC failures and a mislabelled sample were identified from the submitted CRMs. All four failed for graphitic carbon and one failed for both graphitic carbon and sulphur. Zenyatta requested re-assaying for the failures, including four samples that preceded and five samples that followed these failures. The four CRM repeat assays reported within ±20% of the expected value, but were biased low for both graphitic carbon (-12.26%) and sulphur (-2.86%).

Graphitic carbon check assays results are plotted on a scatterplot in Figure 11-6.

FIGURE 11-6 SCATTERPLOT OF CHECK SAMPLES SENT TO SGS

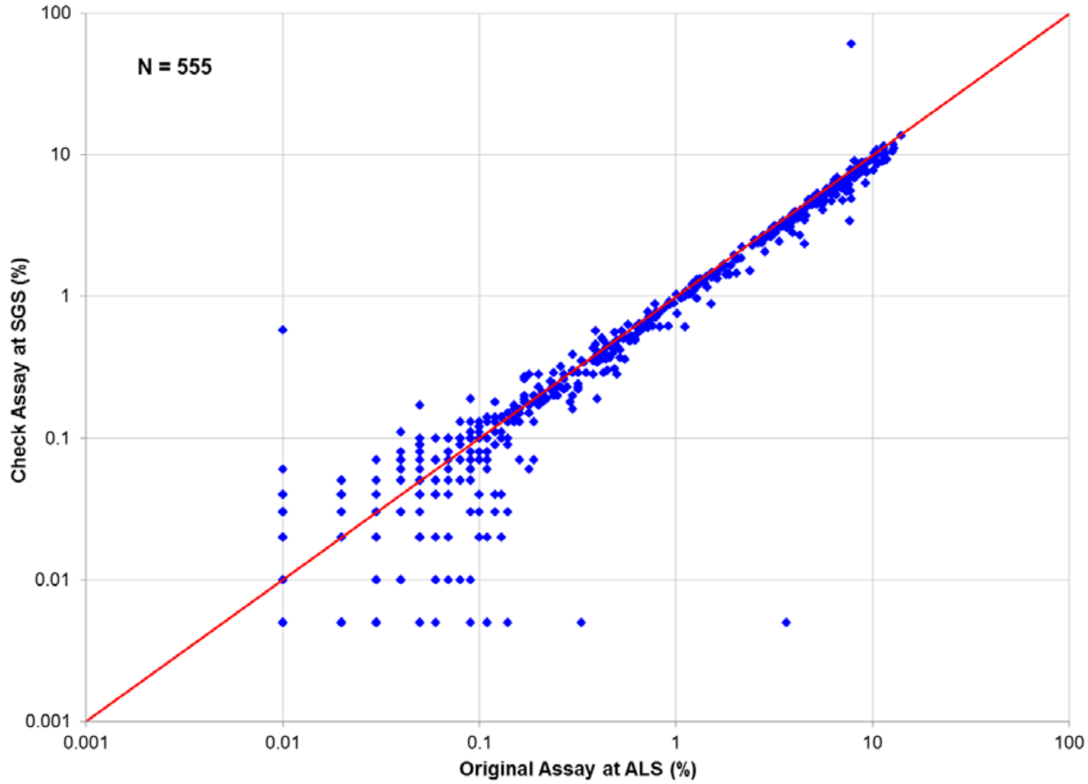


Table 11-6 summarizes the check assay pair results, highlighting the relative differences between the primary and secondary laboratories. There should be a near equal number of cases where one laboratory reports higher than the other, and vice versa. For the 391 samples with graphitic carbon concentrations greater than five times detection limit, there are 329 cases where ALS assays are higher than SGS assays and 53 cases where SGS assays are higher than ALS assays. Sulphur is equally distributed between the two laboratories

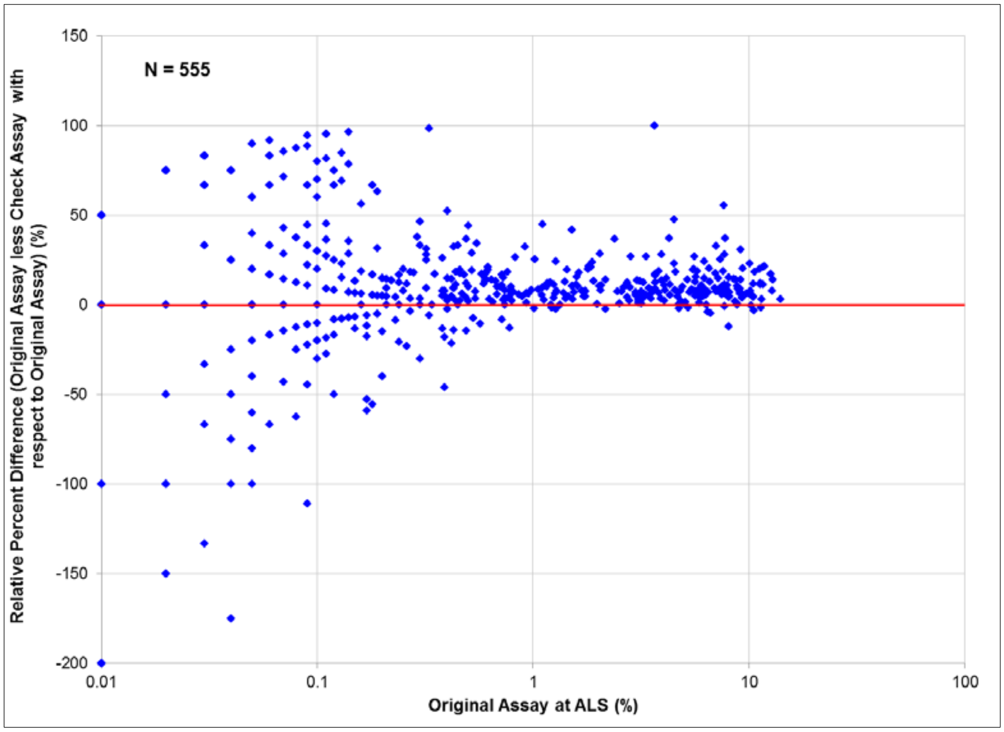
TABLE 11-6 CHECK SAMPLE ASSAY RESULTS
Zenyatta Ventures Ltd. – Albany Project

Element	Criteria	No.	ALS > SGS	ALS < SGS	ALS = SGS	Average Difference (%)
Cg (%)	all samples	555	414	120	21	-6.16%
			74%	22%	4%	
	> 5 x DL*	391	329	53	9	9.73%
			84%	14%	2%	
S (%)	all samples	555	184	217	154	-6.37%
			33%	39%	28%	
	> 5 x DL*	457	167	175	115	-0.13%
			37%	38%	25%	

*Detection Limit

For check assay samples greater than five times detection limit, the average Relative Percent Difference (RPD) was 9.7%, indicating that ALS assays are biased high by 9.7% when compared to the SGS assays. In Figure 11-7, graphitic carbon results from ALS are plotted with the RPD of the check assay pair as the vertical scale to illustrate precision as it relates to grade.

FIGURE 11-7 GRADE VERSUS RPD OF CHECK SAMPLES SENT TO SGS



It should be noted, however, that SGS, on average, reported 7.3% low on CRM samples, implying that the two sets of assays are, in fact, comparable.

Three check samples returned assays that differed by more than 100%: one sample for Cg only, one sample for S only, and one sample for both Cg and S. A clerical error is the likely source of the Cg only assay error.

Results of the check sampling for the drilling program to date has highlighted a potential high bias in the primary laboratory (ALS) assays of graphitic carbon. Zenyatta's check assay QC program, however, also suggests a low bias in the secondary laboratory (SGS) assays of graphitic carbon. It is RPA's opinion that Zenyatta's program of check sampling is rigorous, however, RPA suggests that Zenyatta further investigate the potential of a high bias in the analytical method employed by the primary laboratory, ALS.

SAMPLE SECURITY

Drill core is delivered directly to Zenyatta's core handling facility. After logging, sawing, and bagging, core samples for analysis are stored in a secure building at the same facility. The warehouse is either locked or under direct supervision of the geological staff. Prior to shipping, drill core samples are placed in large rice bags and sealed. A sample transmittal form is prepared that identifies each batch of samples. The samples are transported directly to the ALS facility in Thunder Bay, Ontario, for sample preparation. ALS forwards sample pulps to its laboratory facility in North Vancouver, British Columbia, Canada, for analysis. Analytical results are emailed to Zenyatta staff for review and importation into the resource database.

12 DATA VERIFICATION

RPA reviewed and verified the resource database used to estimate the Mineral Resources for the Albany graphite deposit. The verification works included a review of the QA/QC methods and results, checking assay certificates against the database assay table, a site visit and review of drill core, standard database validation tests, and independent sampling of drill core. The review of the QA/QC program and results is presented in Section 11, Sample Preparation, Analyses, and Security.

RPA considers the resource database reliable and appropriate to prepare a Mineral Resource estimate.

MANUAL DATABASE VERIFICATION

The review of the resource database included header, survey, lithology, assay, and specific gravity tables. Database verification was performed using tools provided within the Dassault Systèmes GEOVIA GEMS Version 6.6 software package (GEMS). As well, the assay and density tables were reviewed for outliers. A visual check on the drill hole GEMS collar elevations and drill hole traces was completed. Minor inconsistencies were noted and promptly corrected by Zenyatta.

RPA verified thousands of assay records. This included comparison of 18,444 assays and 782 specific gravity results in the resource database to the digital laboratory certificates of analysis, which were received directly from ALS. No discrepancies were found.

RPA SITE VISIT

David Ross, P.Geo., RPA Director of Resource Estimation, Principal Geologist and an independent Qualified Person (QP), visited the Property on July 12 and 13, 2013. During the visit, Mr. Ross verified the collar locations of drill holes Z12-4F-3, Z12-4F-4, Z12-4F-9, Z13-4F-11, Z13-4F-19, and Z13-4F-30. Core from the following drill holes were reviewed:

- East Pipe: Z13-4F-11, Z13-4F-20, and Z13-4F-13.
- West Pipe: Z11-4F-1, Z12-4F-6, Z13-4F-26, Z13-4F-27, and Z13-4F-30.

INDEPENDENT DRILL CORE SAMPLING

Four samples of split core were marked and quarter core duplicate samples were cut under the supervision of Mr. Ross. Duplicate samples were selected on the basis of graphitic carbon assays in Zenyatta's drill logs. In addition, Mr. Ross obtained a sample of Zenyatta's blank material and certified reference material (CRM) ZEN-2 for confirmation analyses.

The selected samples were bagged, tagged, sealed, and submitted to ALS's Thunder Bay laboratory for preparation. Each bagged core sample was dried, crushed, and pulverized to better than 85% passing 75 µm following ALS protocol PREP-31B (see Section 11). The sample pulps were forwarded to ALS's Vancouver, British Columbia facility for assay. Graphite assays were obtained using the graphitic carbon by LECO method (ALS protocol C-IR18, see Section 11).

Table 12-1 lists those samples taken for duplicate analysis. Four duplicate samples are insufficient to make statistical comparisons; however, RPA's sampling confirms that significant graphitic carbon mineralization exists on the Albany graphite deposit.

TABLE 12-1 RPA CHECK SAMPLE SUMMARY
Zenyatta Ventures Ltd. – Albany Project

Drill Hole	From (m)	To (m)	Pipe	Zenyatta Sampling		RPA Sampling	
				Sample ID	Cg (%)	Sample ID	Cg (%)
Z13-4F20	80	81	East	N471445	6.63	215601	6.99
Z13-4F20	81	82	East	N471446	4.69	215602	5.58
Z13-4F13	263	264	East	N468507	7.26	215603	9.96
Z13-4F11	470	471	East	N473130	8.67	215604	8.23
Blank	-	-	-	BLANK	0.00	215605	0.02
Standard	-	-	-	ZEN-2	3.13	215606	3.26

13 MINERAL PROCESSING AND METALLURGICAL TESTING

The flowsheet selected for the PEA is based on beneficiation (which consists of crushing, grinding, and flotation) and purification (which consists of caustic (NaOH) leach and baking (350°C), mild HCl leach, and impurity precipitation) to recover a high-purity graphite product. Testwork that forms the basis of the PEA was carried out primarily at SGS in Lakefield, Ontario.

The objectives of the work at SGS were to generate data regarding the concentration process for engineering design, to produce concentrates and tailings for down-stream characterization and testing, to further the purification process, and to generate bulk samples of the high-purity products.

METALLURGICAL SAMPLES AND TESTING

In September 2013, Zenyatta shipped a composite sample from the East Pipe (EP) weighing approximately 5.5 tonnes to SGS for metallurgical testing (RPA, 2014). The EP Composite was comprised of material from drill holes Z13-4FM01 to Z13-4FM03. In November, 2013, a composite sample from the West Pipe (WP) weighing approximately 4.6 tonnes was shipped to SGS and a composite sample was prepared from drill holes Z13-4FM04 to Z13-4FM06. Figure 13-1 illustrates the location of the drill holes for the samples used in metallurgical testing. For each composite, comminution and bench scale flotation testwork was conducted, while testwork for the purification steps was conducted primarily on EP samples.

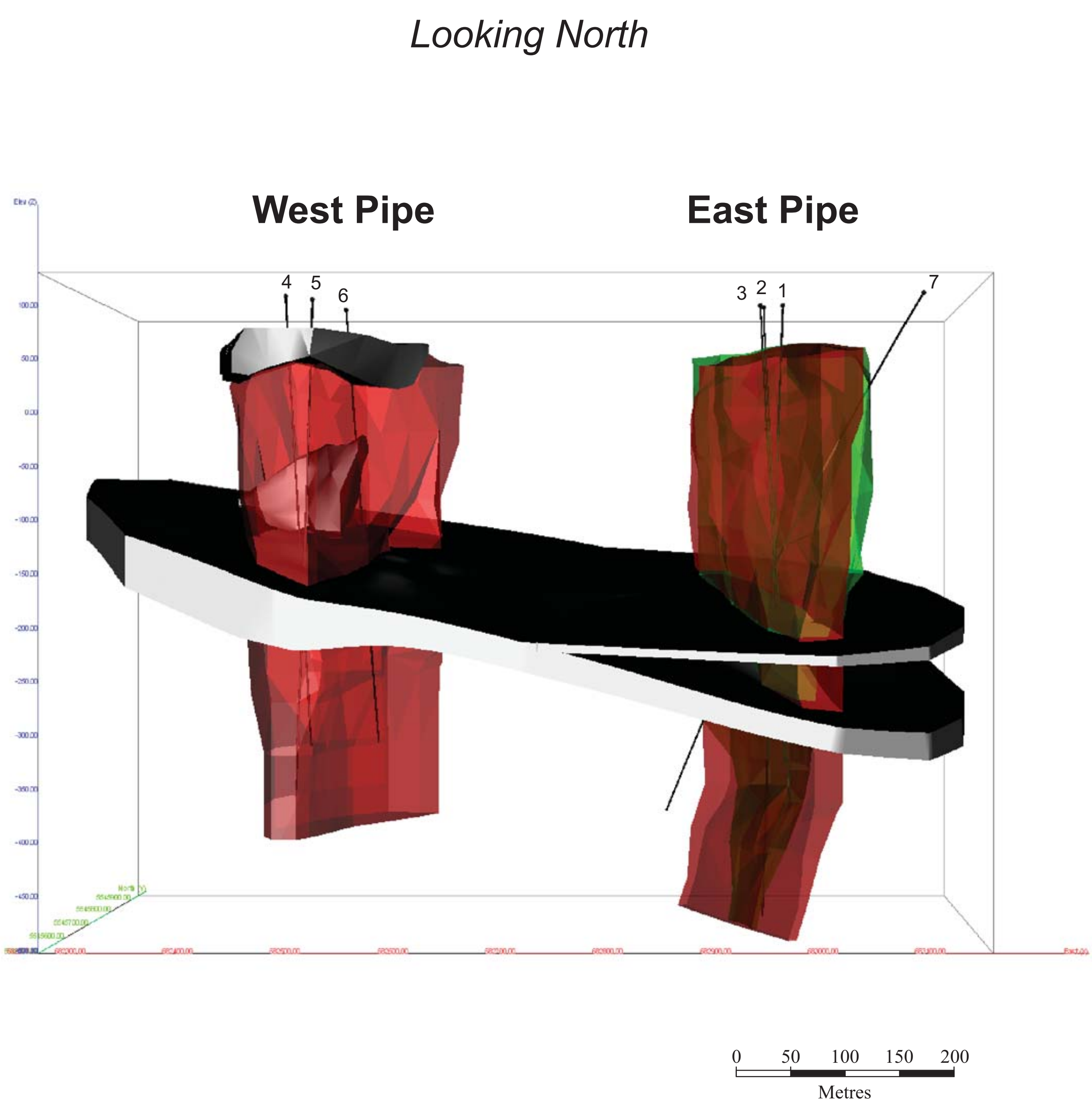


Figure 13-1

1 – 3: drill holes Z13-4FM01 to Z13-4FM03
4 – 6: drill holes Z13-4FM04 to Z13-4FM06
7: drill hole Z13-4F14

Zenyatta Ventures Ltd.

Albany Graphite Project
Northern Ontario, Canada
Location of Metallurgical Drill Holes and Samples

July 2015

Table 13-1 shows the key head assay results for the two metallurgical composites.

TABLE 13-1 COMPOSITE HEAD ASSAY RESULTS
Zenyatta Ventures Ltd. – Albany Project

Element		EP Composite	WP Composite
C_t	%	4.64	2.79
S	%	0.24	0.23

Notes: C_t – total carbon

COMMINUTION TESTING

Table 13-2 shows the results from JKTech Semi-autogenous Grinding (SAG) Mill Comminution testing (SMC), Bond Crushing Work Index (CWI), Bond Rod Mill Work Index (RWI), Bond Ball Mill Work Index (BWI), and Bond Abrasion Index (AI) tests (JKTech, 2014).

TABLE 13-2 COMMINUTION TEST RESULTS
Zenyatta Ventures Ltd. – Albany Project

Sample Name	Relative Density	JK Parameters		Work Indices (kWh/t)			AI
		A x b	DWI	CWI	RWI	BWI	(g)
EP Composite	2.63	35.6	7.42	11.4	15.4	18.0	0.682
WP Composite	2.65	40.4	6.56	11.3	15.4	17.0	0.606

The EP Composite was characterized as hard based on impact breakage and moderately hard with respect to abrasion breakage. The WP Composite was characterized as moderately hard in terms of impact breakage and medium in terms of abrasion breakage. Both composites were categorized as moderate in hardness for CWI and RWI and hard to moderately hard for BWI. AI values were greater than 0.60 g for both composites which indicates the material is highly abrasive.

FLOTATION TEST PROGRAM

To confirm parameters for larger scale pilot plant testing, eight batch flotation tests were conducted on the EP Composite and two rough/cleaner flotation tests were conducted on the WP Composite. The following parameters were analysed during batch flotation: primary grind size, regrind grind size, and the number of cleaner flotation and regrinding steps. Flotation testing and flotation pilot plant testing were documented in several reports (SGS, 2014a and 2014e).

Key results from optimized flotation tests are shown in Table 13-3. The optimized rougher/cleaner flowsheet included a primary grind size of P_{80} of between 175 µm to 200 µm, rougher flotation of eight minutes, three stages of regrinding spaced between nine cleaner flotation stages. A carbon grade of greater than 92% was achieved at carbon recoveries of more than 80% for each composite. The size of the final concentrate was P_{80} of 12 µm.

TABLE 13-3 OPTIMIZED FLOTATION RESULTS
Zenyatta Ventures Ltd. – Albany Project

Test No.	Composite Sample	Rougher Flotation Concentrate Carbon			9th Cleaner Flotation Concentrate Carbon		
		% Mass	% Grade	% Recovery	% Mass	% Grade	% Recovery
F8	EP	26.2	17.0	92.2	4.32	92.0	82.2
F10	WP	22.1	12.7	92.6	2.61	93.5	80.5

Locked cycle tests (six cycles per test) on each composite were performed following optimization of batch flotation. The results of the locked cycle tests are shown in Table 13-4. Carbon recoveries achieved were higher than the recoveries from optimized batch flotation tests, but the grades of the final concentrates were lower.

TABLE 13-4 LOCKED CYCLE FLOTATION RESULTS
Zenyatta Ventures Ltd. – Albany Project

Product	Composite	% Mass	Grade % C_t	% Distribution C_t
9th Cleaner Concentrate	EP	5.57	76.6	92.3
9th Cleaner Concentrate	WP	3.44	69.5	89.5

Note: C_t is total carbon

Information from batch and locked cycle flotation testwork was used to construct a mini-pilot plant with a throughput of 60 kg/h. Results from surveys completed during the mini-pilot plant campaign for the EP and WP Composites are shown in Tables 13-5 and 13-6, respectively. Flotation pilot plant testing demonstrated that high recoveries could be achieved with final concentrate grades of over 80% C_t and 70% C_t for EP and WP Composites, respectively.

TABLE 13-5 EP PILOT PLANT RESULTS

Zenyatta Ventures Ltd. – Albany Project

Survey	Product	Wt. %	Grade % C_t	% Distribution C_t
Day-long commissioning tests				
	9th Cleaner Concentrate	5.29	80.5	84.3
PP-02	Combined Tails	94.7	0.84	15.7
	Feed	100.0	5.05	100.0
	9th Cleaner Concentrate	5.23	78.7	83.4
PP-03	Combined Tails	94.8	0.87	16.6
	Feed	100.0	4.94	100.0
	9th Cleaner Concentrate	4.30	85.0	76.4
PP-04	Combined Tails	95.7	1.17	23.6
	Feed	100.0	4.78	100.0
Continuous tests				
	9th Cleaner Concentrate	5.11	81.5	87.3
PP-05A	Combined Tails	94.9	0.65	12.7
	Feed	100.0	4.78	100.0
	9th Cleaner Concentrate	4.77	82.4	81.3
PP-05B	Combined Tails	95.2	0.94	18.7
	Feed	100.0	4.82	100.0
	9th Cleaner Concentrate	4.96	78.4	88.6
PP-06A	Combined Tails	95.0	0.53	11.4
	Feed	100.0	4.39	100.0
	9th Cleaner Concentrate	6.18	78.0	92.8
PP-06B	Combined Tails	93.8	0.39	7.23
	Feed	100.0	5.18	100.0
	9th Cleaner Concentrate	6.41	77.2	92.8
PP-07A	Combined Tails	93.6	0.39	7.22
	Feed	100.0	5.31	100.0

TABLE 13-6 WP PILOT PLANT RESULTS
Zenyatta Ventures Ltd. – Albany Project

Survey	Product	Wt. %	Grade % C_t	% Distribution C_t
Day-long commissioning tests				
	9th Cleaner Concentrate	3.48	71.2	88.5
PP-08	Combined Tails	96.5	0.33	11.5
	Feed	100.0	2.80	100.0
	9th Cleaner Concentrate	3.55	62.3	84.8
PP-09	Combined Tails	96.4	0.41	15.2
	Feed	100.0	2.61	100.0
	9th Cleaner Concentrate	3.11	67.6	79.2
PP-10	Combined Tails	96.9	0.57	20.8
	Feed	100.0	2.65	100.0
Continuous tests				
	9th Cleaner Concentrate	1.77	80.8	52.7
PP-11A	Combined Tails	98.2	1.31	47.3
	Feed	100.0	2.72	100.0
	9th Cleaner Concentrate	3.05	78.0	81.4
PP-11B	Combined Tails	97.0	0.53	18.6
	Feed	100.0	2.89	100.0
	9th Cleaner Concentrate	3.31	75.9	85.0
PP-12A	Combined Tails	96.7	0.496	15.0
	Feed	100.0	2.96	100.0
	9th Cleaner Concentrate	3.03	79.6	85.6
PP-12B	Combined Tails	97.0	0.40	14.4
	Feed	100.0	2.80	100.0
	9th Cleaner Concentrate	3.05	78.5	79.8
PP-13A	Combined Tails	97.0	0.63	20.2
	Feed	100.0	3.00	100.0

In 2014, additional flotation testwork was carried out by SGS to investigate the following (SGS, 2014e):

- Batch flotation test program on EP Composite to produce a final flotation concentrate grading higher than 90% C_t at a grind size coarser than P_{80} of 40 µm. The effectiveness of a flash flotation step before the rougher flotation stage was also studied to potentially coarsen the final grind size, however, the concentrate generated in flash flotation appeared to be graphite not fully liberated from silicate gangue.

- Bulk concentrate production (2 kg) based on the results of Test F8 (SGS, 2014a) and the use of a M4 model IsaMill for the three stages of regrind. The final C_t grade achieved was 90.2%, but the recovery was lower than planned due to mass loss taking IsaMill samples and higher mass loss through the 1st cleaner tailings.

- Upgrading of the carbon content of WP Composite pilot plant final concentrate (test PP-12-B) from 75% C_t to 90% C_t. Test work showed that the final concentrate could only be upgraded to approximately 80% C_t and the graphite particles were smeared across the majority of the gangue material and could not be effectively separated via flotation.

Following this series of tests, it was concluded by SGS that the optimized flotation flowsheet was the original flowsheet with rougher concentration followed by three stages of regrind spaced between nine stages of cleaner flotation (SGS, 2014b and 2014c).

In 2015, SGS recommended the following changes to the flotation circuit:

- IsaMill (for regrinding) be replaced by conventional grinding
- Third stage of regrind and the last three cleaner flotation stages be omitted

These changes would result in a slightly lower grade concentrate (88.6% C) for purification. The results from the 6th cleaner flotation concentrate generated in Test F8 were compared to the target feed to purification, which was used as the basis for the current design of the flotation process. The figures shown in Table 13-7 are in close agreement. It should be noted that the regrinding testwork was originally conducted to support IsaMill selection. Additional regrind testing should consider conventional grinding for Regrind Mill #1 and #2 to confirm the particle size distribution of the feed to cleaner flotation Stage 1 and Stage 4.

TABLE 13-7 OPTIMIZED FLOTATION RESULTS FOR PURIFICATION
Zenyatta Ventures Ltd. – Albany Project

Test No.	Composite Sample	Rougher Flotation Concentrate Carbon			6th Cleaner Flotation Concentrate Carbon		
		% Mass	% Grade	% Recovery	% Mass	% Grade	% Overall Recovery
F8	EP	26.2	17.0	92.2	3.9	87.14	84.61
Target						88.6	84.54

PURIFICATION TEST PROGRAM

From 2013 to 2015, an extensive test program to purify the graphite concentrate was undertaken at SGS and included the following investigations:

- Base-line purification testwork (2013 – 2014) confirmed the possibility of producing high-purity graphite containing 99% C in a single step and 99.8% C after two purification steps from a feed concentrate containing approximately 78% C (SGS, 2013). No engineering data was generated from testing, but samples were produced for marketing purposes.

- Two-stage caustic baking conceptual flowsheet in 2014 demonstrated that the graphite concentrate could be purified to 99.4% C_g (graphitic carbon) and the recovery in purification was 83.5%. The overall recovery from ore to purified graphite was approximately 69%. The process flowsheet considered agglomeration with caustic, evaporation, baking (350ºC), and extensive solid/liquid separation and washing stages (SGS, 2014d).

- Direct leaching-baking conceptual flowsheet in 2015 demonstrated that the graphite concentrate could be purified to 99.94% Cg and the recovery achieved in purification was 89.13% using an alkaline (NaOH) treatment (two caustic leaching stages bracketing a 350ºC baking stage) followed by mild HCl leach (SGS, 2015a and 2015b). This flowsheet required fewer process steps and achieved the highest-purity product.

The results from bench scale testing of direct leaching-baking were then used as the basis of the current design for the purification process (SGS, 2015c).

Flotation concentrate samples generated from Test F8 on EP Composite were used to conduct bench scale testing of direct leaching-baking. The target feed quality of graphite concentrate for purification consisted of material containing approximately 88.6% C and was produced at 84.54% overall recovery with a particle size slightly above 20 µm. These specifications closely represent the concentrate produced after six stages of cleaner flotation.

The direct leaching-baking steps in graphite purification were tested at the bench-scale and include the following stages:

1. Stage 1 Alkaline Leach with NaOH at ambient and elevated temperature (140°C), followed by solid/liquid separation without washing.
2. Low Temperature Baking at 350°C.
3. Stage 2 Alkaline Leach with NaOH at 140°C, followed by solid/liquid separation with counter-current washing.
4. Aluminum (Al)/Silicon (Si) Removal or AlSiRe, followed by solid/liquid separation.
5. Stage 3 Mild HCl Leach at ambient temperature, followed by solid/liquid separation with counter-current washing.
6. Drying.

Other than the impurity removal steps above, to RPA's knowledge there are no other processing factors that could have a significant effect on potential economic extraction. Table 13-8 summarizes the % purity and % recovery achieved from purification testwork (SGS, 2015b). A target product purity of greater than 99.9% was achieved following Stage 3 Leach. At a conceptual level, the overall beneficiation and purification process for graphite production was successfully demonstrated through laboratory testing.

TABLE 13-8 OVERALL TEST RESULTS
Zenyatta Ventures Ltd. – Albany Project

	Flotation Overall	Stage 1 Leach	Stage 2 Leach	Stage 3 Leach	Purification Overall	Process Overall
Purity, % C_g	88.60	97.96	99.27	99.94	99.94	99.94
% Recovery	84.54	91.43	90.18	99.90	89.13	75.40

PROCESS FLOWSHEET SELECTION

The process flowsheet selected for the PEA is based on recent metallurgical development testwork completed at SGS. It comprises crushing and grinding, flotation, and alkaline treatment (one caustic leaching stage on each side of a low temperature baking (350°C) stage) followed by mild HCl leaching to extract a purified graphite product.

In RPA's opinion, the metallurgical testwork completed to date has focused on achieving product purity and not on optimization of the process. The hydrometallurgical testing is currently in progress and the results related to areas of the purification flowsheet have not been optimized. Waste streams and water consumptions need further definition. Final reports documenting the lab-scale purification test program are to be completed by SGS. Further improvements in process design, performance, and cost reduction are to be expected with advanced levels of study.

FUTURE TESTWORK

In RPA's opinion, the metallurgical variability of the deposit requires further evaluation. Metallurgical testwork on flotation has been carried out on two composite samples (EP and WP) and on purification using only EP Composite material. Additional flotation testing to assess the impact of ore variability in the feed grades of EP Composite and WP Composite is recommended. Tests for regrinding, liquid-solid separation, and thickening of products (concentrate and tails) should be conducted to confirm laboratory results for six stages of cleaner flotation, instead of nine stages of cleaner flotation.

The purification flowsheet (consisting of hydrometallurgical and pyrometallurgical processes) is complex and requires investigation of potential corrosion risks, handling of material from several different process streams, and extensive solid-liquid separation. Further optimization testwork in purification is recommended to validate and to confirm the robustness of the overall process design and reagent consumptions. Analysis and characterization of process wastes (potentially from off-gas handling and AlSiRe) are necessary to determine how to dispose of the materials. Stages of larger scale testing are recommended to confirm laboratory bench-scale tests and include:

- Mini-pilot plant testwork program
- Larger scale pilot/demonstration unit at an advanced level of study

14 MINERAL RESOURCE ESTIMATE

SUMMARY

RPA estimated Mineral Resources for the Albany graphite deposit (Table 14-1) using drill hole data available as of November 15, 2013 and economic assumptions current to June 1, 2015. The Mineral Resource estimate is based on a potential combined open pit and underground mining scenario. RPA estimates Indicated Mineral Resources to total 24.3 million tonnes (Mt) at an average grade of 3.98% Cg, containing 968,000 tonnes of Cg. In addition, Inferred Mineral Resources are estimated to total 16.9 Mt at an average grade of 2.64% Cg, containing 445,000 tonnes of Cg. Inferred Mineral Resources include 5.4 Mt Open Pit (OP) resources at an average grade of 2.58% Cg, containing 138,000 tonnes of Cg constrained by a Whittle pit shell, and 11.5 Mt of Underground (UG) resources below the pit shell at an average grade of 2.67% Cg, containing 307,000 tonnes of Cg. OP Mineral Resources are reported at a cut-off grade of 0.9% Cg, and UG Mineral Resources at a cut-off grade of 1.5% Cg.

There are no Mineral Reserves estimated on the Property.

TABLE 14-1 MINERAL RESOURCE ESTIMATE – JUNE 1, 2015
Zenyatta Ventures Ltd. – Albany Project

	Cut-off Grade (% Cg)	Tonnage (Mt)	Grade (% Cg)	Contained Graphitic Carbon (t Cg)
OP				
Indicated	0.9	24.3	3.98	968,000
Inferred	0.9	5.4	2.58	138,000
UG				
Indicated	-	-	-	-
Inferred	1.5	11.5	2.67	307,000
Total Indicated	**Variable**	**24.3**	**3.98**	**968,000**
Total Inferred	**Variable**	**16.9**	**2.64**	**445,000**

Notes:
1. CIM definitions were followed for Mineral Resources.
2. Cg – graphitic carbon
3. Mineral Resources are estimated using a long-term price of US$7,500 per tonne Cg, and an exchange rate of US$0.82 = C$1.00.
4. Bulk density is 2.6 t/m^3 in the pipes and 2.65 t/m^3 in the halo of the East Pipe.
5. OP Mineral Resources are constrained by a pit-shell generated in Whittle software.

6. UG Mineral Resources are constrained by a nominal 1.5% Cg wireframe, which includes some material below cut-off to preserve continuity.
7. Numbers may not add due to rounding.

RESOURCE DATABASE

RPA received data from Zenyatta in Microsoft Excel format. The data was amalgamated and parsed as required and imported into GEMS for modelling. Listed below is the number of records directly related to the resource estimate:

- Holes: 63
- Surveys: 5,060
- Assays: 20,293 (was 19,078)
- Composites 7,925 (≥0.5 m in length)
- Lithology: 1,952
- Full zone width composites: 214
- Density measurements: 857

Assays for metallurgical drill holes Z13-4FM04, Z13-4F05, and Z13-4FM06 were not received by November 15, 2013, the database cut-off date; however, these holes were used for the geological interpretation. RPA has since received assay results for these drill holes and visually confirmed that the Cg grades correspond to the current block model, and therefore these new assays would have only a minor effect when updating the block model. RPA considers the November 2013 block model to remain current and has reassigned an effective date of June 1, 2015.

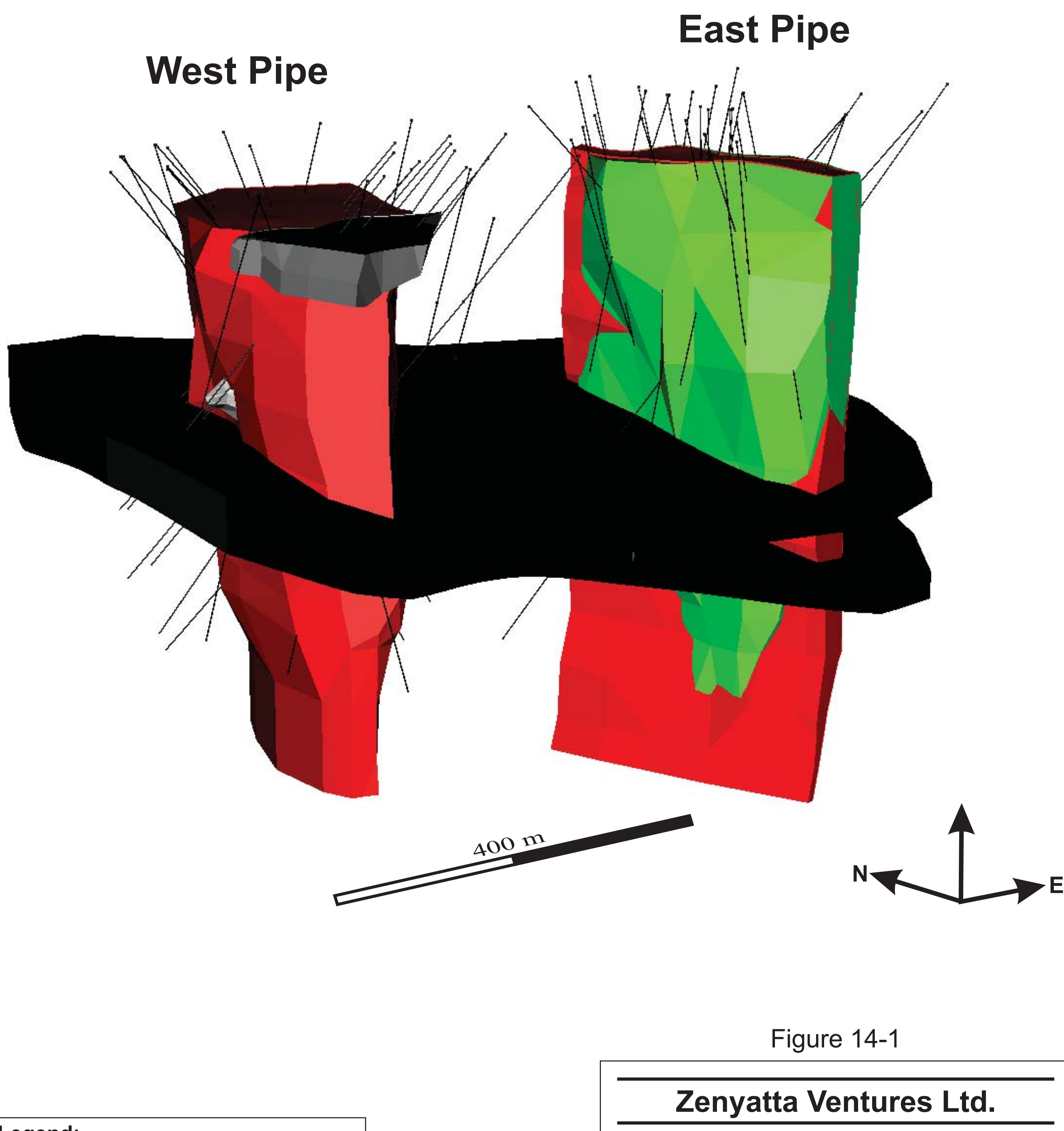
Section 12, Data Verification, describes the verification steps completed by RPA. In summary, no discrepancies were identified and RPA is of the opinion that the GEMS drill hole database is valid and suitable to estimate Mineral Resources for the Albany graphite deposit.

GEOLOGICAL INTERPRETATION AND 3D SOLIDS

Wireframe models of the mineralized zones were built to study geological and grade continuity and to constrain the block model interpretation.

RPA created northeast and northwest looking vertical sections spaced 50 m apart on the West and East Pipes, respectively, level plans spaced 10 m, 25 m, and 50 m apart, and longitudinal sections parallel to the strike of each pipe (approximate azimuth of 020° for the West Pipe and 335° for the East Pipe). Mineralized zones were interpreted on plan sections and snapped to drill holes to generate a set of 3D wobbly polylines on each cross-section (Figure 14-1). At model extremities, polylines were extrapolated approximately 100 m beyond the last drill section. Polylines were joined together in 3D using tie lines and the continuity was checked using the longitudinal and vertical sections. Once the mineralized wireframes were triangulated, clipping boundaries were used to constrain the solids along strike using EM geophysical survey data (Figure 14-2). The East Pipe mineralized wireframes were clipped to a depth of -500 MASL and the West Pipe to -400 MASL (Figure 14-2).

The Albany graphite deposit comprises two separate pipes, West and East. The West Pipe consists of a single mineralized zone, which encompasses graphitic breccia and some lower grade graphitic overprint in some marginal areas. The East Pipe consists of two mineralized zones: graphitic breccia and a low grade halo (Figure 14-1). The West and East graphitic breccia pipes were interpreted using geology. The low-grade halo was constructed considering geology and a minimum 0.4% Cg in the overprinted zones. Wireframes were extended through drill holes with low grade or barren intersections to preserve continuity. A description of each modelled zone follows.



July 2015

Figure 14-1

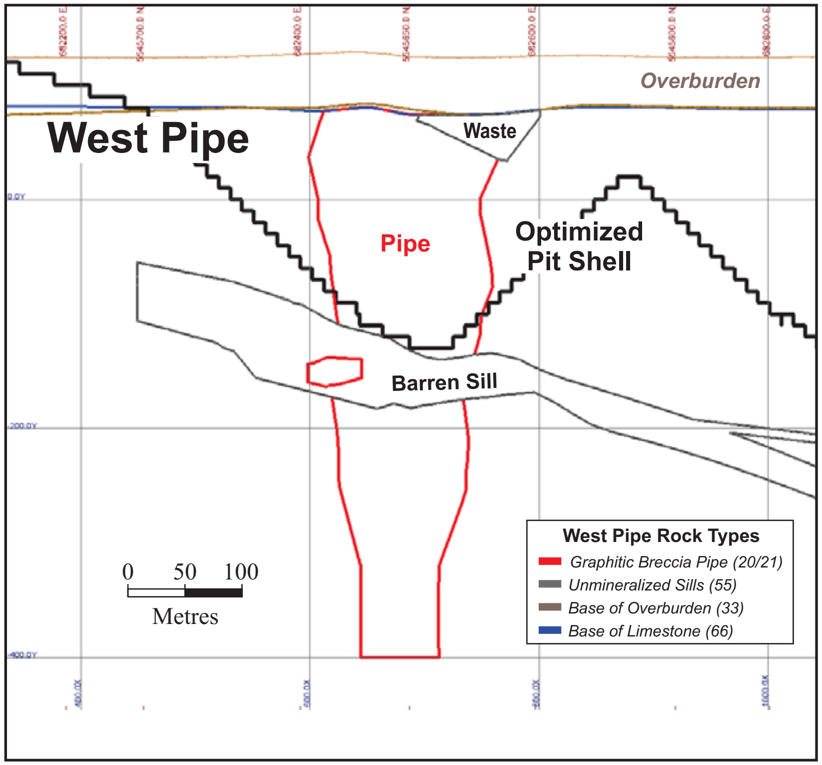
Zenyatta Ventures Ltd.

Albany Graphite Project

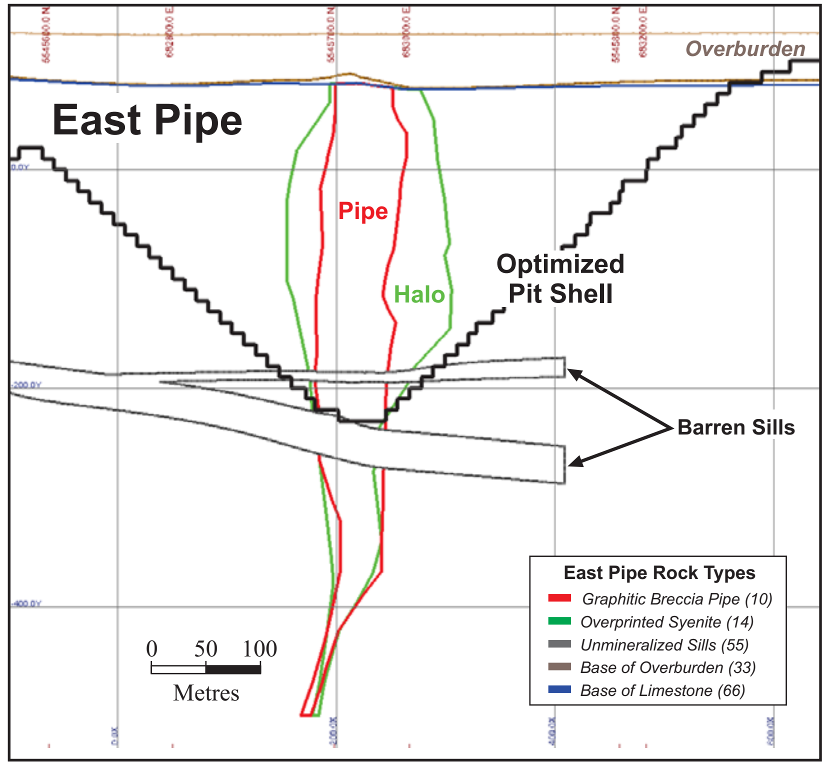
Northern Ontario, Canada

3D View of Wireframe Models

Looking NNE



Looking NNW



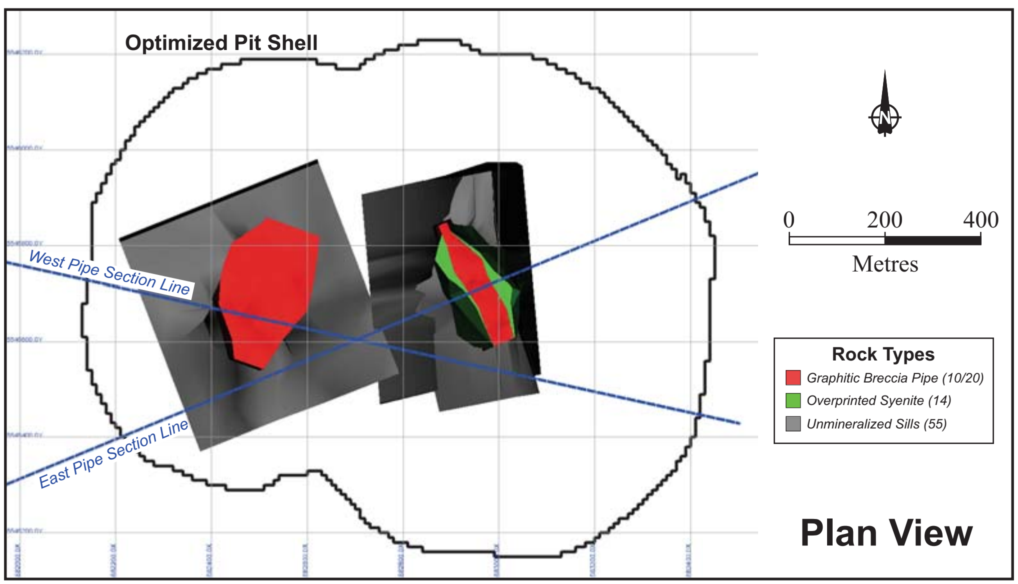


Figure 14-2

Zenyatta Ventures Ltd.

Albany Graphite Project

Northern Ontario, Canada

Vertical Cross Section of Wireframe Models

July 2015

RPA

www.rpacan.com

ROCK TYPE 20 – WEST PIPE

Rock type 20 is a graphitic breccia pipe intersected by 29 drill holes. It occurs as a steep-sided, inverted cone, narrowing with depth. It is elliptical in plan, elongated in a north-northeast direction. Dimensions are somewhat variable, ranging from 175 m at its widest, to less than 68 m at its base (Figure 14-3). Where the pipe is capped by Paleozoic limestone it is 160 m wide by 350 m long and the pipe is modelled to a depth of approximately 525 m below surface (-400 MASL).

The West Pipe is cut by a younger barren sill at a depth of approximately 200 m. The sill ranges from 40 m to nearly 65 m in thickness. In addition, two large blocks of un-mineralized waste material occur within the West Pipe. In the southern part of the pipe apex, a large slab of syenite (65 m in length by 40 m in thickness, see Figure 14-2) has been intersected by several drill holes, and just above the barren sill another large block of internal waste has been modelled (approximately 110 m x 60 m x 90 m). At the margins of the pipe, some graphitic overprint has been incorporated into the wireframe model.

ROCK TYPE 21 – WEST PIPE MINERALIZED WEDGE

Within the barren sill of the West Pipe, a small (approximately 25 m x 50 m) "wedge" of mineralization has been modelled. It occurs in the western part of the pipe, at a depth of approximately 215 m. Samples within this mineralized wedge have returned assays higher than 5% Cg, and the average grade is 1.7% Cg.

ROCK TYPE 10 – EAST PIPE

Rock type 10 is a graphitic breccia pipe intersected by 31 drill holes. It occurs as a near-vertical tabular body, ranging from a width of 50 m at its apex to nearly 75 m, and tapers to a modelled width of approximately ten metres. The pipe is modelled to a depth of -500 MASL, or approximately 625 m below the topographic surface. In plan, the East Pipe is elongated in a north-northwest direction, extending for approximately 250 m. The pipe is cut by two younger barren sills. The thinnest and shallowest is intersected in drill holes at a depth of roughly 310 m and ranges from 10 m to 12 m in thickness. The second, thicker sill, is intersected at a depth of 340 m to 345 m, and averages 35 m thick.

ROCK TYPE 14 – EAST PIPE MINERALIZED HALO

Rock type 14 is a 0.4% Cg halo of overprinted syenite country rock surrounding the East Pipe. Grades range to over 16% Cg, but overall the grade averages 0.7% Cg. In general, there is a significant drop in grade at the contact between the graphitic breccia of rock type 10 and the overprinted syenite. Minor intersections of higher grade graphite breccia occur within the overprinted syenite.

At the bedrock surface, the East Pipe, including the graphitic breccia and overprinted syenite, has an average width of approximately 80 m and reaches widths of up to 150 m. On its own, the low grade halo (above the barren sills) ranges in thickness from 30 m to 60 m and it is thicker on the eastern side of the pipe. Beneath the barren sills, there only remains a thin skin of overprinted syenite on the western side of the pipe, averaging five metres in thickness. The overprinted syenite halo is modelled to the same depth as the East Pipe graphitic breccia.

ROCK TYPE 55 – BARREN SILL

All barren intrusive rocks within the West and East pipes are designated as rock type 55.

The West Pipe is cut by a sub-horizontal barren sill at a depth of approximately 250 m that dips 10° to 15° to the east. Its thickness ranges from less than 40 m to greater than 60 m. There is a minor amount of graphitic mineralization within the sill, and where sufficient continuity was demonstrated, a small wedge of mineralization (rock type 21) was modelled. Two fairly substantial blocks of barren intrusive rock (predominantly syenite) have been modelled in the West Pipe. At the top of the pipe, a 40 m by 100 m un-mineralized zone of syenite has been delineated and just above the barren sill is an irregular-shaped block of internal waste that measures 100 m by 90 m.

The East Pipe is cut by two barren sills. The upper sill, intersected at a depth of approximately 310 m, ranges from 10 m to 12 m in thickness and is nearly horizontal. A second, wider (35 m thick) sill is intersected 40 m below the upper unit and has a shallow dip to the east. The sills that cut both pipes are likely part of the same body.

RPA created 3D wireframes to represent barren sills that cut the graphite breccia pipes. In addition, a large block of barren material was wireframed in the West Pipe and designated as waste material.

Wireframes for the base of the overburden and Paleozoic sedimentary unit were generated utilizing Leapfrog software and imported into GEMS. The topographic surface was constructed in GEMS using drill collar elevation data. The West and East Pipe mineralized wireframes were constrained by the base of the sedimentary unit.

Table 14-2 summarizes the rock types in the Albany Graphite Deposit.

TABLE 14-2 ALBANY RESOURCE ROCK TYPES
Zenyatta Ventures Ltd. – Albany Project

Pipe	Rock type	Name	Description
East	10	10_EAST	East Graphitic Breccia Pipe
	14	10.4_EAST	Low grade graphitic overprint halo
	55	WASTE1	Barren sill
	55	WASTE2	Barren sill
West	20	20_WEST	Graphitic Breccia Pipe minor graphitic overprint along margins
	21	21_WEST	Graphitic Breccia “Wedge” within barren sill
	55	WASTE3	Barren sill
	55	WASTE4	Internal barren waste
	55	WASTE5	Barren syenite in the top of the pipe
Other	33	Overburden	Glacial till
	66	Sedimentary Rock	Paleozoic Limestone unit
	99	Country Rock Waste	Archean country rock

RPA notes that there is additional mineralization in assays outside the mineralized wireframes in the West and East pipes well above the cut-off grade of 0.6% Cg. It is RPA’s opinion that the narrower thickness and lower grade of these intercepts together with intervening material that is below cut-off grade precludes the inclusion of the intercepts as Mineral Resources at this time.

The Indicated Mineral Resources are located in the West and East Pipe graphitic breccia (rock types 10 and 20), exclusively above the barren sills. All mineralization below (or within) the barren sills as well as the East Pipe low grade halo (rock type 14) are classified entirely as Inferred Mineral Resources.

STATISTICAL ANALYSIS

Assay values located inside the wireframe models were tagged with domain identifiers (rock type) and exported for statistical analysis. Results assisted in verifying the modelling process. Basic statistics are summarized in Table 14-3.

TABLE 14-3 SUMMARY STATISTICS OF RESOURCE ASSAY VALUES
Zenyatta Ventures Ltd. – Albany Project

	Length (m)	Cg (%)
East Pipe – Rock Type 10		
No. of Cases	4,695	4,695
Minimum	0.05	0.02
Maximum	3.02	20.80
Median	1.00	5.18
Arithmetic Mean	1.01	5.18
Length Weighted Mean		5.17
Standard Deviation	0.25	3.89
Coefficient of Variation	0.25	0.75
East Pipe Halo – Rock Type 14		
No. of Cases	1,642	1,642
Minimum	0.24	0.02
Maximum	4.00	16.25
Median	1.00	0.40
Arithmetic Mean	1.08	0.71
Length Weighted Mean		0.69
Standard Deviation	0.44	1.08
Coefficient of Variation	0.41	1.53
West Pipe – Rock Type 20		
No. of Cases	4,821	4,821
Minimum	0.22	0.02
Maximum	3.19	14.65
Median	1.00	2.25
Arithmetic Mean	1.01	2.70
Length Weighted Mean		2.66
Standard Deviation	0.25	2.39
Coefficient of Variation	0.25	0.89
West Pipe Wedge – Rock Type 21		
No. of Cases	83	83
Minimum	0.26	0.02
Maximum	1.38	5.23
Median	0.99	1.20
Arithmetic Mean	0.84	1.70
Length Weighted Mean		1.71
Standard Deviation	0.26	1.46
Coefficient of Variation	0.31	0.86

CUTTING HIGH GRADE VALUES

Where the assay distribution is skewed positively or approaches lognormal, erratic high grade assay values can have a disproportionate effect on the average grade of a deposit. One method of treating these outliers in order to reduce their influence on the average grade is to cut or cap them at a specific grade level.

In the absence of production data to calibrate the cutting level, inspection of the assay distribution can be used to estimate a first pass cutting level. Figures 14-3 and 14-4 show the histogram and cumulative frequency log probability plot of Cg assays within the mineralized zone wireframes. Figure 14-5 shows the percentage of Cg loss with average cut grades.

FIGURE 14-3 HISTOGRAM OF RESOURCE ASSAYS

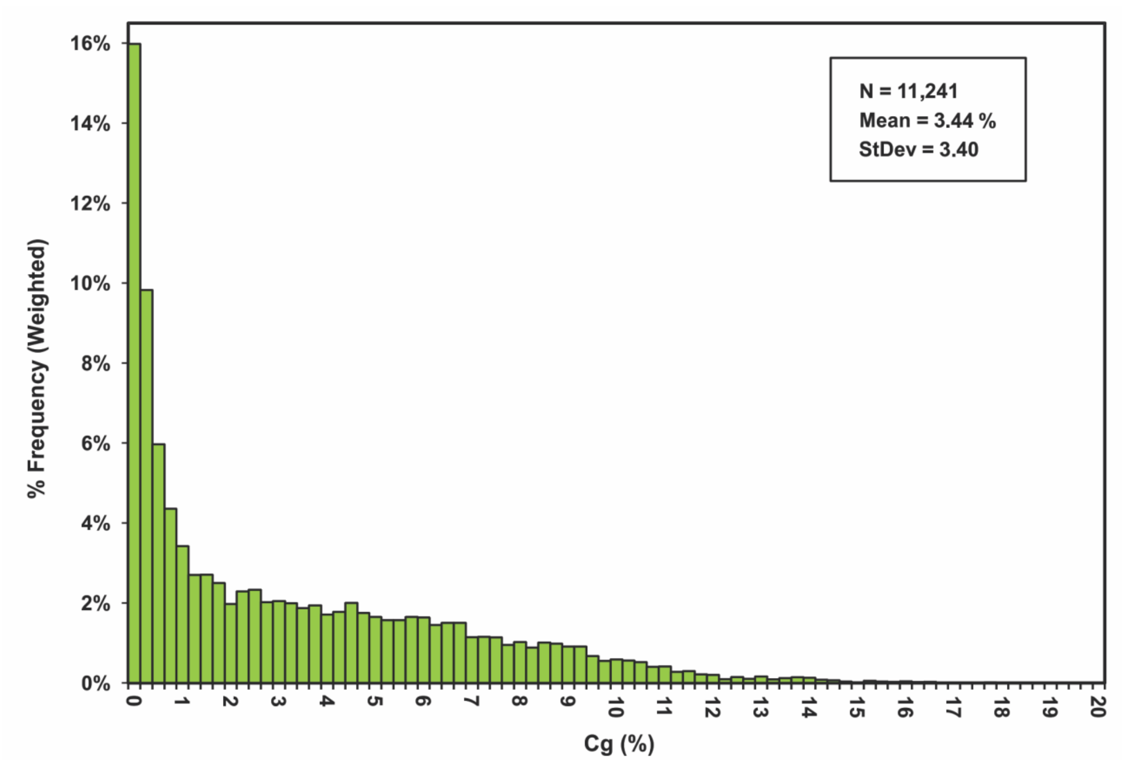


FIGURE 14-4 CUMULATIVE FREQUENCY LOG PROBABILITY PLOT

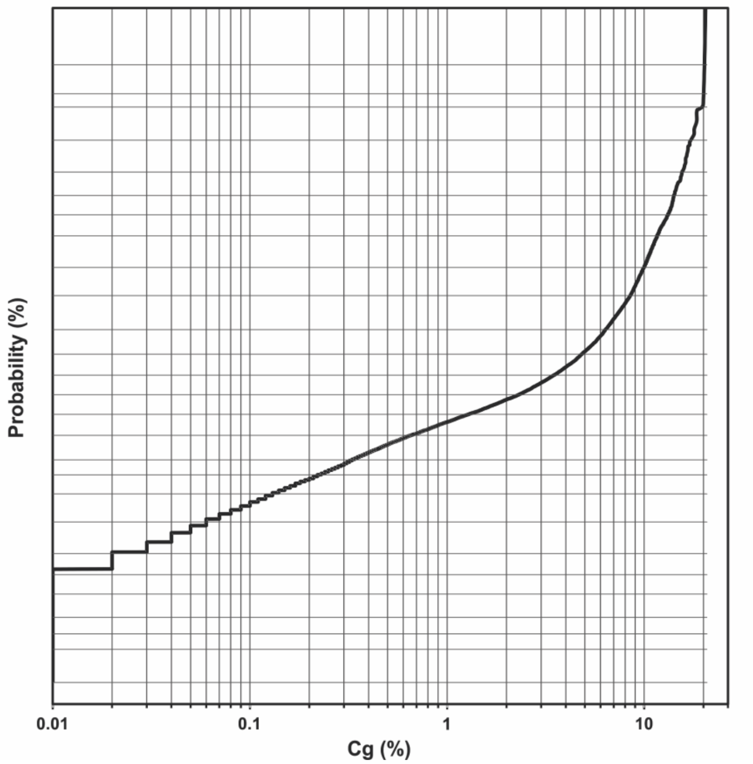
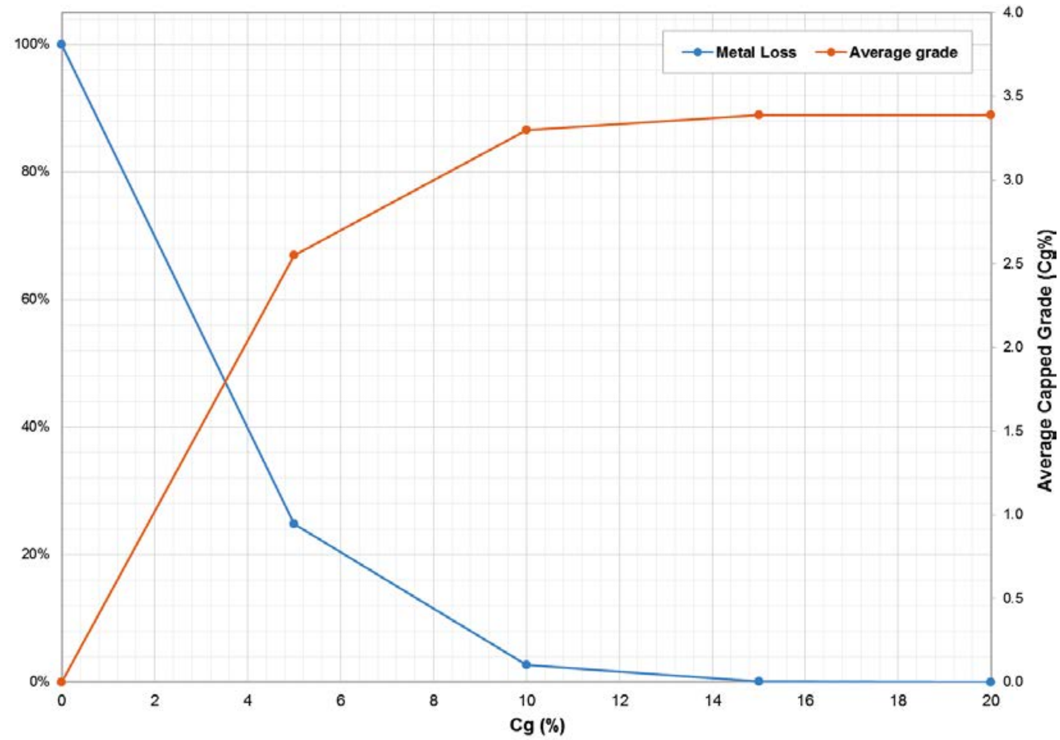


FIGURE 14-5 PERCENT GRAPHITE LOSS AND AVERAGE CUT GRADES



Review of the resource assay histograms within the wireframe domains (Figure 14-3), cumulative probability plots (Figure 14-4), Cg loss with cutting (Figure 14-5) suggests that no cutting of high grades is required for the Albany graphite deposit. Additionally, the coefficients of variation (CV) of the assays (Table 14-3) are mostly less than one, another indication that cutting is unnecessary.

COMPOSITING

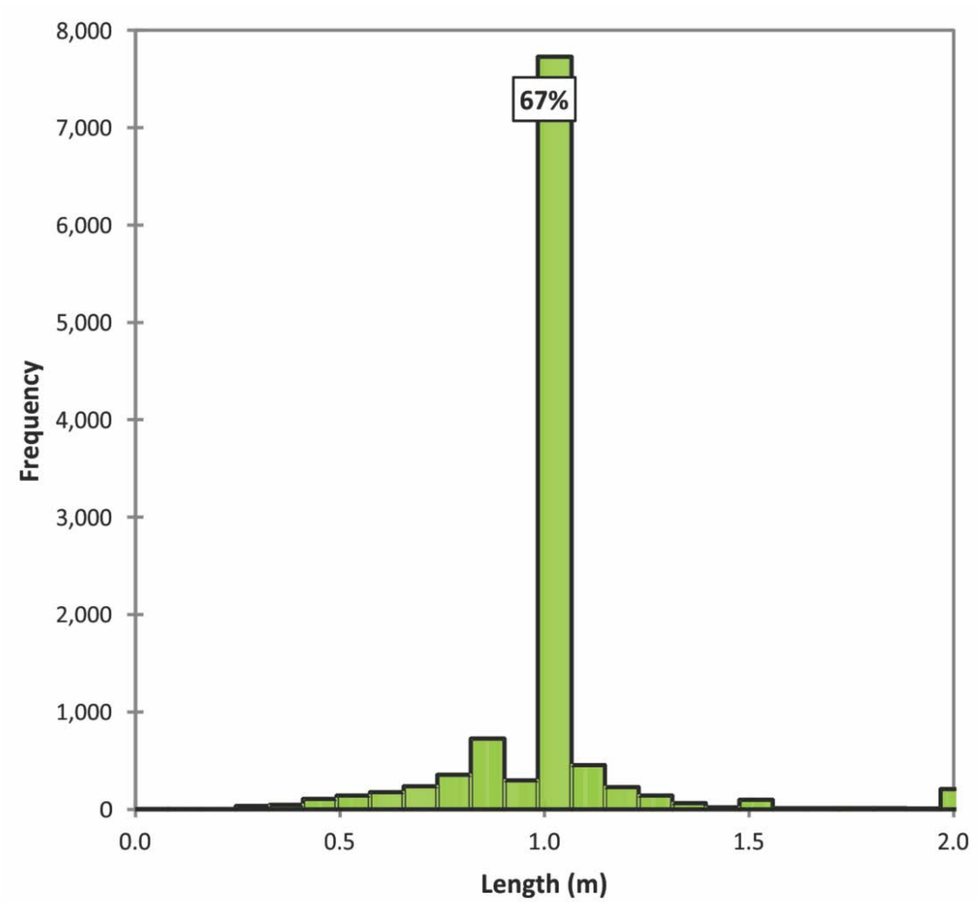
Sample lengths range from five centimetres to four metres within the wireframe models. Two-thirds (67%) of samples were taken at one metre intervals (Figure 14-6). Approximately 1.25% have sample lengths greater than two metres. Given these distributions and considering the width of mineralization, RPA chose to composite to two metre lengths. The resource assays were composited starting at the first mineralized wireframe boundary from the collar and resetting at each new wireframe boundary. Composites less than 0.5 m were removed from the database for resource estimation, but were used for variography.

Table 14-4 summarizes the composite statistics. When compared to Table 14-3, the average grades are essentially the same and the CV values have been reduced.

TABLE 14-4 SUMMARY STATISTICS OF RESOURCE COMPOSITES
Zenyatta Ventures Ltd. – Albany Project

Domain	East Pipe	East Pipe Halo	West Pipe	West Pipe Wedge
Rock Type	10	14	20	21
No. of Cases	2,382	891	2,617	36
Minimum (Cg %)	0.02	0.02	0.00	0.27
Maximum (Cg %)	14.99	9.08	10.36	3.99
Median (Cg %)	5.37	0.46	2.29	1.72
Arithmetic Mean (Cg %)	5.16	0.69	2.59	1.71
Standard Deviation (Cg %)	3.18	0.79	2.04	1.09
Coefficient of Variation	0.62	1.16	0.79	0.64

FIGURE 14-6 HISTOGRAM OF SAMPLE LENGTHS



VARIOGRAPHY AND KRIGING PARAMETERS

RPA used the GEMS 6.5 geostatistics module to prepare a series of variograms from Cg composite values located within the mineralized wireframes. The downhole variogram was well developed and indicates a nugget effect of 25% and 29% for the West and East pipes respectively. Variograms were attempted in a variety of directions and indicated that the longest ranges were 100 m for the West and 76 m for the East Pipe. A single structure spherical model was used with a 25% nugget effect to model the West Pipe experimental variograms and a spherical model using two structures with a 29% nugget effect was applied to the East Pipe. The variograms for the West and East pipes are shown in Figures 14-7 and 14-8, respectively.

A two-pass approach was used to interpolate block grades for both pipes, and no drill hole intercepts located outside the mineralized zone wireframes were used to interpolate block grades. The search ellipses are illustrated in Figures 14-9 and 14-10, and the ranges varied by pipe (Table 14-5). For the West Pipe, the search ellipse was ovoid in the vertical (XY) plane, using an X and Y search distance of 76 m and 58 m, and 36 m in the Z direction (Figure 14-8). The second pass used X and Y search distances of 152 m and 116 m and 72 m in the Z direction (Figure 14-9). For the East Pipe, the search ellipse was isotropic in the vertical (XY) plane, using an X and Y search distance of 100 m and a search distance of 35 m in the Z direction (Figure 14-10). The second pass used an X and Y search distance of 200 m and a search distance of 70 m in the Z direction (Figure 14-10).

The wireframe mineralized zone shells were used as hard boundaries to prevent the use of composites outside of the zones. The first pass search was limited to a minimum of four and a maximum of twelve composites per block estimate with a maximum of three composites per drill hole. The second pass search allowed an estimate with a minimum of two composites per block, a maximum of 24, and no limit placed on the number of composited used per drill hole.

FIGURE 14-7 WEST PIPE 3D VARIOGRAMS

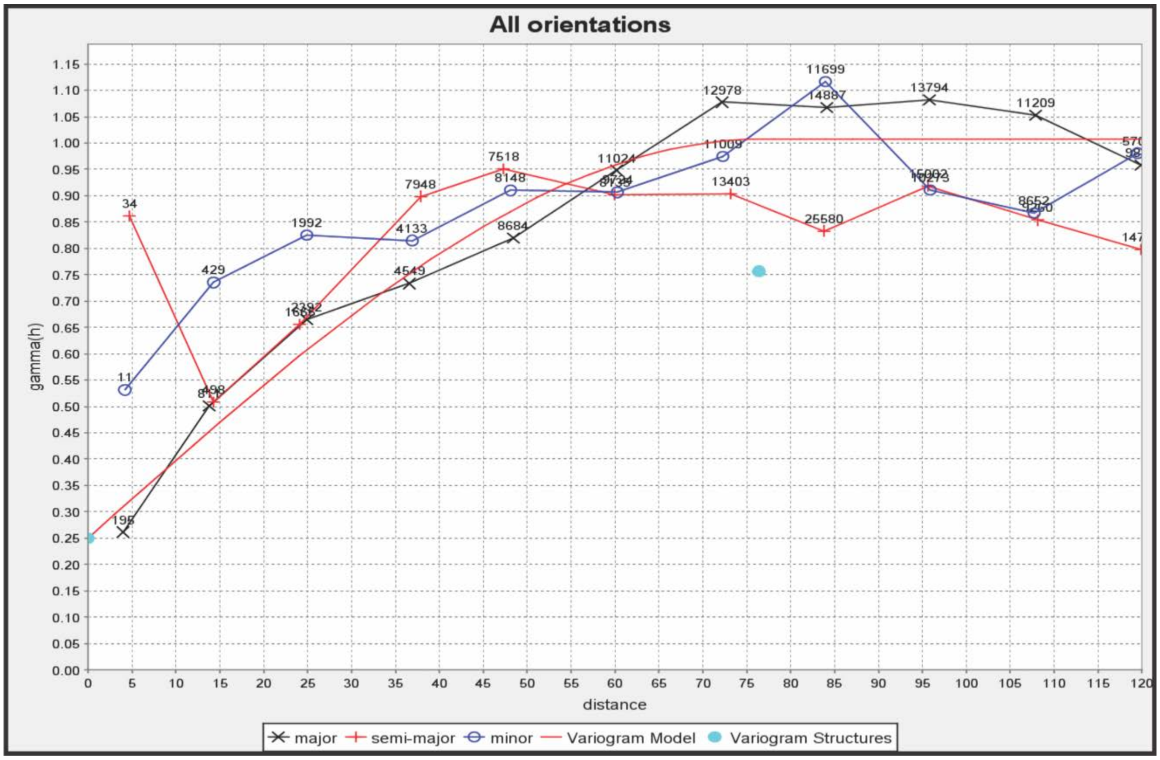
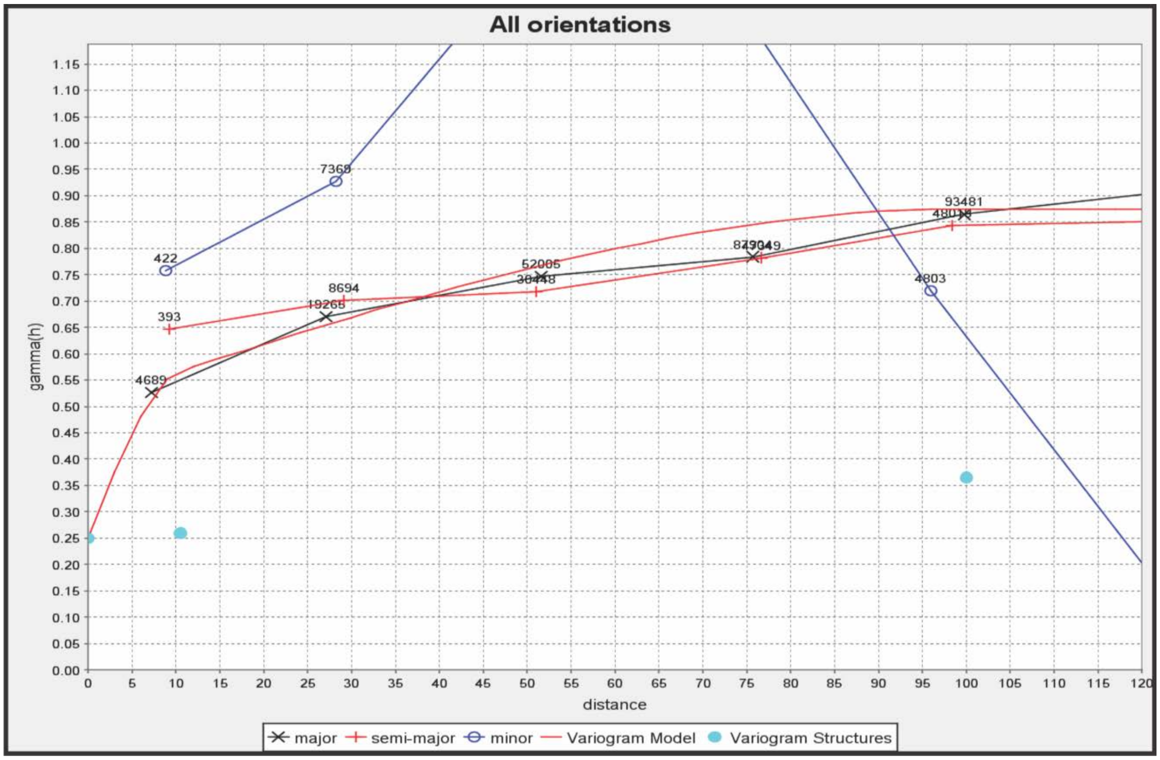
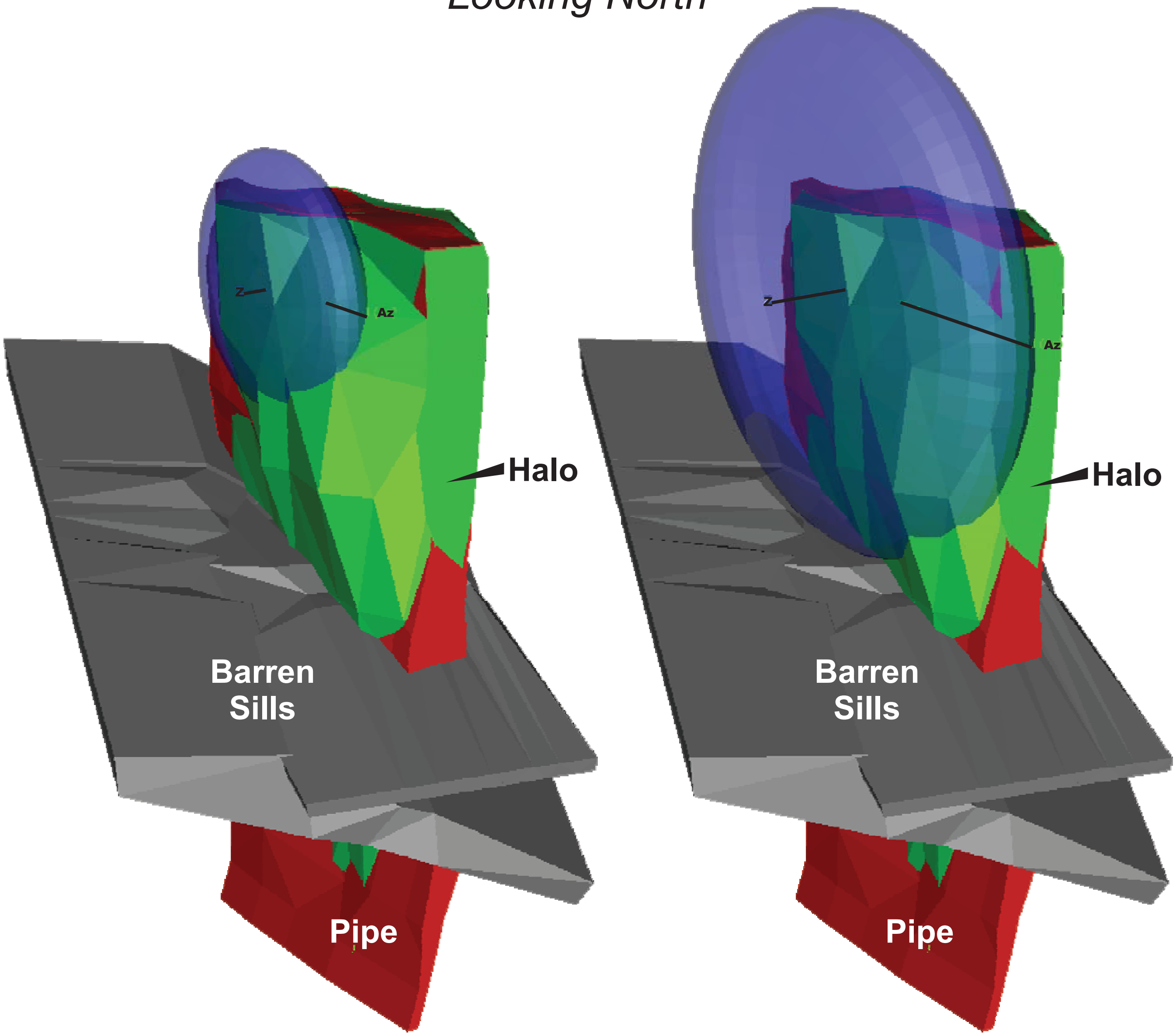


FIGURE 14-8 EAST PIPE 3D VARIOGRAMS



Looking North



Pass 1 **Pass 2**

Figure 14-9

Zenyatta Ventures Ltd.

Albany Graphite Project

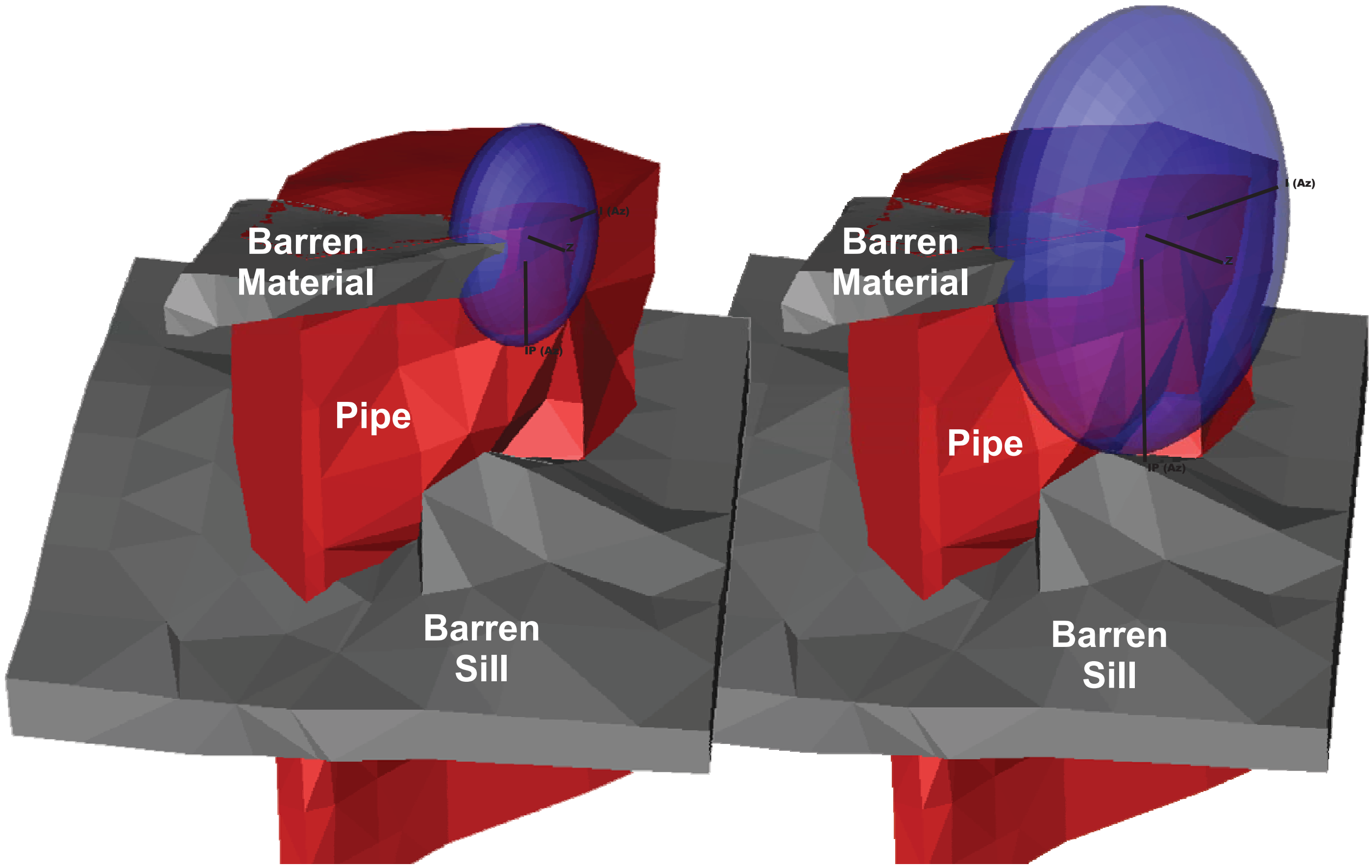
Northern Ontario, Canada

West Pipe

Interpolation Search Ellipsoids

July 2015

Looking North



Pass 1 Pass 2

Figure 14-10

Zenyatta Ventures Ltd.

Albany Graphite Project

Northern Ontario, Canada

East Pipe
Interpolation Search Ellipsoids

July 2015

TABLE 14-5 BLOCK ESTIMATE ESTIMATION PARAMETERS
Zenyatta Ventures Ltd. – Albany Project

Parameter			West Pipe		East Pipe	
	Rock Type		20	21	10	14
	Method		OK	OK	OK	OK
	Boundary Type		Hard	Hard	Hard	Hard
	Min. No. Comps.	Pass 1	4	4	4	4
		Pass 2	2	2	2	2
	Max. No. Comps.	Pass 1	12	12	12	12
		Pass 2	24	24	24	24
	Max. Comps. Per Drill Hole	Pass 1	3	3	3	3
		Pass 2	NA	NA	NA	NA
	Principal Azimuth		245	245	290	290
Search Anisotropy	Principal Dip		-90	-90	-90	-90
	Int. Azimuth		155	155	20	20
	Range X (m)	Pass 1	76	76	100	100
		Pass 2	152	152	200	200
Search Ellipse	Range Y (m)	Pass 1	58	58	100	100
		Pass 2	116	116	200	200
	Range Z (m)	Pass 1	36	36	35	35
		Pass 2	72	72	70	70
Variogram Model	Nugget (C_0)		1.05	1.05	2.87	2.87
	Relative Nugget		25%	25%	29%	29%
Structure	C_1		3.16	3.16	2.98	2.98
	Range X (m)		76.4	76.4	10.5	10.5
	Range Y (m)		57.8	57.8	10.5	10.5
	Range Z (m)		36.4	36.4	3.7	3.7
	C_2		-	-	4.19	4.19
	Range X (m)		-	-	100.0	100.0
	Range Y (m)		-	-	100.0	100.0
	Range Z (m)		-	-	35.0	35.0
	Total Sill		4.21	4.21	10.04	10.04

BULK DENSITY

To convert volumes to tonnes, a density value of 2.6 t/m^3 was used for the West and East Pipe graphitic breccia (rock types 10, 20 and 21) and 2.65 t/m^3 was used for the East Pipe low grade halo (overprinted syenite, rock type 14). The density values for all mineralized wireframes are based on Zenyatta's specific gravity testing results carried out by ALS (Thunder Bay) on pre-selected assay samples in 2013. Following specialty assay procedure OA-GRA08, ALS removed a representative piece of drill core from the sample prior to crushing. The method is based on Archimedes Principle. The DGI in situ density measurements which were collected by the Focused Density downhole probe are in close agreement with the ALS density measurements. Density box plots by rock type are shown in Figure 14-11, and Table 14-6 summarizes the descriptive statistics for samples taken within the mineralization wireframes and waste rock of the West and East pipes.

FIGURE 14-11 BOX PLOTS OF DENSITY BY ROCK TYPE

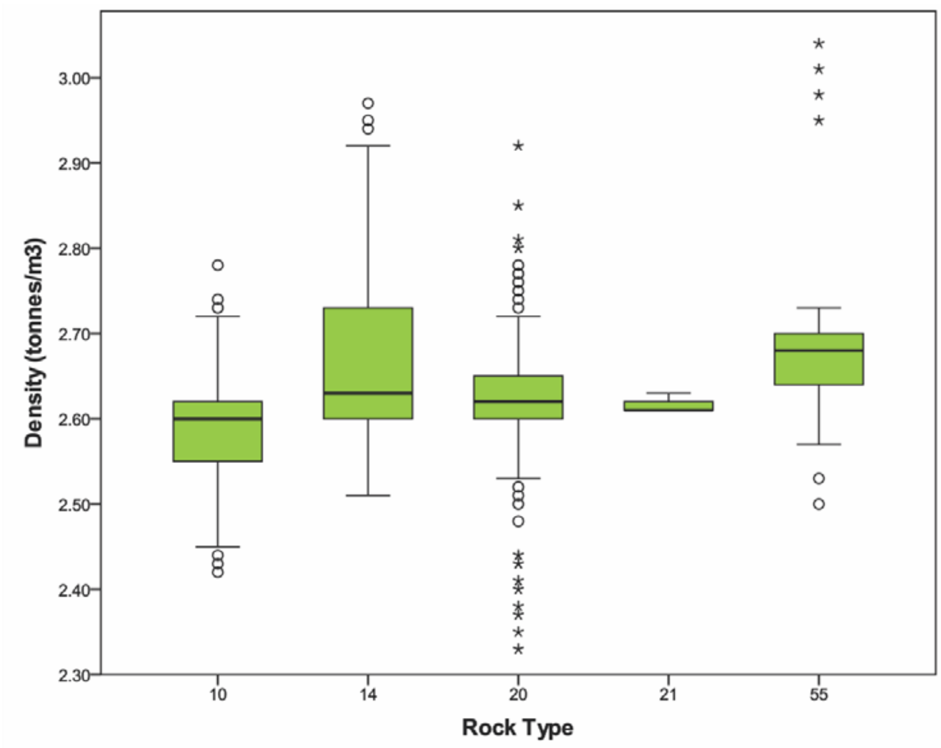
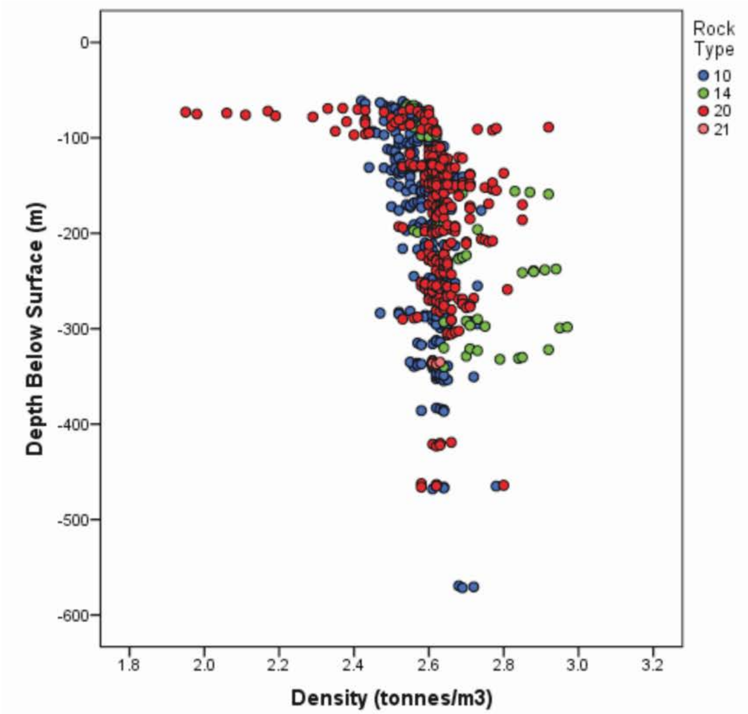


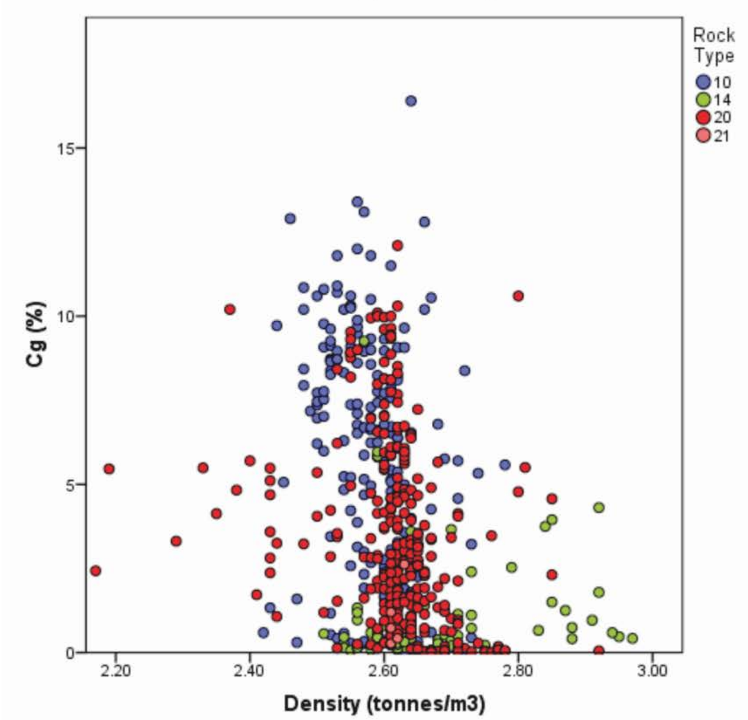
TABLE 14-6 SUMMARY STATISTICS OF DENSITY MEASUREMENTS
Zenyatta Ventures Ltd. – Albany Project

	East Pipe	East Pipe Halo	West Pipe	West Pipe Wedge	Waste
No. of Cases	214	69	293	5	80
Minimum	2.42	2.51	1.95	2.61	2.50
Maximum	2.78	2.97	2.92	2.63	3.09
Median	2.60	2.63	2.62	2.61	2.68
Arithmetic Mean	2.59	2.68	2.61	2.62	2.68
Standard Deviation	0.06	0.12	0.11	0.01	0.10
Coefficient of Variation	0.02	0.04	0.04	0.00	0.04

Figure 14-12 plots density versus depth and Cg grade for measurements within the modelled pipes. Neither graph shows a correlation. RPA therefore applied unique tonnage factors by rock type only.

FIGURE 14-12 SCATTERPLOTS OF DEPTH AND GRADE VERSUS DENSITY





BLOCK MODEL

The GEMS block model is made up of 210 columns, 185 rows, and 80 levels for a total of 3,108,000 blocks. The model origin (lower-left corner at highest elevation) is at UTM Zone 16 NAD 83 coordinates 681,700 m E, 5,544,750 m N and 150 m elevation. Each block is 10 m (x) by 10 m (y) by 10 m (z). A whole block model with attributes that include rock type, density, and Cg grades is used to manage blocks filled by mineralized rock types. The rock type model was created using majority rules with the main lithology solids (Table 14-2). The block model contains the following information:

- domain identifiers with mineralized rock type;
- estimated grade of Cg within the wireframe models;
- tonnage factors (density model), in tonnes per cubic metre, specific to each rock type;
- the distance to the closest composite used to interpolate the block grade;
- the average composite distance used to interpolate the block grade;
- the number of drill holes used to interpolate the block grade;
- the number of composites used to interpolate the block grade;
- the interpolation pass, and
- the resource classification of each block.

OPEN PIT SHELL AND CUT-OFF GRADE

To fulfill the NI 43-101 requirement of "reasonable prospects for economic extraction", RPA prepared an optimized Whittle pit shell to constrain the block model for open pit resource reporting purposes. The reader is referred to Section 16 for additional information.

Using a market price of $7,500 per tonne Cg, Whittle analysis gave a discard cut-off grade of 0.908% Cg. The pit shell was used for open pit resource reporting at a cut-off grade of 0.9% Cg.

UNDERGROUND RESOURCE REPORTING AND CUT-OFF GRADE

For the underground portion of the Albany graphite deposit, the barren dyke cutting the West and East pipes served as the upper limit for resource reporting. The underground resources were reported using a 1.5% Cg cut-off grade based on a market price of US$7,500 per tonne Cg, and C$40 per tonne underground mining operating costs.

To ensure grade continuity, and a minimum thickness of six metres, RPA reviewed blocks with grades above 1.5% Cg in both vertical and plan sections. In the East Pipe, blocks within the graphitic breccia wireframe model, but below the barren sill demonstrate adequate grade continuity and thickness for underground resource reporting. Blocks below the barren sill in the West Pipe, however, required additional refinement to constrain continuous zones above 1.5% Cg. Figure 14-13 illustrates the final wireframe constraints used to report underground resources in the West and East Pipes.

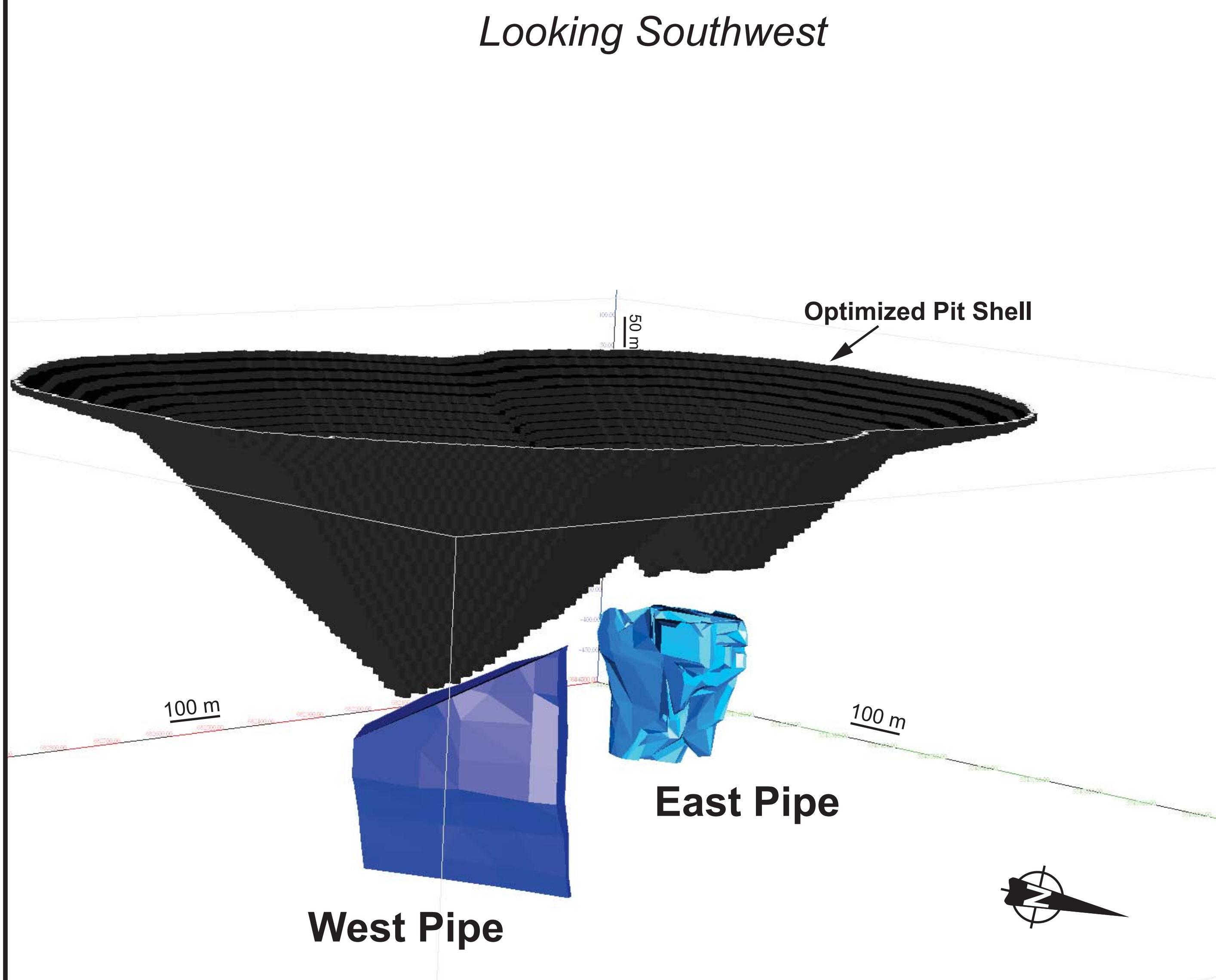


Figure 14-13

Zenyatta Ventures Ltd.

Albany Graphite Project

Northern Ontario, Canada

Wireframe Constraints Used for Underground Resource Reporting

July 2015

BLOCK MODEL VALIDATION

RPA validated the Albany block model in the following ways:

- Volumetric checks
- Inverse distance squared (ID^2) interpolation as a check on kriging (OK)
- Visual comparison of block grades with composite grades
- Comparison of block grade with assay and composite statistics

Block model grades were visually examined and compared with composite and assay grades in vertical cross sections and plan sections. RPA confirmed that the block grades are reasonably consistent with local drill hole assay and composite grades.

Grade statistics, at a zero grade cut-off, for assays, composites, and blocks were examined and compared for all rock types in the West and East Pipes (Table 14-7). The comparisons of average grades are reasonable in RPA's opinion. In some cases, average block grades are slightly higher than average composite grades, for example rock type 21 in the West Pipe and 14 in the East Pipe. This is attributed to a larger influence of some higher grade drill holes in some parts of these zones due to their relative location and spacing locally.

TABLE 14-7 COMPARISON OF GRADE STATISTICS FOR ASSAYS, COMPOSITES AND BLOCKS
Zenyatta Ventures Ltd. – Albany Project

Pipe and Rock Type	Assays (Cg %)	Composites (Cg %)	Block Model (Cg %)
West Pipe			
20			
Number of Cases	4,821	2,617	12,577
Minimum	0.02	0.00	0.05
Maximum	14.65	10.36	6.97
Median	2.25	2.29	2.23
Arithmetic Mean	2.70	2.59	2.33
Standard Deviation	2.39	2.04	1.28
Coefficient of Variation	0.89	0.79	0.55
21			
Number of Cases	83	36	64
Minimum	0.02	0.27	0.42
Maximum	5.23	3.99	3.17
Median	1.20	1.72	1.80
Arithmetic Mean	1.70	1.71	1.76
Standard Deviation	1.46	1.09	0.66

Pipe and Rock Type	Assays (Cg %)	Composites (Cg %)	Block Model (Cg %)
Coefficient of Variation	0.86	0.64	0.37
East Pipe			
10			
Number of Cases	4,695	2,382	6,165
Minimum	0.02	0.02	0.09
Maximum	20.80	14.99	9.26
Median	5.18	5.37	4.60
Arithmetic Mean	5.18	5.16	4.60
Standard Deviation	3.89	3.18	1.93
Coefficient of Variation	0.75	0.62	0.42
14			
Number of Cases	1,642	891	3,098
Minimum	0.02	0.02	0.04
Maximum	16.25	9.08	3.92
Median	0.40	0.46	0.63
Arithmetic Mean	0.71	0.69	0.75
Standard Deviation	1.08	0.79	0.42
Coefficient of Variation	1.53	1.16	0.56

CLASSIFICATION

Exploration results from geophysical surveys and drilling suggest the presence of two discrete mineralized breccia pipes with lower grade graphite-overprinted bedrock occurring as a halo surrounding the pipes. In general, drill holes are closely spaced near the centre of each pipe, and more widely spaced at their margins. Both pipes are cut by barren, post-emplacement sills. Given that the drill hole density and pipe contact data below these sills are markedly lower, all Mineral Resources below the sills (or within, as in the case with rock type 21 in the West Pipe) were classified as Inferred.

RPA classified the Mineral Resource above the sills in the West and East Pipes based on the distance to the nearest sample and the number of samples and drill holes, while at the same time taking into account the understanding and use of the geology. On this basis, the low grade halo in the East Pipe (rock type 14) was classified as Inferred, regardless of the distance to the nearest sample or the number of samples and drill holes. From the base of the limestone to the top of the barren sills, the West and East Pipe graphitic breccia rock types (20 and 10) were classified as Indicated if the block grade was interpolated during the first pass and Inferred if interpolated in the second pass (Table 14-5). Areas of Indicated Mineral Resources in the West and East Pipes had an average drill hole spacing of approximately 15 m near the pipe centres to approximately 50 m near the pipe margins. Figure 14-14 shows the classified blocks for the Albany graphite deposit.

DETAILED MINERAL RESOURCE REPORTS

The Mineral Resource estimate for the Albany graphite deposit is shown by mining method, pipe, and rock type in Table 14-8. Open Pit Mineral Resources are detailed by resource category at a range of cut-off grades in Table 14-9. Open Pit Mineral Resources are insensitive to cut-off grade up to at least 2% Cg. Figure 14-15 shows the distribution of Cg grades in the block model. Figures 14-16 and 14-17 show the Cg grades for the West and East pipes, respectively, in long section.

TABLE 14-8 MINERAL RESOURCE ESTIMATE BY ROCK TYPE – JUNE 1, 2015
Zenyatta Ventures Ltd. – Albany Project

	Cut-off Grade (% Cg)	Tonnage (Mt)	Grade (% Cg)	Contained Graphitic Carbon (t Cg)
Indicated				
OP				
East Pipe and Halo	0.9	10.0	5.60	559,000
West Pipe	0.9	14.3	2.86	409,000
Total Indicated OP	**0.9**	**24.3**	**3.98**	**968,000**
UG				
East Pipe and Halo	1.5	-	-	-
West Pipe	1.5	-	-	-
Total Indicated UG	**1.5**	**-**	**-**	**-**
Total Indicated	**Variable**	**24.3**	**3.98**	**968,000**
Inferred				
OP				
East Pipe and Halo	0.9	2.8	2.11	60,000
West Pipe	0.9	2.5	3.11	78,000
Total Inferred OP	**0.9**	**5.4**	**2.58**	**138,000**
UG				
East Pipe and Halo	1.5	4.9	2.67	131,000
West Pipe	1.5	6.6	2.67	177,000
Total Inferred UG	**1.5**	**11.5**	**2.67**	**307,000**

	Cut-off Grade (% Cg)	Tonnage (Mt)	Grade (% Cg)	Contained Graphitic Carbon (t Cg)
Total Inferred	**Variable**	**16.9**	**2.64**	**445,000**

Notes:
1. CIM definitions were followed for Mineral Resources.
2. Cg – graphitic carbon
3. Mineral Resources are estimated using a long-term price of US$7,500 per tonne Cg, and an exchange rate of US$0.82 = C$1.00.
4. Bulk density is 2.6 t/m^3 in the pipes and 2.65 t/m^3 in the halo of the East Pipe.
5. OP Mineral Resources are constrained by a pit-shell generated in Whittle software.
6. UG Mineral Resources are constrained by a nominal 1.5% Cg wireframe, which includes some material below cut-off to preserve continuity.
7. Numbers may not add due to rounding.

TABLE 14-9 TONNAGE GRADE SENSITIVITY FOR OPEN PIT MINERAL RESOURCES

Zenyatta Ventures Ltd. – Albany Project

Classification, Area, and Cut-off Grade (% Cg)	Tonnage (Mt)	Grade (% Cg)	Tonnes Product (t Cg)
Indicated			
East Pipe			
2.0	9.9	5.6	558,000
1.5	10.0	5.6	559,000
0.9	**10.0**	**5.6**	**559,000**
0.6	10.0	5.6	559,000
West Pipe			
2.0	10.7	3.3	354,000
1.5	12.7	3.1	389,000
0.9	**14.3**	**2.9**	**409,000**
0.6	14.7	2.8	412,000
Total Indicated			
2.0	20.7	4.4	912,000
1.5	22.7	4.2	948,000
0.9	**24.3**	**4.0**	**968,000**
0.6	24.7	3.9	971,000
Inferred			
East Pipe			
2.0	0.9	4.0	35,000
1.5	1.3	3.2	42,000
0.9	**2.8**	**2.1**	**60,000**
0.6	5.1	1.5	76,000
West Pipe			
2.0	2.2	3.3	74,000

Classification, Area, and Cut-off Grade (% Cg)	Tonnage (Mt)	Grade (% Cg)	Tonnes Product (t Cg)
1.5	2.4	3.2	77,000
0.9	**2.5**	**3.1**	**78,000**
0.6	2.6	3.1	79,000
Total Inferred			
2.0	3.1	3.5	108,000
1.5	3.7	3.2	119,000
0.9	**5.4**	**2.6**	**138,000**
0.6	7.7	2.0	155,000

Notes:

1. CIM definitions were followed for Mineral Resources.
2. Cg – graphitic carbon
3. Mineral Resources are estimated using a long-term price of US$7,500 per tonne Cg, and an exchange rate of US$0.82 = C$1.00.
4. Bulk density is 2.6 t/m^3 in the pipes and 2.65 t/m^3 in the halo of the East Pipe.
5. OP Mineral Resources are constrained by a pit-shell generated in Whittle software.
6. Numbers may not add due to rounding.

COMPARISON WITH PREVIOUS MINERAL RESOURCE ESTIMATE

Table 14-10 compares the current Mineral Resource estimate to the previous estimate reported in January 2014. Both estimates are based on the same drill hole database and block model, however, use different reporting criteria.

Indicated Mineral Resource tonnage decreased from 25.1 Mt to 24.3 Mt. Inferred Mineral Resource tonnage decreased from 20.1 Mt tonnes to 16.9 Mt. Contained Cg classified as Indicated decreased by 9,000 tonnes, and contained Cg classified as Inferred increased by 4,000 tonnes.

The small differences are due to the updated pit optimization inputs, particularly the decrease in market price of graphitic carbon, resulting in a smaller open pit shell and a higher cut-off grade. The decrease was largely offset by the addition of underground Inferred Mineral Resources that were excluded from the January 2014 resource estimate.

TABLE 14-10 COMPARISON OF CURRENT RESOURCE ESTIMATE WITH JANUARY 2014

Zenyatta Ventures Ltd. – Albany Project

	Mining Method and Classification	Cut-off Grade (% Cg)	Tonnage (Mt)	Grade (% Cg)	Contained Graphitic Carbon (t Cg)
2015	OP				
	Indicated	0.9	24.3	3.98	968,000
	Inferred	0.9	5.4	2.58	138,000
	UG				
	Indicated	1.5	-	-	-
	Inferred	1.5	11.5	2.67	307,000
	Total Indicated	**Variable**	**24.3**	**3.98**	**968,000**
	Total Inferred	**Variable**	**16.9**	**2.64**	**445,000**
2014	OP				
	Indicated	0.6	25.1	3.89	977,000
	Inferred	0.6	20.1	2.20	441,000
	Total Indicated	**0.6**	**25.1**	**3.89**	**977,000**
	Total Inferred	**0.6**	**20.1**	**2.20**	**441,000**

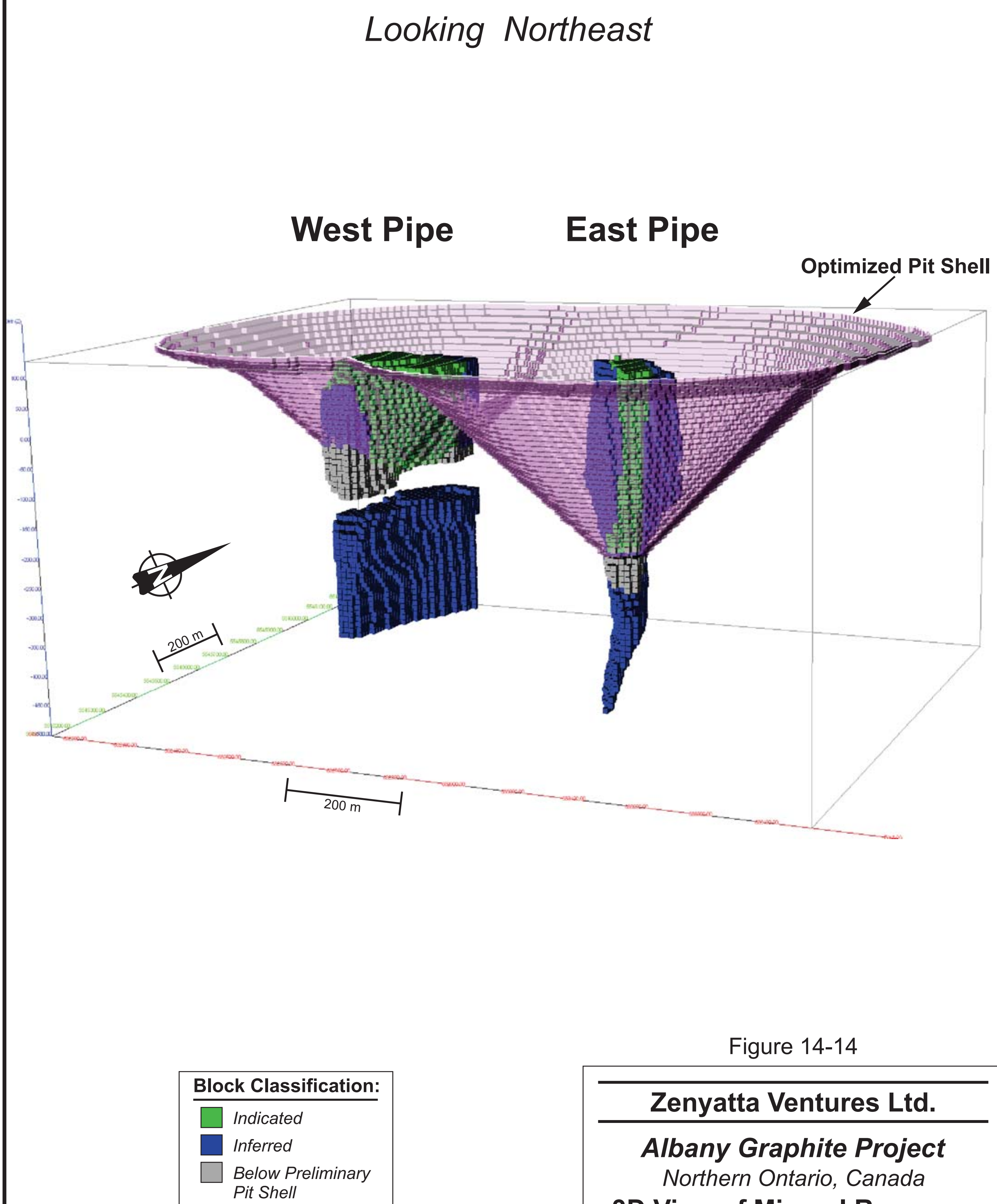


Figure 14-14

Zenyatta Ventures Ltd.

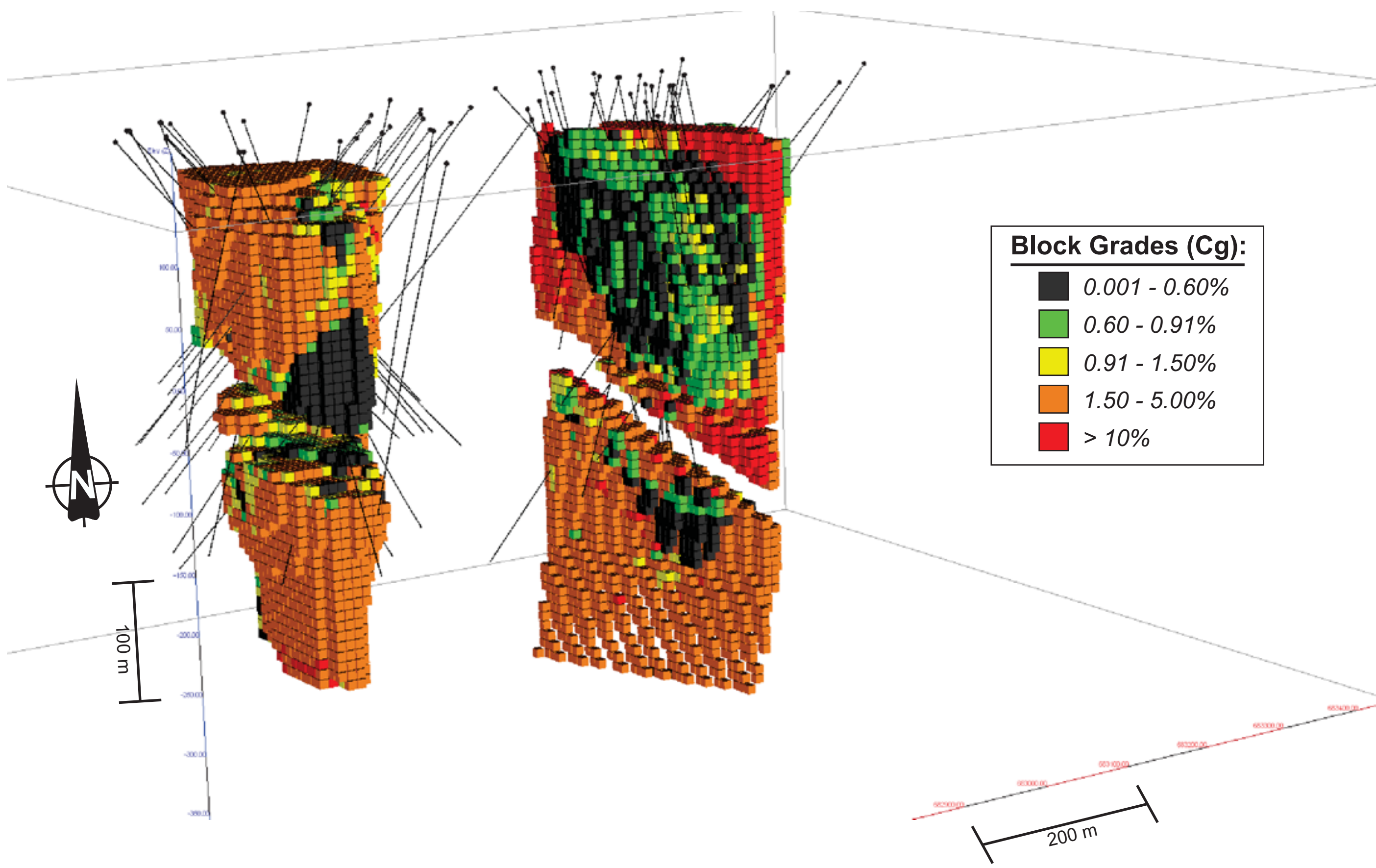
Albany Graphite Project

Northern Ontario, Canada

3D View of Mineral Resource Classification

July 2015

Looking Northeast



Block Grades (Cg):

- 0.001 - 0.60%
- 0.60 - 0.91%
- 0.91 - 1.50%
- 1.50 - 5.00%
- > 10%

Figure 14-15

Zenyatta Ventures Ltd.

Albany Graphite Project

Northern Ontario, Canada

3D View of Block Model Graphite Grades

July 2015

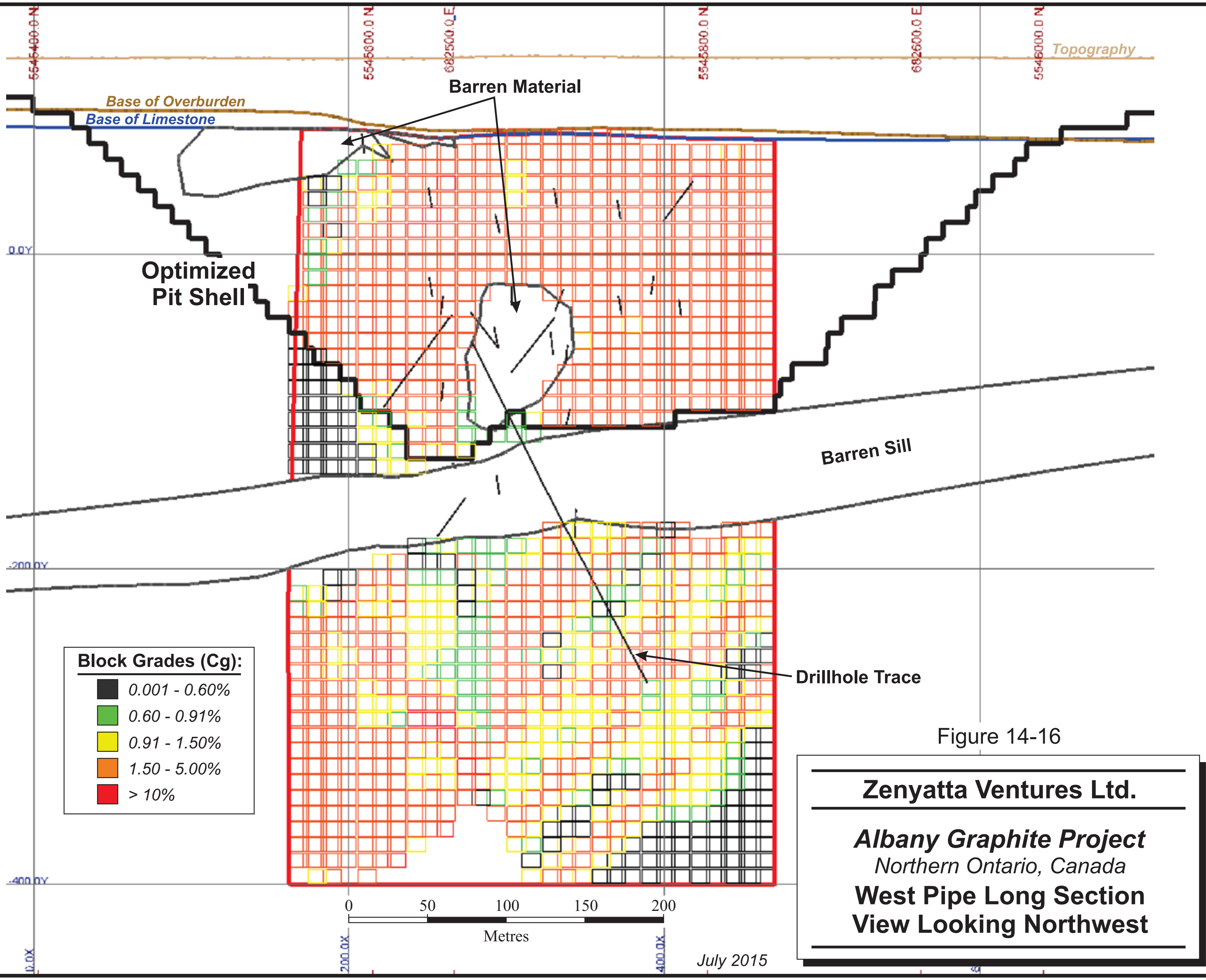


Figure 14-16

Zenyatta Ventures Ltd.

Albany Graphite Project

Northern Ontario, Canada

West Pipe Long Section
View Looking Northwest

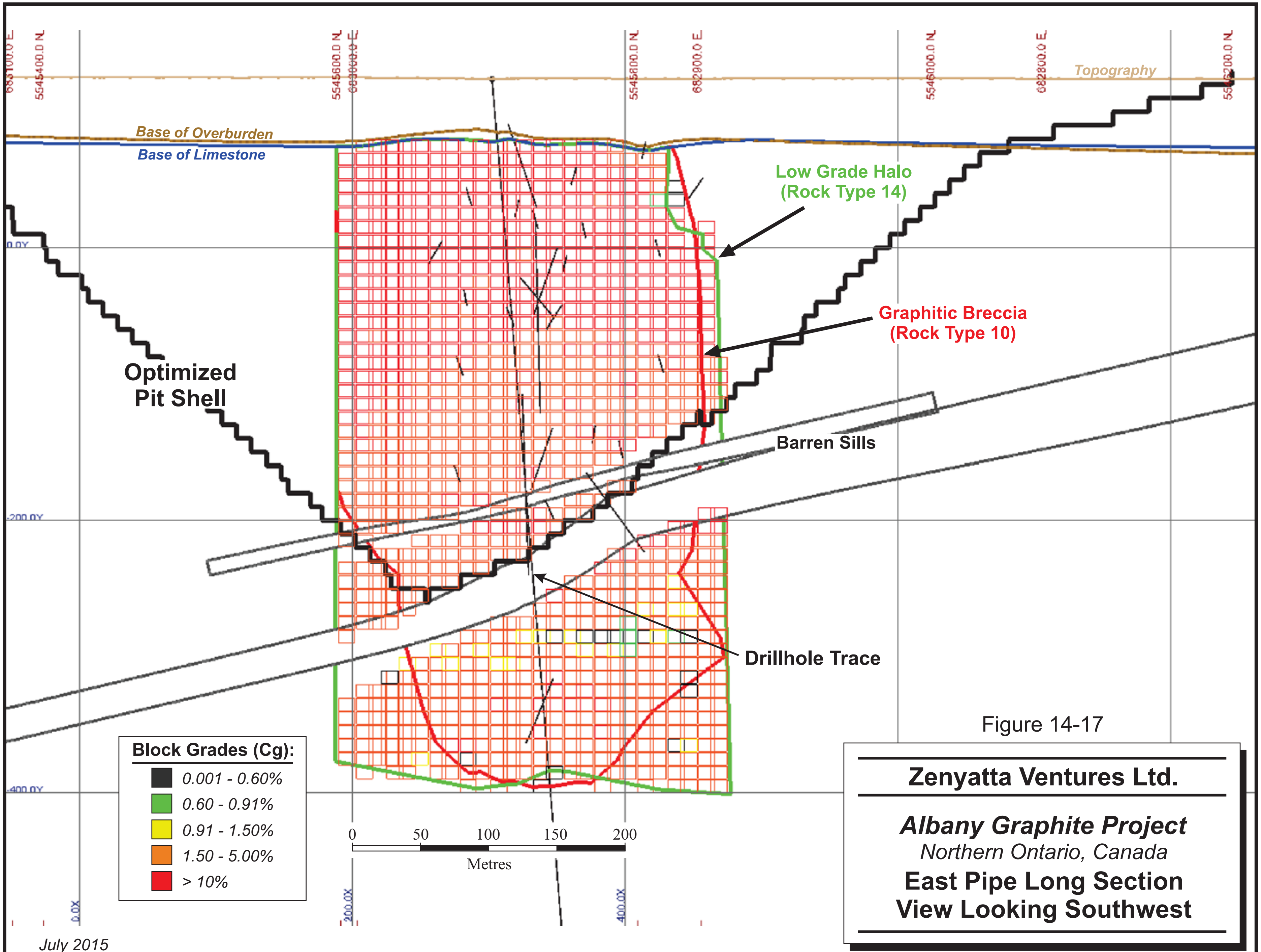


Figure 14-17

Zenyatta Ventures Ltd.

Albany Graphite Project

Northern Ontario, Canada

East Pipe Long Section
View Looking Southwest

15 MINERAL RESERVE ESTIMATE

Mineral Reserves have not yet been estimated for the Albany Graphite Project.

16 MINING METHODS

RPA investigated the potential for open pit mining of the Mineral Resources using graphite prices and saleable purified product quantities appropriate for a PEA. Open pit mining was evaluated with run-of-mine (ROM) material being processed at a rate of 982,500 tpa in flotation and purification plants on site, producing approximately 30,000 tonnes of purified graphite product at 99.94% Cg. Infrastructure requirements for road access, power, natural gas, and for accommodation facilities were also considered. Environmental considerations include the impact of the pit, waste rock dump, overburden pile, and tailings storage.

The targeted production rate enables the open pit option to be evaluated with a year-round owner operated approach. The ROM material would be transported directly to the crusher or would occasionally be stockpiled and re-handled.

In RPA's opinion, should market conditions warrant, the Mineral Resources are capable of supporting higher production rates.

OPEN PIT MINING

The production rate is based on a market-limited cap of 30,000 tonnes product per year. The mining rate to achieve that is 982,500 tpa, or 2,807 tpd. In the event that the market limit rises or is eliminated, the deposit can support higher production rates.

Mining of mineralized material and waste is proposed to be carried out by the owner, with contractor assistance to balance mining equipment requirements over the life of the operation. The overburden stripping will be exclusively done by a contractor with a dedicated mining fleet (larger equipment) given the total volume to be excavated and the higher production rate required.

The combination of owner-operated mining and contractor mining will be carried out using conventional open pit methods consisting of the following activities:

- Drilling performed by conventional production drills.
- Blasting using ANFO (ammonium-nitrate fuel oil) and a down-hole delay initiation system.

- Loading and hauling operations performed with hydraulic shovels, front-end loaders, and rigid frame haulage trucks.

The production equipment will be supported by bulldozers, a grader, and a water truck.

GEOTECHNICAL ASSESSMENTS

BGC Engineering Inc. was retained by Zenyatta to provide geotechnical guidance in support of the PEA. BGC reviewed the 2014 resource pit shell constraint, which extends to a maximum depth of approximately 350 m.

The scope of work was completed in four phases, including background review, a site visit, compilation of available data, rock mechanics analysis, and report preparation.

The southern section of the Property contains Precambrian paragneissic and migmatitic metasedimentary rock. The northern portion of the Property contains metamorphosed tonalite and granodiorite. Both sub-provinces have been intruded with an alkali intrusive suite consisting of alkali syenite and ijolite, mafic and ultramafic rocks, and carbonatite. Overburden across the site is expected to consist largely of glacial till and glaciolacustrine deposits. The Project site was not visited as part of these assessments, however, based on a review of the topography and vegetation in the area, the site is anticipated to be swampy with a near surface water table.

Data sources include rock core observations, acoustic televiewer and downhole seismic logs, drill hole data collected by Zenyatta, Leeb hardness tester data, point load testing data, laboratory testing results, and historic reports. Geotechnical drilling was not completed as part of the current PEA.

Based on the information provided, the proposed open pits appear to be contained within a single geologic structural domain. There are four design discontinuity sets: two dominant sub-horizontal sets (I1 and I2) and two orthogonal sub-vertical sets striking NW-SE (H1) and NE-SW (G1). There is significant variability in the structures and the discontinuity set orientations are not strongly defined.

BGC developed a preliminary geotechnical model consisting of three geotechnical units: UMZ (Unmineralized Zone), LGZ (Low Grade Zone), and HGZ (High Grade Zone). The intact strength of the rock varies from strong (50 Mpa to 100 Mpa) to very strong (100 Mpa to 250 Mpa) (“R4” to “R5”) based on the methods of ISRM (1978). Rock quality designations (RQD) vary between 75% and 90%, joint conditions range from 12 to 18, and the RMR_{76} is estimated to range from 55 to 70.

Bench scale, multi-bench scale, and overall slope analyses were completed to derive preliminary open pit slope design recommendations for single bench heights of 5 m to 7 m, based on guidance received from RPA. Given the quality of the rock, the pit could be mined in triple benches, if desired. BGC recommended a design maximum inter-ramp height of 150 m, and inter-ramp angles between 37° and 50° for 5 m to 15 m high benches, respectively, and between 43° and 50° for 7 m to 21 m benches, respectively. BGC recommended a maximum bench face angle between 72° and 77° for bench heights between 15 m and 5 m, respectively, and between 67° and 77° for bench heights between 21 m and 7 m, respectively. These recommendations are summarized in Table 16-1 (source: BCG report).

TABLE 16-1 PRELIMINARY OPEN PIT SLOPE DESIGN RECOMMENDATIONS
Zenyatta Ventures Ltd. – Albany Project

Domain	Catch Bench Geometry			Inter-Ramp Geometry		Slope Design Control
	Design Height (m)	Face Angle (°)	Width (m)	Maximum Height (m)	Angle (°)	
Pit: single bench	5	77	5.5	150	37	Inter-ramp (Bench geometry)
Pit: double bench	10	75	6.5	150	47	Inter-ramp (Bench geometry)
Pit: triple bench	15	72	7.5	150	50	Inter-ramp (Bench geometry)
Pit: single bench	7	77	5.9	150	43	Inter-ramp (Bench geometry)
Pit: double bench	14	72	7.3	150	50	Inter-ramp (Bench geometry)
Pit: triple bench	21	67	8.7	150	50	Inter-ramp (Bench geometry)

The recommended 50° inter-ramp slope angle in rock associated to the double-benching approach with 7 m high bench was retained by RPA for pit optimization purpose.

In the absence of geotechnical information within the overburden, pit slope angles were selected based on on-site evidences and industry averages. Pit optimizations were carried out using a 3H:1V inter-ramp slope in such material.

Design parameters for the waste dumps and the overburden pile were also selected based on industry averages; that is overall 2H:1V slopes for both.

These assumptions will have to be further assessed as the Project is advanced.

HYDROLOGICAL / HYDROGEOLOGICAL ASSESSMENTS

Hydrogeological and hydrological conditions may have an impact on pit design parameters. Capital expenditures and operating costs related to water management were part of the cost estimation process.

The hydrogeological/hydrological conditions will have to be further assessed as the Project is advanced.

SEISMICITY

Seismicity issues were not considered in conceptual design at this point in the Project. The seismicity will have to be assessed and be considered in more detailed engineering steps of the Project.

PIT OPTIMIZATION

Open pit possibilities were investigated by pit optimization/floating cone analysis, using Whittle software, run on the Mineral Resource block model. Pit optimizations indicated that a significant proportion of the Mineral Resource would be economic to mine using open pit methods.

Whittle pit optimizations were performed based on typical costs for comparable operations and projects of a similar scale. A dedicated overburden stripping cost was considered in the optimization process given its thickness over the orebody. Cost details and other parameters used for optimization purposes were as follows:

- Overburden pit slope 18.5° to 15.5°
- Bedrock pit slope 43.5°
- Open pit mining (owner) US$2.81/t moved
- Overburden stripping (contractor) US$3.15/t moved
- Beneficiation, Purification & Tailings US$40.36/t milled
- Process combined recovery 75.4%
- G&A US$9.95/t milled
- Graphite price US$7,500/t final product

- Selling cost (transport & royalties) US$175/t final product

The value of final production was estimated based on process recoveries, and concentrate and final product grades that can be produced with the Albany graphite-bearing mineralization. A price of US$7,500/tonne was used for the Albany Graphite Project purified graphite product. The cost for transportation of final product to customers was considered in the revenue calculations, as it is usual for sellers to pay for this under commercial terms on the graphite market. The royalties to be paid on production were also accounted for in the revenue calculations. Transportation and royalties are combined under the selling cost above. The overall recovery was derived from beneficiation (flotation) and purification process performances in sequence; these are respectively 84.54% recovery / 88.6% Cg concentrate grade and 89.13% recovery / 99.94% Cg final product grade. Details are provided and discussed under appropriate sections in this report.

The process cut-off grade that can be estimated using all the above optimization parameters is equal to 0.91% Cg, which confirms the minimum grade used to delineate and estimate the open pit constrained Mineral Resources.

Pit optimizations do not include individual benches or ramp design. For the pit size, production requirements, and recommended equipment fleet, RPA considers mining of 14 m benches in two cuts and development of 23 m and 25 m wide ramps in rock and overburden respectively, including ditches and safety berm, to be appropriate for the open pit operations. The ramps should be designed with a maximum 10% gradient with the exits appropriately located in order to minimize distances to the process plant, the waste rock dump, and the overburden pile.

As indicated under the geotechnical assessment sub-section, the selected/recommended inter-ramp slopes considered in overburden and rock were respectively 3H:1V and 50° from horizontal. The slope criteria used for pit optimizations, as stated above, accounted for the number of passes appropriate for the haulage ramps and the pit geometry in both materials.

Optimized pit shells were generated into 28 potential phases as presented in Table 16-2, with Indicated and Inferred material being considered as potential production. With revenue factors (RF) varying from 0.35 to 2, the purified graphite price ranges from US$2,625/t to US$15,000/t final product. At US$7,500 (or RF1), process feed would be 29.6 Mt at 3.73% Cg, which corresponds to the open pit constrained all categories Mineral Resources.

TABLE 16-2 LERCHS-GROSSMANN NESTED PIT SHELLS
Zenyatta Ventures Ltd. – Albany Project

Nested Shell	Revenue Factor	Process Feed (Mt)	Cg Grade (%)	Waste Rock (Mt)	Strip Ratio	Potential Pit LOM Duration
1	0.35	11.88	5.15	76.84	6.47	11.9
2	0.40	15.80	4.77	102.80	6.51	15.8
3	0.45	18.54	4.51	117.64	6.35	18.5
4	0.50	21.27	4.32	141.27	6.64	21.3
5	0.51	21.68	4.29	143.72	6.63	21.7
6	0.52	21.87	4.27	144.87	6.62	21.9
7	0.53	22.27	4.24	147.69	6.63	22.3
8	0.54	22.42	4.23	147.77	6.59	22.4
9	0.55	22.73	4.20	150.11	6.60	22.7
10	**0.56**	**22.90**	**4.19**	**150.23**	**6.56**	**22.9**
11	0.57	23.10	4.17	150.83	6.53	23.1
12	0.58	23.38	4.15	154.31	6.60	23.4
13	0.59	23.80	4.13	161.47	6.79	23.8
14	0.60	24.03	4.11	162.60	6.77	24.0
15	0.65	24.63	4.05	162.96	6.62	24.6
16	0.70	26.00	3.98	186.38	7.17	26.0
17	0.75	26.75	3.93	194.38	7.27	26.7
18	0.80	27.71	3.86	206.70	7.46	27.7
19	0.85	28.19	3.83	213.70	7.58	28.2
20	0.90	28.73	3.80	223.71	7.79	28.7
21	0.95	29.16	3.76	225.50	7.73	29.2
22	1.00	29.64	3.73	232.89	7.86	29.6
23	1.14	40.48	3.31	515.07	12.72	40.5
24	1.20	42.70	3.27	599.27	14.03	42.7
25	1.27	43.29	3.24	599.72	13.85	43.3
26	1.34	44.34	3.20	628.20	14.17	44.3
27	1.50	46.93	3.11	696.36	14.84	46.9
28	2.00	50.66	2.96	761.45	15.03	50.7

The shell generated at RF 0.56, which corresponds to a cut-off of 1.65% Cg with a potential 23-year life of mine, was selected to generate the ultimate pit shell for the Project. The selection was based on achieving positive cash flow results over a lengthy mine life. While larger tonnage pits are certainly reasonable selections, the annual market cap on the production rate extends the mine life, where additional years of mining have little impact on time-discounted cash flow results.

To better represent a pit design, the selected shell was truncated at the bottom and top junction of the pit walls between the West and East mineralized pipes. Dilution and mining extraction factors of 5% at zero grade and 95% respectively were applied within the adjusted pit shell. As a result, process feed changed to 20.9 Mt grading 4.05% Cg, which would require the stripping of 57.7 Mt of overburden and the excavation of 84.7 Mt of waste rock, for an overall strip (waste to ore) ratio of 6.8:1. The waste rock includes graphite-bearing mineralization below the elevated cut-off grade (2.7 Mt at 1.26% Cg), which could be stockpiled and processed after the pit is completed, although this is not included in the PEA life of mine (LOM) plan, as it has little impact on the cash flow. The approximate dimensions of the adjusted pit shell are as follows:

- Overall footprint at surface: 1,200 m EW x 900 m NS
- West pit footprint at surface: 550 m EW x 850 m NS
- East pit footprint at surface: 650 m EW x 950 m NS
- Maximum slope height: 260 m
- Top elevation: 130 m
- Pit bottom levels: -80 m West; -130 m East
- Average overburden thickness: 44 m
- Depth West pit: 210 m from surface; 160 m in rock
- Depth East pit: 260 m from surface; 210 m in rock

Figure 16-1 is an isometric view looking northeast showing the configuration and location of the selected pit shell before and after operational adjustments.

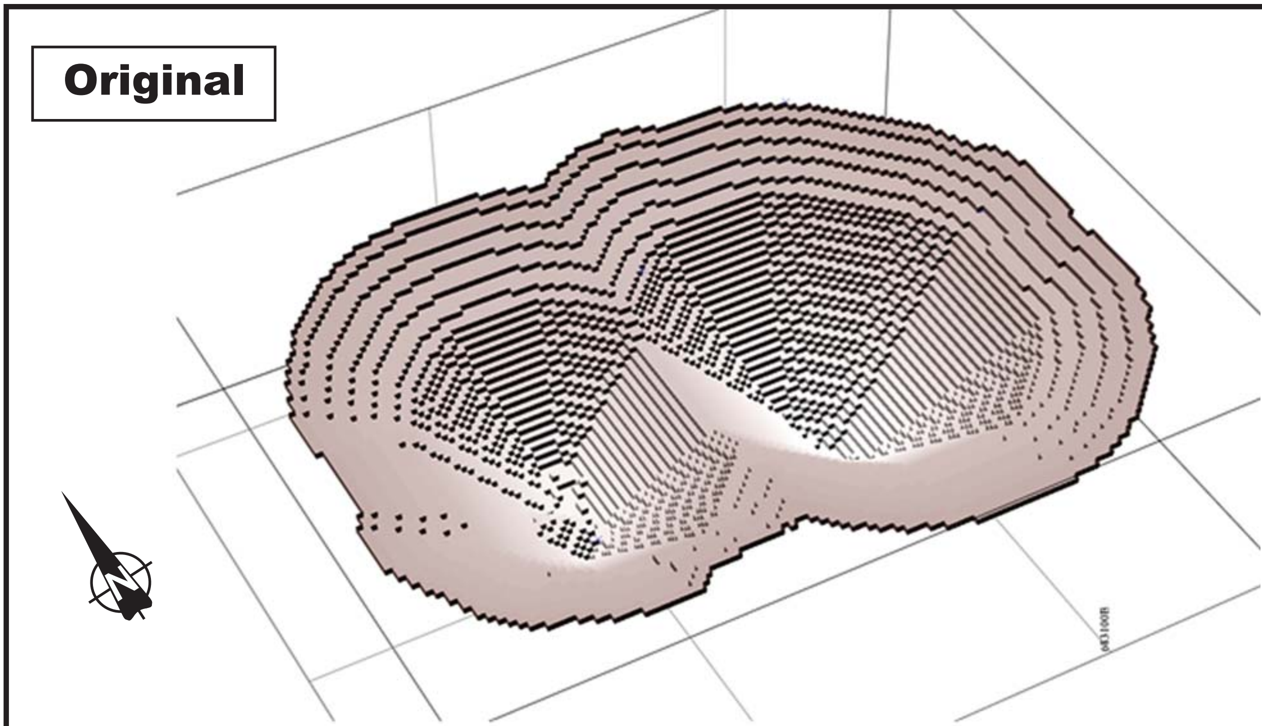
WASTE ROCK AND OVERBURDEN STORAGE

A waste rock dump was designed to receive all waste material contained in the open pit beneath the bedrock. The dump would be located north of the open pit, with a height and total footprint of 30 m and approximately 1.6 Mm^2 respectively, considering a swell factor of 1.3 and 2H:1V slopes. An overburden pile would be located south of the open pit. The dimensions are 25 m high over a footprint of approximately 1.7 Mm^2, considering a 1.2 swell factor with designed slopes at 2H:1V. The characteristics of both materials are shown in Table 16-3.

TABLE 16-3 WASTE MATERIAL CHARACTERISTICS WITHIN THE PIT SHELL
Zenyatta Ventures Ltd. – Albany Project

	Density (t/m^3)	Quantity (Mt)	Swelled Volume (Mm^3)
Overburden	1.8	57.7	38.5
Waste rock	2.6	84.7	42.4
Total		142.4	80.9

A general site plan of the Project is included in Figure 18-1 (in Section 18 Project Infrastructure). The plan shows the location of the main surface facilities including open pit, tailings storage facility, overburden and waste disposal areas, process plant, camp facilities, and haul roads.



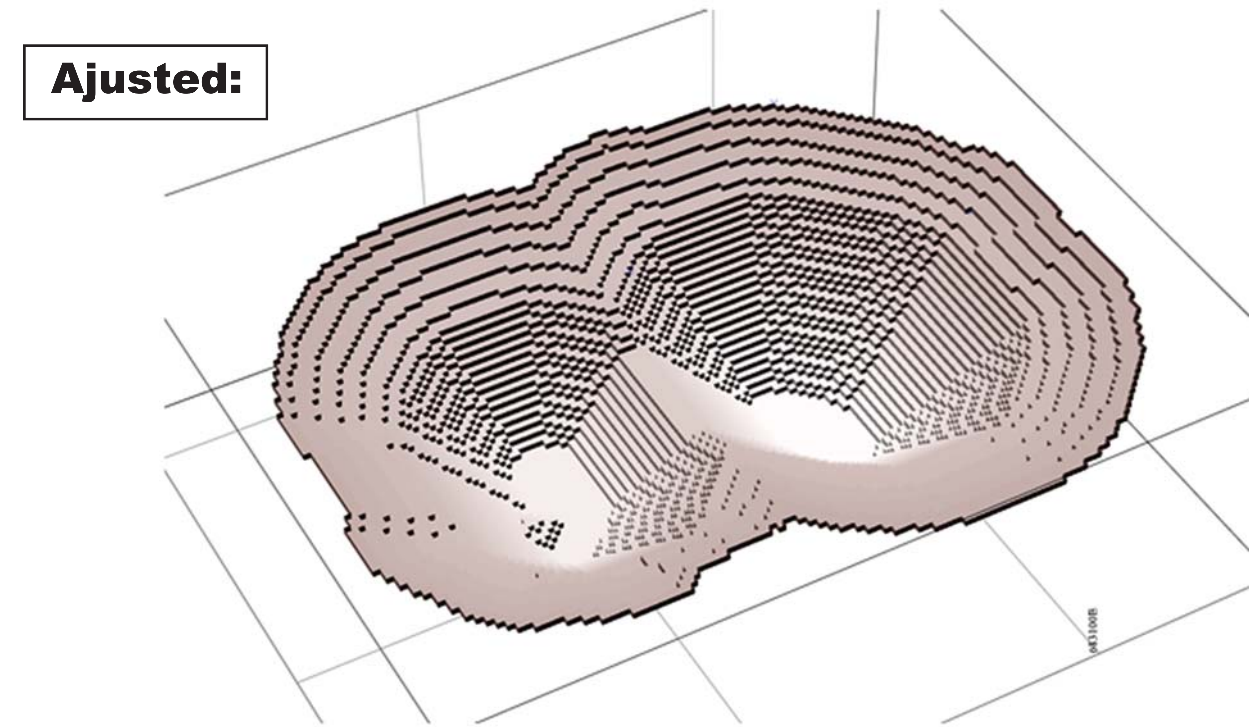


Figure 16-1

Zenyatta Ventures Ltd.

Albany Graphite Project

Northern Ontario, Canada

Isometric Views of Final Pit Shell Looking Northeast

July 2015

PRODUCTION SCHEDULE

Both the open pit owner-operated mining and contractor mining will be carried out on two 12-hour shifts per day and seven days per week. Staffing will be on a rotating shift system being carried out by four shift crews.

Highlights of the production schedule are as follows:

- Contract overburden stripping over approximately four years at an average rate of 40,000 tpd, starting mid-Year -2 and completed in Year 3;
- A ramp-up to full production with 719,250 tonnes produced in Year 1 by the owner;
- Mine production and processing of 982,500 tpa, or 2,807 tpd, of potentially mineable resources consisting of graphite-bearing material which requires an average 15,000 tpd owner mining fleet capacity considering the overall waste to ore ratio;
- Average LOM waste mining of 3.8 Mt per year with peaks at approximately 9.0 Mtpa during four years when a contractor is needed to balance the owner equipment fleet.

It is noteworthy that in Year 2 and Year 3 of production, the annual process feed was deliberately kept below the target, as appropriate, to avoid the build-up of a large final product inventory while mining would occur in higher grade graphite bearing mineralization; this operational capacity was transferred to waste rock mining.

The ore production schedule is summarized in Table 16-4. Table 16-5 shows the overall pit material movement schedule. The contractor's overburden stripping and waste rock mining schedule is shown in Table 16-6.

TABLE 16-4 LOM PRODUCTION SCHEDULE AND FINAL PRODUCT INVENTORY
Zenyatta Ventures Ltd. – Albany Project

	Process Feed West Pipe		Process Feed East Pipe		Total Process Feed		Purification Output (kt)	Product Sales (kt)	Graphite Inventory (kt)
	ROM (Mt)	Cg (%)	ROM (Mt)	Cg (%)	ROM (Mt)	Cg (%)			
Year -2	-	-	-	-	-	-	-	-	-
Year -1	-	-	-	-	-	-	-	-	-
Year 1	-	-	0.72	6.12	0.72	6.12	28.22	27.00	1.22
Year 2	0.15	2.67	0.62	6.37	0.77	5.65	32.67	30.00	3.90
Year 3	0.62	2.95	0.30	6.39	0.92	4.09	28.42	30.00	2.32
Year 4	0.70	3.06	0.28	6.39	0.98	4.00	29.63	30.00	1.95
Year 5	0.70	3.09	0.28	6.31	0.98	4.02	29.78	30.00	1.73
Year 6	0.71	3.16	0.27	6.21	0.98	4.01	29.69	30.00	1.42
Year 7	0.67	3.02	0.31	6.04	0.98	3.99	29.52	30.00	0.94
Year 8	0.69	3.14	0.29	6.02	0.98	3.99	29.57	30.00	0.52
Year 9	0.70	3.19	0.28	6.01	0.98	4.01	29.68	30.00	0.19
Year 10	0.68	3.23	0.31	5.94	0.98	4.08	30.20	30.00	0.39
Year 11	0.67	3.23	0.32	5.86	0.98	4.07	30.18	30.00	0.57
Year 12	0.67	3.20	0.32	5.81	0.98	4.04	29.91	30.00	0.48
Year 13	0.65	3.14	0.33	5.79	0.98	4.03	29.88	30.00	0.36
Year 14	0.62	3.09	0.36	5.67	0.98	4.04	29.96	30.00	0.32
Year 15	0.57	2.98	0.41	5.51	0.98	4.05	29.97	30.00	0.29
Year 16	0.52	2.91	0.46	5.35	0.98	4.06	30.09	30.00	0.38
Year 17	0.45	2.90	0.53	5.11	0.98	4.10	30.34	30.00	0.72
Year 18	0.36	2.89	0.62	4.75	0.98	4.06	30.07	30.00	0.79
Year 19	0.28	2.89	0.70	4.40	0.98	3.97	29.41	30.00	0.20
Year 20	0.53	2.90	0.46	4.14	0.98	3.48	25.74	25.94	-
Year 21	0.98	3.00	-	-	0.98	3.00	22.21	22.21	-
Year 22	0.83	2.95	-	-	0.83	2.95	18.49	18.49	-
Total	**12.74**	**3.05**	**8.18**	**5.59**	**20.93**	**4.05**	**633.64**	**633.64**	**-**

TABLE 16-5 PIT MATERIAL MOVEMENT SCHEDULE DURING THE LOM
Zenyatta Ventures Ltd. – Albany Project

	Ore (Mt)	Overburden (Mt)	Waste (Mt)	Rock Strip Ratio	Global Strip Ratio	Total (Mt)
Year -2	-	4.20	-	-	-	4.20
Year -1	-	14.00	0.87	-	-	14.87
Year 1	0.72	14.00	4.33	6.03	25.49	19.05
Year 2	0.77	14.00	4.75	6.18	24.42	19.51
Year 3	0.92	11.50	4.46	4.84	17.30	16.88
Year 4	0.98	-	9.20	9.37	9.37	10.19
Year 5	0.98	-	9.11	9.27	9.27	10.09
Year 6	0.98	-	9.00	9.17	9.17	9.99
Year 7	0.98	-	7.91	8.05	8.05	8.89
Year 8	0.98	-	4.35	4.43	4.43	5.34
Year 9	0.98	-	4.14	4.22	4.22	5.13
Year 10	0.98	-	4.01	4.08	4.08	4.99
Year 11	0.98	-	3.72	3.78	3.78	4.70
Year 12	0.98	-	3.37	3.43	3.43	4.35
Year 13	0.98	-	2.96	3.01	3.01	3.94
Year 14	0.98	-	2.55	2.59	2.59	3.53
Year 15	0.98	-	2.16	2.20	2.20	3.14
Year 16	0.98	-	1.85	1.89	1.89	2.84
Year 17	0.98	-	1.58	1.61	1.61	2.56
Year 18	0.98	-	1.28	1.31	1.31	2.27
Year 19	0.98	-	1.15	1.17	1.17	2.13
Year 20	0.98	-	1.00	1.02	1.02	1.98
Year 21	0.98	-	0.62	0.63	0.63	1.60
Year 22	0.83	-	0.31	0.37	0.37	1.14
Total	**20.93**	**57.70**	**84.68**	**4.05**	**6.80**	**163.31**

TABLE 16-6 CONTRACTOR MATERIAL MOVEMENT SCHEDULE
Zenyatta Ventures Ltd. – Albany Project

	Overburden (Mt)	Waste (Mt)
Year -2	4.20	-
Year -1	14.00	-
Year 1	14.00	-
Year 2	14.00	-
Year 3	11.50	-
Year 4	-	4.54
Year 5	-	4.52
Year 6	-	4.50
Year 7	-	3.48
Total	**57.70**	**17.03**

MINE EQUIPMENT

The owner's mine equipment fleet for the open pit operation to achieve an average 15,000 tpd total capacity (mining exclusively in rock) is listed in Table 16-7. The equipment fleet was selected based on comparison to operations of similar size and using internal RPA databases.

TABLE 16-7 OWNER MOBILE EQUIPMENT FLEET
Zenyatta Ventures Ltd. – Albany Project

Type	Quantity
Major Equipment	
Front Hydraulic Excavator 6 m^3	1
Loader 8 m^3 (excavator assist/spare and utility)	2
Haul Truck 55 t	6
Percussion Drill 20 cm	2
Bulldozer 180 kW	3
Grader 230 kW	1
Water/Sand Truck	1
Service/Tire Truck	3
Bulk Truck/Blaster	1
Support Equipment	
Electric Cable Reeler	1
Fuel and Lube Truck	1
Utility Backhoe	2
Mobile Crane	1
Shop Forklift	2
Flat Bed Truck	2
Pick Up Truck	5
Mechanic's Service Truck	1
Electrical Bucket Truck	1
Light Stands	4
Mine Comm./Dispatch System (30 units)	1

As discussed previously, mining contractors would be hired in order to proceed with overburden removal and to assist with high waste mining requirements from years 4 to 7 inclusively. The contractor mine fleet capacity for waste rock mining was planned to be the same as the owner fleet capacity as the total material moved during these four years is approximately doubled. Therefore, the contractor mining fleet for waste rock excavation is as in the table above for the loading, hauling, and drilling equipment, and for some support equipment. For the overburden removal, the dedicated contractor mining fleet with capacity to meet a daily removal rate of 40,000 t is listed in Table 16-8. It was assumed that drilling and blasting will not be required for mining of overburden.

TABLE 16-8 CONTRACTOR OVERBURDEN REMOVAL FLEET
Zenyatta Ventures Ltd. – Albany Project

Type	Quantity
Major Equipment	
Backhoe Hydraulic Excavator 8 m^3	2
Loader 10 m^3 (excavator assist/spare and utility)	1
Haul Truck 90 t	12
Bulldozer 180 kW	4
Grader 230 kW	1
Water/Sand Truck	1
Service/Tire Truck	3
Support Equipment	
Fuel and Lube Truck	1
Utility Backhoe	2
Mobile Crane	1
Flat Bed Truck	2
Pick Up Truck	7
Mechanic's Service Truck	1
Electrical Bucket Truck	1
Light Stands	4

MINE INFRASTRUCTURE AND SERVICES

This sub-section is dedicated to infrastructure directly associated with mine operations. For all other general infrastructure located at surface, see Section 18 (Project Infrastructure).

MATERIAL HANDLING

The graphite-bearing material, overburden, and waste rock will be hauled out of the pit with the off-highway equipment fleets listed previously. The waste rock will be transported to the waste dump, located north of the open pit, while the overburden will be deposited into a pile south of the pit. The graphite-bearing material (process feed) will be delivered directly into the primary crusher or stockpiled nearby. Crushing will be performed prior to feeding the process plant.

DEWATERING

The dewatering system will comprise of dewatering wells surrounding the open pit footprint. A pumping network will also be installed to pump run-off water from the open pit.

Pumped water from all sources will be directed through the water treatment system, comprised of settling/polishing ponds, prior to release into the environment.

EXPLOSIVES AND DETONATORS

Detonators and explosives will be stored in approved explosives magazines located south of the open pit and on the east side of the overburden pile, far enough from buildings and working areas to meet safety standards. The selected site is shown in Figure 18-1. Suppliers will deliver explosives and detonators directly into dedicated magazines for storage until use.

17 RECOVERY METHODS

The Mineral Resources for the Project will be mined and beneficiated to recover a flotation concentrate, which will be purified to a graphite product at an onsite processing facility. The primary steps in beneficiation include crushing, grinding, and concentration by flotation. The primary steps in purification include alkaline (NaOH) treatment (a caustic leaching stage on each side of a low temperature baking (350^{o}C) stage) followed by mild HCl leaching to extract a purified graphite product. The graphite product will be filtered, dried, and bagged for sale and transportation to market.

DESIGN BASIS AND PROCESS DESIGN CRITERIA

The crushing, grinding, flotation, and purification processing facility is designed to operate for 350 days per year at a design throughput of 983,000 tpa for the first 22 years of the mine life. Testwork was performed during the course of the PEA study and the results were used to form the basis of the process design criteria and to identify major process equipment required. The equipment selected is strictly preliminary and is based on testwork references, information from other studies, and RPA's previous experience on similar projects. Table 17-1 lists the sources of information used to obtain or to estimate the design criteria. Tables 17-2 and 17-3 present the nominal design throughput and key plant design criteria for the stages of beneficiation and purification.

TABLE 17-1 DESIGN CRITERIA SOURCES
Zenyatta Ventures Ltd. – Albany Project

Source Code	Description
A	As instructed or determined by the client
B	Standard industry practice
C	Selected, based on metallurgical testwork results
D	Criteria from process calculations
E	Engineering handbook data
F	Assumption
G	Information not available or to be determined

TABLE 17-2 KEY PLANT DESIGN CRITERIA – BENEFICIATION
Zenyatta Ventures Ltd. – Albany Project

Parameter Value		Units	Source
Feed Characteristics			
Ore relative density	2.64		C
Graphite head grade (nominal)	4.05	%C	A
Operating Schedule			
Run-of-mine (ROM) ore delivered (dry)	983	ktpa	A
Scheduled operating days	350	d/y	B
Crushing circuit availability	67	%	B
Crushing plant availability	92	%	B
Beneficiation			
Crushing and Screening			
Production Target (dry)	983	ktpa	A
Crushing Circuit Plant Feed Rate	4,188	tpd	D
Nominal Plant Feed Rate	2,807	tpd	D
Operation Plant Feed Rate	3,051	tpd	D
Average concentrate production at 88.6% C_g	37,967	tpa	A
Average tailings production	944	ktpa	D
Grinding			
Utilization	94	%	B
Milling Circuit Feed Rate	2,862	tpd	C
Fuel Oil (Mill Reagent Addition)	10.5	g/t	C
Rougher Flotation			
C_t Head Grade	4.05	%	C
Feed, P_{80}	175	µm	C
Feed density	30	%	C
Feed rate	119	tph	C
Pulp density	582	kg/m^3	C
Retention time	20	min	C
Required total volume	109	m^3	C
Fuel Oil	16.5	g/t	C
MIBC	26.5	g/t	C
Rougher Concentrate			
Mass Pull	22.0	%	C
Solids flowrate	31.3	tph	C
C_t Grade	17.0	%	C
C_t Recovery	92.2	%	C
Rougher Tailings			
Mass pull	78.0	%	C
Solids flowrate	88.3	tph	C
C_t Grade	0.40	%	C
C_t Recovery	7.80	%	C
Regrind Mill #1			
Feed, P_{80}	175	µm	C

Parameter Value		Units	Source
Product, P_{80}	50	µm	C
Power	41.1	kWh/t	C
Cleaner Flotation			
Total number of cleaning stages	6		C
1st – 3rd Cleaner Flotation	3	-	C
Feed, P_{80}	50	µm	C
Fuel Oil	27.0	g/t	C
MIBC	31.5	g/t	C
1st Cleaner Tailing			
C_t grade	0.65	%	C
C_t overall recovery	2.12	%	C
3rd Cleaner Concentrate			
C_t grade	49.6	%	C
C_t overall recovery	88.2	%	C
Regrind Mill #2			
Fuel Oil	10.5	g/t	C
4th – 6th Cleaner Flotation			
Feed, P_{80}	25	µm	C
Fuel Oil	27.0	g/t	C
MIBC	31.5	g/t	C
4th Cleaner Tailing			
C_t grade	2.27	%	C
C_t overall recovery	1.5	%	C
6th Cleaner Concentrate			
C_t grade	88.6	%	C
C_t overall recovery	84.54	%	C
Overall Flotation Recovery	84.54	%	C
Concentrate Thickening			
Thickener diameter	24.4	m	C
Thickener side wall depth	4.9	m	C
Slurry feed rate	209.2	m^3/h	C
Solids in feed	5	wt %	C
Solids in thickener underflow	11.3	wt %	C
Flocculant	45	g/t	C
Thickener Underflow Pump	89	m^3/h	C
Thickener Overflow Pump	121	m^3/h	C
Concentrate Dewatering			
Feed pulp to centrifuge	11.7	t/h	C
Centrate pump	35	m^3/h	C
Concentrate moisture	55	%	C
Concentrate transfer pump	6	t/h	C
Tailings Thickening & Disposal			
Thickener diameter	29.6	m	C
Thickener side wall depth	0.7	m	C
Slurry feed rate	880.5	m^3/h	C

Parameter Value		Units	Source
Solids in feed	23.3	wt %	C
Solids in thickener underflow	56.6	wt %	C
Flocculant	110	g/t	C
Thickener Underflow Pump	274	m^3/h	C
Thickener Overflow Pump	655	m^3/h	C

Notes:
C_t – total carbon
C_g – graphitic carbon

TABLE 17-3 KEY PLANT DESIGN CRITERIA – PURIFICATION
Zenyatta Ventures Ltd. – Albany Project

Parameter Value		Units	Source
Plant Availability	85	%	B
Stage 1 Alkaline (NaOH) Leaching			
Graphite concentrate (conc.) feed	11.0	t/h	C
Leach 1 (L1) PLS recycle	12.97	t/h	C
Leach 2 (L2) PLS recycle	0.36	t/h	C
L2 Repulp PLS recycle	0.94	t/h	C
L1 conditions:			
Solids in pulp	20.0	wt%	C
Caustic (NaOH)	114	kg/t conc. Feed	C
Temperature 1	20	°C	C
Residence time 1	2.0	h	C
Temperature 2	140	°C	C
Residence time 2	0.17	h	C
Steam	6.3	mt/h	D, E
Natural Gas (for steam)	479.4	Nm^3/h	D, E
L1 discharge slurry	23	t/h	C
C_g purity	97.96	%	C
Stage Recovery	91.43	%	C
Low Temperature Baking			
Kiln feed	10.3	wet t/h	C
Nitrogen	0.856	kg/h	C
Natural Gas	773	Nm^3/h	C, D
Temperature (drying)	100	°C	C
Residence time (drying)	1.0	h	C
Temperature (baking)	350	°C	C
Residence time (baking)	2.0	h	C
Kiln discharge (L2 feed)	4.8	dry t/h	C
Kiln dust filter and recycle			G
Hydrated lime ($Ca(OH)_2$) for off-gas scrubbing	99	mt	D, F
Stage 2 Alkaline (NaOH) Leaching			
L2 feed rate	4.8	t/h	C

Parameter Value		Units	Source
L2 feed temperature	350	°C	C
AlSiRe recycle	12.4	t/h	C
L2 Repulp PLS Recycle	3.80	t/h	C
Solids in pulp	20.0	wt %	C
Caustic (NaOH)	157	kg/t conc. Feed	C
Temperature	140	°C	C
Residence time	0.17	h	C
Steam	10.2	mt/h	D, E
Natural Gas (for steam)	775.5	Nm^3/h	D, E
L2 discharge slurry to L/S Separation	21	t/h	C
Deionized (DI) water for washing Stage 2 residue	15.9	t/h	C
Washed Stage 2 filter cake	5.95	t/h	C
C_g purity	99.27	%	C
Stage Recovery	90.13	%	C
Al/Si Removal (AlSiRe)			
Leach 2 PLS feed rate	13.1	t/h	C
Feed temperature	90	°C	C
Retention time	4.0	h	C
Discharge slurry temperature	20	°C	C
Cooling water			G
Neutralization			
AlSiRe cake	0.62	t/h	C
Acid bleed (from Stage 3 L/S Separation)	12.57	t/h	C
Sulphuric acid (H_2SO_4)	140	kg/t conc. Feed	C
Lime (CaO)			G
Retention time	0.25	h	C
Temperature	20	°C	C
Neutralization discharge slurry to thickener	31.5	t/h	C
Flocculant			G
Neutralized filter cake	1.13	t/h	C
Stage 3 Mild HCl Leach			
Leach 3 (L3) feed (washed Stage 2 filter cake)	5.95	t/h	C
L3 PLS recycle	34.7	t/h	C
L3 Repulp PLS recycle	2.1	t/h	C
L2 Repulp PLS Recycle	3.80	t/h	C
Solids in pulp	10.0	wt %	C
Hydrochloric acid (HCl)	1.1	kg/t conc. Feed	C
Temperature	20	°C	C
Residence time	0.5	h	C
L3 discharge slurry to L/S Separation	41	t/h	C
DI water for washing Stage 3 residue	11.8	t/h	C
Washed Stage 3 cake	6.2	t/h	C
Cg purity	99.94	%	C

Parameter Value		Units	Source
Stage Recovery	99.9	%	C
Overall Recovery (Purification)	89.13	%	C
Overall Recovery (Beneficiation & Purification)	75.4	%	C
Product Drying & Packaging			
Dryer feed rate	6.2	t/h	C
Feed moisture	34.2	%	C
Dryer temperature	95	°C	C
Residence time	2	h	C
Target moisture content of final product	0	%	A
Dryer dust filter and collection			G
Dryer discharge to final product packaging	4.1	t/h	C

PROCESS FLOWSHEET AND DESCRIPTION

The selected process plant flowsheet and design are based on the testwork described in Section 13. A simplified Block Flow Diagram (BFD) for the proposed processing facility is shown in Figure 17-1. The information contained in this section has been used for the capital and operating cost estimates presented in Section 21. A summary description of key process unit operations in the conceptual flowsheet is provided below.

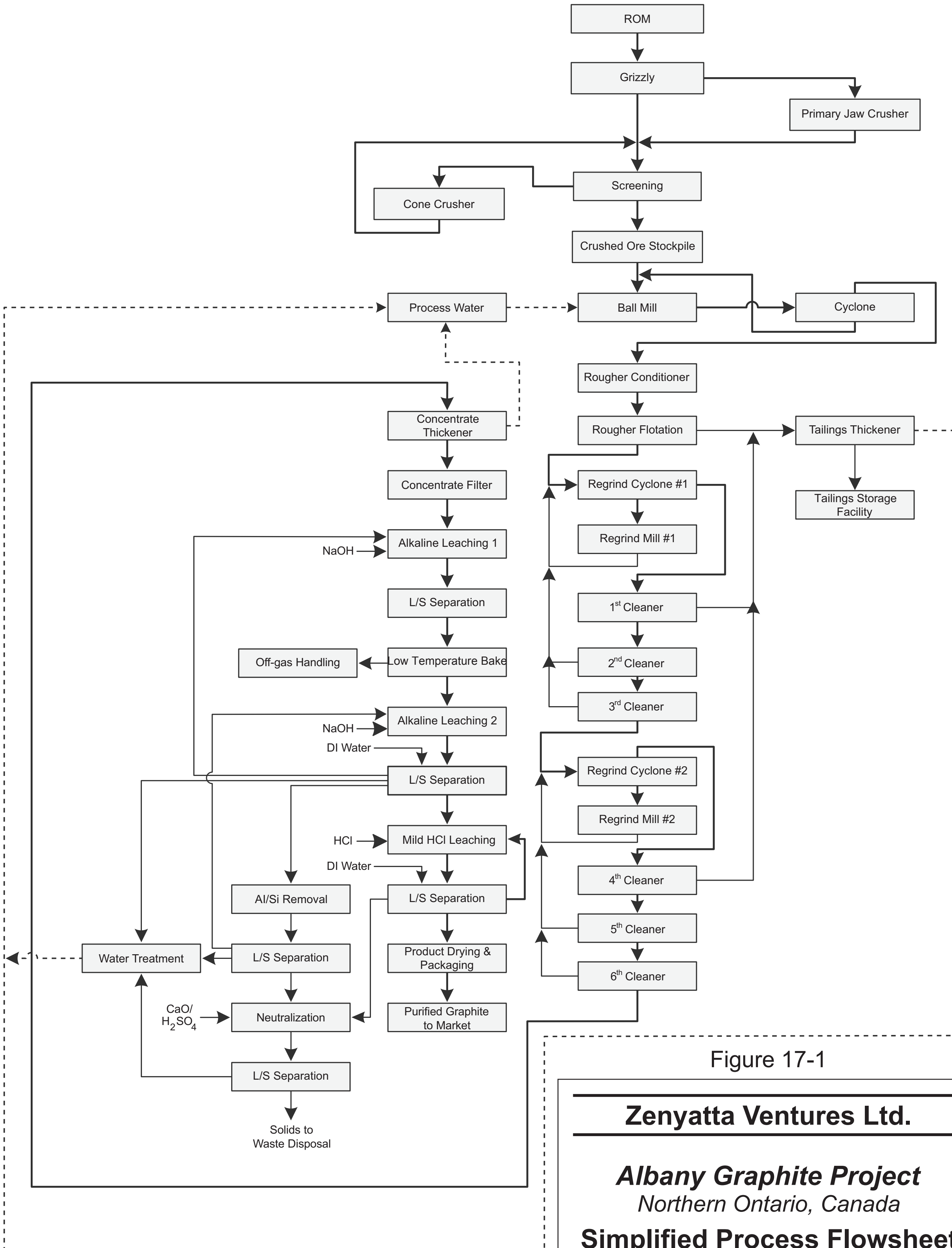


Figure 17-1

Zenyatta Ventures Ltd.

Albany Graphite Project

Northern Ontario, Canada

Simplified Process Flowsheet

July 2015

CRUSHING AND GRINDING

The crushing, milling, and flotation circuits have been designed to support treatment of a maximum of 983,000 tpa feed in the first 22 years of the operation.

The crushing circuit will consist of a jaw crusher and cone crusher to reduce ROM mineralized material. Crushed mineralized material will be ground to a particle size of 80% passing (P_{80}) 200 µm in a typical semi-autogenous grinding (SAG)/ball mill/pebble crusher grinding circuit in closed circuit with hydrocyclone classifiers.

FLOTATION AND CONCENTRATE DEWATERING

The flotation circuit will consist of a conditioning stage and rougher stage to generate a rougher concentrate and a tailing. The rougher concentrate will be reground to a P_{80} of 53 µm in a regrind mill (e.g., Vertimill) in closed circuit with hydrocyclone classifiers before three stages of cleaner flotation. The 3rd cleaner concentrate will be reground to a P_{80} of 25 µm in a second regrind mill (e.g., Stirred Media Detritor or SMD) in closed circuit with hydrocyclone classifiers before another three stages of cleaner flotation. The flotation tailings (rougher and cleaner tails) will combine in the tailings thickener before being sent to a tailings storage facility located at the mine site. The 6th cleaner concentrate will be thickened and dewatered to reduce the moisture in the graphite concentrate filter cake.

STAGE 1 ALKALINE (NAOH) LEACHING

The graphite concentrate is leached with 760 g/L NaOH at 20 wt. % solids for approximately two hours at ambient temperature followed by leaching at 140°C for approximately ten minutes. The Stage 1 Leach discharge will be pressure filtered. The Stage 1 Leach filtrate is recycled to Stage 1 Leaching. The Stage 1 Leach residue is directed to low temperature baking.

LOW TEMPERATURE BAKE

The Stage 1 Leach filter cake is transferred to a rotary kiln for subsequent drying, agglomeration, and baking at 350°C for approximately two hours in total. The rotary kiln is equipped with a combustion air system and exhaust gas handling. The kiln is refractory lined and sloped from the feed end to the kiln discharge end and is fired by natural gas burners counter current to the direction of the flow of the Stage 1 Leach residue. Nitrogen will be supplied to the kiln to create an inert process atmosphere. The kiln discharge is transferred to Stage 2 Alkaline Leaching. The rate of dusting in the kiln will depend on agglomerate strength and friability and requires further investigation and testing. The exhaust gas handling system will comprise of dust cyclones, an electrostatic precipitator, exhaust fan and stack, and an emergency stack. Dust collection and handling will include dust conveyors and pneumatic dust transport system to deliver dust to feed bins for Stage 1 treatment.

STAGE 2 ALKALINE (NAOH) LEACHING

The material discharged from the kiln is quenched directly in recycled Stage 2 lixiviant and is leached at 20 wt. % solids for approximately ten minutes using 760 g/L NaOH at 140°C. The Stage 2 Leach discharge is subjected to liquid-solid separation. The Stage 2 Leach filtrate is recycled to Stage 1 Leaching and is partly directed to the Aluminum Silicon Removal (AlSiRe) stage. The Stage 2 Leach residue is repulped, washed counter-currently with deionised water, and filtered before being directed to Stage 3 Mild HCl Leaching.

ALUMINUM/SILICON REMOVAL (ALSIRE)

The AlSiRe circuit will consist of impurities removal by cooling of the Stage 2 Leach filtrate from 90°C to 20°C and subsequent crystallization without caustic regeneration. The AlSiRe slurry is filtered and the solution is recycled to Stage 2 leaching and the filter cake is sent to final neutralization. During the neutralization step, either sulphuric acid or lime will be mixed with the AlSiRe filter cake and solutions from Stage 2 Wash and Stage 3 Mild HCl Leaching to produce a neutralized slurry. The neutralized slurry will be thickened and filtered prior to disposal and the filtrate will be treated and returned as process water.

STAGE 3 MILD HCL LEACHING

The Stage 2 Leach filter cake is leached at 10 wt. % solids with approximately 40 g/L HCl for approximately 30 minutes at ambient temperature. The Stage 3 Leach slurry discharge is subjected to liquid-solid separation. The filtrate is recycled to Stage 3 leaching and fresh HCl is added, as needed. A Stage 3 acid bleed stream is also directed to neutralization. The Stage 3 Leach residue is repulped, washed counter-currently with deionised water, and filtered. The final washed filter cake is directed to product drying.

PRODUCT DRYING AND PACKAGING

The target moisture content of the final graphite product is 0%. A rotary kiln was selected by SGS as equipment suitable for drying the product. In RPA's opinion, a rotary kiln for final drying may result in excessive dusting, therefore, alternative drying systems should be investigated and tested to effectively dry the material without any significant changes or losses in product. The dryer system should also be equipped with adequate dust collection and handling. In the case of a rotary kiln, for example, an exhaust gas handling system will comprise of dust cyclones, an electrostatic precipitator, exhaust fan and stack, and an emergency stack. Dust collection and handling will include dust conveyors and a pneumatic dust transport system to deliver captured dust to feed bins in packaging.

After drying, the final graphite product will be placed in 2 tonne bulk bags on pallets for shipment. The type and size of packaging will be dependent on customer requirements.

WASTE TREATMENT

Wastes generated from the process include tailings, wastes from neutralization, and scrubber wastes following off-gas handling and treatment. Further studies are required to determine the quantities and characteristics of the waste streams and the appropriate methods of handling and disposal.

STEAM GENERATION PLANT

A steam generator plant produces and supplies steam of a desired quality and quantity to the processing plants. The boilers are fired by natural gas burners. The equipment will also consist of a feed water tank, feed water pumps, condensate vessel, and condensate pumps. All equipment is in the boiler house. The chimney and the feed water tank are outside of the building. All pipes must be insulated.

COOLING WATER PLANT

A cooling water plant supplies cooling water to the processing plants in the required quality and quantity. The number of cooling towers will vary but each is equipped with a blower. There will be one big catch basin for the cooling towers together with pumps. The equipment will also include one water filter with pumps and one cooling tower low point with pumps. The cooling water plant should be located at a central point with the same distances to all plants which need cooling water, in order to minimize temperature losses. All transfer pipes must be insulated. The cooling tower system is designed to provide cooling water with a temperature of 20°C.

NITROGEN PLANT

Nitrogen will be produced on site for inert gas application in the purification circuit using a Pressure Swing Absorption (PSA) Plant.

REAGENTS

Grinding media, flotation reagents, and flocculant will be delivered and stored on site.
Reagents that will be delivered, stored, mixed, and distributed within the processing facilities include the following:

- Fuel oil
- Methyl Isobutyl Carbinol (MIBC)
- Flocculants
- Sodium hydroxide
- Hydrochloric acid
- Sulphuric acid
- Hydrated Lime
- Lime

PLANT UTILITIES

STEAM

Low pressure steam will be supplied to the Albany facilities from a distribution header and transferred to various usage points within the plant by a piping network.

WATER SYSTEMS

The water circuit will be configured to minimize use of fresh water. A fresh water system is required in order to store and to distribute fresh water to various areas of the mill, process plant, and Project site. Fresh water will be used for potable water feed, reagent preparation, cooling, gland seal water, and general use. Fresh water is also used to supplement the fire water required for on-site fire suppression purposes.

Water recovered in the tailings pond (reclaim water) will be delivered to a service water tank for storage and use.

Process water will be stored in a process water tank and will be fed by the service water tank overflow and by fresh water, if required. Process water will be used in grinding, flotation, and thickening.

Deionised (DI) water will be used for washing in purification circuits and to pre-treat boiler feed water and cooling tower make-up water to reduce scaling and energy use. A reverse osmosis (RO) system will be employed to remove solids, dissolved minerals, organics, and other particles to produce high quality DI water.

A potable (domestic) water system will be installed on site and will be designed to local drinking water guidelines. The system will include multimedia filtration for reduction of turbidity, followed by ultraviolet disinfection for primary disinfection, and the addition of sodium hypochlorite for secondary disinfection. Treated water will be distributed to serve all potable water users in all facilities. Main users of potable water include the change house, maintenance shop, administration building, washrooms and safety will be distributed to washrooms and emergency showers throughout the process plant.

COMPRESSED AIR

Compressed air and instrument air systems will be provided to service the processing facilities. Compressed air receivers will be installed at various locations within the plant to provide the necessary surge capacity.

ENERGY, WATER AND PROCESS CONSUMABLES

ENERGY

Plant power requirements for each process area were estimated and Table 17-4 summarizes the estimated installed power requirements for the main process areas.

TABLE 17-4 ESTIMATED POWER REQUIREMENTS
Zenyatta Ventures Ltd. – Albany Project

Area Po	wer (kW)
Beneficiation	
Crushing & Screening	460
Grinding	2,113
Flotation	1,922
Concentrate Thickening	201
Concentrate Dewatering	25
Tailings Thickening & Disposal	346
Purification	
Stage 1 Alkaline (NaOH) Leaching	482
Al/Si Removal	106
Low Temperature Bake (includes Off-gas Handling & Treatment)	1,236
Stage 2 Alkaline (NaOH) Leaching	467
Stage 3 Mild HCl Leaching	468
Neutralization	56
Product Drying & Packaging	832
Total	**8,714**

WATER

Based on data provided by SGS, water consumption was estimated at a high level for the process flowsheet and is presented in Table 17-5. Insufficient information is available at this time to prepare a detailed water balance for the entire process flowsheet and to determine the following:

- Fresh water make-up
- Process water make-up
- Filtered water requirements
- Reclaim water to plant

TABLE 17-5 PRELIMINARY WATER BALANCE
Zenyatta Ventures Ltd. – Albany Project

Area	Consumption (m^3/y)
Beneficiation	
Inputs	
Process Water to Beneficiation	5,958,000
Total	**5,958,000**
Outputs	
Concentrate	46,000
Tailings	410,000
Tailings Thickener Overflow to Process Water	5,502,000
Total	**5,958,000**
Purification	
Inputs	
Concentrate	46,000
DI Water to Alkaline Circuit	118,000
DI Water to HCl Circuit	87,000
Total	**251,000**
Outputs	
Final Product	-
Recycle to Process Water	251,000
Total	**251,000**

PROCESS CONSUMABLES

The consumption of major supplies and reagents is shown in Table 17-6 and is largely determined from metallurgical lab scale testwork. Consumption of grinding media has been estimated and would need to be determined based on further comminution testwork.

TABLE 17-6 MAJOR PROCESS CONSUMABLES
Zenyatta Ventures Ltd. – Albany Project

Description	Units	Consumption
Mill Liners	units/y	2
Mill Media	tpa	450
Fuel Oil	g/t feed	100.5
MIBC	g/t feed	90
Flocculant	g/t feed	155
NaOH	kg/t concentrate feed	271
HCl	kg/t concentrate feed	1.1
H_2SO_4	kg/t concentrate feed	140

18 PROJECT INFRASTRUCTURE

SITE LAYOUT

The Project is located 30 km north of the Trans-Canada Highway, near the communities of Constance Lake First Nation and Hearst. An all-weather logging road runs within four to five kilometres of the deposit, with site access currently via winter trail from there. Power transmission lines and a natural gas pipeline run along the highway, and a railway is situated approximately 70 km to the east of the site.

The site layout is shown in Figure 18-1.

ACCESS ROAD

Access to site from the Trans-Canada Highway currently features a combination of existing local roads, logging roads, and a winter access road. Access for construction and operation will require that the winter access road be made all-season, while the existing local roads can be utilized with minor upgrades. The road connection from the Trans-Canada Highway to the site is approximately 37 km.

POWER SUPPLY AND SITE ELECTRICAL GRID

A 47 km long, 115 kV power line will be constructed to supply electricity to the site, running from a grid connection along the Trans-Canada Highway, and then parallel to the site access road. Once on site, electricity will be distributed via a central transformer, and local power lines. Areas requiring power include the freshwater pump house, tailings facility, in-pit pumps, processing building, and all other surface buildings. Total power consumption for the Project is estimated to be approximately 9 MW.

NATURAL GAS PIPELINE

Natural gas is required for multiple stages of the mineral processing flow sheet, as well as some ancillary purposes around the Project. A 37 km long, 101.6 mm diameter, natural gas pipeline will be constructed between the site and the TransCanada Pipeline. The path of the pipeline will generally follow the site access road. Total natural gas required for the site is approximately 13 million Nm^3 per year.

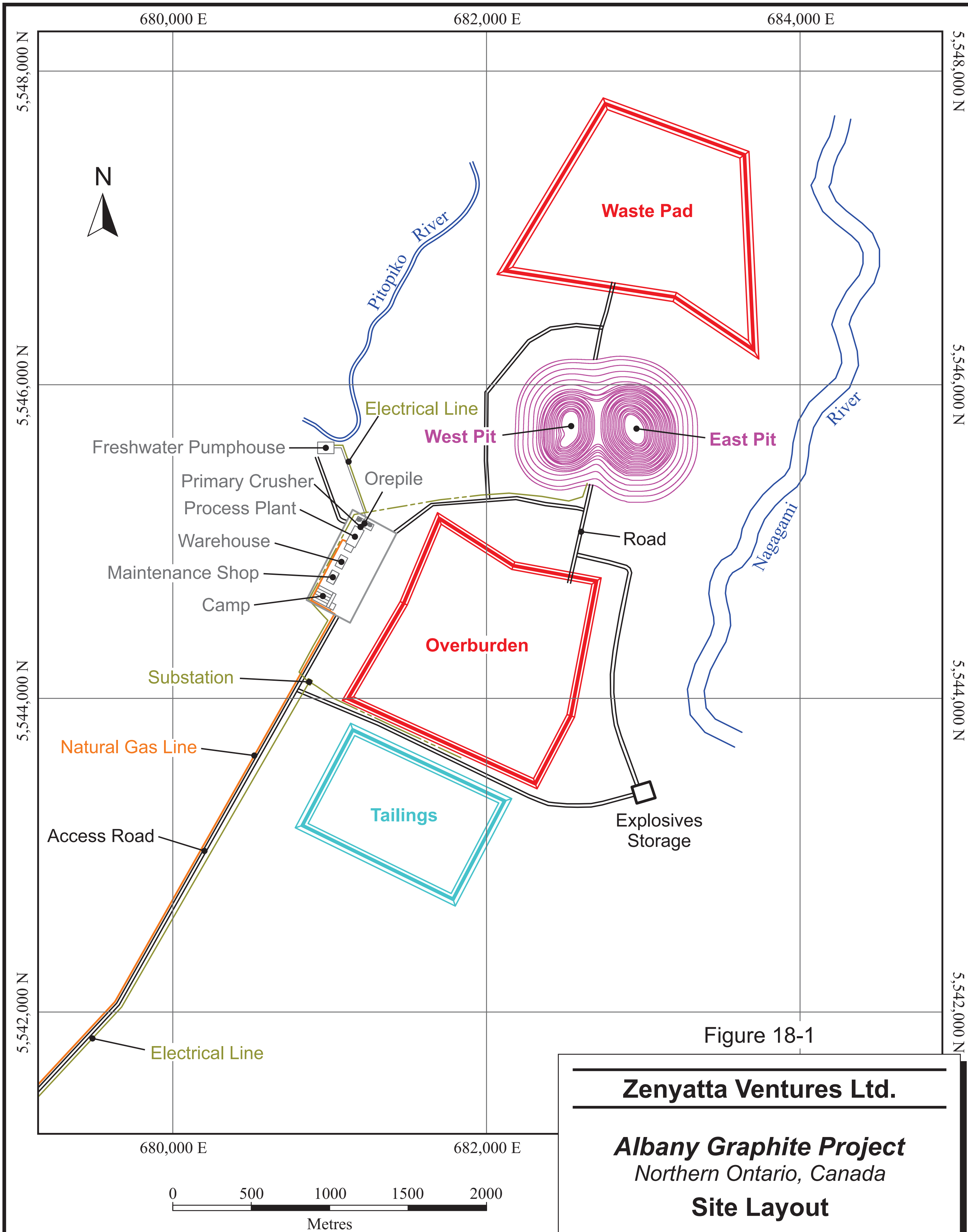


Figure 18-1

Zenyatta Ventures Ltd.

Albany Graphite Project

Northern Ontario, Canada

Site Layout

July 2015

SURFACE BUILDINGS

Multiple surface buildings will be constructed for the Project, including a maintenance shop, permanent camp, process building, dry facility, warehousing, and administration building.

The maintenance shop is envisaged as a four-bay facility that will be sized to match with the largest of the owner-owned mining equipment, being nominal 50 t haul trucks. The maintenance shop will be outfitted with an overhead crane, as well as associated equipment needed to support maintenance activities. In addition, there will be a separate bay dedicated to light-duty vehicles, and a wash bay.

The permanent camp is sized to house a maximum of 200 people. Local hiring from Constance Lake First Nation and Hearst will be pursued to the extent possible. Employees will commute to the site via buses from Timmins, Thunder Bay, or points in between. Generally, site personnel will work a rotation schedule of one week at site and one week off site. The camp will also feature a kitchen and dining area, recreation facilities, and games room.

The process building will house both the flotation and purification stages of mineral treatment. The process building will have a control room, product load out facility, allowances for discharge water treatment, deionized water preparation, storage of reagents and consumables, and a warehouse for storage of all site consumables.

A dry facility and administration building will be built either as a stand-alone facility or as part of the processing complex. The facility will house an area for showering and locker rooms, as well as an office area for site administrative and technical personnel.

MISCELLANEOUS SERVICES

Allowances were made for miscellaneous services such as a diesel fuel storage and pumping system, a site-wide fire protection system, sanitary waste disposal system, and potable water system.

TAILINGS STORAGE FACILITY

A tailings storage facility (TSF) will be constructed to accommodate the estimated 10 million m^3 of tailings generated over the life of the Project. Tailings will be pumped from the processing facility via pipeline to a discharge point within the TSF. More detail on the tailings characteristics and the requirements for the TSF can be found in Section 20.

WASTE ROCK AND OVERBURDEN DUMPS

Separate waste rock and overburden dumps will be built adjacent to the open pit. The waste dump and overburden dump will have estimated capacities of 85 Mt and 58 Mt, respectively.

19 MARKET STUDIES AND CONTRACTS

Information in this section is sourced from a confidential report by Roskill Information Services, and from Zenyatta's discussions with potential graphite end-users.

GRAPHITE MARKETS

Graphite comes in a variety of forms with varying levels of quality depending on the deposit type. The degree of purity, crystallinity, particle shape, and size distribution can vary greatly, which heavily influences the applications and pricing of end products. The element is found naturally in three different types – hydrothermal (vein), flake, and amorphous – and can also be manufactured out of other forms of carbon (petroleum coke), into what is known as synthetic graphite, via an expensive thermal process. The world consumes approximately 2.3 M to 2.5 M tonnes of graphite annually, split approximately equally between natural and synthetic. Each of the different forms of graphite has distinguishing features and properties that make it suitable for various commercial applications. The importance of graphite to industrialized countries is highlighted by the fact that it is included as a strategically critical mineral by the European Union, United States of America, and Great Britain.

Zenyatta's Albany graphite deposit is a unique, large, high-purity, hydrothermal natural graphite type. The unusual mode of formation, through igneous hydrothermal processes, accounts for the superior purity and crystallinity of graphite found in this deposit. Currently, there is only one other hydrothermal graphite producer in the world, located in Sri Lanka, and it differs from the Albany graphite deposit in details of formation, size, and resulting purity. The formation of deposit for the mines in Sri Lanka is such that the extraction method consists of mining multiple narrow veins ranging in width from a few centimetres to a few metres wide. Conversely, the Albany graphite deposit consists of two vertically oriented breccia pipes that would be mined by open pit mining methods. Natural graphite occurring in a breccia pipe body was an unknown type of graphite deposit prior to the discovery of the Albany deposit, and remains the only known example in the world.

Graphite is considered an industrial mineral and is not openly traded. The market consists of contracts between individual producers, carbon traders, and end users. As a result, information on prices and sales volumes in various applications is often considered proprietary information and is not readily available to the public. Two properties, among others, most commonly affecting prices are purity (measured as a percentage of Carbon content), and particle size (measured in microns or mesh size). For example, low-purity amorphous graphite makes it generally suitable for use in low-technology applications. Similarly, medium-purity flake graphite is generally used for refractory purposes. At the opposite end of the value spectrum, high-technology applications like batteries (including lithium-ion batteries), powder metallurgy, fuel cells, and nuclear reactors demand high purity from either natural or synthetic graphite – the highest quality available. Just within the high technology market, prices fluctuate significantly, from approximately US$3,000 per tonne for 99% Cg purity to approximately US$200,000 per tonne for 99.999% Cg purity.

Metallurgical testwork completed to date from the Albany graphite deposit indicates that graphite can be purified to an end product grade of at least 99.94% Cg (higher purities may be possible with further testwork). The degree of purity demonstrated by metallurgical testwork done to date indicates that Zenyatta would compete with synthetic graphite producers and target specialized, high-value end-users with both a cost and environmental advantage.

MATERIAL PROPERTIES

Graphite is a naturally occurring or synthetically produced form of carbon with properties that make it desirable for many commercial applications. Graphite is just one type of naturally occurring carbon, along with diamonds, anthracite, coal, and coke. It comes in a variety of forms, with a range of carbon purities and particle sizes that can be adapted to specialized products or utilizations, as outlined in Table 19-1.

TABLE 19-1 GRAPHITE TYPES
Zenyatta Ventures Ltd. – Albany Project

Type	Product Purity	Particle Size	Relative Value	Characteristics and Uses
Amorphous	80-85%	Micro to Small (-200/-100 mesh)	LOW	The most abundant in the world. Its uses include pencil fillings, and other basic industries.
Flake	90-97%	Small to Large (-100/+80 mesh)	MEDIUM	Quality varies, and flake sizes range from small to large. Uses include refractories, lubricants, and flake size indicates price.
Vein/Lump	97-99.95%	Varying	HIGH	The highest quality naturally occurring, used in specialized industries that demand low impurities.
Synthetic	97-99.95%	Varying	HIGH	Residue from oil refineries is pressed and shaped into specific forms depending on customer needs.

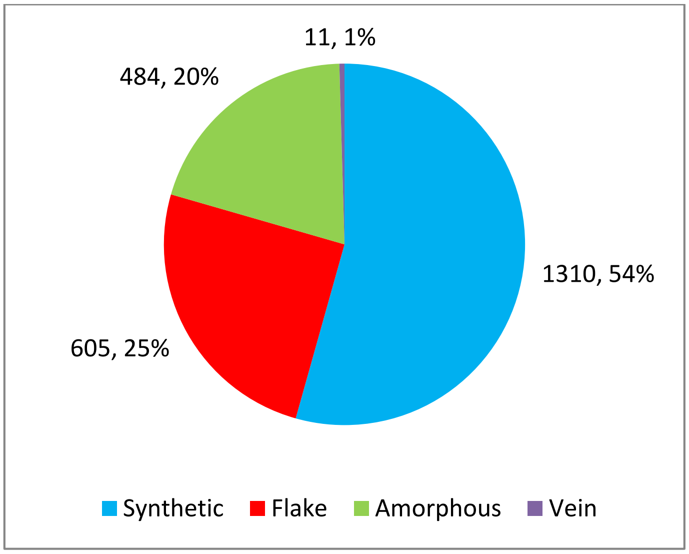
Graphite is known to be heat-resistant, with a melting point approaching 3,500^{0}C. The element is chemically inert, resistant to corrosion and thermal shock, and heat conductive. Furthermore, graphite can be used as a lightweight reinforcing element, and as a lubricating agent in industrial applications. The combination of these attributes makes it useful in a variety of commercial applications, with good potential to develop more.

Albany graphite exhibits the right crystallinity, carbon content, and size that enable it to be processed into a high-purity final product which may be sold to specialized graphite consumers for a variety of applications listed earlier.

GRAPHITE PRODUCTION

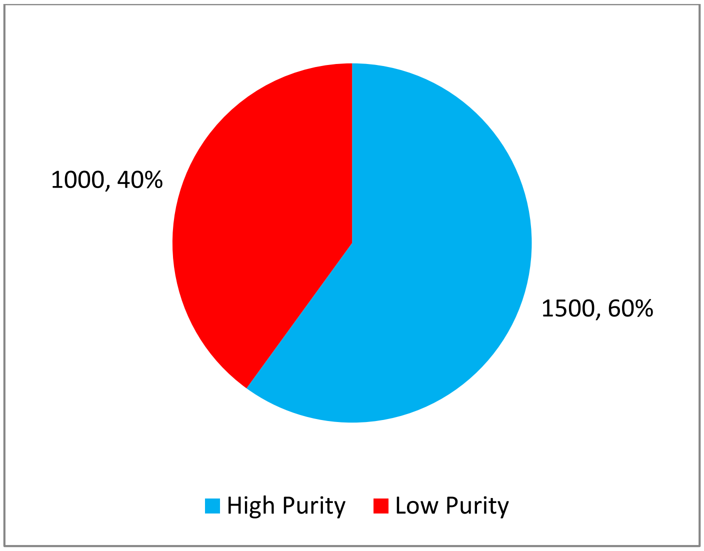
Global production of graphite is estimated annually at 2.3 Mt to 2.5 Mt, which includes all forms of the mineral. Production of natural flake and amorphous graphite is heavily concentrated in China, with other countries like India, Brazil, North Korea, and Canada making up the remainder.

FIGURE 19-1 GLOBAL GRAPHITE PRODUCTION BY TYPE



As shown in Figure 19-1, the element is largely produced from either synthetic sources, or mined in the form of flake and amorphous graphite. Natural vein graphite is currently only produced in a single location globally. When examining the graphite market by segregating it into high- and low-purity markets, the following graph emerges.

FIGURE 19-2 GLOBAL GRAPHITE PRODUCTION BY PURITY



High-purity graphite (>99.0% Cg) represents approximately 60% of the overall market by tonnage. China is the dominant producer of low-purity graphite (68% of amorphous and flake), while high-purity graphite is more geographically diverse, due to synthetic sources being a by-product of refining light sweet crude oil (needle coke).

SYNTHETIC GRAPHITE

The production of synthetic graphite powder is a complex multi-step process, starting from high grade petroleum coke as the main raw material. The entire process can take upwards of four to six months to complete. Synthetic graphite production is distributed as follows: Asia produces approximately 45%, Europe 25%, North America 18%, and the rest of the world approximately 12%. Primary demand for synthetic graphite comes from use in electrodes, specialty products, and batteries.

The cost of producing synthetic graphite can vary over a wide range due to many factors: cost and type of raw petroleum coke used, final purity, desired form factor and crystallinity of the end product, electricity and other fuel costs, type of furnace used in graphitization, cost of other ingredients, and production volumes. Based on Zenyatta's knowledge of the industry, the cost of production of large volume synthetic graphite powders can range from US$6,000 per tonne to US$10,000 per tonne. Costs can be even higher for niche, ultra-high purity graphite products where the volumes are small and special properties are targeted.

Production of equivalent purity natural hydrothermal graphite products from the Albany graphite deposit is expected to have a significant cost advantage in this market.

FUTURE TRENDS

In the last five years, the graphite market has seen increased demand due to a number of factors, notably the emergence of lithium-ion batteries and electric vehicles; an export tax imposed by China; and the rising demand for steel production. Consequently, there has been a flurry of exploration activity centered on discovering graphite deposits located in stable jurisdictions. In contrast to more commonly occurring flake and amorphous graphite deposits, the Albany deposit can be processed, at a cost advantage, to yield high-purity, crystalline graphite ideally suited for advanced high-tech applications. The world trend is to develop products for technological applications that need extraordinary performance using ultra-high purity graphite powder at an affordable cost.

GRAPHITE DEMAND

Within the flake and amorphous market, the overall health of the steel making industry strongly influences the demand for graphite. Consequently, demand for flake graphite surged with the rapid industrialization of China, India, and other emerging countries over the past decade. That growth is expected to slow, but still rise modestly over the coming decade. Since Zenyatta's deposit is of a higher quality than most producers, the application for its graphite is in the more specialized and growing sectors such as lithium-ion batteries, fuel cells, powder metallurgy, and pebble bed nuclear reactors. Several of Zenyatta's targeted industries are explained in further detail.

ENERGY STORAGE

Due to their electrical conductivity, graphite powders are used in both primary (alkaline) and secondary (lithium-ion) batteries. In primary batteries, it is used as a conductive additive in cathodes and binders to improve the adhesion of the electrode active material to prevent materials fusing together. In lithium-ion batteries, high-purity graphite is used as the anode material for storing lithium ions. A range of 10 to 20 times more graphite than lithium is required, or 50 kg to 100 kg of graphite per electric vehicle depending on the size of the battery. This market for high-purity graphite is expected to rise as consumers become increasingly interested in electric vehicles, as demonstrated by Tesla Motors recent commitment to build a large lithium-ion battery factory in Nevada.

CARBON BRUSHES

High-purity graphite is a main component of carbon brushes which are found in the majority of electrical motors. Graphite fixes the electrical conductivity of the brush and also contributes to reduce wear while lubricating and increasing mechanical strength.

PEBBLE BED REACTORS

Nuclear power is competitive with natural gas, is non-polluting, and does not contribute to global warming. The pebble bed reactor (PBR) is a graphite-moderated, gas-cooled, nuclear reactor which uses tristructural-isotropic (TRISO) fuel particles, allowing for high outlet temperatures and passive safety. Graphite is utilized due to its ability to slow down neutrons to the speed required for the nuclear fission reaction to take place and can withstand temperatures of 2,800^{o}C. Compared to other nuclear reactors they are smaller, safer, and less costly. They require 3,000 tonnes of graphite for start-up with 1,000 tonnes annually for a 1 GW reactor. Graphite is also used in traditional nuclear reactor applications.

POWDER METALLURGICAL INDUSTRY

Graphite is used in powdered metals primarily as a strengthening agent, and as a lubricant. An estimated 80% of products made by powder metallurgy are used in the automotive sector mainly as components for transmissions and engines. Other uses in this sector include industrial controls, motors, and hydraulics. Primary military applications for fine grained, high density graphite are re-entry vehicle nose tips, thrust tabs, heat shields, and nozzle throats of missiles. Graphite is used due to its ability to withstand extreme temperatures while maintaining strength & shape. It is also inexpensive, light weight, easy to machine & replace compared to other materials. Sri Lankan vein-type graphite is heavily used in this market and typically achieves prices at the upper end of the range.

FRICTION MATERIALS

Graphite powders are relied on in the manufacture of brake pads or drums and clutch facings due to their ability to provide the required level of friction coefficient at different operating conditions. It also contributes to temperature, vibration, and noise control, while maintaining a low wear rate.

FUEL CELLS

Most bipolar plates in polymer electrolyte membrane (PEM) fuel cells are manufactured by compression moulding using graphite and polymer compounds (graphite content: 75% to 85%). According to Roskill Mineral Consulting, a typical PEM cell weighing 110 kg to 120 kg contains 90 kg of graphite. The Gas Diffusion Layer also contains high-purity graphite. Graphite offers a balance between conductivity, strength, size, and weight along with a coating for metallic bipolar plates to avoid corrosion. Fuel cell applications include motor vehicles, transportation systems, electric power generation, and other consumer products. The U.S. Geological Survey indicates that the emergence of fuel cells has the potential to require significant additional demand for high-purity graphite.

THERMAL CONDUCTIVE AND ELECTRICAL CONDUCTIVE POLYMERS

Graphite finds wide applications as a polymer additive thanks to its following properties: low friction, lubrication, chemical inertness, high thermal conductivity, thermal stability, and electrical conductivity. Some end-use applications are:

- Heat management
- Anti-static packaging
- Electromagnetic (EMI) shielding

- Electronics manufacturing

The growing demand for high-performance, lightweight, and inexpensive products are driving the growth for conductive polymers.

ADDITIONAL USES

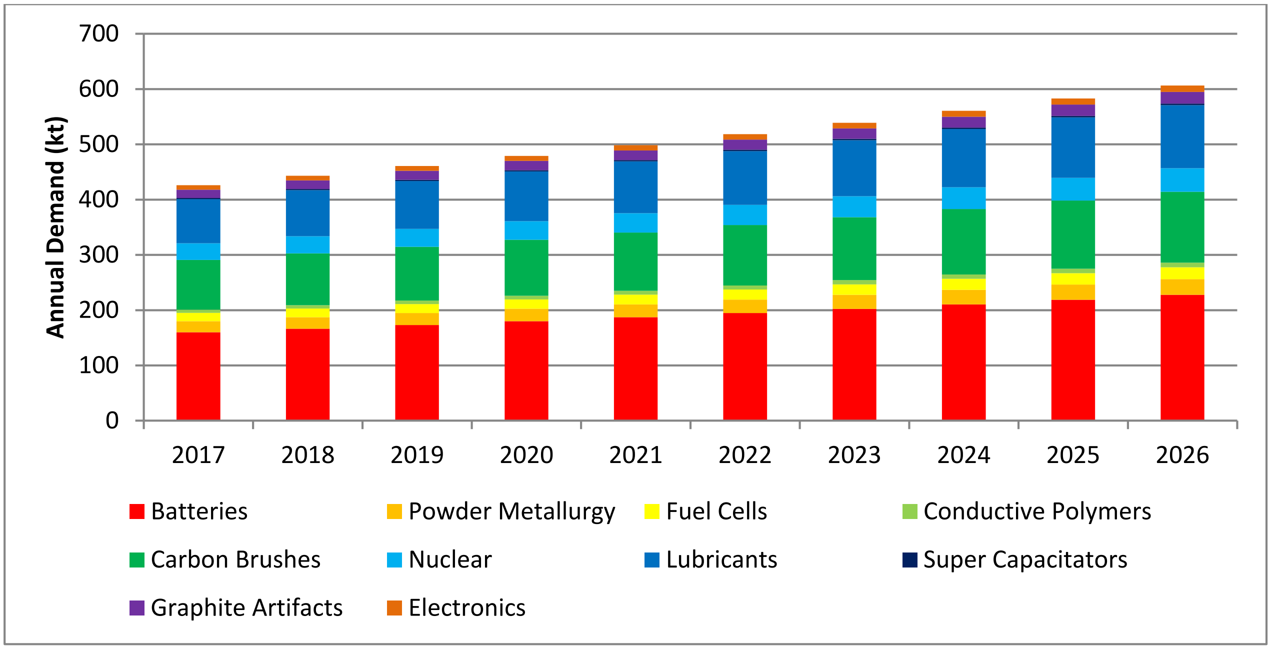
In addition to the previously listed industries, high-purity graphite is required in various other applications such as:

- High temperature coatings
- Semiconductor technology
- High quality synthetic diamonds
- Raw material for graphite foil
- Construction building material
- Aluminum cathodes
- Vanadium flow batteries
- Graphene

DEMAND FORECAST

Figure 19-3 shows the expected demand for specific industries targeted as potential customers for Zenyatta that require high-purity graphite. Industries that demand high-purity graphite include special lubricants, lithium-ion batteries, fuel cells, some nuclear reactors, and other smaller applications.

FIGURE 19-3 HIGH-PURITY GRAPHITE DEMAND 2017-2026



Source: confidential Roskill report and communications between Zenyatta and graphite consumers

The high-purity graphite industry targeted by Zenyatta is expected to see demand of approximately 426 kt in 2017, growing annually by 4% to an expected 600 kt within 10 years. The surge in demand for lithium-ion batteries is the main driver of growth. Based on Zenyatta's planned annual output, it would capture approximately 7% of annual high-purity graphite demand upon commercial production.

GRAPHITE PRICING

Like many specialized minerals such as uranium or fluorspar, graphite prices are decided between individual buyers and sellers, in a somewhat opaque market. There are published prices that can influence the agreed upon contract, however, these are merely guidelines. Furthermore, small improvements in purity (for example improving from 99.1% to 99.9% Cg) can have significant impact on prices.

The purity and quality of Zenyatta's Albany deposit means that it will compete against the synthetic graphite market. Zenyatta commissioned Roskill Minerals, an independent authority in the industrial minerals sector, to interview various end-users to determine specific applications, pricing, and volume that the company could target.

TABLE 19-2 HIGH-PURITY GRAPHITE MARKET
Zenyatta Ventures Ltd. – Albany Project

Market Segment	Expected 2017 Market Demand (kt)	Price Range (US$/kg)	Average Price (US$/kg)
Batteries[1]	160	4 -> 20	12
Powder Metallurgy[2]	20	3 -> 12	7
Fuel Cells[3]	15	5 -> 10	8
Conductive Polymers	6	3 -> 5	4
Carbon Brushes	90	3 -> 5	4
Nuclear	30	10 -> 35	23
Lubricants[4]	80	3 -> 5	4
Super-Capacitors	2	5 -> 10	8
Graphite Artifacts	15	3 -> 10	7
Electronics	8	30 -> 40	35
Total	**426**		**8.7**

Sources and Notes:
1. Includes lithium-ion and additives for primary and secondary batteries. Source: Roskill and BCC Research
2. Source: Roskill and end-User data provided to Zenyatta market development personnel under a confidentiality agreement
3. Source: Roskill, BCC Research
4. Volume includes only high-purity (>99.0% Cg) graphite. Source: Roskill

A high-purity graphite product such as Albany can attract a premium price as it is competing with the synthetic market for customers. In 2014, Zenyatta commenced a market development program to initiate validation of Albany graphite in high-purity graphite applications. Since the start of this program, the Company has had detailed conversations with more than 35 graphite end-users, academic labs and third party testing facilities in Europe, North America and Asia, under confidentiality agreements. Many of these organizations requested a specified amount of purified Albany graphite produced at the SGS Lakefield site during the development of a process flow sheet. The samples produced at SGS are experimental in nature and may differ slightly from batch to batch and may also differ from the final product in the future. These samples are, however, representative of a potential product and provide a good initial assessment and guidance for the potential of Albany graphite for various applications.

Zenyatta has also previously reported that preliminary testing has indicated that the performance of Albany graphite is within the range of anode materials that are presently used for Lithium-ion Batteries (LIBs) (Zenyatta News Release of February 12, 2015). Independent testing has also indicated that it is suitable for use in hydrogen fuel cells (Zenyatta News Release of March 9, 2015) and in powder metallurgy (PM) (Zenyatta News Release of

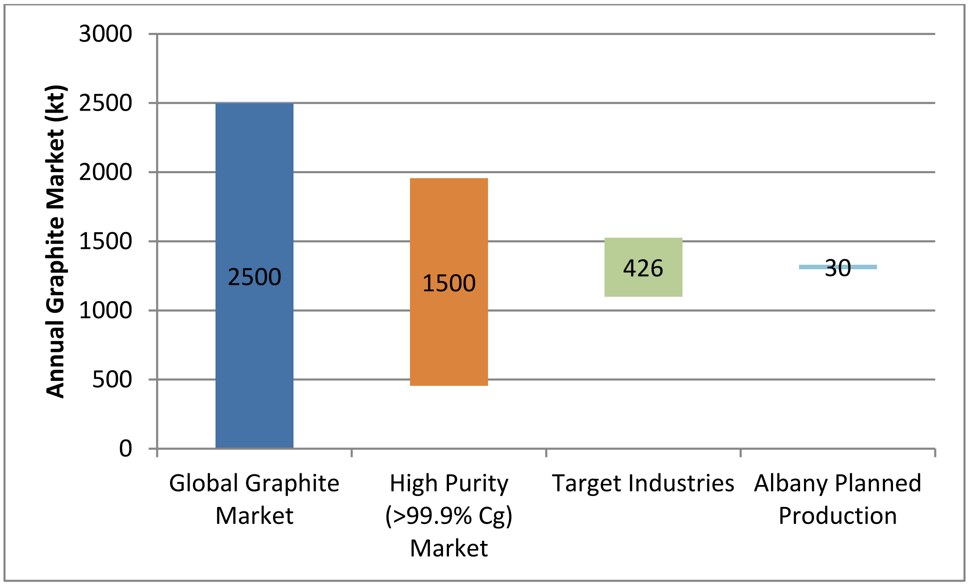
May 19, 2015) applications. At this time Zenyatta anticipates having a targeted market application segmentation which includes 25% to 30% in LIBs, 20% to 25% for Fuel Cell products, 25% to 30% for high-purity graphite in PM, and 15% to 30% from other applications in the list above. Zenyatta is in discussions with end-users on other types of high-purity applications that could possibly change the market segmentation.

Based on this data, an estimate of average realizable price for Albany graphite is in the range of US$5,000 per tonne to US$10,000 per tonne, with a median price of US$7,500 per tonne. This figure is an estimate only, and can be revised upward or downward after further metallurgical testing and consultation with end-users. It is likely that production will be separated into multiple streams, and sold to a variety of end-users for a range of prices. In RPA's opinion, the price used in this PEA represents a reasonable average price assumption for the high-purity Albany graphite products.

MARKET CONCLUSIONS

Graphite has diverse characteristics that make it suitable for use in a wide variety of commercial applications. The application of different forms of graphite is largely dependent on the type, shape, and size of the particle available. Some traditional industrial applications such as steel making and refractory applications require low quality (flake and amorphous) graphite, while other new clean-tech applications like fuel cells and Li-ion batteries demand high-purity graphitic material. Consequently, there exists a wide price spread between various forms of graphite. Zenyatta's hydrothermal (vein) type deposit has demonstrated the ability to be processed into a high-purity substance that will be competing against synthetic graphite producers for market share.

FIGURE 19-4 GRAPHITE MARKET SUMMARY



The high-purity graphite market that Zenyatta is focusing on is expected to need in the order of 426 ktpa by the year 2017, and grow at 4% thereafter (Roskill proprietary report). RPA has selected US$7,500 per tonne as the base case price for this PEA, with sensitivity analysis between the ranges of US$5,000 per tonne to US$10,000 per tonne. The company will target marketing activities around industries like lithium-ion batteries, powder metallurgy, specialized lubricants, fuel cells for energy storage and nuclear reactors, that all demand high-purity graphite.

CONTRACTS

To date, no contracts or memorandum of understanding (MOU) have been signed with downstream customers to ship graphite upon commencement of operations. As part of ongoing Project development activities, over 35 confidentiality agreements have been signed between Zenyatta and various parties including end-user corporations, testing facilities and academic institutions to receive Albany graphite samples. The parties will test the graphite using internal laboratories to assess the suitability for use in their various applications. A number of these confidential parties have expressed a strong interest in certain volumes of finished product at favourable prices.

The Albany graphite deposit is located approximately 30 km north of a major highway, as well as 70 km away from a railway. Both road and rail are connected to North America's continental transportation network, which will provide flexibility to the company when deciding on optimal transportation methods.

20 ENVIRONMENTAL STUDIES, PERMITTING, AND SOCIAL OR COMMUNITY IMPACT

Environmental Resources Management Consultants Canada Limited (ERM) is the author of Section 20 of the Technical Report. This Section discusses the relevant information on the environmental, permitting, and social or community factors related to the Project. The Project is in the early stages of the exploration and development cycle and, as such, this section focuses on recommended future work required to further advance the identification and effective management of potential material environment and social risks and opportunities associated with the Project. The information contained in this Section is the result of a desktop study comprising of a review of available information provided by Zenyatta, public studies as well as recommended work plans for future environmental and social studies produced by ERM. ERM has not visited the Property.

ENVIRONMENTAL AND SOCIAL CONTEXT

The Project is located within the Hudson Bay-James Bay Lowlands, a vast wetland of peat lands where the topography is generally flat. The community of Constance Lake First Nation is located approximately 30 km away, and the town of Hearst is situated approximately 86 km to the east of the Property. The nearest long-term climate station is situated in the Town of Kapuskasing, approximately 100 km east of the Property. There are many creeks flowing between peat bogs throughout the Property. The Nagagami River is a prominent local landscape feature that flows north through the Property with several meandering tributaries flowing in from the east and west. The Pitopiko River flows into the west side of the Nagagami. The Nagagami merges with the Kabinakagami River about 30 km downstream of the Property. In the region, a number of tributaries, including the Kabinakagami, Nagagami and Pagwachuan Rivers among others are all part of the Kenogami River drainage basin. The Kabinakagami River runs north from the headwaters at Kabinakagami Lake. This river continues heading north for approximately 65 km before running into the Nagagami River and then the Kenogami River. The Kenogami River continues north discharging into the Albany River, which then proceeds north-easterly to James Bay.

The general area in which the Property is situated hosts two Boreal Forest Region forest types, the Northern Clay Forest and the Central Plateau Forest. The terrestrial and aquatic habitats within this general area are home to healthy populations of fish and wildlife. Over ten species of fish are known to inhabit the watersheds in the area including Shorthead Redhorse, Northern Pike, Walleye, White Sucker, Trout Perch, Burbot, Lake Whitefish and, potentially, Lake Sturgeon (a COSEWIC Threatened species). In terms of mammals, the Atlas of the Mammals of Ontario lists 42 species with ranges in the general area the Property is situated. Of these, Woodland Caribou are considered to be a Species at Risk, while Northern Myotis and Little Brown Myotis are considered to be species of conservation concern. According to the Ontario Breeding Bird Atlas (OBBA), over 100 species of breeding birds may be present in the general area. Several of these species are considered to be species of conservation concern as a result of (i) being a species in decline in the province, (ii) being listed as Special Concern on the SARA List, (iii) being listed as Threatened or Endangered by COSEWIC, (iv) being included on Schedule 1 of the Species at Risk Act. These species are: the Bald Eagle, the Common Nighthawk, the Olive-Sided Flycatcher, the Canada Warbler, and the Rusty Blackbird.

The Town of Hearst, the District of Cochrane, and Constance Lake First Nation represent the parties that are located in closest proximity to the Project. Zenyatta has engaged with these and other potentially interested parties in the course of its exploration activities and has developed a working relationship with the Constance Lake First Nation which is documented in an executed Exploration Agreement. The Exploration Agreement provides the basis for Zenyatta and Constance Lake First Nation to have a cooperative and mutually beneficial relationship regarding exploration related activities at the Albany Project.

Zenyatta has conducted some preliminary environmental studies to support its exploration program and to characterize environmental features present within its Property. These studies include an archaeological aerial reconnaissance survey in 2011; elemental characterization and humidity cell analyses in 2014 of samples expected to be representative of process tailings that will be generated by the Project; and an aerial survey in 2014 to delineate and to determine the potential use of the Property by Woodland Caribou and large mammals.

Based on the information reviewed, ERM has not identified any material environmental and social features of the area that prevent further advancement of the Project.

BASELINE STUDIES

A comprehensive, Project-specific baseline study program will be required to further the understanding of the local and regional environmental and social context for the Project, thereby contributing to the optimization of the engineering and the identification and mitigation of potential impacts of the Project on its receiving environment. It is expected that a minimum of two field seasons will be required to complete this work.

BASELINE STUDIES DURING THE NEXT PHASE OF THE PROJECT

- Characterizing Noise, Air Quality, Climate and Meteorology using existing information to the extent possible to support the Class Environmental Assessment (EA) as well as Project engineering, environmental approvals, and future operations.

- Surface Water Quality field studies to support the Class EA process as well as engineering design and placement of infrastructure.

- Fish and Fish Habitat field studies to determine the species present (including potential presence of species at risk) and the importance of the habitat in the lakes and streams in the vicinity of the Project to support permitting requirements and the Class EA process as well as engineering design and placement of infrastructure.

- Hydrology studies to support the permitting requirements and the Class EA process. To provide essential data needed for engineering planning related to water supply and waste disposal including progression of the process flow sheet and site-wide water balance.

- Terrain and Soils, Terrestrial Ecosystems and Wetlands Vegetation studies to identify key sensitive features, including the presence of any high value wildlife habitat that could support species of conservation concern and species protected under provincial and federal legislation (i.e. migratory birds, woodland caribou). Spatial data and ecosystem mapping will support the planning of the site layout to avoid environmentally sensitive features, the Class EA process, and the development of the Mine Closure Plan (MCP) (discussed further below).

- Archaeology studies to determine the potential and actual presence of archaeological and cultural heritage resources within the Property and support the Project design by recommending ways to avoid placing Project infrastructure in conflict with these sites.

- Desktop analysis of existing drilling database and the initiation of additional geochemistry studies to further characterize the metal leaching/acid rock drainage potential (ML/ARD) of waste to be generated by the Project.

- Hydrogeology studies to determine the quality and quantity of groundwater and its interaction with the Project.

- On-going Stakeholder & Aboriginal Engagement Support to understand the individuals and groups with interest in, and influence over the Project. This will enable Zenyatta to effectively and proactively manage risks and to strategically target its engagement activities. The development of strategic and implementable consultation plans will focus efforts, meet legal obligations, and help de-risk the Project by anticipating and addressing potential stakeholder concerns. Finally, a consultation tracking system is required to support the regulatory need - Record of Consultation.

WATER AND WASTE MANAGEMENT

The effective management of water and waste for the Project is the bridge between sound engineering and reducing the risk of a material impact to an important environmental aspect feature of the Property: water quality and quantity. The first iteration of the Mass Balance for the Project identifies a need for 6,210,000 cubic metres of water per year to feed the beneficiation and purification processes. While ERM understands that the design intent is to recycle water used in the purification process to the extent practicable, it is not known at this stage how much make up freshwater will be needed for the process. Unknown quantities of water will be recycled from the following Project activities: tailings water recycling, pit dewatering, and site drainage. The PEA currently assumes for the fresh make-up water to be pumped from the Pitopiko River at a rate to be confirmed at later stages of the study.

ERM has undertaken a high level desktop review of the potential capability of the Pitopiko River to supply freshwater at the volumes demanded by the Project assuming no recycling. Using this conservative assumption the ERM review suggests that this may be a possible source for water supply. Further studies will be required as part of the environmental baseline program to validate this conclusion and to support an assessment of alternatives. At this stage, however, water supply has not been identified as material constraint to the Project's advancement.

With regard to wastes and as discussed in Section 18, a TSF will need to be constructed to accommodate an estimated 10 million m^3 of tailings generated over the life of the Project. Separate waste rock and overburden dumps will also be required and are currently assumed in the PEA to be constructed adjacent to the open mining pit. The waste dump and overburden dump will have estimated capacities of 85 Mt and 58 Mt, respectively.

Zenyatta has completed a preliminary environmental characterization of tailings generated by the metallurgical testwork that was conducted on the Albany graphite deposit mineralization (SGS 2015). The purpose of the environmental test program was to assess the geochemical, ARD, and contaminant release potential associated with the tailings materials. Elemental analysis indicated that the composite tailings were comprised primarily of silica with moderate to minor amounts of aluminum, potassium, sodium, iron, and calcium. Total sulphur assays of the graphite mineralized material typically ranged from to 0.2% to 0.3%. Based on QEMSCAN and XRD results, the sulphur content in the tailings samples is primarily attributed to the presence of pyrite and pyrrhotite. Analysis of the TCLP leachate reported all of the typically controlled parameters well within the limits specified for this test procedure (Ontario Schedule 4 limits).

Acute lethality testing (rainbow trout fry and *Daphnia magna*) designated the tails Day 56 solution as non-lethal, reporting 100% survival for both species. Modified ABA test results classified the tailings samples as having uncertain acid generation potential. The humidity cell leachates maintained circum-neutral pH values (≥6.61) and metal concentrations were very low and within typical water quality discharge standards. Industrial activity including graphite mining is subject to *Ontario Regulation 561/94* (Effluent Monitoring and Effluent Limits – Industrial Minerals Sector) under the *Environmental Protection Act*.

While the tailings management technology remains to be determined, ERM recommends that Zenyatta continue to characterize the tailings that are generated by additional metallurgical testwork that will be performed as part of the future pre-feasibility and feasibility studies as well as the environmental baseline program. Further characterization of the overburden and waste rock that will be generated over the life of the Project is also required. If a discharge to the environment is required, it will need to be done so in accordance with applicable regulations. At the stage of this PEA, however, tailings geochemistry is not estimated to be a material risk to the Project's advancement.

In order to ensure that the Project's water and waste management activities are not having a material impact on the receiving environment, water and waste management plans and water and wastes monitoring programs will need to be established for the construction, operation, and closure phases of the Project. The details of these plans and programs will be based on the data collected during future engineering and baseline studies, as described previously. All applicable principles, policies, guidelines, and recommended methods will be applied as appropriate to these plans and programs.

PROJECT PERMITTING

FEDERAL ENVIRONMENTAL ASSESSMENT

A federal environmental assessment under the Canadian Environmental Assessment Act 2012 applies to proposed activities listed as "designated projects" described in the Regulations Designating Physical Activities and to projects designated by the Federal Minister of the

Environment, in accordance with the authoritative power in the Canadian Environmental Assessment Act.

The Project comprises the extraction of an industrial mineral (e.g. graphite) and is not described in the list of "designated projects" under the Regulation Designating Physical Activities and therefore would not require a federal environmental assessment. The proposed Project will not likely require a federal environmental assessment pursuant to the Canadian Environmental Assessment Act, 2012.

PROVINCIAL ENVIRONMENTAL ASSESSMENT

The Province of Ontario does not require an environmental assessment of mining projects in their entirety. Individual components of the Project are, however, anticipated to require provincial class environmental assessments, including:

Transmission line component:

- the proposed construction, operation and eventual retiring of a minor transmission line equal to or greater than 115 kV and less than 500 kV; and greater than 2 km and less than 50 km in length is subject to a Hydro One Class Environmental Assessment for Minor Transmission Facilities.

- An Individual Environmental Assessment, requiring a Terms of Reference and Minister's decision would be required should a proposed transmission line exceed the threshold of greater than 50 km or higher than the kilovolts described.

Disposition of Crown (Provincial) resources and lands:

- the proposed disposition of Crown (Provincial) resources, as well as potentially relating to Crown lands (such as work on streambeds/shorelands) for the Project site, the access road and the transmission line is potentially subject to the Ministry of Natural Resources' Class Environmental Assessment for Resource Stewardship and Facility Development Projects.

The class environmental assessment requires projects to follow a structured planning process that is set out in the class environmental assessment document and in accordance with the Ontario Ministry of Environment's Code of Practice on Preparing, Reviewing and Using Class Environmental Assessments in Ontario (2014).

The primary Provincial agencies that are anticipated to be involved with approvals and permits for the Project include: Ministry of Northern Development and Mines (MNDM), Ministry of

Environment and Climate Change (MOECC), Ministry of Natural Resources and Forestry (MNRF), Ontario Energy Board (OEB), Ministry of Tourism, Culture and Sport (MTCS).

PERMITTING

In addition to class environmental assessments, it is anticipated that the Project will require authorizations under a number of provincial (and potentially federal) statutes and regulations to construct and operate. Table 20-1 provides a summary listing of the major anticipated provincial (and potentially federal) permits, approvals, and authorizations that are currently expected to be required based on the present mine plans.

TABLE 20-1 POTENTIAL MAJOR PERMITS, APPROVALS AND LICENCES
Zenyatta Ventures Ltd. – Albany Project

Act	Major Permits/ Approval	Agency	Potential Project Components
Mining Act	Mine Closure Plan	MNDM	Mine construction/production and closure, including financial assurance.
Public Lands Act	Work Permit and/or Land Use Permit (and Forestry Licence)	MNRF	Work/construction on Crown land. Could be required as part of construction of transmission line and access road.
Lakes and Rivers Improvement Act	Approval	MNRF	Works affecting the aquatic environment as defined under the Lakes and Rivers Improvement Act. Construction of a dam, retaining or diverting structure in any lake or river in circumstances set out in the regulations requires a written approval of the Minister for the location of the dam and its plans and specifications.
Crown Forest Sustainability Act	Forest Resource Licence	MNRF	For clearing of Crown merchantable timber. Could be required as part of construction of the transmission line.
Forest Fires Prevention Act	Burn Permit	MNRF	Burning of piled wood, brush, leaves, grass, leaf litter or discarded wood products.
Aggregate Resources Act	Aggregate Permit	MNRF	Access to aggregate and quarry sources for construction material; Extraction of aggregate (e.g., sand/gravel/rock for tailings dam or other site construction).
Endangered Species Act	Endangered Species Permit	MNRF	Any activity that could adversely affect species or their habitat identified as 'Endangered' or 'Threatened' in the various schedules of the Act.
Ontario Water Resources Act	Permit to Take Water	MOECC	For taking of ground or surface water (in excess of 50,000 L/day), such as for potable needs, pit dewatering, mill process water. During construction, a permit(s) may be required for dam and/or mill construction to keep excavations dry. Water supply (well or surface) for the construction and operations phase accommodation complexes. Withdrawal of water from the open pit sumps.
Environmental Protection Act	Environmental Compliance Approval	MOECC	Monitoring and control of effluent discharge subject to the Effluent Monitoring and Effluent Limits – Industrial Minerals Sector (O. Reg. 561/94) Industrial sewage works – tailings. Air and noise emission control equipment associated with the construction and operation phases. Discharge air emissions and noise, such as from mill processes, on-site laboratory and haul trucks (road dust).

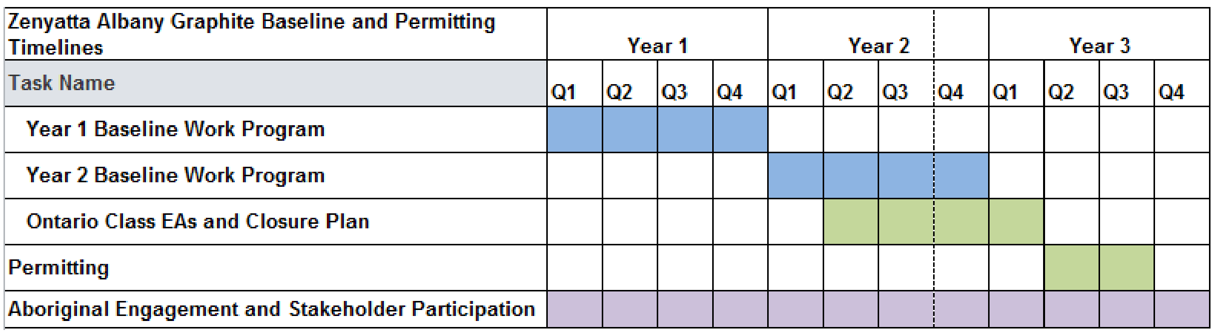
Act	Major Permits/ Approval	Agency	Potential Project Components
Environmental Protection Act	Approval of a Waste Management System/ Waste Disposal Site	MOECC	Establishment and operation of facilities for collecting, handling, transporting, storing, and processing of domestic and industrial solid waste; For operation of a landfill and/or waste transfer site.
Environmental Protection Act	Generator Registration	MOECC	Storage and transportation of hazardous wastes.
Safe Drinking Water Act	Certificate of Approval	MOECC	Potable water supply.
Ontario Heritage Act	Clearance Letter	MTCS	Confirmation that appropriate archaeological studies and mitigation, if required, have been completed for the Project.
Ontario Energy Board Act	Leave to Construct	OEB	Approval to construct a transmission line.
Navigation Protection Act	Approval	Transport Canada	Construction of water intake structure or other works in non-scheduled waters in the NPA subject to the common law right of navigation. Legislation allows proponents in non-scheduled waters the option to 'opt-in' and seek assessment and approval of proposed works.
Fisheries Act	Authorization	DFO	Serious harm to fish and fish habitat requires an Authorization under the Fisheries Act.

Notes:
MNDM – Ministry of Northern Development and Mines
MOECC – Ministry of Environment and Climate Change
MNRF – Ministry of Natural Resources and Forestry
MTCS – Ministry of Tourism, Culture, and Sport
OEB – Ontario Energy Board
DFO – Department of Fisheries and Oceans

REGULATORY TIMELINE

Notwithstanding the time required to collect sufficient multi-season environmental and social baseline data it is expected that an estimated approximately 18 months will be required to develop and submit the class EA reports and permit applications and to be granted approvals to enable construction in advance of year -2 of the PEA. A summary of the regulatory timeline inclusive of the baseline data collection phase is presented in Figure 20-1.

FIGURE 20-1 PREDICTED BASELINE AND PERMITTING TIMELINES



MINE CLOSURE

In Ontario, mining companies cannot commence mining operations until a certified Mine Closure Plan (MCP) and associated Financial Assurance is in place. The requirements for an MCP, including Financial Assurance, are set out in Part VII of the Mining Act and elaborated in Ontario Regulation 240/00 (Amended to Ontario Regulation 282/03) – Mine Development and Closure under Part VII of the Act.

The MCP is an all-encompassing document that describes the nature of the operations that will be carried out, current baseline environmental conditions, potential effects on the environment together with appropriate mitigation measures, and the Company's plan for rehabilitating the site to its natural state at the end of operations. It involves extensive consultation with various government ministries, First Nations, and local communities who all have input into the process. In accordance with part VII of the Mining Act (O. Reg. 240/00), the primary closure objectives are to return the Property back to a physical and chemical condition similar to the pre-production state. This is to ensure both public safety and long-term environmental protection. Closure activities will include the removal of materials and equipment from the property and the removal of hazardous materials and wastes to a licensed disposal facility by a licensed contractor. Reclamation of the Property will be undertaken to enhance natural recovery of the disturbed areas and allow for future use by people and wildlife.

The Closure Plan must specify the form and amount of financial assurance to be provided by the proponent. The amount of the financial assurance must be adequate and sufficient to cover the cost of all the rehabilitation work that is described in the Closure Plan. In calculating the amount required for implementing the rehabilitation work, the proponent must base its costs on the market value cost of the goods and services required by the work.

Mine closure involves the completion of mineral extraction, processing, and transportation activities and the removal of the site facilities and infrastructure which supported these activities. After site facilities and infrastructure have been removed, all soil cover materials, vegetation and surface water features modified during the life of the mine must be restored to a quality, quantity and appearance that is as close as possible to pre-development conditions or the baseline environmental conditions measured and described during the beginning of mine development.

The financial guarantee, held in trust by the ministry as part of financial assurance, will be returned after evidence is submitted to the ministry which proves that all rehabilitation work outlined in the MCP has been performed and meets the minister's satisfaction following an inspection of the site.

MINE CLOSURE CONSIDERATIONS AND FINANCIAL ASSURANCE FOR THE PROJECT

It is expected that the MCP for the Project will comprise both progressive rehabilitation during operations and remediation at closure of the open pit(s), the surface infrastructure (buildings and roads), the waste rock and overburden stockpiles, and the TSF. The proposed baseline studies for the Project presented previously will collect data need to advance the MCP. The preliminary cash flow balance capital projection sheet includes an allowance of US$22.1 million for closure and reclamation costs (starting in Year 15).

CONCLUSION

ERM has not identified material environmental and social risks to prevent the Project's advancement to the next stage of Study. ERM does recommend, however, that Zenyatta continue to engage with potentially interest parties and begin the environmental baseline study program as soon as practicable as an important input into future Study and Project permitting. Project permitting, inclusive of the collection of sufficient baseline data this is often on the critical path to Project completion.

21 CAPITAL AND OPERATING COSTS

CAPITAL COSTS

Capital costs have been estimated for the Project based on comparable projects, subscription-based cost services, and information within RPA's project database. Broadly, capital costs are divided among four areas: mining, processing, general infrastructure, and project indirect expenses. The breakdown of capital costs between mining, processing, and infrastructure is shown in Table 21-1.

TABLE 21-1 SUMMARY OF CAPITAL COSTS
Zenyatta Ventures Ltd. – Albany Project

Description	Units	Cost
Mining	US$ millions	81.2
Processing	US$ millions	111.5
Infrastructure	US$ millions	70.3
Subtotal Pre-Production Direct Costs	**US$ millions**	**262.9**
Pre-Production Indirect Costs	US$ millions	68.7
Subtotal Direct and Indirect	**US$ millions**	**331.6**
Contingency	US$ millions	79.8
Initial Capital Cost	**US$ millions**	**411.5**
Sustaining, Closure, and Misc.	US$ millions	291.4
Total	**US$ millions**	**702.9**

Further, capital is divided between initial expenditures incurred to bring the Project into production, and sustaining capital that is incurred over the LOM. Contingency costs were applied to each respective area according to the following allotment:

- Mining overburden and waste removal: 15% of pre-production direct and indirect costs
- Mining equipment: 10% of pre-production direct and indirect costs
- Infrastructure: 25% of total pre-production direct and indirect costs
- Processing: 30% of total pre-production direct and indirect costs

The overall contingency factor equates to 24% of pre-production direct and indirect costs.

MINING

Within mining capital costs, overburden and waste removal and equipment fleet purchases are two significant areas of spend. Fleet requirements for the Project are typical of an open pit mine, including: drills, material loaders, haul trucks, and auxiliary equipment, as noted in Section 16 Mining. Capital costs related to mining are shown in Table 21-2.

TABLE 21-2 MINING CAPITAL COSTS
Zenyatta Ventures Ltd. – Albany Project

Description	Units	Total
Contractor Overburden and Waste Removal	US$ millions	55.2
Capitalized Pre-Production Operating Cost	US$ millions	2.3
Open Pit Mining Equipment Purchases	US$ millions	23.6
Total Mining Capital Costs	**US$ millions**	**81.2**

Material movement costs include the removal of overburden and waste to reach the orebody. It is envisaged that overburden removal will be completed by a contractor, who will also assist with peak waste mining requirements. Overburden will be removed during Year -2 to Year 3, while contracted waste removal will take place from Year 4 to Year 7. Contractor mining costs for Years -2 and -1 are included in the Table 21-2, while costs from Year 1 onwards are summarized in Table 21-12, under Sustaining Capital. Any waste mining done by the owner during Years -2 and -1 was included as Capitalized Pre-Production Operating Costs.

A unit cost of US$ 3.03/t moved, and US$ 3.46/t moved, was used to estimate contractor costs for removal of overburden and waste, respectively. Both of these rates are based on industry benchmarks for mining at a rate of 40,000 tpd, less drilling and blasting costs (in the case of overburden), plus a mark-up for contract mining.

Mining equipment fleet purchases are summarized in Table 21-3.

TABLE 21-3 OPEN PIT MINING EQUIPMENT PURCHASES
Zenyatta Ventures Ltd. – Albany Project

Description	Quantity ea.	Unit Price US$ '000	Pre-Production Capital US$ millions	Sustaining Capital US$ millions
Major Equipment				
Front Hydraulic Excavator 6 m³	1	1,816	1.8	3.6
Loader 8 m³	2	1,540	3.1	6.2
Haul Truck 55 t	6	938	5.6	5.6
Percussion Drill 20 cm	2	1,064	2.1	2.1
Bulldozer 180 kW	3	1,651	5.0	5.0
Grader 230 kW	1	787	0.8	0.8
Water/Sand Truck	1	662	0.7	0.7
Service/Tire Truck	3	170	0.5	0.5
Bulk Truck/Blaster	1	88	0.1	0.1
Total Major Equipment			**19.7**	**24.5**
Support Equipment				
Electric Cable Reeler	1	644	0.6	0.6
Fuel and Lube Truck	1	86	0.1	0.1
Utility Backhoe	2	564	1.1	1.1
Mobile Crane	1	170	0.2	0.2
Shop Forklift	2	112	0.2	0.2
Flat Bed Truck	2	88	0.2	0.2
Pick Up Truck	5	53	0.3	0.8
Mechanic's Service Truck	1	178	0.2	0.2
Electrical Bucket Truck	1	180	0.2	0.2
Light Stands	4	25	0.1	0.1
Mine Comm./Dispatch System	1	791	0.8	0.8
Total Support Equipment			**3.9**	**4.5**
Total Mobile Equipment			**23.6**	**29.0**

PROCESS

Process capital costs have been estimated for the Project based on process design criteria and factored based on proprietary RPA cost information. No vendor quotations for equipment related costs were obtained. Due to the lixiviants used in purification, there is potential for corrosion and special materials of construction for process equipment will be required. Increased costs for special materials of construction have not been included in the current capital cost estimate.

The two primary components of the process plant are beneficiation and purification. Within beneficiation, costs have been allocated for a crushing and screening system, grinding circuit, flotation, thickening, and concentrate dewatering. In the purification stage, costs have been allocated for a cooling plant, steam generation plant, nitrogen plant, multi-stage leaching (NaOH) circuit, low temperature bake, neutralization, product drying and packaging area, water treatment and residue management, tailings dewatering and disposal. Additional costs that have been allocated to processing include the provision for a laboratory, ore pad and stockpile area, an enclosed building, and plant mobile equipment. Costs for processing are summarized in Table 21-4.

TABLE 21-4 PROCESS CAPITAL COSTS
Zenyatta Ventures Ltd. – Albany Project

Description	Units	Total
General	US$ millions	12.4
Beneficiation	US$ millions	20.8
Purification	US$ millions	78.3
Total Process Capital Costs	**US$ millions**	**111.5**

Cost components of each of the three areas of process capital costs are further subdivided in the following tables. Process general capital costs are shown in Table 21-5.

TABLE 21-5 PROCESS GENERAL CAPITAL COSTS
Zenyatta Ventures Ltd. – Albany Project

Description	Units	Total
Buildings	US$ millions	8.2
Ore Stockpile and Receiving	US$ millions	2.0
Plant General Mobile Equipment	US$ millions	0.5
Laboratory Centre	US$ millions	1.6
Total Process General	**US$ millions**	**12.4**

Beneficiation capital costs are shown in Table 21-6.

TABLE 21-6 BENEFICIATION CAPITAL COSTS
Zenyatta Ventures Ltd. – Albany Project

Description Units		Total
Crushing and Screening	US$ millions	3.7
Grinding	US$ millions	6.5
Flotation	US$ millions	7.4
Thickening	US$ millions	3.0
Concentrate Dewatering	US$ millions	0.2
Total Process Beneficiation	**US$ millions**	**20.8**

Purification capital costs are shown in Table 21-7.

TABLE 21-7 PURIFICATION CAPITAL COSTS
Zenyatta Ventures Ltd. – Albany Project

Description Units		Total
Steam Generation Plant	US$ millions	4.1
PSA Nitrogen Plant	US$ millions	3.3
Stage 1 (NaOH) Alkaline Leaching	US$ millions	2.5
Al / Si Removal	US$ millions	1.1
Low Temperature Bake	US$ millions	25.1
Stage 2 Alkaline (NaOH) Leaching	US$ millions	5.0
Stage 3 Mild HCl Leaching	US$ millions	4.9
Neutralization	US$ millions	0.8
Product Drying & Packaging	US$ millions	2.6
Waste Treatment & Residue Management	US$ millions	8.1
Tailings Disposal & Water Separation	US$ millions	5.7
Water Treatment	US$ millions	2.7
Auxiliary Facilities	US$ millions	12.3
Total Process Purification	**US$ millions**	**78.3**

In RPA's opinion, the metallurgical testwork completed to date has focused on achieving product purity and not on optimization of the process. Further improvements in process design, performance, and cost estimation are expected with advanced levels of study.

INFRASTRUCTURE

The Project is located in a region of Ontario that is relatively close to existing infrastructure. A main access road, 115 kV power line, and natural gas pipeline will be constructed to connect the site within the vicinity of the Trans-Canada Highway. Portions of the main access road currently exist. Other major infrastructure costs include permanent camp facilities, maintenance building, warehouse, administration and dry facility, freshwater pump house, tailings storage facility, and site preparation. Infrastructure capital costs are summarized in Table 21-8.

TABLE 21-8 INFRASTRUCTURE CAPITAL COSTS
Zenyatta Ventures Ltd. – Albany Project

Description	Units	Total
Main Access Road	US$ millions	2.8
115 kV Power Line	US$ millions	14.5
Natural Gas Pipeline	US$ millions	6.1
On-Site Roads	US$ millions	1.6
Communications System	US$ millions	2.1
Miscellaneous Mobile Equipment	US$ millions	1.4
Site Preparation	US$ millions	12.3
Surface Services	US$ millions	4.1
Surface Buildings	US$ millions	15.3
Site Electrical Grid	US$ millions	2.8
Tailings Storage Facility	US$ millions	7.4
Total Infrastructure Capital Costs	**US$ millions**	**70.3**

Several unit costs went into developing the site infrastructure cost estimate, which are summarized in Table 21-9.

TABLE 21-9 INFRASTRUCTURE UNIT RATES
Zenyatta Ventures Ltd. – Albany Project

Description	Unit Rate US$ '000 / km	Distance km	Total US$ millions
Main Access Road			
Road Widening	41	5	0.2
All Season Road Conversion	82	12	1.0
New Road Construction	164	10	1.6
On-Site Roads	164	10	1.6
115 kV Power Line	308	47	14.5
Natural Gas Pipeline	164	37	6.1

Unit rates were sourced from comparable projects, as well as cost databases.

INDIRECT CAPITAL COSTS

Indirect capital costs were assigned to the Project based on parameters such as project management contracting strategies, project complexity, and site remoteness. An Engineering, Procurement, Construction (EPC) or Engineering, Procurement, Construction Management (EPCM) firm will manage and build certain aspects of the Project. In the case of contracted overburden and waste removal, a factor for EPCM services was not applied. Other indirect capital costs that were applied to the capital cost estimate include temporary facilities, first fills, owner's costs, mobilization, operational readiness, freight, spare parts, and study costs. Indirect capital costs are summarized in Table 21-10.

TABLE 21-10 INDIRECT CAPITAL COSTS
Zenyatta Ventures Ltd. – Albany Project

Description	Units	Total
Mining	US$ millions	8.5
Processing	US$ millions	38.2
Infrastructure	US$ millions	22.0
Total Indirect Capital Costs	**US$ millions**	**68.7**

Indirect capital costs were applied to different components of the capital cost estimate based on Table 21-11. Except for contracted removal of overburden and waste, indirect capital costs were only applied to pre-production capital costs. The values in Table 21-11 are factors that were applied to the total capital cost in each respective area.

TABLE 21-11 INDIRECT CAPITAL COST TYPES
Zenyatta Ventures Ltd. – Albany Project

Description	Units	Infrastructure	Contractor Mining (Pre-Production)	Contractor Mining (Sustaining)*	Mining – Equipment	Process Plant
Total Direct Costs	US$ millions	70.3	55.2	178.8	23.6	111.5
EPCM	%	12.0	5.0	0.0	0.0	12.0
Temporary Facilities	%	5.0	5.0	5.0	0.0	5.0
Owner's Costs	%	5.0	2.0	0.0	0.0	5.0
Study Costs	%	1.5	0.0	0.0	0.0	1.5
Operational Readiness	%	0.1	0.0	0.0	0.0	0.1
Freight or Mob/Demob	%	5.0	0.7	0.1	5.0	5.0
Spare Parts	%	0.7	0.0	0.0	0.7	0.7
Commissioning	%	2.0	0.0	0.0	0.5	5.0
Total Indirect	%	31.3	12.7	5.1	6.2	34.3
Total Indirect	US$ millions	22.0	7.0	9.2*	1.5	38.2

* Indirect costs applied to Contractor Mining (Sustaining) appear under Sustaining Capital

SUSTAINING CAPITAL COSTS

Capital costs that were not incurred in pre-production years were counted as sustaining capital costs. Major items captured here include contractor overburden and waste removal from Year 1 to Year 7, replacement of mining equipment in approximately Year 10, tailings storage facility expansion, ongoing capital spending for the processing plant reclamation and closure, and miscellaneous costs such as buying out a portion of the royalty agreements, as discussed in Chapter 4. Sustaining capital costs are summarized in Table 21-12.

TABLE 21-12 SUSTAINING CAPITAL COSTS
Zenyatta Ventures Ltd. – Albany Project

Description	Units	Cost
Contractor Overburden and Waste Removal	US$ millions	188.0
Open Pit Mining Equipment Replacement	US$ millions	29.0
Processing Plant	US$ millions	39.1
Infrastructure and Tailings Storage Expansion	US$ millions	11.9
Subtotal Sustaining Cost	**US$ millions**	**268.1**
Reclamation and Closure	US$ millions	22.1
Miscellaneous – Buyout Portion of Royalties	US$ millions	1.2
Total Sustaining, Reclamation, Miscellaneous	**US$ millions**	**291.4**

EXCLUSIONS TO CAPITAL COSTS

The initial capital cost estimate excludes several factors, including:

- Ongoing exploration drilling and all associated services
- Environmental and social impact studies
- Geotechnical and hydrological studies
- Permitting and fees
- Detailed metallurgical testwork and marketing studies
- Cost to conduct future pre-feasibility and feasibility studies
- Project financing and interest charges
- Fluctuations in foreign exchange rates
- Working capital requirements

OPERATING COSTS

Operating costs have been estimated for the Project and allocated to mining, process, and general and administration (G&A). Operating costs are summarized in Table 21-13.

TABLE 21-13 SUMMARY OF OPERATING COSTS
Zenyatta Ventures Ltd. – Albany Project

Description	LOM Cost US$ millions	Unit Cost US$/t processed	Unit Cost US$/t final product
Mining	237.4	11.34	375
Process – Beneficiation	286.7	13.70	452
Process – Purification	557.6	26.64	880
G&A	215.0	10.28	339
Total	**1,296.7**	**61.96**	**2,046**

MINING

Mining operating costs have been estimated for the Project based on industry benchmarks for mining at a rate of 15,000 tpd moved (ore and waste), and are summarized in Table 21-14. It is envisaged that all ore, and some waste material will be moved by equipment owned by Zenyatta. Further, site personnel utilizing this equipment will be employed by the Zenyatta.

TABLE 21-14 MINING COSTS
Zenyatta Ventures Ltd. – Albany Project

Description	LOM Cost US$ millions	Unit Cost US$/t processed	Unit Cost US$/t final product
Consumables	38.5	1.84	61
Equipment Maintenance	61.7	2.95	97
Labour	137.2	6.56	217
Total Mining	**237.4**	**11.34**	**375**

A unit rate of US$ 2.71 per tonne moved was used to estimate the overall mining operating cost. The mining cost includes a diesel price of US$0.83 per litre.

PROCESSING

Processing costs have been estimated for the Project, based on process design criteria or factored based on proprietary RPA cost information. A breakdown of process beneficiation costs are shown in Table 21-15.

TABLE 21-15 PROCESS – BENEFICIATION COSTS
Zenyatta Ventures Ltd. – Albany Project

Description	LOM Cost US$ millions	Unit Cost US$/t processed	Unit Cost US$/t final product
Crushing & Screening	5.1	0.24	8
Grinding	61.3	2.93	97
Flotation	30.7	1.47	49
Concentrate Thickening	6.2	0.30	10
Concentrate Dewatering	0.3	0.01	0
Tailings Thickening & Disposal	13.7	0.65	22
Water Treatment	7.0	0.33	11
Utilities	7.7	0.37	12
Yard Services	5.5	0.26	9
Labour	91.2	4.36	144
Maintenance Materials	55.9	2.67	88
G&A – Lab Supplies	2.1	0.10	3
Total 286.7		**13.70**	**452**

A breakdown of process purification costs are shown in Table 21-16.

TABLE 21-16 PROCESS – PURIFICATION COSTS
Zenyatta Ventures Ltd. – Albany Project

Description	LOM Cost US$ millions	Unit Cost US$/t processed	Unit Cost US$/t final product
Stage 1 Alkaline (NaOH) Leaching	68.6	3.28	108
Al / Si Removal	1.1	0.05	2
Low Temperature Bake	35.9	1.72	57
Stage 2 Alkaline (NaOH) Leaching	101.9	4.87	161
Stage 3 Mild HCl Leaching	5.8	0.28	9
Neutralization	19.1	0.91	30
Waste & Residue Treatment	52.4	2.50	83
Product Drying & Packaging	25.6	1.22	40
Water Treatment	10.5	0.50	17
Utilities	11.5	0.55	18
Yard Services	8.3	0.40	13
Labour	130.0	6.21	205
Maintenance Materials	83.8	4.00	132
G&A – Lab Supplies	3.1	0.15	5
Total 557.6		**26.64**	**880**

Additionally, major cost centres for both beneficiation and purification are shown in Table 21-17. These include power consumption, fuel, supplies and reagents, labour, and maintenance.

TABLE 21-17 PROCESSING COSTS
Zenyatta Ventures Ltd. – Albany Project

Description	LOM Cost US$ millions	Unit Cost US$/t processed	Unit Cost US$/t final product
Power	94.3	4.51	149
Fuel	53.2	2.54	84
Supplies and Reagents	263.1	12.57	415
Utilities	19.2	0.92	30
Labour	221.2	10.57	349
Maintenance	139.7	6.67	220
Product Handling	17.0	0.81	27
General	36.5	1.74	58
Total Processing	**844.3**	**40.34**	**1,332**

Key inputs that went into deriving process operating costs include power consumption of US$ 0.065 per kWh, caustic prices of US$ 0.60 per kg, and natural gas price of US$ 0.164 per Nm^3.

In RPA's opinion, the metallurgical testwork completed to date has focused on achieving product purity and not on optimization of the process. Further improvements in process design, performance, and cost estimation are expected with advanced levels of study.

GENERAL AND ADMINISTRATION

General and Administration (G&A) operating costs were estimated for the Project. G&A costs are primarily composed of labour, transportation, camp facilities, insurance, and auxiliary services and supplies.

Labour costs that are allocated to G&A include site management, information technology services, sales and marketing, accounting, administration, health and safety, community relations, and warehouse. Labour costs which are directly attributable to either mining or processing are included in these respective areas. The operation of the camp facility will be outsourced to a third-party contractor that specializes in camp operations. The cost of operating the camp, including meals, lodging, and maintenance, is included in G&A. The cost to operate busing services from Timmins and Thunder Bay to the site is also accounted for within G&A. G&A operating costs are summarized in Table 21-18.

TABLE 21-18 G&A OPERATING COSTS
Zenyatta Ventures Ltd. – Albany Project

Description	LOM Cost US$ millions	Unit Cost US$/t processed	Unit Cost US$/t final product
Labour	75.9	3.63	120
Camp Operations	53.7	2.56	85
Transportation	8.3	0.39	13
Insurance	36.1	1.72	57
Equipment Maintenance	12.3	0.59	19
Security	7.0	0.34	11
Miscellaneous	21.8	1.04	34
Total	**215.0**	**10.28**	**339**

G&A operating costs are generally considered fixed, and are not expected to change substantially with varying levels of mine production.

22 ECONOMIC ANALYSIS

The economic analysis contained in this report is preliminary in nature and based on Mineral Resources that are not Mineral Reserves, and therefore do not have demonstrated economic viability. There is no certainty that economic forecasts on which this PEA is based will be realized.

OVERVIEW OF CASH FLOW MODEL PARAMETERS

The overall LOM plan and resulting cash flow model were designed to generate saleable high-purity graphite in the amount of 30,000 tpa. As discussed in Chapter 19, Zenyatta is targeting a specialized market with a distinct product, and is not selling into an open market. Any graphite produced in excess of 30,000 tpa is kept as finished inventory for sale in future periods. The economic analysis was prepared using the following additional assumptions:

- No allowance has been made for cost inflation or escalation
- No allowance has been made for corporate costs
- Capital and operating costs are consistent with those described in Chapter 21
- Only open pit resources, as defined in Chapter 14, were used in the cash flow model
- The capital structure is assumed to be 100% equity, with no debt or interest payments
- The model is assessed in constant United States Dollars
- No allowances for working capital have been made in the financial analysis
- The Project has no terminal value

ECONOMIC CRITERIA

Economic criteria that were used in the cash flow model include:

- Price of saleable graphite of US$7,500 per tonne
- Exchange rate of 0.82 US$/C$
- Life of mine processing of 20,927 kt grading 4.05% Cg
- Nominal 983 kt of processed material per year during steady state operations
- Life of mine of 22 years
- Flotation recovery of 84.54%, and purification recovery of 89.13%
- Final product graphite grade of 99.94% Cg
- Sales capped at 30 ktpa, with life of mine sales totalling to 634 kt

- Transportation costs of US$82.00 per tonne
- Net Smelter Return (NSR) royalties of 1.25%
- Unit operating costs of US$62 per tonne of processed material, or US$2,046 per tonne of finished product
- Pre-production capital costs of US$411.4 million, spread over two years
- Sustaining capital costs (including reclamation) of US$291.4 million, spread over the mine life.

A summary of the cash flow model is shown in Table 22-1.

TABLE 22-1 CASH FLOW SUMMARY
Zenyatta Ventures Inc. - Albany Project

	INPUTS	UNITS	TOTAL	Year -2	Year -1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22
MINING																											
Open Pit																											
Operating Days	350	days	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350	350
Ore Tonnes mined per day		tpd	2,736	-	-	2,055	2,101	2,727	2,807	2,807	2,807	2,807	2,807	2,807	2,807	2,807	2,807	2,807	2,807	2,807	2,807	2,807	2,807	2,807	2,807	2,807	2,378
Total Tonnes moved per day		tpd	32,231	12,000	42,479	54,438	55,659	48,328	29,100	28,822	28,535	25,405	15,247	14,647	14,250	13,432	12,426	11,266	10,088	8,972	8,103	7,322	6,476	6,099	5,670	4,566	3,269
Ore Tonnes mined per year	See Material Movement	ktpa	20,927	-	-	719	735	954	982	983	982	983	983	983	983	982	982	982	983	982	982	982	983	982	983	983	832
Cg Grade	See Material Movement	%	4.05%	0.00%	0.00%	6.12%	5.61%	4.16%	4.00%	4.02%	4.01%	3.99%	3.99%	4.01%	4.08%	4.07%	4.04%	4.03%	4.04%	4.05%	4.06%	4.10%	4.06%	3.97%	3.48%	3.00%	2.95%
Overburden	See Material Movement	kt	57,699	4,200	14,000	14,000	14,000	11,499	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Waste Rock	See Material Movement	kt	84,684	-	868	4,334	4,745	4,461	9,203	9,105	9,005	7,909	4,354	4,144	4,005	3,719	3,367	2,961	2,548	2,158	1,853	1,580	1,284	1,152	1,002	616	312
Total Moved		**kt**	**163,310**	**4,200**	**14,868**	**19,053**	**19,481**	**16,915**	**10,185**	**10,088**	**9,987**	**8,892**	**5,336**	**5,126**	**4,988**	**4,701**	**4,349**	**3,943**	**3,531**	**3,140**	**2,836**	**2,563**	**2,267**	**2,135**	**1,985**	**1,598**	**1,144**
Stripping Ratio (incl. OVB)		W:O	6.80	-	-	25.49	25.49	16.72	9.37	9.27	9.17	8.05	4.43	4.22	4.08	3.78	3.43	3.01	2.59	2.20	1.89	1.61	1.31	1.17	1.02	0.63	0.37
Stripping Ratio (w/o OVB)		W:O	4.05	-	-	6.03	6.45	4.67	9.37	9.27	9.17	8.05	4.43	4.22	4.08	3.78	3.43	3.01	2.59	2.20	1.89	1.61	1.31	1.17	1.02	0.63	0.37
PROCESSING																											
Mill Feed																											
Tonnes Processed		kt	20,927	-	-	719	735	954	982	983	982	983	983	983	983	982	982	982	983	982	982	982	983	982	983	983	832
Cg Grade		%	4.05%	0.00%	0.00%	6.12%	5.61%	4.16%	4.00%	4.02%	4.01%	3.99%	3.99%	4.01%	4.08%	4.07%	4.04%	4.03%	4.04%	4.05%	4.06%	4.10%	4.06%	3.97%	3.48%	3.00%	2.95%
Contained Cg		t	847,019	-	-	44,036	41,292	39,743	39,295	39,504	39,380	39,157	39,223	39,359	40,056	40,026	39,675	39,631	39,734	39,748	39,909	40,239	39,888	39,004	34,144	29,452	24,522
Flotation																											
Recovery	84.54%	%	85%	84.54%	84.54%	84.54%	84.54%	84.54%	84.54%	84.54%	84.54%	84.54%	84.54%	84.54%	84.54%	84.54%	84.54%	84.54%	84.54%	84.54%	84.54%	84.54%	84.54%	84.54%	84.54%	84.54%	84.54%
Graphite Concentrate		t		-	-	42,018	39,400	37,922	37,495	37,694	37,575	37,362	37,425	37,556	38,220	38,192	37,857	37,815	37,913	37,927	38,081	38,395	38,060	37,217	32,579	28,103	23,398
Cg grade within con	88.60%	%		88.60%	88.60%	88.60%	88.60%	88.60%	88.60%	88.60%	88.60%	88.60%	88.60%	88.60%	88.60%	88.60%	88.60%	88.60%	88.60%	88.60%	88.60%	88.60%	88.60%	88.60%	88.60%	88.60%	88.60%
Contained Cg		t		-	-	37,228	34,908	33,599	33,220	33,397	33,292	33,103	33,159	33,275	33,863	33,838	33,541	33,504	33,591	33,603	33,739	34,018	33,721	32,974	28,865	24,899	20,731
Carbon Purification																											
Ramp Up on Purification	100%	%				85.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Recovery	89.13%	%		89.13%	89.13%	89.13%	89.13%	89.13%	89.13%	89.13%	89.13%	89.13%	89.13%	89.13%	89.13%	89.13%	89.13%	89.13%	89.13%	89.13%	89.13%	89.13%	89.13%	89.13%	89.13%	89.13%	89.13%
Product		t	633,636	-	-	28,221	31,133	29,965	29,627	29,785	29,691	29,522	29,572	29,675	30,200	30,178	29,913	29,880	29,958	29,968	30,090	30,339	30,074	29,407	25,743	22,206	18,488
Grade	99.94%	%		99.94%	99.94%	99.94%	99.94%	99.94%	99.94%	99.94%	99.94%	99.94%	99.94%	99.94%	99.94%	99.94%	99.94%	99.94%	99.94%	99.94%	99.94%	99.94%	99.94%	99.94%	99.94%	99.94%	99.94%
Final Product Moisture Content	0%			0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
REVENUE																											
Metal Prices		**Input Units**																									
Cg	$ 7,500	US$ / t Cg	$ 7,500			$ 7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500	7,500
Exchange Rate	$ 0.82	US$ / C$	$ 0.82			$ 0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Price Ramp Up	100%	%				100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Realized Price		C$ / t Cg	$ 9,146			$ 9,146	9,146	9,146	9,146	9,146	9,146	9,146	9,146	9,146	9,146	9,146	9,146	9,146	9,146	9,146	9,146	9,146	9,146	9,146	9,146	9,146	9,146
Ramp Up of Realized Cg Price	100%	%				100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Ramp Up of Cg Sales Volume	100%	%				90%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Finished Product Stockpile																											
Opening Balance	-	t		-	-	-	1,221	2,354	2,318	1,945	1,730	1,421	943	515	191	391	569	482	362	320	289	379	717	791	199	-	-
+ Add Production		t		-	-	28,221	31,133	29,965	29,627	29,785	29,691	29,522	29,572	29,675	30,200	30,178	29,913	29,880	29,958	29,968	30,090	30,339	30,074	29,407	25,743	22,206	18,488
= Available For Sale		t		-	-	28,221	32,354	32,318	31,945	31,730	31,421	30,943	30,515	30,191	30,391	30,569	30,482	30,362	30,320	30,289	30,379	30,717	30,791	30,199	25,942	22,206	18,488
- Less Sales	30,000	**t**	**633,636**	**-**	**-**	**27,000**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**30,000**	**25,942**	**22,206**	**18,488**
= Closing Balance				-	-	1,221	2,354	2,318	1,945	1,730	1,421	943	515	191	391	569	482	362	320	289	379	717	791	199	-	-	-
Total Gross Revenue		**US$ '000**	**$ 4,752,271**			**$ 202,500**	**225,000**	**225,000**	**225,000**	**225,000**	**225,000**	**225,000**	**225,000**	**225,000**	**225,000**	**225,000**	**225,000**	**225,000**	**225,000**	**225,000**	**225,000**	**225,000**	**225,000**	**225,000**	**194,564**	**166,543**	**138,664**
Transportation	$82.00 US$/t product	US$ '000	$ 51,958			$ 2,214	2,460	2,460	2,460	2,460	2,460	2,460	2,460	2,460	2,460	2,460	2,460	2,460	2,460	2,460	2,460	2,460	2,460	2,460	2,127	1,821	1,516
Net Smelter Return		**US$ '000**	**$ 4,700,312**			**$ 200,286**	**222,540**	**222,540**	**222,540**	**222,540**	**222,540**	**222,540**	**222,540**	**222,540**	**222,540**	**222,540**	**222,540**	**222,540**	**222,540**	**222,540**	**222,540**	**222,540**	**222,540**	**222,540**	**192,436**	**164,723**	**137,147**
Royalty																											
Cliffs Royalty (0.25%)	0.25%	US$ '000	$ 11,751			$ 501	556	556	556	556	556	556	556	556	556	556	556	556	556	556	556	556	556	556	481	412	343
EGC Royalty (1%)	1%	US$ '000	$ 47,003			$ 2,003	2,225	2,225	2,225	2,225	2,225	2,225	2,225	2,225	2,225	2,225	2,225	2,225	2,225	2,225	2,225	2,225	2,225	2,225	1,924	1,647	1,371
Total Royalties		**US$ '000**	**$ 58,754**			**$ 2,504**	**2,782**	**2,782**	**2,782**	**2,782**	**2,782**	**2,782**	**2,782**	**2,782**	**2,782**	**2,782**	**2,782**	**2,782**	**2,782**	**2,782**	**2,782**	**2,782**	**2,782**	**2,782**	**2,405**	**2,059**	**1,714**
Net Revenue		**US$ '000**	**$ 4,641,559**			**$ 197,782**	**219,758**	**219,758**	**219,758**	**219,758**	**219,758**	**219,758**	**219,758**	**219,758**	**219,758**	**219,758**	**219,758**	**219,758**	**219,758**	**219,758**	**219,758**	**219,758**	**219,758**	**219,758**	**190,031**	**162,664**	**135,433**
Unit NSR		**US$ / t proc**	$ 222			**$ 275**	**299**	**230**	**224**	**224**	**224**	**224**	**224**	**224**	**224**	**224**	**224**	**224**	**224**	**224**	**224**	**224**	**224**	**224**	**193**	**166**	**163**
OPERATING COSTS (US$)																											
Mining (Ore and Waste)		US$ '000	$ 237,362	$ -	$ -	$ 13,674	14,831	14,655	15,287	15,075	14,862	14,649	14,440	13,872	13,496	12,722	11,768	10,670	9,554	8,498	7,674	6,935	6,133	5,776	5,370	4,324	3,096
Beneficiation		US$ '000	$ 286,688	$ -	$ -	$ 9,853	10,076	13,076	13,460	13,460	13,460	13,460	13,460	13,460	13,460	13,460	13,460	13,460	13,460	13,460	13,460	13,460	13,460	13,460	13,460	13,460	11,404
Purification		US$ '000	$ 557,577	$ -	$ -	$ 28,988	27,182	26,162	25,867	26,005	25,923	25,776	25,820	25,910	26,368	26,349	26,117	26,089	26,156	26,165	26,272	26,489	26,258	25,676	22,476	19,388	16,142
G&A		US$ '000	$ 215,037	$ -	$ -	$ 9,774	9,774	9,774	9,774	9,774	9,774	9,774	9,774	9,774	9,774	9,774	9,774	9,774	9,774	9,774	9,774	9,774	9,774	9,774	9,774	9,774	9,774
Total Operating Cost		**US$ '000**	**$ 1,296,664**	**$ -**	**$ -**	**$ 62,290**	**61,863**	**63,668**	**64,389**	**64,314**	**64,019**	**63,659**	**63,494**	**63,016**	**63,099**	**62,304**	**61,120**	**59,993**	**58,945**	**57,897**	**57,180**	**56,658**	**55,625**	**54,686**	**51,081**	**46,946**	**40,416**
UNIT OPERATING COSTS (US$)																											
Mining (Ore and Waste)		US$ / t proc	$ 11.34			$ 19.01	20.16	15.35	15.56	15.34	15.13	14.91	14.70	14.12	13.74	12.95	11.98	10.86	9.72	8.65	7.81	7.06	6.24	5.88	5.47	4.40	3.72
Beneficiation		US$ / t proc	$ 13.70			$ 13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70	13.70
Purification		US$ / t proc	$ 26.64			$ 40.30	36.96	27.41	26.33	26.47	26.38	26.24	26.28	26.37	26.84	26.82	26.58	26.55	26.62	26.63	26.74	26.96	26.73	26.13	22.88	19.73	19.39
G&A		US$ / t proc	$ 10.28			$ 13.59	13.29	10.24	9.95	9.95	9.95	9.95	9.95	9.95	9.95	9.95	9.95	9.95	9.95	9.95	9.95	9.95	9.95	9.95	9.95	9.95	11.74
Total Operating Cost		**US$ / t proc**	**$ 61.96**			**$ 86.6**	**84.1**	**66.7**	**65.5**	**65.5**	**65.2**	**64.8**	**64.6**	**64.1**	**64.2**	**63.4**	**62.2**	**61.1**	**60.0**	**58.9**	**58.2**	**57.7**	**56.6**	**55.7**	**52.0**	**47.8**	**48.6**
Mining (Ore and Waste)		US$ / t prod	**$ 375**			$ 485	476	489	516	506	501	496	488	467	447	422	393	357	319	284	255	229	204	196	209	195	167
Beneficiation		US$ / t prod	**$ 452**			$ 349	324	436	454	452	453	456	455	454	446	446	450	450	449	449	447	444	448	458	523	606	617
Purification		US$ / t prod	**$ 880**			$ 1,027	873	873	873	873	873	873	873	873	873	873	873	873	873	873	873	873	873	873	873	873	873
G&A		US$ / t prod	**$ 339**			$ 346	314	326	330	328	329	331	331	329	324	324	327	327	326	326	325	322	325	332	380	440	529
Unit Operating Cost		**US$ / t prod**	**$ 2,046**			**$ 2,207**	**1,987**	**2,125**	**2,173**	**2,159**	**2,156**	**2,156**	**2,147**	**2,124**	**2,089**	**2,065**	**2,043**	**2,008**	**1,968**	**1,932**	**1,900**	**1,868**	**1,850**	**1,860**	**1,984**	**2,114**	**2,186**
Operating CashFlow		US$ '000	**$ 3,344,895**	**$ -**	**$ -**	**$ 135,492**	**157,895**	**156,090**	**155,369**	**155,445**	**155,739**	**156,099**	**156,264**	**156,742**	**156,660**	**157,454**	**158,638**	**159,765**	**160,814**	**161,861**	**162,578**	**163,100**	**164,133**	**165,072**	**138,950**	**115,717**	**95,017**
		US$ / t proc	$ 160																								
CAPITAL COST																											
Direct Cost																											
Mining		US$ '000	$ 81,158	$ 12,743	$ 68,415	$ -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Processing		US$ '000	$ 111,495	$ 44,598	$ 66,897	$ -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Infrastructure		US$ '000	$ 70,255	$ 14,908	$ 55,347	$ -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Direct Cost		**US$ '000**	**$ 262,908**	**$ 72,249**	**$ 190,659**	**$ -**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Indirect Costs																											
EPCM / Owners / Indirect Cost		US$ '000	$ 68,732	$ 21,902	$ 46,829	$ -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Subtotal Costs		**US$ '000**	**$ 331,639**	**$ 94,151**	**$ 237,488**	**$ -**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Contingency		US$ '000	$ 79,826	$ 25,064	$ 54,762	$ -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Initial Capital Cost		**US$ '000**	**$ 411,465**	**$ 119,215**	**$ 292,250**	**$ -**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Sustaining		US$ '000	$ 268,073	$ -	$ -	$ 44,600	44,600	39,078	18,941	22,298	18,793	20,237	3,853	11,266	12,424	6,545	2,446	2,446	9,801	3,410	2,446	2,446	2,446	-	-	-	-
Reclamation and Closure		US$ '000	$ 22,140	$ -	$ -	$ -	-	-	-	-	-	-	-	-	-	-	-	-	-	5,535	-	-	5,535	-	-	-	11,070
Misc - Buy Out Royalties		US$ '000	$ 1,230	$ -	$ 1,230	$ -	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Capital Cost		**US$ '000**	**$ 702,908**	**$ 119,215**	**$ 293,480**	**$ 44,600**	**44,600**	**39,078**	**18,941**	**22,298**	**18,793**	**20,237**	**3,853**	**11,266**	**12,424**	**6,545**	**2,446**	**2,446**	**9,801**	**8,945**	**2,446**	**2,446**	**7,981**	**-**	**-**	**-**	**11,070**
CASH FLOW																											
Pre-Tax Cashflow		US$ '000	$ 2,641,987	$ (119,215)	$ (293,480)	$ 90,892	113,295	117,012	136,428	133,147	136,946	135,862	152,412	145,477	144,236	150,909	156,193	157,319	151,013	152,916	160,133	160,655	156,152	165,072	138,950	115,717	83,947
Cumulative Pre-Tax Cashflow		US$ '000		$ (119,215)	$ (412,695)	$ (321,803)	(208,508)	(91,496)	44,932	178,079	315,025	450,886	603,298	748,775	893,011	1,043,920	1,200,113	1,357,432	1,508,445	1,661,361	1,821,494	1,982,148	2,138,301	2,303,373	2,442,323	2,558,040	2,641,987
EBITDA		US$ '000	$ 3,344,895	$ -	$ -	$ 135,492	157,895	156,090	155,369	155,445	155,739	156,099	156,264	156,742	156,660	157,454	158,638	159,765	160,814	161,861	162,578	163,100	164,133	165,072	138,950	115,717	95,017
Less Deductions		US$ '000	$ 707,953	$ -	$ -	$ 135,492	157,895	75,130	56,384	47,612	40,105	34,754	26,115	21,886	19,036	15,574	12,054	9,486	9,571	9,573	7,625	6,214	6,851	4,999	3,651	2,670	5,275
Taxable Earnings		US$ '000	$ 2,636,942	$ -	$ -	$ -	-	80,960	98,985	107,832	115,634	121,345	130,150	134,856	137,624	141,880	146,584	150,279	151,242	152,288	154,953	156,886	157,282	160,074	135,299	113,047	89,742
Taxes	24.4%	US$ '000	$ 642,095	$ -	$ -	$ -	-	19,714	24,103	26,257	28,157	29,547	31,691	32,838	33,511	34,548	35,693	36,593	36,828	37,082	37,731	38,202	38,298	38,978	32,945	27,527	21,852
Net Profit		US$ '000	$ 1,994,847	$ -	$ -	$ -	-	61,246	74,882	81,575	87,477	91,797	98,458	102,019	104,112	107,332	110,891	113,686	114,415	115,206	117,222	118,684	118,983	121,096	102,354	85,520	67,890
After-Tax Cashflow		US$ '000	$ 1,999,891	$ (119,215)	$ (293,480)	$ 90,892	113,295	97,298	112,325	106,890	108,789	106,314	120,720	112,639	110,724	116,361	120,499	120,726	114,185	115,834	122,402	122,453	117,854	126,094	106,005	88,190	62,095
Cumulative After-Tax Cashflow		US$ '000		$ (119,215)	$ (412,695)	$ (321,803)	(208,508)	(111,210)	1,115	108,005	216,794	323,108	443,829	556,468	667,192	783,554	904,053	1,024,780	1,138,965	1,254,799	1,377,200	1,499,653	1,617,508	1,743,602	1,849,606	1,937,796	1,999,891
PROJECT ECONOMICS																											
Pre-Tax Payback Period		yrs	3.7	0	0	1.00	1.00	1.00	0.67	-	-	-	-	-													
Pre-Tax IRR		%	27.3%																								
Pre-tax NPV @ 8%	8%	US$ '000	$814,717																								
Pre-tax NPV @ 10%	10%	US$ '000	$614,676																								
Pre-tax NPV @ 12%	12%	US$ '000	$462,942																								
Post-Tax Payback Period		yrs	4.0	0	0	1.00	1.00	1.00	0.99	-	-	-	-	-													
Post-Tax IRR		%	23.9%																								
Post-Tax NPV @ 8%	8%	US$ '000	$593,115																								
Post-Tax NPV @ 10%	10%	US$ '000	$438,434																								
Post-Tax NPV @ 12%	12%	US$ '000	$320,967																								

CASH FLOW ANALYSIS

Based on the economic criteria discussed previously, a summary of the cash flow is shown in Table 22-2.

TABLE 22-2 SUMMARY OF CASH FLOW
Zenyatta Ventures Ltd. – Albany Project

Description	Units	Value
Gross Revenue	US$ millions	4,752.3
Less: Transportation	US$ millions	(52.0)
Net Smelter Return	US$ millions	4,700.3
Less: Royalties	US$ millions	(58.8)
Net Revenue	US$ millions	4,641.6
Less: Total Operating Costs	US$ millions	(1,296.7)
Operating Cash Flow	US$ millions	3,344.9
Less: Total Capital Costs	US$ millions	(702.9)
Pre-Tax Cash Flow	US$ millions	2,642.0
Less: Taxes Paid	US$ millions	(642.1)
After Tax Cash Flow	US$ millions	1,999.9

ECONOMIC ANALYSIS

Based on the input parameters, a summary of the Project economics is shown in Table 22-3.

TABLE 22-3 SUMMARY OF ECONOMIC RESULTS
Zenyatta Ventures Ltd. – Albany Project

Description	Units	Value
Pre-Tax		
Net Present Value at 8%	US$ millions	814.7
Net Present Value at 10%	US$ millions	614.7
Net Present Value at 12%	US$ millions	462.9
Internal Rate of Return	%	27.3
Payback Period	years	3.7
Post-Tax		
Net Present Value at 8%	US$ millions	593.1
Net Present Value at 10%	US$ millions	438.4
Net Present Value at 12%	US$ millions	321.0
Internal Rate of Return	%	23.9
Payback Period	years	4.0

SENSITIVITY ANALYSIS

The cash flow model was tested for sensitivity to variances in the head grade, process recovery, realized sales price, Canadian to United States dollar exchange rate, overall operating costs, and overall capital costs. The resulting post-tax $NPV_{10\%}$ sensitivity is shown in Figure 22-1, and Table 22-4.

FIGURE 22-1 SENSITIVITY ANALYSIS

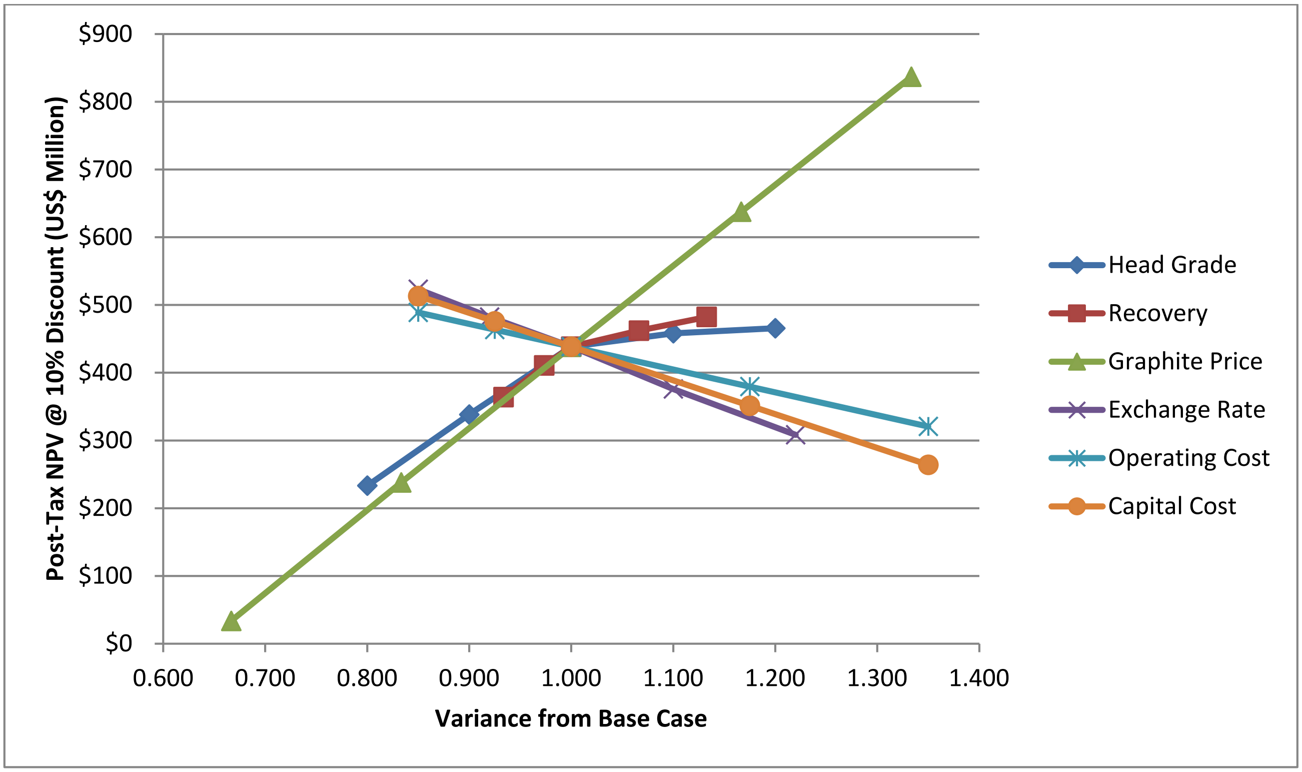


TABLE 22-4 SUMMARY OF SENSITIVITY ANALYSIS
Zenyatta Ventures Ltd. – Albany Project

Description	Units	Low Case	Mid-Low Case	Base Case	Mid-High Case	High Case
Head Grade	%	3.24	3.64	4.05	4.45	4.86
Overall Recovery	%	70.4	73.4	75.4	80.4	85.4
Graphite Price	US$/t	5,000	6,250	7,500	8,750	10,000
Exchange Rate	US$/C$	0.70	0.75	0.82	0.90	1.00
Operating Costs	US$/t	52.67	57.32	61.96	72.81	83.65
Capital Cost	US$ million	597	650	703	826	949
Adjustment Factor						
Head Grade	%	-20	-10	NA	+10	+20
Overall Recovery	%	-5	-2	NA	+5	+10
Graphite Price	%	-33	-17	NA	+17	+33
Exchange Rate	%	-15	-8	NA	+10	+22
Operating Costs	%	-15	-7.5	NA	+17.5	+35
Capital Cost	%	-15	-7.5	NA	+17.5	+35
Post-Tax NPV @ 10%						
Head Grade	US$ million	233.2	338.2	438.4	458.2	465.7
Overall Recovery	US$ million	363.8	410.7	438.4	462.1	482.3
Graphite Price	US$ million	33.6	237.8	438.4	637.7	836.8
Exchange Rate	US$ million	523.2	482.2	438.4	375.9	308.4
Operating Costs	US$ million	488.9	463.7	438.4	379.5	320.6
Capital Cost	US$ million	513.2	475.8	438.4	351.2	264.1

As shown in Figure 22-1, Project cash flow is equally and most sensitive to the realized price of graphite, the head grade, and the overall process recovery. However, head grade and overall process recovery variations above the Base Case have almost no impact on the post-tax NPV as sales of graphite were capped at 30,000 tpa. Exchange rate, capital costs, and operating costs, have lesser and almost equal impacts on the Project.

TAXES AND DEPRECIATION

Taxes and depreciation were applied following the guidelines of *"A Guide to Canadian Mining Taxati*on", published by KPMG Canada. Depreciation was calculated based on examining the different capital expenditures made over the life of the Project. Capital costs were assigned to one of:

- Canadian Exploration Expense (CEE)
- Canadian Development Expense (CDE)
- Capital Cost Allowance (CCA)

CEE includes exploration expenses and pre-production mine development, however, it excludes the cost of depreciable property such as equipment and machinery. Zenyatta has an opening CEE balance of US$ 16.4 million that is applicable to the Project. Up to 100% of the CEE balance can be applied against income in any given year.

CDE includes both the costs to acquire a mining property, and the capital costs incurred after a mine has come into production. Similar to CEE, CDE excludes the costs of depreciable property such as equipment and machinery. Zenyatta has an opening CDE balance of US$ 1.1 million that is applicable to the Project. Up to 30% of the CDE balance can be applied against income in any given year.

CCA covers all depreciable property, including equipment, machinery, and buildings. Zenyatta does not have an opening balance of CCA credits. All capital spending allocated to CCA was counted as Class 41 assets under applicable Canadian tax codes. Class 41 assets can be depreciated at a rate of up to 25% of the balance per year.

Federal and provincial taxes were then applied to remaining operating income after the previously discussed deductions were applied. Federal and provincial taxes of 15% and 11%, respectively, were applied to the Project. Total taxes paid over the life of the Project amount to US$642 million.

23 ADJACENT PROPERTIES

There are no significant properties adjacent to the Claim Block 4F property.

24 OTHER RELEVANT DATA AND INFORMATION

No additional information or explanation is necessary to make this Technical Report understandable and not misleading.

25 INTERPRETATION AND CONCLUSIONS

In RPA's opinion, the PEA indicates that positive economic results can be obtained for the Project, in a scenario that includes open pit mining and graphite recovery by flotation followed by purification at the mine site.

The PEA consists of technical and cost assumptions outlined in this report. The economic analysis shows post-tax IRR and NPV (10%) of 23.9% and US$438.4 million respectively at a long term price of US$7,500/t of purified final product.

The LOM plan for the Project indicates that 20.9 Mt, at an average grade of 4.05% graphitic carbon (Cg), will be mined over 22 years at a nominal production rate of 2,807 tpd (982,500 tpa). Primary graphite concentrate production is projected to total 808,200 t at 88.6% Cg. After the purification to 99.94% Cg of the primary concentrate, final saleable product totals 633,600 t.

Project cash flow is equally and most sensitive to the realized price of graphite, the head grade, and the overall process recovery. However, head grade and overall process recovery variations above the Base Case have almost no impact on the post-tax NPV as sales of graphite were capped at 30,000 tpa, based on market studies. In RPA's opinion, should market conditions change, the Mineral Resources are capable of supporting higher production rates.

RPA offers the following conclusions by area:

GEOLOGY AND MINERAL RESOURCES

The Albany graphite deposit is an epigenetic deposit in which a large volume of highly crystalline, fluid-deposited graphite occurs within an igneous host. Graphite occurs both in the matrix, as disseminated crystals, clotted to radiating crystal aggregates and veins, and along crystal boundaries, and as small veins within the breccia fragments. The deposit is interpreted as a vent pipe breccia that formed from CO_2-rich fluids that evolved due to pressure-related degassing of syenites of the Albany Alkalic Complex.

Diamond drilling has outlined two graphite mineralized breccia pipes with three-dimensional continuity, and size and grades that can potentially be exploited economically. Zenyatta's protocols for drilling, sampling, analysis, security, and database management meet industry accepted practices. The drill hole database was verified by RPA and is suitable for Mineral Resource estimation work.

RPA estimated Mineral Resources for the Albany graphite deposit using drill hole data available as of November 15, 2013 and economic assumptions current to June 1, 2015. The Mineral Resource estimate is based on a potential combined open pit and underground mining scenario. Indicated Mineral Resources are estimated to total 24.3 million tonnes (Mt) at an average grade of 3.98% Cg, containing 968,000 tonnes of Cg. Inferred Mineral Resources are estimated to total 16.9 Mt at an average grade of 2.64% Cg, containing 445,000 tonnes of Cg.

MINING

RPA investigated production rates in the 2,500 tpd to 3,500 tpd range using open pit mining methods. Within 260 m of surface, strip ratios remain low enough for open pit methods to produce favourable results. Although it is not included in the PEA, underground mining of Inferred Resources remains worth consideration for the portion of both mineralized breccia pipes beneath an unmineralized dyke dipping southeast (from approximately 250 m to 300 m depth and below), as incorporated into the resource estimate.

The PEA production rate is 982,500 tpa, or 2,807 tpd, of graphite bearing material via open pit mining. Mining of ore and waste would be carried out by the owner and by contractor to balance mining equipment requirements over the life of the operation. The overburden removal will be exclusively done by a contractor with a dedicated mining fleet (larger equipment) given the total volume to be excavated and the higher production rate to be achieved.

A PEA level mine plan has been developed using 20.9 Mt of Indicated Mineral Resources, at an average grade of 4.05% Cg. The production schedule reflects mining at an elevated cut-off grade of 1.65% Cg. Beyond the PEA LOM plan, there is potential to extend purified graphite production via:

- Larger pits.
- Underground mining.
- Processing of low-grade stockpile (material between 0.9% Cg and 1.65% Cg).

The combination of owner-operated mining and contractor mining will be carried out using a conventional open pit method consisting of the following activities:

- Drilling performed by conventional production drills.
- Blasting using ANFO and a down-hole delay initiation system.
- Loading and hauling operations performed with hydraulic shovel, front-end loader, and rigid frame haulage trucks.

Geotechnical, hydrogeological/hydrological and pit design parameters are based either on the open pit preliminary geotechnical evaluation or on assumptions derived from comparable operations, and require site-specific investigation as the Project advances.

MINERAL PROCESSING AND METALLURGICAL TESTING

Metallurgical test results at a bench scale level have demonstrated the following:

- Graphite concentrate can be produced via flotation targeting 88.6% Cg and 84.54% recovery.
- Graphite concentrate can be purified to yield a final graphite product grading 99.94% Cg and 89.13% recovery, for an overall recovery of 75.40%.

The metallurgical testwork completed to date has focused on achieving product purity and not on optimization of the process. Further improvements in process design, performance, and cost estimation are to be expected with advanced levels of study.

Ore samples for metallurgical testwork should be representative of the ore blend for each year in the LOM plan. The metallurgical complexity of the deposit has been evaluated using two composite samples (East Pipe and West Pipe) for flotation testing, and using East Pipe composite material for purification testing.

Ore variability needs to be investigated through mineralogical analysis and flotation testing.

ENVIRONMENTAL AND SOCIOLOGICAL CONSIDERATIONS

ERM has not identified any material environmental and social risks that prevent the Project's advancement to the next stage of study.

Zenyatta has conducted some preliminary environmental studies to support its exploration program and to characterize environmental features present within its Property.

A comprehensive, Project-specific baseline study program will be required to further the understanding of the local and regional environmental and social context for the Project, thereby contributing to the optimization of the engineering and the identification and mitigation of potential impacts of the Project on its receiving environment.

HIGH-PURITY GRAPHITE MARKETS

Unlike metamorphic flake deposits, testwork has demonstrated that Zenyatta's hydrothermal (vein) type graphite can be processed into a high-purity substance, suitable to compete against synthetic graphite producers for market share.

The high-purity graphite market that Zenyatta is focusing on is expected to require in the order of 426 ktpa by 2017, and grow at a rate of 4% thereafter. RPA has selected US$7,500 per tonne as the base case price for this PEA, with sensitivity analysis in the range of US$5,000 per tonne to US$10,000 per tonne. Zenyatta will target marketing activities around industries such as lithium-ion batteries, powder metallurgy, specialized lubricants, fuel cells for energy storage and nuclear reactors, that all demand high-purity graphite.

26 RECOMMENDATIONS

RPA recommends that Zenyatta advance the Project to the pre-feasibility stage, and offers the following recommendations by area:

GEOLOGY AND DRILLING

- Consider upgrading areas of Inferred Mineral Resources to Indicated Mineral Resources. RPA notes that this is not required to advance to the pre-feasibility stage – current Indicated Resources are adequate for the open pit production scenario described in this PEA.

MINING

- Carry out a geotechnical drill program at pit wall locations to enhance geomechanical and rock mechanics assessments to confirm appropriate pit wall slope angles and stability.

- Carry out specific hydrological/hydrogeological studies to refine dewatering needs in the open pit over the LOM.

- Improve the mining plan and develop an estimate of the mining costs based on first principles.

MINERAL PROCESSING AND METALLURGICAL TESTING

- Additional metallurgical testwork should be carried out to scale up the process flowsheet for the production of a high-purity graphite product with the specifications targeted based on research and dialogue with end-users.
    - Continued mineralogical characterization and mineral deportment analysis on a broad range of ore samples representative of the areas to be mined (across the Mineral Resources and at depth)
    - Ore variability testing
    - Confirmatory tests on regrinding, liquid-solid separation and thickening under the various stages of cleaner flotation
    - Confirm that grinding media selection does not affect the quality of the product
    - Optimization of the purification circuit, including materials handling, liquid-solid separation, and thickening
    - Off-gas handling and scrubbing requirements in low-temperature bake treatment
    - Dust collection and recycle
    - Analysis and characterization of all waste streams and determination of the appropriate methods of disposal
    - Methods for effective drying and handling of the final graphite product
    - Detailed water balance for the entire process flowsheet
    - Materials of construction requirements

ENVIRONMENTAL AND SOCIOLOGICAL CONSIDERATIONS

- Continue to engage with potentially interested parties.
- Begin the environmental baseline study program as an important input into future study and Project permitting.

HIGH-PURITY GRAPHITE MARKETS

- Continue discussions with end-users who are potential customers for the product and work towards securing off-take or strategic partnership agreements.
- Continue research into new markets for high-purity graphite by monitoring current research initiatives and support new research initiatives into potential future applications of the unique Albany high-purity graphite product.
- Participate in technical conferences on graphite and energy storage whenever possible to stay current on market developments and identify potential partners.

PROPOSED BUDGET

RPA and ERM propose the following budget for work carrying through to the end of a Pre-Feasibility Study:

TABLE 26-1 PROPOSED BUDGET
Zenyatta Ventures Ltd. – Albany Project

Item	C$'000s
Geotechnical Drilling and Analysis (including hydrogeology)	600
Market Development Work	1,000
Metallurgical Testwork	1,600
Community Engagement	200
Environmental Baseline Studies (one year of a multi-year program including geochemistry)	600
Pre-Feasibility Study	500
Total	**4,500**

27 REFERENCES

BGC Engineering Inc., 2014, Albany Preliminary Economic Assessment Open Pit Preliminary Geotechnical Evaluation, prepared for Zenyatta Ventures Ltd. (July 18, 2014).

Carey, G., 2012, Albany Project Block 4F, 2012 Assessment Report, Phase II Diamond Drill Program, Porcupine Mining District, Ontario, Pitopiko River, Feagan Lake Townships, NTS: 42K/01,02, 42F/15,16, August 20, 2012.

Carey, G., 2014, Albany Project, Block 4F, Porcupine Mining District, Ontario, 2013 Drill Assessment Report, Reconnaissance Drilling, Pitopiko River and Feagan Lake Areas, NTS: 42K/01,02 and 42F/15,16, January 16, 2014.

CIM, 2014, CIM Definition Standards for Mineral Resources and Mineral Reserves, prepared by the CIM Standing Committee on Reserve Definitions, adopted by CIM Council on May 10, 2014.

Conly, A.G., 2014b, The Albany graphite deposit: a new sub-class of igneous-hosted graphite: Geological Association of Canada - Mineralogical Association of Canada Program with Abstracts, v. 37, pp. 60-61.

Conly, A.G., and Moore, L.C., 2015, Role of hypabyssal subvolcanic magmas in the genesis of the Albany graphite deposit: Joint Assembly (GAC-MAC-AGU) 2015 Program with Abstracts, Abstract number MD34A-0201 (web accessed May 25, 2015; https://agu.confex.com/agu/ja2015/meetingapp.cgi#Paper/36506).

Crone Geophysics & Exploration Ltd., 2013, Geophysical Interpretation Report covering Surface Pulse EM Surveys over the Albany Graphite Project for Zenyatta Ventures Limited during February – March 2013, 17 p.

Geotech Ltd., 2010, Report on a Helicopter-Borne Versatile Time Domain Electromagnetic (VTEM) and Aeromagnetic Survey, 1(A-D), 2(A-L), 3(A-F), 4(A-F), Hearst, Ontario, July, 2010.

Harben, P.W., and Kuzvart, M., 1996, A Global Geology. Industrial Minerals Information Ltd., London, 462 p.

JKTech Pty Ltd., 2014, SMC Test Report, JKTech Job No. 14007/P1, prepared for Zenyatta Ventures Ltd. (January 2014).

Koulomzine, T., 1959, Report on Mag Survey, Assessment Report File GM 08473.

Legault, J.M., Lymburner, J., Ralph, K., Wood, P., Orta, M. and Prikhodko, A., 2015, The Albany Graphite Discovery, Airborne and Ground Time-Domain EM, presented at KEGS Geophysics Symposium at PDAC 2015, February 28, 2015.

RPA Inc., 2014, Technical Report on the Albany Graphite Deposit, northern Ontario, Canada, prepared for Zenyatta Ventures Ltd., filed on SEDAR/available at www.sedar.com (January 16, 2014).

Sage, R.P., 1988, Nagagami River Alkalic Rock Complex, Ontario Geological Survey, Study #43.

SGS Canada Inc., 2013, An investigation into the Purification of Zenyatta Graphite from the Albany Graphite Deposit, prepared for Zenyatta Ventures Ltd. (April 22, 2013).

SGS Canada Inc., 2014a, An Investigation into a Graphite Flotation Pilot Plant Campaign from the Albany Deposit, Project 13621-003 – Final Report, prepared for Zenyatta Ventures Ltd. (June 26, 2014).

SGS Canada Inc., 2014b, Zenyatta Data Oct 2'14.xlsx, (October 2, 2014).

SGS Canada Inc., 2014c, Zenyatta PDPRDM Nov14'14.xlsx, (November 14, 2014).

SGS Canada Inc., 2014d, Zenyatta Dec 2'14 Submitted.xlsx, (December 2, 2014).

SGS Canada Inc., 2014e, An Investigation into Flotation Optimization and Pilot Plant Concentrate Upgrading on Samples from the Albany Graphite Project, Project 13621-006 – Progress Report #1, prepared for Zenyatta Ventures Ltd. (December 3, 2014).

SGS Canada Inc., 2015a, Process Design Package for the Albany Graphite Project Graphite Purification Flowsheet, Preliminary Assessment Study, SGS Project Reference: CALR 13621-008 and 009, prepared for Zenyatta Ventures Ltd., (May 3, 2015).

SGS Canada Inc., 2015b, Unrevised Version R0 - Process Design Package for the Albany Graphite Project Graphite Purification Flowsheet, Preliminary Assessment Study, SGS Project Reference: CALR 13621-008 and 009, prepared for Zenyatta Ventures Ltd., (May 19, 2015).

SGS Canada Inc., 2015c, Zenyatta May 19 2015 PDP R0Values.xlsx, (May 19, 2014).

Stott, G.M., and Corfu, F., 1991: Uchi Subprovince; in Geology of Ontario, Ontario Geological Survey, Special Volume 4, Part 1, pp.145-236.

Stott, G.M., Corkery, T., Leclair, A., Boily, M., and Percival, J., 2007, A revised terrane map for the Superior Province as interpreted from aeromagnetic data; in Woodruff, L. (ed.), Institute on Lake Superior Geology Proceedings, 53rd Annual Meeting, Lutsen, Minnesota, v.53, Part 1, pp.74-75.

Stott, G.M., 2008, Precambrian geology of the Hudson Bay and James Bay lowlands region interpreted from aeromagnetic data – south sheet; Ontario Geological Survey, Preliminary Map P.3599, scale 1:500 000.

Vaillancourt, C., Sproule, R.A., MacDonald, C.A., and Lesher, C.M., 2003, Investigation of Mafic-Ultramafic Intrusions in Ontario and Implications for Platinum Group Element Mineralization: Operation Treasure Hunt; Ontario Geological Survey File Report 6102.

Venn, V. R., 1964, Preliminary Map P.237, Algoma Ore Properties, Assessment Files, Sault Ste. Marie.

28 DATE AND SIGNATURE PAGE

This report titled "Technical Report on the Preliminary Economic Assessment of the Albany Graphite Project, Northern Ontario, Canada" and dated July 9, 2015 was prepared and signed by the following authors:

(Signed & Sealed) "*Jason J. Cox*"

Dated at Toronto, ON
July 9, 2015

Jason J. Cox, P.Eng.
Principal Mining Engineer

(Signed & Sealed) "*David Ross*"

Dated at Toronto, ON
July 9, 2015

David Ross, M.Sc., P.Geo.
Principal Geologist

(Signed & Sealed) "*Katharine M. Masun*"

Dated at Toronto, ON
July 9, 2015

Katharine M. Masun,
P.Geo. Principal
Geologist

(Signed & Sealed) "*Marc Lavigne*"

Dated at Toronto, ON
July 9, 2015

Marc Lavigne, M.Sc., ing.
Senior Mining Engineer

(Signed & Sealed) "*Brenna J.Y. Scholey*"

Dated at Toronto, ON
July 9, 2015

Brenna J.Y. Scholey, P.Eng.
Principal Metallurgist

(Signed & Sealed) "*Derek Chubb*"

Dated at Toronto, ON
July 9, 2015

Derek Christopher Chubb, P.Eng.
Partner, ERM Consulting Canada Limited

29 CERTIFICATES OF QUALIFIED PERSONS

JASON J. COX

I, Jason J. Cox, P.Eng., as an author of this report entitled "Technical Report on the Preliminary Economic Assessment of the Albany Graphite Project, Northern Ontario, Canada", prepared for Zenyatta Ventures Ltd., and dated July 9, 2015, do hereby certify that:

1. I am a Principal Mining Engineer and Executive Vice President, Mine Engineering, with Roscoe Postle Associates Inc. of Suite 501, 55 University Ave Toronto, ON, M5J 2H7.

2. I am a graduate of the Queen's University, Kingston, Ontario, Canada, in 1996 with a Bachelor of Science degree in Mining Engineering.

3. I am registered as a Professional Engineer in the Province of Ontario (Reg. #90487158). I have worked as a Mining Engineer for a total of 19 years since my graduation. My relevant experience for the purpose of the Technical Report is:
   - Review and report as a consultant on many mining operations and projects around the world for due diligence and regulatory requirements
   - Feasibility Study project work on several mining projects, including five North American mines
   - Operational experience as Planning Engineer and Senior Mine Engineer at three North American mines
   - Contract Co-ordinator for underground construction at an American mine

4. 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 purposes of NI 43-101.

5. I have not visited the Albany Property.

6. I am responsible for the overall preparation of the report.

7. I am independent of the Issuer applying the test set out in Section 1.5 of NI 43-101.

8. I have had no prior involvement with the property that is the subject of the Technical Report.

9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

10. At the effective date of this Technical Report, to the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Dated this 9th day of July, 2015.

(Signed & Sealed) "*Jason J. Cox*"

Jason J. Cox, P.Eng.

DAVID ROSS

I, David Ross, M.Sc., P.Geo., as an author of this report entitled "Technical Report on the Preliminary Economic Assessment of the Albany Graphite Project, Northern Ontario, Canada", prepared for Zenyatta Ventures Ltd., and dated July 9, 2015, do hereby certify that:

1. I am a Principal Geologist with Roscoe Postle Associates Inc. of Suite 501, 55 University Ave., Toronto, ON, M5J 2H7.

2. I am a graduate of Carleton University, Ottawa, Canada, in 1993 with a Bachelor of Science degree in Geology and Queen's University, Kingston, Ontario, Canada, in 1999 with a Master of Science degree in Mineral Exploration.

3. I am registered as a Professional Geoscientist in the Province of Ontario (Reg. #1192). I have worked as a geologist for 20 years since my graduation. My relevant experience for the purpose of the Technical Report is:
   - Review and report as a consultant on numerous mining and exploration projects around the world for due diligence and regulatory requirements
   - Exploration geologist on a variety of gold and base metal projects in Canada, Indonesia, Chile, and Mongolia.

4. 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 purposes of NI 43-101.

5. I visited the Albany Property on July 15 to 18, 2013.

6. I am responsible for Sections 4 to 12, and share responsibility with my co-authors for Sections 1, 14, 25, and 26 of the Technical Report.

7. I am independent of the Issuer applying the test set out in Section 1.5 of NI 43-101.

8. I have previously co-authored an independent technical report on the Albany property.

9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

10. At the effective date of this Technical Report, to the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Dated this 9th day of July, 2015.

(Signed & Sealed) "*David Ross*"

David Ross, M.Sc., P.Geo.

KATHARINE M. MASUN

I, Katharine M. Masun, P.Geo., as an author of this report entitled "Technical Report on the Preliminary Economic Assessment of the Albany Graphite Project, Northern Ontario, Canada", prepared for Zenyatta Ventures Ltd., and dated July 9, 2015, do hereby certify that:

1. I am a Senior Geologist with Roscoe Postle Associates Inc. of Suite 501, 55 University Ave Toronto, ON, M5J 2H7.

2. I am a graduate of Lakehead University, Thunder Bay, Ontario, Canada, in 1997 with an Honours Bachelor of Science degree in Geology and in 1999 with a Master of Science degree in Geology. I am also a graduate Ryerson University in Toronto, Ontario, Canada, in 2010 with a Master of Spatial Analysis.

3. I am registered as a Professional Geologist in the Province of Ontario (Reg. #1583). I have worked as a geologist for a total of 15 years since my graduation. My relevant experience for the purpose of the Technical Report is:
   - Review and report as a professional geologist on many mining and exploration projects around the world for due diligence and regulatory requirements
   - Project Geologist on numerous field and drilling programs in North America, South America, Asia, and Australia
   - Experience with Gemcom block modelling

4. 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 purposes of NI 43-101.

5. I have not visited the Albany Property.

6. I share responsibility with my co-authors for Sections 1, 14, 25, and 26 of the Technical Report.

7. I am independent of the Issuer applying the test set out in Section 1.5 of NI 43-101.

8. I have previously co-authored an independent technical report on the Albany property.

9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

10. To the best of my knowledge, information, and belief, the Section Nos. for which I am responsible in the Technical Report contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated 9th day of July, 2015

(Signed & Sealed) ***"Katharine M. Masun"***

Katharine M. Masun, M.Sc., MSA, P.Geo.

MARC LAVIGNE

I, Marc Lavigne, ing., M.Sc., as an author of this report entitled “Technical Report on the Preliminary Economic Assessment of the Albany Graphite Project, Northern Ontario, Canada”, prepared for Zenyatta Ventures Ltd., and dated July 9, 2015, do hereby certify that:

1. I am a Principal Mining Engineer with Roscoe Postle Associates Inc. My office address is Suite 302, 1305 Boulevard Lebourgneuf, Québec, Québec, G2K 2E4.

2. I am a graduate of Université Laval, Québec, Québec, Canada, in 1987 with a B.A.Sc. in Mining Engineering, and in 1991 with a M.Sc. in Geostatistics.

3. I am registered as an Engineer in the Province of Québec, member of the Ordre des Ingénieurs du Québec (Reg. #99190). I have worked as a mining engineer for a total of 27 years since my graduation. My relevant experience for the purpose of the Technical Report is:
   - Specialist in geostatistics - project engineer, Roche Ltd Consulting Group, 1989 to 1995;
   - Project Manager, Roche Ltd Consulting Group, 1995 to 2006;
   - Senior Project Manager, Genivar Limited Partnership, 2006 to 2011;
   - Senior Mining Engineer, RPA from 2011 to 2015.

4. 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 purposes of NI 43-101.

5. I have not visited the Albany Property.

6. I am responsible for Sections 15 and 16, and share responsibility with my co-authors for Sections 1, 18, 21, 22, 25 and 26 of the Technical Report.

7. I am independent of the Issuer applying the test set out in Section 1.5 of NI 43-101.

8. I have had no prior involvement with the property that is the subject of the Technical Report.

9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

10. At the effective date of the Technical Report, to the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 9th day of July, 2015

(Signed & Sealed) ***“Marc Lavigne”***

Marc Lavigne, M.Sc., ing.

BRENNA J.Y. SCHOLEY

I, Brenna J.Y. Scholey, P.Eng., as an author of this report entitled “Technical Report on the Preliminary Economic Assessment of the Albany Graphite Project, Northern Ontario, Canada”, prepared for Zenyatta Ventures Ltd., and dated July 9, 2015, do hereby certify that:

1. I am Principal Metallurgist with Roscoe Postle Associates Inc. of Suite 501, 55 University Ave., Toronto, ON, M5J 2H7.

2. I am a graduate of The University of British Columbia in 1988 with a B.A.Sc. degree in Metals and Materials Engineering.

3. I am registered as a Professional Engineer in the Province of Ontario (Reg. #90503137) and British Columbia (Reg. #122080). I have worked as a metallurgist for a total of 25 years since my graduation. My relevant experience for the purpose of the Technical Report is:
   - Reviews and reports as a metallurgical consultant on a number of mining operations and projects for due diligence and regulatory requirements.
   - Senior Metallurgist/Project Manager on numerous base metals and precious metals studies for an international mining company.
   - Management and operational experience at several Canadian and U.S. milling, smelting and refining operations treating various metals, including copper, nickel, and precious metals.

4. 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 purposes of NI 43-101.

5. I have not visited the Albany Property.

6. I am responsible for preparation of Sections 13 and 17, and share responsibility with my co-authors for Sections 1, 21, 25, and 26 of the Technical Report.

7. I am independent of the Issuer applying the test set out in Section 1.5 of NI 43-101.

8. I have had no prior involvement with the property that is the subject of the Technical Report.

9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

10. At the effective date of the Technical Report, to the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 9th day of July, 2015.

(Signed & Sealed) ***“Brenna J.Y. Scholey”***

Brenna J.Y. Scholey, P.Eng.

DEREK CHRISTOPHER CHUBB

I, Derek Christopher Chubb, P. Eng., as an author of this report entitled "Technical Report on the Preliminary Economic Assessment of the Albany Graphite Project, Northern Ontario, Canada", prepared for Zenyatta Ventures Ltd., and dated July 9, 2015, do hereby certify that:

1. I am a Partner with ERM Consultants Canada Inc. of Toronto, Ontario.

2. I am a graduate of McMaster University in 1990 with a Bachelor of Chemical Engineering.

3. I am registered as a Professional Engineer in the Province of Ontario (Reg. 90328121). I have worked in the field of environmental management for a total of 23 years since my graduation. My relevant experience for the purpose of the Technical Report is:
    - Review and report as a consultant to numerous operations and projects on matters related to environmental and socio-economic management
    - Management of the design and implementation of environmental and socio-economic baseline data programs, regulatory submissions including EIS documents, and project permitting support
    - Senior management roles with accountability for environmental affairs at several mining companies including the VP Sustainability for a company seeking to develop a project in Nunavut

4. 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 purposes of NI 43-101.

5. I have not visited the Albany Property.

6. I am responsible for preparation of Section 20, and share responsibility with my co-authors for Sections 1, 25, and 26 of the Technical Report.

7. I am independent of the Issuer applying the test set out in Section 1.5 of NI 43-101.

8. I have had no prior involvement with the property that is the subject of the Technical Report.

9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

10. At the effective date of the Technical Report, to the best of my knowledge, information, and belief, the portions of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated 9^{h} day of July, 2015

(Signed & Sealed) "*Derek Christopher Chubb*"

Derek Christopher Chubb, P. Eng.