Frontier Announces Positive Pre-feasibility Study for its Zandkopsdrift Rare Earth Project in South Africa

May 12, 2015 (Source: CNW) – **Frontier Rare Earths Limited** (TSX: FRO) (US:FREFF) ("Frontier" or the "Company") is pleased to announce the results of a Pre-feasibility Study ("PFS") prepared in accordance with Canadian National Instrument 43-101 ("NI 43-101") on the Zandkopsdrift rare earth element ("REE") project in South Africa ("Zandkopsdrift", the "Zandkopsdrift Project" or the "Project"). Zandkopsdrift is being developed by Frontier in partnership with Korea Resources Corporation, the wholly-owned mining and natural resource investment arm of the South Korean Government, which owns a 10% interest in the Project.

The results of the PFS indicate that the proposed development of Zandkopsdrift to produce a range of high purity, separated rare earths is both technically feasible and economically robust. In addition, the production of a saleable manganese sulphate by-product has been proven both technically and economically feasible and has been incorporated into the process flow sheet and economic analysis for the PFS.

"Frontier is pleased to have completed a positive PFS on Zandkopsdrift which confirms the significant economic potential of Zandkopsdrift and the opportunity for Frontier to become a major new producer of high purity separated rare earths and manganese sulphate," said Mr. James Kenny, President and CEO of Frontier Rare Earths.

PFS HIGHLIGHTS

- The economic evaluation of the Project resulted in the

following
  - Internal rate of return of 30%, after tax and royalties
  - Net Present Value ("NPV") of $2.98 billion, after taxes and royalties, at an 8% discount rate
  - NPV of $2.2 billion, after tax and royalties, at a 10% discount rate
  - NPV of $1.58 billion, after taxes and royalties at a 12% discount rate*
- Production capacity of 8,000 tonnes per annum ("tpa") of high purity, separated total rare earth oxides ("TREO") for the first four years of operation (Phase 1), doubling to 16,000 tpa TREO from year five onwards (Phase 2)
- Proven and Probable Reserves of 788,700 tonnes TREO, sufficient for a 45 year Life of Mine ("LoM")
- Production of 48,000 tpa of manganese sulphate during Phase 1, doubling to 96,000 tpa for Phase 2
- Annual revenues of approx. $440m at Phase 1 capacity and approx. $880m at Phase 2 capacity
- Average operating costs of $11.87/kg TREO (pre-contingency and net of by-product revenue credit) for the first 20 years of operations
- Average annual operating margin of 69% for the first 20 years of operations
- Total Phase 1 capital expenditure (pre-contingency) of $809m, comprising:
  - Zandkopsdrift Mine, excluding manganese sulphate plant – $523m
  - Manganese sulphate plant – $38m
  - Rare earths separation plant – $238m
- Phase 2 capital expenditure (pre-contingency), which is planned to be financed from Phase 1 operating cash flow, of $645m
- Approximately 76% of Project revenues are derived from critical rare earth oxides and 75% from magnet related REOs**

Note: All dollar amounts herein are in US dollars.
* The PFS financial analysis was carried out at a range of discount rates between 6% and 14%. The 10% discount rate is in line with relevant studies conducted by other junior companies in the rare earths sector. The full discount rate sensitivity analysis is set out below.
** CREOs are neodymium, europium, dysprosium, terbium and yttrium. Magnet REOs are neodymium, praseodymium, dysprosium and terbium.

The PFS was conducted by a group of independent specialist consultants retained by Frontier to examine the technical, logistical, legal, environmental and economic aspects of the project. The specialist studies have been independently reviewed by Venmyn Deloitte (Proprietary) Limited ("Venmyn Deloitte"), a wholly owned subsidiary of Deloitte specialising in the technical and economic evaluation of mineral projects.

Venmyn Deloitte has concluded that the PFS has been conducted well within industry and NI 43-101 reporting standards, and that it comprehensively examines at a PFS level of accuracy all the necessary significant components of the Zandkopsdrift Project. As the selected mining, processing and infrastructure design components of the Zandkopsdrift PFS have been conducted at a ±20% to ±25% accuracy, Venmyn considers that the PFS is of sufficient accuracy and confidence level that potential investors can make reasonable decisions based on the outcomes of the study. Venmyn Deloitte considers that the costs and price estimates are conservative, that the Zandkopsdrift Project is economically robust and that the overall study can be considered to be an advanced Pre-feasibility Study.

Table 1: Key PFS Financial Data	
Post-tax IRR	30.0%
Pre-tax IRR	32.9%
NPV6%	$4,172m

NPV8%	$2,976m
NPV10%	$2,158m
NPV12%	$1,576m
NPV14%	$1,147m
Operating expenditure (pre-contingency & net of by-product revenue credit) years 1-20 *	$11.87/kg TREO
Phase 1 capital expenditure (pre-contingency)*	$809m
Phase 2 capital expenditure (pre-contingency)*	$645m
Separated TREO basket price	$49.30/kg
Manganese sulphate price	$630/t

* Contingencies of 12% and 7% have been added to the capex and opex estimates, respectively, in the PFS economic analysis.

The majority of the engineering design work and capital and operating costs estimates for the PFS was prepared by a team of international engineering companies, including WorleyParsons RSA (Pty) Ltd ("WorleyParsons"), Veolia Water Solutions and Technologies South Africa (Pty) Ltd ("Veolia") and Outotec GmbH ("Outotec").

Based on the development plan for Zandkopsdrift as outlined in the PFS, Frontier believes that it is well positioned to become one of the next new major producers of high purity, separated rare earth oxides outside China, with a target total production capacity of 16,000 tonnes of per annum of separated, high purity rare earth oxides, and to become one of the largest integrated producers of high demand critical rare earth oxides in separated form, outside China.

In compliance with regulatory requirements, a report summarising the results of the PFS (the "PFS Report") will be filed on SEDAR (www.sedar.com) within 45 days of this announcement, following which it will also be made available on the Company's website at www.frontierrareearths.com.

Background to the Zandkopsdrift Project

The Zandkopsdrift Project comprises three principal operational components: (1) mining and processing activities at Zandkopsdrift to produce a mixed rare earth hydroxide and a saleable manganese sulphate by-product; (2) a dedicated seawater desalination plant to be located 35 km from the mine to supply potable water to the mining and processing operations at Zandkopsdrift; and (3) a 16,000tpa TREO capacity rare earth separation plant to be located in the Industrial Development Zone at the deep water port of Saldanha Bay approximately 300 km south from Zandkopsdrift.

Table 2: Zandkopsdrift Project Summary Key Operational Metrics	
Life of Mine	45.5 years
Waste mined	24.3Mt
Ore mined	43.5Mt
Stripping ratio	0.56
TREO feed grade	1.9%
Manganese feed grade (as MnO)	4.7%
Zandkopsdrift plant recovery – TREO	71%
Zandkopsdrift plant recovery – manganese	68%
Saldanha separation plant recovery – TREO	98%
Total saleable separated TREO	558Kt
Total saleable manganese sulphate	3.3Mt

Mine Design and Mining Operations

The higher grade Central Zone at Zandkopsdrift, which generally contains mineralisation above a grade of 2.5% TREO, was selected as the target for mining operations during the first 20 years of production. Thereafter mining operations will transition into the lower grade Outer Zone, which generally contains mineralisation with a grade of 1.0% to 1.5% TREO.

The mining study has demonstrated that the Zandkopsdrift

deposit can be economically mined as a conventional open pit operation, which will be undertaken in a series of four pushbacks resulting in a final pit of 880m x 1,100m in size. The pit will be excavated in 6m high benches to an average depth of 66m below surface. In three locations the base of the pit will be further extended to 90m below surface in three mini-pits to access additional high grade material below the main pit base. Such an approach has enabled extraction of the higher grade Central Zone material with a lower strip ratio early in the LoM, with significant economic benefit. The mining operation is planned to be undertaken by a contractor utilising excavators and an articulated dump truck and loader fleet and a combination of excavation for weathered material and drill and blast for more competent material. The mining operations are planned as a 7 day per week, dayshift only operation.

The mining cut-off grade is 0.9% TREO with a steady state mining production of 500Ktpa of ore (for 8,000tpa TREO production) in the first four years and thereafter 1Mtpa or ore (for 16,000tpa TREO production) for a total LoM of 45.5 years. The total tonnage mined is 67.8Mt comprising 43.5Mt of RoM and 24.3Mt of waste.

Metallurgical Test work and Recovery Methods

Approximately 97% of the REEs at Zandkopsdrift are contained in monazite, for which a sulphuric acid cracking process has been widely used on a commercial scale for many years. A significant quantity of metallurgical test work was undertaken by Frontier at a number of laboratories as the basis for the PFS, in the course of which Frontier made a number of significant and innovative improvements to the conventional sulphuric acid-based process, with the main improvement being the replacement of kilns, which are used in the conventional sulphuric acid cracking process, with fluidised bed reactors (“FBRs”). The combined effect of these improvements is that the Zandkopsdrift ore is expected to be processed in an

efficient, cost effective and robust metallurgical process.

As many of the process improvements that Frontier has developed could be applied to other REE deposits that use an acid-based cracking process, Frontier has applied for patent protection for these key process improvements. The key process improvements made by Frontier are summarised below:

Table 3: Key Process Improvements	
Process Component	**Process Improvement**
Impurity pre-leach	Removes 90% of manganese at the start of the process and allows production of a saleable manganese sulphate by-product
Acid contacting	Produces dry granules, which eliminates corrosion and materials handling problems associated with conventional acid contacting methods.
	Produces granules that can be processed in a FBR

Cracking in FBR	Significantly improved heating kinetics and energy efficiency compared to a rotary kiln, resulting in lower operating costs
	Significantly lower residence time required for cracking – residence time required for Zandkopsdrift ore in a FBR is approximately 80% lower than that required in a rotary kiln, resulting in smaller and lower cost equipment being required
	Reduction of heat losses
	No additional heating required for the cracking stage – the entire heat input required is supplied by off-gas from the calcining stage
	Precise control of residence time and temperature, which allows good control of the cracking process
	Ore can be rapidly heated and maintained above sulphuric acid dew point, eliminating acid corrosion problems
	Ease of energy recovery
	Ease of integration with off-gas treatment circuit and acid plant

Calcining in FBR	Stabilises and renders insoluble the majority of impurities, reducing capital and operating costs of the impurity removal stage and associated REE losses
	Recovers 80-85% of sulphur used in the cracking stage for recycling to acid plant
	Residence time 80% lower than that required in a rotary kiln, so heat losses are low due to small equipment size
	Precise control of residence time and temperature, which allows good control of the calcination process
	Ease of energy recovery
	Ease of integration with off-gas treatment circuit and acid plant
Heat recovery	Integrated off-gas cleaning and heat recovery from the cracking and calcining FBRs allows 47% of the energy used for calcining and cracking to be recovered in waste heat boilers and used to generate high pressure steam for power generation and low pressure steam for process heating requirements

Sufficient information was generated by the test work to define the operating parameters of each unit process considered, and those aspects necessary to integrate these unit processes into a commercially applicable process flow sheet. The unit processes can be performed utilising well-proven industrial equipment and require no specialised reagents.

The Zandkopsdrift ore has a high manganese content and metallurgical test work was also successfully conducted to

define a route for the production of a saleable manganese sulphate by-product.

Processing Plant Design

After initial crushing and milling, the Zandkopsdrift ore will be subjected to a reductive sulphuric acid/sulphur dioxide impurity pre-leach to remove manganese and other impurities. The pre-leach residue will then be contacted with sulphuric acid in a high shear mixer to produce a granular, free flowing material suitable for processing in a FBR, and fed to a low temperature FBR where the monazite will be cracked and sulphated. The cracked material will be subjected to a calcination step in a high temperature FBR, which will result in stabilisation of most of the impurities and the recovery of 80-85% of the sulphur used in the cracking process. The calcine will be fed to a two stage water leach circuit to recover the soluble rare earth sulphates. The REE bearing water leach solution will then be subjected to an impurity removal step, following which the REEs will be recovered by precipitation into a mixed RE hydroxide product.

The waste solution from the impurity pre-leach circuit will be used as a feed solution for the manganese sulphate recovery plant. Since the feed solution and the steam required for the manganese recovery plant are effectively free by-products from the REE recovery sections of the Zandkopsdrift Processing Plant, it is expected that Frontier can become one of the lowest cost producers of manganese sulphate.

The Zandkopsdrift Processing Plant will include a sulphuric acid generation plant, sulphur and heat recovery sections, off-gas treatment and electrical power generation. Thorium, uranium, iron and all other impurities are removed during the above processes and disposed of to a tailings disposal facility.

From a metallurgical processing perspective, the key components of the Zandkopsdrift Processing Plant are the acid

mixing, low and high temperature FBRs, sulphuric acid plant, sulphur recovery, heat recovery and off-gas treatment packages. These components were designed by Outotec as a single integrated plant and are based on proven technologies in widespread use in mineral processing applications. Outotec is expected to deliver the plant on a lump sum turnkey basis with a process guarantee and will take responsibility for commissioning, start up and initial operations. Such a supply arrangement is expected to mitigate the development and start-up risks for the Zandkopsdrift Project.

The mixed REE hydroxide product will be transported from Zandkopsdrift by road to the Saldanha Separation Plant, where it will be dissolved in hydrochloric acid (to be supplied on an 'over-the-fence' basis from an independently owned and operated chlor-alkali plant) into an aqueous solution. The resultant solution will undergo a complex multi stage solvent extraction and stripping process in a 12 line separation plant using advanced solvent extraction technology to produce 14 different separated saleable REO products at purities of between 99% and 99.999%. A breakdown of the proposed production profile from Zandkopsdrift is set out in table 13.

Five of the REOs (holmium, erbium, thulium, ytterbium and lutetium) will be precipitated as a mixed REO product and stockpiled for potential future processing or sale, and no revenue has been assumed from the production of these REOs for the purposes of the PFS economic analysis.

Infrastructure and Services

Bulk power supply for the Zandkopsdrift Mine is expected to be supplied by Eskom, the South African national power authority, in the form of a shared power line with another proposed new mining operation in the Zandkopsdrift area, the development costs of which will be shared by the two companies. Eskom will provide power from the main transmission station at Juno to a new substation at Hoekklip from where an additional new switching station will be constructed as a shared facility

supplying two 132kV lines to Zandkopsdrift Mine.

A significant quantity of steam is produced as a by-product of the sulphuric acid generation plant at Zandkopsdrift and from heat recovered from the fluidised bed reactors. A steam turbine and generator will produce approximately 22MW of power at 11kV from this steam to supplement the Eskom supply to the plant and reduce power costs.

Bulk water will be provided via pipeline from a seawater desalination plant to be located at Volwaterbaai approximately 35km from the Zandkopsdrift Mine. The water requirements for Phase 1 of operations will be 3.1Mm³/yr, with an additional equivalent required for Phase 2.

Power for the Saldanha Separation Plant will also be supplied by Eskom who have completed a feasibility study for the supply of power via the Blouwater substation northwest of Saldanha. Water will be supplied by the local Saldanha municipality.

Capital Expenditure

Phase 1 capital expenditure for the Zandkopsdrift Project is estimated to be $809m (pre- contingency), which includes the Zandkopsdrift Mine ($523m), the manganese sulphate plant ($38m) and the Saldanha Separation Plant ($238m).

Phase 2 capital expenditure is estimated to be $645m (pre-contingency). This is planned to be financed from Phase 1 operating cash flows and is therefore not expected to require additional external financing.

Table 4: Zandkopsdrift Project Capital Expenditure Summary			
PROJECT COMPONENT	PHASE 1 ($m)	PHASE 2 ($m) *	TOTAL ($m)
Zandkopsdrift Mine			
Upgrade of local district roads	11.8	–	11.8
Eskom bulk power	16.2	1.3	17.5
Desalination plant and pipe line	34.9	21.8	56.8

Mining equipment, surface infrastructure and pre-production	3.5	–	3.5
Hydrometallurgical plant (WorleyParsons)	205.2	193.2	398.4
Pyrometallurgical plant (Outotec)	228.9	206.1	435.0
Zandkopsdrift other (housing, land, capital contribution)	7.4	2.4	9.8
Tailings disposal facility	13.5	5.0	18.2
Social and labour plan contributions	0.4	–	0.4
Rehabilitation and closure	0.7	–	0.7
Total Zandkopsdrift Mine (excluding manganese sulphate plant)	**522.6**	**429.8**	**952.1**
Manganese sulphate plant (Veolia)	38.2	38.2	76.3
Total Zandkopsdrift Mine (including manganese sulphate plant)	**560.8**	**467.9**	**1,028.4**
Saldanha Separation Plant			
Saldanha Separation Plant	237.7	176.6	414.3
Saldanha marine outfall pipeline, land purchase, Eskom	10.8	0.4	11.3
Total Saldanha Separation Plant	**248.5**	**177.1**	**425.6**
Total Zandkopsdrift Project			
Total Zandkopsdrift Project (excluding contingency)	**809.3**	**645.0**	**1,453.9**
Contingency 12%	97.1	77.4	174.5
Total Zandkopsdrift Project (including contingency)	**906.4**	**722.4**	**1,628.4**

* Phase 2 capital expenditure is planned to be financed from Phase 1 operating cash flows and is therefore not expected to require additional external financing.

Operating Costs

The operating expenditure for the first 20 years of operation is estimated to be **$11.87/kg TREO** (pre-contingency). With a value for Zandkopsdrift production of $32/kg TREO , based on March 2015 FoB China prices, and given that REE market forecasts indicate increasing REE prices in the future, the Zandkopsdrift Project is expected to be well positioned to sustain any unanticipated future extended periods of low REE prices.

Table 5: Zandkopsdrift Project Operating Expenditure Summary

	$m			$/kg		
Years	**1 to 10**	**1 to 20**	**LOM**	**1 to 10**	**1 to 20**	**LOM**
Mining	(68)	(147)	(356)	(0.52)	(0.53)	(0.64)
Hydrometallurgical plant (Worley Parson)	(643)	(1,374)	(2,946)	(4.91)	(4.93)	(5.28)
Pyrometallurgical plant (Outotec)	(726)	(1,686)	(4,022)	(5.55)	(6.05)	(7.21)
Manganese sulphate plant (Veolia)	(19)	(38)	(86)	(0.14)	(0.13)	(0.15)

Tailings disposal facility	(9)	(13)	(20)	(0.07)	(0.05)	(0.04)
Rehab and Closure	(3)	(6)	(14)	(0.02)	(0.02)	(0.03)
Social and Labour Plan	(1)	(3)	(7)	(0.01)	(0.01)	(0.01)
Mixed hydroxide product transport	(4)	(8)	(15)	(0.03)	(0.03)	(0.03)
Saldanha separation plant	(487)	(1,037)	(2,074)	(3.72)	(3.72)	(3.72)
Saldanha other	(7)	(14)	(28)	(0.05)	(0.05)	(0.05)
Gross opex (excluding contingency)	**(1,967)**	**(4,326)**	**(9,569)**	**(15.01)**	**(15.52)**	**(17.16)**
By-product revenue credit	497	1,018	2,068	3.80	3.65	3.71
Net opex (excluding contingency)	**(1,470)**	**(3,307)**	**(7,501)**	**(11.22)**	**(11.87)**	**(13.45)**
Contingency (7%)	(138)	(303)	(670)	(1.05)	(1.09)	(1.20)
Total opex (including contingency)	**(1,607)**	**(3,610)**	**(8,171)**	**(12.27)**	**(12.95)**	**(14.65)**

Environmental permitting

Frontier has completed a significant proportion of the specialist environmental studies required to obtain the environmental authorisations required for the commencement of construction and development of the Zandkopsdrift Processing Plant, the Saldanha Separation Plant and related infrastructure. No environmental risks or legal permitting issues were identified by these studies that it is expected cannot be managed or successfully mitigated. The degree of completion of these studies is advanced and is expected to provide an excellent framework for the continued development of the Project without incurring delays due to obstructions or impediments to the issuance of the required permits or authorisations.

While uranium (U) and thorium (Th) are present in the Zandkopsdrift deposit, they are at relatively low concentrations, with average grades of 60 -70ppm U and 215-235ppm Th. These low concentrations are advantageous as no special permitting is required for the transportation and storage of the material arising from the mining and processing operations, and radiological studies have concluded that the potential for exposure to radionuclides is not considered to be a significant factor in the environmental management of the Project.

Mining Right Application

The Company submitted an application for a 30 year mining right for Zandkopsdrift to the Department of Mineral Resources in South Africa in Q3 2013. It is anticipated that the mining right will be granted later in 2015. Subject to the conditions of the mining right being complied with, a renewal of the mining right can be secured for a further 30 years, which would cover the entire 45.5 year planned life of mine.

Mineral Resource Estimate

An updated mineral resource estimate (the "2014 Mineral Resource estimate") was prepared by The MSA Group ("MSA") and has been utilised for the purposes of the PFS. The 2014 Resource Estimate incorporates a dataset of 19,130 assays a total of 21,037m of drilling over 323 drill holes.

Frontier's exploration programmes were independently designed, monitored and managed by MSA and a set of industry standard operating procedures was adopted, which ensured best practice and the integrity of the data. Industry standard practices were followed and the quality of the Frontier database meets NI 43-101 standards and Canadian Institute of Mining and Metallurgy best practice guidelines.

The 2014 Mineral Resource estimate was independently reviewed by Venmyn Deloitte who is satisfied that the 2014 Mineral Resource estimate is globally unbiased and fairly reflects the deposit. The geological and mineralisation model is sufficiently understood at this stage to permit the generation of distinct mineralised envelopes. Lithologies within the mineralised envelope were not modelled and a TREO grade-only approach was adopted and a 1% TREO cut-off grade was applied.

Table 6: Zandkopsdrift 2014 Mineral Resource Estimate

TREO CUT-OFF GRADE (%)	TONNAGE (Mt)	GRADE TREO (%)	GRADE MnO (%)	CONTAINED TREO (kt)	CONTAINED MnO (kt)

Measured Mineral Resource					
1	23.0	2.07	5.0	476.1	1,160.1
1.5	17.1	2.35	5.6	401.7	948.4
2	10.3	2.77	6.3	284.2	644.6
2.5	5.5	3.23	6.8	178.4	374.8
3	2.9	3.69	7.2	106.8	209.5
Indicated Mineral Resource					
1	22.7	1.73	4.5	392.7	1,025.1
1.5	12.5	2.13	5.4	265.9	671.5
2	6.1	2.57	6.3	156.6	383.4
2.5	2.8	2.97	7.1	82.2	196.3
3	0.9	3.51	7.9	31.8	71.7
Inferred Mineral Resource					
1	1.1	1.52	4.2	16.5	45.5
1.5	0.5	1.80	4.8	8.5	22.4
2	0.1	2.45	6.2	1.7	4.4
2.5	0	2.69	6.9	0.9	2.3

Source: MSA 2014
Mineral Resources reported in compliance with NI 43-101
Mineral Resources reported inclusive of Mineral Reserves
NI 43-101 requires the statement that *"Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability"*. However, it must be noted that 89% of the Mineral Resources have been converted to Mineral Reserves
Cut-off grade 1% TREO and no mineralisation width applicable
The Mineral Resource cut-off grade of 1.0% TREO was calculated based on the economic analysis and assumptions contained in the report entitled "Amended Independent Technical Report on the Results of a Preliminary Economic Assessment of Frontier Rare Earth's Zandkopsdrift Rare Earth Project Located in the

Northern Cape Province of South Africa“, dated 30 March 2012 (the “PEA Report”), which is available on SEDAR at www.sedar.com.
In situ estimation with no geological losses estimated

Density 1.94g/cm^3 to 1.88g/cm^3
Any apparent discrepancies in totals are due to rounding
Frontier has an effective economic interest of 85%
The effective date of the 2014 Mineral Resource Estimate is 31 July 2014
A breakdown of the TREO grades into individual REO grades is set out in table 7

Table 7: Breakdown of 2014 Mineral Resource Estimate by element

RARE EARTH ELEMENT	OXIDE	MEASURED MINERAL RESOURCES		INDICATED MINERAL RESOURCES		INFERRED MINERAL RESOURCES	
		REO GRADE (%)	CONTAINED REO (kt)	REO GRADE (%)	CONTAINED REO (kt)	REO GRADE (%)	CONTAINED REO (kt)
Lanthanum	La_2O_3	0.544	125.0	0.454	103.1	0.400	4.3
Cerium	Ce_2O_3	0.915	210.2	0.764	173.3	0.672	7.3
Praseodymium	Pr_2O_3	0.096	22.1	0.080	18.2	0.071	0.8
Neodymium	Nd_2O_3	0.325	74.7	0.272	61.6	0.239	2.6
Samarium	Sm_2O_3	0.045	10.3	0.038	8.5	0.033	0.4
Europium	Eu_2O_3	0.012	2.6	0.010	2.2	0.008	0.1
Gadolinium	Gd_2O_3	0.027	6.3	0.023	5.2	0.020	0.2
Terbium	Tb_2O_3	0.003	0.7	0.003	0.6	0.002	0.0
Dysprosium	Dy_2O_3	0.015	3.3	0.012	2.8	0.011	0.1
Holmium	Ho_2O_3	0.002	0.6	0.002	0.5	0.002	0.0
Erbium	Er_2O_3	0.006	1.4	0.005	1.1	0.004	0.0
Thulium	Tm_2O_3	0.001	0.2	0.001	0.1	0.001	0.0

Ytterbium	Yb_2O_3	0.004	0.9	0.003	0.8	0.003	0.0
Lutetium	Lu_2O_3	0.001	0.1	0.000	0.1	0.000	0.0
Yttrium	Y_2O_3	0.077	17.7	0.064	14.6	0.057	0.6
TOTAL	**TREO**	**2.072**	**476.1**	**1.731**	**392.7**	**1.522**	**16.5**

Note: The individual REO grades were derived from the average relative proportions in the drillholes from the total Mineral Resource area. Variations to these proportions may occur from block to block within the Mineral Resource.

Mineral Reserve Estimate

The conversion of the 2014 Mineral Resource estimate to Mineral Reserves was independently undertaken by Sound Mining, and represents a maiden Mineral Reserve estimate for Zandkopsdrift.

The 2014 Mineral Reserve Estimate is set out below and represents an overall conversion rate from Measured and Indicated Mineral Resources to Mineral Reserves of 91%. The 2014 Mineral Reserve Estimate takes into consideration several factors including the removal of inferred Mineral Resources from the 2014 Mineral Resource Estimate, mining losses, dilution, the calculation of mineral reserves based on mineral resources within the designed pit as detailed in the PFS and the removal of year 46 from the mining schedule.

Table 8: Zandkopsdrift 2014 Mineral Reserve Estimate

MINERAL RESERVE CLASSIFICATION	TONNAGE (Mt)	TREO GRADE (%)	CONTAINED TREO (kt)	CONTAINED MnO (kt)
Proven	14.93	2.21	330.7	783.5
Probable	26.19	1.75	458.0	1193.9
TOTAL	**41.12**	**1.92**	**788.7**	**1977.5**

Source: Sound Mining 2014

Excludes Inferred Mineral Resources
Excludes final year LoM production
Estimate is based on a fully diluted, delivered to plant model
Any apparent discrepancies in totals are due to rounding
Modifications to the Mineral Resource estimate guided by cut-off grade of 1% TREO
The Mineral Reserve cut-off grade of 1.0% TREO was calculated based on a TREO basket price of USD42.52/kg recovered TREO and estimated metallurgical recovery of 66.4% (the metallurgical recovery estimate was made before the final PFS metallurgical recovery estimate of 70.6% was available)
Overall mining conversion rate of Measured & Indicated Mineral Resources to Mineral Reserves of 91%
The effective date of the 2014 Mineral Reserve Estimate is 30 September 2014
A breakdown of the TREO grade into individual REO grades is provided in table 9

Table 9: Breakdown of 2014 Mineral Reserve Estimate by element

RARE EARTH ELEMENT	OXIDE	PROVEN MINERAL RESERVES		PROBABLE MINERAL RESERVES	
		REO GRADE (%)	CONTAINED REO (Kt)	REO GRADE (%)	CONTAINED REO (Kt)
Lanthanum	La_2O_3	0.562	83.9	0.443	116.2
Cerium	Ce_2O_3	0.975	145.6	0.770	201.7
Praseodymium	Pr_2O_3	0.102	15.3	0.081	21.2
Neodymium	Nd_2O_3	0.352	52.6	0.278	72.8
Samarium	Sm_2O_3	0.050	7.5	0.040	10.4
Europium	Eu_2O_3	0.013	2.0	0.010	2.7
Gadolinium	Gd_2O_3	0.031	4.7	0.025	6.5

Terbium	Tb_2O_3	0.004	0.6	0.003	0.8
Dysprosium	Dy_2O_3	0.017	2.6	0.014	3.6
Holmium	Ho_2O_3	0.003	0.4	0.002	0.6
Erbium	Er_2O_3	0.007	1.1	0.006	1.5
Thulium	Tm_2O_3	0.001	0.1	0.001	0.2
Ytterbium	Yb_2O_3	0.005	0.7	0.004	1.0
Lutetium	Lu_2O_3	0.001	0.1	0.001	0.1
Yttrium	Y_2O_3	0.091	13.6	0.072	18.9
TOTAL	**TREO**	**2.214**	**330.7**	**1.749**	**458.0**

Note: The individual REO grades were derived from the average relative proportions in the drillholes from the total Mineral Resource area. Variations to these proportions may occur from block to block within the Mineral Reserve.

Rare Earth Pricing

In order to estimate revenue for the Zandkopsdrift Project for the purpose of economic analysis a forecast future 'basket price' value for the Zandkopsdrift production profile ($/kg TREO) must be made. The following data sources were considered in determining the long term basket price for the purposes of the PFS:-

- An underlying long term increasing price trend is evident in the pricing data when the 2010 to 2013 price spike is excluded from the data set. This long term positive price trend is considered likely to continue due to the on-going pressure on operating costs of producers, increasing pricing power due to consolidation in the Chinese rare earths industry, barriers to new market entrants, reduced illegal production and increasing demand, particularly for magnet related applications.
- An analysis of other relevant junior REE company peer

forecasts used in comparable published economic studies was also undertaken and utilised as an input.

- The base case supply scenario (see table 10 note (2)) developed by Adamas Intelligence (Adamas Intelligence, October 2014: "*Rare Earth Market Outlook: Supply, Demand and Pricing 2014-2020*"), which forecasts a total world supply in 2020 of approximately 160kt TREO.

The Zandkopsdrift Project PFS basket price is shown below in table 10, and is based on an average of the 2019 and 2020 prices using (i) a forecast of the underlying long term price trend based on a regression analysis of the historical prices from 2007, excluding the price peak between mid-2011 and mid-2013, (ii) forecasts from economic studies published by other junior REE companies, and (iii) Adamas Intelligence's base case price projections for 2019 and 2020.

Table 10: Basket Price $/kg TREO

	2019	2020	Average
Forecast on historic price trends (1)	46.2	49.2	47.7
Analysis of forecasts from other REE companies	41.2	43.0	42.1
Adamas' price forecast(2)	49.9	54.8	52.3
Average			47.3

(1) From 2007 to 2015, but excluding REE price peak from mid-2010 to mid-2013
(2) The October 2014 Adamas Intelligence report envisaged two TREO supply scenarios. Adamas have subsequently confirmed to Frontier that the higher supply scenario is no longer considered realistic and accordingly the lower TREO supply scenario is now their base case.

As set out above in table 10 this results in a standard purity PFS basket price of $47.3/kg. REE pricing is typically based on standard purity products that range from 99% purity to

99.999% purity, depending on the element. Higher prices can generally be achieved, particularly in respect of some of the light rare earths, for higher purity products. The separation plant process technology secured by Frontier and utilised in the Saldanha Separation Plant design will produce higher than standard purity values for some of the products, and this is estimated will add a premium of approximately $2.0/kg to a 'standard purity' basket price. The final Zandkopsdrift basket price used in the financial model for the PFS, including the 'purity premium', is therefore $49.3/kg.

For comparative purposes, the Zandkopsdrift 'standard purity' basket price would be $49.2/kg, applying the 3 year average FoB China price to mid-March 2015, and $30.3/kg using the mid-March 2015 China FoB spot price

Rare Earth Price Sensitivity Analysis

Table 11 shows a sensitivity analysis of the IRR against various REE basket prices.

Table 11: Project IRR					
	REE Basket Price ($/kg)				
	45.3	47.3	49.3	51.3	53.3
IRR Pre-tax	29.5%	31.2%	32.9%	34.6%	36.3%
IRR Post-tax	26.6%	28.3%	30.0%	31.7%	33.3%

The PFS basket price forecast of $49.3/kg includes forecast prices for cerium at $5.0/kg and lanthanum at $11.0/kg. If, in a worst case scenario, an anticipated surplus of cerium and lanthanum were to result in Frontier's entire output of these products becoming unsaleable, the impact on the overall Zandkopsdrift basket price would be a decrease of $5.0/kg ($2.0/kg for cerium and $3.0/kg for lanthanum) or approximately 10% of the PFS forecast basket price. While Frontier considers such a scenario as unlikely, this analysis indicates that it would not have a material impact on the

overall economics of the Zandkopsdrift Project.

Manganese Sulphate Market and Pricing

Manganese sulphate is an inorganic compound with the chemical formula $MnSO_4.H_2O$, and is widely used in the fertiliser industry, in the agricultural sector as a feed additive, in the chemical industry as a paint and ink drier, in commercial pesticides, in the metal treatment industry, and as a chemical catalyst. The high solubility of manganese sulphate in water renders it particularly suitable for use as a micronutrient in animal feeds and in fertilisers, which account for approximately 40% of global demand.

Overall growth in demand for manganese sulphate to 2018 is estimated to be 2.6% per annum. The 3 year trailing average price (2011-2013) for manganese sulphate exported from India and China, who are the main producers, is $630/t. As this is in line with the most recent export price data available for 2014, this price has been utilised for the purposes of the PFS economic analysis.

Specialist Consultants Contributing to the PFS

The majority of the studies conducted for the PFS were carried out by the specialist consultants set out in table 12 below.

Table 12: Principal PFS Consultants	
Consultant	**Principal Scope of Work**
SGS Canada Inc.	Metallurgical testwork
Mintek	Metallurgical testwork
Australian Nuclear Science and Technology Organisation	Metallurgical testwork
Independent Metallurgical Operations	Beneficiation testwork
Nagrom	Beneficiation testwork
Metallurgical Development Services	Process consultant

MSA Group	Geology and Resource Estimate
Sound Mining Solution	Mine design and Reserve Estimate
Outotec	Acid contacting, fluidised bed reactor and acid plant design and costing
WorleyParsons RSA	Hydrometallurgical plant design and costing
Veolia Water Solutions & Technologies South Africa	Manganese recovery plant design and costing
Epoch Resources	Tailing disposal facility design and costing
Royal HaskoningDHV	Upgrade of mine access road, desalination plant and Saldanha pipeline design and costing
AGES Gauteng	Environmental impact assessment and specialist studies
SRK Consulting (South Africa)	Environmental impact assessment and specialist studies
Council for Scientific and Industrial Research	Environmental impact assessment and specialist studies

Venmyn Deloitte	Independent review of the results of the PFS, compilation of PFS Report, and Qualified Person responsible for market studies, capital and operating costs, economic analysis and conclusions and interpretations sections of the PFS Report

Rare Earth Product Strategy

The proposed rare earth output from Zandkopsdrift will comprise a wider range of separated rare earth products and higher purity levels than any of the current or proposed new rare earth projects outside China, and is as follows:

Table 13: Zandkopsdrift REO Production Profile

Element	Product purity	Proportion of element output
Lanthanum	2N-3N	75%
	5N	25%
Cerium	2N	30%
	3N	30%
	3N5	40%
Praseodymium	3N	50%
	to Didymium	50%
Neodymium	3N	55%
	to Didymium	45%
Samarium	2N-3N	100%
Europium	4N	100%
Gadolinium	2N-3N	100%

Terbium	4N	100%
Dysprosium	3N	100%
Yttrium	5N	100%
Holmium to Lutetium	Mixed	100%

Notes:

1. The data and opinions disclosed herein in respect of the PFS Report including, where relevant, sampling, analytical and test data underlying the data and opinions, have been reviewed and verified by independent Qualified Persons, and the procedures employed in this regard were similar to those used in the preparation of the PEA Report.
2. No known legal, political, environmental (other than those identified and mitigated in the PFS mine and process plant design) or other risks, have been identified in the PFS that could materially affect the potential development of the Minerals Resources or Mineral Reserves
3. Dr. S. Smith B.Sc., Ph.D., Vice President of Exploration of Frontier, who is a Qualified Person under NI 43-101, has approved the technical and scientific disclosure contained in this release.
4. Ms. F. Harper B.Sc. (Hons), Pr.Sci.Nat. MGSSA of Venmyn Deloitte, who is a Qualified Person and is independent of Frontier in accordance with the requirements of NI 43-101, has reviewed the contents of this release and confirmed that it fairly represents the contents of the PFS Report.

All regulatory filings including the latest MD&A and company updates are available on the Company website and on Sedar. For further information on Frontier visit www.frontierrareearths.com, e-mail the Company at IR@frontierrareearths.com or contact +352 208 80249.

About Frontier Rare Earths Limited (TSX: FRO US: FREFF)

Frontier Rare Earths Limited (www.frontierrareearths.com) is a mineral exploration and development company principally focused on the development of rare earths projects in Africa. Frontier's flagship asset is the Zandkopsdrift rare earth project, which is located in the Northern Cape Province of South Africa and is one of the largest, highest grade undeveloped rare earth deposits worldwide. Frontier has a direct 64% interest and an 85% economic interest in Zandkopsdrift following the acquisition by its strategic partner; Korea Resources Corporation; of an initial 10% interest in Zandkopsdrift. Frontier is listed on the main board of the Toronto Stock Exchange and currently has 89,562,781 shares outstanding. Frontier is well funded with approximately $22 million in cash and no debt at the end of March 2015. Readers are directed to the news release dated March 30, 2015 in which details of a strategic review being undertaken by the Company are described.

Forward Looking Statements – Certain information set forth in this news release may contain forward-looking statements that involve substantial known and unknown risks and uncertainties. Readers can identify many of these statements by looking for words such as "will", "intends", "projects", "anticipates", "estimates", "achieving", or similar words or the negative thereof. Such forward looking information includes, among other things, anticipated recovery rates, timing of receipt of mining rights and environmental permits, realization of construction activities and mining operations, estimated capital expenditures and operating costs, estimated REE market prices and statements regarding NPV and IRR. These forward-looking statements are subject to numerous risks and uncertainties, certain of which are beyond the control of the Company, including, but not limited to, the impact of general economic conditions, industry conditions, commodity prices, availability of financing for the Company and the Company's

ability to raise additional capital, results of feasibility studies, dependence upon regulatory approvals, the estimation of mineral resources and the realization of mineral reserves based on mineral resource estimates and estimated future development, if any, and possible variations of ore grade or recovery rates; the Company development, if any, and possible expectations regarding competition from other producers globally, possible customer and supplier relationships, anticipated trends and challenges in the Company regarding competition; mineral resource estimates and supply outlook and growth opportunities, the future price of and future demand for rare earth elements, title disputes or claims including Black Economic Empowerment initiatives, the timing and possible outcome of pending regulatory and permitting matters and the factors described or referred to under "Description of the Business – Risk Factors" in Frontier's current annual information form filed on SEDAR at www.sedar.com.

Readers are cautioned that the assumptions used in the preparation of such information, although considered reasonable at the time of preparation, may prove to be imprecise and, as such, undue reliance should not be placed on forward-looking statements. There can be no assurance that the plans, intentions or expectations upon which these forward-looking statements are based will occur. The forward-looking statements contained herein are made as of the date of this news release and are expressly qualified in their entirety by this cautionary statement. Actual results may differ materially from those anticipated. Readers are cautioned not to put undue reliance on forward-looking statements due to the inherent uncertainty therein. Frontier disclaims any intent or obligation to update publicly any forward-looking statements, whether as a result of new information, future events or results or otherwise, except as required by applicable law.