TECHNICAL REPORT AND RESOURCE ESTIMATE ON ALTO PARANÁ PROJECT

Alto Paraná Paraguay

PREPARED FOR URANIUM ENERGY CORP

Report for NI 43-101

Final

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1 SUMMARY

INTRODUCTION

Minerals Advisory Group LLC ("MAG") was retained by Uranium Energy Corp ("UEC"), to prepare an independent Technical Report and Resource Estimate on the Alto Paraná project near Ciudad del Este, Paraguay. In concept, the project consists of a proposed mining operation, beneficiation of the material to produce an ilmenite/titanomagnetite concentrate and smelting in a DC electric arc furnace to produce a high quality titanium slag and high quality pig iron products. The titanium slag would be sold as a feedstock for the production of titanium dioxide pigment. The pig iron would be sold to the iron and steel industry as a source of high quality iron units for the production of steel or to the foundry industry for the production of high quality ductile iron castings.

Uranium Energy Corp is a publicly listed company undertaking exploration and development work for a range of metals and minerals. The Alto Paraná project is a mineral project located in Eastern Paraguay in Alto Paraná province approximately 100 km north of Ciudad del Este. On July 10, 2017 UEC exercised its option to acquire all of the issued and outstanding shares of CIC Resources (Paraguay) Inc. ("CIC"). CIC owns 100% of Paraguay Resources Inc. (Cayman) which owns and controls Metálicos y No Metálicos S.R.L. ("MYNM"), the holder of 70,528 has of property (claim blocks) approved for prospecting and exploration. Additionally, CIC owns 100% of JDL Resources Inc. (Cayman), which owns 100% of Trier S.A. (Paraguay) ("Trier"). Trier S.A. controls 100% of the pilot plant and owns 30 has upon which the Alto Paraná project pilot plant resides.

The Alto Paraná resource is atypically high in titanium values when compared to most beach sand deposits. High iron laterite hosts heavy minerals containing high iron and titanium values as ilmenite, titanomagnetite and magnetite. Minerals Advisory Group, LLC of Tucson, Arizona, USA developed processing technology enabling the successful recovery of the heavy mineral components utilizing known and proven unit processes.

Prior to UEC acquiring rights to Alto Paraná properties, CIC identified mineralized laterite high in TiO_2 extending over 321,980 has in Paraguay. CIC controlled the mineralized area through their subsidiary MYNM. UEC has acquired MYNM properties and received Paraguayan Governmental approval to reduce the original land holdings to a total area of 70,498 has.

Previous work on the project included an extensive program of pitting and auger drilling, development of a test pit for tailings impoundment, construction of a pilot plant to evaluate the proposed beneficiation flow sheet, tailings handling, sedimentation and remediation, bench scale smelting tests, and production of approximately 108 tons of concentrate for a large scale smelting test.

GEOLOGY, MINERALIZATION AND EXPLORATION

Mineralization on the property consists of laterite containing ilmenite, titanomagnetite and magnetite derived from Early Cretaceous tholeitic basalts of the Paraná Basin and associated gabbro intrusions. The basalts and gabbros have been weathered to laterite to an average depth of approximately 7 m over a very extensive area. Kaolinite is the dominant mineral, representing 60% - 75% of the mineral assemblage. Ilmenite, magnetite and titanomagnetite are present in the laterite as discrete minerals ranging in particle size from <40 to 350 µm with average particle sizes in the 135 µm to 165 µm range. The grade of TiO_2 in the laterite ranges up to approximately 11% but is typically in the 5% to 9% TiO_2.

UEC proposes to further develop the project to eventually produce high quality titanium slag for use as feedstock in chloride process titanium dioxide pigment manufacture. A high quality pig iron co-product will also be produced. The pig iron is used in the manufacture of high quality ductile iron castings for automotive and machinery applications. Due to an apparent favorable-negotiated power cost averaging about $0.04/kW-hr from the Paraguayan Government (Source: CIC), a smelting operation envisions direct ilmenite feed to electric arc furnaces. Consideration of a pre-reduction roast versus no roast is recommended at the PEA or PES level of project analysis.

Exploration work on the property was initiated by CIC in 2009 with a program of widespread hand-dug pits consisting of channel samples at approximate 1 m vertical intervals. Samples were collected only in the laterite zone, which is the highly leached and texture lacking clay and iron oxide interval between the base of the soil surface and the top of the saprolite (decomposed bedrock) zone. The initial phase of pitting and sampling was followed up by more closely spaced deep pitting and shallow (1 m) auger drilling in 2010 and 2011. Sample spacing for the pits varies from approximately 1 km x 1 km to more than 4 km. There is only limited deep pit sampling on spacing at less than 1 km x 1 km. In total, 4,432 samples from deep pits and 2,992 1 m auger samples have been collected and analyzed. Most of the exploration activity was directed to the original Metálicos y No Metálicos S.R.L. concessions. The purpose of exploration work was to evaluate the original 321,980 ha project area in order to determine the area(s) of best grade and thickness. Based on this exploration work, CIC determined to reduce the original concession area to its current size.

METALLURGY AND PILOT PLANT OPERATIONS

CIC conducted extensive process development work with the objective of a viable process flow sheet for beneficiation of the heavy minerals from a kaolinite matrix. This work has included design, construction and operation of a 1.5 t/hour pilot plant in Paraguay. The process development work was very successful. The pilot plant produced approximately 108 tonnes of concentrate over a three-month period. During the operation of the pilot plant, significant process improvements were identified and implemented which result in significant reductions in reagent usage and the capacity to produce tailings at 38-40+% solids with paste thickener technology. Mass recovery of concentrate in the pilot plant operation was approximately 16.9% on 8% TiO_2 feed grade material, which compared well with laboratory test work. The concentrate produced during pilot plant operations demonstrated excellent quality. Table 1-1 illustrates the average results for 84t of concentrate and a comparison to the laboratory results.

TABLE 1-1: MAGNETIC CONCENTRATE COMPARISON – LABORATORY VS PILOT PLANT RESULTS
(SOURCE: MAG, 2012)

Concentrate	Barrels	Al_2O_3	BaO	CaO	Cr_2O_3	Fe_2O_3	K_2O	MgO	MnO	Na_2O	P_2O_5	SiO_2	SrO	TiO_2	LOI
	Number	%	%	%	%	%	%	%	%	%	%	%	%	%	%
HIMS	90	0.95	0.014	0.017	0.011	50.14	0.005	1.10	0.53	0.031	0.015	1.76	0.002	46.38	2.92
LIMS	94	1.68	0.008	0.015	0.026	67.06	0.003	0.60	0.49	0.031	0.028	0.86	0.003	29.07	1.72
TOTAL	**184**	**1.32**	**0.011**	**0.016**	**0.019**	**58.78**	**0.004**	**0.85**	**0.51**	**0.031**	**0.021**	**1.30**	**0.003**	**37.53**	**2.31**

Laboratory Result, Combined Product

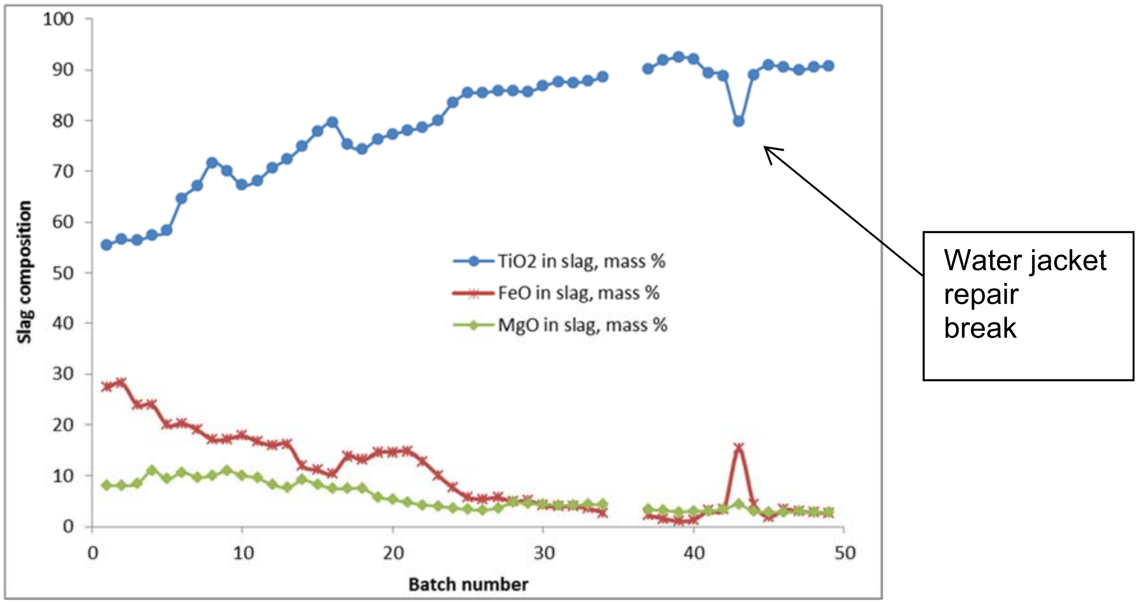
Concentrate Assay	Al_2O_3	BaO	CaO	Cr_2O_3	Fe_2O_3	K_2O	MgO	MnO	Na_2O	P_2O_5	SiO_2	SrO	TiO_2	LOI
	%	%	%	%	%	%	%	%	%	%	%	%	%	%
	1.31	**0.01**	**0.04**	**0.04**	**59.13**	**0.01**	**0.81**	**0.52**	**0.02**	**0.022**	**1.18**	**n.r.**	**36.89**	**0.01**

CIC shipped about 108 tonnes of concentrate in January, 2012 to MINTEK in South Africa for smelting in a MINTEK pilot plant. This work was completed during the last week of March, 2012 and was highly successful. The pilot plant operation demonstrated the following key MINTEK conclusions:

- Slag fluidity was excellent and much better than comparable ilmenite feeds;
- Slag quality was excellent, with slag assays consistently better than 85% and often exceeding 90%;
- Pig iron quality was excellent, with the Fe assay exceeding 97%;
- Energy requirements for both coal and electricity were well within the calculated requirement; and
- Furnace arc stability and heat transfer were excellent and much better than prior experience with other ilmenite feed stocks.

Figure 1-1 illustrates the evolution of the furnace performance during the course of the pilot plant test work.

FIGURE 1-1: MINTEK PILOT PLANT SMELTER RESULTS
(SOURCE, MINTEK, 2014)



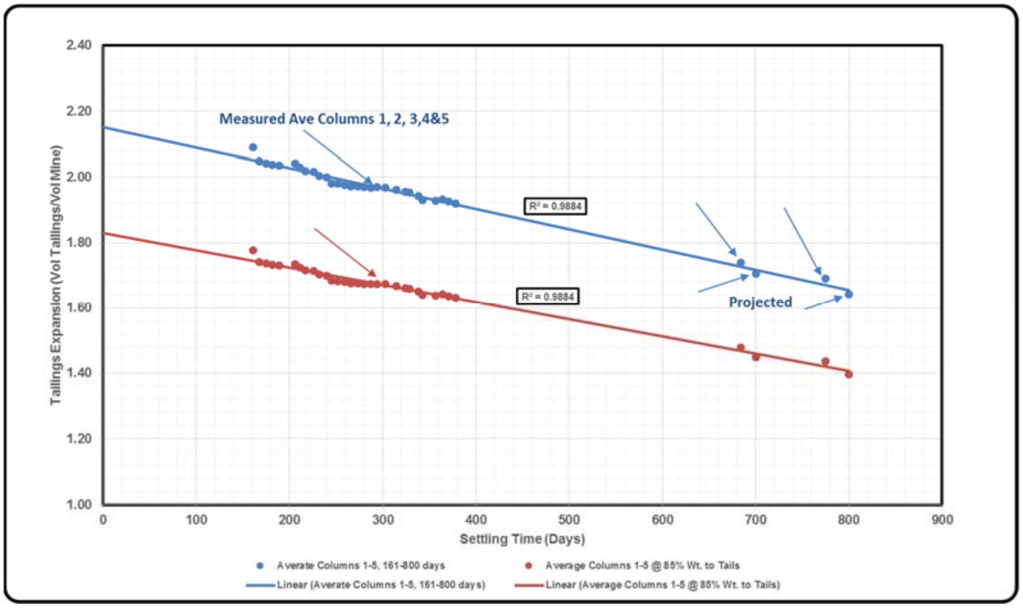
Graph of TiO_2, FeO and MgO concentrations in slag from furnace start up to 2 weeks into a 2 1/2 week pilot DC arc smelter test (Data to 3/27/2011)

TAILINGS STUDY

Continued study and characterization of Alto Paraná plant tails has been reported in a Minerals Advisory Group report entitled "Report of Investigation Paraná Tailings #2 and #3", February 2014 and March 2015. The in-situ tailings columns were placed in the lateritic ground and filling began on November 2, 2012 with the intent to allow tailings settling and compaction for an extended period of time in order to ascertain the in-place volume of tailings after deposition into a tailings impoundment. The decrease in tailings volume was monitored by measuring the drop-in tailings elevation in the columns and drilling samples from the columns for percent solids determination. The decrease in volume shown in Figure 1-2 was determined through shrinkage measurements as a function of percent solids. Average shrinkage in the columns was measured over a 775 day period and the rate of shrinkage projected to 800 days was compared to shrinkage as determined from drilling samples from the columns and determining average percent solids and converting from percent solids to degree of shrinkage. Figure 1-2 gives the data, the projected shrinkage and measured shrinkage for 664 and 775 days. The measured shrinkage is shown above the projected line.

FIGURE 1-2 (SOURCE: MAG, 2015)

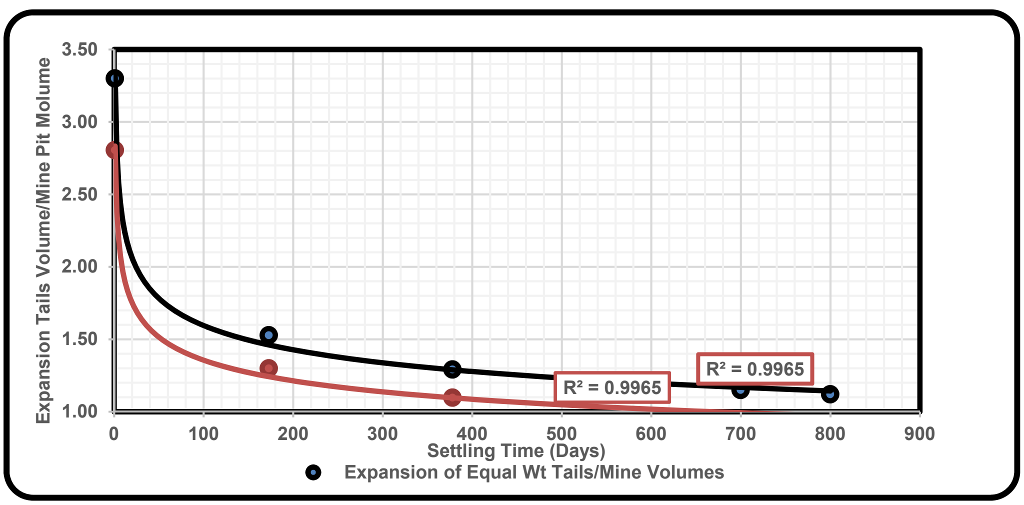
SHRINKAGE OF PARANÁ TAILINGS IN IN-SITU COLUMNS



Alto Paraná tailings deposited in an open pit and allowed to settle and dewater demonstrated greater shrinkage than in the column program. Shrinkage in the open pit is given in Figure 1-3.

FIGURE 1-3 (SOURCE: MAG, 2014)

SHRINKAGE AND DRYING OF TAILINGS IN AN OPEN PIT



Apparent from Figure 1-3 is the return of tailings to the pit in layers of 3.5 meters, which allows shrinkage equal to the volume of material removed from the pit in about 600 days. These tailings would average about 63% solids and in MAG's opinion have demonstrated sustained agricultural production. The reason the layered tails decrease in volume better than the full column material is due to evaporation, since unlike the in-situ columns the tailings pond surface is exposed to the sun and wind. In either case the columns and the experimental tailings impoundment were subjected to water incursion from rain events.

Testing on site of plant tails covered by grub and clear organic rich laterite from stripping of the mine surface (20-30 cm) has demonstrated crop growth similar to undisturbed laterite. See Figure 1-4.

FIGURE 1-4

GROWTH OF WHEAT ON PLANT TAILINGS

PROPERTY DESCRIPTION AND LOCATION

The Alto Paraná project is located in eastern Paraguay in the departments of Alto Paraná and Canindeyu (Figures 4-1 and 4-2). The initial project area covered a total of 321,980 has and was held through CIC's Paraguayan registered subsidiary Metálicos y No Metálicos Paraguay S.R.L. The UEC permits are held as and exploration permits and confer subsurface exploration rights.

The center of the property is located approximately 100 km north of Ciudad del Este. Ciudad del Este has a population of approximately 300,000 and is the second largest city in Paraguay. Ciudad del Este is the major commercial center for eastern Paraguay and is connected to the city of Foz do Iguaçu in Brazil via a bridge crossing the Paraná River. The Pan-American Highway connects Ciudad del Este to the capital, Asuncion, which is approximately 300 km to the east.

LAND TENURE

UEC's mineral properties are held as exploration permits. The coordinates of the individual ten (10) blocks of property are detailed in Table 4-2. There is sufficient land available within the Alto Paraná property holdings to provide for a required mine, process plant, tailings storage, and related infrastructure requirements. All MYNM and Trier properties are in good standing.

EXISTING INFRASTRUCTURE

Local infrastructure in the area is excellent. A paved national highway leading north from Ciudad del Este bisects the major portion of the property. The highway is paralleled by two high voltage lines, one of 66 KV and one of 220 KV, as well as lower voltage electric power lines. There is a major sub-station located at Itakary, approximately 20 km south of the current location of the pilot plant. This sub-station connects 220 KV and 66 KV power lines from the Itaipu Dam. A 500 KV line, the construction of which concluded at the end of 2013, follows the right-of-way of the 220 KV line. Local access and farm roads provide a well-developed network of access throughout the property.

Water transport on the Paraná River using barges is available for movement of bulk commodities from a network of ports located below the Itaipu dam near Ciudad del Este. This barge system provides for access to ocean ports in Uruguay and Argentina. The maximum allowable draft is approximately 3.6 m at Encarnaçion. This decreases to approximately 2.7 m at the ports located near Ciudad del Este. The Paraguay River is navigable for much of its length and Handysize ocean going vessels (25,000 dwt) are able to navigate to Asuncion. Barge transport and smaller size vessels are able to transit the river as far as Puerto Bahia Negra near the Brazilian border.

The Pan-American Highway crosses Paraguay from Ciudad del Este to Asuncion, with bridge connections to Brazil between Ciudad del Este and Foz de Iguacu and from Asuncion to Argentina. There is also a road connection between Encarnaçion and Rosadas in Argentina. The national system of highways is reasonably well developed and connects the major cities in Paraguay. A rail line connects Asuncion to Buenos Aires through a crossing from Encarnaçion to Rosadas. The rail line within Paraguay is in a state of disrepair. International airports are located at Asuncion and Ciudad del Este with direct connections to Chile, Argentina, Brazil, and Bolivia.

There are a number of small to mid-size towns within the property. Local supplies and services are available. UEC's predecessor, CIC, constructed a small pilot plant near the town of Minga Pora. This plant is connected to the local power grid. A test pit and water well for process water have been constructed. Local manual labour is generally available from the surrounding communities, while skilled labour and heavy construction equipment is sourced from Ciudad del Este. There are two aggregate crushing operations nearby, which can provide sufficient aggregate for construction purposes.

HISTORY

Prior to CIC's exploration efforts, no previous exploration for titanium bearing heavy minerals has been recorded.

GEOLOGY AND MINERALIZATION

Paraguay's geological framework consists of three cratons ranging in age from 3,800 to 2.7 Ma, composed of gneisses, granulites, and greenstone belts, and surrounded by 950 to 550 Ma old metamorphic rocks broadly referred to as the Brazilian Shield. These rocks are covered by intra-cratonic red beds of Carboniferous and Permian age, the Coronel Oveido Formation and Independencia Group (Table 7-1).

The sedimentary rocks of the basin are intruded by two rift related mafic units, the Alto Paraná Magmatic Suite and the Sapuci Magmatic Suite. Both units intrude as dikes and sills and outcrop as extrusive rocks along northwest regional structures. The Sapuci Group is alkali and consists of carbonatites, tephrites, nepheline syenites, shonkonites, malignites, phonolites, essexites, kimberlites and alkaline trachytes. The Alto Paraná Suite consists of tholeitic and alkalic basalts and lamprophides. The basalts are of early Cretaceous age and represent flows derived from the initial opening of the South Atlantic. Small areas of metamorphosed gabbro sills and dykes that cut the layered basalts are also present. These are also thought to be of Cretaceous-Jurassic age. Overlying the basalts and gabbros is a laterite plateau. The plateau is nearly flat with gently rolling terrain. (Gonzalez Nunez and Cubas Villalba, 2001; Fulfaro, 1996).

All of the higher TiO_2 grade occurrences are spatially related and are probably underlain by gabbro. The gabbro appears to contain more TiO_2, Ni, Sr, V and Zr than the basalt. Residual enrichment occurred at approximately constant volume during breakdown of silicate minerals from the mafic rocks. Weathering is also critical for TiO_2 enrichment. Iron is progressively leached from ilmenite during weathering. A representative section shows the following:

- 0.10 to 0.30 m thick surface lateritic soil with about 20% organic matter and concentration of Fe oxides, mainly magnetite. TiO_2 content for this zone is usually high and varies between 4% to 11% TiO_2;

- 5 m to 10 m thick zone of reddish brown laterite comprised predominantly of kaolin clay with hematite, limonite and SiO_2. Typically averages 3% to 11% TiO_2 but, in best zones, ±8% TiO_2. Fe oxide nodules 1 cm to 3 cm in diameter are commonly found at the base of the main laterite horizon. Kaolinite content varies from 50% to 75%. Small and irregular lenses of bauxite also occur close through this horizon. The water table is typically close to the saporlite/laterite interface; and

- 1 m to 3 m yellow-red saporlite with lower TiO_2, which grades downward into gabbro and basalts.

EXPLORATION STATUS

The property is classified as an Exploration Property. Additional exploration work will be required to advance the property to the next stage of development. Blocks A, C and D are up to date in the fulfilment of their obligations under the Mining Law. Blocks B and E may be subject to MOPC future requests to move from the exploration stage to an exploitation stage. (Source-Florio, Cardaozo & Alvarado-August 7, 2017).

MINERAL RESOURCES

Mineral resources on the reduced property have been classified as Inferred Resources based on the density of pit samples. Table 1-2 summarizes the resource estimate at <5, 6, and 7% TiO_2 cut-off grade.

Table 1-2: 2017 UEC RESOURCE ESTIMATE

Cut-Off %	% TiO_2	% Fe_2O_3	% Ilmenite calculated	Tonnes	Thickness (m)
<5.0	7.31	23.35	13.68	5.21 billion	6.50
6.0	7.41	23.58	13.95	4.94 billion	6.61
7.0	7.83	24.35	14.96	3.35 billion	6.40

Notes:
1. CIM definitions were followed for Mineral Resources.
2. The Qualified Person for this Mineral Resource estimate is David Brown, P. Geo.
3. Maximum Mineral Resources are estimated at a cut-off grade of approx. 5.0% TiO_2.
4. A minimum mining thickness of 1 meter was used.
5. The Mineral resource is based on a property area of 70,498 hectares.
6. Effective date December 2016.

By definition, Inferred Resources do not have demonstrated economic value and it is not known if they can be developed.

MINERAL RESERVES

No mineral reserves have been classified for the property.

MINING METHOD

Further studies of mining methods are necessary to bring the project to a PEA level.

ENVIRONMENTAL, PERMITTING AND SOCIAL CONSIDERATIONS

Metálicos y No Metálicos Paraguay S.R.L. completed a base line environment and social study on the Paraná Project. The work was completed by SVS Ingenieros, Empresa del Grupo SRK.

UEC will be required to submit a detailed environmental impact assessment (Evaluación de Impacto Ambiental) (“EIA”) for the project prior to obtaining a permit for mine development and construction of the processing and smelting facilities in accordance with Law 294/93. The EIA must cover all aspects of the project and detail to prevailing environmental conditions with respect to water, flora and fauna, air, noise, social and other factors and the expected impacts of the project on the physical and social environment, as well as any mitigating measures. The EIA must be prepared and submitted to SEAM by a locally registered and approved environmental consultant. No water or environmental laws have been passed in 2017 (Source: Victor Fernandez-UEC)

Permits to take water from either underground or surface sources for industrial purposes will be required in accordance with Law 3239/2007. Hydrogeological studies of the impact of water withdrawal on the subsurface aquifer and on surface water drainage patterns will be required. Permits will also be required for discharge of treated water to any receiving streams and for the disposal of tailings which could release water to the surrounding surface or subsurface environment. Characterization studies of tailings discharges will be required. Permits for taking potable water and for sewage disposal will be required under Law 1614/00.

Law 3239/2007 provides for a setback of 100 meters from the banks of any stream. Accordingly, mining activity is prohibited within the setback boundaries. Community consultations and approvals will be required as part of the environmental assessment process. The current status of such consultations is not known. No definitive mine closure requirements are contained within the current mining law. Mining companies are required to post a bond or hold insurance policies in the amount of 5% of the investment to cover the costs of reclamation.

CONCLUSIONS

The Alto Paraná resource represents a potential large and sustainable business opportunity for the production of high quality TiO_2 slag and pig iron. Due to the apparent low cost of power, Paraguay could become a major player in the heavy minerals industry.

The Alto Paraná resource appears to be homogeneous and much higher grade than existing mineral sands deposits. Further work on particle size distribution of the ilmenite/titanomagnetite fractions and variable laterite bulk density as a function of depth will help better define the resource.

Metallurgical processing of Alto Paraná materials at the pilot plant in Paraguay demonstrated successful recovery of +40μ heavy minerals into a combined high and low intensity magnetic concentrate for large scale electric smelting test work.

Large scale electric arc smelting of Alto Paraná high intensity/low intensity magnetic concentrate at MINTEK in South Africa demonstrated successful arc furnace production of 90% TiO_2 slag and 97% pig iron.

RECOMMENDATIONS

The following recommendations are made:

In accordance with UEC's intentions to advance the Alto Paraná project to the next level of development (economic viability of a proven resource), the following recommendations are made:

1. Re-start and improve the efficiency of the mothballed pilot plant in order to increase TiO_2 content of the concentrates shipped to the smelter;
2. Conduct infill auger drilling within the Initial Mining Area of CIC-CI in order to confirm a mineable (proven and probable category) reserve;
3. Acquire a Digital Terrain Model of the IMA in order to assist future ore reserve estimates and mine/infrastructure planning; and
4. Complete a Preliminary Economic Assessment report, including a revised resource model incorporating new data acquired as listed above.

TABLE 1-1 RECOMMENDED WORK AND BUDGET FOR PEA

Recommendations	Proposed Vendor	Estimate of Cost
		$ USD
Infill Drilling and XRF Sample Analysis	UEC Personnel	170,000
Particle Size Analysis and XRF Sample Analysis	MAG and UEC	35,000
Digital Terain Model (Initial Mining Area)	Selection by UEC	25,000
Preliminary Economic Assessment (PEA)	Selection by UEC	85,000
Develop a Proposed Mining Plan	Selection by UEC	35,000
Develop Environmental and Social Management Plan	NewFields	65,000
Partial Transportaion Study	Selection by UEC	10,000
Estimated Total Cost		**425,000**

2 INTRODUCTION

Minerals Advisory Group has prepared the Technical Report for Uranium Energy Corp as the issuer of "Technical Report and Resource Estimate on Alto Paraná Project".

Uranium Energy Corp is a publicly listed company undertaking exploration and development work for a range of metals and minerals. On July 10, 2017, UEC exercised its option to acquire all of the issued and outstanding shares of CIC Resources (Paraguay) Inc. CIC owns 100% of Paraguay Resources Inc. (Cayman) which owns and controls MYNM S.R.L., the holder of 70,498 has of concessions approved for exploration.

In 2012 CIC added a large TiO_2 producer to the development team - Tronox/Exxaro. Tronox/Exxaro undertook resource and engineering studies on the Alto Paraná project by agreement with CIC. Tronox/Exxaro selected Hatch Engineering as the engineer of record for their Key Elements Analysis Report ("KEA") and used their own geological personnel to study the resource. MAG is aware of data from the studies, but never fully evaluated the Hatch KEA and is not able to comment on the work. MAG has included in this Technical Report portions of the original Hains Engineering internal Technical Report as well as updated information from the May 4, 2015 CIC Technical Report and Resource Estimate on the Alto Paraná project. These earlier reports are listed in Item 27, References.

The purpose of this Technical Report and Resource Estimate is to provide a resource estimate based entirely on concessions newly acquired through MYNM and approved by the Paraguayan Government. In concept, the project consists of a proposed mining operation, beneficiation of the material to produce an ilmenite/titanomagnetite concentrate product, pre-reduction of the concentrate in a rotary kiln, and smelting of the reduced concentrate in a DC electric arc furnace to produce a high quality titanium slag and a high quality pig iron product. The titanium slag would be sold as a feedstock for the production of titanium dioxide pigment. The pig iron would be sold to the iron and steel industry as a source of high quality iron units for the production of steel or to the foundry industry for the production of high quality ductile iron castings. CIC completed a pilot study to include mining methods, processing of feed material, production of high grade ilmenite and titanomagnetite. Concentrates have been tested in South Africa at MINTEC and 85%+ TiO_2 slag and +97% pig iron production was demonstrated.

This Technical Report conforms to NI 43-101 Standards of Disclosure for Mineral Projects. CIC commissioned Minerals Advisory Group Research and Development ("MAG R&D") to develop a metallurgical process to recover ilmenite, titanomagnetite and magnetite from Alto Paraná laterite material. MAG R&D led the research effort and summarized the process development work in a CIC internal research report entitled "Report of Investigation 1 and Report of Investigation 2". Based on the laboratory work, Minerals Advisory Group personnel Dr. M.C. Kuhn and Kent McGrew designed, built and operated the pilot facility in Paraguay. See Item 27, References.

SOURCES OF INFORMATION

Early work by CIC and MYNM on the Alto Paraná TiO_2 project was carried out under the direction of CIC and its technical advisors at the time:

- Mr. Jorge Fierro, Chief Geologist
- Mr. J. David Lowell, Chairman
- Mr. Rob Reeves, Principal, 3R Associates

This report has been prepared by Dr. Martin C. Kuhn, PhD, PE & QP and David Brown, CPG & QP. Dr. Kuhn is responsible for Item 13 (Mineral Processing and Metallurgical Testing), Items 1 through 6 and 15 through 27. David Brown is responsible for Items 7 through12 and 14.

Site visits were carried out by:

- Martin Kuhn (2009-2013) Dr. Kuhn has visited the property more than 10 times. The last visit was February 15-23, 2013. Visits to the property began in early 2011 to identify potential staff to man the proposed pilot plant near Minga Pora, Paraguay. In addition to identifying staff, potential contractors to provide infrastructure for the green-fields plant site were interviewed. A deep water well was drilled (280 m) and a 50,000 L fresh water tank was built and installed at site. Electrical power from a 66 KV line was installed with a transformer to provide power to the pilot plant and site. During the site preparation period, MAG contracted with Lyntek in Denver, CO to provide equipment and materials for the pilot plant. In August of 2011 the pilot plant arrived for installation at site and Martin Kuhn was on site supervising the construction effort. In 2011 MAG supplied engineers to assist in construction, ramp-up and operation of the pilot plant. In November and early December of 2011, Kuhn provided plant supervision in the production of concentrate for MINTEK. During the periods of September 21-26, 2012, October 13-16, 2012 and October 28-November 6, 2012, Kuhn worked at the pilot plant supervising installation of plant improvements, the installation and operation of a paste thickener and filling of the tailings columns. His final visit to the pilot plant was February 15-22, 2013. During this visit he provided technical input to pilot plant visitors.

- David Brown (January 29-February 4, 2014) The 2014 site visit by Brown was primarily to observe sampling methods and sample sites, including several of the deep pits. During this visit he observed and assisted with the collection of samples from three auger holes, which were analyzed in the field with a Niton portable spectrometer. The field observation also included five measured sections from road cuts, using the Niton device. The purpose of these sections was to assess the vertical variability in Ti and Fe within the lateritic weathering profile. Additionally, the author visited a quarry to observe the host basalt and measure primary Ti grades in the field with the Niton. He also visited the pilot plant in order to inspect the equipment and processes used to concentrate the Ti-bearing material.

A title opinion has been provided by UEC's local counsel.

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

LIST OF ABBREVIATIONS

Units of measurement used in this report conform to the Imperial system. All currency in this report is in US dollars (US$), unless otherwise noted.

μ	Micron
°C	degree Celsius
°F	degree Fahrenheit
μg	Microgram
A	Ampere
a	Annum
bbl	Barrels
Btu	British thermal units
C$	Canadian dollars
cal	Calorie
cfm	cubic feet per minute
cm	Centimeter
cm^2	square centimeter
d	Day
dia.	Diameter
dmt	dry metric tonne
dwt	dead-weight ton
ft	Foot
ft/s	foot per second
ft^2	square foot
ft^3	cubic foot
g	Gram
G	giga (billion)
Gal	Imperial gallon
g/L	gram per litre
g/t	gram per tonne
gpm	Imperial gallons per minute
gr/ft^3	grain per cubic foot
gr/m^3	grain per cubic meter
hr	Hour
has	Hectares
hp	Horsepower
in	Inch
in^2	square inch
J	Joule
k	kilo (thousand)
Kcal	Kilocalorie
Kea	key element analysis
kg	Kilogram
km	Kilometer
km/h	kilometer per hour
km^2	square kilometer
kPa	kilopascal
kVA	kilovolt-amperes
kW	kilowatt
kWh	kilowatt-hour
L	litre
L/s	litres per second
m	meter
M	mega (million)
m^2	square meter
m^3	cubic meter
min	minute
MASL	meters above sea level
mm	millimeter
mph	miles per hour
MVA	megavolt-amperes
MW	megawatt
MWh	megawatt-hour
m^3/h	cubic meters per hour
opt, oz/st	ounce per short ton
oz	Troy ounce (31.1035g)
ppm	part per million
psia	pound per square inch absolute
psig	pound per square inch gauge
RL	relative elevation
s	second
st	short ton
stpa	short ton per year
stpd	short ton per day
t	metric tonne
tpa	metric tonne per year
tpd	metric tonne per day
US$	United States dollar
USg	United States gallon
USgpm	US gallon per minute
V	volt
W	Watt
wmt	wet metric tonne
yd^3	cubic yard
yr	year

3 RELIANCE ON OTHER EXPERTS

This report has been prepared by Minerals Advisory Group for UEC. The information, conclusions, opinions, and projections herein are based on:

- Information available to MAG at the time of preparation of this report;
- Assumptions, conditions and qualifications as set forth in this report;
- Data, reports and other information supplied at one time by CIC and other third party sources. MAG has relied on UEC and Paraguayan counsel for an opinion on the reported property status. Documents from UEC have been forwarded to MAG supporting that all claim blocks are in good standing. VOUGA Abogados, Paraguayan legal counsel for CIC and Victor Fernandez (UEC) have all validated Table 4-2; and Maria Betharram Ardissone of law firm Fiorio, Cardozo and Alvarado.
- MAG has relied on UEC for the corporate organization chart given in Item 4, Table 4-1, Property Description and Location.

For the purpose of this report, MAG has also relied on ownership information provided by UEC and UEC counsel. MAG has relied on local counsel's opinion to validate property status. UEC, through UEC local counsel, affirms that all permits, concessions and claims are in good standing. MAG has relied upon UEC counsel in Paraguay to supply documents relating to environmental permit applications.

4 PROPERTY DESCRIPTION AND LOCATION

LOCATION

UEC's Alto Paraná project is located in eastern Paraguay in the departments of Alto Paraná and Canindeyu.

The center of the property is located approximately 100 km north of Ciudad del Este. Ciudad del Este has a population of approximately 300,000 and is the second largest city in Paraguay. Ciudad del Este is the major commercial center for eastern Paraguay and is connected to the city of Foz do Iguaçu in Brazil via a bridge crossing the Paraná River.

The Pan-American Highway connects Ciudad del Este to the capital, Asuncion, which is approximately 300 km to the east.

UEC ORGANIZATION AND STRUCTURE

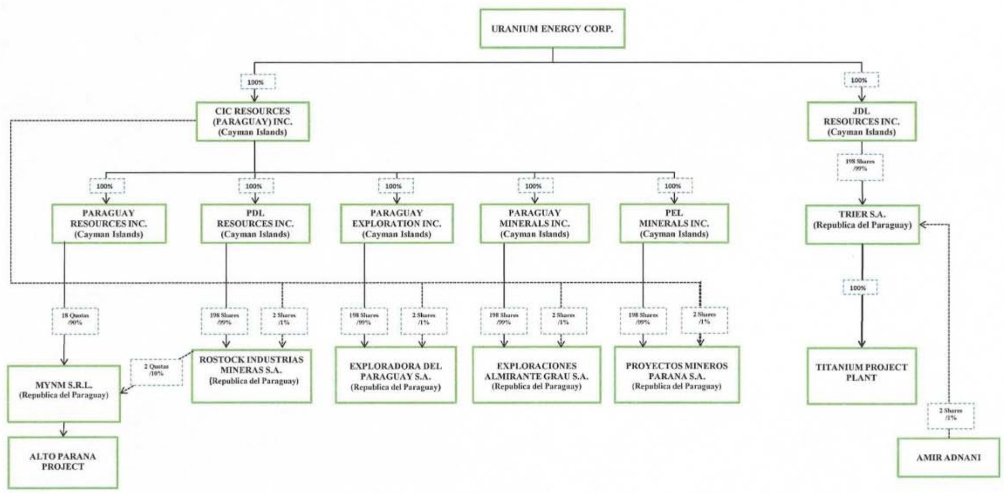
UEC's mineral properties are held as exploration permits. The coordinates of the individual ten (10) blocks of property are detailed in Table 4-2. There is sufficient land available within the Alto Paraná property holdings to provide for a required mine, process plant, tailings storage, and related infrastructure requirements. All properties are in good standing.

UEC is a publicly listed company undertaking exploration and development work for a range of metals and minerals. The Alto Paraná project is a mineral project located in Eastern Paraguay in Alto Paraná province approximately 100 km north of Ciudad del Este. On July 10, 2017 UEC exercised its option to acquire all of the issued and outstanding shares of CIC Resources (Paraguay) Inc. CIC owns 100% of Paraguay Resources Inc. (Cayman) which owns and controls Metálicos y No Metálicos S.R.L., the holder of 70,498 has approved for exploration.

UEC owns 100% of CIC Resources Inc. (Paraguay) and through JDL Resources Inc. (Cayman Islands) owns 99% of Trier S.A. (Paraguay). Trier S.A. controls 100% of the pilot plant and 30 has of property, fee simple, upon which the Alto Paraná project pilot plant resides (see Figure 4-1)

Figure 4-1

Uranium Energy Corp. Organization Chart (Source: UEC)



UEC is in process of liquidating Paraguayan entities; Rostock Industrias Mineras S.A., Exploradora del Paraguay S. A., Exploractones Almirante Grau and Proyectos Mineros Paraná S.A. Once these entities have been liquidated, the Cayman entities - PDL Resources Inc, Paraguay Exploration Inc., Paraguay Minerals Inc. and PEL Minerals Inc. - will be dissolved. After dissolution, UEC, CIC and MYNM will remain and control 70,498 has of exploration concessions, and JDL Resources Inc. and Trier, S.A. will control the titanium project pilot plant, and 30 has fee simple land.

MINING LAW IN PARAGUAY

Paraguay has no significant history of mining. Mining activity in Paraguay is governed by the national constitution under Law 3180/07 (the "Mining Law") and as amended by various articles in Laws No. 4269/2011 and 4935/2013. All mineral resources with the exception of sand and gravel are vested in the State. The Ministry of Public Works and Communications ("MOPC") is charged with the responsibility of administrating the Mining

Law and regulating mining activities. The Mining Law does not cover petroleum, petroleum by-products or other hydrocarbons.

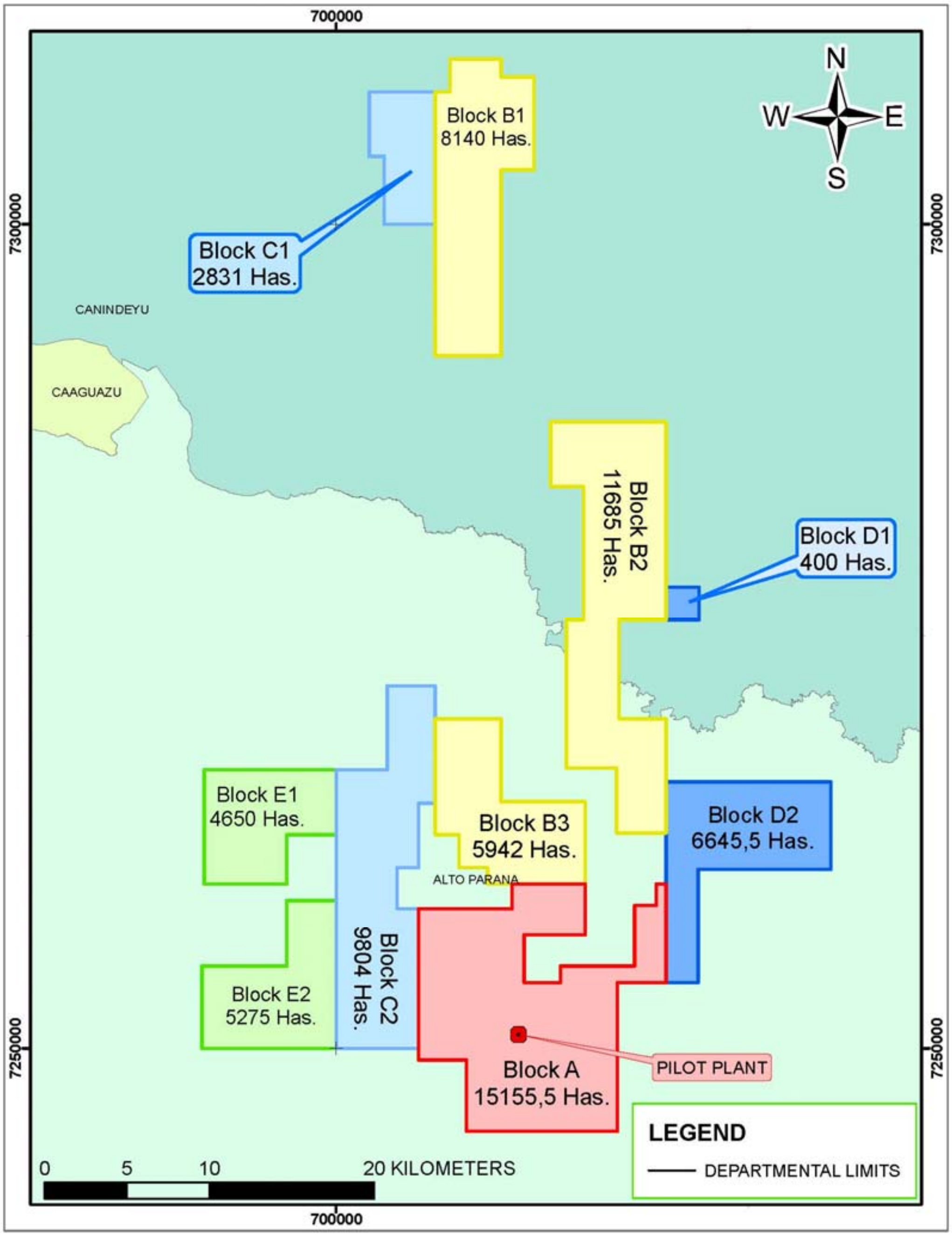
Mineral rights in Paraguay are in three forms: Permiso de Prospección (Prospecting Permit), Permiso de Exploración (Exploration Permit) and Concesión de Explotación (Mining Concession). Each type of mining right has specific attributes and obligations.

The exploration land is privately owned and mainly farm land, accessible from main highways and unpaved farm roads. Prospecting and exploration permits allow UEC to dig pits, trenches and drill, but it is necessary to obtain the suffrage land owners' permission to work on their property. Figures 4-2 and 4-3 show the relative locations of UEC land in Paraguay and a summary map of 10 approved exploration blocks (UEC Concessions).

Figure: 4-2

Location Map (Source: D. Hains, 2012)

Figure 4-3
Map of UEC Concessions (Source: UEC, 2017)



Prospecting and exploration rights are granted by the State through permits for specified periods of time. Mining concessions are enacted as specific laws in the national Congress. Mining concessions have specific attributes with respect to the length of term of the concession and the associated financial obligations and benefits. All mining rights must be recorded in the Mining Registry to be valid (not in force yet). The Mining Law (Law 3180/07) was amended by Law No. 4269/11 which was made official on July 15, 2011. The amendments provide additional flexibility in mineral exploration and development and incentives for mining companies. Specifically, the amendments to the Mining Law provide for exemption from local or departmental (provincial) taxes on services provided to the mining rights holder by sub-contractors, and value added tax free import of all non-locally produced machinery, vehicles, supplies, tools and materials necessary for the mining activities during the prospecting and exploration phases.

Exploration, prospecting and mining activities are subject to prior approval of environmental plans and filing of environmental impact statements and/or environmental impact assessments with the Secretaria del Ambiente (“SEAM”). The construction and operation of the pilot plant was approved pursuant to an Environmental Impact Assessment report and the regulations pertaining to the existing Environmental License for Exploration.

All prospecting and exploration permits held by MYNM are in good standing. Insurance policies are in force which requires 10% of investment commitment per year, on all active prospecting and exploration permit areas. The location of existing, pending, and proposed concession areas are shown on Figures 4-2 and 4-3. On Figure 4-3, there is a prominent blank area internal to the proposed final 70,498 has concessions reduction. This internal area is not part of the proposed resource development block because the identified resources in this area are consistently below the lower cut-off grade of 6% TiO_2. This area is surrounded by Blocks A, B3 and C2. To the best of the QP’s knowledge (Brown), there are no known factors or risks which could affect access, title, or the right, or ability to perform work on the properties shown on Figures 4-2 and 4-3. Block B3 may be subject to review by MOPOC relative to an extension of the exploration stage. (Source-Florio, Cardozo & Alvarado).

PROPERTY DIMENSIONS AND LAND STATUS

UEC's mineral properties are held as exploration permits. The coordinates and status of the individual properties are detailed in Table 4-2.

There is sufficient land available within the Alto Paraná property holdings to provide for all required mine, process plant, tailings storage, and related infrastructure requirements.

LAND TENURE

Table 4-2 provides a summary of the mineral registration information associated with each of the areas comprising the Alto Paraná project

Table 4-2: UEC Property Coordinates; Alto Parana Project (Source UEC)

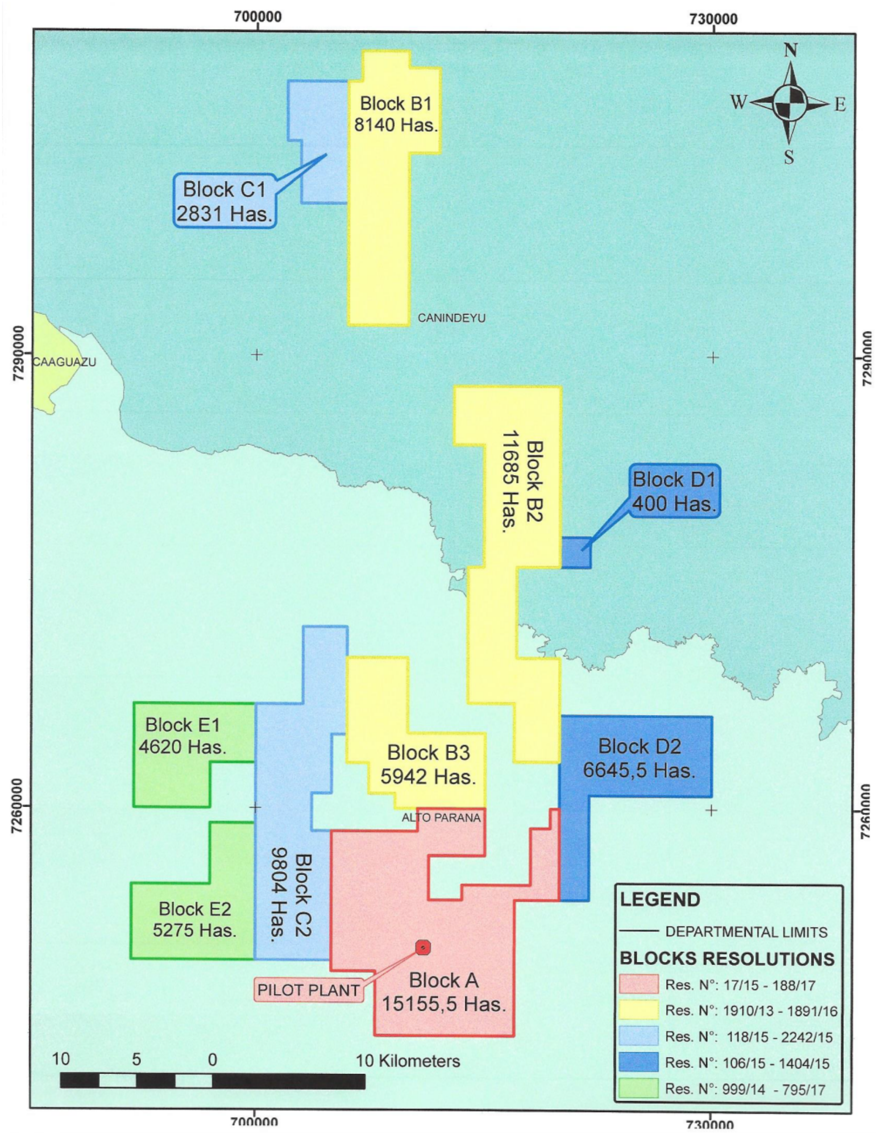
Block	Registry		Area	Ownership	Vertex	Datum Zone 21J		Permit Type	Permit Status	Approval	Expiration	Environmental	Approval	Expiration
	Code	File Number	(ha)			N WGS84	E WGS84			Date	Date	Licence	Date	Date
A	I7-i	17/15 (1st extension) 188/17 (reduction)	15,155.5	MYNM	1	7260000	720000	Exploration	2nd. year of extension of exploration phase	14/02/2017	14/02/2018	DGCCARN Nr. 1272/15	22/04/2015	22/04/2017
					2	7254000	720000							
					3	7254000	717050							
					4	7245000	717050							
					5	7245000	707900							
					6	7249300	707900							
					7	7249300	705000							
					8	7258500	705000							
					9	7258500	710670							
					10	7260000	710670							
					11	7260000	715100							
					12	7256900	715100							
					13	7256900	711400							
					14	7254000	711400							
					15	7254000	713600							
					16	7255000	713600							
					17	7255000	718100							
					18	7258700	718100							
					19	7258700	719400							
					20	7260000	719400							
B1	I7-a1	1910/13 1891/16 (reduction)	8,140.0	MYNM	1	7310000	710000	Exploration	In process of granting extension of exploration permit pass to exploitation (pending). Reduction was approved by Res. 1891/2016 (31, Oct, 2016)	31/10/2016	26/12/2016	DGCCARN Nr. 1271/15	22/04/2015	22/04/2017
					2	7308900	710000							
					3	7308900	712000							
					4	7303300	712000							
					5	7303300	710000							
					6	7292000	710000							
					7	7292000	706000							
					8	7308000	706000							
					9	7308000	706900							
					10	7310000	706900							
B2	I7-a	1910/13 1891/16 (reduction)	11,685.0	MYNM	1	7288000	720000	Exploration	In process of granting extension of exploration permit or pass to exploitation (pending). Reduction was approved by Res. 1891/2016 (31, Oct, 2016)	31/10/2016	26/12/2016	DGCCARN Nr. 1271/15	22/04/2015	22/04/2017
					2	7276000	720000							
					3	7276000	717150							
					4	7270000	717150							
					5	7270000	720000							
					6	7263100	720000							
					7	7263100	717000							
					8	7267000	717000							
					9	7267000	713950							
					10	7276000	713950							
					11	7276000	715000							
					12	7284100	715000							
					13	7284100	713000							
					14	7288000	713000							
B3	I7-e3	1910/13 1891/16 (reduction)	5,942.0	MYNM	1	7270000	710000	Exploration	In process of granting extension of exploration permit or pass to exploitation (pending). Reduction was approved by Res. 1891/2016 (31, Oct, 2016)	31/10/2016	26/12/2016	DGCCARN Nr. 1271/15	22/04/2015	22/04/2017
					2	7265000	710000							
					3	7265000	715100							
					4	7260000	715100							
					5	7260000	709180							
					6	7261000	709180							
					7	7261000	707450							
					8	7263000	707450							
					9	7263000	706000							
					10	7270000	706000							

C1	H7-m	118/15; 2242/15 (reduction)	2,831.0	MYNM	1	7308000	706000	Exploration	3rd trimester of the 2nd year Exploration	28/01/2015	28/01/2018	DGCCARN Nr. 625/16	29/07/16	29/07/2018
					2	7300000	706000							
					3	7300000	702900							
					4	7304100	702900							
					5	7304100	702000							
					6	7308000	702000							
C2	H7-e3	118/15; 2242/15 (reduction)	9,804.0	MYNM	1	7272000	706000	Exploration	3rd trimester of the 2nd year Exploration	02/12/2015	02/12/2018	DGCCARN Nr. 625/16	29/07/16	29/07/2018
					2	7264900	706000							
					3	7264900	705000							
					4	7261000	705000							
					5	7261000	703700							
					6	7258500	703700							
					7	7258500	705000							
					8	7250000	705000							
					9	7250000	700000							
					10	7266900	700000							
					11	7266900	703100							
					12	7272000	703100							
D1	I7-a4	106/15; 1404/15 (reduction)	400.0	MYNM	1	7278000	722000	Exploration	3rd trimester of the 2nd year Exploration	21/08/2015	21/08/2018	DGCCARN Nr. 624/16	29/08/2016	29/08/2018
					2	7276000	722000							
					3	7276000	720000							
					4	7278000	720000							
D2	I7-e4	106/15; 1404/15 (reduction)	6,645.5	MYNM	1	7266200	730000	Exploration	3rd trimester of the 2nd year Exploration	21/08/2015	27/01/2018	DGCCARN Nr. 624/16	29/08/2016	29/08/2018
					2	7260900	730000							
					3	7260900	721950							
					4	7254000	721950							
					5	7254000	720000							
					6	7266200	720000							
E1	H7-h	999/14	4,620.0	MYNM	1	7266900	700000	Exploration	In process of granting extension of exploration permit (pending). Reduction was approved by Res. 795/2017 (29, May, 2017)	5/9/2014	5/9/2017	DGCCARN Nr. 623/16	29/08/2016	29/08/2018
					2	7263000	700000							
					3	7263000	697000							
					4	7260000	697000							
					5	7260000	692000							
					6	7266900	692000							
E2	H7-h	999/14	5,275.0	MYNM	1	7259000	700000	Exploration	In process of granting extension of exploration permit (pending). Reduction was approved by Res. 795/2017 (29, May, 2017)	5/9/2014	5/9/2017	DGCCARN Nr. 623/16	29/08/2016	29/08/2018
					2	7250000	700000							
					3	7250000	691850							
					4	7255000	691850							
					5	7255000	697000							
					6	7259000	697000							
			70,498.0											

Figure 4-4 shows UEC approved blocks and in the legend indicates the Governmental block resolution numbers as a function of block area (has) and color. The corresponding Table 4-2 above enumerates the precise locations by map coordinate corners.

Figure 4-4

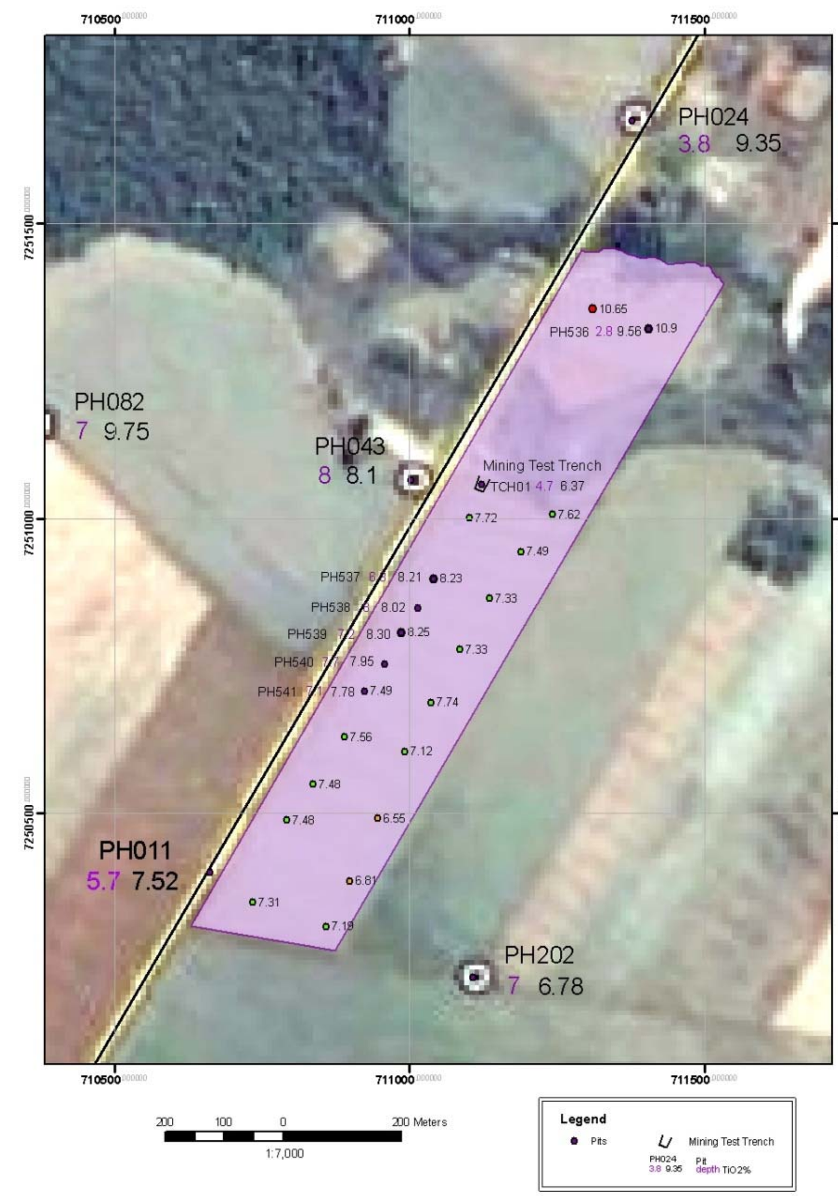
UEC concessions by block designations and resolution numbers. (Source: UEC)



All listed resolutions from the Paraguayan Government have been reviewed and correspond to the relative areas exhibited in Figure 4-4.

There is sufficient land available within the Alto Paraná property holdings to provide for all required mine, process plant, tailings storage, and related infrastructure requirements. UEC owns in fee simple (100% Interest) a 30 ha parcel within the UEC exploration permits. This property is the site of the pilot plant and test pit and is illustrated in Figure 4-5.

FIGURE 4-5: UEC PILOT PLANT AREA



PROJECT PERMITTING

The project will be required to submit a detailed environmental impact assessment (Evaluación de Impacto Ambiental) ("EIA") for the project prior to obtaining a permit for mine development and construction of the processing and smelting facilities in accordance with Law 294/93. The EIA must cover all aspects of the project and detail to prevailing environmental conditions with respect to water, flora and fauna, air, noise, social and other factors and the expected impacts of the project on the physical and social environment, as well as any mitigating measures. The EIA must be prepared and submitted to SEAM by a locally registered and approved environmental consultant.

Permits to take water from either underground or surface sources for industrial purposes will be required in accordance with Law 3239/2007. Hydrogeological studies of the impact of water withdrawal on the subsurface aquifer and on surface water drainage patterns will be required. Permits will also be required for discharge of treated water to any receiving streams and for the disposal of tailings which could release water to the surrounding surface or subsurface environment. Characterization studies of tailings discharges will be required.

Permits for taking potable water and for sewage disposal will be required under Law 1614/00.

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

ACCESSIBILITY

Paraguay is a small land-locked country covering 406,752 km^2. It is bordered by Argentina, Bolivia and Brazil. The country is separated from Brazil and Argentina on the east and southeast by the Paraná River and from Argentina on the west by the Pilcomayo River and Paraguay River. Bolivia borders on the north. The population is approximately 6 million with 57% living in the rural areas and 43% in urban areas. The capital of Paraguay is Asunçion, a modern city with a population of approximately 2 million. The country has a modern system of highways and international airports in Asunçion and Ciudad del Este, the second largest city. The economy is largely based on agriculture, with some light manufacturing and tourism. Eastern Paraguay, especially the department of Alto Paraná where the project is located, is intensively farmed. Due to the location of the country between Argentina and Brazil, smuggling has also been a major activity in the past.

Paraguay is a major exporter of hydroelectric power, with major dams at Itaipu, Acaray and Yacyreta on the Paraná River. The Itaipu dam is the second largest in the world with a rated generating capacity of 14,000 MW and supplies approximately 90% of Paraguay's power requirements. The Itaipu Dam is located just north of Ciudad del Este and approximately 80 km south of the center of the property. The Itaipu Dam is a joint operation between the governments of Paraguay and Brazil. The Yacyreta Dam is located near Encarnaçion on the Paraná River and has a rated generating capacity of 4,000 MW. It is a joint operation between the governments of Paraguay and Argentina. The Acaray Dam is located at Ciudad del Este and has a rated generating capacity of 200 MW. The availability of abundant, low cost hydroelectric power is one of the major industrial attractions of Paraguay.

The property is located in the Department of Alto Paraná in eastern Paraguay. The property covers a very large area extending 127.9 km in a north-south direction and 73.2 km west to east. The pilot plant is located near UTM coordinates 71179E and 7250879 N (WGS 84, Zone 21 J). Access to the property is provided by a paved highway leading north from Ciudad del Este and roughly bisecting the property to the town of Cruce Carolina.   Ciudad del Este is located approximately 80 km south of the pilot plant area. Ciudad del Este is located approximately 300 km east and is connected to the capital, Asunción, by the Pan-American Highway. The Pan-American Highway connects to Brazil via a crossing of the Paraná River from Ciudad del Este to Foz de Iguaçu. Foz de Iguaçu, a city of approximately 320,000, is connected to the port of Santos via a national highway and railroad. Another crossing to Brazil is also available at the Itaipu Dam. However, this is not a commercial crossing. A network of good quality local farm roads throughout the concession areas provides excellent local access to all areas of the property.

The Alto Paraná project elevations are variable and range between 150-380 meters above sea level.

Asuncion and Ciudad del Este provide international air travel access with connections to Brazil, Argentina, Chile and Bolivia. The Paraná River is navigable up to the Itaipu Dam and barge shipping to ports near Ciudad del Este (elevation at airport is 258 m) is available from ports in Argentina and Uruguay. Shipments to the property can also be made through Asuncion via the Paraguay River and Rio Plate from Argentina.

CLIMATE

The climate in the project area is classified as semi-tropical. Rainfall averages approximately 1,800 mm per year, with a peak of approximately 225 mm in November and a minimum of approximately 50 mm in July. While there is no distinct dry season, the winter months of June through August do show significantly less rainfall than other months. Rainfall in the peak months is often in the form of intense downpours. Temperatures are typically moderate, with peak daytime temperatures experienced during the summer months of November through March. The maximum temperature in March averages approximately 28^0C, with a minimum of approximately 20^0C. June and July are the coolest months, with maximum temperatures in the range of 21^0C to 23^0C and minimum temperatures in the range of 11^0C to 12^0C. During the pilot plant campaign, weather conditions allowed drying of tailings material and demonstrated sufficient evaporation to permit significant evaporation and shrinkage of tailings material.

Neither weather nor climate poses a risk to mine or plant operation. The Paraná laterites are shallow and can be extracted by back hoe and front-end loader. No blasting of material is necessary. Heavy rain may slow mining down, however most storm events are intermittent and mining machinery will likely operate on rock and prepared road surfaces.

LOCAL RESOURCES

The project area is the center of major agricultural activity and is well serviced by local roads, agricultural and mechanical equipment suppliers and light industry. There are several small to mid-size towns located along the highway bisecting the property which can provide local services. Ciudad del Este is the second largest city in Paraguay, with a population of approximately 300,000. A full range of services including heavy equipment supply and repair and electrical and mechanical equipment and engineering support is available in Ciudad del Este.

There is sufficient land available on the property for all necessary mining, beneficiation and metallurgical operations and plant and equipment.

INFRASTRUCTURE

Local infrastructure in the area is excellent. A paved national highway leading north from Ciudad del Este bisects the major portion of the property. The highway is paralleled by two high voltage lines, one of 66 KV and one of 220 KV, as well as lower voltage electric power lines. There is a major sub-station located at Itakary, approximately 20 km south of the current location of the pilot plant. This sub-station connects 220 KV and 66 KV power lines from the Itaipu Dam. A 500 KV line is currently under construction and will follow the right-of-way of the 220 KV line. Local access and farm roads provide a well-developed network of access throughout the property.

Water transport on the Paraná River using barges is available for movement of bulk commodities from a network of ports located below the Itaipu dam near Ciudad del Este. This barge system provides for access to ocean ports in Uruguay and Argentina. The maximum allowable draft at low water is approximately 3.6 m at Encarnaçion. This decreases to approximately 2.7 m at the ports located near Ciudad del Este. The Paraguay River is navigable for much of its length and Handysize ocean going vessels (25,000 dwt) are able to navigate to Asuncion. Barge transport and smaller size vessels are able to transit the river as far as Puerto Bahia Negra near the Brazilian border.

The Pan-American Highway crosses Paraguay from Ciudad del Este to Asunçion, with bridge connections to Brazil between Ciudad del Este and Foz de Iguacu and from Asunçion to Argentina. There is also a road connection between Encarnaçion and Rosadas in Argentina. The national system of highways is reasonably well developed and connects the major cities in Paraguay. A rail line connects Asunçion to Buenos Aires through a crossing from Encarnaçion to Rosadas. The rail line within Paraguay is in a state of disrepair.

International airports are located at Asunçion and Ciudad del Este with direct connections to Chile, Argentina, Brazil, and Bolivia.

There are a number of small to mid-size towns within the property. Local supplies and services are available. CIC constructed a small pilot plant near the town of Minga Pora. This plant is connected to the local power grid. A test mine and water well for process water have been constructed. Local manual labour is generally available from the surrounding communities, while skilled labour and heavy construction equipment is sourced from Ciudad del Este. There are two aggregate crushing operations nearby which can provide sufficient aggregate for construction purposes. MYNM also maintains an administrative office in Asunçion. Both the pilot plant and the office have internet connections.

PHYSIOGRAPHY

The project area is gently rolling farmland with a maximum elevation difference of approximately 30 m. Drainages are generally west to east leading to the Paraná River. Drainage valleys are typically wooded. Environmental regulations require farmers to set aside 10% of the land for tree cover. Similar regulations apply to mining activities.

Stream water in the project area is the property of the Itapúa Dam and mining activity is limited within 100 m of the stream.

6 HISTORY

There are no records of exploration or historical mining activity in the MYNM permitted area prior to exploration activities initiated by CIC. UEC purchased the assets of CIC Resources Inc. (CIC). Limited exploration by Tronox/Exxaro was accomplished during the KEA study conducted by Hatch under the Tronox/Exxaro CIC joint supervision. MAG has not presented any of the Tronox/Exxaro exploration data.

7 GEOLOGICAL SETTING AND MINERALIZATION

GEOLOGICAL SETTING

Paraguay has limited information about its mineral wealth and geological setting. There is no government Geological Survey and information is either private, company generated, or in scattered scientific reports. The only complete geological map of Paraguay is at 1:1,000,000 scale produced in 1986 by Fulfaro and Avarenga. The metallogenic map of Paraguay was completed by Caceres and Palmieri in 1986. These geologic and metallogenic maps summarize the regional work done in Paraguay between 1979 and 1983 by Anshutz Corporation, who staked 64,000 km^2 in eastern Paraguay and performed a reconnaissance exploration program of mapping, Landsat image analysis and radiometric and magnetic airborne surveys. Anshutz Corporation left Paraguay in 1987. Figures 7.1 and 7.2 show the geology and mineral occurrences of eastern Paraguay. The only current active metal mine in Paraguay is the Paso Yobai project owned by Latin American Minerals, although other properties are under active exploration. The only other active mining activity is in quarries for supply of aggregate.

A program, sponsored by the German government, exists to map Paraguay at 1:100,000 scale but only 4 sheets of 79 have been completed.

REGIONAL GEOLOGY

Paraguay's geological framework consists of three cratons ranging in age from 3,800 to 2.7 Ma, composed of gneisses, granulites, and greenstone belts, and surrounded by 950

– 550 Ma old metamorphic rocks broadly referred to as the Brazilian Shield. These rocks are covered by intra-cratonic red beds of Carboniferous and Permian age, the Coronel Oveido Formation and Independencia Group (Table 7-1). The geologic evolution of Paraguay to this time was related to the Gondwana Super Continent, which consisted of Africa, Australia and South America.

FIGURE 7-1: REGIONAL GEOLOGY

(Source: J. Fierro, CIC, From Published Geologic Map of Paraguay, 2000)

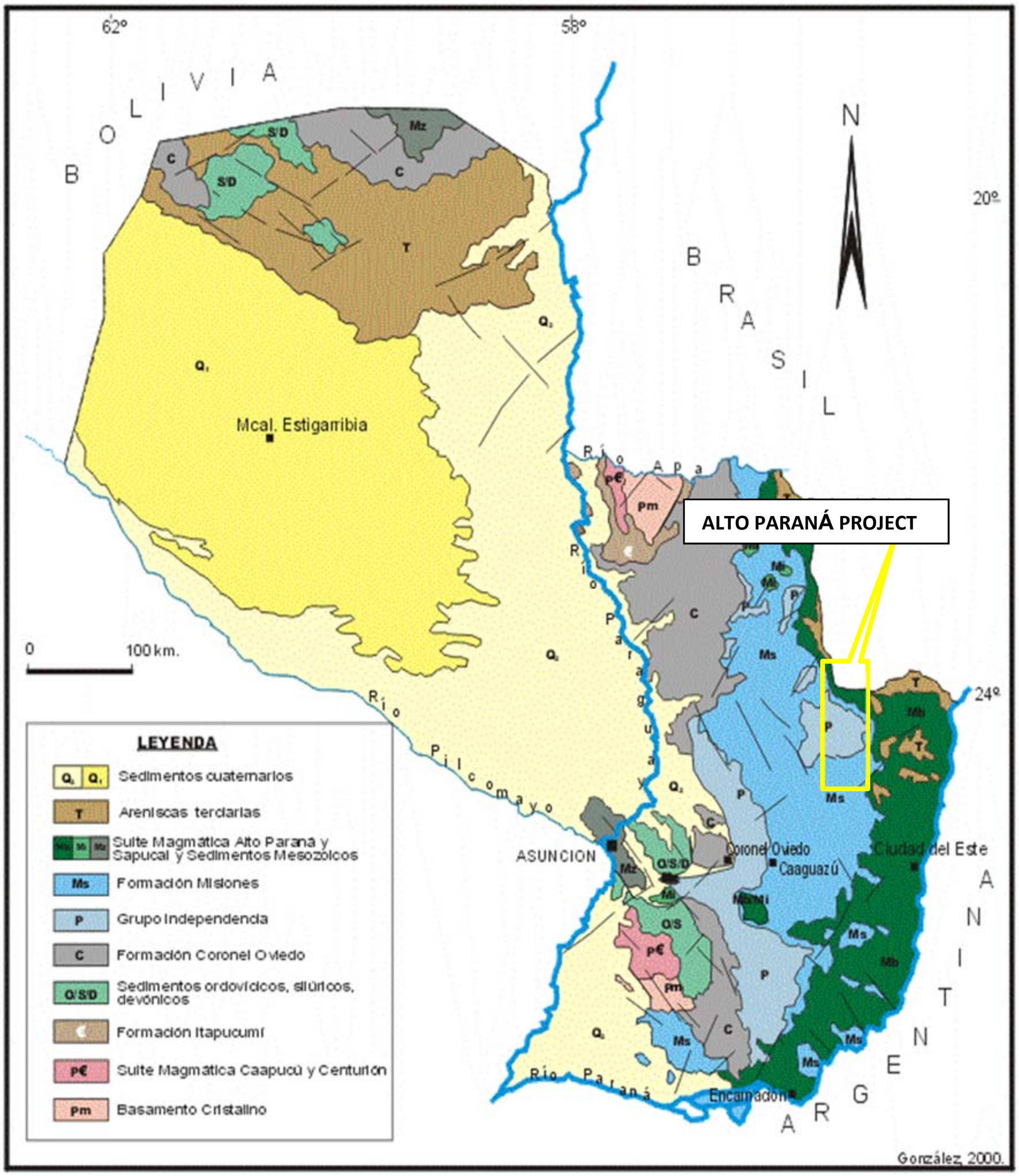


FIGURE 7-2: MINERAL OCCURRENCES IN PARAGUAY

(Source: J. Fierro, CIC from Latin American Minerals Technical Report, 2009)

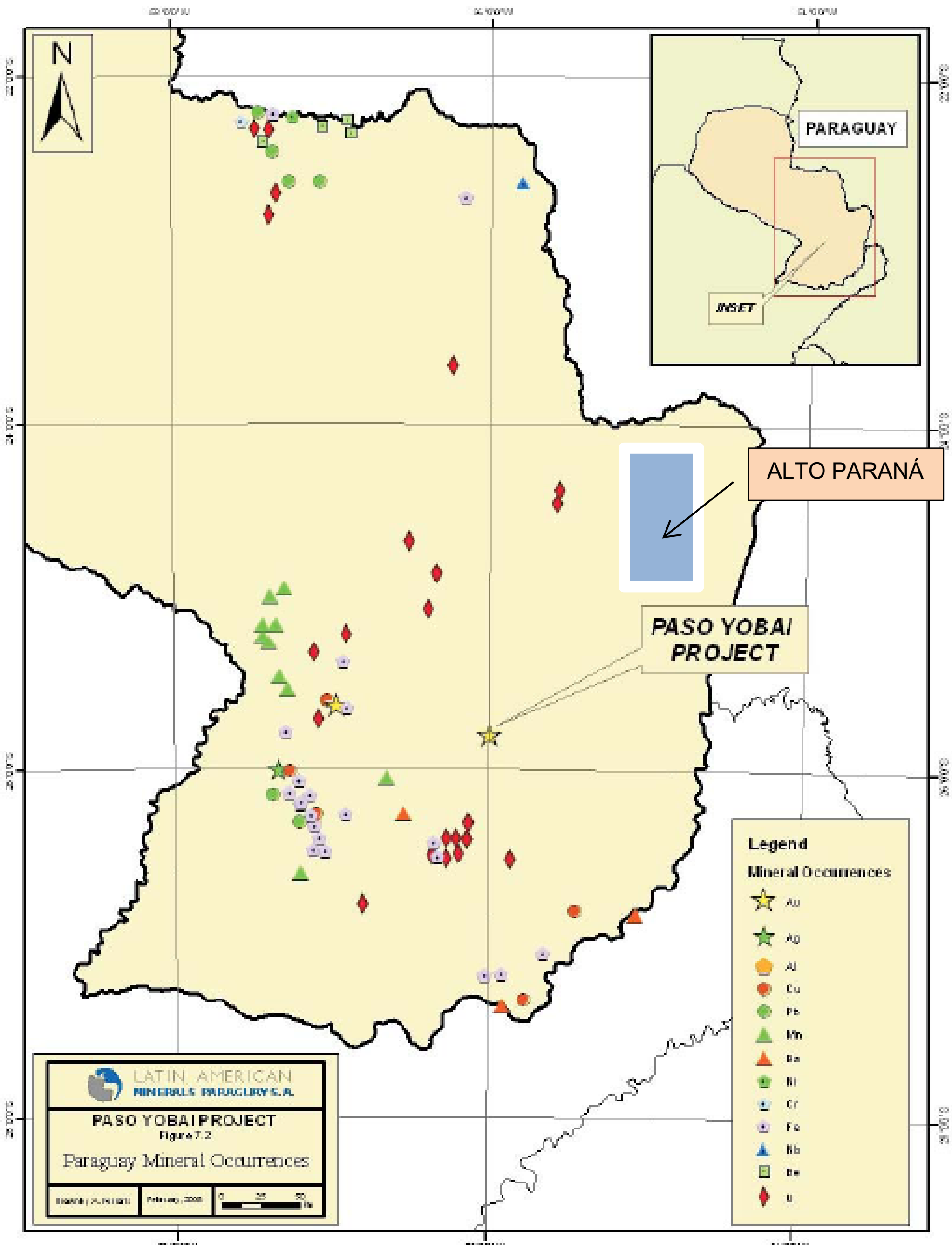


TABLE 7-1: STRATIGRAPHY OF EASTERN PARAGUAY
Alto Paraná Project (Source: J. Fierro, CIC, 2015)

Age	Formation	Rock Type	Type of Intrusive	Chemical Suite
Quaternary-Tertiary		Unconsolidated sediments		
Tertiary	Intrusions		Stocks & Dykes	Sodic-Alkaline
Late/Early Cretaceous	San Juan Bautista Grp.	Basalts		
Early Cretaceous	Intrusions		Stocks & Dykes	K-Alkaline rocks
	Paraná Basin	Tholeitic basalts		
	Intrusions		Stocks & Dykes	K-Alkaline rocks
Jurassic-Cretaceous	Misiones Fm	Sedimentary rocks Including sandstones		
Permian	Independencia Grp	Sedimentary rocks		
Permian-Carboniferous	Coronel Oveido Grp	Sedimentary rocks		
Ordovician-Silurian	Caacupé and Itacurubi Grps	Sedimentary rocks		
Cambro-Ordovician	Itacupumi Grp.	Platform carbonate rocks		
Archaean to Proterozoic	Crystalline basement	High to low grade metasedimentary rocks		

During the Mesozoic, large northwesterly oriented rifts were generated in eastern Paraguay and the related basins, one of them being the Paraná Basin, filled with Triassic and Jurassic fluvial sandstones, known as the Misiones Formation.

The Paraná Basin is a typical intra-cratonal flexural basin, although during the Paleozoic it was a gulf that opened to the southwest. The basin genesis is related to the convergence between the former Gondwana supercontinent and the oceanic crust of the former Panthalassa Ocean. The basin formed, at least during the Paleozic orogenesis, as a foreland basin. The present Paraná River, which forms the eastern boundary of Paraguay, flows along the central axis of the Paraná Basin and drains the modern basin.

The sedimentary rocks of the basin are intruded by two rift related mafic units, the Alto Paraná Magmatic Suite and the Sapuci Magmatic Suite. Both units intrude the older sedimentary rocks as dykes and sills and also occur as extrusive rocks along northwest regional structures. The Sapucai Group is alkali and consists of carbonatites, tephrites, nepheline syenites, shonkonites, malignites, phonolites, essexites, kimberlites and alkaline trachytes. The Alto Paraná Suite consists of tholeitic basalts and lamprophides. The basalts are of early Cretaceous age and represent flows derived from the initial opening of the South Atlantic. Small areas of metamorphosed gabbro sills and dykes that cut the layered basalts are also present. These are also thought to be of Cretaceous-Jurassic age. Overlying the basalts and gabbros is a laterite plateau. The plateau is nearly flat with gently rolling terrain. (Gonzalez Nunez and Cubas Villalba, 2001; Fulfaro, 1996).

LOCAL AND PROPERTY GEOLOGY

The underlying rocks on the property are primarily tholeiitic basalts belonging to the Alto Paraná Formation. The basalts are cut by dykes and sills of gabbro. These rocks have been subject to extensive weathering and a laterite cover has developed. The laterite is very homogeneously distributed throughout the property. Laterite thickness ranges from approximately 2 m to over 10 m, and averages approximately 7 m. Fresh gabbro and basalts crop out at the base of the creeks where the laterite profile has been eroded.

The basalts are dense and fine grained with quartz-filled amygdules near flow tops. Analysis of the basalt in the field with a Niton portable spectrometer shows the primary TiO_2 content is variable, ranging from about 1% – 4% in a quarry near the pilot plant. This indicates that the Ti-bearing ilmenite was concentrated and re-distributed during the laterization process because measured laterite TiO_2 grades are on the order of two times the primary grade in the basalts.

Figures 7-3 and 7-4 show the surface topography, hydrography, and geology of the UEC concessions. Shown for reference on both figures are the outline of the UEC concessions and the location of auger holes used for the resource calculation. The dendritic drainage patterns shown on Figure 7-3 are typical of easily erodible material in an uplifted plateau region such as Alto Paraná.

Figure 7-5 is a more detailed view of the southern part of the property, encompassing the area where the majority of sampling and pilot studies have been concentrated to date. The locations of two geological cross sections are shown on this figure: A-A' (a transverse east-west oriented section) and B-B' (a generally longitudinal section oriented northeast-southwest). These two cross sections are shown in profile view as Figures 7-5 and 7-6.

The nature of the Ti-bearing laterite mineralization is a broad, nearly continuous tabular body with a total known extent covering approximately 90 km x 50 km and varying in thickness from an average of 4 to 10 meters (Figure 7-5 and Figure 7-6). The underlying saprolite layer is generally no more than 1 – 3 meters thick and the saprolite grades abruptly into fresh basalt. A younger and less weathered analogue for the Paraná laterites are the Columbia River flood basalts in the northwest U.S, which are very similar in origin to the Ti-bearing Paraná basalts, except for the deeply weathered lateritic character of the Paraná lavas. The Columbia River basalt flows display sheeted horizontal layers with columnar jointing, and they typically consist of multiple flow units. Individual flow units can be up to 50 meters thick and extend for hundreds of kilometers. This is essentially the physical character of the Paraná Ti mineralization. The only significant deviations from a flat tabular shape are gentle undulations or "pinch and swell" features which could be due to eruption over pre-existing topography or to differential compaction during laterite formation.

Figure 7-3: PROPERTY TERRAIN, DRAINAGE, AND INFRASTRUCTURE

(Source: D. Brown, From CIC data 2015)

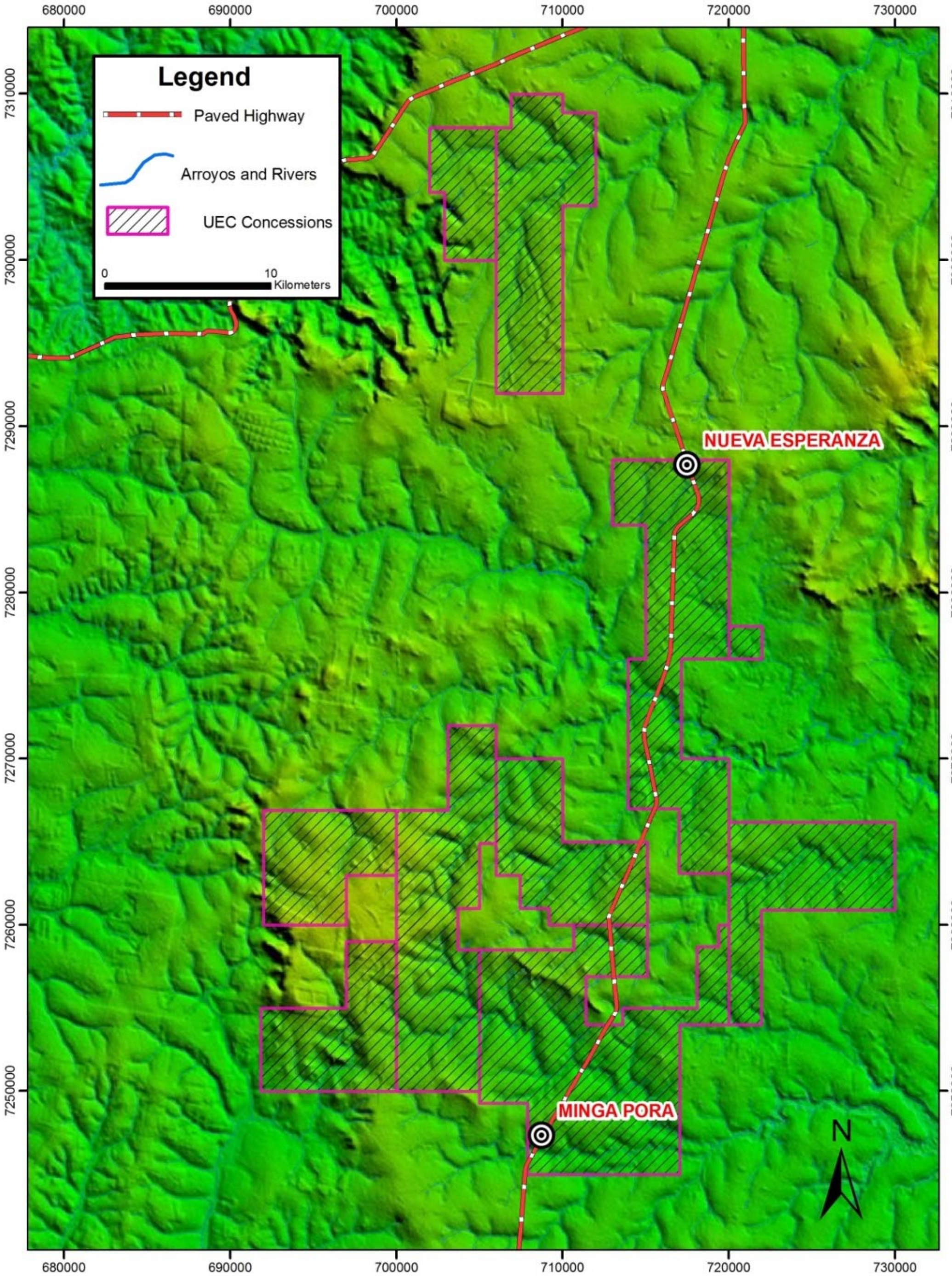


Figure 7-4: PROPERTY GEOLOGY

(Source: D. Brown, From CIC data 2015)

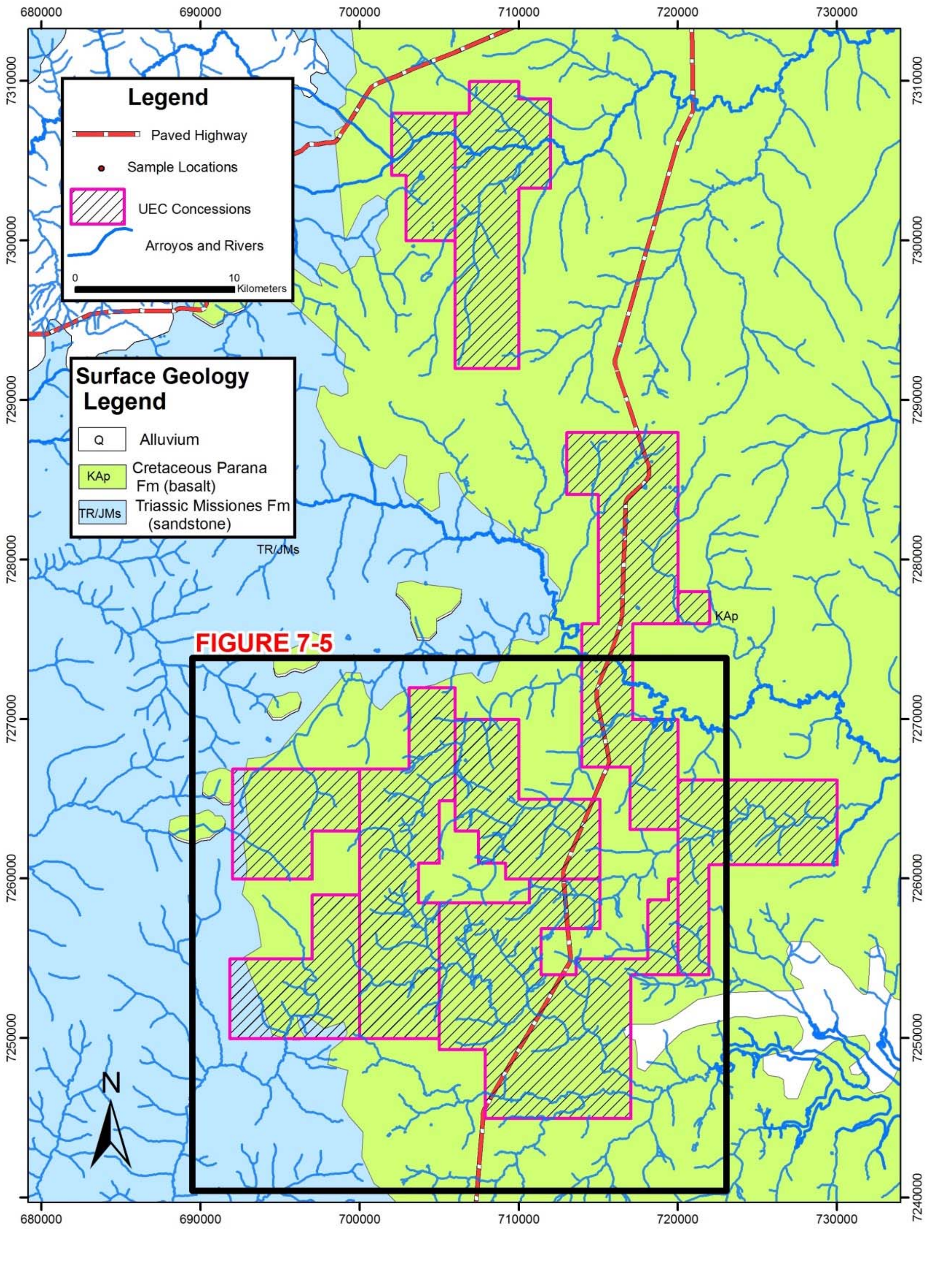


Figure 7-5: GEOLOGIC CROSS SECTION LOCATIONS

(Source: D. Brown, From CIC data 2015)

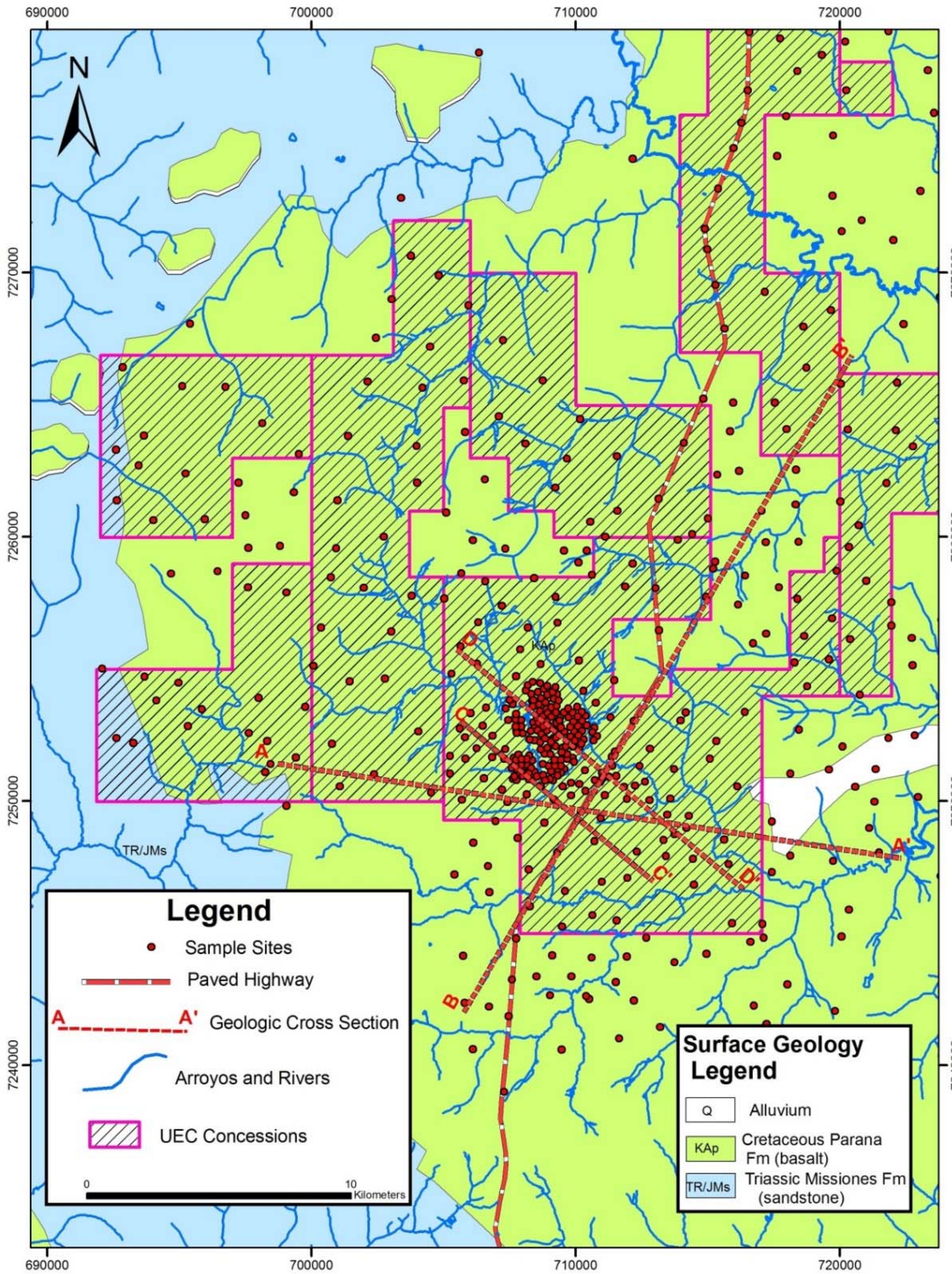


FIGURE 7-6 (SOURCE: D. BROWN, 2016)

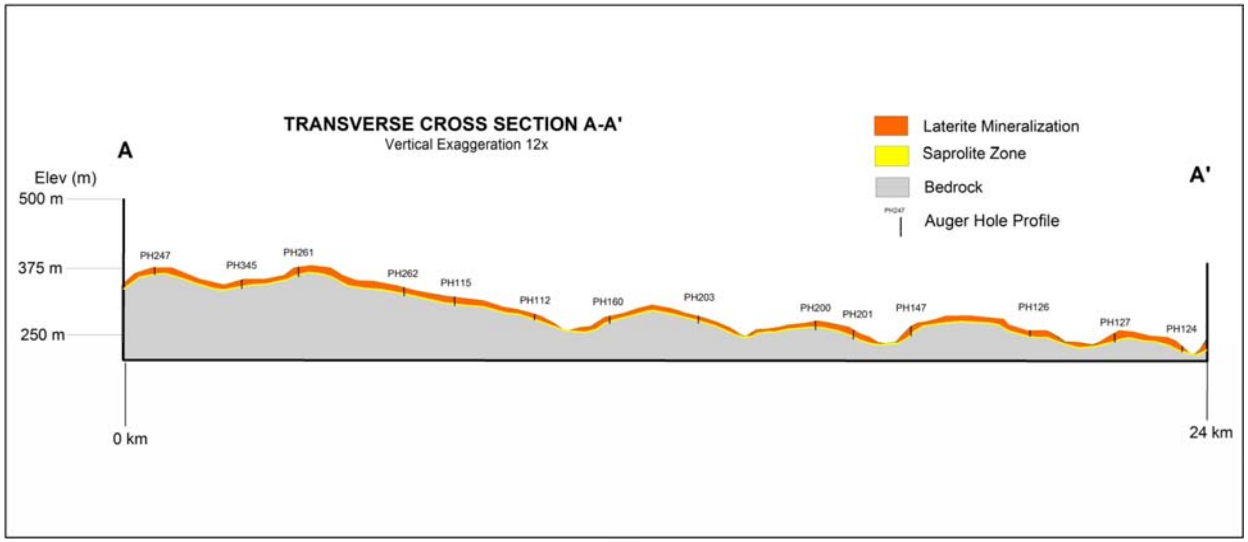
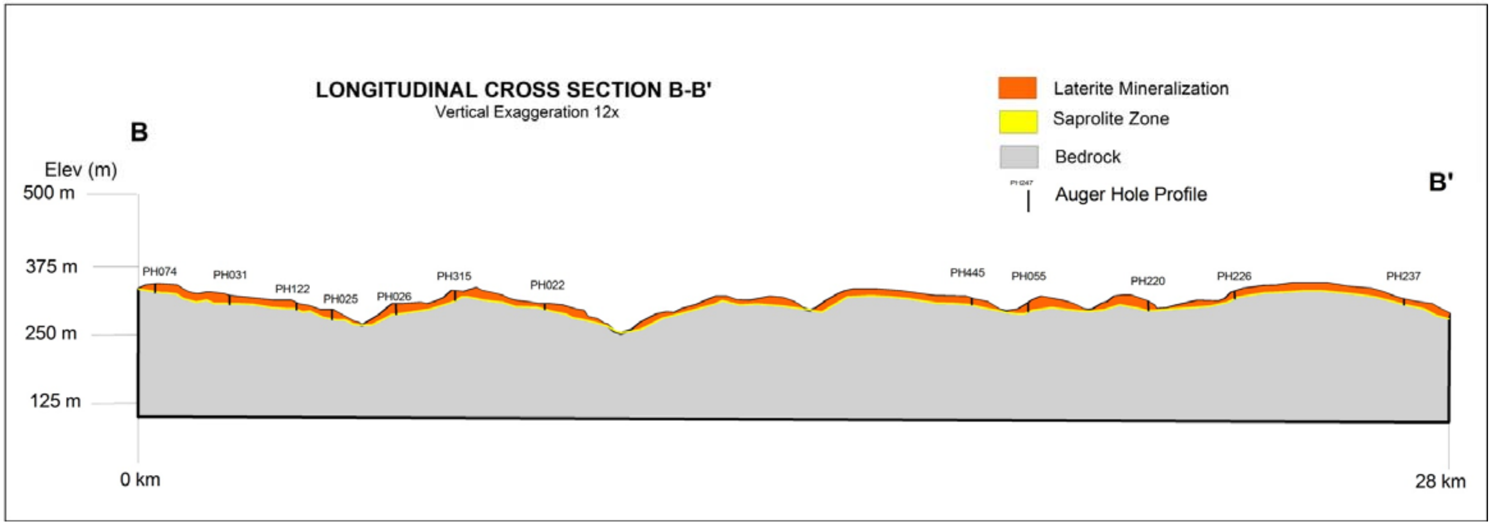


FIGURE 7-7 (SOURCE: D. BROWN, 2016)



MINERALIZATION

The horizontal mineralized zones shown in cross section (Figures 7-6 and 7-7) represent lateritized basalt and gabbro with disseminated ilmenite and magnetite. The character and delineation of these zones is discussed in more detail in Item 9 of this report (Exploration). The grades shown on the profiles were determined from conventional laboratory analysis of hand dug pits averaging between 2 – 10 meters in depth.

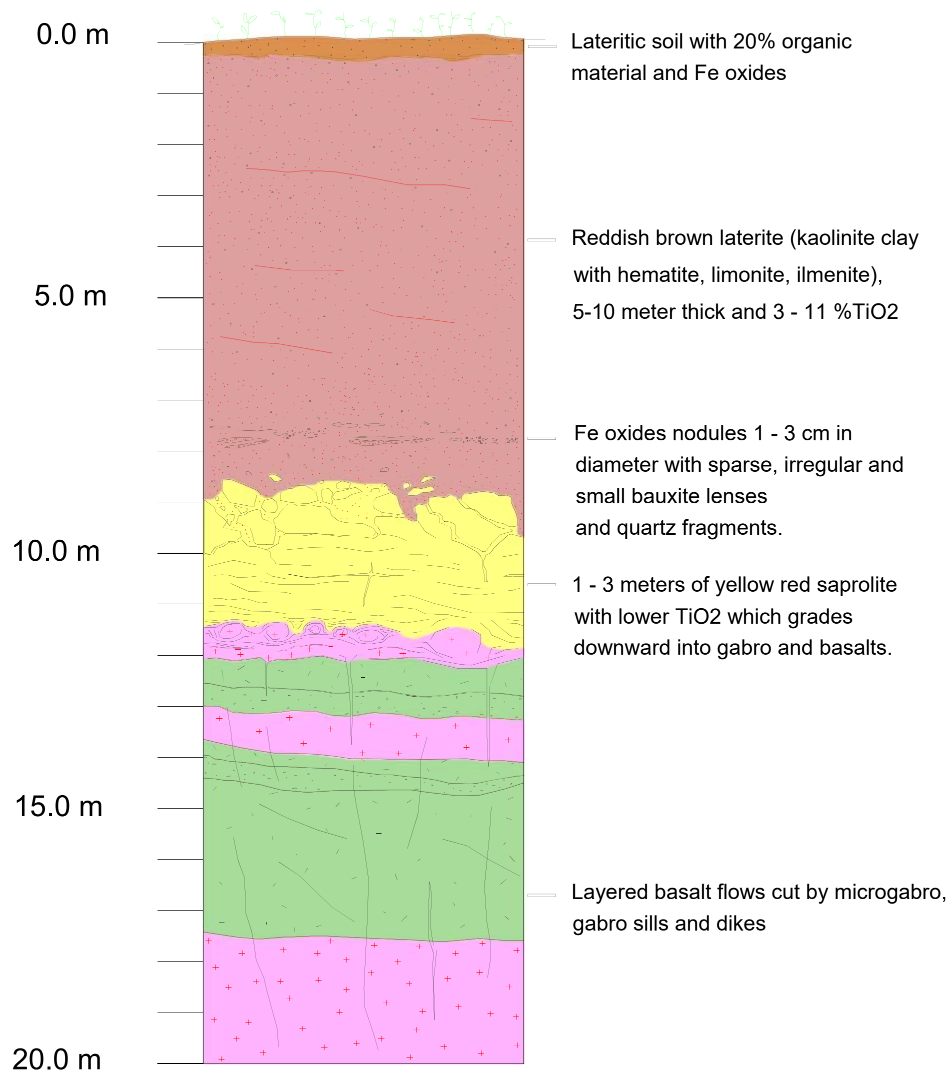
Most of the higher TiO_2 grade occurrences are spatially contiguous and are probably underlain by gabbro. The gabbro appears to contain more TiO_2, Ni, Sr, V, and Zr than the basalt. Residual enrichment occurred at approximately constant volume during breakdown of silicate minerals from the mafic rocks. Weathering is also critical for TiO_2 enrichment. Iron is progressively leached from ilmenite during weathering.

Figure 7-8 depicts a typical vertical weathering profile for the laterite. Commonly identifiable zones include the following:

- 0.10 – 0.30 m thick surface lateritic soil with about 20% organic matter and concentration of Fe oxides, mainly magnetite. TiO_2 content for this zone is usually high and varies between 4% – 11% TiO_2;
- 5 m – 10 m thick zone of reddish brown laterite comprised predominately of kaolin clay with hematite, limonite and SiO_2. Typically averages 3% - 11% TiO_2 but in best zones ±8% TiO_2. Fe oxide nodules 1 cm – 3 cm in diameter are commonly found at the base of the main laterite horizon. Kaolinite content varies from 50% - 75%. Small and irregular lenses of bauxite also occur within this basal horizon, due to leaching and downward transport of aluminous minerals higher in the profile. The water table is typically close to the saprolite/laterite interface; and
- 1 m – 3 m yellow-red saprolite with lower TiO_2 which grades downward into gabbro and basalts.

FIGURE 7-8: LATERITE PROFILE

(Source: J. Fierro, CIC, 2009)



8 DEPOSIT TYPES

Alto Paraná is provisionally classified as a lateritic ilmenite-titanomagnetite deposit. This type of deposit is an unusual and previously unknown (or non-published) source of titanium. The geological development of an economic laterite deposit requires a prolonged period of tropical weathering, good drainage, a relatively slow rate of erosion, and a source rock with significant heavy mineral accessories such as ilmenite or magnetite. These conditions have prevailed in the Paraná Basin since at least Late Cretaceous times and have resulted in the accumulation of substantially enriched concentrations of heavy minerals (in this case Ti as ilmenite) over eons of time.

The most closely related analogues to known deposit types are laterite deposits of bauxite and iron, which are typically characterized by relatively thin but horizontally extensive mineralization. Lateral grade continuity is typically broad in scale, sometimes measured over distances of kilometers or even tens of kilometers. The fundamental process of laterite development in a tropical humid environment is fairly straightforward, although the exact physiochemical processes and time frames involved are less well understood and are topics of ongoing scientific investigation. Silicate minerals in bedrock including quartz and feldspar are dissolved and removed over time, while chemically and mechanically resistant oxides such as ilmenite remain behind. Over time the original rock is reduced to a smaller volume consisting mainly of clays, fine grained iron oxides, and various residual heavy minerals. The heavy minerals are, by their magnetic and specific gravity properties, separable using metallurgical methods.

To the best of the QP's knowledge, the Alto Paraná mineralization is unique. There are no known titanium deposits of this type that Alto Paraná can be compared with and no iron-titanium deposits of this geological type are in production elsewhere in the world. The world's largest titanium deposits are almost exclusively of a type known as heavy mineral beach placer deposits. Of the six largest deposits currently in production or under development, five are beach placer deposits located in Africa and the sixth is a hardrock anorthosite mine in Quebec Canada (Reeves and Kuhn, 2016). Compared with other world class titanium deposits, the Alto Paraná estimated resource is reported to be an order of magnitude larger than any of these deposits in terms of total tonnage and recoverable Ti as ilmenite (Reeves and Kuhn, 2016).

9 EXPLORATION

SUMMARY OF SAMPLING PROGRAMS

No new exploration has been proposed or conducted on the Alto Paraná property by UEC subsequent to acquisition and consolidation of the property in 2016. Exploration results presented in this section are based on baseline exploration studies conducted by CI over a five-year period (2009 – 2013). These results were thoroughly documented in the 2015 43-101 technical report for CIC, and have been accepted and certified by the QP for the current report based on a non-biased and professional examination of data from the original exploration work.

Initial exploration work by CIC stemmed from a regional bauxite reconnaissance program in 2008. During the course of this work it was found that there was a TiO_2 soil anomaly and the focus of the exploration work changed to titanium resource potential based on this un-anticipated result. Systematic exploration of the property for titanium mineralization began in 2009 with very widely spaced (up to 4 km apart) shallow and deep pit sampling. The primary purpose of the 2009 exploration program was to define the limits of the TiO_2 anomaly and to test for higher grade zones. Shallow pit samples were collected at a depth of one meter, while deep pit samples were collected over each meter interval from the surface to the pit bottom, which in most cases was at the laterite/saprolite interface. This work was successful in defining a wide area of anomalous TiO_2 and in defining some higher grade areas (Figure 9-2). The grade contours shown on this map were determined from the assays of 555 deep pits and 485 shallow pits excavated through 2011 (Table 9-1). The primary purpose of this wide-spaced pit sampling was to determine the lateral limits of potential economic mineralization in order to determine which ground should be protected with long-term mineral concessions.

Similar exploration continued in 2010 with sampling concentrated in higher grade areas. Spacing of hand-dug pits was reduced to an average of 1 – 2 km and some infill sampling was done at 500 m x 1,000 m. Samples were assayed at ALS Chemex in Lima using XRF. Samples were also collected for laboratory metallurgical test work.

Exploration work in 2011 was focused on in-fill shallow auger sampling in higher grade zones, predominantly within the 36,000 hectares area of the MYNM concessions block. The MYNM area was selected for closer spaced sampling based on wide-spaced shallow sampling results in 2009 and 2010, but also because of favorable lease terms available at that time with farmers adjacent to the pilot plant site. Portable XRF readings of samples using a Niton XL3p instrument were taken in the field as a check against the laboratory assays. Table 9-1 summarizes the various exploration programs.

SAMPLE METHODS AND DESCRIPTION

Auger sampling was done using either a hand auger or a two-person hand-held power auger. This type of auger allows the collection of high quality samples of about 30 cm length (the length of the collection cup). All deep auger samples are at 90^0 azimuth and extend to the laterite/saprolite interface, typically 7m – 8m depth. Figure 9-1 illustrates the hand auger used for the shallow (1 m) sampling.

FIGURE 9-1: HAND AUGER DRILL FOR SHALLOW SAMPLES PARANÁ PROJECT (SOURCE: CIC, 2011)

For shallow auger holes, material from the last 30 cm of the hole is collected and placed in a plastic bag which is sealed and labeled. To avoid contamination, the upper vegetation and organic rich soil zone is first cleared off with a shovel before the hole is started. A Niton spectrometer reading is taken from the bagged material before the sample is sent to ALS Chemex for analysis by multi-element XRF. For the deep auger holes, the same procedure is followed, with a 30 cm sample collected at the end of each one meter run.

For the hand dug pits, channel samples are carved from one side of the pit over one meter widths, starting from the bottom and working to the top in order to avoid contamination. At the surface the material hauled up from each one meter channel is mixed and quartered on a tarp. One quarter of the laterite material is placed in a plastic bag and a Niton reading is recorded as a back-up analysis.

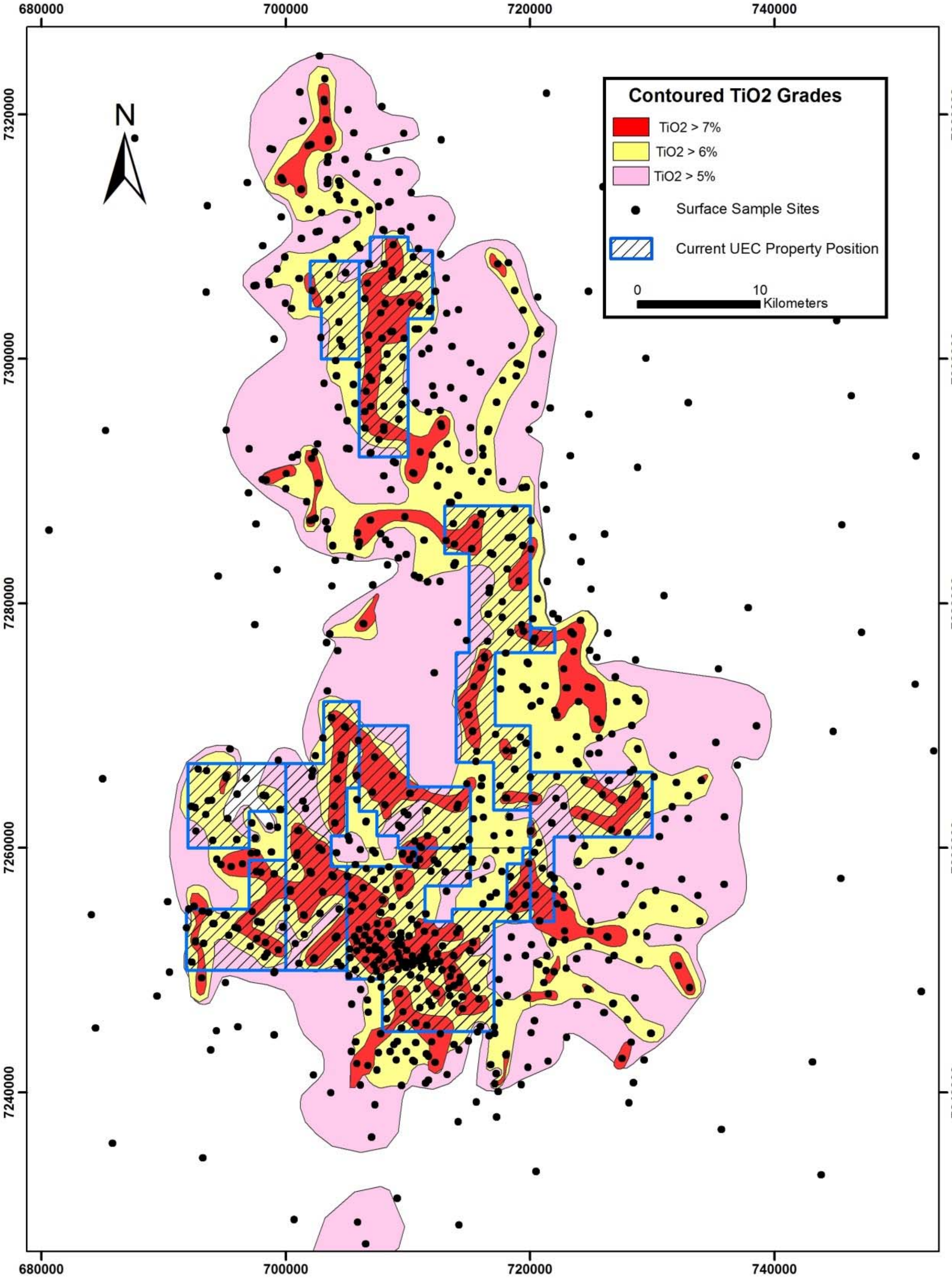
It is the author's opinion that the sampling techniques used for both the deep pits and the auger holes were representative of surrounding mineralized laterite material. The auger samples and pit wall channels were free from contamination and do not contain any known bias. In fact, samples of this nature are probably superior to conventional drilling which is subject to caving and loss of fines due to air or water pressure. To the best of the author's knowledge, industry standards were properly followed throughout the project regarding the collection, chain of custody, and handling of all samples.

TABLE 9-1: EXPLORATION PROGRAM SUMMARY
Alto Paraná Project (Source: J. Mejia, CIC, 2015)

	Deep Samples				Shallow Samples	
Year	**Deep Pits**	**No. Samples**	**Gasoline Auger**	**No. samples**	**S Series 1m Pits**	**T Series 1m Hand Auger**
2009	186	1486			466	
2010	332	2664				
2011	37	281			19	2262
2012			132	1107		
2013	3	30				
Total	**558**	**4461**	**132**	**1107**	**485**	**2262**

Assay results were compiled to develop contour maps showing TiO_2 and Fe_2O_3 grade distributions across the property. The results are illustrated in Figures 9-2, 9-3 and 9-4.

FIGURE 9-2: TIO$_2$ GRADE DISTRIBUTION
Alto Paraná Project (Source: J. Fierro / D. Brown, 2015)



DISCUSSION AND INTERPRETATION

Exploration work available as of the date of this report has delineated an extremely large and thoroughly documented volume of Ti-bearing lateritic material. CIC sampling and due diligence verification demonstrate very consistent TiO_2 and Fe_2O_3 grades, based upon observed surface trends and statistical comparisons. The indicated average TiO_2 grades of 7 - 9 % are generally higher than most "conventional" titanium deposits currently in production. The QP’s opinion is that the sampling methods and procedures utilized in the resource evaluation are not only acceptable but well suited to the physical nature of the lateritic mineralization.

The geochemical exploration results from the Alto Paraná Project, summarized in Figure 9-2, represent relatively deep sampling as opposed to conventional surface rock or soil surveys, which generally penetrate no more than a few centimeters beneath the regolith surface. As such the CIC samples penetrate most or all of the potential mineralized material. The objective of the CIC sampling was to identify areas of higher grade/thickness for more detailed resource evaluation in smaller areas, as opposed to identification of "drill targets" per se. In this sense, the higher grade TiO_2 areas shown on Figure 9-2 should not be considered as "anomalies", but rather as indicated areas of higher grade resource potential, as presented in Item 14 of this report.

10 DRILLING

No conventional exploration drilling such as diamond coring or air reverse circulation has been conducted on the project. The only type of drilling done on the property is shallow auger boring. A description of this method is summarized in Item 9 of this report.

11 SAMPLE PREPARATION, ANALYSES AND SECURITY

MAIN SAMPLES

Two types of samples were collected during the exploration work conducted by CIC between 2009-2013. Samples from the deep pits were collected by channel sampling on two sides of the pit (Figure 11-1) at 1 m intervals.

FIGURE 11-1: TYPICAL DEEP PIT SAMPLING
Collecting Due Diligence Samples (Source: CIC, 2011)

Samples were collected for the interval from surface to the top of the laterite and then for each meter down to the saprolite. Control of the interval length was done by dropping a tape measure parallel to the channel. Samples were collected in plastic bags. The bags were marked with a unique identifying number corresponding to an internal sample control list denoting pit number, interval number, location and other relevant data required for the sample assay data base. A paper tag with the unique sample number was also attached to the sample bag. Duplicate and check samples were collected on a periodic basis by extending the depth of the channel sample for the relevant interval. Samples were collected daily and stored at CIC's exploration office prior to shipment to the assay lab. No sample drying or sample splitting was done by CIC.

Shallow (1 m) auger samples were collected by hand auger. The auger was pushed to a 1 m depth and a sample collected from the interval, as illustrated in Figure 10-1. Deeper auger samples were collected using a hand-held power auger. Material from each meter interval was collected and composited as a single sample.

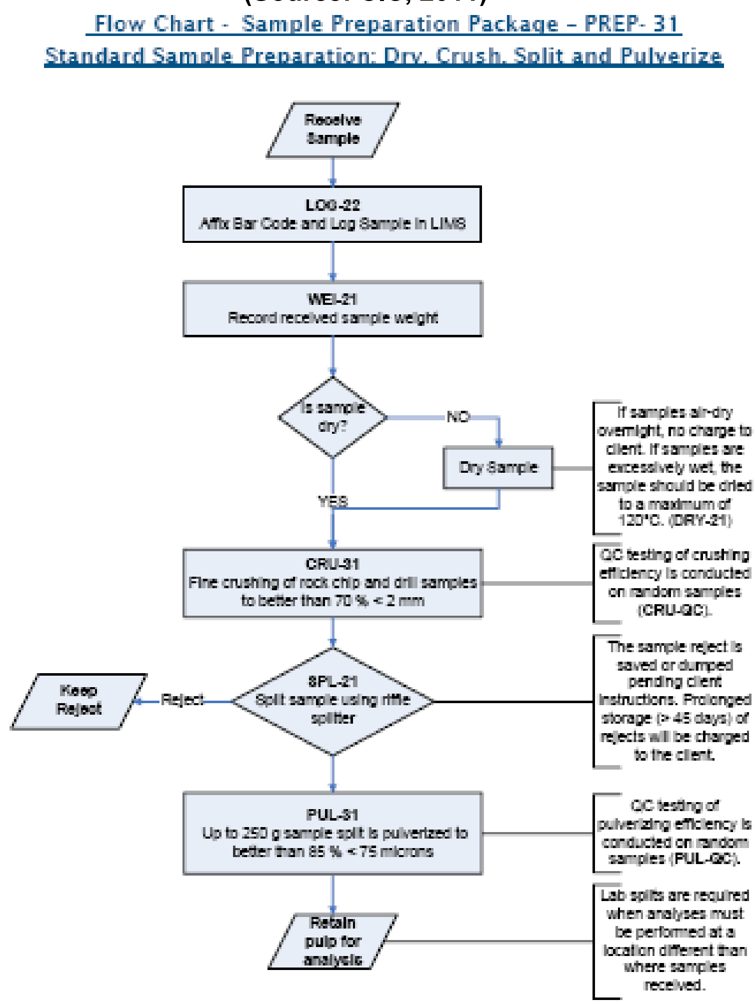
Samples were shipped in batches of approximately 30 to ALS in Lima, Peru. ALS Peru is certified to ISO 17025 standards as an analytical laboratory and is also certified to Peruvian national standards for minerals assays. CIC was totally independent of ALS Laboratories and has no affiliation with their operations. At ALS, samples were subject to the following ALS sample preparation and analytical protocols and procedures:

- Sample log in, bar coding, drying at 110^{0}C;
- Sample crushing to 70% < 2 mm;
- Sample splitting in riffle splitter;
- Pulverization of 64 approx. 300 gram split; and
- Analysis by XRF (ME-XRF12st) and/or ICP/AES (ME-ICP-41), plus Loss on Ignition (OA-GRA05).

The basic sample preparation procedure is illustrated in Figure 11-2.

FIGURE 11-2: SAMPLE PREPARATION PROCEDURE

(Source: CIC, 2011)



In total, 4486 main samples were collected from the deep pits and 2992 samples from the 1 m auger drill program.

SECURITY

All samples were handled in compliance with standard industry practice regarding security and chain of custody. Bagged samples were temporarily stored in a secure storage room at the field camp in San Alberto, under the supervision of the camp manager. Samples were trucked to Asuncion, which is about a six hour drive. In Asuncion the samples were delivered to DHL for shipment to ALS Chemex in Lima via commercial air. At DHL the samples were kept between 24 and 72 hours until customs clearance was completed. ALS

Chemex representatives collected samples from the Lima airport and transported them to the lab, which is about 5 minutes from the airport.

Project geologists were present during handling and transport to temporary storage and to DHL facilities in Asuncion.

It is the opinion of the QP for Item 11 that security measures utilized in the past by CIC and its contractors were adequate to ensure that none of the samples were compromised in any way, and that the guidelines in Item 11(d) of 43-101F1 were followed correctly.

DUPLICATES AND CHECKS

Selected samples were split for duplicate analysis at ALS and for check assay analysis at ALS in Vancouver and IPL Laboratories in Vancouver. The number of these samples was quite limited (74 duplicates and 6 checks). In addition, ALS Peru split off laboratory pulp duplicates at a rate of 1 in 50 main samples as part of its standard QA/QC procedures. The number of duplicate samples is considerably below recommended practice. Future drilling and sampling programs should ensure a minimum of 10% duplicates (as both coarse and pulp duplicates of the main samples) and 5% check samples.

STANDARDS AND BLANKS

CIC did not insert any certified reference materials (CRMs) or blanks with the main, duplicate or check samples. Instead, CIC relied on the use of ALS inserted standards and blanks for monitoring laboratory precision. In accordance with the 2012 due diligence recommendation made by Hains Engineering, future drilling and sampling programs should incorporate provision for insertion of certified reference materials and/or reference matched and round-robin evaluated standards and certified blanks. The recommended insertion rate for both standards and blanks is 5% each of main, coarse and pulp duplicates and check samples.

STATISTICAL ANALYSIS – DUPLICATE SAMPLES VS. ORIGINAL

(Source: Hains, 2011)

A paired statistical analysis was performed to compare the results from the duplicate samples and its corresponding original sample. In this analysis, samples were separated by batch number before analysis. Each batch had a minimum of 9 points for comparison.

Analysis Parameters:

Number of Batches: 3

Number of Elements Analyzed: 12

Analysis Used: - Statistical, Regression

Results: Batch 166

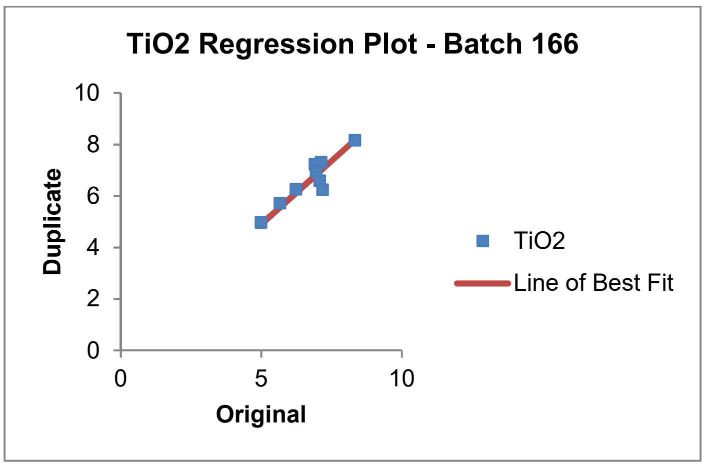
Field Duplicate – Batch 166													
	Al_2O_3	BaO	CaO	Cr_2O_3	Fe_2O_3	K_2O	MgO	MnO	Na_2O	P_2O_5	SiO_2	TiO_2	LOI
Mean	25.83	0.00	0.10	0.01	24.37	0.10	0.23	0.14	0.00	0.12	32.29	6.60	10.19
Median	26.00	0.00	0.09	0.01	24.50	0.10	0.23	0.12	0.00	0.11	31.70	6.59	10.05
Mode	26.00	0.00	#N/A	0.01	24.50	#N/A	0.24	#N/A	0.00	#N/A	#N/A	#N/A	#N/A
Standard Deviation	1.32	0.00	0.05	0.00	2.70	0.03	0.01	0.05	0.00	0.05	2.22	0.94	0.63
Sample Variance	1.75	0.00	0.00	0.00	7.26	0.00	0.00	0.00	0.00	0.00	4.95	0.89	0.40
Minimum	23.40	0.00	0.02	0.01	18.85	0.03	0.20	0.09	0.00	0.08	29.40	4.97	9.57
Maximum	27.90	0.00	0.19	0.02	29.30	0.14	0.24	0.26	0.01	0.24	36.10	8.16	11.45
Count	9	9	9	9	9	9	9	9	9	9	9	9	9
RSD	5%	0%	53%	41%	11%	32%	6%	37%	156%	38%	7%	14%	6%

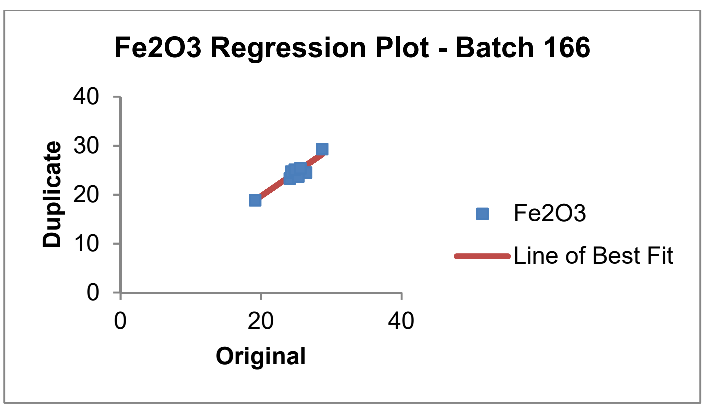
Original Sample – Batch 166													
	Al_2O_3	BaO	CaO	Cr_2O_3	Fe_2O_3	K2O	MgO	MnO	Na_2O	P_2O_5	SiO_2	TiO_2	LOI
Mean	25.87	0.01	0.09	0.01	24.75	0.09	0.17	0.14	0.01	0.12	31.79	6.72	10.24
Median	26.20	0.00	0.09	0.01	24.80	0.09	0.22	0.13	0.00	0.11	31.20	6.95	10.05
Mode	26.20	0.00	0.11	0.01	#N/A	0.08	0.01	0.12	0.00	#N/A	30.20	#N/A	10.05
Standard Deviation	1.23	0.01	0.05	0.01	2.54	0.03	0.13	0.04	0.02	0.05	2.15	0.97	0.56
Sample Variance	1.53	0.00	0.00	0.00	6.43	0.00	0.02	0.00	0.00	0.00	4.61	0.94	0.31
Minimum	24.00	0.00	0.02	0.00	19.15	0.03	0.01	0.09	0.00	0.08	29.80	4.99	9.74
Maximum	28.10	0.02	0.19	0.02	28.70	0.14	0.32	0.25	0.04	0.23	35.30	8.33	11.60
Count	9	9	9	9	9	9	9	9	9	9	9	9	9
RSD	5%	180 %	53%	58%	10%	36%	76%	32%	147%	39%	7%	14%	5%

Regression Statistics – Batch 166							
TiO_2		SiO_2		P_2O_5		Na_2O	
Regression Statistics		*Regression Statistics*		*Regression Statistics*		*Regression Statistics*	
Multiple R	0.998558947	Multiple R	0.999739	Multiple R	0.996897175	Multiple R	0.52667
R Square	0.997119971	R Square	0.999478	R Square	0.993803978	R Square	0.277381
Adjusted R Square	0.872119971	Adjusted R Square	0.874478	Adjusted R Square	0.868803978	Adjusted R Square	0.152381
Standard Error	0.379337085	Standard Error	0.784467	Standard Error	0.010872266	Standard Error	0.002224
Observations	9	Observations	9	Observations	9	Observations	9
MnO		MgO		K_2O		Fe_2O_3	
Regression Statistics		*Regression Statistics*		*Regression Statistics*		*Regression Statistics*	

Multiple R	0.998999527	Multiple R	0.816644	Multiple R	0.994869678	Multiple R	0.999418
R Square	0.998000055	R Square	0.666907	R Square	0.989765677	R Square	0.998836
Adjusted R Square	0.873000055	Adjusted R Square	0.541907	Adjusted R Square	0.864765677	Adjusted R Square	0.873836
Standard Error	0.006931192	Standard Error	0.138964	Standard Error	0.010899307	Standard Error	0.88692
Observations	9	Observations	9	Observations	9	Observations	9

Cr_2O_3		CaO		BaO		Al_2O3	
Regression Statistics		*Regression Statistics*		*Regression Statistics*		*Regression Statistics*	
Multiple R	0.89148329	Multiple R	0.992783	Multiple R	0.508060201	Multiple R	0.999905
R Square	0.794742457	R Square	0.985618	R Square	0.258125168	R Square	0.999811
Adjusted R Square	0.669742457	Adjusted R Square	0.860618	Adjusted R Square	0.133125168	Adjusted R Square	0.874811
Standard Error	0.006289944	Standard Error	0.014228	Standard Error	0.000456785	Standard Error	0.377624
Observations	9	Observations	9	Observations	9	Observations	9





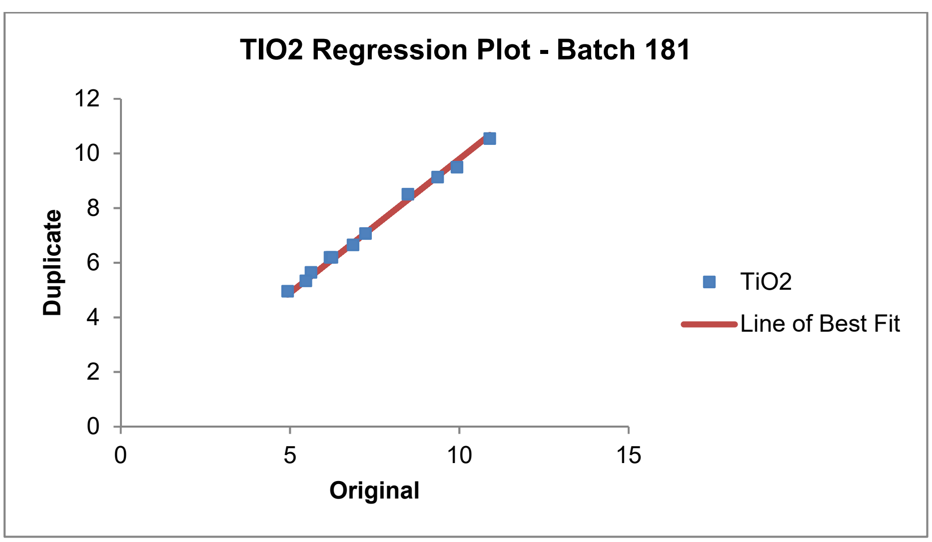
Based on the statistical analysis of the twelve elements in batch 166, the two data sets exhibited similar statistical numbers in terms of mean and standard deviation. Specifically, iron and titanium figures both showed similar results. The results from the regression analysis confirmed a linear relationship. Iron and titanium were shown to exhibit a very strong relationship based on R-values.

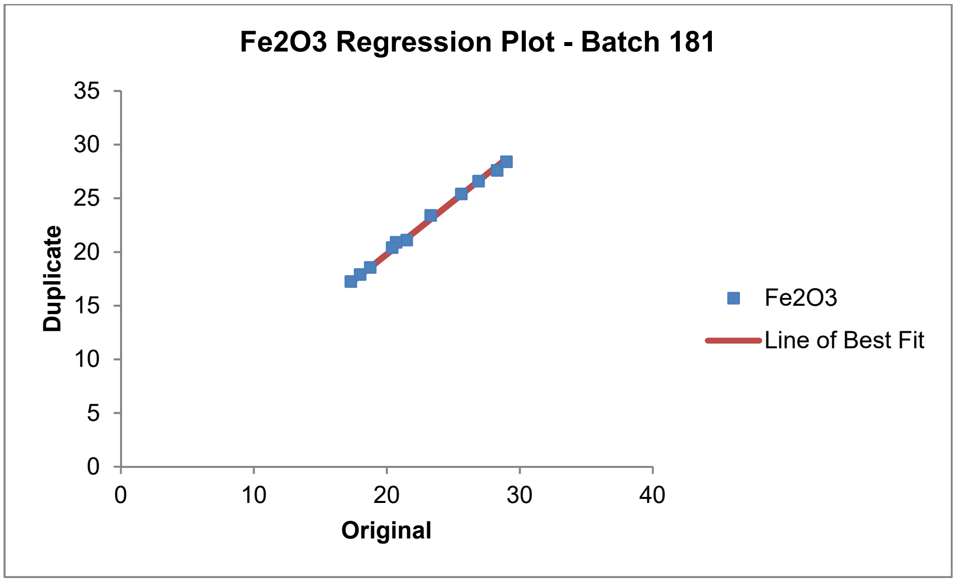
Results: Batch 181

Duplicate Samples – Batch 181													
	Al_2O_3	BaO	CaO	Cr_2O_3	Fe_2O_3	K_2O	MgO	MnO	Na_2O	P_2O_5	SiO_2	TiO_2	LOI
Mean	25.91	0.00	0.09	0.00	22.50	0.09	0.27	0.13	0.00	0.12	33.26	7.25	10.61
Median	27.10	0.00	0.08	0.00	21.10	0.09	0.27	0.10	0.00	0.11	33.70	6.66	10.45
Mode	#N/A	0.00	0.02	0.00	#N/A	#N/A	0.27	#N/A	0.00	#N/A	#N/A	6.20	11.05
Standard Deviation	3.13	0.00	0.08	0.00	4.00	0.03	0.05	0.06	0.00	0.04	2.65	1.87	0.93
Sample Variance	9.80	0.00	0.01	0.00	16.01	0.00	0.00	0.00	0.00	0.00	7.03	3.51	0.87
Minimum	19.90	0.00	0.02	0.00	17.25	0.04	0.21	0.07	0.00	0.06	29.20	4.96	8.98
Maximum	29.50	0.00	0.23	0.01	28.40	0.13	0.38	0.24	0.00	0.20	36.30	10.55	12.40
Count	11	11	11	11	11	11	11	11	11	11	11	11	11
RSD	12%	0%	92%	136%	18%	29%	17%	45%	0%	36%	8%	26%	9%

Original Samples – Batch 181													
	Al_2O_3	BaO	CaO	Cr_2O_3	Fe_2O_3	K_2O	MgO	MnO	Na_2O	P_2O_5	SiO_2	TiO_2	LOI
Mean	25.89	0.00	0.09	0.01	22.70	0.10	0.27	0.14	0.01	0.11	32.77	7.38	10.55
Median	27.60	0.00	0.07	0.01	21.50	0.11	0.25	0.10	0.00	0.11	33.90	6.86	10.35
Mode	#N/A	0.00	0.02	0.01	#N/A	0.11	0.25	#N/A	0.00	#N/A	36.00	#N/A	#N/A
Standard Deviation	3.22	0.01	0.08	0.01	4.18	0.03	0.06	0.06	0.02	0.04	2.82	2.00	0.94
Sample Variance	10.40	0.00	0.01	0.00	17.50	0.00	0.00	0.00	0.00	0.00	7.98	3.98	0.89
Minimum	19.70	0.00	0.02	0.01	17.30	0.04	0.19	0.08	0.00	0.06	27.80	4.93	9.01
Maximum	29.20	0.03	0.23	0.04	29.00	0.15	0.37	0.25	0.08	0.18	36.00	10.90	12.45
Count	11	11	11	11	11	11	11	11	11	11	11	11	11
RSD	12%	278%	83%	64%	18%	34%	21%	45%	250%	36%	9%	27%	9%

Regression Statistics – Batch 181							
TiO_2		SiO_2		P_2O_5		Na_2O	
Regression Statistics		*Regression Statistics*		*Regression Statistics*		*Regression Statistics*	
Multiple R	0.9999	Multiple R	0.9999	Multiple R	0.9992	Multiple R	0.3868
R Square	0.9997	R Square	0.9998	R Square	0.9985	R Square	0.1497
Adjusted R Square	0.8997	Adjusted R Square	0.8998	Adjusted R Square	0.8985	Adjusted R Square	0.0497
Standard Error	0.1346	Standard Error	0.4750	Standard Error	0.0050	Standard Error	0.0005
Observations	11	Observations	11	Observations	11	Observations	11
MnO		MgO		K_2O		Fe_2O_3	
Regression Statistics		*Regression Statistics*		*Regression Statistics*		*Regression Statistics*	
Multiple R	0.9996	Multiple R	0.9951	Multiple R	0.9932	Multiple R	0.9999
R Square	0.9992	R Square	0.9903	R Square	0.9864	R Square	0.9999
Adjusted R Square	0.8992	Adjusted R Square	0.8903	Adjusted R Square	0.8864	Adjusted R Square	0.8999
Standard Error	0.0043	Standard Error	0.0286	Standard Error	0.0114	Standard Error	0.2546
Observations	11	Observations	11	Observations	11	Observations	11
Cr_2O_3		CaO		BaO		Al_2O_3	
Regression Statistics		*Regression Statistics*		*Regression Statistics*		*Regression Statistics*	
Multiple R	0.4409	Multiple R	0.9883	Multiple R	0.3530	Multiple R	0.9999
R Square	0.1944	R Square	0.9768	R Square	0.1246	R Square	0.9998
Adjusted R Square	0.0944	Adjusted R Square	0.8768	Adjusted R Square	0.0246	Adjusted R Square	0.8998
Standard Error	0.0040	Standard Error	0.0186	Standard Error	0.0005	Standard Error	0.3435
Observations	11	Observations	11	Observations	11	Observations	11





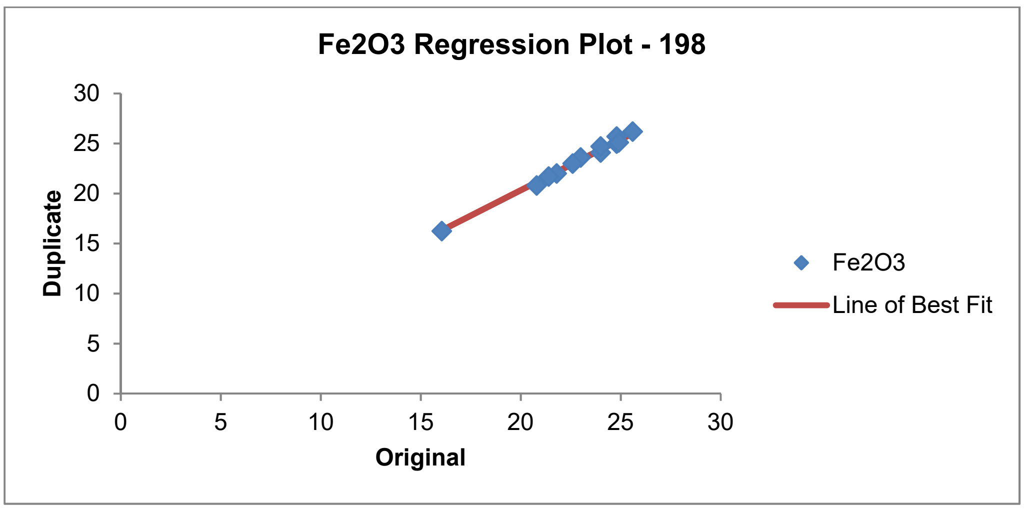
Based on the statistical analysis of the twelve elements in batch 181, the two data sets exhibited similar statistical numbers in terms of mean and standard deviation. Specifically, iron and titanium figures both showed similar results for their relative standard deviation percent. The results from the regression analysis confirmed a linear relationship. Iron and titanium were shown to exhibit a very strong relationship based on R-values.

Results: Batch 198

Duplicate Samples - Batch 198													
	Al_2O_3	BaO	CaO	Cr_2O_3	Fe_2O_3	K_2O	MgO	MnO	Na_2O	P_2O_5	SiO_2	TiO_2	LOI
Mean	25.883	0.124	0.118	0.014	23.179	0.118	0.275	0.129	0.017	0.129	33.183	7.417	11.004
Median	26.300	0.123	0.095	0.014	23.850	0.100	0.280	0.120	0.018	0.129	32.200	7.540	11.000
Mode	#N/A	#N/A	0.020	0.015	#N/A	0.100	0.240	#N/A	0.020	#N/A	31.400	#N/A	10.750
Standard Deviation	2.237	0.022	0.097	0.002	2.749	0.031	0.049	0.037	0.005	0.027	2.515	1.543	0.660
Sample Variance	5.005	0.000	0.009	0.000	7.555	0.001	0.002	0.001	0.000	0.001	6.327	2.380	0.436
Minimum	21.900	0.092	0.020	0.010	16.250	0.080	0.190	0.069	0.009	0.090	30.600	4.810	10.050
Maximum	28.700	0.165	0.330	0.017	26.200	0.170	0.360	0.200	0.029	0.184	39.100	10.200	11.950
Count	12	12	12	12	12	12	12	12	12	12	12	12	12
RSD	9%	17%	82%	14%	12%	26%	18%	28%	29%	21%	8%	21%	6%

Original Samples – Batch 198													
	Al_2O_3	**BaO**	**CaO**	**Cr_2O_3**	**Fe_2O_3**	**K_2O**	**MgO**	**MnO**	**Na_2O**	**P_2O_5**	**SiO_2**	**TiO_2**	**LOI**
Mean	25.767	0.087	0.117	0.011	22.813	0.108	0.279	0.125	0.023	0.128	32.583	7.173	11.008
Median	26.200	0.102	0.085	0.013	23.500	0.098	0.290	0.120	0.001	0.124	32.500	7.370	11.075
Mode	26.200	#N/A	0.040	0.015	24.000	#N/A	0.290	#N/A	0.001	#N/A	32.600	#N/A	11.400
Standard Deviation	2.203	0.050	0.103	0.006	2.624	0.030	0.052	0.035	0.032	0.029	2.527	1.436	0.558
Sample Variance	4.852	0.003	0.011	0.000	6.885	0.001	0.003	0.001	0.001	0.001	6.385	2.062	0.311
Minimum	22.100	0.018	0.005	0.001	16.050	0.074	0.180	0.066	0.001	0.089	29.200	4.640	10.200
Maximum	28.600	0.146	0.340	0.018	25.600	0.155	0.350	0.191	0.075	0.187	38.000	9.370	11.950
Count	12	12	12	12	12	12	12	12	12	12	12	12	12
RSD	9%	58%	88%	50%	12%	28%	19%	28%	140%	23%	8%	20%	5%

Regression Statistics – Batch 198							
TiO_2		**P_2O_5**		**Na_2O**		**MnO**	
Regression Statistics		*Regression Statistics*		*Regression Statistics*		*Regression Statistics*	
Multiple R	0.9995	Multiple R	0.9996	Multiple R	0.5956	Multiple R	0.9997
R Square	0.9991	R Square	0.9993	R Square	0.3548	R Square	0.9994
Adjusted R Square	0.9082	Adjusted R Square	0.9084	Adjusted R Square	0.2639	Adjusted R Square	0.9085
Standard Error	0.2384	Standard Error	0.0037	Standard Error	0.0152	Standard Error	0.0033
Observations	12	Observations	12	Observations	12	Observations	12
MgO		**K_2O**		**Fe_2O_3**		**Cr_2O_3**	
Regression Statistics		*Regression Statistics*		*Regression Statistics*		*Regression Statistics*	
Multiple R	0.9943	Multiple R	0.9972	Multiple R	0.9999	Multiple R	0.8811
R Square	0.9886	R Square	0.9944	R Square	0.9999	R Square	0.7763
Adjusted R Square	0.8977	Adjusted R Square	0.9035	Adjusted R Square	0.9090	Adjusted R Square	0.6854
Standard Error	0.0311	Standard Error	0.0095	Standard Error	0.2594	Standard Error	0.0069
Observations	12	Observations	12	Observations	12	Observations	12
CaO		**BaO**		**Al_2O_3**		**SiO_2**	
Regression Statistics		*Regression Statistics*		*Regression Statistics*		*Regression Statistics*	
Multiple R	0.9968	Multiple R	0.9002	Multiple R	0.9999	Multiple R	0.9998
R Square	0.9937	R Square	0.8104	R Square	0.9999	R Square	0.9997
Adjusted R Square	0.9028	Adjusted R Square	0.7195	Adjusted R Square	0.9090	Adjusted R Square	0.9088
Standard Error	0.0125	Standard Error	0.0573	Standard Error	0.3126	Standard Error	0.6126
Observations	12	Observations	12	Observations	12	Observations	12



Based on the statistical analysis of the twelve elements in batch 198, the two data sets exhibited similar statistical numbers in terms of mean and standard deviation. Iron and titanium oxide numbers were very similar. The results from the regression analysis confirmed a linear relationship. Iron and titanium were shown to exhibit a very strong relationship based on R-values.

The overall conclusion from analysis of the three batches of paired samples is that there is demonstrable evidence to indicate that the duplicate and original samples are similar and equivalent. Based on the data, the QP (D. Brown) concludes that the sampling data is accurate within acceptable analytical error limits, and can be reliably used for resource estimate calculations included in this report.

SUMMARY QA/QC ANALYSIS

Analysis of the available QA/QC data indicates the analytical results can be considered as reliable. Given the nature of the mineralization in the laterite, significant variations from the mean values would not be expected. The assay results appear to adequately represent the range of TiO_2 and Fe_2O_3 and other oxides of interest within the deposit. However, additional QA/QC controls are recommended to bring future exploration programs in line with industry practice. It is recommended that a matrix matched certified standard be prepared and inserted at a rate of 5% (five per hundred or every 20th sample). Similarly, the number of coarse and pulp duplicates and check samples should be increased to match current industry practice. Certified blanks should be inserted at a rate of 5% of samples. Finally, it is recommended that additional samples be taken for particle size analysis.

12 DATA VERIFICATION

Data verification was done by Don Hains as part of a technical report in 43-101 format completed for CIC-CI in 2012 (Hains, D.H., 2012). Data verification consisted of the following activities:

- Collection of due diligence samples for chemical and particle size analysis from deep pits and 1 m auger holes, and
- Review of the assay data base against the laboratory certificates.

Deep pit samples were collected at 1 m intervals from a profile of five closely spaced pits located within the pilot plant parcel from three additional locations within distance of 0.7 to 3.5 km west and east of the pilot plant site (Figure 12-1). Also, 18 one-meter auger samples were collected along Highway 536 as shown on Figure 12-1. All samples were shipped to ALS Peru for assay. The assay data from these pits was compared to the original assays for the respective pits. The results of the comparison are detailed in Table 12-1.

The tables, charts, and conclusions contained in this section are extracted from the 2012 Hains report dealing with verification of CIC sampling procedures and analytical accuracy. The QP is satisfied that the verification procedures used by Hains are acceptable and accurate with respect to 43-101 technical specifications and standard industry practice. The sample locations are considered by the QP to be representative of the mineralization as a whole, and the variance between original CIC results and due diligence samples are believed to be within acceptable limits. No independent verification was conducted by the QP's for this report because no such additional verification was deemed necessary by the authors due to the extensive and thorough nature of the data verification previously completed by Hains and reviewed by the authors.

FIGURE 12-1: LOCATION OF VERIFICATION SAMPLES
(SOURCE: D. BROWN, 2015)

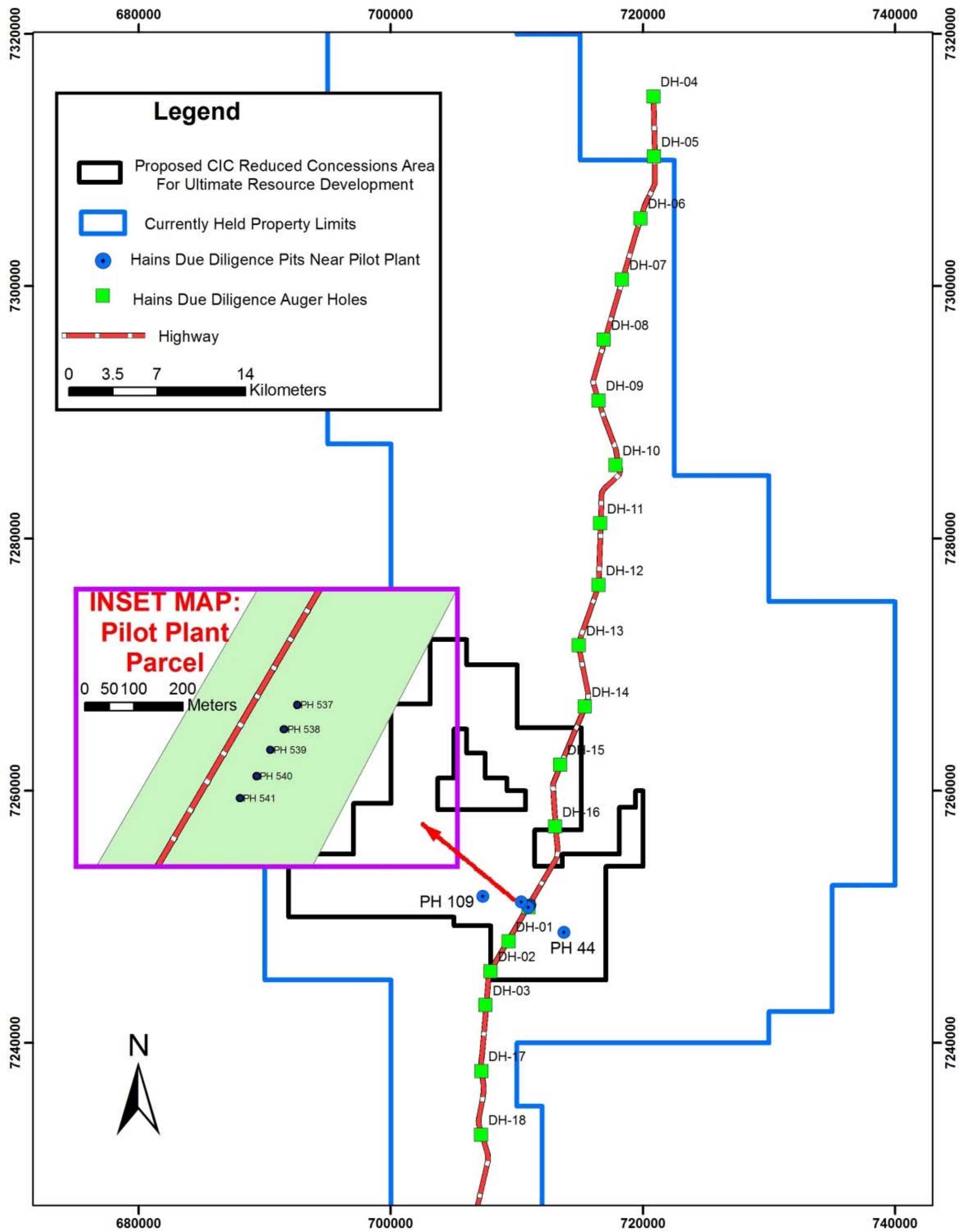


TABLE 12-1: DUE DILIGENCE SAMPLE COMPARISON – PIT SAMPLES

CIC Alto Paraná Project (Source: Hains, 2011)

Hole PH-082

	Al2O3	BaO	CaO	Cr2O3	Fe2O3	K2O	MgO	MnO	Na2O	P2O5	SiO2	TiO2	LOI
DD Sample	%	%	%	%	%	%	%	%	%	%	%	%	%
PH-082.1	24	0.006	0.06	0.005	25.6	0.082	0.38	0.158	<0.001	0.118	30.5	9.31	9.58
PH-082.2	24.8	0.004	0.05	0.011	25.6	0.088	0.37	0.149	0.002	0.103	31.4	9.03	8.89
PH-082.3	24.8	0.003	0.02	0.009	27	0.076	0.35	0.154	<0.001	0.092	29.6	9.44	8.64
PH-082.4	24.4	0.002	0.02	0.006	26.4	0.078	0.37	0.152	<0.001	0.094	30.2	9.51	8.53
PH-082.5	24.2	0.006	0.02	0.009	28.1	0.073	0.34	0.16	<0.001	0.104	28.9	9.28	8.55
PH-082.6	21.8	0.006	0.02	0.016	34.3	0.055	0.31	0.163	<0.001	0.213	25.7	8.8	8.55
average	24.00	0.005	0.03	0.009	27.83	0.08	0.35	0.16	0.00	0.121	29.38	9.23	8.79
Std. Dev.	1.12	0.00	0.02	0.00	3.30	0.01	0.03	0.01	#DIV/0!	0.05	1.99	0.27	0.41
Variance	1.2640	0.0000	0.0003	0.0000	10.9227	0.0001	0.0007	0.0000	#DIV/0!	0.0021	3.9657	0.0713	0.1679
Rel Diff of Means	-3.38%	-800.00%	28.49%	-553.33%	-0.74%	84.96%	-6966.67%	8.39%	-300.00%	9.37%	1.07%	5.36%	0.47%
Original	Al2O3	BaO	CaO	Cr2O3	Fe2O3	K2O	MgO	MnO	Na2O	P2O5	SiO2	TiO2	LOI
PH082-1	23.8	0.0005	0.07	0.0005	25.1	0.483	0.005	0.15	0.0005	0.121	30.7	9.07	10.55
PH082-2	24.3	0.0005	0.04	0.0005	25.4	0.493	0.005	0.144	0.0005	0.099	31.4	9.19	8.94
PH082-3	24	0.0005	0.04	0.0005	26.5	0.511	0.005	0.148	0.0005	0.091	30.3	9.77	8.56
PH082-4	24.2	0.0005	0.02	0.0005	27	0.506	0.005	0.152	0.0005	0.089	29.7	9.77	8.52
PH082-5	24.2	0.0005	0.03	0.0005	27.1	0.501	0.005	0.152	0.0005	0.091	29.7	9.62	8.53
PH082-6	21.6	0.0005	0.03	0.007	33.7	0.452	0.005	0.158	0.0005	0.204	26.2	8.94	8.7
PH082-7	20.4	0.0005	0.08	0.0005	28.6	0.56	0.005	0.288	0.0005	0.237	29.9	11.9	8.02
Average	23.21	0.001	0.04	0.0014	27.63	0.50	0.005	0.170	0.0005	0.133	29.70	9.75	8.83
St. Dev	1.56	0.00	0.02	0.00	2.92	0.03	0.00	0.05	0.00	0.06	1.66	1.01	0.81
Variance	2.4348	0.0000	0.0005	0.0000	8.5190	0.0011	0.0000	0.0027	0.0000	0.0038	2.7567	1.0120	0.6504

Hole PH-044

DD Sample	Al2O3	BaO	CaO	Cr2O3	Fe2O3	K2O	MgO	MnO	Na2O	P2O5	SiO2	TiO2	LOI
PH-044.1	27.2	0.005	0.08	0.007	22.1	0.085	0.33	0.134	<0.001	0.124	31.9	7.12	11.4
PH-044.2	27.7	0.01	0.03	0.006	22.4	0.102	0.35	0.131	0.004	0.114	32.3	7.26	10.55
PH-044.3	27.3	<0.001	0.02	0.007	22.7	0.088	0.3	0.125	0.003	0.109	32.1	7.23	10.2
PH-044.4	27.9	0.002	0.02	0.005	23.2	0.093	0.31	0.131	<0.001	0.105	30.8	7.58	10.1
PH-044.5	27.9	0.008	0.03	0.006	23.2	0.092	0.31	0.131	<0.001	0.104	31	7.45	10.15
PH-044.6	27.7	0.008	0.02	0.009	23.9	0.085	0.3	0.145	<0.001	0.114	30.6	7.72	9.97
PH-044.7	27.9	0.008	0.02	0.011	23.9	0.079	0.28	0.143	0.001	0.123	30.6	7.3	9.92
PH-044.8	27.8	0.007	0.02	0.007	24.3	0.071	0.27	0.148	<0.001	0.138	30.7	7.24	9.88
average	27.68	0.007	0.03	0.007	23.21	0.087	0.31	0.136	0.003	0.116	31.25	7.36	10.27
St. Dev	0.28	0.00	0.02	0.00	0.78	0.01	0.03	0.01	0.00	0.01	0.72	0.20	0.50
Variance	0.0764	0.0000	0.0004	0.0000	0.6127	0.0001	0.0007	0.0001	0.0000	0.0001	0.5229	0.0412	0.2526
Rel Diff of Means	-0.596%	1.257%	30.769%	-18.636%	-4.639%	67.210%	-151.712%	#######	84.365%	2.570%	2.072%	-3.261%	2.847%

Original	Al2O3	BaO	CaO	Cr2O3	Fe2O3	K2O	MgO	MnO	Na2O	P2O5	SiO2	TiO2	LOI
PH044 0-1	26.7	0.0005	0.06	0.0005	21.5	0.402	0.005	0.131	0.027	0.126	32.4	7.24	11.45
PH044 1-2	27.1	0.0005	0.05	0.0005	21.8	0.425	0.005	0.123	0.03	0.112	32.6	7.34	10.4
PH044 2-3	27.1	0.0005	0.03	0.0005	22.4	0.427	0.005	0.125	0.027	0.109	31.9	7.55	10.35
PH044 3-4	27.8	0.0005	0.02	0.0005	22.8	0.424	0.005	0.122	0.016	0.104	31.1	7.62	10.05
PH044 4-5	27.6	0.0005	0.02	0.001	23	0.429	0.005	0.124	0.032	0.102	30.9	7.74	10.1
PH044 5-6	27.2	0.015	0.08	0.015	23.7	0.073	0.3	0.13	0.02	0.106	30.5	7.58	10.25
PH044 6-7	27.2	0.01	0.03	0.013	23.6	0.084	0.3	0.132	0.0005	0.108	30.8	7.44	10.25
PH044 7-8.25	26.5	0.012	0.06	0.016	23.6	0.12	0.29	0.136	0.0005	0.118	31.9	7.14	10.1
PH044 8.25-9	30.4	0.023	0.04	0.008	17.25	0.0005	0.18	0.084	0.0005	0.19	35.1	4.52	12.2
average	27.51	0.0069	0.04	0.01	22.18	0.265	0.122	0.123	0.017	0.119	31.91	7.13	10.57
Std. Dev.	1.15	0.01	0.02	0.01	2.01	0.19	0.14	0.02	0.01	0.03	1.40	1.00	0.74
Variance	1.3311	0.0001	0.0004	0.0000	4.0450	0.0354	0.0204	0.0002	0.0002	0.0008	1.9736	0.9945	0.5532

Hole PH-109

DD Sample	Al2O3	BaO	CaO	Cr2O3	Fe2O3	K2O	MgO	MnO	Na2O	P2O5	SiO2	TiO2	LOI
PH-109.1	24	0.005	0.03	0.005	27.3	0.059	0.38	0.176	<0.001	0.126	28.5	9.66	9.73
PH-109.2	24.9	0.005	0.03	0.006	26.8	0.076	0.37	0.163	<0.001	0.114	29.3	9.28	9.22
PH-109.3	25.2	0.005	0.02	0.005	27.4	0.076	0.36	0.162	<0.001	0.11	28.9	9.23	8.98
PH-109.4	24.9	0.006	0.01	0.005	28	0.066	0.35	0.166	<0.001	0.108	27.8	9.47	8.7
PH-109.5	25.2	0.006	0.02	0.004	27.9	0.064	0.34	0.167	<0.001	0.111	28	9.43	8.99
PH-109.6	25.5	0.009	0.01	0.012	27.9	0.06	0.33	0.165	<0.001	0.124	28.1	9.02	8.92
average	24.95	0.006	0.02	0.006	27.55	0.067	0.36	0.167	<0.001	0.1155	28.43	9.35	9.09
Std. Dev.	0.52	0.00	0.01	0.00	0.47	0.01	0.02	0.01	#DIV/0!	0.01	0.58	0.22	0.35
Variance	0.2670	0.0000	0.0001	0.0000	0.2190	0.0001	0.0004	0.0000	#DIV/0!	0.0001	0.3347	0.0490	0.1259
Rel. Diff of Means	- 1.600%	76.986%	44.000%	47.358%	- 0.130%	- 65.312%	-4.412%	-1.084%	#VALUE!	14.172%	0.084%	- 2.874%	4.831%

Original	Al2O3	BaO	CaO	Cr2O3	Fe2O3	K2O	MgO	MnO	Na2O	P2O5	SiO2	TiO2	LOI
PH109 0-0.3	23.6	0.0005	0.04	0.01	27.3	0.035	0.36	0.172	0.05	0.126	28.4	9.6	10.25
PH109 0.3-1.3	24.4	0.031	0.05	0.018	26.7	0.049	0.37	0.16	0.05	0.116	29.1	9.09	9.85
PH109 1.3 -2.3	24.9	0.028	0.04	0.012	26.6	0.058	0.35	0.153	0.051	0.107	29.4	8.9	9.46
PH109 2.3 -3.3	24.8	0.024	0.03	0.018	27.8	0.048	0.34	0.16	0.052	0.106	28	9.32	9.2
PH109 3.3 -4.3	25.1	0.025	0.02	0.008	27.7	0.043	0.33	0.161	0.045	0.11	28.1	9.02	9.33
PH109 4.3 – 5.8	24.7	0.029	0.04	0.008	28.3	0.043	0.34	0.17	0.084	0.11	27.8	9.36	9.01
PH109 5.8-6.3	24.4	0.045	0.03	0.008	28.2	0.007	0.29	0.177	0.049	0.267	28.4	8.32	9.76
average	24.56	0.026	0.04	0.012	27.51	0.04	0.34	0.165	0.054	0.135	28.46	9.09	9.55

Std. Dev.	0.49	0.01	0.01	0.00	0.68	0.02	0.03	0.01	0.01	0.06	0.59	0.41	0.43
Variance	0.2429	0.0002	0.0001	0.0000	0.4581	0.0003	0.0007	0.0001	0.0002	0.0035	0.3462	0.1700	0.1824

Hole PH537

DD Sample	Al2O3	BaO	CaO	Cr2O3	Fe2O3	K2O	MgO	MnO	Na2O	P2O5	SiO2	TiO2	LOI
PH-537.1	24.8	0.003	0.11	0.012	24.5	0.102	0.37	0.154	0.006	0.13	31.6	8.62	9.65
PH-537.2	25.4	0.001	0.06	0.003	23	0.108	0.34	0.117	0.001	0.102	32	7.77	9.47
PH-537.3	25.4	0.004	0.05	<0.001	24.1	0.1	0.34	0.122	0.002	0.092	31.1	8.12	9.3
PH-537.4	25.6	0.002	0.05	<0.001	24.4	0.102	0.33	0.123	<0.001	0.089	30.5	8.1	9.14
PH-537.5	26.2	<0.001	0.05	0.008	24.3	0.098	0.31	0.115	<0.001	0.083	30.8	8.03	9.12
average	25.48	0.003	0.06	0.008	24.06	0.102	0.34	0.126	0.003	0.099	31.2	8.128	9.336
Std. Dev	0.50	0.00	0.03	0.00	0.61	0.00	0.02	0.02	0.00	0.02	0.60	0.31	0.23
Variance	0.252	1.67E-06	0.00068	2.033E-05	0.373	0.000014	0.00047	0.00025	0.000007	0.000344	0.365	0.09517	0.05073
Rel. Diff of Means	-0.463%	51.220%	11.724%	-11.515%	2.294%	-23.636%	0.952%	4.213%	88.571%	10.023%	0.160%	2.702%	-0.293%

Original	Al2O3	BaO	CaO	Cr2O3	Fe2O3	K2O	MgO	MnO	Na2O	P2O5	SiO2	TiO2	LOI
PH537 0-0.2	25.6	0.01	0.05	0.01	25	0.06	0.32	0.122	0.024	0.147	31.5	7.85	9.14
PH537 0.2 1.2	26.1	0.0005	0.05	0.006	24.8	0.07	0.31	0.122	0.019	0.088	30.6	8.04	9.08
PH537 1.2 -2.2	26.1	0.0005	0.05	0.006	24.9	0.078	0.32	0.123	0.022	0.086	30.6	8.27	8.95
PH537 2.2-3.2	25.9	0.003	0.05	0.005	24.5	0.082	0.33	0.125	0.026	0.09	30.9	8.19	9.11
PH537 3.2-4.2	25.9	0.003	0.08	0.006	24.3	0.084	0.35	0.122	0.029	0.093	31.2	8.19	9.04
PH537 4.2-5.2	26	0.01	0.07	0.008	23.8	0.092	0.36	0.122	0.03	0.103	32.6	8.18	9.33
PH537 5.2-6.1	25.3	0.004	0.09	0.005	23.3	0.085	0.35	0.132	0.028	0.12	32	7.96	9.82
PH537 6.1-6.3	22	0.01	0.14	0.009	26.4	0.109	0.39	0.186	0.032	0.155	30.6	10.15	10
average	25.36	0.005	0.07	0.007	24.63	0.083	0.34	0.132	0.026	0.110	31.25	8.35	9.31
Std. Dev.	1.39	0.00	0.03	0.00	0.92	0.01	0.03	0.02	0.00	0.03	0.74	0.74	0.39
Variance	1.9198	0.0000	0.0010	0.0000	0.8507	0.0002	0.0007	0.0005	0.0000	0.0008	0.5486	0.5464	0.1516

Hole PH538

DD Sample	Al2O3	BaO	CaO	Cr2O3	Fe2O3	K2O	MgO	MnO	Na2O	P2O5	SiO2	TiO2	LOI
PH-538.1	24.4	0.007	0.13	0.003	23.9	0.107	0.36	0.148	0.005	0.116	31.4	8.31	9.75
PH-538.2	25	0.004	0.05	<0.001	23.7	0.107	0.36	0.128	0.014	0.098	31.7	8.14	9.29
PH-538.3	25.1	0.003	0.03	0.024	24.8	0.097	0.35	0.131	0.063	0.089	30.8	8.53	8.98
PH-538.4	25.1	0.003	0.02	0.016	25	0.089	0.33	0.131	0.014	0.084	29.8	8.54	8.86
PH-538.5	25.3	0.001	0.02	0.001	25.2	0.09	0.32	0.132	0.005	0.079	29.9	8.55	8.85
PH-538.6	25.5	<0.001	0.02	0.003	25.3	0.088	0.32	0.129	0.005	0.077	29.6	8.43	8.82

PH-538.7	25.5	0.008	0.02	0.005	25.4	0.084	0.32	0.13	0.003	0.085	30.1	8.23	8.81
Average	25.13	0.004	0.04	0.009	24.76	0.095	0.34	0.133	0.016	0.090	30.47	8.39	9.05
Std. Dev.	0.38	0.00	0.04	0.01	0.69	0.01	0.02	0.01	0.02	0.01	0.83	0.17	0.35
Variance	0.1424	0.0000	0.0016	0.0001	0.4695	0.0001	0.0004	0.0000	0.0005	0.0002	0.6924	0.0273	0.1232
Rel. Diff. of Means	2.565%	-12.554%	35.268%	-17.117%	-0.762%	-9.458%	-2.165%	-1.077%	37.212%	16.700%	1.355%	-2.907%	4.571%

Original	Al2O3	BaO	CaO	Cr2O3	Fe2O3	K2O	MgO	MnO	Na2O	P2O5	SiO2	TiO2	LOI
PH538 0-0.1	25.5	0.014	0.04	0.007	25.1	0.05	0.31	0.118	0.019	0.188	30.4	7.92	9.19
PH538 0.1-0.9	25.9	0.003	0.03	0.007	25.3	0.067	0.31	0.13	0.026	0.091	30.8	8.07	8.9
PH538 0.9 -1.9	26.9	0.004	0.03	0.006	25	0.071	0.3	0.122	0.034	0.091	30.9	7.73	8.99
PH538 1.9-2.9	26.4	0.0005	0.01	0.006	24.9	0.079	0.31	0.127	0.017	0.079	30.1	8.17	9.11
PH538 2.9-3.9	26.4	0.0005	0.02	0.012	24.9	0.081	0.31	0.127	0.019	0.08	30.2	8.29	9.2
PH538 3.9-4.9	26	0.0005	0.02	0.008	24.6	0.086	0.33	0.13	0.023	0.088	30.9	8.35	9.2
PH538 4.9-5.9	26.1	0.003	0.03	0.004	24	0.088	0.34	0.123	0.03	0.095	31.8	7.99	10.15
PH538 5.9-6.9	25.4	0.003	0.06	0.009	24.1	0.119	0.37	0.135	0.026	0.105	31.4	8.42	9.51
PH538 6.9-7.9	27	0.005	0.17	0.006	22.1	0.094	0.34	0.114	0.023	0.11	32.7	7.02	10.3
PH538 7.8-8	22.3	0.005	0.23	0.009	25.7	0.129	0.38	0.187	0.031	0.15	29.7	9.57	10.3
Average	25.79	0.004	0.06	0.007	24.57	0.086	0.33	0.131	0.025	0.108	30.89	8.15	9.49
Std. Dev.	1.33	0.00	0.07	0.00	1.01	0.02	0.03	0.02	0.01	0.03	0.89	0.64	0.55
Variance	1.7788	0.0000	0.0055	0.0000	1.0157	0.0006	0.0008	0.0004	0.0000	0.0012	0.7921	0.4097	0.3054

Hole PH539

DD Sample	Al2O3	BaO	CaO	Cr2O3	Fe2O3	K2O	MgO	MnO	Na2O	P2O5	SiO2	TiO2	LOI
PH-539.1	25.5	0.003	0.13	0.018	22.9	0.094	0.35	0.128	0.006	0.112	31.2	7.46	10.15
PH-539.2	25.8	0.004	0.05	0.01	23.3	0.1	0.35	0.12	0.006	0.1	31.5	7.64	9.62
PH-539.3	25.6	0.006	0.03	0.004	25	0.092	0.34	0.13	<0.001	0.095	30.2	8.32	9.32
PH-539.4	26.2	0.008	0.03	0.003	25.1	0.085	0.33	0.13	<0.001	0.093	29.9	8.12	9.53
PH-539.5	26	0.003	0.02	0.006	25.3	0.081	0.33	0.134	<0.001	0.092	29.8	8.21	9.28
PH-539.6	26.1	0.006	0.02	0.004	26	0.076	0.32	0.139	0.004	0.097	29.6	8.36	9.22
PH-539.7	25.7	0.003	0.02	0.01	26.3	0.067	0.31	0.148	0.023	0.107	29.7	8.36	9.23
Average	25.84	0.005	0.04	0.008	24.84	0.085	0.33	0.133	0.010	0.099	30.27	8.07	9.48
Std. Dev.	0.26	0.00	0.04	0.01	1.29	0.01	0.01	0.01	0.01	0.01	0.77	0.37	0.33
Variance	0.0695	0.0000	0.0016	0.0000	1.6529	0.0001	0.0002	0.0001	0.0001	0.0001	0.5857	0.1350	0.1111
Rel Diff of Means	-1.256%	-48.872%	31.122%	33.288%	3.210%	-6.546%	-0.866%	9.922%	57.609%	14.121%	-0.421%	3.784%	-1.932%

Original	Al2O3	BaO	CaO	Cr2O3	Fe2O3	K2O	MgO	MnO	Na2O	P2O5	SiO2	TiO2	LOI
PH539 0-0.2	24.8	0.011	0.03	0.026	29.1	0.048	0.29	0.172	0.028	0.194	28.8	8.07	9.04

PH539 0.2-1.2	25.9	0.003	0.02	0.01	26.5	0.059	0.31	0.149	0.019	0.106	29.4	8.52	8.99
PH539 1.2-2.2	26.1	0.0005	0.02	0.007	25.8	0.066	0.31	0.138	0.02	0.095	29.4	8.32	9.09
PH539 2.2-3.2	26.2	0.0005	0.02	0.018	26.1	0.073	0.33	0.141	0.022	0.091	29.8	8.77	8.97
PH539 3.2-4.2	26.2	0.0005	0.02	0.008	26	0.077	0.33	0.14	0.025	0.093	29.6	8.76	9.14
PH539 4.2-5.2	26	0.001	0.03	0.008	25.1	0.088	0.34	0.135	0.02	0.095	30.6	8.37	9.04
PH539 5.2-6.2	26.2	0.0005	0.06	0.012	23.3	0.094	0.34	0.124	0.027	0.103	32.1	7.58	9.5
PH539 6.2-7.0	26.2	0.0005	0.15	0.008	22.8	0.087	0.34	0.128	0.02	0.115	31.8	7.29	10.05
PH539 7.0-7.2	22.1	0.011	0.21	0.009	26.3	0.126	0.38	0.199	0.026	0.15	29.8	9.78	9.87
Average	25.52	0.003	0.06	0.012	25.67	0.080	0.33	0.147	0.023	0.12	30.14	8.38	9.30
Std. Dev.	1.36	0.00	0.07	0.01	1.85	0.02	0.03	0.02	0.00	0.03	1.13	0.72	0.41
Variance	1.8469	0.0000	0.0048	0.0000	3.4175	0.0005	0.0007	0.0006	0.0000	0.0012	1.2778	0.5255	0.1672

Hole PH540

DD Sample	Al2O3	BaO	CaO	Cr2O3	Fe2O3	K2O	MgO	MnO	Na2O	P2O5	SiO2	TiO2	LOI
PH-540A	26.8	<0.001	0.1	0.008	22.7	0.086	0.34	0.125	<0.001	0.115	31.5	7.26	10.45
PH-540.1	26.2	0.005	0.09	0.004	23.3	0.087	0.35	0.128	0.002	0.116	31.7	7.6	10.45
PH-540.2	26.2	0.008	0.04	0.003	23.7	0.1	0.35	0.124	0.002	0.101	31.3	7.79	9.77
PH-540.3	26.8	0.004	0.03	0.003	24.2	0.094	0.33	0.122	0.009	0.095	30.4	7.72	9.55
PH-540.4	26.2	0.003	0.02	0.004	25.2	0.086	0.34	0.133	0.003	0.089	29.8	8.4	9.34
PH-540.5	26.6	0.004	0.02	0.006	25	0.08	0.32	0.126	0.001	0.087	29.4	7.94	9.57
PH-540.6	26.2	0.006	0.02	0.003	25.3	0.083	0.33	0.134	0.005	0.089	29.7	8.45	9.47
PH-540.7	26.3	0.006	0.02	0.003	25.4	0.074	0.31	0.136	<0.001	0.101	29.6	8.13	9.43
average	26.4125	0.005	0.043	0.004	24.35	0.086	0.33	0.129	0.004	0.099	30.43	7.91	9.75
Std. Dev.	0.27	0.00	0.03	0.00	1.03	0.01	0.01	0.01	0.00	0.01	0.94	0.41	0.45
Variance	0.0755	0.0000	0.0011	0.0000	1.0600	0.0001	0.0002	0.0000	0.0000	0.0001	0.8850	0.1643	0.2002
Rel. Diff of Means	-1.760%	36.158%	11.047%	46.127%	2.643%	-7.069%	-5.026%	47.622%	82.632%	13.971%	-0.819%	1.615%	-2.888%
Original	Al2O3	BaO	CaO	Cr2O3	Fe2O3	K2O	MgO	MnO	Na2O	P2O5	SiO2	TiO2	LOI
PH540 0-0.3	24.8	0.06	0.03	0.018	27	0.047	0.28	1.095	0.022	0.179	28.6	7.22	9.35
PH540 0.3-1.3	26.3	0.0005	0.02	0.008	25.7	0.063	0.3	0.139	0.022	0.102	29.8	8.08	8.98
PH540 1.3-2.3	26.8	0.0005	0.02	0.01	24.9	0.072	0.3	0.128	0.019	0.089	29.6	7.86	9.22
PH540 2.3-3.3	26.5	0.0005	0.02	0.007	24.9	0.076	0.3	0.133	0.015	0.087	29.7	8.11	9.22
PH540 3.3-4.3	26.8	0.0005	0.02	0.007	25	0.081	0.32	0.132	0.022	0.089	30.2	8.14	9.26
PH540 4.3-5.3	26.4	0.0005	0.02	0.005	24.9	0.081	0.32	0.129	0.023	0.093	30	8.13	9.22
PH540 5.3-6.3	26.6	0.003	0.05	0.005	23.7	0.095	0.33	0.127	0.023	0.099	31.7	7.81	9.42
PH540 6.3-7.5	26.1	0.002	0.09	0.005	22.9	0.086	0.33	0.128	0.017	0.121	31.7	7.3	10.15

PH540 7.5-7.7	23.3	0.005	0.16	0.006	26.1	0.124	0.38	0.197	0.027	0.178	30.3	9.72	10.5
average	25.96	0.008	0.05	0.008	25.01	0.081	0.32	0.245	0.021	0.115	30.18	8.04	9.48
Std. Dev.	1.17	0.02	0.05	0.00	1.22	0.02	0.03	0.32	0.00	0.04	0.99	0.72	0.50
Variance	1.3578	0.0004	0.0023	0.0000	1.4786	0.0005	0.0008	0.1020	0.0000	0.0014	0.9844	0.5190	0.2514
Hole PH541													
DD Sample	Al2O3	BaO	CaO	Cr2O3	Fe2O3	K2O	MgO	MnO	Na2O	P2O5	SiO2	TiO2	LOI
PH-541.1	26.8	0.004	0.15	0.003	22.1	0.102	0.33	0.12	0.001	0.12	31.6	6.93	10.8
PH-541.2	26.9	0.009	0.06	0.005	22.7	0.105	0.34	0.118	<0.001	0.104	31.6	7.27	10.25
PH-541.3	26.7	0.003	0.03	0.004	24.4	0.097	0.34	0.128	0.003	0.095	30	7.86	9.76
PH-541.4	26.7	0.003	0.02	0.002	24.5	0.088	0.32	0.133	<0.001	0.095	29.6	7.97	9.59
PH-541.5	26.7	<0.001	0.02	0.003	24.5	0.088	0.32	0.129	<0.001	0.09	29.4	7.99	9.55
PH-541.6	27.2	0.003	0.02	0.003	24.7	0.084	0.31	0.128	0.001	0.094	29.7	7.78	9.57
Average	26.83	0.004	0.05	0.003	23.82	0.094	0.33	0.126	0.002	0.100	30.32	7.63	9.92
Std. Dev.	0.20	0.00	0.05	0.00	1.12	0.01	0.01	0.01	0.00	0.01	1.01	0.43	0.51
Variance	0.0387	0.0000	0.0026	0.0000	1.2497	0.0001	0.0001	0.0000	0.0000	0.0001	1.0257	0.1880	0.2554
Rel. Diff of Means	-2.897%	60.201%	28.571%	58.333%	2.257%	-4.703%	-8.088%	8.475%	95.536%	7.047%	-0.869%	3.660%	-0.371%
Original	Al2O3	BaO	CaO	Cr2O3	Fe2O3	K2O	MgO	MnO	Na2O	P2O5	SiO2	TiO2	LOI
PH541 0.01.	26.9	0.001	0.02	0.005	25.2	0.055	0.29	0.141	0.022	0.131	29.1	7.83	9.69
PH541 0.1-1.1	26.6	0.0005	0.02	0.005	25.2	0.07	0.3	0.141	0.02	0.103	29.8	8.01	9.29
PH541 1.1-2.1	27.6	0.0005	0.02	0.006	23.8	0.08	0.29	0.122	0.02	0.096	30.2	7.22	9.36
PH541 2.1-3.1	27	0.0005	0.02	0.005	24.4	0.082	0.3	0.13	0.02	0.091	30	7.89	9.29
PH541 3.1-4.1	27.1	0.004	0.02	0.007	24.6	0.084	0.31	0.134	0.016	0.094	30.2	7.91	9.35
PH541 4.1-5.1	25.7	0.021	0.05	0.011	24.5	0.09	0.29	0.129	0.045	0.091	29.6	8.05	9.82
PH541 5.1-6.1	25.5	0.021	0.06	0.011	23.4	0.11	0.3	0.122	0.094	0.097	31.3	7.8	10.1
PH541 6.1-6.9	26.2	0.019	0.15	0.01	22.5	0.097	0.29	0.124	0.038	0.114	31.2	7.13	10.95
PH541 6.9-7.1	22.1	0.032	0.27	0.012	25.7	0.14	0.35	0.196	0.061	0.148	29.1	9.47	11.1
Average	26.08	0.011	0.07	0.008	24.37	0.090	0.30	0.138	0.037	0.107	30.06	7.92	9.88
Std. Dev	1.64	0.01	0.09	0.00	1.00	0.02	0.02	0.02	0.03	0.02	0.79	0.67	0.70
Variance	2.6844	0.0001	0.0074	0.0000	0.9975	0.0006	0.0004	0.0005	0.0007	0.0004	0.6253	0.4456	0.4961

The data show reasonable comparability between the original and due diligence samples in terms of relative difference of the means of the due diligence sample versus the original sample, especially for the major oxides of interest. Some of the larger differences for some elements are attributed to variations in sample lengths between the original samples and the due diligence samples.

Shallow (1m) auger drill samples were collected from sites adjacent to highway 536 at approximate 1 km intervals over a distance of over 20 km. This data provided a general indication of the surface of the deposit in a northeast-southwest direction. The results of the analyses are provided in Table 12-2.

TABLE 12-2: DUE DILIGENCE SAMPLES
1 m Auger Drill Samples (Source: Hains, 2012)

	Al2O3	BaO	CaO	Cr2O3	Fe2O3	K2O	MgO	MnO	Na2O	P2O5	SiO2	TiO2	LOI
DH 01	26.5	0.002	0.1	0.005	22.9	0.084	0.36	0.117	<0.001	0.116	31.2	6.98	10.65
DH 02	27.9	0.009	0.14	0.006	20.5	0.11	0.35	0.109	0.004	0.122	33.5	6.25	10.85
DH 03	29.9	0.006	0.16	0.038	17.65	0.139	0.32	0.075	0.009	0.116	35.9	4.52	11.5
DH 04	30.1	0.002	0.06	0.01	17.45	0.1	0.26	0.068	0.005	0.086	36.9	2.9	12.25
DH 05	28.3	0.004	0.06	0.029	22.1	0.069	0.27	0.106	<0.001	0.09	33.2	4.53	11.35
DH 06	28.1	0.001	0.04	0.027	24.3	0.064	0.3	0.117	<0.001	0.102	29.9	4.91	11.6
DH 07	27.6	0.001	0.04	0.01	24.1	0.083	0.27	0.123	<0.001	0.102	30.4	5.96	10.9
DH 08	26.7	0.001	0.04	0.012	25.9	0.062	0.31	0.151	<0.001	0.127	29.3	6.64	10.8
DH 09	26.4	<0.001	0.04	0.005	25.5	0.064	0.33	0.138	<0.001	0.12	28.1	7.49	11.7
DH 10	26.8	0.006	0.18	0.028	17.15	0.071	0.31	0.069	<0.001	0.108	39.3	5.53	10.55
DH 11	29	0.006	0.14	0.005	15.9	0.124	0.29	0.083	0.005	0.078	38.1	4.9	11.1
DH 12	24.6	0.003	0.02	0.012	18.9	0.071	0.29	0.105	<0.001	0.084	40	6.27	9.99
DH 13	23.1	0.002	0.07	0.004	23.7	0.071	0.35	0.157	<0.001	0.078	34.8	8.58	9.05
DH 14	27.1	0.003	0.08	0.014	22.4	0.071	0.33	0.136	<0.001	0.118	32.8	6.69	10.95
DH 15	24	0.003	0.11	0.004	27.3	0.049	0.36	0.173	<0.001	0.12	28.9	9.51	9.52
DH 16	28.1	0.009	0.18	0.008	21.5	0.106	0.31	0.127	0.002	0.134	33.1	5.71	11.05
DH 17	30.4	0.006	0.09	0.005	17.25	0.126	0.3	0.07	0.006	0.114	37.3	3.7	11.65
DH 18	28.4	0.003	0.16	0.009	13.8	0.126	0.26	0.06	0.006	0.079	43.1	3.49	11
Average	27.39	0.00	0.10	0.01	21.02	0.09	0.31	0.11	0.01	0.11	34.21	5.81	10.91
StDev	2.01	0.00	0.05	0.01	3.87	0.03	0.03	0.03	0.00	0.02	4.27	1.73	0.79
Variance	4.0481	0.0000	0.0028	0.0001	14.9403	0.0007	0.0011	0.0011	0.0000	0.0003	18.2422	2.9869	0.6177
RSD	7.35%	66.21%	56.08%	80.86%	18.39%	30.87%	10.60%	30.66%	40.45%	17.47%	12.48%	29.75%	7.20%

This data compares favourably with the results of the 1 m auger drill samples from adjacent areas.

Particle size analysis of samples from two pits in the pilot plant area are provided in Table 12-2 and Figures 12-1 and 12-2. The data are for dried but not blunged samples and thus show larger particle sizes than blunged material. Despite this defect, the data are consistent with assay and laboratory test data showing a relatively fine material and decreasing TiO_2 and Fe_2O_3 content with decreasing particle size.

TABLE 12-3: PARTICLE SIZE ANALYSIS – DUE DILIGENCE SAMPLES

Pits 541 and 537 (Source: Hains, 2012)

SAMPLE DESCRIPTION	Recvd Wt. kg	+1180 um g	+1000 um g	+600um g	+250um g	+106um g	+75um g	+38um g
PH-541.1	0.71	164.8	25.4	76.1	191.5	157.4	51.5	33.4
PH-541.2	0.69	156.7	24.4	72.5	180.4	169.6	43.7	30
PH-541.3	0.89	213.2	34	110.1	238.4	197.1	56.2	37.2
PH-541.4	0.84	218.9	37	111.4	208.5	181.3	42.2	35
PH-541.5	0.79	204.9	36.2	114.6	204.3	159.2	30.7	40.9
PH-541.6	0.99	273.1	43.3	137.8	231.3	202.9	67.8	35
PH-537.1	0.5	123.2	19.5	58.5	133.7	105.1	34.2	26.5
PH-537.2	0.79	166.1	26.5	90.4	250.4	168.6	52.4	32.7
PH-537.3	0.97	243.7	36.2	123	276	196.2	52.7	35
PH-537.4	1.03	252.1	45.9	144.6	277.3	190.8	75.2	32.1
PH-537.5	0.84	228.7	43.4	122.7	193.6	150.1	59.9	31.7
Total	9.04	2245.4	371.8	1161.7	2385.4	1878.3	566.5	369.5

Figure 12-2: particle size distribution (Source: Hains, 2012)

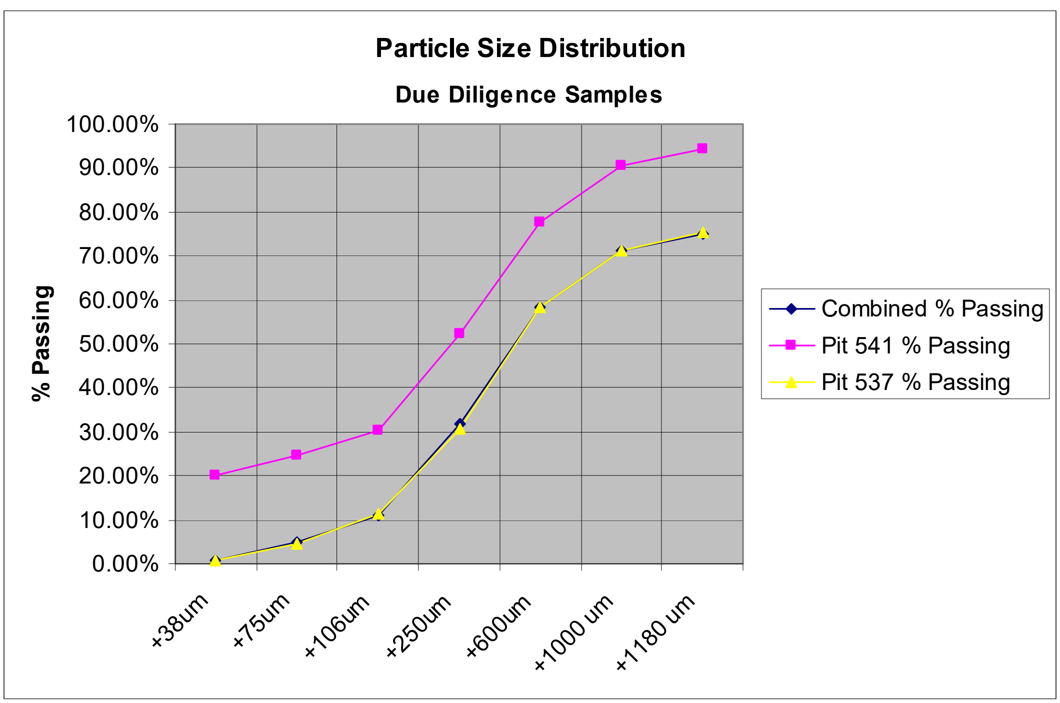
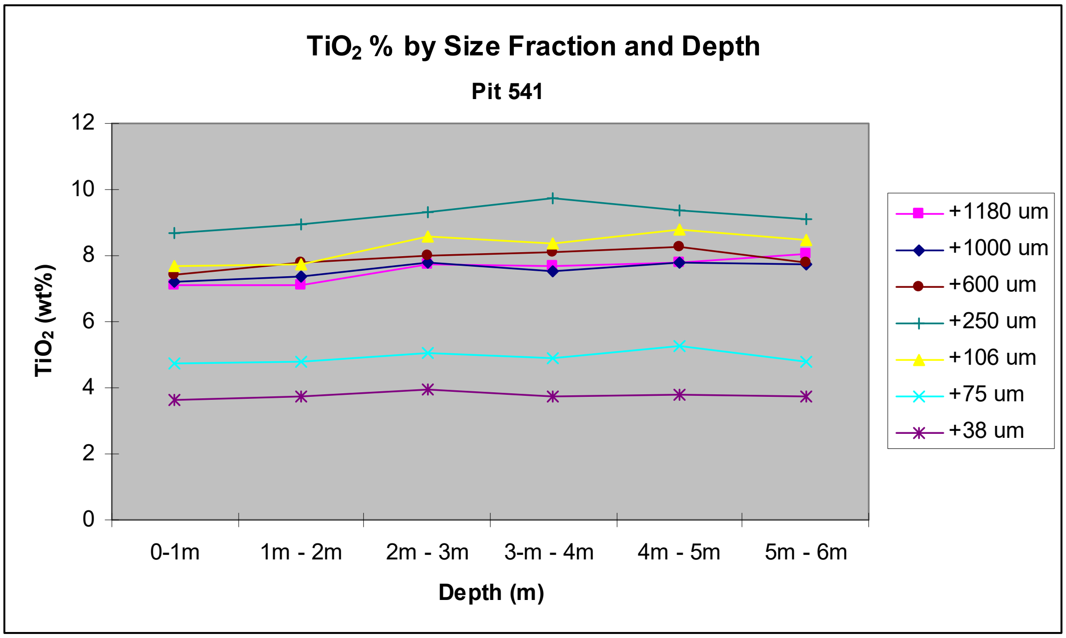
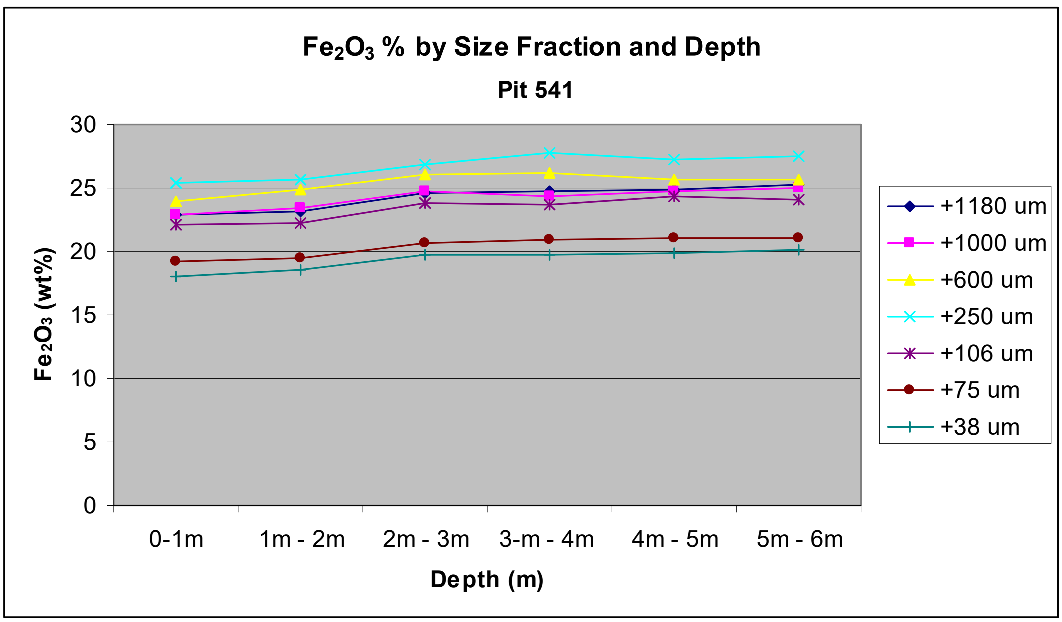
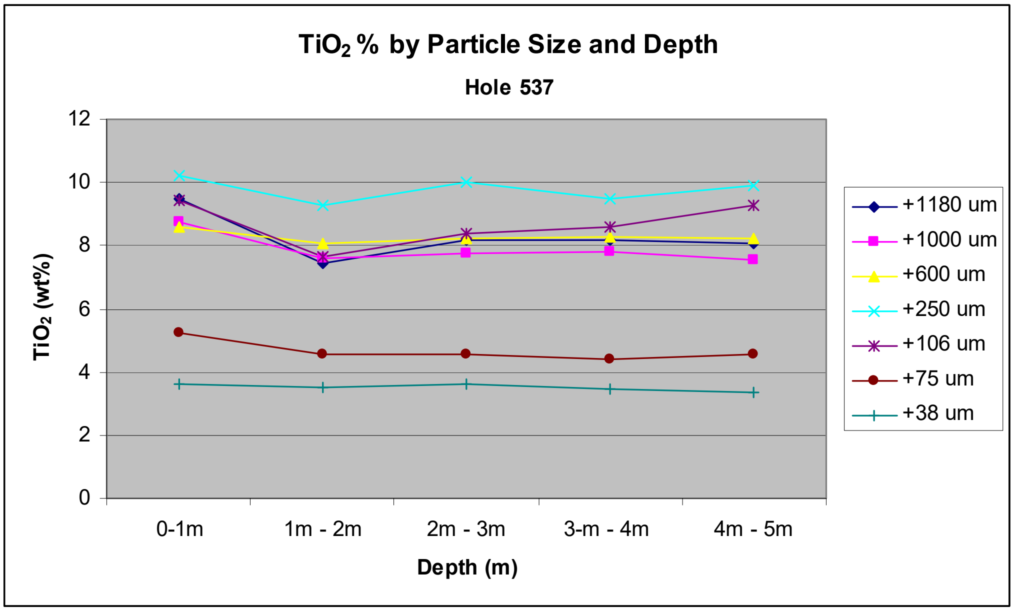


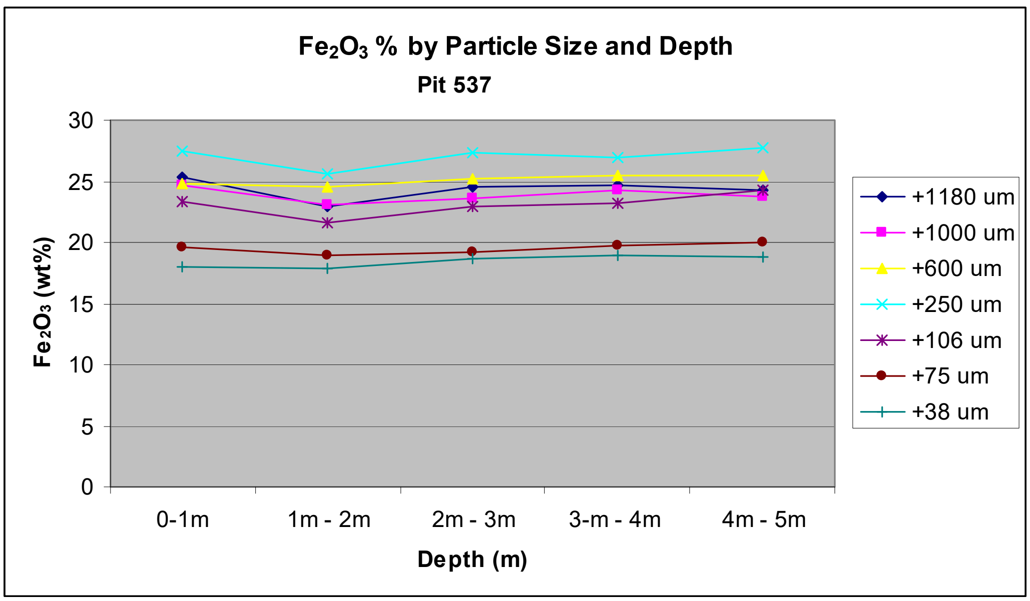
FIGURE 12-3: ASSAYS BY SIZE FRACTION AND DEPTH

Due Diligence Samples (Source: Hains, 2012)









Review of the pit assay data base against the assay certificates did not reveal any discrepancies and in the opinion of the author, the assay data is of adequate accuracy and precision for use in the technical report.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

Typical titanium rich sand deposits use well proven mineral processing technology to recover the valuable minerals. The Alto Paraná titanium sand mineralization is embedded in a clay matrix and represents what appears to be a “one of a kind” resource. As such no existing plant or operation has attempted the recovery of ilmenite / titanomagnetite from a material with 60% – 75% fines. For this reason it was deemed necessary to demonstrate that technology could be developed to successfully recover titania bearing minerals from Paraná lateritic materials.

CIC undertook an extensive program of mineral processing and metallurgical test work in 2009 designed to produce a high quality ilmenite and magnetite concentrates. This work program involved both laboratory scale and pilot plant scale test work. Concentrate production has been followed by process modeling studies, laboratory scale and pilot plant scale smelting tests for production of titanium dioxide slag and high quality pig iron. At the end of 2011, approximately 108 tons of concentrate were produced in the pilot plant in Paraguay. This material was used as feed for pilot plant smelting tests at MINTEK in South Africa during the first quarter of 2012. The smelting test work was successfully completed during the week of March 25, 2012.

MINERAL PROCESSING

LABORATORY TEST WORK

Initial mineral processing test work was undertaken in 2009 based on laboratory scale processing of laterite samples collected from test pits. This work, which was supervised by Minerals Advisory Group LLC, Tucson, Arizona (MAG) involved materials characterization to define the chemistry, mineralogy and physical characteristics of the laterite, followed by experimental work at Minerals Advisory Group Research and Development (Tucson) to establish a potential flow sheet for recovery of the ilmenite and magnetite. Chemical and mineralogical analysis shows the following characteristic analysis for the laterite (Table 13-1).

TABLE 13-1: TYPICAL LATERITE CHEMICAL AND MINERALOGICAL ANALYSIS (SOURCE: MAG, 2009)

CIC-CI Alto Paraná Project

Chemical Analysis[1] (wt%)

Al_2O_3	BaO	CaO	Cr_2O_3	Fe_2O_3	K_2O	MgO	MnO	Na_2O	P_2O_5	SiO_2	TiO_2	LOI
22.50	0.01	0.05	0.01	26.01	0.08	0.29	0.14	0.02	0.10	31.0	8.04	11.70

Trace Element Analysis[2] (ppm)

S	Cl	V	Co	Ni	W	Cu	Zn	As	Sn	Pb	Mo	Sr	U	Th	Nb	Zr	Rb	Y
500	200	760	47	57	<10	321	130	<20	105	25	<10	13	<20	<20	56	612	18	41

Typical Mineralogical Analysis[3]

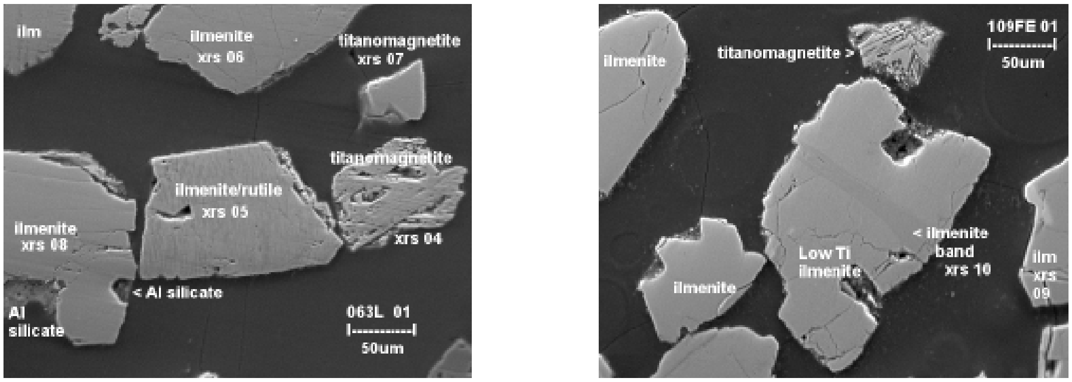
Mineral Name	Chemical Formula	Approx. Wt%
Kaolinite	$Al_2Si_2O_5(OH)_4$	65
Gibbsite	$Al(OH)_3$	<5
Hematite	Fe_2O_3	9
Magnetite (Maghemite)	$(Fe,Mn,Zn,Cu,Ni)(Fe,Al,Cr)_2O_4$	7
Ilmenite	$FeOTiO_2$	8
Quartz	SiO_2	<5
Rutile	TiO_2	<2
Other	?	<5

1) by lithium borate fusion, ICP
2) by XRF
3) by XRD

The amount of kaolinite in the laterite can vary from 50% to 75% depending on the location of the sample and depth of sample. The ilmenite and titanomagnetite/hematite are present in the laterite as free particles. Figure 13-1 provides a micrograph of typical heavy mineral particles obtained from a panned laterite sample.

FIGURE 13-1: MICROGRAPH OF PANNED HEAVY MINERAL SAMPLE

CIC-CI Alto Paraná Project (Source: MAG, 2009)



Over 97% of the titanium values are present at less than a 28 mesh particle size (600 µm), with +28 mesh material primarily being in the form of ilmenite-titanomagnetite nodules found near the interface between the saprolite and laterite. Particle size determination by Pocock Industrial Inc. of a hydroseparator feed material wet screened at 500 mesh (25 micron), followed by dry screening of the oversize fraction, showed the following (Table 13-2):

TABLE 13-2: PARTICLE SIZE ANALYSIS

CIC-CI Resources Alto Paraná Project (Source: MAG, 2009)

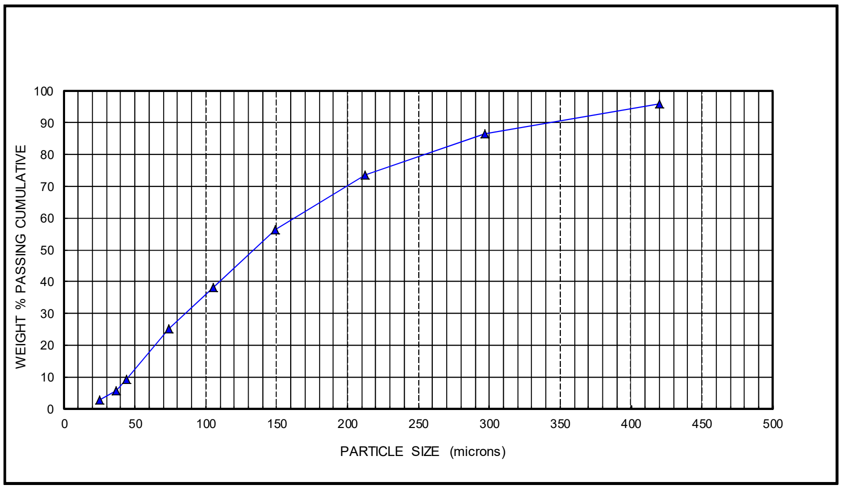
Screen Size		Sample Weights			
	Tyler	Grams	Wt. %	Cumulative Wt. %	
micron	mesh	Retained	Retained	Passing	Retained
---	---	0.00	0.00	100.00	0.00
---	---	0.00	0.00	100.00	0.00
---	---	0.00	0.00	100.00	0.00
212	65	30.97	6.84	93.16	6.84
150	100	17.32	3.83	89.33	10.67
106	150	15.53	3.43	85.90	14.10
75	200	12.96	2.86	83.04	16.96
53	270	11.77	2.60	80.44	19.56
45	325	5.39	1.19	79.25	20.75
38	400	11.07	2.45	76.80	23.20
25	500	0.21	0.05	76.76	23.24
-25	500	347.46	76.76		
	Totals:	452.68	100%		

Product Size Passing 90% (P_{90}) 160 microns

Product Size Passing 80% (P_{80}) 50 microns

As kaolinite and other clay particles are by definition <25 micron (500mesh), the relevant product fraction is +25 micron (500 mesh). Figure 13-2 provides concentrate particle size data for some typical sample composites. These data are for concentrates that were subjected to differential settlement and cleaning by elution to remove the -500 mesh particles. The first graph is for a relatively low grade concentrate compared to the data for PH 109. Overall, it was determined that the average (P_{50}) particle size for the ilmenite was 135μ and 165μ for the iron oxide particles in the +500 mesh material.

FIGURE 13-2: TYPICAL CONCENTRATE PARTICLE SIZE ANALYSIS
CIC-CI Alto Paraná Project (Source: MAG, 2010)
Composite A : PH 74, 78, 81, 82 & 84 Pit Composite

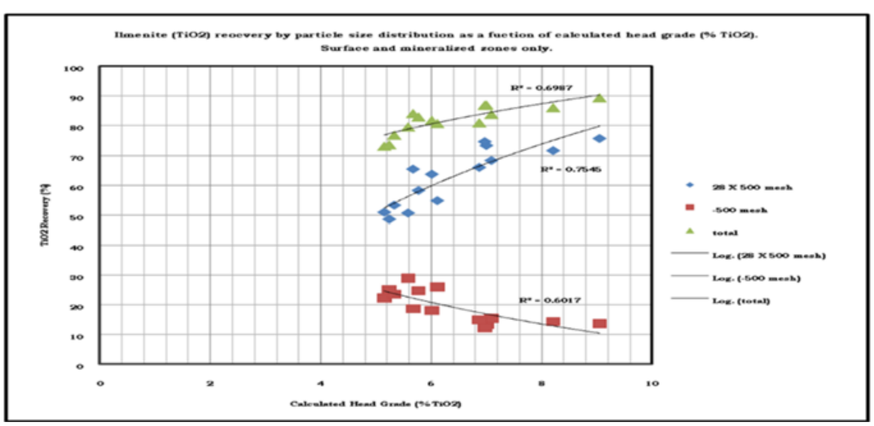


A relationship exists between particle size distribution and TiO_2 head grade, as illustrated by the grade-recovery data in Figure 13-3:

FIGURE 13-3: ILMENITE HEAD GRADE VS PARTICLE SIZE

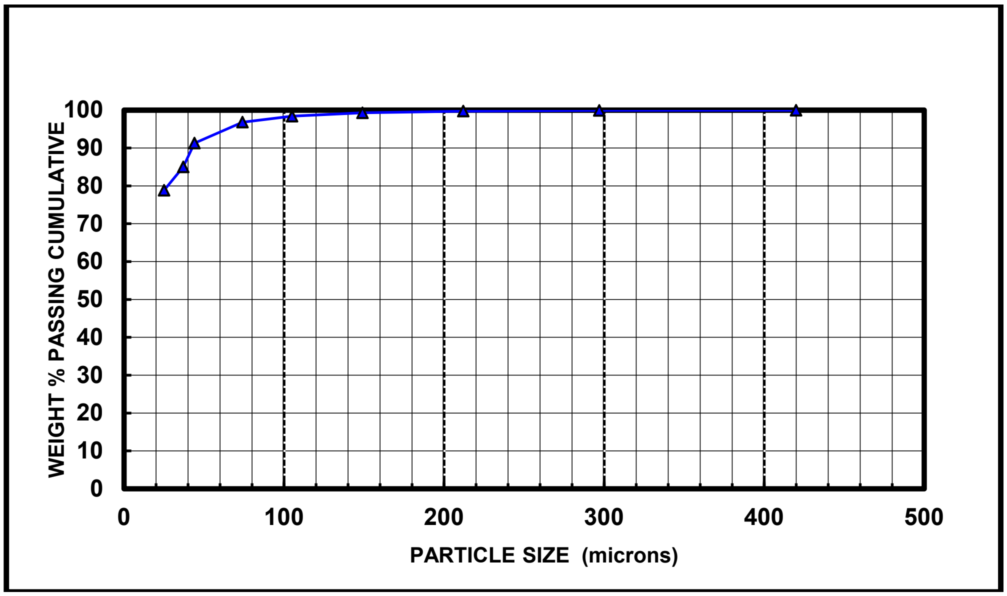
CIC-CI Alto Paraná Project (Source: MAG, 2009)

Composite B: PH 109 Composite



Laboratory test work on beneficiation of the material determined that blunging[1], followed by screening, elution and magnetic separation, was the most effective method to achieve high recoveries of both ilmenite and magnetite/titanomagnetite with good grade. Elutriation was found to be highly effective in producing a concentrate with a relatively narrow particle size distribution and minimum fines. Figure 13-4 illustrates the particle size distribution of the eluted fines from a cleaned concentrate produced from composite as illustrated in Figure 13-2.

FIGURE 13-4: PARTICLE SIZE DISTRIBUTION OF ELUTED FINES FROM CLEANED CONCENTRATE (SOURCE MAG: 2010)
CIC-CI Resources Alto Paraná Project



Theis data indicates a P_{80} of approximately 25 microns for the eluted fines, with an average particle size of 6 – 7 microns. Analysis indicated most of the +25 micron particles were silica, thus elution acts as both a fines removal and a concentration process.

Magnetic separation tests of the eluted concentrate involved low intensity magnetic separation followed by high intensity separation. Initial test work was undertaken in open circuit configuration at Outotec Inc. in Jacksonville, FL. The test results indicated two

[1] Blunging refers to high shear dispersion of clay matrix minerals in water

separate magnetic products were produced: 1) a low intensity magnetic product comprised of approximately 30% of the contained ilmenite and almost all of the magnetite and locked magnetite/ilmenite/hematite particles; and 2) high intensity particles comprised primarily of ilmenite with minor magnetite/hematite locked. The low intensity and high intensity magnetic products were then combined to produce the final concentrate. Results from a 50 kg test are detailed in Table 13-3.

Table 13.3

Low and High Intensity Magnetic Separation (Outotec Inc.)

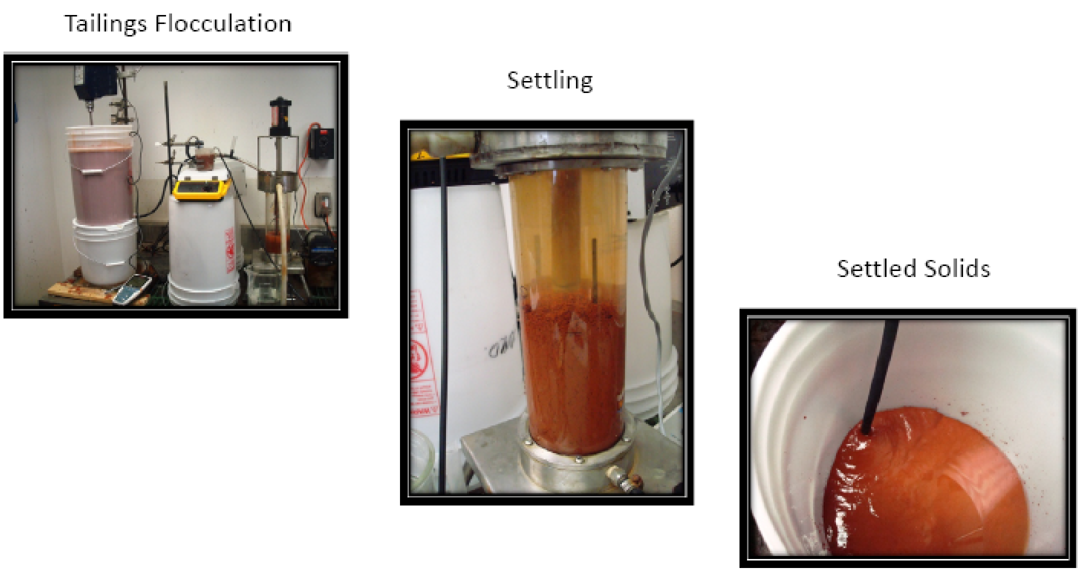
Test Product	Weight	Assay												
Description	%	TiO2	Fe_2O_3	Al_2O_3	LOI	SiO_2	BaO	CaO	Cr2O3	K_2O	MgO	MnO	Na_2O	P_2O_5
Feed		37.62	49.02	2.02	0.01	9.90	0.01	0.04	0.03	0.01	0.75	0.49	0.02	0.03
Lims 1 Mag Conc		26.72	68.81	1.84	0.01	1.55	0.01	0.04	0.03	0.01	0.49	0.48	0.02	0.03
Lims 1 Non-mag Tail		39.01	45.39	2.51	0.01	10.91	0.01	0.06	0.04	0.03	0.97	0.46	0.03	0.03
Lims 2 Mag Concentrate		26.81	69.20	1.88	0.01	0.92	0.01	0.05	0.04	0.01	0.51	0.53	0.02	0.02
Lims 2 Non-mag Tail		39.43	47.27	2.39	0.01	9.29	0.01	0.11	0.02	0.90	0.49	0.03	0.03	
Lims 3 Mag Conc		26.87	69.49	1.74	0.01	0.74	0.01	0.06	0.04	0.01	0.50	0.52	0.02	0.02
Lims 3 Non-mag Tail		33.99	55.53	2.70	0.01	6.33	0.01	0.07	0.03	0.01	0.74	0.48	0.02	0.05
Lims 3 Mag Floatex U'F	38.40	26.13	70.47	1.53	0.01	0.74	0.01	0.04	0.05	0.01	0.47	0.51	0.02	0.03
Lims 3 Floatex Mag O'F	0.70	35.13	58.09	2.42	0.01	3.03	0.01	0.07	0.03	0.01	0.65	0.47	0.02	0.06
Combined NM Slimes	1.20	17.03	35.72	9.13	5.49	31.52	0.01	0.17	0.03	0.04	0.39	0.25	0.03	0.18
Combined Lims Non-mag Ta		37.72	46.18	2.51	0.01	11.98	0.01	0.05	0.03	0.01	0.95	0.47	0.02	0.03
SLon 0.2 Tesla Mag Conc		44.64	50.95	1.10	0.01	1.59	0.01	0.05	0.03	0.01	1.06	0.52	0.02	0.01
Slon 0.2 Tesla Fines		33.30	48.60	5.06	1.56	9.92	0.01	0.18	0.03	0.02	0.74	0.45	0.04	0.11
Slon 0.2 Tesla Non-Mag Tail	1.20	21.47	27.50	6.74	3.12	39.97	0.01	0.22	0.03	0.02	0.74	0.45	0.04	0.11
HI Mag Floatex O'F	5.80	41.86	45.90	2.96	0.01	7.67	0.01	0.07	0.03	0.01	0.90	0.50	0.02	0.06
HI Mag Floatex U'F1	25.90	46.96	49.89	0.55	0.01	0.74	0.01	0.03	0.04	0.02	1.15	0.55	0.02	0.01
HI Mag Floatex U'F2	15.10	44.95	50.25	1.67	0.01	1.44	0.01	0.05	0.03	0.01	1.02	0.51	0.02	0.02
Slon 0.3 Tesla Mag Conc	5.40	42.64	47.57	2.41	0.01	5.66	0.01	0.07	0.03	0.01	1.03	0.48	0.02	0.05
Slon Non-mag Tail	6.30	6.30	14.93	9.03	5.61	63.43	0.01	0.16	0.03	0.05	0.19	0.10	0.04	0.13
Calculated Head	100.00	34.82	54.91	2.06	0.47	6.32	0.01	0.05	0.04	0.02	0.77	0.49	0.02	0.04
Calculated Final Concentrat	84.80	36.89	59.13	1.31	0.01	1.18	0.01	0.04	0.04	0.01	0.81	0.52	0.02	0.02

XRD Mineralogy of Low and High Intensity Magnetic Circuit Products (Source: MAG, 2010)

Mineral Name	Chemical Formula	LIMS 2nd Cl Mag Conc.	HIMS 2n Cl Mag Conc.	HIMS Ro. Non Mag Tail	HIMS 1st Cl Non Mag Tail	Hims 2nd Cl Non Mag Tail
		Approximate Wt%				
Ilmenite	$(Fe,Mg,Mn)TiO_3$	35	85	23	48	55
Magnetite	$(Fe,Mg,Zn,Cu,Ni)(Fe,Al,Cr)_2O_4$	50	-	-	-	<5
Hematite	Fe_2O_3	10	5	14	20	15
Rutile	TiO_2	<5	<5	<5	<5	<5
Quartz	SiO_2	-	<3	34	10	7
Kaolinite	$Al_2Si_2O_5(OH)_4$	-	-	22	14	10
Gibbsite	$Al(OH)_3$	-	-	-	-	<5
Unidentified	?	<5	<5	<5	<5	<5

Laboratory investigations of tailings management involved tests of high rate thickening for differential settling, decant tailings thickening and centrifugation of thickened tailings. During test work, it was found that the elution tailings could be treated by pH adjustment and the addition of flocculent to produce a high consistency settled solids suitable for disposal in a tailings pond, with minimal requirements for centrifugation of the thickener overflow to remove residual solids. Figure 13-5 illustrates the laboratory test work showing tailings thickening.

FIGURE 13-5: LABORATORY TAILINGS THICKENING TEST
Alto Paraná Project (Source: MAG, 2010)



Based on the results of the laboratory test work, a pilot plant was designed with a capacity of approximately 1.5 tonnes per hour to the blunging circuit. This pilot plant was shipped to Paraguay and installed on the project site in August, 2011.

PILOT PLANT TEST WORK

The demonstration plant was designed to accomplish the following objectives:

- Provide an opportunity to scale up from batch processing to a continuous operation;
- Demonstrate the separation of heavy titanium/iron rich sands from a 60-70% kaolinite laterite matrix;
- Operate a plant large enough to produce 108 metric tonnes of concentrate for arc furnace smelting tests at MINTEK, South Africa;

- Demonstrate the ability of a continuous circuit to reproduce the quality of final concentrate expected from large scale laboratory tests;
- Demonstrate a process capable of operating at natural pH to allow the return of process tailings to the environment at a pH suitable to promote agricultural use of mined out areas;
- Optimize process reagents to minimize operating costs and exclude reagents that potentially could be harmful to the environment; and
- Develop tailings handling technology suitable to return clean recycle water to process and high percent solids tailings suitable for pumping and direct deposition as mine backfill.

MYNM extracted 8,000 tonnes of feed material from its 30 hectare property in Minga Pora, Paraguay. Exploration pits were dug by CIC's geological exploration group, sampled and used as the basis for locating the test pit. The exploration pits suggested 8.0% TiO_2 feed material would be extracted and site sampling of extracted material averaged 7.97% TiO_2, confirming the exploration pit projections. About 3,000 tonnes of material were stockpiled for feed to the plant and 5,000 tonnes used to berm the extraction pit to be used for tailings disposal.

The pilot plant was used to demonstrate process unit operations as well as provide opportunities for process development and demonstration of mining methods. Figures 13-6 and 13-7 illustrate the mine area, tailings area and the pilot plant.

FIGURE 13-6: PILOT PLANT PIT AND TAILINGS POND
Alto Paraná Project (Source: MAG, 2011)

Pit Area with Tailings Sump

Tailings O/F Water Recycle Pond

FIGURE 13-7: CIC RESOURCES PILOT PLANT

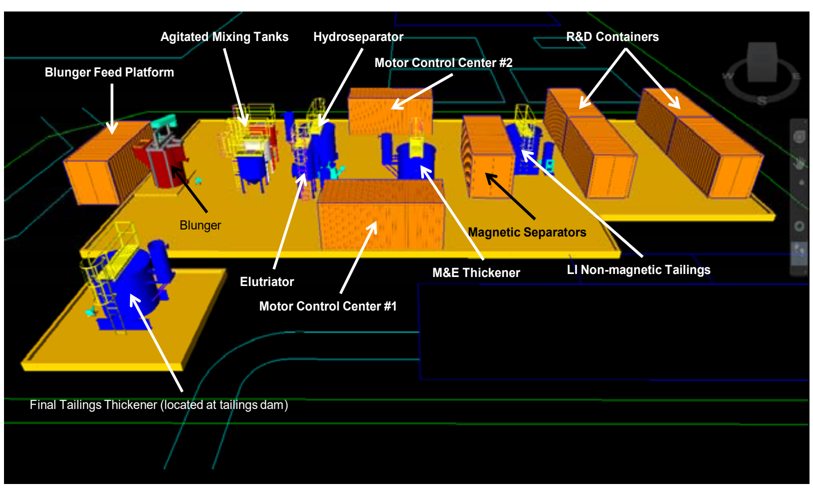
Alto Paraná Project (Source: MAG, 2011)

Feed Load Ramp & Hopper
Blunger in background

Hydroseparator (red) Tank
Elution (blue) Column
Attrition Scrubber (green)

Adjustment Tanks and Sweco Screens

High and Low Intensity Magnetic Separator

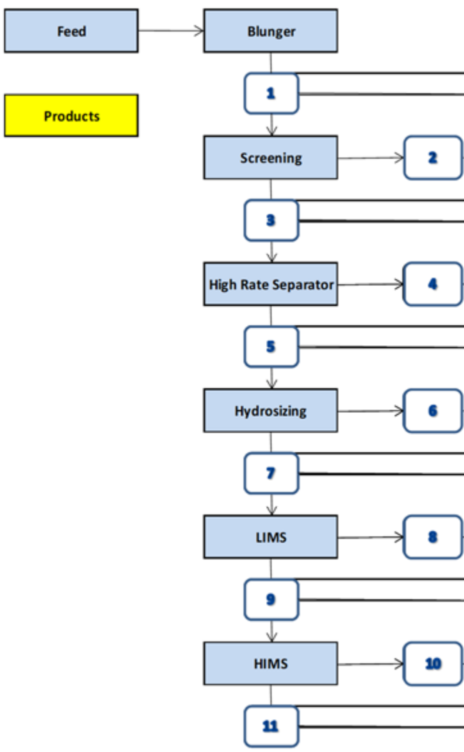


3D PERSPECTIVE OF PILOT PLANT (SOURCE: MAG, 2011)

The pilot plant was designed from the laboratory test data, with equipment selected and sized for a production rate of 1.5 tph in accordance with the materials balances detailed in Figure 13-8. A laterite moisture content of 25% - 28% was assumed. The product grades and distributions detailed in Figure 13-8 were based on the results of the magnetic separation tests at Outotec on 110 kg laboratory concentrate.

FIGURE 13-8: SIMPLIFIED BLOCK FLOW DIAGRAM AND PROJECTED MASS BALANCE (SOURCE: MAG, 2011)

Alto Paraná Project



Description	Weight	Assay				Distribution			
	%	TiO_2	Fe_2O_3	SiO_2	Al_2O_3	TiO_2	Fe_2O_3	SiO_2	Al_2O_3
Feed	100.0	8.0	28.5	30.8	22.3	100.0	100.0	100.0	100.0
+28 mesh	1.5	16.4	65.6	5.4	8.2	3.1	3.5	0.3	0.6
HRS Feed	98.5	7.9	28.0	39.9	22.5	96.9	96.5	127.5	99.4
HRS O'Flow	77.2	1.9	21.7	36.1	27.1	18.3	58.6	90.4	93.8
HRS U'Flow	21.2	29.5	55.4	10.0	5.7	78.4	41.2	6.9	5.4
Hydrosizer O'Flow	3.0	14.1	34.3	34.0	10.0	5.3	3.6	3.3	1.3
Hydrosizer U'Flow	18.3	32.0	58.9	6.1	5.0	73.4	37.8	3.6	4.1
LIMS Concentrate	7.0	26.0	71.0	0.7	1.5	22.8	17.4	0.2	0.5
LIMS Non-magnetics	11.3	35.7	51.3	16.1	7.1	50.6	20.3	5.9	3.6
HIMS Concentrate	8.5	45.4	51.6	1.5	1.1	48.4	15.4	0.4	0.4
HIMS Non-magnetics	2.8	6.0	15.0	60.8	25.6	2.1	1.5	5.5	3.2

The demonstration plant operated for approximately 3 months for operator training, ramp up, circuit modification and concentrate production. Approximately 108 tons of combined low intensity magnetic separation (LIMS) and high intensity magnetic separation (HIMS) concentrates were produced. The products were packed in 240 sealed barrels and shipped to MINTEK in South Africa in early December for arc furnace smelter tests.

The projected pilot plant metallurgy shown in Figure 13-8 and Table 13-3 compared well with actual results. Table 13-4 illustrates results from November 9, 2011 for a feed material having approximately the same head grade as in Figure 13-8.

TABLE 13-4: PILOT PLANT MASS BALANCE – TYPICAL RESULT
November 9, 2011 (Source: MAG)
Alto Paraná Project

Stream	Product	Weight	Assay				Distribution			
			TiO_2	Fe_2O_3	Al_2O_3	SiO_2	TiO_2	Fe_2O_3	Al_2O_3	SiO_2
		%	%	%	%	%	%	%	%	%
0	Blunger Feed	100.0	8.6	23.8	25.8	31.8	99.8	108.1	99.3	94.1
1	Blunger O"F	112.2	8.6	25.3	25.2	30.7	112.5	119.4	109.5	108.4
2	Hydrosizer O"F	78.3	2.5	18.1	30.1	35.7	23.1	59.6	91.3	88.0
3	Hydrosizer U"F	33.9	22.7	38.4	11.5	21.1	89.4	54.8	15.0	22.5
4	Elution O"F	12.2	8.9	22.0	21.6	37.2	12.6	11.3	10.2	14.3
5	Elution U"F	20.7	31.9	49.8	5.8	11.3	76.8	43.5	4.8	8.2
6	Lims Tail	13.0	35.8	41.0	5.9	13.5	54.1	22.5	3.0	5.5
7	LIMS Concentrate	7.7	29.4	64.7	1.9	1.2	26.3	21.0	0.6	0.3
8	Mag Thickener O"F	0.8	6.8	21.3	26.5	32.5	0.6	0.7	0.8	0.8
9	HIMS Feed	12.3	37.5	42.7	4.7	14.1	53.5	21.8	2.2	4.7
10	HIMS Conc #1	8.7	43.6	48.1	2.8	2.4	44.1	17.6	0.9	0.6
11	HIMS Scavenger Concentrate	3.6	29.0	33.7	7.0	27.0	8.9	3.6	0.6	3.1
12	HIMS Tail	0.8	6.9	19.1	22.9	39.6	0.6	0.6	0.7	0.9
	Final Tail	83.4	3.4	18.4	28.9	35.4	33.2	59.6	94.0	98.6
	Final Concentrate	16.4	36.9	55.9	2.4	1.8	70.5	35.7	1.5	1.0

Note: Hydrosizer O'F recycled to blunger rather than to tail.

During pilot plant operation, it was decided to recycle the elution column overflow to the blunger. This was done to minimize loss of ilmenite and magnetite and also to assist in the plant water balance. The distribution of products in Table 13-4 has been adjusted by an estimate of the tonnage reporting to the hydrosizer overflow based on percent solids and flow rate of the stream. Similarly, the products to magnetic separation have been adjusted by an estimate from the tonnage reporting to the high and low intensity magnetic concentrates. The combined grade of LIMS and HIMS is lower than plant practice, but represents the results for the shift in question. The mass balance rejects the HIMS scavenger concentrate; however, the entrained ilmenite in the scavenger concentrate is recoverable at grade by tabling. This could potentially increase total TiO_2 recovery.

The TiO_2 grades of LIMS and HIMS as compared to those reporting to final concentrate barrel samples are very similar to the test samples produced at Outotec. The demonstration plant LIMS circuit lost a minor amount of magnetite to the HIMS circuit and entrained or recovered a notable amount of ilmenite to the LIMS concentrate. As a result the Outotec work suggested a LIMS concentrate of about 26% TiO_2 and a HIMS concentrate of about 46.4% TiO_2 and a combined final concentrate of about 36.9% TiO_2. The demonstration plant produced on average a concentrate of about 46.4% TiO_2 in the HIMS concentrate and 29% TiO_2 in the LIMS circuit and the combined concentrates of 37.5% TiO_2 and 58.8% Fe_2O_3 (see Table 3-5).

TABLE 13-5: MAGNETIC CONCENTRATE COMPARISON – LABORATORY VS PILOT PLANT RESULTS (SOURCE: MAG, 2011)

Alto Paraná Project

Pilot Plant Results (Average of 84 t combined product)

Concentrate	Barrels	Al_2O_3	BaO	CaO	Cr_2O_3	Fe_2O_3	K_2O	MgO	MnO	Na_2O	P_2O_5	SiO_2	SrO	TiO_2	LOI
	Number	%	%	%	%	%	%	%	%	%	%	%	%	%	%
HIMS	90	0.95	0.014	0.017	0.011	50.14	0.005	1.10	0.53	0.031	0.015	1.76	0.002	46.38	2.92
LIMS	94	1.68	0.008	0.015	0.026	67.06	0.003	0.60	0.49	0.031	0.028	0.86	0.003	29.07	1.72
TOTAL	**184**	**1.32**	**0.011**	**0.016**	**0.019**	**58.78**	**0.004**	**0.85**	**0.51**	**0.031**	**0.021**	**1.30**	**0.003**	**37.53**	**2.31**

Laboratory Result, Combined Product

Concentrate		Al_2O_3	BaO	CaO	Cr_2O_3	Fe_2O_3	K_2O	MgO	MnO	Na_2O	P_2O_5	SiO_2	SrO	TiO_2	LOI
		%	%	%	%	%	%	%	%	%	%	%	%	%	%
TOTAL		**1.31**	**0.01**	**0.04**	**0.04**	**59.13**	**0.01**	**0.81**	**0.52**	**0.02**	**0.022**	**1.18**	**n.r.**	**36.89**	**2.20**

Based on the assays for the pilot plant product, the combined LIMS and HIMS product had the following mineralogical composition:

$$\text{wt\% ilmenite} = \frac{\%\ TiO_2}{MW\ TiO_2} \times MW\ \text{ilmenite} = (37.53/79.90) \times 151.70 = 71.27\%$$

Iron for ilmenite = % ilmenite - % TiO_2 = 71.27% - 37.53% = 33.73%

wt. % magnetite = Total iron – iron for ilmenite = 58.78% - 33.73% = 25.05%

This calculation assumes all the residual iron is in the form of magnetite, which is not true as iron is present in the residual clays, micas and pyroxenes.

Figure 13-9 displays the relative particle size distribution of LIMS, HIMS and combined magnetic concentrates as produced from Alto Paraná samples in the laboratory, and Figure 13-10 displays the average particle size distribution of concentrates produced in the demonstration plant, both with and without the addition of polymer flocculent. The laboratory LIMS particle size D_{50} is about 212µ, the HIMS about 110µ and the combined concentrates about 150µ. The demonstration plant concentrates were coarser and contained fewer -74µ particles. Plant operation set the hydrosizer rise rate to avoid significant -45µ material reporting to the hydrosizer underflow. The plant LIMS concentrate D_{50} is about 250µ, the HIMS concentrate about 150µ and the combined concentrates about 180µ.

Plant operating conditions were modified during the early phase of ramp up. The planned operation of the circuit included the addition of sodium hydroxide (NaOH) to modify the pH to greater than 7.0 in feed preparation to facilitate optimum dispersion with sodium polyacrylate (C-211). Laboratory usage of C-211 suggested an additional amount of about 2 kg/mt to achieve complete dispersion of kaolinite. In plant practice with local well water, the level of acrylate addition proved to be 0.8-1.0 kg/mt at natural ph. Excellent dispersion was achieved at natural pH, and NaOH was not necessary to modify the operating pH of the demonstration plant blunging and mixing circuits.

The plant operating design included the addition of 0.35 kg/mt of anionic flocculent A110. A two-step process of anionic flocculation of tailings and densification of tailings material in a convention high rate thickener to include thickener overflow adjustment to pH 4.5-5.0 for further water treatment was originally designed. The system performed as expected; however, the low pH water needed to be adjusted to neutral pH with NaOH for introduction to the plant recycle water system.

FIGURE 13-9: MAGNETICS PRODUCTS PARTICLE SIZE DISTRIBUTION – LABORATORY RESULT (SOURCE: MAG, 2011)
Alto Paraná Project

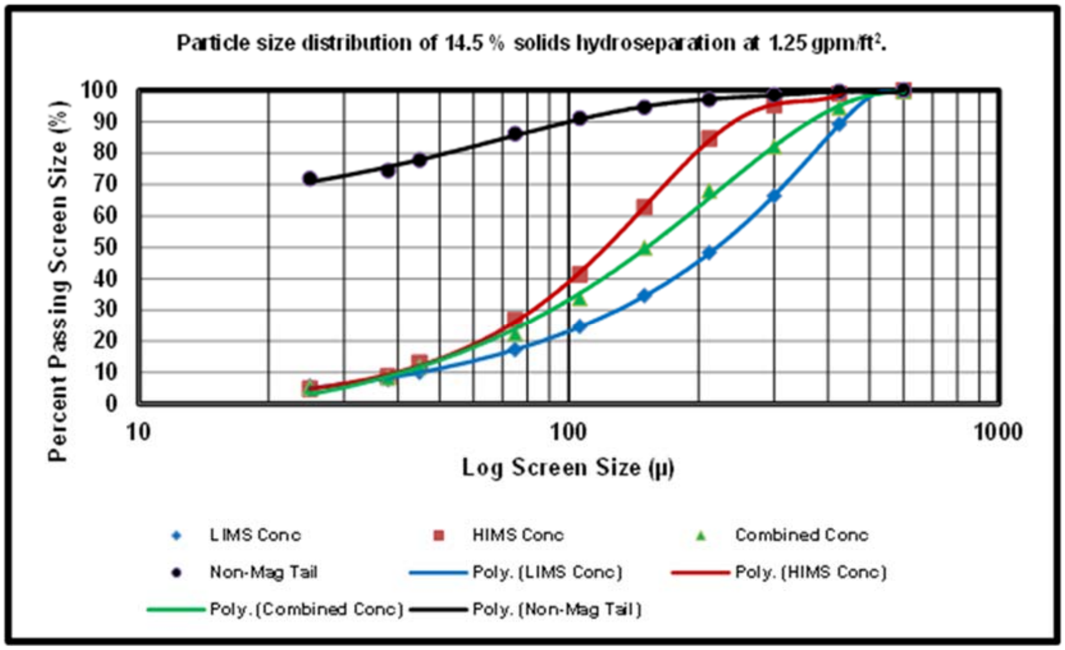
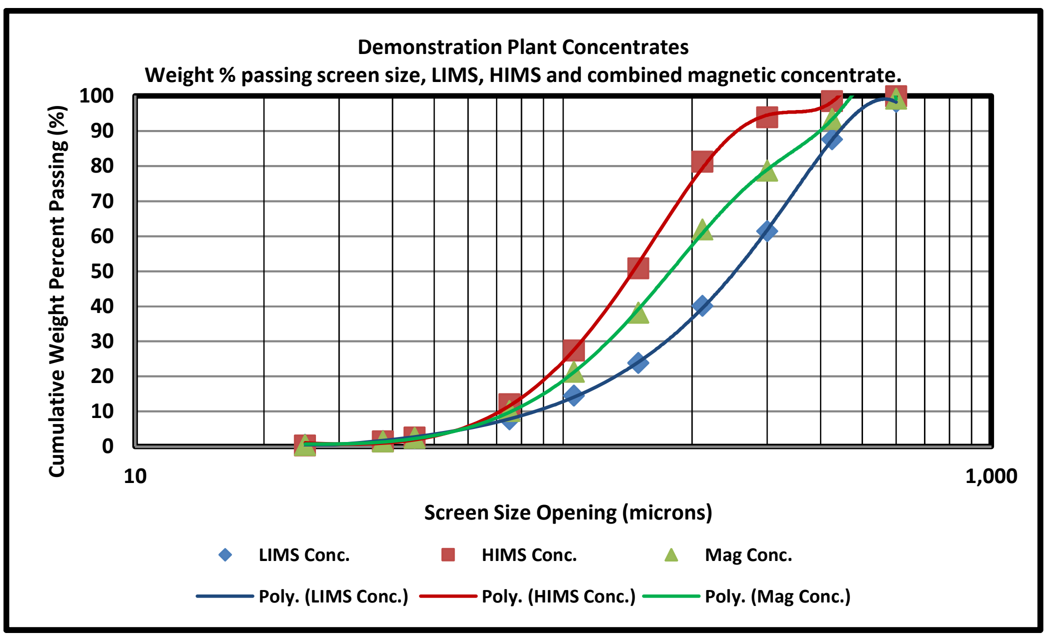


FIGURE 13-10: MAGNETICS PRODUCTS PARTICLE SIZE DISTRIBUTION – PILOT PLANT RESULT (SOURCE: MAG, 2011)
Alto Paraná Project



Testing at site was initiated to avoid the use of sulfuric acid for pH modification and sodium hydroxide for water neutralization. This was done to reduce the amount of sulphate introduced to the recycle water. A redesigned reagent system that could operate at natural pH and return clear water to process was developed. The revised processing scheme allows operation with the use of only two reagents; sodium polyacrylate (0.8-1.0 kg/mt) and A110 (0.15 kg/mt). The revised process will enable the production of suitable tailings for pumping to backfill the extraction pit and produce a clean paste thickener overflow for water recycle to the plant. The plant was modified to demonstrate the proprietary-new technology during a plant run in 2012.

CONVERSION FROM CONVENTIONAL TO PASTE THICKENING

Following the initial pilot plant production run to produce concentrate for MINTEK smelter testing, the plant was modified to test thickening and tailings management. The plant was modified to test paste thickening as opposed to conventional thickening.

The paste thickener produced 36-40% solids underflow with low reagent consumption.

SMELTER TEST WORK

MNYM contracted with MINTEK of South Africa to undertake a series of test work related to smelting of the ilmenite/magnetite concentrate. This work involved modeling of smelter performance, slag and pig iron chemistry and mass and energy balances based on concentrate assay results from the laboratory test work, small scale (5 kg) smelting of a concentrate produced during the laboratory test work, computer modeling of pre-reduced concentrate, and large scale smelting of concentrate produced form the pilot plant operation. This latter work involved processing approximately 110 tons of concentrate and was successfully completed the week of March 25, 2012.

The work at MINTEK is based on using a concentrate feed having less than 35% TiO_2. This restriction is due to current patent and other intellectual property agreements between MINTEK and other parties related to DC electric arc smelting technology. The agreements MINTEK has with third parties expire within the next 12 to 24 months. Upon expiration of the agreements, both MINTEK and MYNM will be able to pursue development of smelting options related to concentrate grading in excess of 35% TiO_2. Such a development would offer advantages in terms of reduced production costs and higher quality TiO_2 slag and pig iron.

Initial modeling of the smelting process was based on concentrates with assumed TiO_2 contents of 25%, 30% and 35%, respectively. Modeling analysis was based on use of MINTEK's proprietary PYROSIM software. The assumed assays for the modeled concentrate and the anthracite reductant are detailed in Table 13-6:

TABLE 13-6: FEED COMPOSITIONS USED IN SMELTING MODELING
Alto Paraná Project
(mass %) (Source: MINTEK, 2012)

Component	35% Concentrate	30% Concentrate	25% Concentrate	Generic Anthracite
Fe_2O_3	26.451	36.536	44.342	1.063
$FeTiO_3$	66.482	56.985	49.634	-
SiO_2	0.854	0.790	0.740	2.42
Al_2O_3	1.279	1.421	1.530	3.12
MgO	1.242	0.981	0.779	0.169
CaO	0.054	0.055	0.056	0.729
MnO	0.673	0.665	0.659	-
V_2O_5	0.250	0.250	0.250	-
Cr_2O_3	0.044	0.047	0.050	-
SO_3				0.33
P_2O_5	0.023	0.027	0.030	-
K_2O	0.010	0.010	0.010	-
Thorium	0.0021	0.0021	0.0021	-
H_2O	-	-	-	1.50
Fixed Carbon	-	-	-	85.03
Volatile	-	-	-	5.17
Ash	-	-	-	8.31
TiO_2	-	-	-	0.116
Total	**97.36**	**97.77**	**98.08**	**99.64**
Unaccounted*	2.64	2.23	1.92	0.36

* Assumed as oxygen in model

Based on these data, the simulation program returned the following values for an 80% TiO_2 slag product (Table 13-7):

TABLE 13-7: SIMULATION RESULTS
Predicted FeO and TiO_2 Content in Slag
(mass %) (Source: MINTEK, 2012)

No	35% Concentrate		30% Concentrate		25% Concentrate	
	% FeO	% TiO_2	% FeO	% TiO_2	% FeO	% TiO_2
1	12.3	77.8	12.3	76.4	12.4	74.7
2	10.1	79.8	9.5	78.8	9.4	77.3
3	7.8	82.0	8.0	80.1	6.8	79.7
4	6.0	83.8	6.6	81.5	5.0	81.8
5	4.7	85.2	5.0	83.2	-	

Predicted Energy Requirement

	Specific energy requirement, MWh/t for 80% TiO_2 slag product		
	MWh per ton slag	MWh per ton concentrate	MWh per ton metal
35% TiO_2 concentrate	2.42	1.06	2.62
30% TiO_2 concentrate	3.00	1.12	2.48
25% TiO_2 concentrate	3.58	1.16	2.38

TABLE 13-8: PREDICTED MASS AND ENERGY BALANCE SUMMARY FOR 35% TIO_2 CONCENTRATE

(Source: MINTEK, 2012)

Fe recovery	90.0%	92.0%	94.0%	95.5%	96.5%
Ti_{Total} as TiO_2 in feed	35%	35%	35%	35%	35%
Ti_{Total} as TiO_2 in slag	77.84	79.78	82.01	83.82	85.17
Ti^{3+} as Ti_2O_3 in slag	$ 22.26	22.55	23.87	25.72	27.55
	Feed				
Concentrate (kg)	1000	1000	1000	1000	1000
Anthracite (kg)*	205.0	210.0	210.0	215.0	220.0
	Slag				
Mass (kg)	449.4	438.3	426.2	416.6	409.7
FeO	12.34	10.13	7.81	5.99	4.75
Al_2O_3	2.85	2.92	3.00	3.07	3.12
CaO	0.197	0.204	0.210	0.217	0.223
Cr_2O_3	0.001	0.001	0	0	0
K_2O	0.022	0.023	0.023	0.024	0.024
MgO	4.19	4.33	4.45	4.59	4.71
Mn_2O_3	1.77	1.76	1.71	1.63	1.53
P_2O_5	0.005	0.005	0.005	0.005	0.004
SiO_2	2.99	3.09	3.16	3.22	3.25
Ti_3O_5	34.63	35.09	37.14	40.02	42.87
TiO_2	40.73	42.18	42.21	40.94	39.24
V_2O_3	0.442	0.448	0.450	0.446	0.434
	Metal				
Mass (kg)	403.7	394.8	412.8	419.7	424.6
C	1.468	1.472	1.479	1.488	1.499
Cr	0.076	0.074	0.073	0.071	0.071
Mn	0.027	0.033	0.041	0.051	0.060
Si	0.008	0.012	0.02	0.035	0.063
Ti	0.07	0.086	0.116	0.15	0.195
V	0.012	0.016	0.023	0.033	0.045
	Gas				
Mass (kg)	325.8	330.8	336.3	341.9	346.6
CO	99.0	99.0	98.9	98.8	98.7
H_2	0.226	0.228	0.224	0.226	0.228
Mn	0.225	0.274	0.348	0.437	0.529
N2	0.445	0.449	0.441	0.444	0.448
SO_2	0.078	0.08	0.078	0.08	0.083
MWh/t slag	2.336	2.418	2.487	2.568	2.636
MWh/ metal	2.660	2.626	2.568	2.549	2.544
MWh/t concentrate	1.050	1.060	1.060	1.070	1.080
Slag-to-metal ratio	1.113	1.110	1.032	0.993	0.965
Excess C specified (%)	19.49	20.24	18.91	19.54	20.34

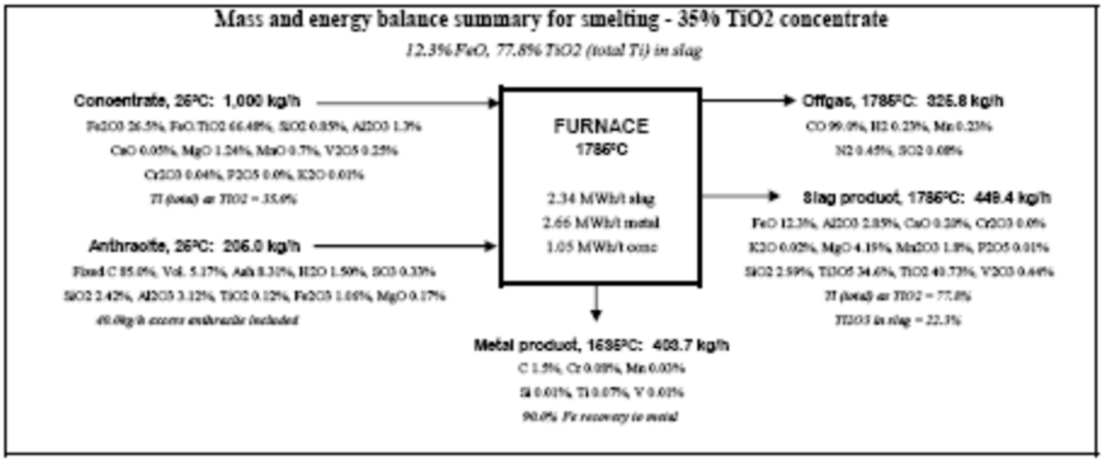
* Includes excess on fixed carbon basis

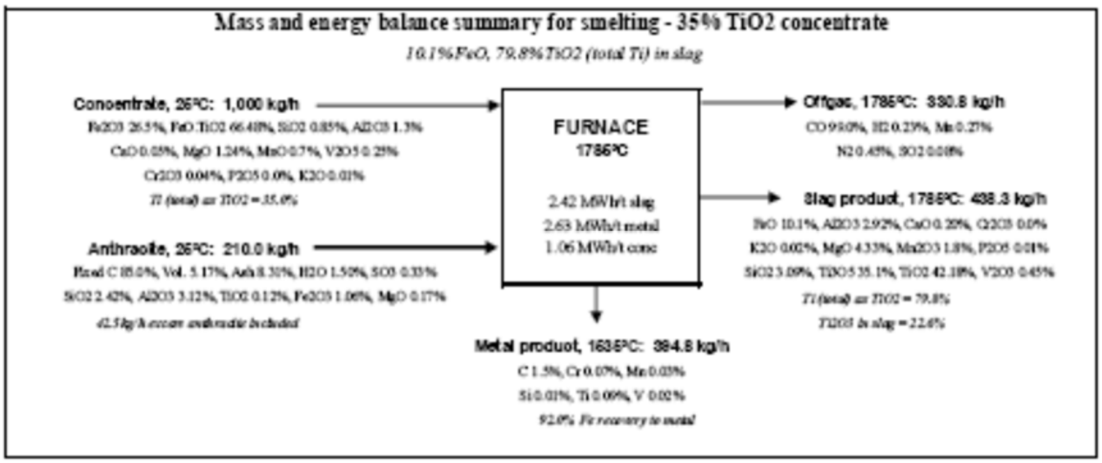
$ Ti^{3+} content estimated assuming $Ti^{3+}/Ti = 0.32$ (for predicted TiO_2 <78%)

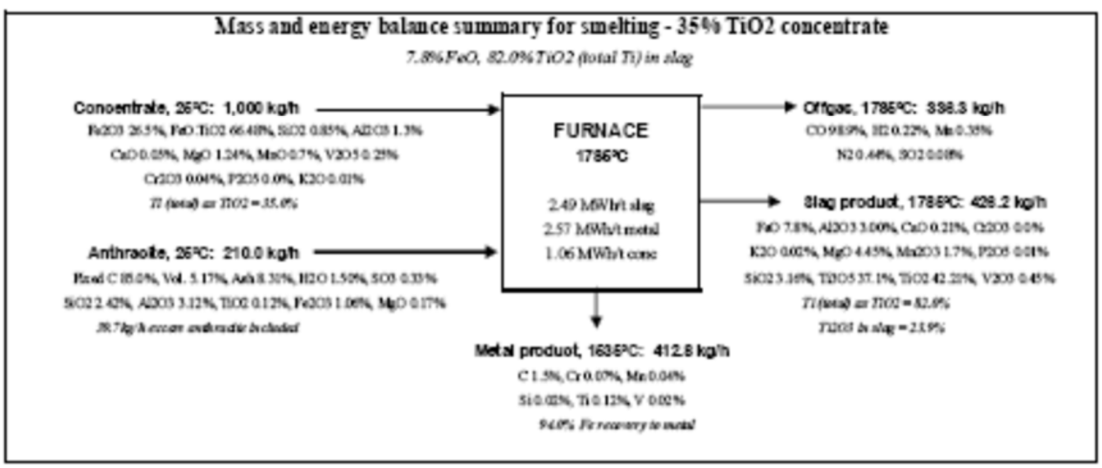
The simulation results indicated that both the TiO_2 slag and the pig iron product would be of acceptable quality.

The predicted mass and energy balances for a 35% concentrate feed at various % FeO composition in the slag are detailed in Table 13-8.

TABLE 13-9: MASS and ENERGY BALANCE for 35% TiO_2 CONCENTRATE at VARIOUS %FeO in SLAG
(Source: MINTEK, 2012)







The generic anthracite used in the modeling work contained 8.31% ash, with CaO of 0.729%. In the smelting process, ash components report to the titania slag phase, thereby raising the calculated levels of CaO, Al_2O_3, and SiO_2 in the slag and diluting the TiO_2. In practice, it is usual to use a low ash calcined petroleum coke or a very low ash anthracite as the reductant. The use of such materials enables production of titania slags with CaO levels of less than 0.15% CaO, the typical specification limit for chloride grade titania slag.

Subsequent to the computer simulation work described above, MINTEK conducted a laboratory scale (5 kg) crucible reduction tests of concentrate produced during the laboratory test work. This work used both a wet low intensity magnetic separated (LIMS) product and a wet high intensity magnetic separated (WHIMS) product. Separate tests were undertaken for each product. Table 13-9 details the assays of the LIMS and HIMS feeds:

TABLE 13-10: CONCENTRATE ASSAYS FOR 5 KG SMELTING TESTS

CIC Alto Paraná Project
(Source: MINTEK, 2012)

	MgO	Al_2O_3	SiO_2	CaO	TiO_2	V_2O_5	Cr_2O_3	MnO	FeO	Total
LIMS	0.41	1.37	0.25	0.05	36.40	1.23	<0.05	0.54	62.40	102.60
WHIMS	1.00	0.87	0.57	<0.06	51.8	0.59	<0.06	0.55	45.00	100.38

CoO, NiO and CuO <0.06%

Tests at 20% and 10% excess carbon addition were used for reduction of both concentrates. Test results were good. The results of the test work indicated that the LIMS concentrate produced a slag in good agreement with the previously modeled results for a 35% TiO_2 feed concentrate. The pig iron product was of good quality, as noted by the following assay results:

TABLE 13-11: PIG IRON ASSAY VALUES

(SOURCE: MINTEK, 2012)

Fe	93.5%	Ti	0.66%	Mg	0.12%	Mn	0.06%
Cu	0.06%	P	0.04%	C	2.27%	S	0.01%
Si, Ca, V, Cr, Co, Ni		all <0.05%					

It was further concluded that larger scale tests involving more realistic smelting conditions such as those that exist for the MINTEK pilot plant furnace would provide more indicative information.

Computer modeling of using a pre-reduced concentrate as smelter feed was also undertaken. Work consisted of modeling various batch concepts using Fact Sage, a thermodynamic software package. The modeled product was a 10% FeO slag smelted at 1,700^{0}C. The results of the analysis are summarized below:

TABLE 13-12: PRE-REDUCED CONCENTRATE MODE RESULTS
(SOURCE: MINTEK, 2012)

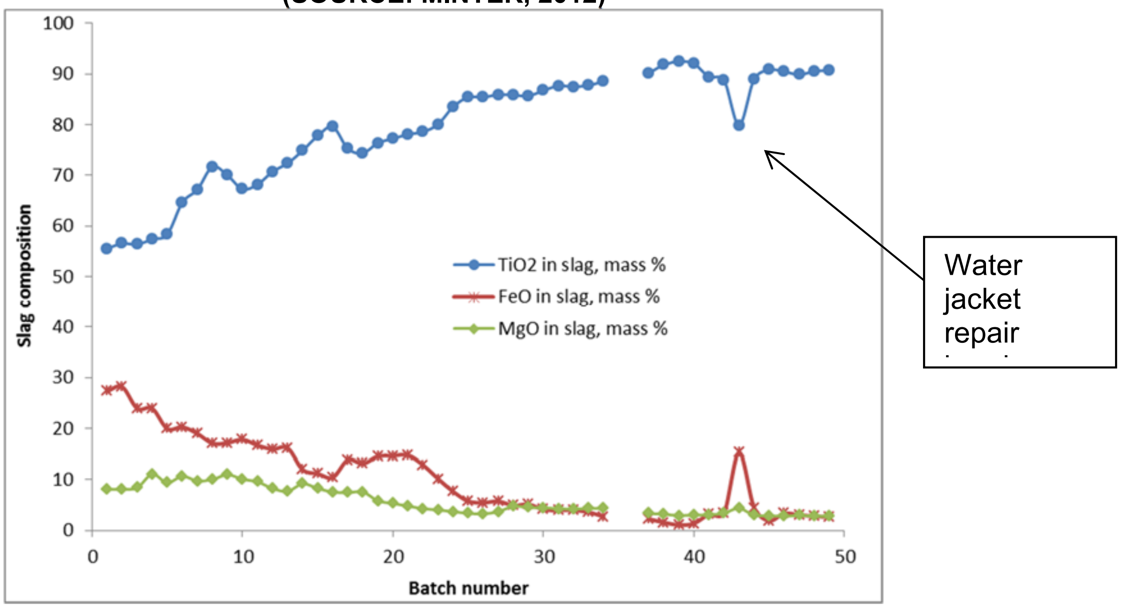
Condition	Ilmenite/Magnetite Feed	Total Energy Required/t Ilmenite (MWh/t)	Electrical Energy (MWh/t)	Thermal Energy (MWh/t)
No pre-reduction	1,000 kg	1.015	1.015	-
Pre-reduced feed	857.6 kg	0.665	-	0.665
Cold pre-reduced feed + cold ilmenite	857.63 kg cold 142.37 kg cold	1.150	0.485	0.665
Hot pre-reduced feed + ilmenite	857.63 kg hot 142.37 kg cold	0.972	0.307	0.665

This work indicates that substantial reductions in electrical energy requirements can be obtained if the feed concentrate is pre-reduced. Reductions in electrical energy requirements translate into increased furnace capacity as more melting power is available for a given charge of material. This in turn leads to faster tap-to-tap times.

PILOT PLANT SMELTING TEST

Ilmenite concentrate produced by the Paraná pilot plant was shipped to South Africa for smelting tests at MINTEK. A total of approximately 108 tons of concentrate was processed. The feed material was adjusted to 35% TiO_2 content by blending the LIMS and HIMS concentrate fractions. The results of the test work were very encouraging. Figure 13-11 summarizes the increase in slag quality to levels in excess of 90%. The MgO level is somewhat elevated due to erosion of the magnesia refectory. In practice, a freeze wall of titanium slag is built up in the furnace which prevents such erosion. The CaO content of the slag is low and it is anticipated that it will be further reduced in industrial practice. The pig iron product showed excellent results, with low levels of contaminants.

FIGURE 13-11: PILOT PLANT SMELTER RESULTS
(SOURCE: MINTEK, 2012)



Graph of TiO_2, FeO and MgO concentrations in slag from furnace start up to 2 weeks into a 2 1/2 week pilot DC arc smelter test (Data to 3/27/2011)

The smelter charge for the furnace is 20% anthracite and 80% ilmenite. The test work indicates the slag is quite fluid and flows much more readily than typical TiO_2 slags. Such a result is unexpected and shows potential for significant improvements in furnace productivity. The anthracite is a low ash material sourced from China. Figures 13-11 through 13-13 and 13-14 show various aspects of the test work.

FIGURE 13-12: SLAG TAP FROM PILOT PLANT FURNACE

(SOURCE: MAG, 2012)

FIGURE 13-13: IRON METAL TAP FROM PILOT PLANT FURNACE
(SOURCE: MAG, 2012)

FIGURE 13-14: SLAG AND PIG IRON PRODUCTS
(SOURCE: MAG, 2012)

TiO_2Slag – cooling prior to crushing

Pig Iron – slag residue to be removed

SUMMARY

Overall, the pilot plant test program has been highly successful. The beneficiation test work has demonstrated the efficiency and effectiveness of the process flow sheet and the ability to recover a high quality concentrate. The pilot plant smelting test work has demonstrated that high quality slag and pig iron products can be readily produced from the concentrate. Significant engineering data has been developed to use in design of the full scale plant.

TAILINGS HANDLING AND REMEDIATION

MAG published a "Report of Investigation-Tailings, MYNM Pilot Plant, and Tailings Management Study" in October 2012 (Authored by Martin C. Kuhn). The report covered a laboratory study of placed tailings and used the data to develop a preliminary model of tailings sedimentation, settling, compacting and dewatering. A large-scale extended test program was developed and instituted to provide operating data on shrinkage and dewatering of kaolinite tails over an extended period of time in 5-7 meter deep in-situ concrete columns. This report summarizes column data obtained over a one year period from October 31, 2012, through November 11, 2013. The study has allowed MAG to refine the sedimentation model and predict likely shrinkage of tailings volumes over time. The predicted tailings expansion upon placement and shrinkage as a function of time allows a preliminary design of tailings placement in mined out areas. MYNM continued sampling of the in-situ columns through 2014 and recently completed a sampling campaign in February of 2015. An up-to-date analysis of continued tailing compaction and shrinkage is the subject of Tailings Report #3, authored by MAG in March of 2015.

TAILINGS SHRINKAGE

Paraná tails are estimated to be about 80-85% kaolinite and silica and about 15-20% hematite. The specific gravity of kaolinite and silica are about 2.65 and hematite about 5.26. The tailings specific gravity has been estimated to approximate 3.1-3.2 g/cm^3. Expansion of tailings as a function of percent solids then can be calculated and is graphically expressed in Figures 13-15 & 16.

FIGURE 13-15
EXPANSION OF TAILS AS A FUNCTION OF PERCENT SOLIDS
THEORETICAL (BLUE) PARANÁ TAILS SAMPLES (RED)

(SOURCE: MAG, 2014)

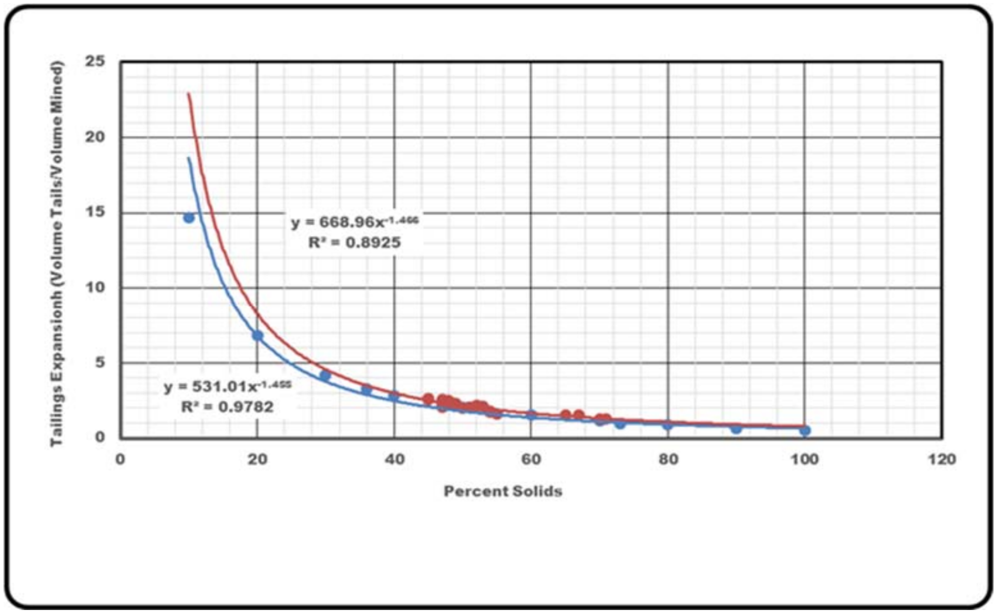
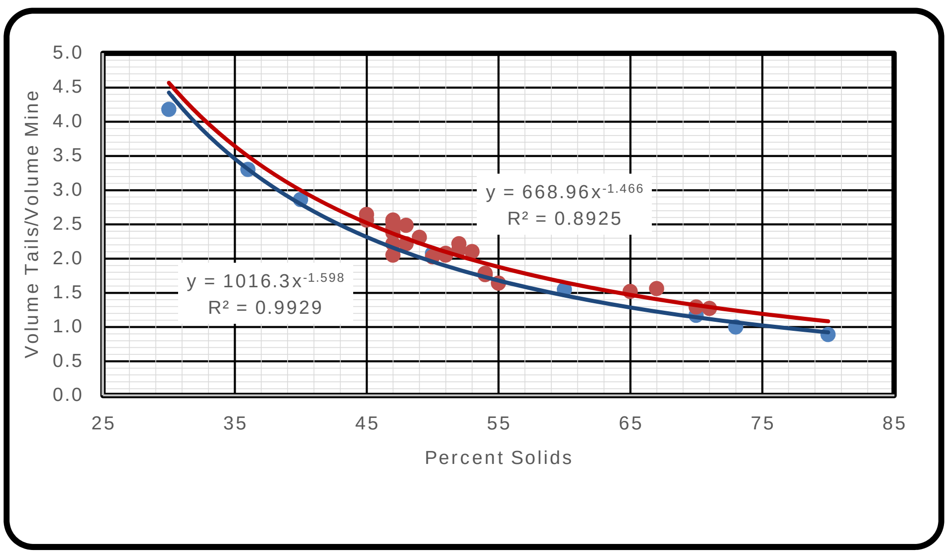


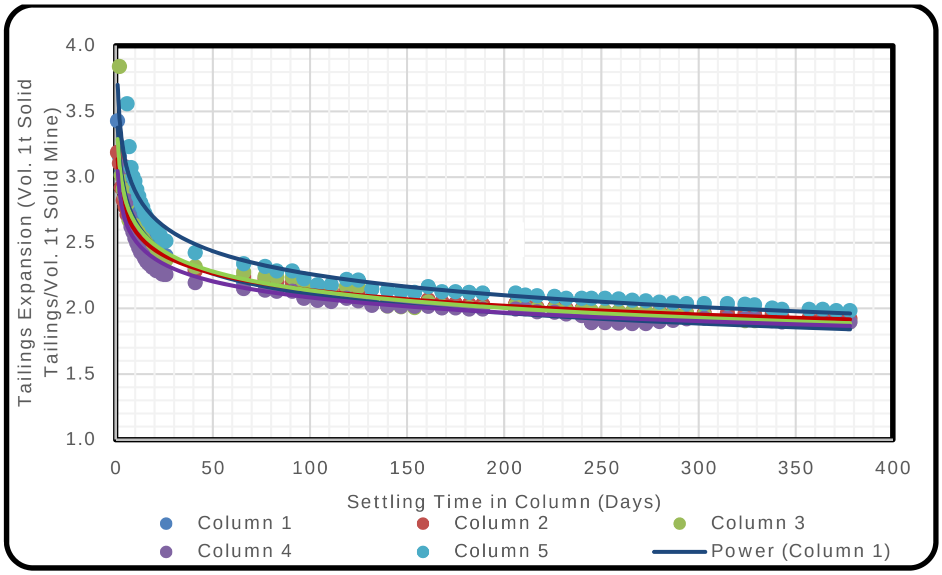
FIGURE 13-16
EXPANSION AS A FUNCTION OF PERCENT SOLIDS, THEORETICAL AND PARANÁ SAMPLES

(SOURCE: MAG, 2014)



Samples extracted from previously settled tailings in a tailings impoundment allowed the determination of Paraná tailings apparent wet-bulk density as a function of % solids. The agreement with the theoretical calculations shown in Figure 13-14 allow the development of a reliable model to predict tailings volume contraction and expansion. The curves described in Figures 1.01&2 accurately describe the observed settling experienced in the columns over the first year of settling. See Figure 13-16.

FIGURE 13-17
SETTLING AND SHRINKAGE IN TEST COLUMNS 1-5.
(SOURCE: MAG, 2014)

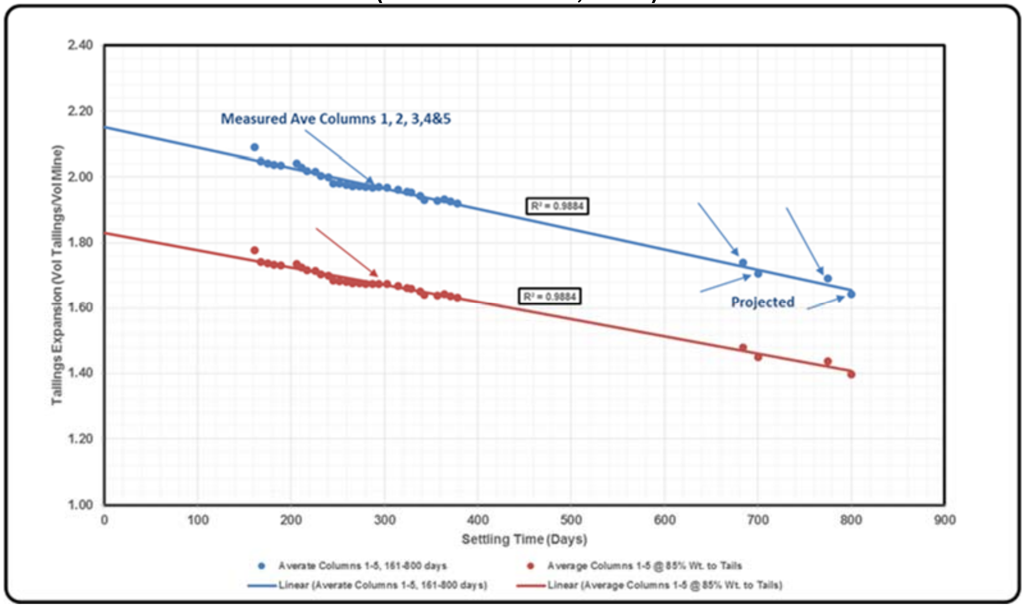


Averaging and extending the column data allows a projection of in-place shrinkage at 700 and 800 days. Figure 13-17 shows this projection.

FIGURE 13-18

AVERAGE COLUMN SETTLING FROM DAY 161 TO DAY 800

(SOURCE: MAG, 2015)



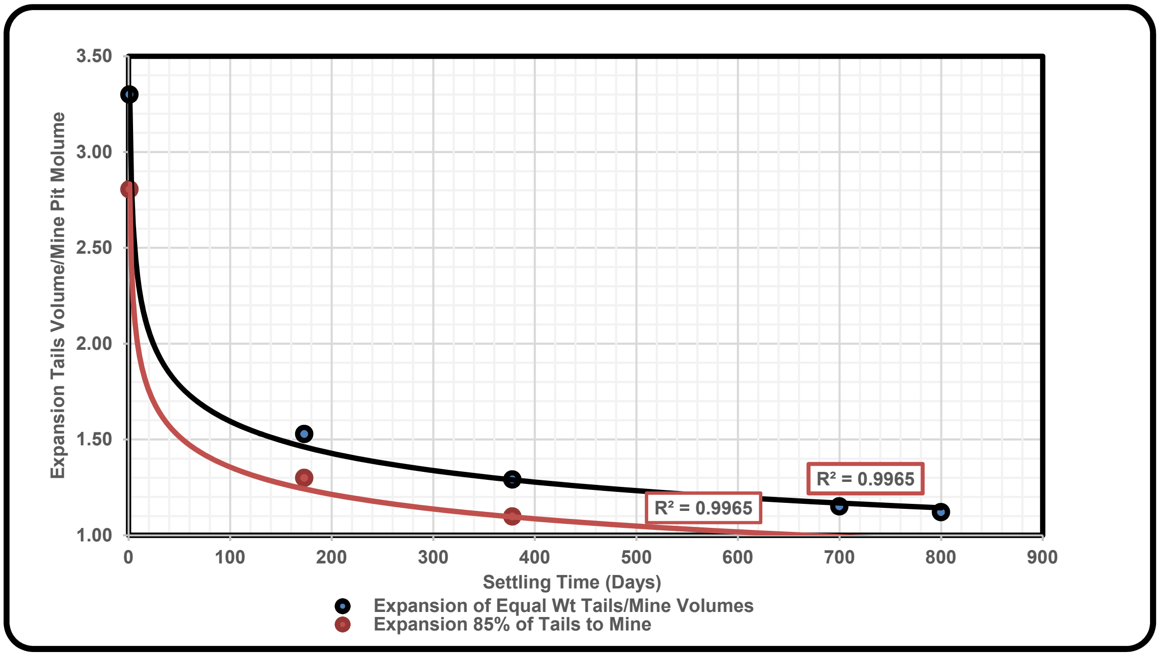
The blue line represents shrinkage based on 1 tonne of tails returned to the mine from which 1 tonne of material has been removed. The red line demonstrates the actual mine and tailings conditions, wherein only 85% of the mined material will return to the tailings impoundment (the mine pit). Figure 13-18 gives the projected shrinkage to 800 days and measured shrinkage for 664 and 775 days. Excellent agreement with the projection is noted.

An alternate way of looking at tailings volume returned to the mine is demonstrated by settling in a tailings pit and allowing the tails to dewater through the underlying laterite and evaporation. The columns did not demonstrate significant evaporation. Fitting the limited data points from pit sampling to the MAG model yields the contraction (shrinkage) projections shown in Figure 13-18

FIGURE 13-19

SHRINKAGE IN TAILINGS POND

(SOURCE: MAG, 2014)



The time to reach an acceptable level of expansion appears to require evaporation and layering of tails. Apparent from Figure 13-19 is the return of tailings to the pit in layers of 3.5 meters allows shrinkage equal to the volume of material removed from the pit in about 600 days. These tailings would average about 63% solids and in MAG's opinion would sustain agricultural activity.

From data produced to-date, MAG believes deposition in about 2 meter lifts could result in the return of tailings material to agricultural use in about one year.

CONCLUSIONS

- Paraná tailings expand and shrink proportional to entrained water.
- Using an estimate of Fe_2O_3 15-20% in tails yields a S.G. of about 3.1-3.2. The specific gravity of the tails does not greatly influence shrinkage calculations. For all calculations made in this report a S.G. of 3.2 was assumed.
- At a tailings percent solids of 36% introduced to the columns, about 50% of the water lost in the first year was lost in the first 10 days.

- One year of settling in the column resulted in a 36% solids tailing material to thicken to about 57% solids.
- One year of settling and drying in a pit exposed to the atmosphere resulted in average of 4 meters in depth of 63.6% solids.
- The average of columns shrinkage over 800 days yields expansion over removed pit material of 1.6 times that extracted from the pit. Since only 85% of the mine material will be returned to the pit, the final expected expansion is projected to be 1.4 times the volume extracted from the pit.
- An excellent correlation between theoretical and measured shrinkage as a function of percent solids is noted in both the column program and the pit program.
- Paraná tailings respond predictably and well to conventional and paste thickening and dewatering in tailings impoundments over time. Thickness of deposition favors evaporation in 2 meter layers versus 7 meters with limited evaporation.
- Tailings covered by a 20-30 cm layer of stockpiled organic rich soil from mine grub and clear operations provides a suitable soil for the return of the pit areas to agricultural use.
- Numerous samples from Alto Paraná laterites were studied in the metallurgical program for variability. The samples demonstrate variability in TiO_2 and silica content; however, all tested samples responded as expected to the developed process flowsheet. Depending on location and laterite depth, the relative proportion of recoverable TiO_2 could vary. As TiO_2 grade diminished, recovery of TiO_2 also decreased (Figure 13-3).
- Typical ilmenite mineral sand deposits are high in uranium and thorium; however, the Paraná concentrates are very low in both uranium and thorium. Magnesium and vanadium contained in concentrates were noted to report to titanium slag (MgO) and pig iron (V_2O_5). Additional study of the variability in the resource is recommended.

- Alto Paraná tailings need to be better defined in terms of percent solids and pulp rheology to determine optimum percent solids for pumping to remote tailings impoundments.
- Proper tailings handling will be critical in returning the tailings material to the land to allow agricultural use.
- Prepare a large enough area to deposit tailings and test surface conditions necessary for load bearing farm equipment.
- Plan and execute a program to determine optimum thickness of deposition with an objective of also determining load bearing capacity of layered tailings allowed to dry on the surface to about 70% solids.
- Demonstrate ability of mining operation to operate on basalt and after the removal of plant feed, replacement of saprolite layer for drainage of tailings water during shrinkage.
- Demonstrate replacement of grub and clear organic rich soil will allow the return of land for agriculture purposes.

An important feature of the test program was to test water quality as the water enters the ground water to travel to the local streams. Since the process operates at natural pH and no sulfides are in the material, increasing levels of metallic salts are not expected; a demonstration of this is recommended.

14 MINERAL RESOURCE ESTIMATES

SPECIFIC GRAVITY (BULK DENSITY)

In order to calculate a resource tonnage it is necessary to determine a reliable average density of in situ lateritic material. Estimates of bulk density and specific gravity of the laterite were obtained using several methods by Hains (2012). Measurements included laboratory tests based on published standard methods, as well as field tests using recognized but non-standard methods. The test methods employed included the following:

- ASTM D854, Peru National Standard Test method NTP 339.131;
- ALS Chemex method OA-GRAO8b;
- Archimedes method;
- Sand replacement method; and
- Gravimetric/volumetric method.

The latter two methods are field methods. The first involves removing a volume of sample material and weighing it both wet and dried to constant weight. The void is filled with a measured amount of fine dry quartz sand and the wet and dry bulk densities determined. The second involves excavation of a specific unit volume of material and weighing the sample in the wet and dry states. The wet and dry bulk densities are then calculated. Both methods have been found to be sufficiently accurate to enable them to be used in early stage resource calculations. Table 14-1 summarizes the results of the various bulk density and specific gravity determinations.

TABLE 14-1: BULK DENSITY/SPECIFIC GRAVITY DETERMINATIONS

CIC Alto Paraná Project (Source: D. Hains, 2012)

Sample	Coordinates (WGS 84)		Method	S.G[1]	Method	Bulk Density		Moisture (%)	Lab.	Date Sampled
	Easting	Northing				Wet	Dry			
PH-100	711111	7260030	D854	2.90	Archi.[2]		1.56		SENICO	Dec.17/09
PH-202	711096	7250252	D854	2.87	Archi.		1.69		SENICO	Dec17/09
PH-164	718267	7255266	D854	2.38	Grav.[3]			20.9	Minilab	Dec.17/09
PH-157	708508	7243382		2.44	Grav.			21.1	Minilab	Dec.17/09
PH-44	713740	7248769	OA-GRAO8b	2.69					ALS	Dec. 17/09
Pilot Plant										
0-1m					Grav.	1.87	1.24	33.83	CIC Res.	Oct. 29/11
1-2m						1.75	1.31	25.19		
2-3m						1.90	1.24	34.95		
3-4m						2.24	1.67	25.27		
4-5m						2.93	2.19	25.12		
5-6m						2.43	1.81	25.50		
6-7m						2.71	1.99	26.62		
average						**2.26**	**1.64**	**28.33**		
T-2253	708921	7252649			Sand Rep	1.75				Oct. 20/11
					Sand Rep	1.89				
					Arch.	2.03				
T-2173	708668	7254445			Sand Rep	2.08				
					Sand Rep	1.85				
					Arch.	2.09				
T-2250	707947	7251350			Sand Rep	1.99				
					Sand Rep	1.67				
					Arch.	1.97				
T-2194	710223	7253367			Sand Rep	2.04				
					Sand Rep	1.81				
					Arch.	2.13				
T-2254	709932	7251509			Sand Rep	1.91				
					Sand Rep	1.65				
					Arch.	2.01				

1) Specific gravity of solids
2) Archimedes method
3) Gravimetric

Local contractors reported typical wet and dry bulk densities similar to those determined by MAG for the Pilot Plant samples. This report has used a dry bulk density of 1.64 for estimation of resource tonnage. Additional bulk density tests should be undertaken to better characterize the bulk density variability of the deposit and to establish seasonal variations in bulk density due to rainfall both laterally and vertically across the deposit.

CIC MYNM RESOURCE ESTIMATE (2015)

The 2015, 43-101 technical report prepared for CIC and Delta Gold Corp included a resource estimate for the 36,177 hectares MYNM concessions block (Kuhn M. C. and Brown D. M., 2015). This area (Figure 14-1) was chosen for a resource estimate because it was the final planned concession holdings after consolidation of the original CIC concessions to the area of generally highest grade/thickness and greatest density of sampling. A preliminary resource estimate for this planned ultimate holding area was made by CIC in February of 2015, as summarized in Table 14-2 below.

Resources were estimated using the polygon method where polygons were constructed using perpendicular bisectors around each central pit. Polygon grade and thickness were determined by assigning an average grade and thickness of the pit in the center of each polygon. Environmentally sensitive surface drainages and natural forest areas (blank areas) were excluded from the original polygons and hence not included in the final resource polygons. A specific gravity of 1.64 was used for all tonnage calculations using the average dry density for the Pilot Plant samples (Table 14-1).

Figure 14-1: CIC 2015 MYNM POLYGON RESOURCE ESTIMATE

(Source: J. Fierro / D. Brown, 2015)

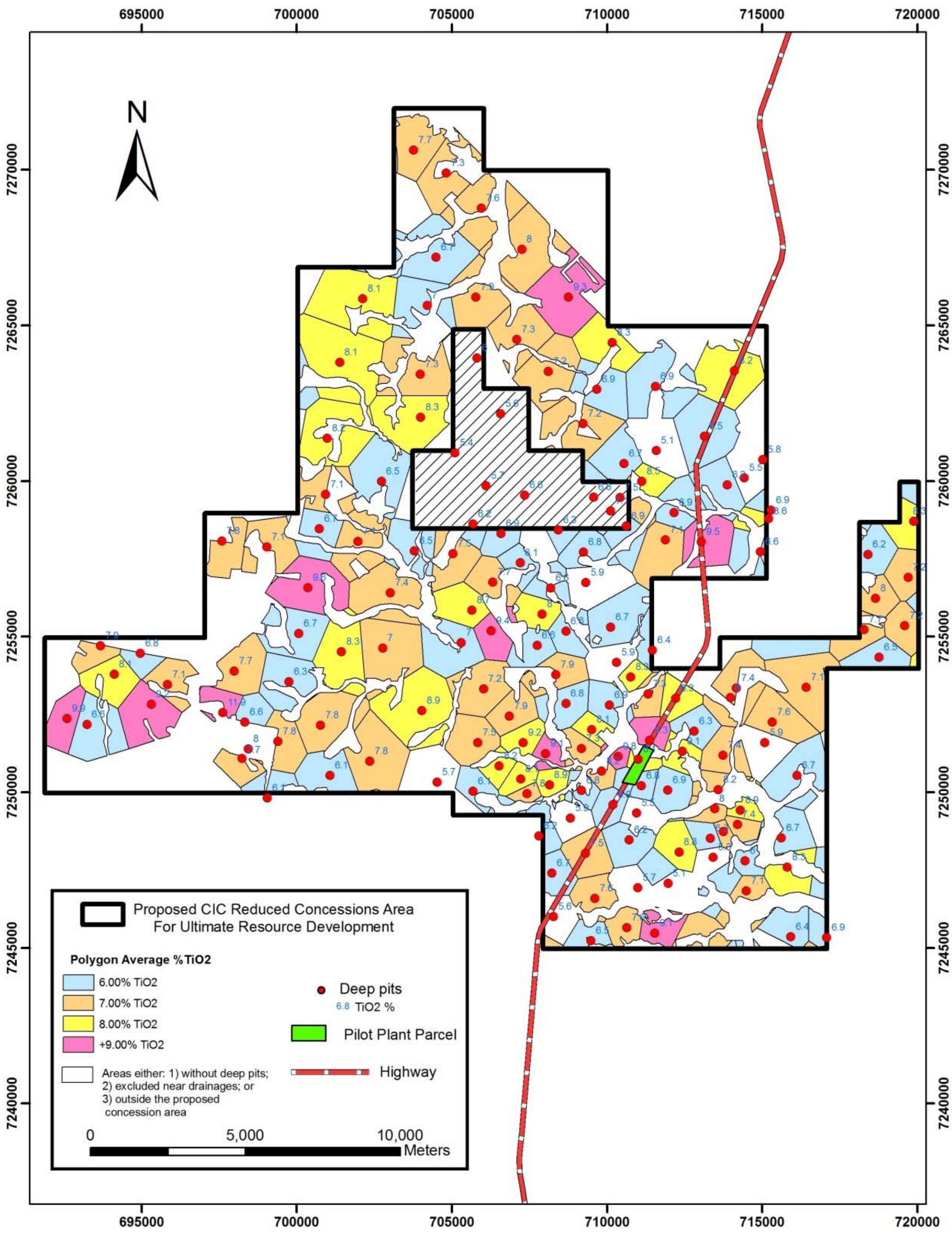


TABLE 14-2: 2015 MYNM RESOURCE ESTIMATE

Alto Paraná Project

(Source: J. Fierro, CIC, 2015)

Cut Off (%TiO2)	%TiO2	%Fe2O3	Tonnes	Average Thickness (m)
6.0	**7.47**	**24.40**	**2,406,182,800**	**6.11**
7.0	7.91	25.14	1,602,307,400	5.90
8.0	8.58	26.04	596,535,797	5.24

Notes:

1. CIM definitions were followed for Mineral Resources.
2. The Qualified Person for this Mineral Resource estimate is David Brown, P. Geo.
3. Maximum Mineral Resources are estimated at a cut-off grade of approx. 6.0% TiO_2.
4. A minimum mining thickness of 1 meter was used.
5. The Mineral resource is based on an area of 36,177 ha.
6. Effective date February 2015.

UEC RESOURCE ESTIMATE (2017)

An updated resource calculation has been estimated for this technical report. This resource estimate was calculated for the 70,498 hectares in exploration concessions which UEC holds under license from MOPC as described in Section 4 of this report. The location of the resource polygons is shown on Figure 14-2 and the calculated resource is summarized in Table 14-3. These estimates were made using the same polygon method as described previously for the 2015 MYNM 43-101 report and the same average specific gravity of 1.64. A total of 328 polygons were used in the calculations for the updated 2017 resource estimate.

Table 14-3: 2017 UEC RESOURCE ESTIMATE

Cut-Off %	% TiO_2	% Fe_2O_3	% Ilmenite calculated	Tonnes	Thickness (m)
<5.0	7.31	23.35	13.68	5.21 billion	6.50
6.0	7.41	23.58	13.95	4.94 billion	6.61
7.0	7.83	24.35	14.96	3.35 billion	6.40

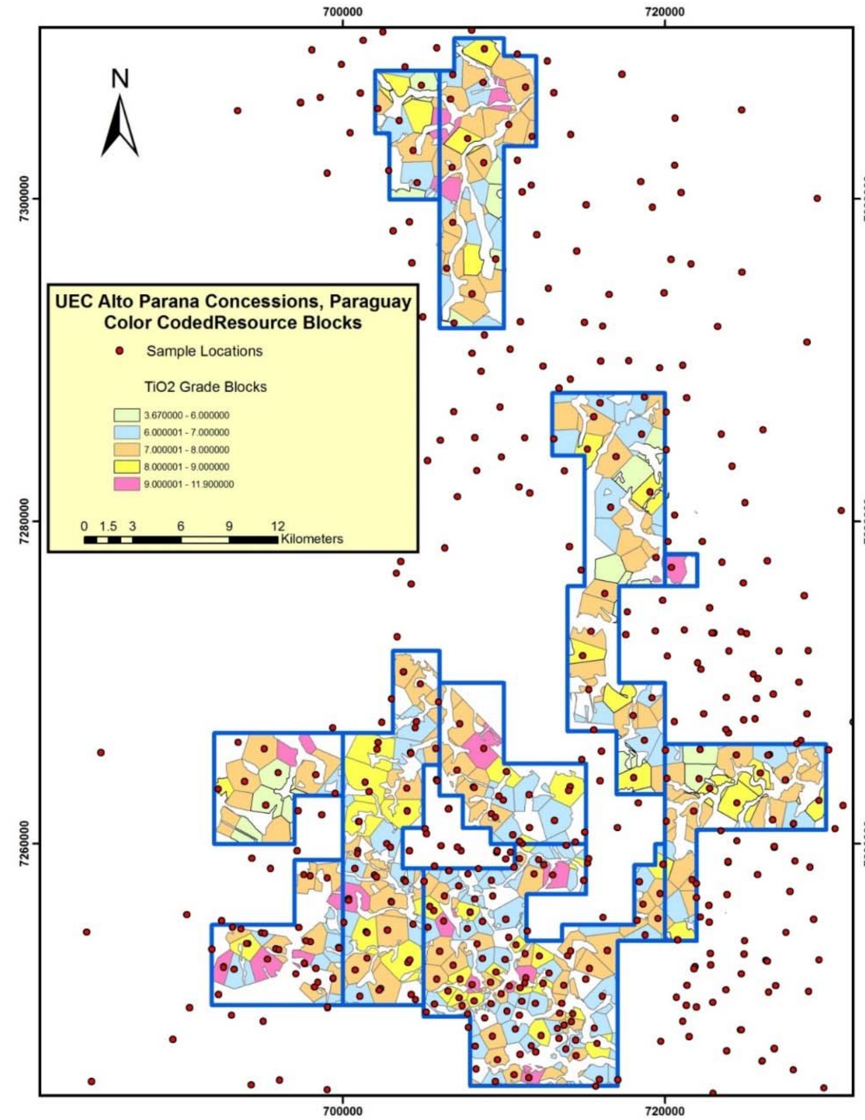
Notes:

1.CIM definitions were followed for Mineral Resources.
2. The Qualified Person for this Mineral Resource estimate is David Brown, P. Geo.
3.Maximum Mineral Resources are estimated at a cut-off grade of approx 5.0% TiO_2.
4.A minimum mining thickness of 1 meter was used.
5.The Mineral resource is based on a property area of 70,498 hectares.
6.Effective date August 11, 2017.

Volume percent of ilmenite in Table 14-3 was approximated using atomic weights, assuming that ilmenite ($FeTiO_3$) is the only or predominant mineral source of titanium. This assumption is supported by mineralogical XRD studies of laterite material which show that the mineral contents of rutile, the only other potential Ti source, are negligible. Estimation of hematite as a mineral percentage from the laboratory analyses is not feasible because the hematite reports as fine grained particles possibly associated with clay rather than heavy minerals.

Figure 14-2: UEC 2017 POLYGON RESOURCE ESTIMATE

(Source: D. Brown, 2016)



By definition, Inferred Resources do not have demonstrated economic value and it is not known if they can be developed. As defined, Inferred Mineral Resources have reasonable prospects for economic extraction. Certain assumptions have been made in assigning Alto Paraná to this resource category. These include: (1) that TiO_2 and Fe_2O_3 grades can be reliably extrapolated between the widely spaced test pits; (2) that average thickness of mineralization between test pits does not radically vary from the average of about 6 meters; (3) that TiO_2 and pig iron market prices are economical at the time of extraction;

and (4) that recoveries obtained in the pilot plant can be reproduced in a full-production scale beneficiation plant.

With regard to assumptions 1 and 2, it is the QP's opinion that consistency and reliability of grade and thickness has a high probability of accuracy based on the relatively large volume of data collected to date coupled with aerial extent and geological homogeneity of the deposit. With regard to sensitivity to metals prices, these are highly unpredictable and it is uncertain whether prices would be economic at a future extraction date.

FACTORS AFFECTING ACCURACY AND FUTURE VIABILITY OF RESOURCE ESTIMATE

With regard to information presented by the QP for this Item 14, there are no known legal, permitting, or title issues that could have a detrimental effect on the mineral resource estimates and potential mineability of these estimates. Regarding environmental concerns, it is the QP’s opinion that sufficient mitigation efforts have been followed by both UEC and its predecessor CIC to exclude areas of virgin forest or active drainages from any proposed resource extraction.

There are some physical factors concerning moisture content, specific gravity variation, and grain size which could affect the recoverable titanium metal from the currently estimated resource. These factors will have to be assessed in any future reserve estimates and economic evaluation studies by the project team.

With further regard to the unusual nature of this ilmenite deposit, a reader familiar with large open pit base or precious metal mines might question whether seemingly random scattered blocks could be mined effectively. However, the mining method contemplated for the Alto Paraná mineralization would not consist of one or several large pits, but rather numerous shallow pits or “panel areas” which would be backfilled and reclaimed by the drainage exclusion areas (irregular white areas on Fig. 14-1), which are prohibited from mining and were not included in the total resource estimate.

15 MINERAL RESERVE ESTIMATES

No mineral reserve estimates have been calculated at this stage of the project.

16 MINING METHODS

No mining plan is included in this Technical Report.

17 RECOVERY METHODS

No process recovery methods are included in this Technical Report.

18 PROJECT INFRASTRUCTURE

No Project infrastructure has been included in this Technical Report.

19 MARKET STUDIES AND CONTRACTS

No market studies or contracts have been included in this Technical Report.

20 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

Environmental and permitting has been addressed in Item 4 of this Technical Report.

As with most new mining projects, a major risk to the project is excellent community relations and land management. The ability of the project to purchase/lease the land to allow the recovery of heavy minerals with the return of the clay tailings in a form to support farming will be closely tied to the project demonstrating, early on, suitable technology.

Assuming the project will use pyrometallurgical technology (electric arc smelting) to produce high value products such as high grade TiO_2 slag and pig iron, a suitable site directly tied to the Itaipu Dam's hydroelectric power plant will be essential to ensure low cost 100% reliable power availability. One of the greatest advantages to the project is low cost power, since most current TiO_2 producers are experiencing higher and higher power costs. (See Item 24)

Proximity to reliable shipping lanes will also be extremely important for the transportation of products to South American and overseas markets. (See Item 24)

21 CAPITAL AND OPERATING COSTS

No capital or operating costs are given in this Technical Report.

22 ECONOMIC ANALYSIS

No economic analyses have been made a part of this Technical Report.

23 ADJACENT PROPERTIES

The UEC properties are surrounded by lateritic materials high in TiO_2. To date no other companies have filed for exploration permits.

24 OTHER RELEVANT DATA AND INFORMATION

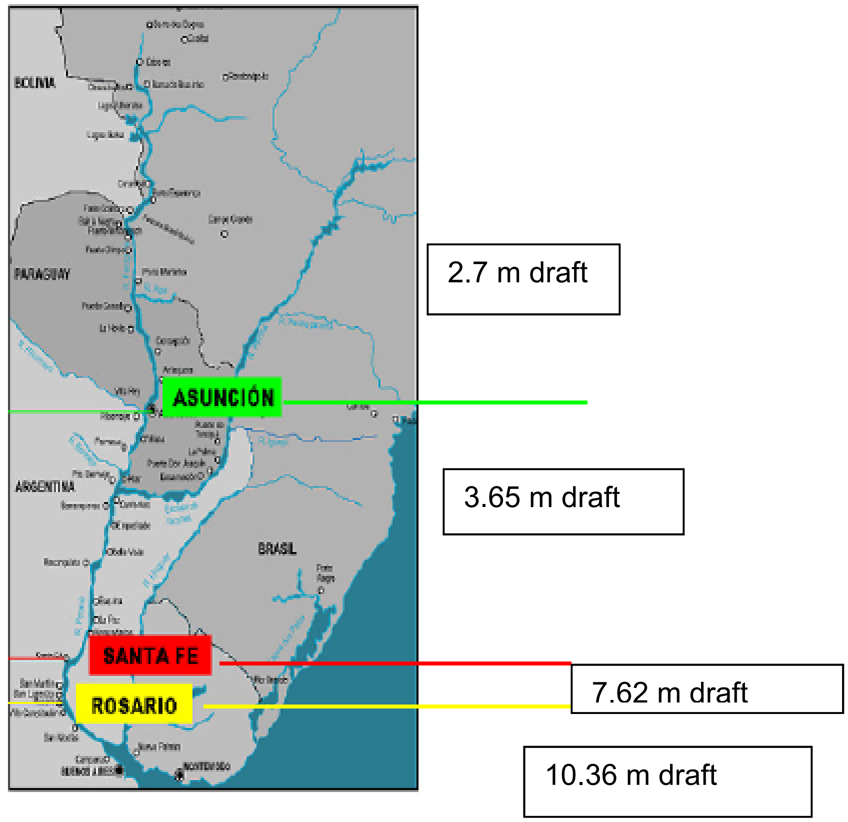
TRANSPORTATION

Paraguay is a landlocked country with limited transportation connections to the rest of the world. Transport costs and the associated logistical requirements are a significant factor in determining the economic viability of major mineral and metallurgical projects such as the Alto Paraná ilmenite project.

The most significant transportation corridors are the Paraguay and Paraná Rivers. These rivers provide access for goods into and out of Paraguay using barges and, in the case of the Paraguay River, ships. Road connections to Brazil and Argentina are available, but distances to major ports are significant. There is no active rail system in Paraguay and rail connections with Brazil and Argentina require road transport from Paraguay to rail heads in those countries.

The Paraguay and Paraná Rivers are subject to significant fluctuations in water levels and have increasing draft limitations going upstream. Figure 24-1 illustrates the general limitations on vessel draft.

FIGURE 24-1: DRAFT LIMITATIONS ON PARAGUAY AND PARANÁ RIVERS



Below Rosario in Argentina, there are no draft limitations and large ocean going vessels can freely navigate. Between Rosario and Santa Fe, the draft limit decreases to 7.62 m, limiting vessels to no more than approximately 40,000 DWT capacity. Between Santa Fe and Asuncion, the draft limit decreases again to 3.65 m. This limits potential cargo ships at Asuncion to no more than 25,000 DWT, and generally requires vessels to carry only part loads until reaching Santa Fe, or having to discharge partial cargos at Santa Fe. Above Asuncion, the draft limit decreases to 2.7 m on both the Paraguay and Paraná Rivers. This draft limitation means only barge traffic is available for shipping. Dams on the Paraná River further limit navigation on the river, with no barge traffic being present above the Itaipu Dam just north of Ciudad del Este.

Navigation restrictions are imposed on both the Paraguay and Paraná Rivers in terms of the size of barge strings,barge size and barge hours of operation. There are also restrictions on free movement of barges between the various countries; this persists despite existing agreements permitting free navigation. For example, Argentina and

Paraguay impose restrictions on the national registration of barges. Paraguay requires that only Paraguayan flagged barges load or unload cargo in Paraguay. Current barge limitations on the Paraguay and Paraná Rivers are detailed in Table 24-1.

TABLE 24-1: BARGE RESTRICTIONS ON PARAGUAY AND PARANÁ RIVERS

River	From	To	Barge String Size (W x L (m)
Paraguay/Rio Plate	Nueva Palmira, Arg.	Gral. San Martin, Arg.	50 x 290 m or 50 x 236 m, depending on channel
	San Martin, Arg.	Confluencia, Arg.	No restrictions
	Confluencia, Arg.	Rio Apa, Py	60 m x 319 m
	Rio Apa, Py	Corumba, Brazil	50 m x 290 m
	Corumba, Brazil	Cáceres, Brazil	24 m x 80 m
Paraná	Tres Fronteras, Py	San Gotardo, Py	6 barges, 12 hr continuous navigation
	San Gotardo, Py	Encarnacion, Py	16 barges, 12 hr continuous navigation
	Encarnacion, Py	Confluencia, Arg.	20 barges, 48 hr. Continuous navigation
Note	Dry season limitations on Paraná River. Rainy season limits are higher		

The typical individual barge is 10.6 m wide by 60 m and has a draft of 3 m. This type of barge can hold 1,500 tonnes. The largest barge used on the rivers is 16.6 m wide x 60 m long with a 3 m draft and holds 2,600 tonnes.

Port facilities on both the Paraguay and Paraná Rivers are limited. The Port of Asuncion is the largest general cargo port in Paraguay. The port has a 1,200 m long wharf with a maximum depth of 3.3 m at low water. The port has a general cargo open storage area of 15,000 m^2 and a container storage area of 26,000 m^2. The port is operated by the Administratcion Nacional de Navegacion y Puertos (ANNP), a Paraguayan government agency. Ports on the Paraná are generally restricted to loading grain. The river has very steep banks for most of its length and significant open space for bulk commodity storage is limited. The closest port having reasonably significant bulk commodity storage capability is Puerto Trociuk at km 1,566. This port is at km 1,566 and has a storage area of 22 ha. By way of reference, Encarnacion is at km 1,583 and Tres Fronteras, which is near Ciudad del Este, is at km 1,928.

Development of bulk loading and unloading facilities for coal and slag will be essential for the success of the project. Logistics and logistics costs are a critical component of the project and require extremely detailed study to select the most appropriate option.

ELECTRICITY PRICE

The Alto Paraná project will be a significant consumer of electricity. While under the control of CIC, a negotiated price of about $0.04/kWh was proposed and appeared to be agreeable to ANDE. The $0.04/kWh cost is below the published tariff provided by ANDE, the national electricity distributor. Rio Tinto has also proposed a major project in Paraguay to construct an aluminum smelter based on imported alumina feedstock. Their proposal was based on securing a large, low cost block of power at about $0.04/kWh.

25 INTERPRETATION AND CONCLUSIONS

Mineralization on the property consists of laterite containing ilmenite, titanomagnetite, magnetite and hematite derived from Early Cretaceous tholeitic basalts of the Paraná Basin and associated gabbro intrusions. The basalts and gabbros have been laterized to an average depth of approximately 7 m over a very extensive area. Kaolinite is the dominant mineral in the laterite, representing 60% - 75% of the mineral assemblage. Ilmenite and associated ferrous minerals are present in the laterite as discrete minerals having average particle sizes in the 135 µm to 165 µm range. The grade of TiO_2 in the laterite ranges up to approximately 11% but is typically in the 5% to 9% TiO_2.

Based on pilot plant operational results and MINTEK smelting results and standard industry practice it is reasonable to assume the successful development of the project for production of a high quality titanium slag for use as a feedstock in chloride process titanium dioxide pigment manufacture. A high quality pig iron co-product will also be produced. The pig iron is used in the manufacture of high quality ductile iron castings for automotive and machinery applications.

Exploration work on the property began in 2009 with a program of very widespread hand-dug deep pits sampled at approximate 1 m intervals. In these deep pits, samples were collected through the laterite zone to the top of the saprolite zone. The initial phase of pitting and sampling was followed up by more closely spaced deep pitting and shallow 1 m auger drilling in 2010 and 2011. Sample spacing for the pits varies from approximately 1 km x 1 km to more than 4 km. There is only limited deep pit sampling on spacing at less than 1 km x 1 km. In total, 4,432 samples from deep pits and 2,992 1 m auger samples have been collected and analyzed. Analysis of this project-wide sample data indicates that assays from the deep pits generally provide more reliable data than the shallow auger samples due to vertical inhomogeneity from soil surface to saprolite base resulting from compaction and also possibly from primary segregation of heavy minerals during crystallization and eruption of the basalt host rock.

In late 2014 CIC Inc. applied to reduce the original 321,980 ha concession areas to a smaller footprint covering 74,447 has. Upon approval of this application in 2015, CIC Inc. intended to reduce the mineral concession holdings further to a final resource permit area of 36,177 ha covering the indicated highest grade and potentially economically extractable part of the titanium mineralization. UEC has elected to increase the size of their properties compared to the reduced CIC holdings. A resource estimate for the UEC area is given as summarized in Table 25-1.

Table 25-1: 2017 UEC RESOURCE ESTIMATE

Cut-Off %	% TiO_2	% Fe_2O_3	% Ilmenite calculated	Tonnes	Thickness (m)
<5.0	7.31	23.35	13.68	5.21 billion	6.50
6.0	7.41	23.58	13.95	4.94 billion	6.61
7.0	7.83	24.35	14.96	3.35 billion	6.40

Notes:

1.CIM definitions were followed for Mineral Resources.
2. The Qualified Person for this Mineral Resource estimate is David Brown, P. Geo.
3.Maximum Mineral Resources are estimated at a cut-off grade of approx 5.0% TiO_2.
4.A minimum mining thickness of 1 meter was used.
5.The Mineral resource is based on a property area of 70,498 hectares.
6.Effective date August 11, 2017

The inferred resource is calculated on the total TiO_2 and Fe_2O_3 assays. Metallurgical test work demonstrates that recovery of +25 μ ilmenite/titanomagnetite diminishes as feed grade decreases. Future geological exploration work needs to focus not only on total TiO_2 but also on recoverable TiO_2. Recoverable values will be determined by recognizing the smallest particle size allowed in smelter feed.

The resource is exceptionally large and initial operating parameters should be directed to procuring properties with the most favorable heavy mineral particle size distribution. Land acquisition and excellent community relationships will be critical issues in the ability of UEC to purchase the highest value properties. To the authors' knowledge there are no known significant risks that could negatively affect the exploration information and mineral resource estimates presented in this technical report. This assumes that there are no unforeseen changes to Paraguayan mining or environmental regulations or in the attitude of local land owners, who are presently predominantly in favor of the project.

To date the resource appears to be very homogeneous and mineral chemistry consistent. Elements such as uranium and thorium have been problems for heavy minerals extracted from sands; however, Alto Paraná uranium and thorium levels are extremely low. Vanadium, magnesium and calcium levels in slag and pig iron must be carefully monitored and controlled.

Previous owners have conducted extensive process development work with the objective of a technically and economically viable process flow sheet for beneficiation of the material. This work has included design, construction and operation of a 1.5 t/hour pilot plant in Paraguay. The process development work has been very successful. The pilot plant produced approximately 108 tonnes of concentrate over a three month period. During the operation of the pilot plant, significant process improvements were identified and implemented which resulted in significant reductions in reagent usage and the capacity to produce a tailings at 30-40%+ solids with paste thickener technology. Mass recovery of concentrate in the pilot plant operation was approximately 16.9%, which compared very well with laboratory test work. The concentrate produced during the pilot plant operations demonstrated excellent quality. Table 25-2 shows the average results for 84 t of concentrate and a comparison to the laboratory result.

TABLE 25-2: MAGNETIC CONCENTRATE COMPARISON – LABORATORY VS PILOT PLANT RESULTS

CIC Alto Paraná Project (Source: MAG, 2015)

Pilot Plant Results (Average of 84 t combined product – CIC XRF Assays)

Concentrate	Barrels	Al_2O_3	BaO	CaO	Cr_2O_3	Fe_2O_3	K_2O	MgO	MnO	Na_2O	P_2O_5	SiO_2	SrO	TiO_2	LOI
	Number	%	%	%	%	%	%	%	%	%	%	%	%	%	%
HIMS	90	0.95	0.014	0.017	0.011	50.14	0.005	1.10	0.53	0.031	0.015	1.76	0.002	46.38	2.92
LIMS	94	1.68	0.008	0.015	0.026	67.06	0.003	0.60	0.49	0.031	0.028	0.86	0.003	29.07	1.72
TOTAL	**184**	**1.32**	**0.011**	**0.016**	**0.019**	**58.78**	**0.004**	**0.85**	**0.51**	**0.031**	**0.021**	**1.30**	**0.003**	**37.53**	**2.31**

Laboratory Result, Combined Product – (CIC XRF Assays)

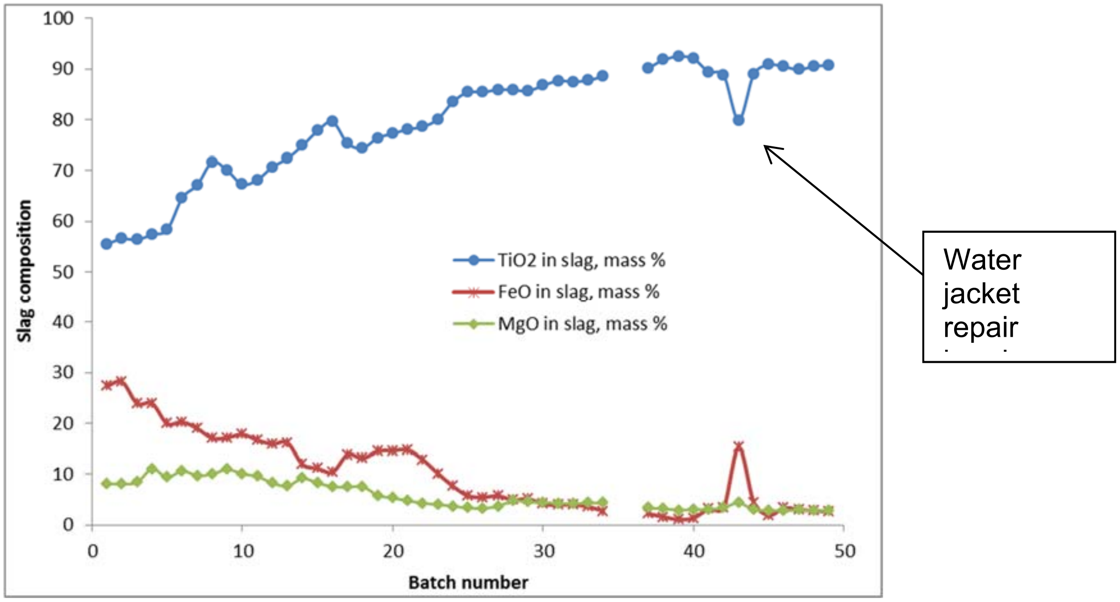
Concentrate Assay	Al_2O_3	BaO	CaO	Cr_2O_3	Fe_2O_3	K_2O	MgO	MnO	Na_2O	P_2O_5	SiO_2	SrO	TiO_2	LOI
	%	%	%	%	%	%	%	%	%	%	%	%	%	%
	1.31	**0.01**	**0.04**	**0.04**	**59.13**	**0.01**	**0.81**	**0.52**	**0.02**	**0.022**	**1.18**	**n.r.**	**36.89**	**0.01**

MYNM shipped 108 tonnes of concentrate in January, 2012 to MINTEK in South Africa for smelting in the MINTEK pilot plant. This work was completed during the last week of March, 2012 and was highly successful. The pilot plant operation demonstrated the following key conclusions:

- Smelter operations during the two week test went as planned, without upset, with the exception of one half-day period when a water jacket leak had to be repaired and the smelter was idled during that period. MINTEK resumed smelting operations once the repair was made;
- TiO_2 slag quality met or exceeded expectations for this first test. During stabilized operations, slag assays were consistently better than 85% and later exceeded 90% as more operating parameters were tested;
- Pig iron quality met expectations, with low manganese premium material being produced in the 85-87% TiO_2 range;
- Slag fluidity remained high, even when TiO_2 content exceeded 90%.
- Electric power requirements fell within expected ranges, when adjusted for moisture content in feeds and heat losses from a pilot scale. Reductant ratios, when adjusted for a pilot scale operation, also fell within expected parameters; and
- Overall, this was a very encouraging first smelting test, as most early trials with other materials have not been met with the same level of success and many faced severe operational problems.

Figure 25-1 illustrates the evolution of the furnace performance during the course of the pilot plant test work.

FIGURE 25-1: PILOT PLANT SMELTER RESULTS
(SOURCE: MINTEK, 2012)



Graph of TiO_2, FeO and MgO concentrations in slag from furnace start up to 2 weeks into a 2 1/2 week pilot DC arc smelter test (Data to 3/27/2011)

CONCLUSIONS

The Alto Paraná resource represents a potential large and sustainable business opportunity for UEC (Cayman Islands) and is important for the Country of Paraguay.

The Alto Paraná resource appears to be homogeneous and much higher grade than existing mineral sands deposits. Further work on particle size distribution of the ilmenite/titanomagnetite fraction will help better define the resource.

Metallurgical processing of Alto Paraná materials at the pilot plant in Paraguay demonstrated successful recovery of +40µ heavy minerals into a combined high and low intensity magnetic concentrate.

Large scale electric arc smelting of Alto Paraná high intensity/low intensity magnetic concentrate at MINTEK in South Africa demonstrated successful arc furnace production of 90% TiO_2 slag and 97% pig iron.

26 RECOMMENDATIONS

RECOMMENDATIONS

In accordance with UEC's intentions to advance the Alto Paraná Project to the next level of development (economic viability of a proven resource), the following recommendations are made:

1. Re-start and improve the efficiency of the mothballed pilot plant in order to increase TiO_2 content of the concentrates shipped to the smelter;
2. Conduct infill auger drilling within the Initial Mining Area of CIC in order to confirm a mineable (proven and probable category) reserve;
3. Acquire a Digital Terrain Model of the IMA in order to assist future ore reserve estimates and mine/infrastructure planning; and
4. Complete a Preliminary Economic Assessment report, including a revised resource model incorporating new data acquired as listed above.

For UEC to prepare a Preliminary Economic Analysis, MAG recommends the additional work shown in Table 27-1.

TABLE 27-1 RECOMMENDED WORK AND BUDGET FOR PEA

Recommendations	Proposed Vendor	Estimate of Cost
		$ USD
Infill Drilling and XRF Sample Analysis	UEC Personnel	170,000
Particle Size Analysis and XRF Sample Analysis	MAG and UEC	35,000
Digital Terain Model (Initial Mining Area)	Selection by UEC	25,000
Preliminary Economic Assessment (PEA)	Selection by UEC	85,000
Develop a Proposed Mining Plan	Selection by UEC	35,000
Develop Environmental and Social Management Plan	NewFields	65,000
Partial Transportaion Study	Selection by UEC	10,000
Estimated Total Cost		**425,000**

An area designated as the Initial Mining Area (IMA) was proposed in the 2012 Haines technical report for CIC as the most favorable location to delineate ore reserves and conduct initial extraction of the reserves (Figure 27-1). This area covering approximately

2,700 hectares consists of generally more consistent mineralization and higher grades of Ti-bearing laterite material within the overall property. Internal to the IMA itself is a smaller area that was designated in the Haines report for an initial mining operation with an estimated mine life of 11 years (Figure 27-1). It is recommended that UEC conducts infilling auger drilling within this relatively small area covering 856 hectares. To date the area has been tested with approximately 160 auger holes averaging 200 – 350 meters apart. Based on this relatively wide-spaced auger drilling, the IMA was projected to contain sufficient resources to sustain an eleven year mine life using bulk surface mining methods and cut-off grades proposed in the technical report for CIC by Haines (2012). The 11 year mine area is generally flat, consisting of large cultivated soybean fields, which is important in terms of the type of mine and backfill type of operations envisioned for the project.

A significant advantage in concentrating future exploration, modeling, and development of the Alto Paraná titanium-iron resource within the recommended boundaries is proximity to the Pilot Plant. This has obvious cost and logistical advantages regarding processing of both auger drill samples and any future bulk samples. At a minimum, it is recommended to fill in the grid spacing of 8 meter - 12 meter deep auger holes within the 11 Year Resource Block to 100 meters. This would require an estimated 200 holes. The unit cost of these auger holes is estimated to be $137 US per hole for labor and $52 US per sample for analyses (based on historic CIC costs 2009 - 2011). Assuming an average of 10 samples per hole, this works out to be approximately $700 per auger hole.

As part of any future exploration, it is recommended that a representative population of the auger samples (say 50% of the holes) be subjected to a particle size analysis using screen tests. In previous bulk sample runs at the Pilot Plant, in some cases as much as 60% of the concentrates were less than 40 microns in size, which is below the minimum particle size accepted by the smelter. In future exploration work, it will be necessary not only to determine average grades versus depth, but also the distribution of grades by size fraction with depth. This testing could be done at the pilot plant at reduced cost versus a commercial laboratory. For budget estimate purpose, this is projected to add another 20% to unit cost per auger hole.

Accurate digital terrain model (DTM) data is critical for the next phase of the project, including resource modeling and preliminary mine/infrastructure design. A LIDAR aerial survey to produce a DTM with one meter or less accuracy for the IMA is estimated to cost approximately $25,000, based on estimates available on the Internet.

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28 DATE AND SIGNATURE PAGE

CERTIFICATE OF QUALIFIED PERSON

I am Martin C. Kuhn, as author of this report entitled "Technical Report and Resource Estimate on Alto Paraná Project" dated August 11, 2017 do hereby certify that:

1. I am a Senior Principal of:

   Minerals Advisory Group, LLC
   2524 W Ruthrauff Rd
   Tucson, Arizona, USA 85705

2. I am a graduate of the Colorado School of Mines with the following degrees:
   a. Metallurgical Engineer, 1963
   b. Master of Science, Metallurgical Engineering, 1967
   c. Doctor of Philosophy, Metallurgical Engineer, 1969

3. I am a Distinguished Member of the Society of Mining Engineers of the American Institute of Mining, Metallurgical and Petroleum Engineers, Class of 1987

   I am a Member of the Mining and Metallurgical Society of America, Member Number-01216

   I am a Founding Registered Member of the Society for Mining, Metallurgy, and Exploration, Inc.,
   Member Number 1802650RM, 2006

   I am a Registered Professional Engineer, Metallurgical Engineering, State Board of Technical Registration, State of Arizona, USA, Certificate Number 10560, 1976.

   I have worked as a Metallurgical Engineer for forty nine (49) years since leaving school with my PhD in Metallurgical Engineering.

   I have relevant process and engineering experience in processing industrial, precious and heavy metal materials. Following is an example of projects I have been involved in.

- UOP, Inc. Developed and piloted nickel and cobalt recovery technology from high iron laterite ores.

- UOP, Inc. Directed laboratory and pilot scale research in the recovery of titanium from ilmenite.
- UOP, Inc. Developed and piloted silica-free powdered iron recovery from specular hematite concentrates.
- Universal Tankships (Delaware) Inc., Jari, Para, Brazil: Designed, installed and operated a 15 MTPH heavy media plant for a gibbsite-hematite separation from high clay lateritic ores.
- IMC/W.R. Grace, Florida: Provided process development, conceptual engineering, and major equipment selection of 100 TPH beneficiation plant for the separation of dolomite from phosphate rock.
- CIC Resources, Developed and demonstrated first successful recovery of ilmenite/magnetic from lateritic ores in Paraguay.
- Ok Tedi Mining, Ltd.: Removal and reconstruction of two copper concentrators from United States locations for primary copper/gold milling in Papua New Guinea.
- Newcrest Mining Limited, Provided metallurgical due diligence review to the Newcrest Mining Board for the Cadia Hill Gold/Copper Project, Orange, NSW.
- Newmont Mining, Performed a critical review for the Newmont Board of a feasibility study for a gold mill at Yanacocha, Peru.
- Newmont Mining, Performed a critical review for the Newmont Board of a feasibility study for the Phoenix Gold/Copper Project in Nevada.
- Peru Copper Inc., Developed and supervised metallurgical research and development program for the Toromocho Project. Authored the metallurgical section of the Canadian Instrument 43-101.
- Copper Range Company, Provided metallurgical due diligence for the in-situ copper leaching, solvent extraction and electrowinning project at White Pine, Michigan, USA
- Goldfields, Inc, Provided metallurgical due diligence of heap leach, carbon adsorption, electrowinning and conventional milling of the Pipeline Project, Nevada, USA

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 visited the project on numerous occasions from 2011 through September 21-26, 2012; October 13-16, 2012; October 28-November 6, 2012; and February 15-22, 2013.

6. I am responsible for the overall preparation of the report and specifically of Items (1 through 6, 13, 15 through 22 & 23 through 27) of the Technical Report titled “Technical Report and Resource Estimate on Alto Paraná Project” dated August 11, 2017.

7. I am independent of the Issuer, Uranium Energy Corp. (USA) applying the test set out in Section 1.5 of National Instrument 43-101.

   My Prior involvement with the project began in 2009 by analyzing lateritic materials from Paraná at Minerals Advisory Group R&D in Tucson, AZ. Minerals Advisory Group, under contract with CIC Resources, Inc. developed the metallurgical process, designed, engineered and delivered a pilot plant to site and managed the operation of the plant to produce the technical information and ilmenite concentrate for smelter testing at MINTEC in South Africa. Minerals Advisory Group’s last on-site involvement in the project was February 22nd, 2013.

   My visits to the property began in 2009 observing the resource and 2011 to identify potential staff to man the proposed pilot plant near Minga Pora, Paraguay. In addition to identifying staff, I identified potential contractors to provide infrastructure for the green-fields plant site. A deep water well was drilled (280 m) and a 50,000 L fresh water tank built and installed at site. Electrical power from a 66 KV line was installed with transformer to provide power to the pilot plant and site. During the site preparation period MAG contracted with Lyntek in Denver, CO to provide equipment and materials for the pilot plant. In August of 2011 the pilot plant arrived for installation at site and I was on site supervising the construction effort. In 2011 MAG supplied engineers to assist in construction, ramp-up and operation of the pilot plant. In November and early December of 2011, I provided plant supervision in the production of concentrate for MINTEK. The periods of September 21-26, 2012, October 13-16, 2012 and October 28-November 6, 2012 I worked at the pilot plant supervising installation of plant improvements, the installation and operation of a paste thickener and filling of the tailings columns. My final visit to the pilot plant was February 15-22, 2013. During this visit I provided technical input to pilot plant visitors. I was the QP of record for a May 4, 2015 Technical Report on the Alto Paraná project.

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

9. To the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information required to be disclosed to make the technical report not misleading.

Dated this 11th Day of August 2017.

Signature of Qualified Person

Martin C. Kuhn
Print name of Qualified Person

Registered Professional Engineer (Metallurgical)
CERTIFICATE NO.
10560
MARTIN C.
KUHN
Date Signed 8-11-2017
ARIZONA, U.S.A.
Expires 6-30-2018

SME
Society for
Mining, Metallurgy
& Exploration
Dr. Martin C. Kuhn
SME Registered Member No. 1802650
Signature
Date Signed 8/11/2017
Expiration date 1/1/2018

CERTIFICATE of QUALIFIED PERSON

David M. Brown, as an author of this report entitled "Technical Report and Resource Estimate on Alto Parana Project, Alto Paraná, Paraguay" dated August 11, 2017 does hereby certify that:

1. I am a practicing consulting geologist residing at:
   5467 North Agave Drive
   Tucson, Arizona, USA 85704

2. I am a graduate of the New Mexico Institute of Mining and Technology with the following degrees:
   a. Bachelor of Science, Geology, 1969
   b. Master of Science, Geology, 1971

3. I am a member of the American Institute of Professional Geologists, Registered Certified Professional Geologist CPG - 07130

   I am a member of the Society of Mining Engineers of the American Institute of Mining, Metallurgical and Petroleum Engineers

   I am a member of the Society of Economic Geologists

   I am a member of the Geological Society of America

   I have worked as an exploration geologist since 1972. My work experience has included:

   - Geologist and District Geologist for Texasgulf Minerals.
   - Senior Geologist and District Exploration Manager for Billiton and Shell Mining.
   - Senior Geologist for Newmont Mining Co.
   - Consulting and project management for various companies including Cambior, Constellation Copper, Magma Copper, Rio Tinto, and Riverside Resources.
   - I have previous experience in mineral resource estimations, including a copper deposit in Mexico, a gold mine in California, and a gypsum mine in Arizona.
   - I have relevant professional experience in the evaluation of laterite-hosted mineral systems in the Guayana Shield of South America and in Panama.

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 Paraná site during the period of January 29, 2014 to February 4, 2014 in order to: (a) examine the surface geology and mineralization, (b) observe and evaluate the sampling methods used for resource estimates, and (c) examine the CIC pilot extraction plant and verify that the metallurgical recovery processes utilized were consistent with those reported by CIC.

6. I am responsible for Items 7 through 12 as well as Item 14 of the technical report titled "Technical Report and Resource Estimate on Alto Paraná Project" dated August 11, 2017.

7. I am independent of CIC Uranium Energy Corp (USA) applying all the following tests in Part 1.5 of NI 43-101 which states:

   "a qualified person is independent of an issuer if there is no circumstance that, in the opinion of a reasonable person aware of all relevant facts, could interfere with the qualified person's judgment regarding the preparation of the technical report."

8. I have had no prior involvement with the property that is the subject of this Technical Report.

9. I have read NI 43-101 and the Technical Report has been prepared in compliance with that Instrument.

10. As of the effective date, August 11, 2017 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 11th Day of August 2017.

Signature of Qualified Person

David M. Brown
Print name of Qualified Person