Appendix D: Mining Work Programme

NAME OF APPLICANT:

Imerys Refractory Minerals South Africa: t/a Cape Bentonite Mine

REFERENCE NUMBER:

SAMRAD Ref Nr: 183789
DMR Ref Nr: (WC) 30/5/1/2/2/10098MR

MINING WORK PROGRAMME

Submitted for

A MINING RIGHT APPLICATION

With respect to

REMAINING EXTENT OF FARM UITPANSKRAAL NR 585 HEIDELBERG, MAGISTERIAL DISTRICT OF SWELLENDAM

As required in terms of Section 23 (a), (b) and (c) read together with Regulation 11(1)(g) of the Mineral and Petroleum Resources Development Act (Act 28 of 2002)

mineral resources
Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

STANDARD DIRECTIVE

All applicants for mining rights are herewith, in terms of the provisions of Section 23 (a), (b) and (c) and in terms of Regulation 11 (1)(G) of the Mineral and Petroleum Resources Development Act, directed to submit an Mining Work Programme, strictly under the following headings and in the following format together with the application for a mining right.

1. REGULATION 11.1(a): FULL PARTICULARS OF THE APPLICANT

ITEM	COMPANY CONTACT DETAILS
Company Name	Imerys Refractory Minerals South Africa t/a Cape Bentonite Mine
Registration Nr	1963/005589/07
Physical Address	Sanlameerzicht Lower Level 259 West Street Centurion 0157
Contact Person	Mr Tawanda Mukarati
Postal Address	Box 8118, Centurion 0046
Phone	012 643 5880; Cell 082 467 4532
Fax	012 643 1966
E-mail	*tawanda.mukarati@samrec.com*
Banking Details	*Ecca Holdings (Pty) Ltd-Standard Bank (Centurion Branch):01-26-45-40, Account number: 410305995*

ITEM	CONSULTANT CONTACT DETAILS (if applicable)
Company Name	Not applicable
Physical Address	
Contact Person	
Postal Address	
Phone	
Fax	
E-mail	

2. REGULATION 11(1) (b): PLAN SHOWING THE LAND AND MINING AREA TO WHICH THE APPLICANT RELATES (The plan required in term of Regulation 2(2))

Refer to Appendices D1 and D2

3. REGULATION 11(1) (c): THE REGISTERED DESCRIPTION TO WHICH THE APPLICANT RELATES

Remaining Extent of Farm Uitpanskraal Nr 585, Swellendam Magisterial District

4. REGULATION 11(1)(d): THE DETAILS OF THE IDENTIFIED MINERAL DEPOSIT

4.1 Resource Particulars

ITEM	DETAIL
Types of Mineral	Bentonite and Zeolite
Locality	Heidelberg
Extent of the area required for Mining	**<u>Uitspanskraal South</u>** Phase 1 Quarry – 0.9ha Phase 2 Quarry – 1.3ha **<u>Uitspanskraal North</u>** Phase 1 Quarry – 2.81ha Phase 2 Quarry – 1.82ha Phase 3 Quarry – 0.11ha Phase 4 Quarry – 2.51ha Phase 5 Quarry – 1.24ha Phase 6 Quarry – 3.46ha Phase 7 Quarry – 1.18ha Phase 8 Quarry - 1.24ha Phase 9 Quarry - 2.51ha Phase 10 Quarry – 4.31ha Phase 11 Quarry – 1.13ha Phase 12 Quarry – 0.97ha Phase 13 Quarry – 2.20ha Phase 14 Quarry – 2.41ha Phase 15 Quarry – 2.54ha Phase 16 Quarry -1.20ha Phase 17 Quarry – 2.54ha Phase 18 Quarry – 1.20ha Phase 19 Quarry – 0.74ha **Total quarries size** as proposed for the property – 38.32ha
Extent of the area required for infrastructure, roads, servitudes etc…	151 Hectares (Mining Activities Area)
Maximum depth below surface	30 m
Minimum depth below surface	1 m
Geological Formation	Kirkwood Formation

4.2 Detail of person that compiled the resource statement

ITEM	DETAILS
Name	Tawanda Mukarati
Qualifications	Geology Degree
Experience	12 years
Professional Body (if registered)	SACNASP
Registration number (if applicable)	200056/12

4.3 Locality Specific Geological Map (in colour)

Refer to Appendix D3

4.4 Exploration result (supporting geological reports to be listed and appended)

Refer to Appendix D4 (Drilling campaign results)

4.5 Information required in terms of Regulation 8(in case where the application was preceded by a prospecting right)

Refer to Appendix D5

4.6 Mineral Resource Map

Refer to Appendix D2

4.7 Resource Statement

Table 1*: REMAINING EXTENT OF FARM UITPANSKRAAL RE NR 585: Reserves and Resources*

	Reserves		**Resources**		
	Proven	**Probable**	**Measured**	**Indicated**	**Inferred**
Clay (tons)	***120 000t***	**-**	**-**	***20 000t***	**-**

5. REGULATION 11(1) (e): THE DETAILS OF THE MARKET FOR, THE MARKETS REQUIREMENTS AND PRICING IN RESPECT OF THE MINERAL CONCERNED

5.1 A list of product and their proportionate quantities

Table 2: *Product grades produced at Cape Bentonite Mine*

Grade	***Uses***	***Annual Consumption (tons)***		***Price Range****
		Local/Regional	***Export***	
ECCABOND N	***Binder in moulding and pelletising***	***32 200***	***3 000***	***355 – 800***
ECCAGEL	***Drilling mud***	***700***	***3 400***	***700 – 1250***
ECCASEAL	***Soil stabilizer, Slurry trenching, Dry walling***	***2000***		***700 – 900***
ECCACAT	***Cat litter***	***500***		***600 – 700***
ECCAFEED	***Binder in feed pelletising***	***400***		***600 – 700***
VARIOUS	***Fruit juice and wine clarification, pottery,***	***200***		***1400 – 1700***
TOTALS		***36 000***	***6 400***	

5.2 Market for each specific products in terms of Local, Regional, or International (export)

See table 2 above

5.3 Summary of product consumers

Table 3: *Product grades produced at Cape Bentonite Mine and main customers*

Grade	*Customers*
ECCABOND N	***Local: SCAW METALS, ATLANTIS FOUNDRY, HERNIC FERROCHROME***
ECCAGEL	***Local: SAMCHEM*** ***International: HALLIBURTON***
ECCASEAL	***Local: DURA PILING, STEFFANUTTI***
ECCACAT	***Local: INTERCAN, ARLECO, SA PET***
ECCAFEED	***Local: CAMELUS VOERE, FEEDPHARM***
VARIOUS	***Local: VARIOUS***

5.4 Summary of customer specifications and details of any proposed beneficiation of the products

Grade	*Uses*	*Beneficiation*
ECCABOND N	***Binder in moulding and pelletising***	***Binding properties***
ECCAGEL	***Drilling mud***	***Viscosity properties (Suspension of materials within wells)***
ECCASEAL	***Soil stabilizer, Slurry trenching, Dry walling***	***Sealing properties***
ECCACAT	***Cat litter***	***Absorption properties***
ECCAFEED	***Binder in feed pelletising***	***Binding properties***
VARIOUS	Fruit juice and wine clarification, pottery,	Filtration properties
Grade	Uses	Beneficiation

5.5 Summary of infrastructure requirement such as road rail way, electricity and water

Cape Bentonite is already and currently in production, therefore no new infrastructure is required.

5.6 Summary of other information applied that may influence price, e.g exchange rate, duties, barriers etc.

None

5.7 The price to be used in the cash flow forecast

-

5.8 Confirmation that a specialist market analysis is attached as an appendix which explain the assumption made and how the price was determined

Cape Bentonite has been in production for more than 40 years with an existing customer/client base, therefore no market analysis for this specific site is required.

6. REGULATION 11(1) (f): THE DETAIL WITH THE REGARD OF THE APPLICABLE TIMEFRAME AND SCHEDULING OF THE VARIOUS IMPLEMENTATION PHASES AND A TECHNICALLY JUSTIFIED ESTIMATE OF THE PERIOD REQUIRED

6.1 Time frames and scheduling of the implementation phases

6.1.1 Explanation of time taken to develop the mine and commence production.

Estimated time frame for the proposed mining of the 38.32ha area on the applicable property is ± 10years.

6.1.2 Explanation of the production build up period once production commences

-

6.1.3 Explanation of production decline period (as grades deteriorate).

-

6.1.4 Production forecast for each year over the full period applied for based on the above explanations. (Not Life of Mine Calculation).

-

6.2 Technically justified estimate of the period required

(Description of the rate of production, estimated payable reserve ratio, efficiency factors and extraction rates, relative to available resources to justify the period applied for)

RESERVES	PRODUCTION RATE	LOM
120 000t	12 000t/year	10 years

7. REGULATION 11(1)(g)(i): THE DETAILS WITH REGARDS TO THE COSTING OF THE MINING TECHNIQUE, MINING TECHNOLOGY AND PRODUCTION RATES (excluding labour and capital)

7.1 Mine Design Map (include a high level map indicating the basic mine design and schematic mining schedule)

Refer to Appendix D2

7.2 Description of the Mining method's impact on operating cost

7.2.1 Basic overview of the mining Method

Mining is conducted 'in-house' by means of excavators, front-end loaders and 15-ton dumper trucks. The mining method comprises of relatively shallow opencast quarrying. The topsoil and the overburden are removed and stockpiled separately along the perimeter of the quarry. As and when the bentonite is being mined, it is trucked to the Processing Plant at the head offices on Erf 1412, Heidelberg. Overburden is mined in 20m wide and 3-4m thick benches to expose 3m of bentonite down-dip to be mined. This process is repeated until all bentonite is mined out. Through this process the quarries depth will be a maximum of

30m deep, and no more than half of the quarry size will be open at a time.

Rehabilitation takes place on an ongoing basis as mining proceeds. As the quarry advances along strike, the overburden is progressively replaced to backfill the excavation. The backfilled area is then contoured to prevent erosion, which could be caused by rain and surface water flow. Finally the topsoil is then spread over the disturbed surface area to restore the land to its previous state.

The bentonite found on the mining area is emplaced as relatively thin seams of 1-4m thick. The topsoil is normally less than 30cm thick. Overburden consists of a sequence of siltstone with conglomerate lenses; the latter also form the footwall of the succession.

The timing of the several phases is described on the Mine Layout Plan as attached under Appendix D2.

Also refer to Appendix D6 of this MWP for typical cross section of proposed mining method.

7.2.2 Description of equipment and activities impacting on electricity cost

None

7.2.3 Description of equipment and activities impacting on fuel cost

-Excavator * 2
-15 tons Truck *4
-Dozer *1
-30 tons Truck*1
-Loader*1

7.2.4 Description of equipment and activities impacting on cost of stores and materials

-Moving equipment Maintenance
-Operation Boards

7.2.5 Description of equipment and activities impacting on the cost of water

None

7.2.6 Description of equipment and activities impacting on other cost not included above

None

7.2.7 Operating cost forecast (excluding the processing plant and labour) in KZAR for first 10 years

COST CATEGORY	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10
Electricity	0	0	0	0	0	0	0	0	0	0
Fuel	1711.5	1814.19	1923.041	2038.42	2160.73	2290.37	2427.8	2573.46	2727.87	2891.54
Stores	340.4	360.824	382.4734	405.422	429.747	455.532	482.864	511.836	542.546	575.099
Water	0	0	0	0	0	0	0	0	0	0
Other (specify)	0	0	0	0	0	0	0	0	0	0
Total Cost (to be reflected in the cash flow forecast)	2051.9	2175.01	2305.515	2443.85	2590.48	2745.91	2910.66	3085.3	3270.42	3466.64

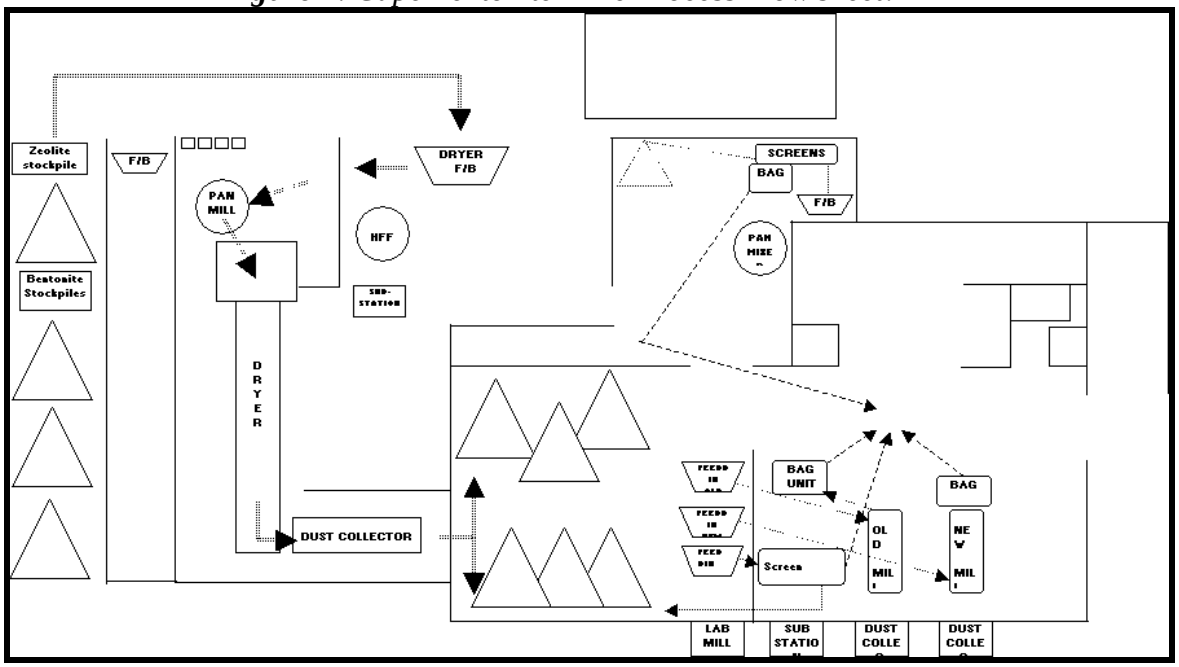
NB! The costs determined here must explain the costs used in line item 4 of the cash flow forecast required herein under Regulation 11(1) (g)(vi)

8. REGULATION 11(1)(g)(ii): DETAILS AND COSTS OF THE TECHNOLOGICAL PROCESS APPLICABLE TO THE EXTRACTION AND PREPARATION OF THE MINERAL OR MINERALS TO COMPLY WITH MARKET REQUIREMENTS

8.1 High level Description of the Processing Plant

8.1.1 Basic Plant Design (supported by a process flow diagram, of the plant)

***Figure 1**: Cape Bentonite Mine Process Flow sheet.*



8.1.2 Efficiency of the Process (together with an estimate of the mineral recovery rate, and the expected mass or volume of mine waste or residues together with the manner in which it would be disposed of)

No waste is created during bentonite processing. The only Mass Loss occurring is due to the decreasing of the Moisture of the Material through the dryer. Indeed, the material is around 28% moisture (average) before drying and 10% after.

8.2 Description of equipment and activities impacting on electricity cost (excluding the processing plant)

-Mills*2 -Pan Mill -Conveyor Belts (Multiples) -Screens*2 -Bag Unit -Soda Station -Drier

8.3 Description of equipment and activities impacting on fuel cost

-Front-end Loader -Fork lift

8.4 Description of equipment and activities impacting on cost of stores and materials

-Plant Maintenance

8.5 Description of equipment and activities impacting on the cost of water

None

8.6 Description of equipment and activities impacting on other cost not included above

Soda ash (improve quality of Bentonite) The Drier Burner is using coal

8.6.1 Processing Plant operating cost forecast (excluding Labour) in KZAR

COST CATEGORY	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7	YEAR 8	YEAR 9	YEAR 10
Electricity	4709	4991.54	5291.032	5608.49	5945	6301.7	6679.81	7080.59	7505.43	7955.76
Fuel	570.5	604.73	641.0138	679.475	720.243	763.458	809.265	857.821	909.29	963.848
Maintenance and repairs	510.6	541.236	573.7102	608.133	644.621	683.298	724.296	767.754	813.819	862.648
Stores and materials	0	0	0	0	0	0	0	0	0	0
Water	0	0	0	0	0	0	0	0	0	0
Soda Ash and Coal	5254	5569.24	5903.394	6257.6	6633.05	7031.04	7452.9	7900.07	8374.08	8876.52
Total Cost (to be reflected in the cash flow forecast)	11044.1	11706.7	12409.15	13153.7	13942.9	14779.5	15666.3	16606.2	17602.6	18658.8

NB! The costs determined here must explain the costs used in line item 5 of the cash flow forecast required herein under Regulation 11(1)(g)(vi)

9. REGULATION 11(1) (g) (iii): DETAIL AND COSTING OF THE TECHNICAL SKILLS, EXPERTISE AND ASSOCIATE LABOUR IMPLICATIONS REQUIRED TO CONDUCT THE PROPOSE MINING OPERATIONS

9.1 Organizational structure of the mine

9.1.1 Description of position requiring certificates of competency and under which skills category they have been budgeted for

None

9.1.2 Description of which part or parts of the mining operation will be outsourced (if any)

9.1.2.1 Description of position requiring certificates of competency and under which skills category they have been budgeted for

None

9.2 Costing of the skills categories in the mining operation to determine if technical competence has been budgeted for: Complete the following tables:

With Cape Bentonite currently producing and planning on continuing operations after the end of the mining of this particular prosed deposit, the skills required for the mining operations will be unchanged during the LOM.

MINE EMPLOYEES

Personnel of the Mine's Payroll: (Years 1 to 5)

CATEGORY	LOM	
	NO OF POSITIONS	BUDGET
Top management	***0***	**-**
Senior management	***0***	**-**
Professionally qualified and experience specialist and mid-management	***2***	**-**
Skilled technical and academically qualifies workers, junior management, supervisors, foreman and superintendent	***12***	**-**
Semi-skilled and discretionary decision making	***19***	***5000***
Non-permanent employee	***1***	**-**
TOTAL PERSONNEL EXPENDITURE	***34***	***5000***

Personnel of the Mine's Payroll: (Years 6 to 10)

CATEGORY	LOM	
	NO OF POSITIONS	BUDGET
Top management	***0***	**-**
Senior management	***0***	**-**
Professionally qualified and experience specialist and mid-management	***2***	**-**
Skilled technical and academically qualifies workers, junior management, supervisors, foreman and superintendent	***12***	**-**
Semi-skilled and discretionary decision making	***19***	***5000***
Non-permanent employee	***1***	**-**
TOTAL PERSONNEL EXPENDITURE	***34***	***5000***

SUBCONTRACTORS EMPLOYEES (if applicable)
(Duplicate this form for each Subcontractor)

CATEGORY	LOM	
	NO OF POSITIONS	BUDGET
Top management	***0***	**-**
Senior management	***0***	**-**
Professionally qualified and experience specialist and mid-management	***0***	**-**
Skilled technical and academically qualifies workers, junior management, supervisors, foreman and superintendent	***2***	**-**
Semi-skilled and discretionary decision making	***0***	**-**
Non-permanent employee	***0***	**-**
TOTAL PERSONNEL EXPENDITURE	***2***	**-**

SERVICE PROVIDER

CATEGORY	LOM
Breerivier Training	5000
TOTAL BUDGET (SERVICES)	**5000**

TOTAL COST OF ALL TECHNICAL SKILLS AND SERVICES REQUIRED TO OPERATE THE MINE

CATEGORY	LOM
In house skills and services	-
Skills and services provided by subcontractors	-
Skills and services provided by service providers	-
TOTAL BUDGET FOR TECHNICAL SKILLS AND COMPETENCE	-

NB! The total budget for technical skills and services and competence must be transferred to line item 6 in the cash flow forecast

10. REGULATION 11(1)(g)(iv): DETAIL AND COSTING OF REGULATORY REQUIREMENTS IN TERMS OF THE ACT AND OTHER APPLICABLE LAW, RELEVANT TO THE PROPOSED MINING OPERATION

10.1 Environmental cost forecast

10.1.1 Rehabilitation estimate cost

(Refer to the guideline for Financial provision (described in Regulation 54 (1)(2) published on the Departments website. Complete 10 forecasts and paste them into this section, i.e. one for the progressive impact in each of the first 10 years of operation. The progressive total (10th year must be stated under this heading and also included into the first year of the cash flow under Regulation 11(1)(g)(vi) below in the environmental cost category.)

At a rate of R 105 619/ha, the estimate global cost for the rehabilitation of the proposed active quarries of 38.32ha will be R 4 047 320.00.

Total Proposed Rehabilitation Financial Provision for the Mining Right = R 4 047 320.00

10.1.2 Socio-economic impact cost estimate

(Refer to the guidelines on community consultation, and the scoping report template. Estimate the risk of compensation to persons whose socio-economic conditions may be directly affected by the mining operation. Provide the estimated total under this heading and also include it into the first year of the cash flow under regulation 11(1) (g)vi) below in the environmental cost category.)

Not applicable for this specific site

10.1.3 Summary of Environmental cost

Estimated Environmental and Rehabilitation cost

CATEGORY	COST ESTIMATE
a)Progressive total for rehabilitation	R4 047 320.00
b) Cost to mitigate socio-economic conditions of directly affected persons	-
TOTAL COST (Transfer amount to cash flow forecast –Line 7 Year 1 only)	R4 047 320.00

10.2 Other Regulatory Costs

CATEGORY	BUDGET
Royalties	R 1 940 000/Year
Mine Health and Safety regulations	
Occupational health	
Rate and taxes	
National skills fund	
Other:Specify	
TOTAL COST (Include amount into the cash flow forecast – Line 7)	

The costs thus derived must be clearly explained and used to justify the numbers that area reflected in line item 7 of the cash flow forecast required in term of regulation 11(1)(g)(vi)

11. REGULATION 11(1) (g)(viii): PROVISION FOR THE EXECUTION OF THE SOCIAL AND LABOUR PLAN

11.1 The following table must be duplicated here from the table in Section 5: Financial Provision of the Social and Labour Plan

ESTIMATED EXPENDITURE ON THE SOCIAL AND LABOUR PLAN IN A 10 YEAR PERIOD										
ITEM	**YEAR 1**	**YEAR 2**	**YEAR 3**	**YEAR 4**	**YEAR 5**	**YEAR 6**	**YEAR 7**	**YEAR 8**	**YEAR 9**	**YEAR 10**
HUMAN RESOURCES DEVELOPMENT	R238000	R290000	R338500	R346500	R245500	R270050	R297055	R326760.05	R359436.55	R395380.05
LOCAL ECONOMIC DEVELOPMENT	0	R70000	R280000	R100000	R500000	R550000	R605000	R665500	R732050	R805255
MANAGEMENT OF DOWNSCALING	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
ESTIMATED TOTALS PER YEAR	238000	360000	R688500	R521500	R405500	R820050	R902055	R992260	R1091486.55	R1200635.05

The costs quantified in the aforesaid categories must justify the numbers that are reflected in line item 8 of the cash flow forecast required in terms of Regulation 11(1)(g)(vi)

12. REGULATION 11(1)(g)(iv): DETAILS REGARDING OTHER RELEVANT COSTING, CAPITAL EXPENDITURE REQUIREMENTS AND EXPECTED REVENUE APPLICABLE TO THE PROPOSED MINING OPERATION

12.1 Expected revenue

12.1.1 Explanation of revenue determination (given the prices of the various relevant products and byproducts produced) how the price referred to in item 5.9 above, and the production referred to in item 6.1.4 above was arrived at and applied at and applied to each year's production estimate in order to estimate revenue.

Revenue is determined by Production sales of Bentonite and Zeolite Locally and for the export. Sales prices consists of Product Sales price, Packaging (if applicable) and Transport to the Customer (depending on Inco Terms with the Customer)

12.1.2 Revenue forecast (for each year of the full period applied for based on the above explanations. Note that this revenue estimate must be stated both here and in line item 3 of the cash flow forecast required below in terms of Regulation 11 (1)(g)(vi).

Year	Revenue
2017	113 197 861
2018	119 989 733
2019	127 189 117
2020	134 820 464
2021	142 909 692
2022	151 484 274
2023	160 573 330
2024	170 207 730
2025	180 420 194
2026	191 245 405
2027	202 720 129
2028	214883337
2029	227776337
2030	241442918

12.2 Estimated Capital expenditure

12.2.1 Initial capital expenditure

Not applicable – mine already operational.

12.2.2 Ongoing Capital Expenditure

None for this specific farm/property.

12.2.3 Summary in a 10 year Tabular format

Not applicable for this specific site

12.3 Explanation and summary of other cost

Not applicable for this specific site

12.4 Summary of capital and other costs.

Not applicable for this specific site

(Note! The total amounts must be transferred to line item 9 of the cash flow forecast require in terms of Regulation 11(1)(g)(vi) below.)

13. REGULATION 11(1)(g)(vi): A DETAILED CASH FLOW FORECAST AND VALUATION, EXCLUDING FINANCING OF THE PROPOSED MINING OPERATION, WHICH FORECAST MUST ALSO CLEARLY INDICATE HOW THE APPLICABLE REGULATORY COSTS WILL BE ACCOMMODATED THEREIN

Life of Mine Projected Cash Flow A14-12 to F28-12 IRMS Cape Bentonite

		6.0%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%	6%
MZAR	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Sales Tons	56 432.248	56 432.248	56 432.248	56 432.248	56 432.248	56 432.248	56 432.248	56 432.248	56 432.248	56 432.248	56 432.248	56 432.248	56 432.248	56 432.248	56 432.248	56 432.248
Revenue	100 745 694	106 790 435	113 197 861	119 989 733	127 189 117	134 820 464	142 909 692	151 484 274	160 573 330	170 207 730	180 420 194	191 245 405	202 720 129	214 883 337	227 776 337	241 442 918
Variable Cost	(50 522 408)	(53 553 752)	(56 766 977)	(60 172 996)	(63 783 375)	(67 610 378)	(71 667 001)	(75 967 021)	(80 525 042)	(85 356 544)	(90 477 937)	(95 906 613)	(101 661 010)	(107 760 671)	(114 226 311)	(121 079 890)
Contribution Margin		50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%
Fixed Cost	(24 152 778)	(25 897 584)	(27 090 839)	(28 575 490)	(30 290 019)	(32 107 420)	(34 033 865)	(36 075 897)	(38 240 451)	(40 534 878)	(42 966 971)	(45 544 989)	(48 277 688)	(51 174 350)	(54 244 811)	(57 499 499)
Labour (Inc Soc. Charges)	(14 482 627)	(15 351 585)	(16 272 680)	(17 249 041)	(18 283 983)	(19 381 022)	(20 543 883)	(21 776 516)	(23 083 107)	(24 468 094)	(25 936 179)	(27 492 350)	(29 141 891)	(30 890 405)	(32 743 829)	(34 708 459)
Maintenance & Repair	(850 789)	(901 836)	(955 946)	(1 013 303)	(1 074 101)	(1 138 547)	(1 206 860)	(1 279 272)	(1 356 028)	(1 437 390)	(1 523 633)	(1 615 051)	(1 711 954)	(1 814 671)	(1 923 552)	(2 038 965)
Taxes	(1 231 086)	(1 304 951)	(1 383 248)	(1 466 243)	(1 554 218)	(1 647 471)	(1 746 319)	(1 851 098)	(1 962 164)	(2 079 894)	(2 204 688)	(2 336 969)	(2 477 187)	(2 625 818)	(2 783 367)	(2 950 369)
Depreciation	(2 250 309)	(2 385 328)	(2 528 448)	(2 680 154)	(2 840 964)	(3 011 422)	(3 192 107)	(3 383 633)	(3 586 651)	(3 801 850)	(4 029 961)	(4 271 759)	(4 528 065)	(4 799 748)	(5 087 733)	(5 392 997)
External services	(4 251 876)	(4 506 989)	(4 777 408)	(5 064 052)	(5 367 896)	(5 689 969)	(6 031 368)	(6 393 250)	(6 776 845)	(7 183 455)	(7 614 463)	(8 071 330)	(8 555 610)	(9 068 947)	(9 613 084)	(10 189 869)
Environmental Costs	(216 000)	(216 000)	(228 960)	(242 698)	(257 259)	(272 695)	(289 057)	(306 400)	(324 784)	(344 271)	(364 927)	(386 823)	(410 032)	(434 634)	(460 713)	(488 355)
SLP	(190 000)	(510 000)	(180 000)	(50 000)	(53 000)	(56 180)	(59 551)	(63 124)	(66 911)	(70 926)	(75 182)	(79 692)	(84 474)	(89 542)	(94 915)	(100 610)
Training & Devolopment	(680 090)	(720 896)	(764 149)	(809 998)	(858 598)	(910 114)	(964 721)	(1 022 604)	(1 083 960)	(1 148 998)	(1 217 938)	(1 291 014)	(1 368 475)	(1 450 584)	(1 537 619)	(1 629 876)
Total Cost of Production	(41 064 177)	(79 451 336)	(83 857 816)	(88 748 485)	(94 073 394)	(99 717 798)	(105 700 866)	(112 042 918)	(118 765 493)	(125 891 423)	(133 444 908)	(141 451 602)	(149 938 698)	(158 935 020)	(168 471 122)	(178 579 389)
Gross Profit / Loss	26 070 509	27 339 099	29 340 045	31 241 248	33 115 723	35 102 666	37 208 826	39 441 356	41 807 837	44 316 307	46 975 286	49 793 803	52 781 431	55 948 317	59 305 216	62 863 529
Gross Profit Margin	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%	26%
Overheads	(18 512 000)	(19 622 720)	(20 800 083)	(22 048 088)	(23 370 973)	(24 773 232)	(26 259 626)	(27 835 203)	(29 505 316)	(31 275 634)	(33 152 173)	(35 141 303)	(37 249 781)	(39 484 768)	(41 853 854)	(44 365 085)
Net Profit before Tax	7 558 509	7 716 379	8 539 962	9 193 160	9 744 749	10 329 434	10 949 200	11 606 152	12 302 521	13 040 673	13 823 113	14 652 500	15 531 650	16 463 549	17 451 362	18 498 444
Tax	(2 116 382)	(2 160 586)	(2 391 189)	(2 574 085)	(2 728 530)	(2 892 242)	(3 065 776)	(3 249 723)	(3 444 706)	(3 651 388)	(3 870 472)	(4 102 700)	(4 348 862)	(4 609 794)	(4 886 381)	(5 179 564)
Net Profit / Loss	5 442 126	5 555 793	6 148 773	6 619 075	7 016 219	7 437 193	7 883 424	8 356 430	8 857 815	9 389 284	9 952 641	10 549 800	11 182 788	11 853 755	12 564 981	13 318 879
Depreciation	2 250 309	2 385 328	2 528 448	2 680 154	2 840 964	3 011 422	3 192 107	3 383 633	3 586 651	3 801 850	4 029 961	4 271 759	4 528 065	4 799 748	5 087 733	5 392 997
Capital & Change in Working Capital		500 000	500 000	500 000	500 000	500 000	500 000	500 000	500 000	500 000	500 000	500 000	500 000	500 000	500 000	500 000
Net Cash Flow		3 670 465	4 120 325	4 438 921	4 675 256	4 925 771	5 191 317	5 472 796	5 771 164	6 087 434	6 422 680	6 778 041	7 154 723	7 554 007	7 977 247	8 425 882
Net Present Value		54 062 723														

The Applicant may provide for escalation, based on accepted practice, and may provide other indicators such as IRR.

14. REGULATION 11(1)(g)(vii): DETAILS REGARDING THE APPLICANTS RESOURCES OR PROPOSED MECHANISMS TO FINANCE THE PROPOSED MINING OPERATION, AND DETAILS REGARDING THE IMPACT OF SUCH FINANCING ARRANGEMENTS ON THE CASH FLOW FORECAST

14.1 Financing the cash flow

(Provide in tabular format an explanation of how the cash flow will be financed showing the amounts, the type of financing, eg. loans, equity, retained earnings etc., as well as the impact of financing on the cash flow in terms of financial arrangements and repayments)

Cape Bentonite will be able to generate enough resources out of the Operating capital (e.g. 13)

14.2 Detail regarding the financing arrangements

(Elaborate on the financing arrangements that are described in item 14.1 above, in terms of where the finance will be sourced, extent to which the financing has been finalized and on the level of certainty that such financing can be secured)

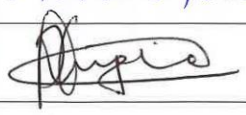
Refer to Appendix D7

14.3 Confirmation of supporting evidence appended

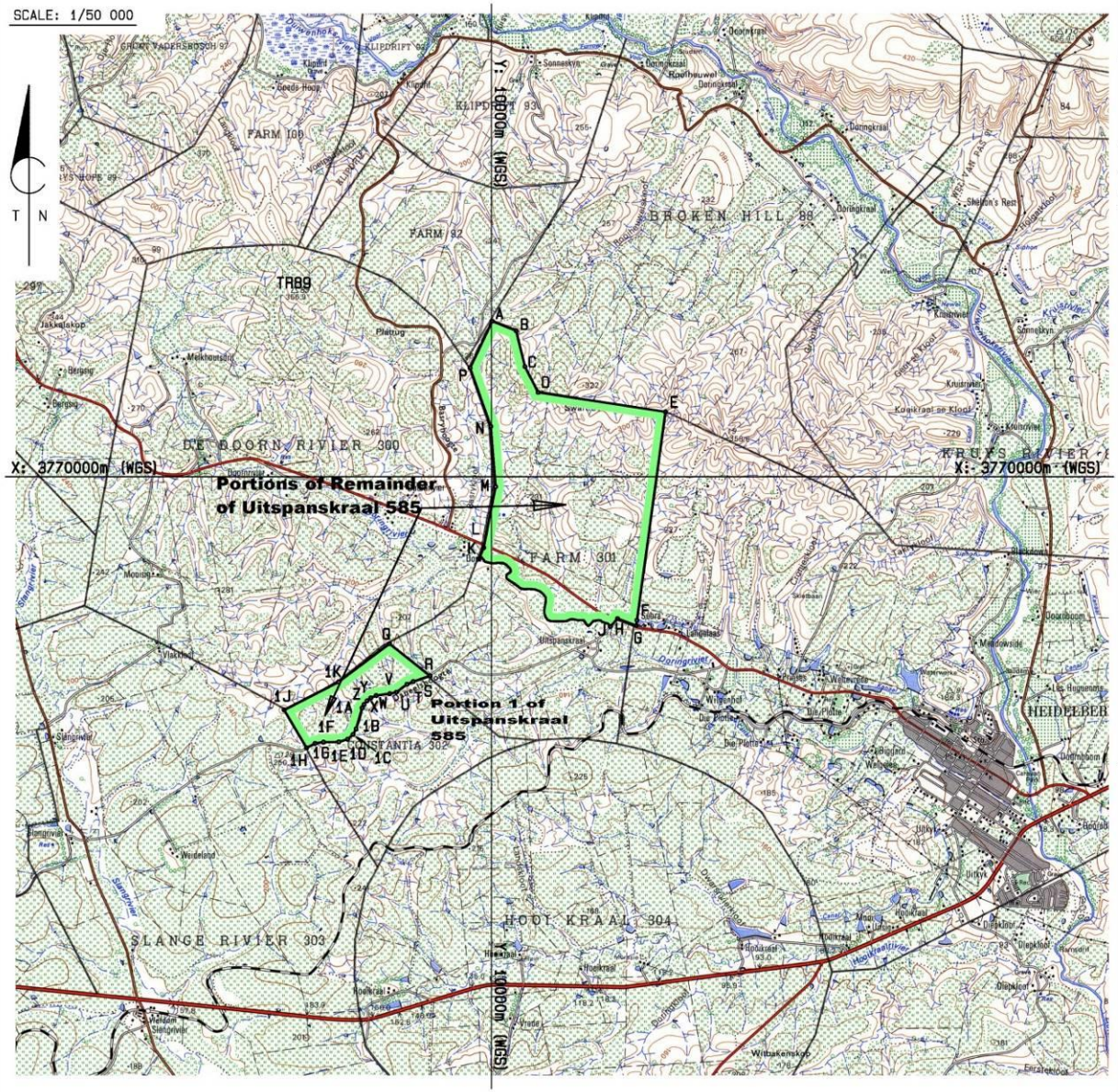
*(Attach evidence of available funding and or financing arrangements such as balance sheets, agreements with financial institutions, underwriting agreements etc. and **specifically confirm** in this regard what documentation has been attached as appendices to the MWP)*

See point 13

15. REGULATION 11(1)(h): UNDERTAKING, SIGNED BY THE APPLICANT, TO ADHERE TO THE PROPOSALS AS SET OUT IN THE MINING WORK PROGRAMME

Herewith I, the person whose name and identify number is stated below, confirm that I am the Applicant or the person authorized to act as representative of the Applicant in terms of the resolution submitted with the application, and undertake to implement this mining work programme and adhere to the proposals as set out herein.	
Full Names and Surname	Xolisa Mvinjelwa
Identity Number	6907055952089
Signature	
Date	13/02/2018

Appendix D1: Regulation 2(2) Map



ECCA HOLDINGS (Cape Bentonite Mine)

PROSPECTING RIGHT

Holder of Right:
ECCA HOLDINGS (PTY) LTD

Reg. No. 1963/005589/07

F.W.HATTINGH
Professional Land Surveyor: Registration No.PLS02520
Date: 8 March 2013

MINERAL : BENTONITE AND ZEOLITE

CO-ORDINATE LIST

PORTION DESCRIPTION

The figures A B C D E F G H J Right Bank of Doring river K L M N P and Q R S T U V W X Y Z 1A 1B 1C 1D 1E 1F 1G 1H 1J 1K represents a Prospecting Area in extent 672,4263 ha comprising of portions

of the REMAINDER

of the farm

UITSPANSKRAAL No.585

(excluding

Mineral Area No.2)

situated in the
HEIDELBERG MUNICIPALITY
Registration Divison
of SWELLENDAM
for which ECCA HOLDINGS (PTY) LTD with registration No.1963/05589/07 has been granted a Prospecting Right

Sketch plan prepared by
F.W.HATTINGH
Address: MERIDIAN SURVEYS
230 Bootes Street,
Waterkloof Ridge,
Pretoria 0027,
Tel (012) 346-1489
Fax (012) 346 1076,
E-mail:info@msurveys.co.za

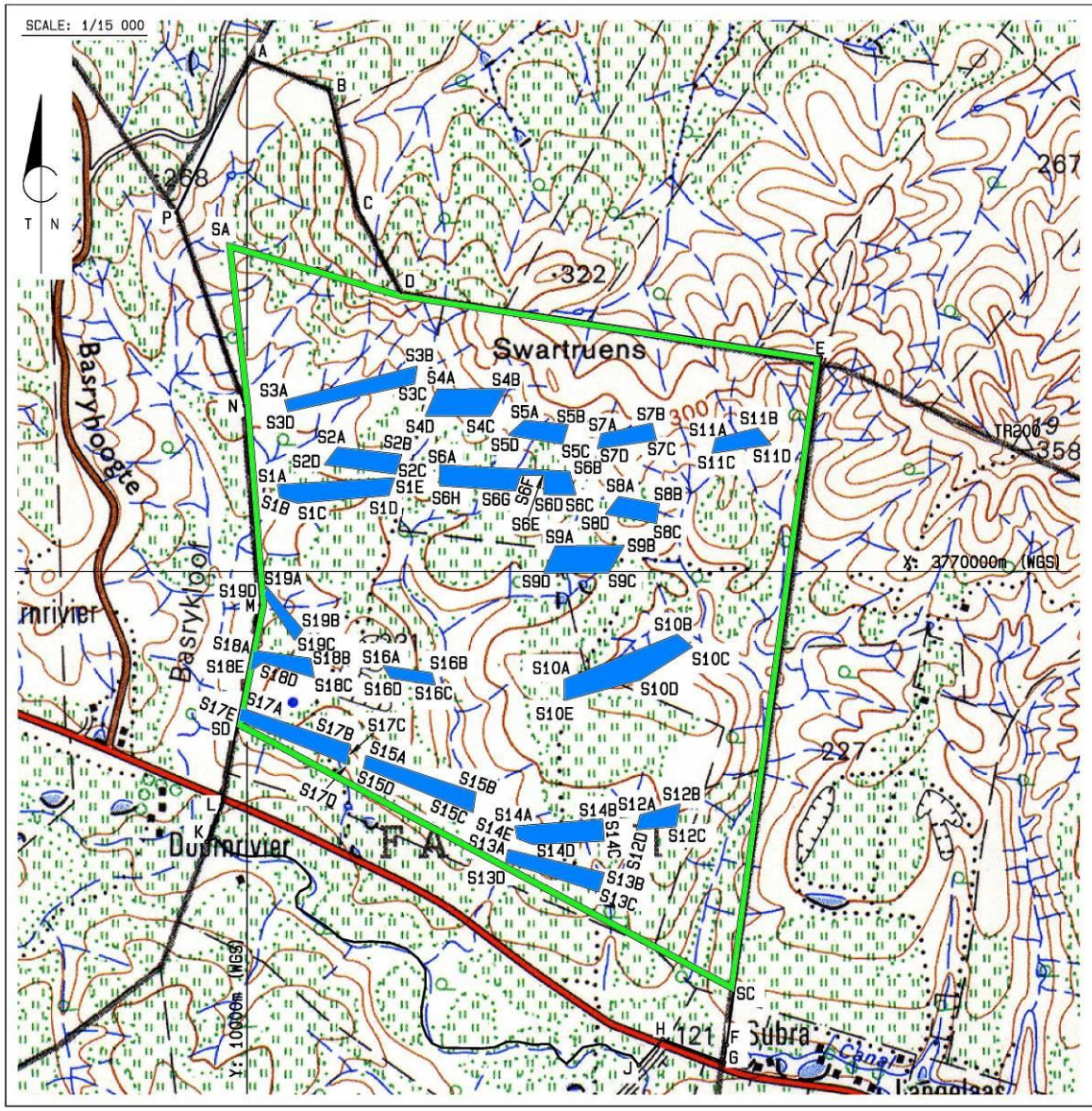
Point Name	Clarke 1880 (Modified) Lo.21 East Y Metres	X	WGS Hartebeesthoek 94 W6.21 East Y Metres	X
A	9934,23	3767759,91	9990,42	3768056,79
B	9635,46	3767879,75	9691,65	3768176,63
C	9526,18	3768326,95	9582,36	3768623,83
D	9361,38	3768650,03	9417,56	3768946,91
E	7770,39	3768892,96	7826,56	3769189,83
F	8126,32	3771494,72	8182,46	3771791,60
G	8136,80	3771560,29	8192,94	3771857,17
H	8369,10	3771473,31	8425,24	3771770,19
J	8458,83	3771571,91	8514,97	3771868,79
K	10097,55	3770725,92	10153,71	3771022,82
L	10040,81	3770586,90	10096,97	3770883,80
M	9892,40	3769829,01	9948,57	3770125,90
N	9952,27	3769074,63	10008,45	3769371,52
P	10211,13	3768343,84	10267,31	3768640,73
Q	11218,26	3771787,46	11274,41	3772084,37
R	10710,54	3772189,50	10766,69	3772486,41
S	10920,62	3772259,51	10976,77	3772556,42
T	10999,70	3772294,23	11055,85	3772591,14
U	11130,64	3772392,32	11186,78	3772689,24
V	11214,71	3772411,22	11270,85	3772708,14
W	11383,92	3772434,11	11440,07	3772731,03
X	11450,70	3772463,60	11506,85	3772760,52
Y	11498,55	3772500,46	11554,70	3772797,38
Z	11536,32	3772547,19	11592,46	3772844,11
1A	11560,36	3772589,51	11616,50	3772886,53
1B	11635,11	3772851,94	11691,25	3773148,86
1C	11673,33	3772920,62	11729,47	3773217,54
1D	11740,11	3772980,52	11796,25	3773277,44
1E	11850,20	3773013,71	11906,34	3773310,64
1F	12042,51	3773016,92	12098,65	3773313,85
1G	12147,67	3773032,27	12203,81	3773329,20
1H	12253,83	3773089,04	12309,97	3773385,97
1J	12533,21	3772615,09	12589,36	3772912,02
1K	11853,84	3772264,94	11909,99	3772561,86

REGIONAL MANAGER Date
Western Cape Region

ON BEHALF OF THE HOLDER Date
ECCA HOLDINGS (PTY) LTD

REFERENCE

Appendix D2: Regulation 42 Mine Layout Maps



IMERYS REFRACTORY (Cape Bentonite Mine)

PROSPECTING RIGHT

Holder of Right:
IMERYS REFRACTORY
MINERALS SA (PTY) LTD
Reg. No. 1973/012351/07

F.W.HATTINGH
Professional Land Surveyor: Registration No.PLS0252D
Date: 8 March 2013

MINERAL : BENTONITE AND ZEOLITE

SHEET TWO OF TWO SHEETS

PORTION DESCRIPTION

The figure SA-D-E-SC-SD-M-N-SA represents 430,6673 hectares of land being a NO GO AREA
The figures S1A-S1B-S1C-S1D-S1E-S1A, S2A-S2B-S2C-S2D-S2A, S3A-S3B-S3C-S3D-S3A, S4A-S4B-S4C-S4D-S4A, S5A-S5B-S5C-S5D-S5A, S6A-S6B-S6C-S6D-S6E-S6F-S6G-S6H-S6A, S7A-S7B-S7C-S7D-S7A, S8A-S8B-S8C-S8D-S8A, S9A-S9B-S9C-S9D-S9A, S10A-S10B-S10C-S10D-S10E-S10A, S11A-S11B-S11C-S11D-S11A, S12A-S12B-S12C-S12D-S12A, S13A-S13B-S13C-S13D-S13A, S14A-S14B-S14C-S14D-S14E-S14A, S15A-S15B-S15C-S15D-S15A, S16A-S16B-S16C-S16D-S16A, S17A-S17B-S17C-S17D-S17A, S18A-S18B-S18C-S18D-S18E-S18A and S19A-S19B-S19C-S19D-S19A represents 2,8027-1,8237-2,5663-2,5102-1,2355-3,4488-1,1792-1,2395-2,5055-4,3043-1,1300-0,9706-2,1912-2,4072-2,5599-0,7084-2,5405-1,2026 and 0,7363 hectares of land respectively being the Proposed QUARRIES

CO-ORDINATE LIST WGS Hertebeesthoek 94

Point Name	WG.21 East Y Metres	X	Point Name	WG.21 East Y Metres	X	Point Name	WG.21 East Y Metres	X
SA	10076,15	3768757,06	S8D	8639,51	3769782,95	S17E	10031,55	3770562,46
SC	8155,04	3771591,19	S9A	8630,53	3769904,27	S18A	9974,58	3770300,18
SD	10038,67	3770586,07	S9B	8572,76	3769902,23	S18B	9760,32	3770329,72
S1A	9883,28	3769673,43	S9C	8629,85	3770003,23	S18C	9747,02	3770399,24
S1B	9875,14	3769718,93	S9D	8674,33	3770003,22	S18D	9940,18	3770342,95
S1C	9809,46	3769740,99	S10A	8796,45	3770409,17	S18E	9988,61	3770376,48
S1D	9463,74	3769711,90	S10B	8370,45	3770239,27	S19A	9927,55	3770057,50
S1E	9442,79	3769647,70	S10C	8314,94	3770285,32	S19B	9791,54	3770220,55
S2A	9656,27	3769532,28	S10D	8510,58	3770408,79	S19C	9819,55	3770257,90
S2B	9415,46	3769559,02	S10E	8796,45	3770485,48	S19D	9934,60	3770091,45
S2C	9437,53	3769830,02	S11A	8222,78	3769498,27			
S2D	9705,25	3769596,28	S11B	8065,53	3769459,75			
S3A	9855,45	3769353,59	S11C	8236,21	3769551,84			
S3B	9357,20	3769224,87	S11D	8016,15	3769519,20			
S3C	9367,00	3769289,11	S12A	8509,33	3770921,76			
S3D	9844,66	3769394,30	S12B	8360,10	3770881,60			
S4A	9278,67	3769311,63	S12C	8375,38	3770963,83			
S4B	9021,18	3769309,92	S12D	8523,01	3770975,36			
S4C	9078,44	3769411,06	S13A	9009,49	3771054,03			
S4D	9322,65	3769410,95	S13B	8647,70	3771141,03			
S5A	8947,87	3769430,35	S13C	8668,76	3771211,02			
S5B	8784,42	3769446,41	S13D	9018,77	3771098,68			
S5C	8805,55	3769517,22	S14A	8982,87	3770964,33			
S5D	9007,77	3769483,70	S14B	8653,85	3770938,53			
S6A	9269,53	3769598,54	S14C	8647,48	3771018,72			
S6B	8778,57	3769623,01	S14D	8915,23	3771032,13			
S6C	8755,73	3769708,89	S14E	8975,01	3771009,69			
S6D	8874,29	3769708,70	S15A	9548,01	3770698,21			
S6E	8874,22	3769634,45	S15B	9134,45	3770837,06			
S6F	8963,99	3769634,44	S15C	9145,11	3770909,11			
S6G	8983,08	3769693,50	S15D	9557,38	3770742,75			
S6H	9269,85	3769674,57	S16A	9482,21	3770358,23			
S7A	8657,17	3769481,27	S16B	9300,92	3770384,99			
S7B	8465,81	3769440,80	S16C	9288,73	3770428,07			
S7C	8450,46	3769501,94	S16D	9455,16	3770402,54			
S7D	8670,47	3769534,43	S17A	10021,98	3770517,60			
S8A	8590,41	3769719,08	S17B	9608,89	3770656,76			
S8B	8439,57	3769745,83	S17C	9619,25	3770693,18			
S8C	8449,47	3769816,90	S17D	9619,34	3770728,50			

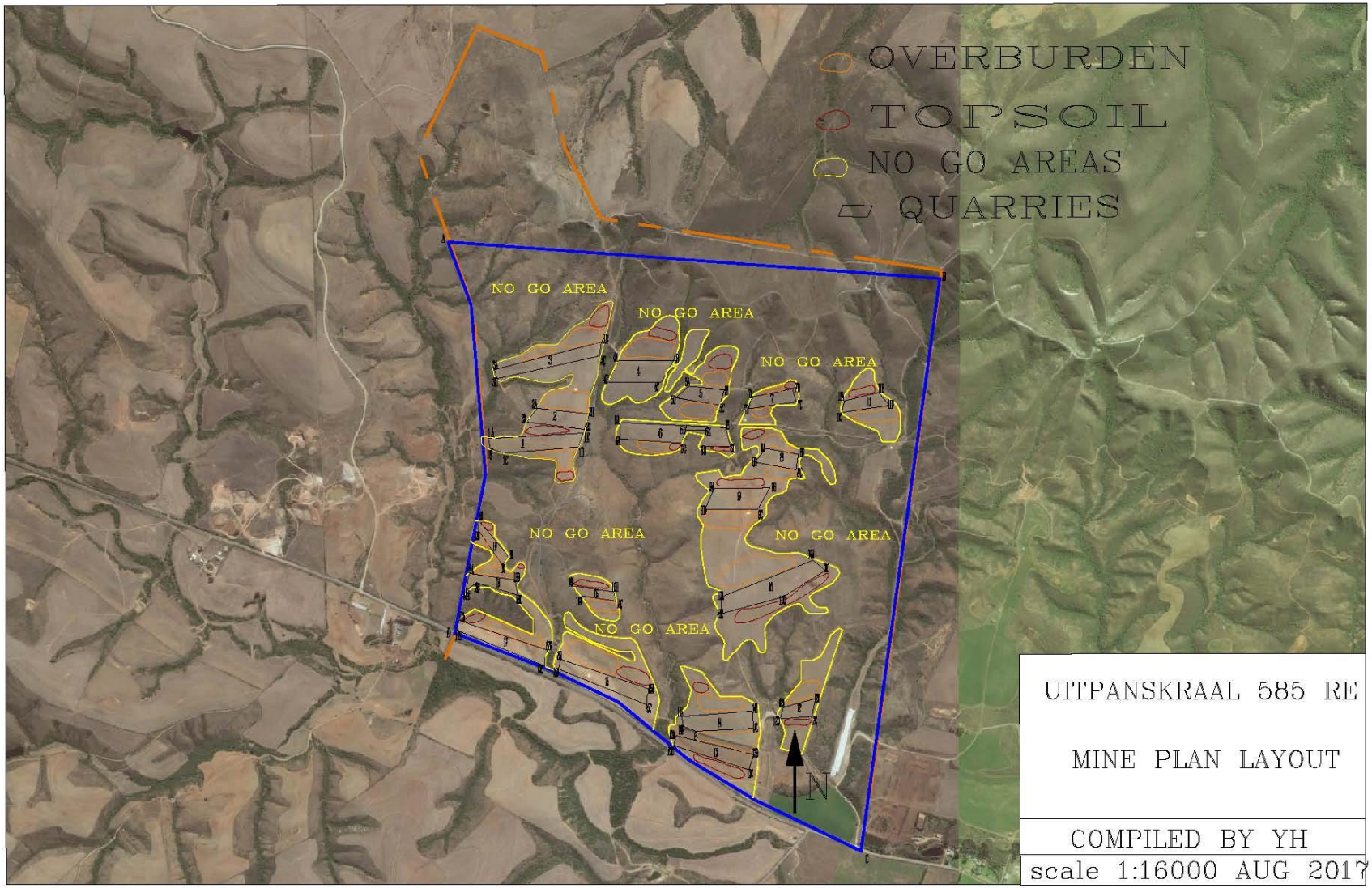
REGIONAL MANAGER
Western Cape Region

DATE

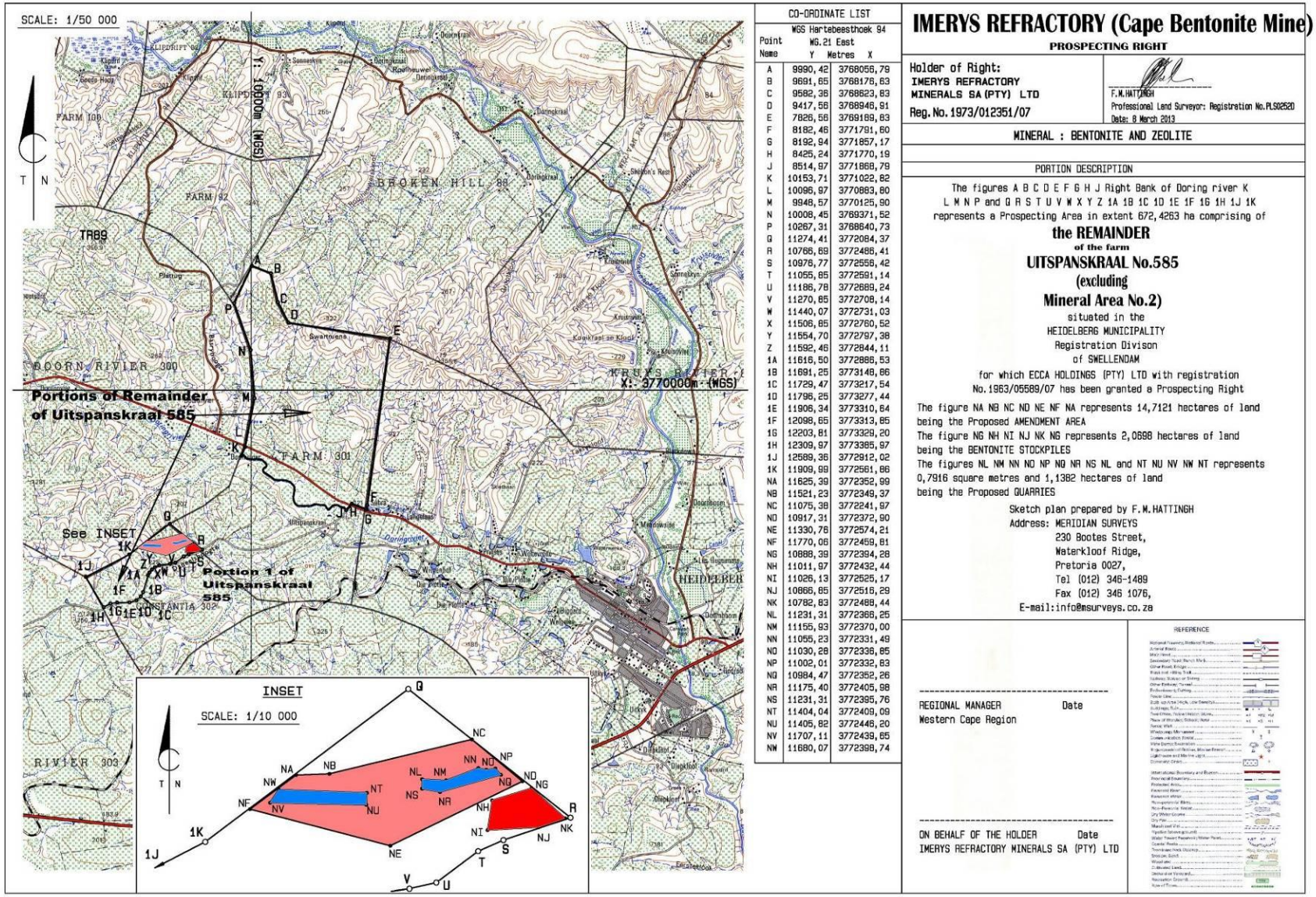
ON BEHALF OF THE HOLDER
IMERYS REFRACTORY
MINERALS SA (PTY) LTD

DATE

Uitspanskraal North



Uitspanskraal North



CO-ORDINATE LIST

Point Name	WGS Hartebeesthoek 94 WG.21 East Y Metres	X
A	9990,42	3768056,79
B	9891,65	3768176,83
C	9582,38	3768823,83
D	9417,56	3768946,91
E	7826,56	3769189,83
F	8182,46	3771791,60
G	8192,94	3771857,17
H	8425,24	3771770,19
J	8514,97	3771868,79
K	10153,71	3771022,82
L	10096,97	3770883,80
M	9948,57	3770125,90
N	10008,45	3769371,52
P	10267,31	3768640,73
Q	11274,41	3772084,37
R	10766,69	3772488,41
S	10978,77	3772556,42
T	11055,85	3772591,14
U	11186,78	3772689,24
V	11270,85	3772708,14
W	11440,07	3772731,03
X	11506,85	3772760,52
Y	11554,70	3772797,38
Z	11592,46	3772844,11
1A	11616,50	3772886,53
1B	11691,25	3773148,86
1C	11729,47	3773217,54
1D	11796,25	3773277,44
1E	11906,34	3773310,84
1F	12098,65	3773313,85
1G	12203,81	3773329,20
1H	12309,97	3773385,97
1J	12589,36	3772912,02
1K	11909,99	3772561,86
NA	11625,39	3772352,99
NB	11521,23	3772349,37
NC	11075,38	3772241,97
ND	10917,31	3772372,90
NE	11330,76	3772574,21
NF	11770,06	3772459,81
NG	10888,39	3772394,28
NH	11011,97	3772432,44
NI	11026,13	3772525,17
NJ	10866,65	3772518,29
NK	10782,83	3772488,44
NL	11231,31	3772366,25
NM	11155,93	3772370,00
NN	11055,23	3772331,49
NO	11030,28	3772336,85
NP	11002,01	3772332,83
NQ	10984,47	3772352,26
NR	11175,40	3772405,98
NS	11231,31	3772385,76
NT	11404,04	3772409,09
NU	11405,82	3772446,20
NV	11707,11	3772439,85
NW	11680,07	3772398,74

IMERYS REFRACTORY (Cape Bentonite Mine)

PROSPECTING RIGHT

Holder of Right:
IMERYS REFRACTORY MINERALS SA (PTY) LTD
Reg. No. 1973/012351/07

F.M.HATTINGH
Professional Land Surveyor: Registration No.PLS92520
Date: 8 March 2013

MINERAL : BENTONITE AND ZEOLITE

PORTION DESCRIPTION

The figures A B C D E F G H J Right Bank of Doring river K L M N P and Q R S T U V W X Y Z 1A 1B 1C 1D 1E 1F 1G 1H 1J 1K represents a Prospecting Area in extent 672,4263 ha comprising of

the REMAINDER
of the farm
UITSPANSKRAAL No.585
(excluding
Mineral Area No.2)
situated in the
HEIDELBERG MUNICIPALITY
Registration Divison
of SWELLENDAM

for which ECCA HOLDINGS (PTY) LTD with registration No.1963/05589/07 has been granted a Prospecting Right

The figure NA NB NC ND NE NF NA represents 14,7121 hectares of land being the Proposed AMENDMENT AREA
The figure NG NH NI NJ NK NG represents 2,0698 hectares of land being the BENTONITE STOCKPILES
The figures NL NM NN NO NP NQ NR NS NL and NT NU NV NW NT represents 0,7916 square metres and 1,1382 hectares of land being the Proposed QUARRIES

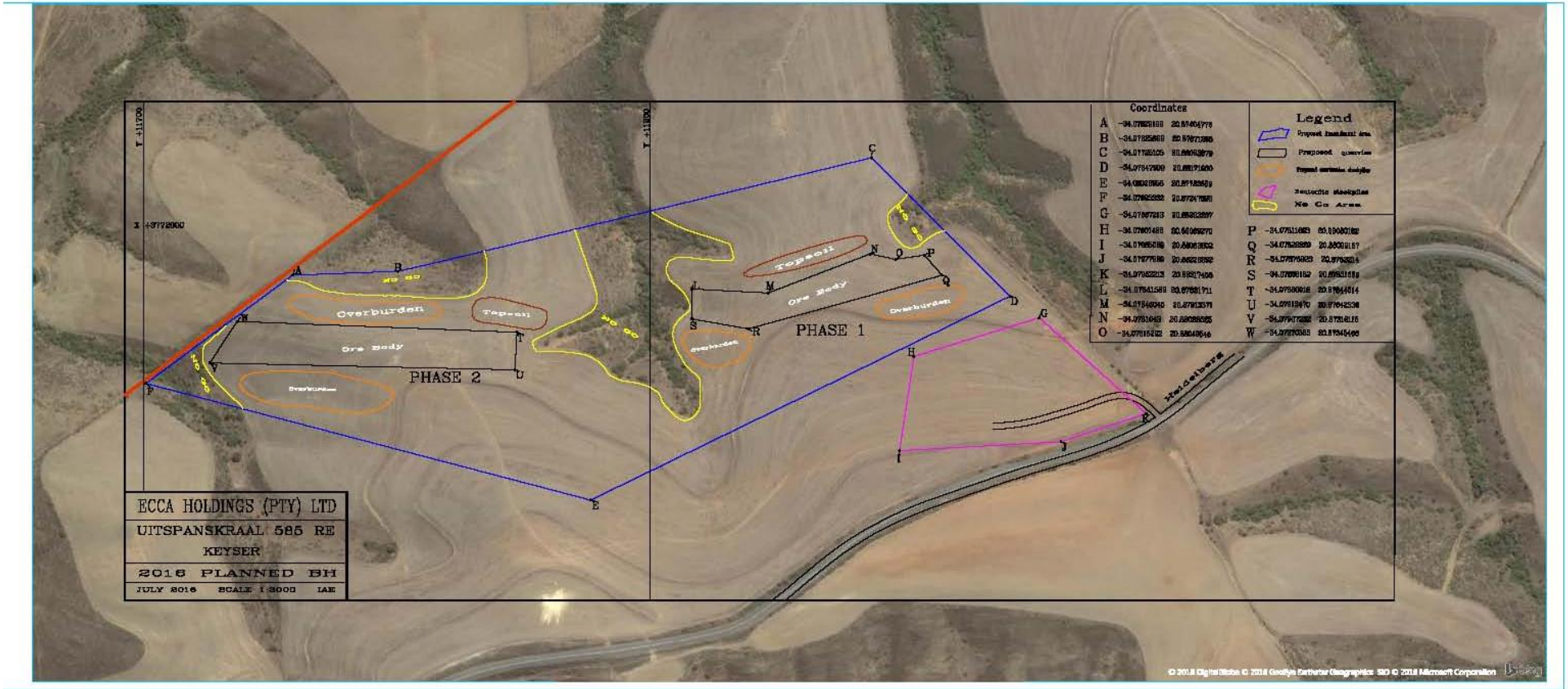
Sketch plan prepared by F.M.HATTINGH
Address: MERIDIAN SURVEYS
230 Bootes Street,
Waterkloof Ridge,
Pretoria 0027,
Tel (012) 346-1489
Fax (012) 346 1076,
E-mail:info@msurveys.co.za

REGIONAL MANAGER Date
Western Cape Region

ON BEHALF OF THE HOLDER Date
IMERYS REFRACTORY MINERALS SA (PTY) LTD

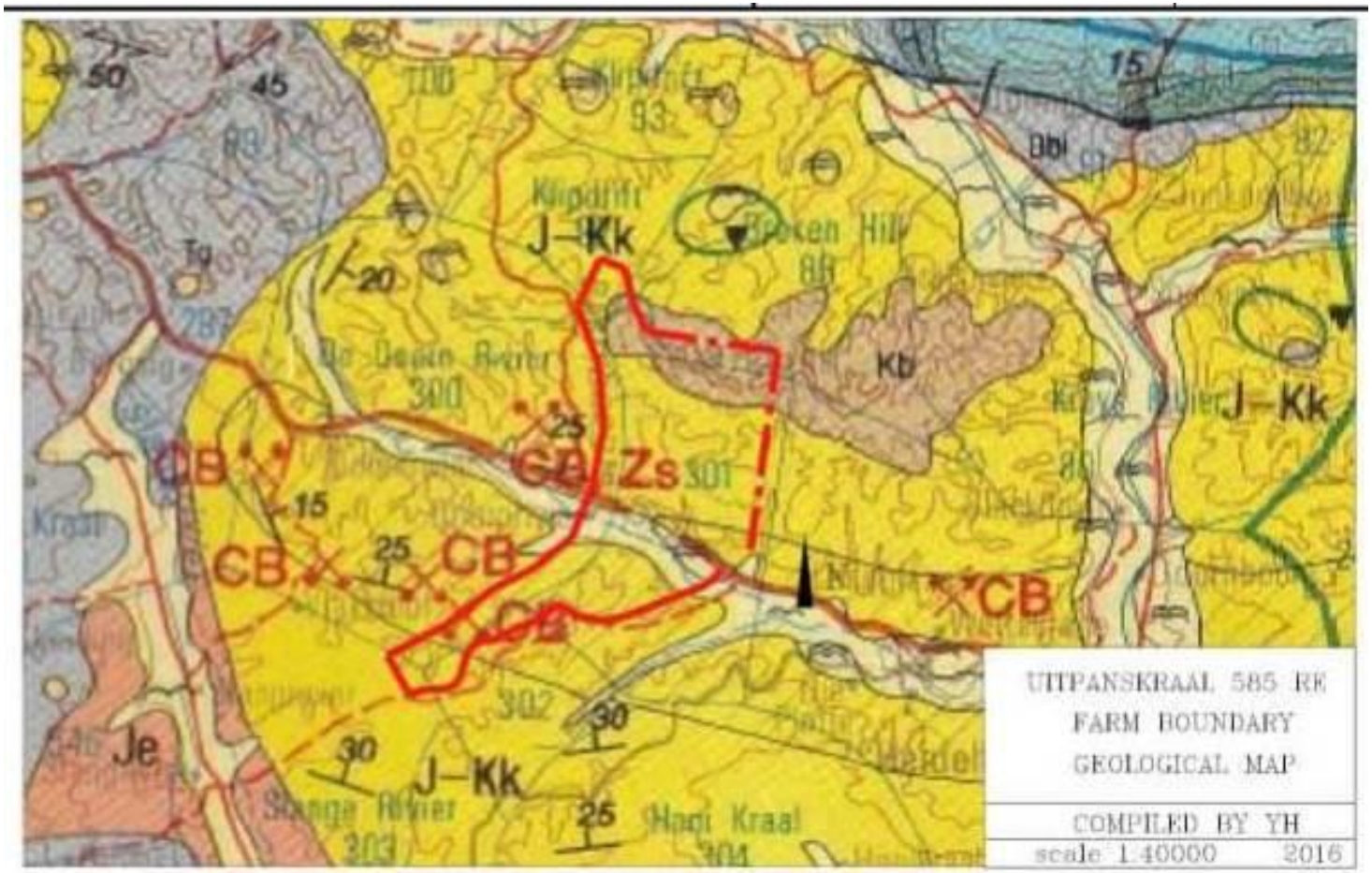
REFERENCE

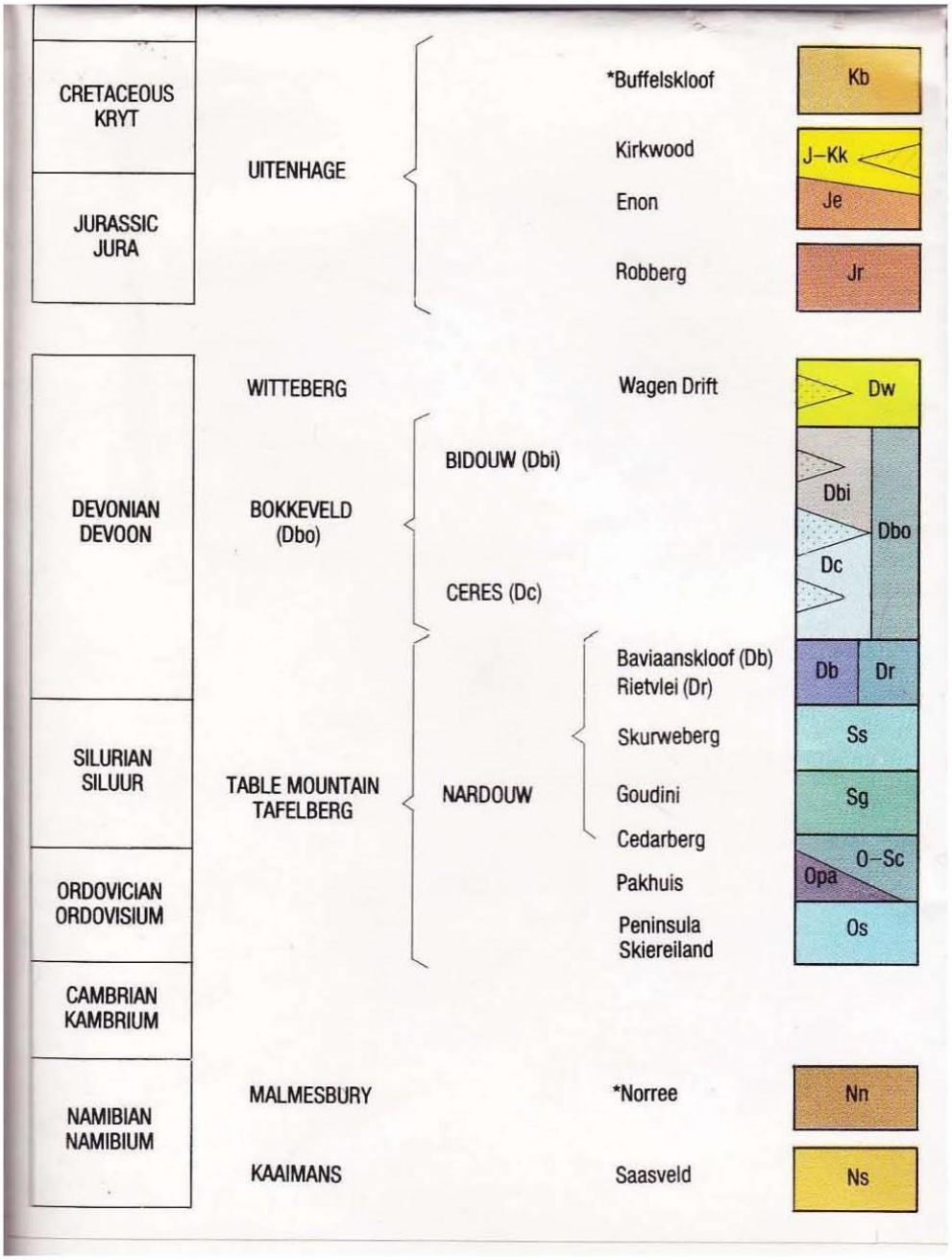
Uitspanskraal South



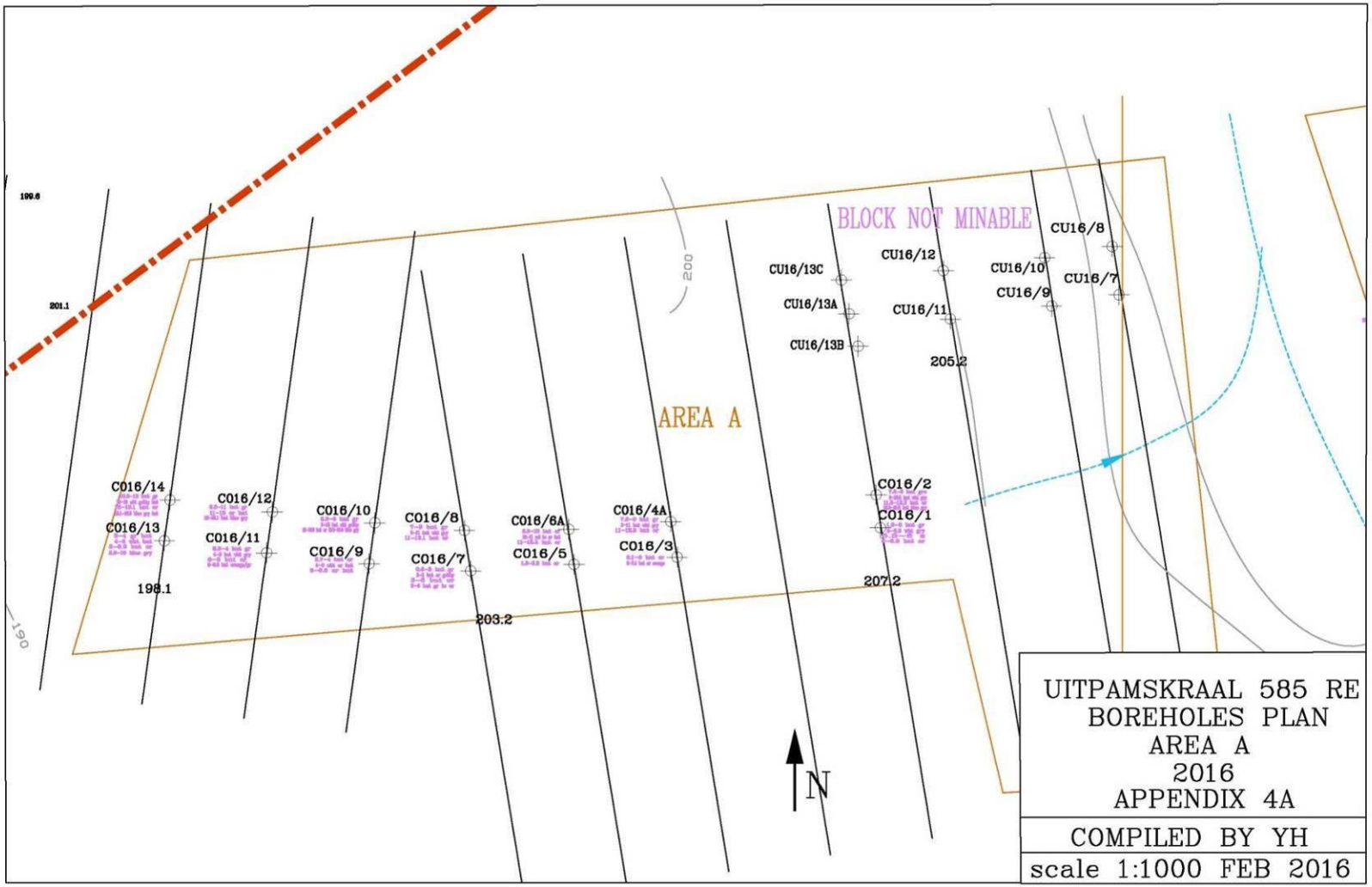
Uitspanskraal South

Appendix D3: Local Geology Map

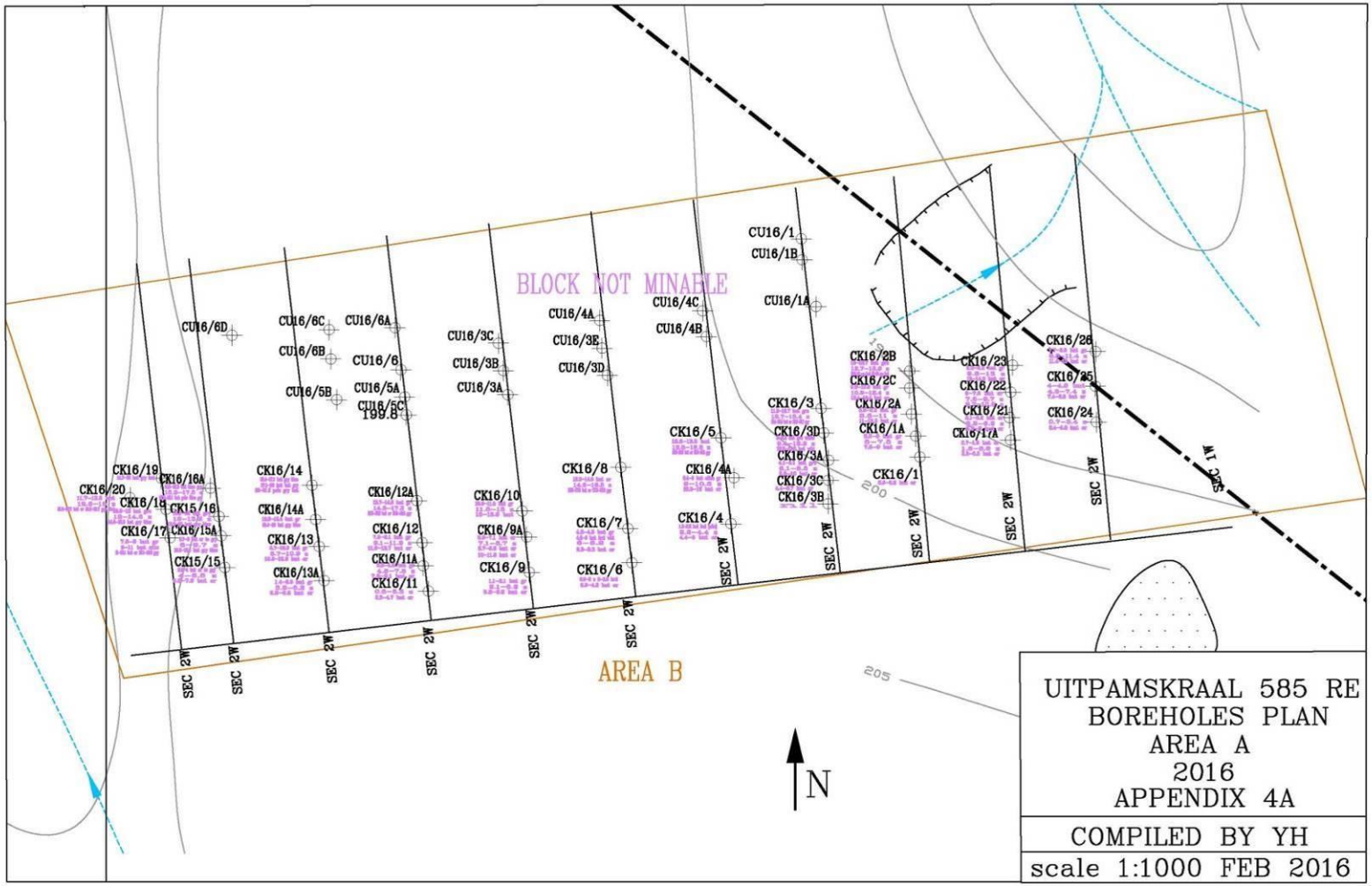

J-Kk
Kb
J-Kk
CB
CB
Zs
CB
CB
CB
CB
J-Kk
Je
Dbl
UITPANSKRAAL 585 RE
FARM BOUNDARY
GEOLOGICAL MAP
COMPILED BY YH
scale 1:40000 2016


CRETACEOUS
KRYT
JURASSIC
JURA
UITENHAGE
*Buffelskloof
Kirkwood
Enon
Robberg
Kb
J–Kk
Je
Jr
DEVONIAN
DEVOON
SILURIAN
SILUUR
ORDOVICIAN
ORDOVISIUM
CAMBRIAN
KAMBRIUM
WITTEBERG
BOKKEVELD
(Dbo)
BIDOUW (Dbi)
CERES (Dc)
TABLE MOUNTAIN
TAFELBERG
NARDOUW
Wagen Drift
Baviaanskloof (Db)
Rietvlei (Dr)
Skurweberg
Goudini
Cedarberg
Pakhuis
Peninsula
Skiereiland
Dw
Dbi
Dbo
Dc
Db
Dr
Ss
Sg
O–Sc
Opa
Os
NAMIBIAN
NAMIBIUM
MALMESBURY
KAAIMANS
*Norree
Saasveld
Nn
Ns

Appendix D4: Deposit Maps

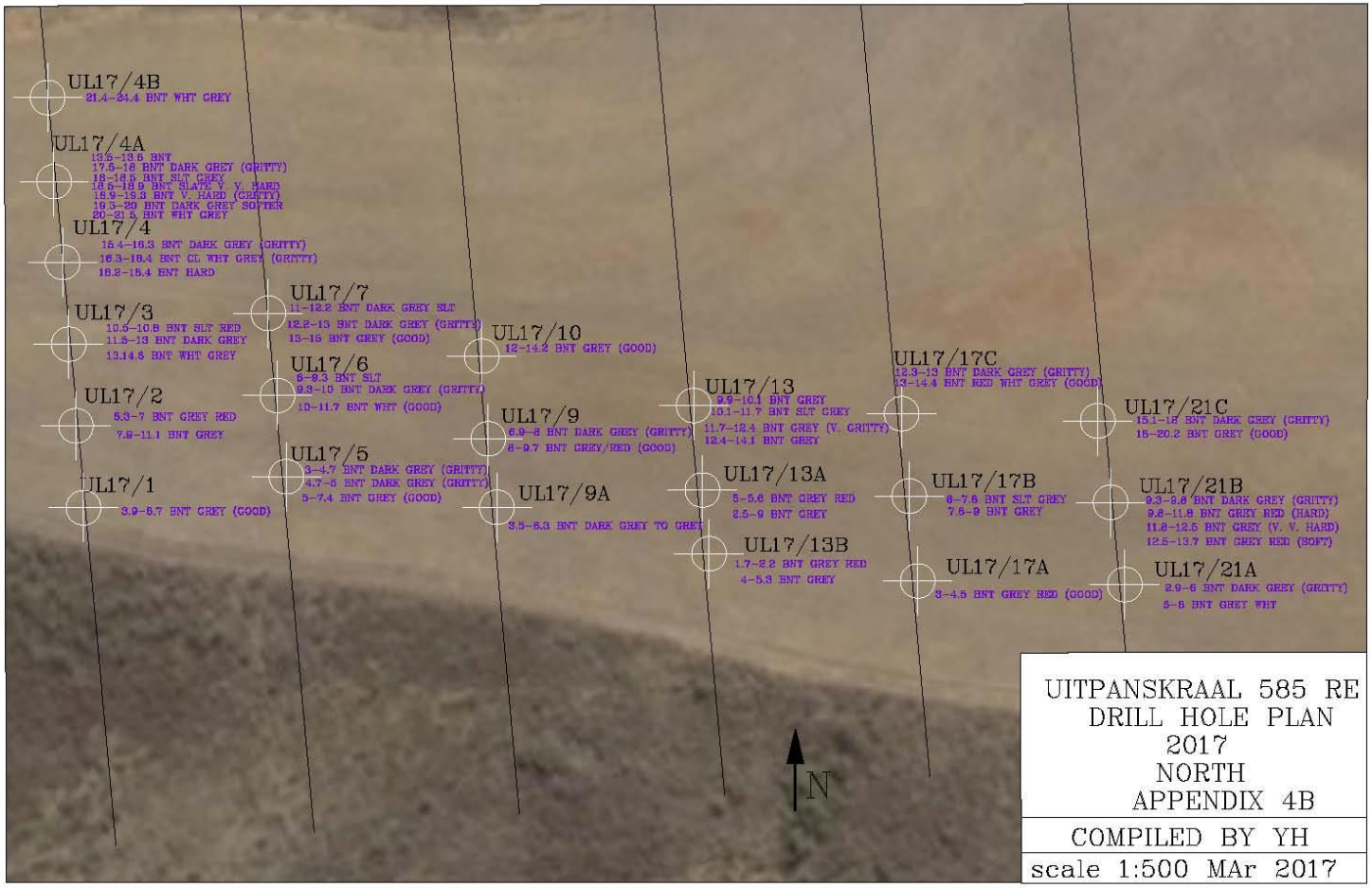


Uitspanskraal South

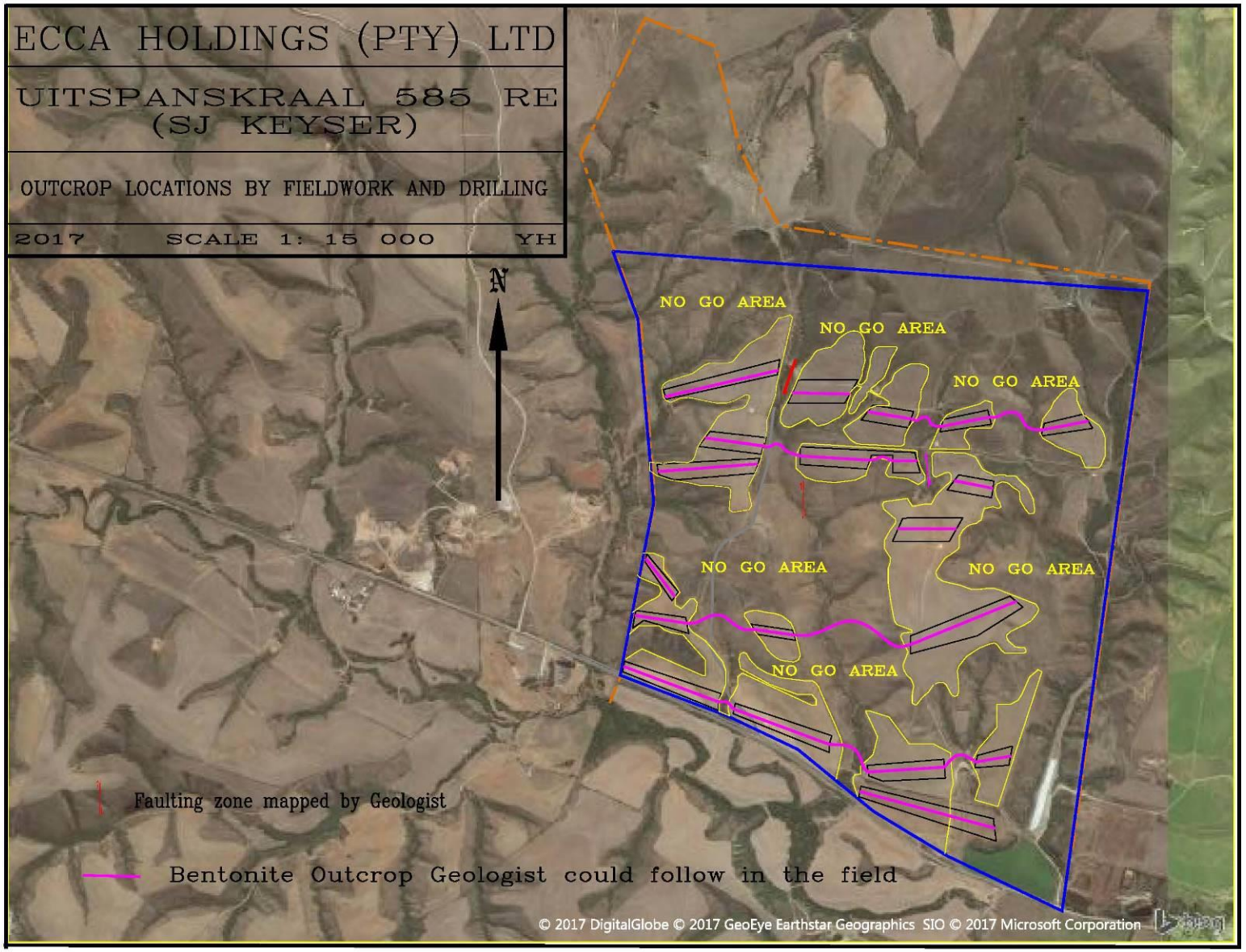


Uitspanskraal South

Uitspanskraal South



Uitspanskraal North



Uitspanskraal North

Appendix D5: Regulation 8 Requirements – Prospecting Reports

PROSPECTING REPORT

(in accordance with section 8 of the MPRDA (2002))

for

10068PR

with respect to

REMAINING EXTENT OF FARM UITPANSKRAAL 585, HEIDELBERG, WESTERN CAPE

1 DETAILS OF THE HOLDER OF THE PROSPECTING RIGHT

COMPANY NAME	Ecca Holdings (Proprietary) Limited
REGISTRATION NUMBER	1963/005589/07
PHYSICAL ADRESS	259 West Street (Lower Level)
	Centurion 0157
CONTACT PERSONS	Tawanda Mukarati
	Yoann Hoibian
POSTAL ADDRESS	PO Box 8118
	Centurion
	0046
PHONE	(012) 643 5880 ; your tel No also
CELL	079 513 9503 ; your cell no also
FAX	(012) 643 1966 ; your fax no also
E-MAIL	tawanda.mukarati@samrec.com
	yoann.hoibian@samrec.com

2 INTRODUCTION

A Prospecting Right for five years was granted to Ecca Holdings (Pty) Ltd to prospect/explore on portions of the Remaining Extent of the farm UITPANSKRAAL NO.585, district Heidelberg for Bentonite and Zeolite. The Right was granted on 13 March 2013.

This report outlines the prospecting work done in this area as well as the results thereof.

3 DETAILS OF PROSPECTING OPERATIONS

On the Remaining Extent of the farm Uitpanskraal 585, ECCA Holdings has previously mined layers of bentonite on Mineral Area 2. The prospecting work program was focused on looking for the continuation of these layers in the southern portion of the farm, as well as to explore for the continuation of proven layers on neighbouring farms in the northern part of the property. Furthermore the program was also aimed at prospecting for new layers of bentonite within the Prospecting Area. Prospecting was planned in 3 phases:

- The first phase was composed of reconnaissance geological field work and mapping and some surveys. This phase has been completed.
- The second phase included a literature study. This phase has been completed.
- The third phase will consist of invasive prospecting with trenching and drilling campaigns.

3.1 Prospecting: Phase 1 (0-12 months)

During the first phase of exploration, geological reconnaissance field work was conducted. In this process of exploration very clear surface expressions that could be indicative of bentonite, were recorded in the field. These allowed us to follow most of the layers in the field and to map them. This work enabled the creation of a map (Appendix 1) highlighting several interesting areas and in some instances the tracing of bentonite outcrops.

As a result of this field work the surveys mentioned were proven to be unnecessary and were canceled. In practice Phase 1 covered a shorter period than originally planned and we proceeded with Phase 2 after 12 months.

3.2 Prospecting: Phase 2 (12-20)

During the next 8 months a literature survey was conducted. The data gathered during this period has been compiled as a slide show in Appendix 2.

3.3 Prospecting: Phase 3 (20-current)

Phase 3 consists of invasive prospecting by trenching and eventually drilling. Proper planning, which is required for this part, was conducted during the past 4 months leading to a plan drawing which was created according to the reconnaissance field mapping (Appendix1) and shown in Appendix 3.

4 REGULATION 2(2) PLAN

The plan contemplated in regulation 2(2) is attached in Annexure A.

5 SUMMARY STATEMENT OF THE RESULTS

The non-invasive prospecting activities conducted during the last 2 years enabled us to confirm the continuation of the known neighbouring bentonite and zeolite layers. Two additional possible new layers could be identified.

6 COST

Prospecting on Remaining Extent of the farm Uitpanskraal 585, did not involve any outsourcing costs until now. In-house resources utilized were the Mining and Exploration manager, the Consulting Geologist and the Production Geologist of the mine. Indeed, it is stipulated in the Prospecting Work Program of Remaining Extent of the Farm Uitpanskraal 585 (Chapter 9.) that the phases we conducted involve only internal cost (Table 1).

In Table 1, the text highlighted in green are the phase that has been done currently and in red is the phase that has been cancel (see 3.1). The expenditure of the cancelled phase has been replace by the trenching and drilling planning as explain in 3.3.

TABLE 1: ESTIMATE OF EXPENDITURE TO BE INCURRED FOR EACH PHASE

	1ST YEAR				2ND YEAR				3RD YEAR				4TH YEAR				5TH YEAR				
3 MONTH PERIOD	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	**Total**
Field mapping		INTERNAL																			
Geophysical survey/Survey					R5000																R5000
Literature survey						INTERNAL															
Drilling and sampling									R535,200												R535.200
Sample analysis															INTERNAL						
Reserve/ resource modeling																		INTERNAL			
TOTAL																					**R540.200**
Geophysical survey/Survey					R5000																R5000

7 CONCLUSION

ECCA Holdings has completed the entire non-invasive prospecting phase which confirmed the potential of the area in terms of bentonite and zeolite reserves. It furthermore provided the Company with useful indications in order to efficiently plan the invasive prospecting activities.

The next prospecting operations that will take place on Uitpanskraal 585 Remaining Extent (Trenching/Drilling), will now have to confirm the existence, the extent, the quality and the thickness of the layers highlighted by the geological field reconnaissance (Appendix1).

Signed..... Date.....

X. MVINJELWA
DULY AUTHORISED

Appendix 1

Geological field reconnaissance map

Probable Outcrop

Surface expression signs in the field.

Southern Part, Uitpanskraal 585 RE

Northern Part, Uitpanskraal 585 RE

Appendix 2

Literature Survey

Bentonite is a clay and part of the smectite group of minerals. This occurrence is situated in the Cape basin. This basin was first formed during the Cape Fold Belt orogeny (Permian-Triassic) as a foreland basin. Thereafter it continued to subside during the fragmentation of Gondwanaland due to the opening of the South-Atlantic Ocean.

In this area there are two structural blocks visible shown in Figure 1, the highly deformed rocks of the Cape fold belt and the slightly folded post-orogenic sediments, on average dipping towards the north, resulting from normal faulting.

The Worcester Fault controls the basin between Swellendam and Riversdale (Figure 1).

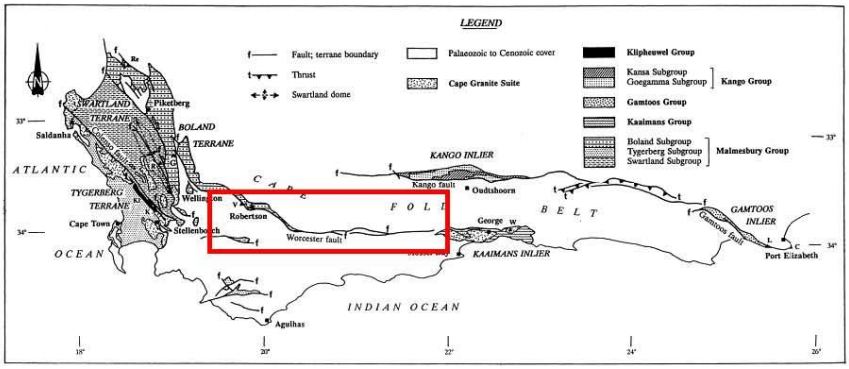


Figure 1: Localisation of the Worcester Fault (Neoproterozoic to Early Cambrian Crustal Evolution of the Pan-African Saldania Belt, South Africa; A Rozendaal, P.G Gresse, R Scheepers, J.P Le Roux; http://www.sciencedirect.com)

Bentonite is a clay forming part of the smectite group which is one of the seven groups of clay.

It is formed from the deposition of volcanic ash due to the eruption of alkaline volcanoes. These volcanoes were part of an important volcanic period during the Cretaceous (Figure 2)

After several eruptions the volcanic ash was deposited in a lacustrine environment in this basin where it was subjected to hydrothermal variations. The glass components of the ashes were chemically altered in this low energy environment and consolidated into distinct clay layers.

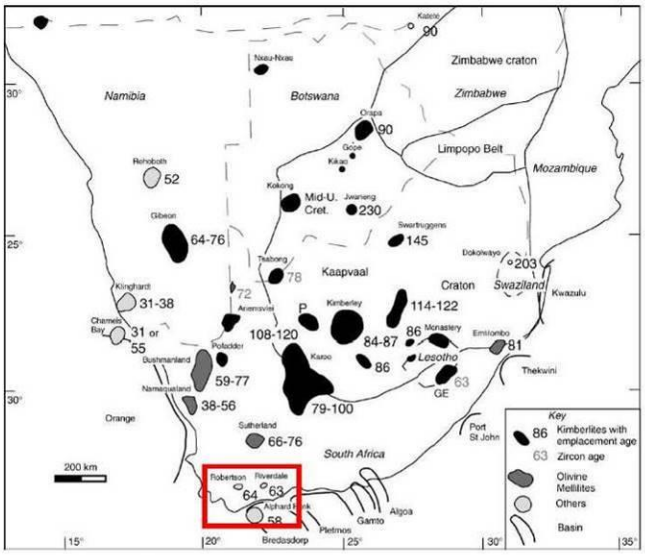


Fig. 3. Distribution, and representative ages of alkaline volcanic pipes in southern Africa. While zircon ages have been included where other data are unavailable, these only provide an upper limit on the timing of emplacement, as discussed in the text.

Figure 2: Global Map of the Southern African volcanic episode of the Cretaceous (Controls of post-Gondwanaland alkaline volcanism in southern Africa; A.E. Moore; http://www.sciencedirect.com)

The bentonite layers are concentrated within a Cretaceous stratigraphic deposit, illustrated in yellow on this Geological Map (Figure 3). More accurately within the Kirkwood formation which is composed of two kinds of Environment:

-Alluvial plain composed of conglomerates, sandstone and mudstone.

-Lacustrine composed of siltstone and randomly located bentonite layers.

The Remaining Extent of Uitpanskraal 585 is approximately outlined in red on the geological map (Figure 3).

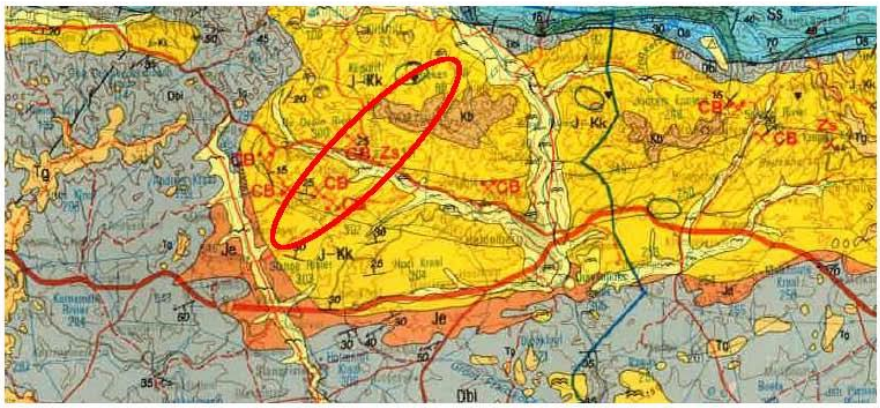
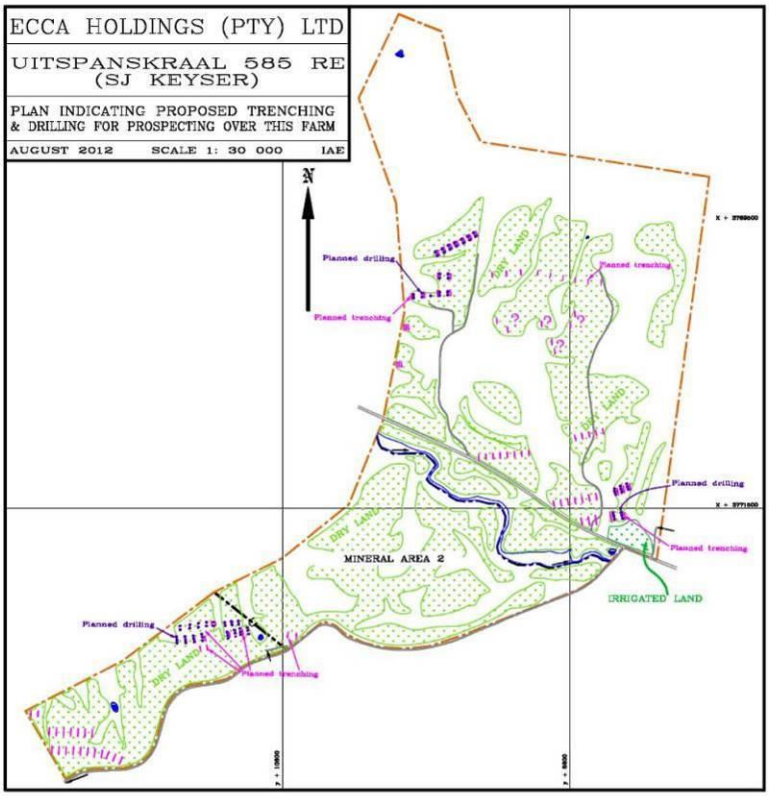


Figure 3: Local Geological Map highlighting the Remaining extent of Uitpanskraal 585 farm.

Appendix 3

Trenching and Drilling Plan



PROSPECTING REPORT

2015-2016

(in accordance with section 8 of the MPRDA (2002))

for

10068PR

with respect to

REMAINING EXTENT OF FARM UITPANSKRAAL 585, HEIDELBERG, WESTERN CAPE

1 DETAILS OF THE HOLDER OF THE PROSPECTING RIGHT

COMPANY NAME	Ecca Holdings (Proprietary) Limited
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PHONE	(012) 643 5880 ; your tel No also
CELL	079 513 9503 ; your cell no also
FAX	(012) 643 1966 ; your fax no also
E-MAIL	tawanda.mukarati@samrec.com yoann.hoibian@samrec.com

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A Prospecting Right for five years was granted to Ecca Holdings (Pty) Ltd to prospect/explore on portions of the Remaining Extent of the farm UITPANSKRAAL NO.585, district Heidelberg for Bentonite and Zeolite. The Right was granted on 13 March 2013.

This report outlines the prospecting work done in this area as well as the results thereof.

3 DETAILS OF PROSPECTING OPERATIONS

On the Remaining Extent of the farm Uitpanskraal 585, ECCA Holdings has previously mined layers of bentonite on Mineral Area 2. The prospecting work program was focused on looking for the continuation of these layers in the southern portion of the farm, as well as to explore for the continuation of proven layers on neighbouring farms in the northern part of the property. Furthermore the program was also aimed at prospecting for new layers of bentonite within the Prospecting Area. Prospecting was planned in 3 phases:

- The first phase was composed of reconnaissance geological field work and mapping and some surveys. This phase has been completed (2013-2015 Report).
- The second phase included a literature study. This phase has been completed (2013-2015 Report).
- The third phase will consist of invasive prospecting with trenching and drilling campaigns (2015-2016 Report).

3.1 Prospecting: Phase 3 (20-current)

Phase 3 consists of invasive prospecting by trenching and eventually drilling. Proper planning, which is required for this part, was conducted during the past 4 months

leading to a plan drawing which was created according to the reconnaissance field mapping (treated in the 2013-2015 prospecting report).
The drilling campaign was conducted in January 2016 (month 34). The Final Drilling positions and intersection are available in Appendix 1A and 1B.

4 REGULATION 2(2) PLAN

The plan contemplated in regulation 2(2) is attached in Annexure A.

5 SUMMARY STATEMENT OF THE RESULTS

The prospecting activities conducted during the last 2 years enabled us to confirm the continuation of the known neighbouring bentonite and zeolite layers. Two additional possible new layers could be identified. The First Drilling campaign enable us to outline the Orebodies on 2 areas and measured around 30,000t Raw material.

6 COST

Prospecting on Remaining Extent of the farm Uitpanskraal 585, did not involve any outsourcing costs before the Drilling campaign in January 2016. In-house resources utilized were the Mining and Exploration manager, the Consulting Geologist and the Production Geologist of the mine. During the Drilling campaign a contractor was used. This contracted company charged us R418.28/m and we drilled 885m which bring the Total cost to R370,178.

The Initial provision was R535,200, after the first drilling campaign we still R165,000 left of that initial provision which correspond to around 400m to drill. According to our calculation which should still drill 800m during the next 2 years on Uitpanskraal 585 RE. Therefore a provision of an extra 165,000 should be make.

In Table 1, the text highlighted in green are the phase that has been done currently and in red is the phase that has been cancel (see 3.1). The expenditure of the cancelled phase has been replace by the trenching and drilling planning as explain in 3.3.

TABLE 1: ESTIMATE OF EXPENDITURE TO BE INCURRED FOR EACH PHASE

	1ST YEAR				2ND YEAR				3RD YEAR				4TH YEAR				5TH YEAR				
3 MONTH PERIOD	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	**Total**
Field mapping		INTERNAL																			
Geophysical survey/Survey					R5000																R5000
Literature survey						INTERNAL															
Drilling and sampling												R535,200									R535.200
Sample analysis															INTERNAL						
Reserve/ resource modeling																		INTERNAL			
TOTAL																					**R540.200**
Geophysical survey/Survey					R5000																R5000

7 CONCLUSION

ECCA Holdings has completed the first drilling campaign on Uitpanskraal 585 Re, which proved a considerable of Measured Resources

The next prospecting operations that will take place on Uitpanskraal 585 Remaining Extent will now have to confirm the quality of the measured orebodies and outline the non-drilled ones.

Signed..... Date.....

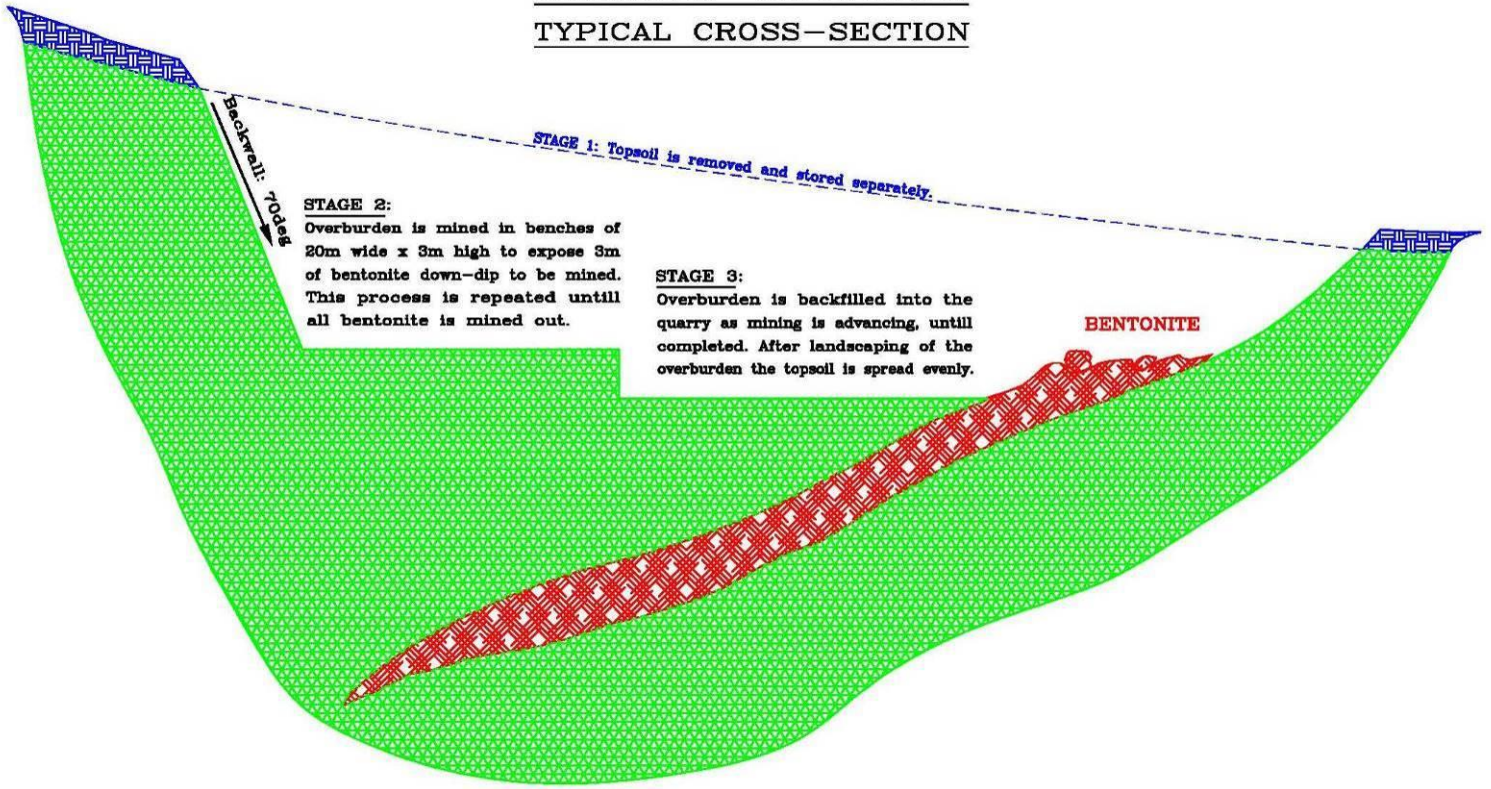
X. MVINJELWA

DULY AUTHORISED

Appendix D6: Proposed Mining Method Illustration

MINING METHOD

TYPICAL CROSS–SECTION



Appendix D7: Financial and Technical Competence Report

mineral resources

Department:
Mineral Resources
REPUBLIC OF SOUTH AFRICA

NAME OF APPLICANT:

FINANCIAL AND TECHNICAL COMPETENCE REPORT

SUBMITTED FOR A MINING PERMIT APPLICATION

AS REQUIRED IN TERMS OF ITEM B OF FORM F, ANNEXURE I OF THE REGULATIONS FOR THE MINERAL AND PETROLEUM RESOURCES DEVELOPMENT ACT (ACT 28 of 2002), AND IN ACCORDANCE WITH THE STANDARD DIRECTIVE FOR THE COMPILATION THEREOF AS PUBLISHED ON THE OFFICIAL WEBSITE OF THE DEPARTMENT OF MINERAL RESOURCES.

STANDARD DIRECTIVE

All applicants for mining permits are herewith, in terms of the provisions of Section 29 (a) of the Mineral and Petroleum Resources Development Act, directed to submit a report strictly in accordance with the following format, and as informed by the guideline posted on the Departments Official Website, together with an application for a mining permit.

1. TECHNICAL COMPETENCE

1.1 Complete the table below regarding the technical competence forecast.

TABLE 1

TECHNICAL COMPETENCE COST FORECAST										
SKILLS CATEGORY			**STATE THE ESTIMATED QUARTERLY EXPENDITURE ON EACH EMPLOYMENT CATEGORY, SUBCONTRACTOR, OR SERVICE PROVIDER AS SHOWN BELOW**								
List all the job categories that will be employed on the mine, from the mine manager to the unskilled labourers, including those of subcontractors and service providers.	**State the qualifications required for each job category**	**State Part time or Full time**	**Qtr1 (R'000)**	**Qtr2 (R0'00)**	**Qtr3 (R'000)**	**Qtr4 (R'000)**	**Qtr5 (R'000)**	**Qtr6 (R'000)**	**Qtr7 (R'000)**	**Qtr8 (R'000)**	**TOTAL FOR TWO YEARS**
MINE MANAGER	Diploma in production/ operations	Full time									
SITE ADMINISTRATOR	Diploma	Full time									
PRODUCTION GEOLOGIST	Degree	Full time									
PRODUCTION MANAGER	Degree	Full time									
ELECTRICIAN	Relevant Electrical Qualification	Full time									
DIESEL MECHANIC	Diesel mechanic qualification	Full time									
PROCESS CONTROLLER	Matric	Full time									
PROCESS ATTENDANT	Matric	Full time									
PLANT OPERATOR	Matric	Full time									
TOTAL ESTIMATED EXPENDITURE	**KZAR**		3 039	3 138	3 246	2 923	3 039	3 138	3 246	2 923	**24 692**

NOTE ! If any person (including the applicant) provides services in any job or skills category at a reduced rate or free of charge, then such person's Curriculum Vitae (CV) must be attached as documentary proof of the technical ability available to the applicant.

2. ABILITY TO MANAGE AND REHABILITATE RELEVANT ENVIRONMENTAL IMPACTS

TABLE 2 Environmental cost estimate.

ACTIVITY Mark with X which activities are applicable		POTENTIAL IMPACT	MITIGATION MEASURE	STATE QUARTERLY COST OF MITIGATION MEASURES IN THE AVAILABLE SPACE BELOW, IN RANDS	STATE THE ESTIMATED REHABILITATION COST RELATED TO THE ACTIVITY IN THE AVAILABLE SPACE BELOW, IN RANDS
Excavating	X	Surface disturbance	Rehabilitation	R303 000	R2 424 000 **(this correspond to the rehabilitation cost for the whole Operation not for the area we are applying for now)**
		Dust	Dust control measures	NA	NA
		Noise	Noise control measures	NA	NA
		Contaminated Drainage	Storm water system	NA	NA
Blasting		Fly Rock	Access control measures	NA	NA
Stockpiles	X	Surface disturbance	Rehabilitation	NA	NA
		Dust	Dust Control Measures	NA	NA
		Contaminated Drainage	Storm water system	NA	NA
Discard dumps or dams		Surface Disturbance	Rehabilitation	NA	NA
		Dust	Dust control Measures	NA	NA
		Contaminated Drainage	Storm water system	NA	NA
Loading, hauling and transport	X	Noise	Noise control measures	NA	NA
		Dust	Dust control Measures	NA	NA
Water supply dams and boreholes.		Surface disturbance	Rehabilitation	NA	NA
Accommodation, offices, ablution, stores, workshops etc.		Surface disturbance	Rehabilitation	NA	NA
Processing Plant		Noise	Noise control measures	NA	NA
		Dust	Dust control Measures	NA	NA
		Contaminated Drainage	Storm water system	NA	NA
		Surface disturbance	Rehabilitation	NA	NA
			TOTAL	R303 000	R2 424 000

3. FINANCIAL COMPETENCE

TABLE 3.1 : Financial implications of the project

CASH FLOW FORECAST (Complete the quarterly information and totals as specified by the "ITEM" column below)									
ITEM	**Quarter 1**	**Quarter 2**	**Quarter 3**	**Quarter 4**	**Quarter 5**	**Quarter 6**	**Quarter 7**	**Quarter 8**	**TOTAL**
PRODUCTION The mass or volume of the product to be produced in each quarter, either in tons, m^3, grams, carats, etc., whichever is applicable.	8 194	8 471	8 855	6 500	8 194	8 471	8 855	6 500	64 040
ITEM	**Quarter 1 R'000**	**Quarter 2 R'000**	**Quarter 3 R'000**	**Quarter 4 R'000**	**Quarter 5 R'000**	**Quarter 6 R'000**	**Quarter 7 R'000**	**Quarter 8 R'000**	**TOTAL R'000**
PRICE The expected price that will be received for the abovementioned product	3 000 R/t	3 000 R/t	3 000 R/t	3 000 R/t	3 000 R/t	3 000 R/t	3 000 R/t	3 000 R/t	3 000 R/t
REVENUE The mass or volume of production multiplied by the price	24 582	25 413	26 565	19 500	24 582	25 413	26 565	19 500	192 120
OPERATING COST Estimated quarterly operating cost (as shown in table 4.2 herein) of stores, materials, electricity, water, fuel and other (Excluding labour and environmental cost)	-18 765	-19 129	-20 278	-14 885	-18 765	-19 129	-20 278	-14 885	-146 114
TECHNICAL COMPETENCE COST TO BE PROVIDED FOR Estimated quarterly cost shown in table 1 above, i.e. salaries, wages, labour, service providers, subcontractors, etc.	-3 039	-3 138	-3 248	-2 923	-3 039	-3 138	-3 248	-2 923	-24 692
ENVIRONMENTAL COST Estimated quarterly cost shown in table 2 above and divide the total rehabilitation cost among the quarters. The total of the environmental cost must equal all the quarterly environmental costs and the total rehabilitation cost combined.	-303	-303	-303	-303	-303	-303	-303	-303	-2 424
CAPITAL AND OTHER The cost (as shown in table 4.1 herein) of land, machinery, the plant, buildings and infrastructure and any other costs. ***Cape Bentonite is already producing for more than 50 years. It is financed on working cost.***	NA	NA	NA	NA	NA	NA	NA	NA	NA
WORKING PROFIT / LOSS The revenue minus all the costs listed above	2 475	2 843	2 736	1 389	2 475	2 843	2 736	1 389	21 664

NOTE! If the total is a working loss, then it means that the applicant cannot provide for the technical ability or mine the mineral optimally in a period of two years.

TABLE 3.2– FINANCING THE PROJECT

CATEGORY	AMOUNT	SUPPORTING INFORMATION
State the amount required to fund the project	NA	Cape Bentonite is already producing for more than 50 years. It is financed on working cost.
State the amount the applicant has available to fund the project	NA	Cape Bentonite is already producing for more than 50 years. It is financed on working cost.
State the outstanding amount required to fund the project	NA	Cape Bentonite is already producing for more than 50 years. It is financed on working cost.

CATEGORY	DESCRIPTION	SUPPORTING INFORMATION
State how the outstanding amount will be financed, e.g. Loan, investor, etc.	NA	

NOTE ! If the applicant does not have sufficient financial resources readily available (or cannot provide) for the working losses, and for the operating, technical competence and working cost of the first quarter stated in the cash flow forecast above, it cannot be concluded that the applicant has or can provide for the necessary financial resources to carry out the mining activities and to mitigate and rehabilitate relevant environmental impacts.

4. SUPPORTING INFORMATION

TABLE 4.1- CAPITAL COST ESTIMATE: Complete the information required in the table below

COST CATEGORY	QUARTERLY RENTAL WHERE APPLICABLE R'000	OUTRIGHT PURCHASE AMOUNT
Land	Cape Bentonite is already producing for more than 50 years. It is financed on working cost.	
Buildings and infrastructure		
Processing plant		
Machinery		
Other (specify)		
TOTAL (to be reflected in the cash flow forecast in table 3.1 above)	NA	NA

TABLE 4.2- OPERATING COSTS: Complete the information below:-

COST CATEGORY		Quarterly cost R'000
Fuel (average over 2 years period)		500
Electricity (average over 2 years period)		817
Water		0
Stores and materials (average over 2 years period)		1 020
Other (specify) Average over 2 years period	Soda Ash and Coal	750
TOTAL QUARTERLY COST (must be reflected in the cash flow forecast in table 3.1 above) *This is an average over the 2 years period*		3 087

TABLE 4.3– BACKGROUND TO OPERATING COSTS: Complete the information below:-

CATEGORY	REQUIREMENT	COMPLETE THIS COLUMN
MINERAL	State the mineral to be mined	Bentonite
FUEL	State volume or tonnage of earth to be excavated per quarter **This is an average over the 2 years period**	115 000t
	State number of excavators to be used	2
	State number of loaders to be used	2
	State number of trucks to be used	5
ELECTRICITY	State volume or tonnage of material to be processed in the plant **This is an average over the 2 years period**	8 005t
	List plant or equipment that requires electricity	-2 Mills; -1 Pan Mill; -10 conveyors; -1 Noodler; -1 Cutter;
WATER	State volume of water to be used	0
	Where will the water be obtained?	**NA**
OTHER	Describe other operating costs to be incurred, if applicable	-Soda Ash (Additive required in Bentonite process) -Coal (To run drier)

. IDENTIFICATION OF THE REPORT

Herewith I, the person whose name and identity number is stated below, confirm that I am the person authorised to act as representative of the applicant in terms of the resolution submitted with the application, and confirm that the above report and appendices comprise the details and documentary proof of the Financial and Technical ability required to be submitted with this application in terms of form F, annexure I of the MPRDA Regulations.	
Full Names and Surname	XOLISA MYINJELWA :
Identity Number	6907055952089

.....END.....