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Minutes for the Scoping Phase Public Meeting held for the:

Proposed Doornhoek Fluorspar Mine

DMR Reference No: NW30/5/1/2/2/10110MR

Date: 28 July 2016 Scoping Phase Public Meeting – Minutes

Place: Ramotshere Moiloa Local Municipality Town Hall, Zeerust

Time: 18:00 Attendees:

Attendees:	
Michael Grobler (MG)	EXIGO – Independent Environmental Assessment Practitioner
Ferdinand Mostert (FM)	EXIGO – Hydrogeological Specialist
Chantal Uys (CU)	EXIGO – Independent Environmental Assessment Practitioner
Allan E Saad (Snr) (AES)	Project Manager/Applicant Representative — SA Fluorite Pty Ltd
Allan D Saad (Jnr) (ADS)	Project Manager/Applicant Representative - Project
Mr D Rassow (DR)	Landowner of unknown portion(s) of the farm Kwaggafontein
Mr Geo Booysen (GB)	Landowner of portions 2, 3, & 4 of the farm Knoflookfontein 310
Mrs Elise Booysen (EB)	Landowner of portions 2, 3, & 4 of the farm Knoflookfontein 310
Mr Loek van den Heever (LvdH)	Occupier of portions 8 & 9 of Farm 306 JP and portions 30 & 31 of
	the farm Doornhoek 305 JP
Mr J van den Heever (JvdH)	Occupier of portions 8 & 9 of Farm 306 JP and portions 30 & 31 of
	the farm Doornhoek 305 JP
Ms Karien Botha (KB)	Landowner of portion 29 of the farm Paardeplaats 296 JP
Ms Jeanne du Toit (JdT)	Landowner of unknown portion(s) of the farm Strydfontein 326 JP
	and owner of the Postnet in Zeerust
Mr J Snyman (JS)	Landowner of portion 2 of the farm Kwaggafontein 297 JP
Mr Herman Peters (HP)	I&AP who attended the meeting, resident of Marikana
Ms Imaan Soyed Suliman (IS)	Chairperson for the Democratic Alliance in Ramotshere Moiloa
	Local Municipality

These	Notes	Action







1-3	Agenda, Welcoming & Introductions	
	The meeting was opened by Mr Michael Grobler (MG), who introduced the	
	independent environmental consultant company undertaking the EIA process	
	(namely Exigo Sustainability (Pty) Ltd) and thanked the meeting attendees for	
	their time. He stated that the presentation would be given in English but that	
	questions in Afrikaans were welcome. The meeting would be recorded for	
	minute purposes. Agendas were circulated to the meeting attendees.	
	minute purposes. Agendas were circulated to the meeting attendees.	
	MG stated that Ms Chantal Uys (CU) will be taking minutes and asked whether	
	the meeting could be recorded for meeting purposes. All answered in the	
	affirmative. MG introduced the project team which were present at the	
4	meeting and the applicant representatives.	
4	Meeting Conduct & Attendance Register	
	MG briefly discussed the conduct for the meeting. An attendance register was	
	circulated.	
5	Purpose of the meeting	
	MG stated that the meeting is a Scoping Phase Public Meeting and briefly gave	
	the purpose of the meeting as follows:	
	1. To provide feedback on the proposed Doornhoek Fluorspar Mine	
	Environmental Authorisation and Mining Right Application Process to	
	Interested and Affected Parties (I&APs)	
	2. To discuss potential impacts	
	3. To obtain input and guidance from I&APs for the Environmental	
	Impact Assessment and Environmental Management Programme	
	Phase	
	4. To clarify the way forward	
6	EIA Process	
U		
	MG gave a breakdown of the EIA process which would be followed in terms of	
	the National Environmental Management Act (NEMA) (Act 107 of 1998). The	
	project is currently in the review of the Draft Scoping Report (DSR) phase until	
	the 15 th of August 2016, after which the Final Scoping Report (FSR) would be	
	submitted to the Department of Mineral Resources (DMR) and after approval	
	thereof the Environmental Impact Assessment (EIA) Phase will commence. The	
	project is currently at the beginning of the process.	
7-8	Ownership	
	Mr Allan E Saad (AES) explained the ownership of the project. The major	
	shareholder was ERG (51%), a large international company. Please refer to	
	slide 8.	
9	Project Location	
	AES indicated the locality of the proposed mine on a map. He stated that the	
	project is located 15km South-East of Zeerust.	
10-19	Project History / Background	
	AES gave a short overview of the project history to date. Previously the	
	mineral rights were owned by individual landowners prior to reverting back to	
	the state. In 2004 the mineral rights were consolidated. Prospecting has been	
	taking place since 2005. AES listed the activities undertaken to date.	
	taking place since 2003. Als hated the delivities dilucitated to date.	
	AES indicated the ore body which was planned to be mined over a 30 year life	
	of mine (LOM). Drilling had been done to a depth of 90 m, as this is the depth	
	of the resource. The geology of the project area is predominantly dolomite. He	
	indicated the outline of the orebody, an area of 15 km by 5k m which consisted	
	of both low grade and high grade zones. Two areas have been identified for	
	mining during the initial 30 year life of mine but the resource is sufficient for a	





	LOM of over 100 years. Shallow opencast mining would take place to a depth of 90 m.	
	AES stated that the current market for fluorspar is very limited. There was however potential for downstream beneficiation, however this will only occur once the mine is established and will be subject to separate studies and authorisations (if applicable). He indicated the fluorspar world reserves on slide 16. The proposed Doornhoek fluorspar mine has the largest fluorspar deposit in the world, however the operation will be small scale due to current market limitations. AES explained that there was both high grade and low grade fluorspar and explained that the focus of the proposed mine would be on higher grade fluorspar. He listed the uses for both types of fluorspar. He stated that in terms of project development, the focus is currently on the Mining Right Application (MRA) and obtaining the relevant permits, after which a Bankable Feasibility Study (BFS) would be conducted. A preliminary feasibility study had been indicated which showed the proposed mine to be feasible. Following the BFS, development partners would need to be approached and funds will need to be raised to develop the mine.	
20-23	Project Description MG indicated that there are 3 resource areas, namely Resource Area A, C and D. He indicated the proposed mining schedule for each resource area. He informed the meeting attendees that the current application is limited to a 30 year LOM after which amendments or additional applications will be required to extend the LOM. Mining depth would be from 60 to 90 m. There would be an initial construction period of 5 years. The mining area is 23 000 Ha however the actual footprint area is approximately 400 Ha. The reason for the large mining right area is due to the large area that is covered by the prospecting right (PR) which is being converted to a mining right (MR) as part of this application.	
	He indicated the relevant municipalities within which the mining right area falls. He listed the farm portions on which the open pits and mine infrastructure would be located. He listed the mine infrastructure that is proposed to be constructed. He asked whether anyone had questions with regards to the locality of the proposed mine. No questions were raised in this regard.	
24	Applicable Legislation MG gave an overview of the applicable legislation for the MR and Environmental Authorisation (EA) applications as well as other relevant licences and permits. He listed the key Acts which are applicable to the project. The competent authority for the project is the DMR. The MR and EA applications were lodged in July 2016. The proposed project is still at the start of the process. An Integrated Water Use Licence Application (IWULA) will be submitted to the Department of Water and Sanitation (DWS). He stated that water supply for the project is very important and that a hydrogeologist was present to give feedback with regards to the hydrogeological baseline for area which had been determined over 3 years of monitoring.	
25-26	EIA Process MG explained the EIA process which will be followed. The DSR is available for review until the 15 th of August 2016. He stated that the size of meeting should not be considered indicative of the importance thereof. HE informed them that consultation is also ongoing in the background. Another public meeting will be held during November/December 2016 when the Draft Environmental	





	Impact Assessment and Environmental Management Programme Report	
	(EIA&EMPR) will be made available for comment. MG invited the attendees to	
	however comment throughout the process.	
27-28	Specialist Studies being conducted	
	MG listed the specialist studies being conducted for the project at present. The	
	studies will address all comments raised until present by the relevant	
	authorities as well as Interested and Affected Parties (I&AP's).	
29-40	Baseline Description	
	MG indicated the overall sensitivity of the project area, especially the sensitive	
	drainage features, water resources, heritage sites and ecological sensitive areas. He stated that the baseline information for the project is provided in	
	detail in the DSR. He gave an overview of the vegetation types that occurred in	
	the area.	
	the area.	
	MG stated that mine planning and the placement of mine infrastructure are	
	being planned around the sensitivities on site. He indicated the surface water	
	resources in the project area on a map. He handed over to Mr Ferdinand	
	Mostert to discuss the groundwater baseline information. He furthermore	
	stated that water monitoring had commenced in 2013 and the potential	
	impacts now needed to be assessed.	
	Mr Ferdinand Mostert (FM) concurred that monitoring had taken place since	
	2013. He stated that the hydrogeological baseline is based on the 3 years of	
	monitoring data. There were 2 aquifer systems in the project area of which	
	one was a shallow and the other a deeper aquifer. There are a large number of	
	springs in the area which are formed by geological structures and result in	
	numerous hydrological compartments. He stated that the recharge is also	
	relatively high due to the dolomitic aquifer.	
	FM stated that a hydrocensus was conducted in 2013 and again in 2016. 116	
	sites were sampled of which 112 were borehole, 3 springs and 2 surface water	
	bodies. The average water level is 16m below ground level. Artesian wells	
	occur within in study area. Not all the boreholes have static water levels. He	
	indicated the difference between water levels from the 2013 and 2016	
	monitoring data. Water levels had lowered due to drought and abstraction. FM	
	stated that with an elevated topography deeper water levels could be	
	expected, while low lying areas had shallower water levels. The groundwater	
	flow was expected to follow the topography in the area. Water predominantly	
	flowed in a north north-easterly direction. Deeper water levels occurred to the	
	south of the project area.	
	He stated that calcium, magnesium and bicarbonate seepage could be	
	expected from the dolomitic aquifer. The baseline fluorite values in the project	
	area were elevated and above the South African National Standards (SANS)	
	drinking water standards, especially in proximity to the resource body.	
	MG indicated the heritage resources and sites of heritage importance that	
	occurred in the project area. These sites were mostly related to the Iron Age	
	and formed part of the larger Kaditshwene cultural heritage site. MG stated	
	that other environmental aspects relating to the project were discussed in	
	detail in the DSR.	
41	Alternatives considered	
	It is a requirement that alternatives be considered in terms of legislation. MG	





	listed the alternatives which were being considered for the project in line with Appendix 2 and 3 of GNR 982 (NEMA EIA Regulations 2014).	
42	Draft Site Plan	
	MG indicated the draft site plan for the mine on Slide 45. He indicated the	
	location of the proposed mine footprint on the map.	
43-46	Public Participation	
	MG gave an overview of the public participation process conducted to date. He	
	stated that an extensive list of I&AP's is provided in the comments and	
	response register (CRR) in the DSR. The DSR is currently out for review until the	
	15th of August 2016. Hard copies of the report were available at the Zeerust	
	and Lichtenburg Public Libraries.	
47	Way Forward	
	MG indicated the proposed way forward. Refer to slide 50.	
48-49	FAQ's	
40 43	Where will water be sourced from?	
	As part of the hydrogeological impact assessment study, a water supply	
	options analysis study was also being conducted. FM listed the water supply	
	options which were being considered and indicated these options on a map. A	
	combination of these options could also be utilized. These options were in the	
	process of being assessed.	
50	FAQ's	
	How will water impacts be determined?	
	FM gave an overview of the methodology which was followed to determine	
	possible water impacts, being a desktop review of the monitoring results and	
	analog sites; hydrocensus; identification of contamination sources, pathways	
	and receptors; and aquifer characterization (via pump tests). All info would be	
	compiled into a groundwater model which would inform the potential impacts	
	and subsequent mitigation measures.	
51	FAQ's	
	When will the mine be built and how long will it take?	
	The DMR should approve the MR in a year, i.e. by approximately 2017.	
	Construction of mining infrastructure and access roads will take 1 to 5 years.	
	Actual mining would possibly only occur in 2023.	
52	FAQ's	
	What about surface lease agreements and compensation?	
	Upon awarding of the MR, surface lease agreement or buy-out agreements will	
	be negotiated with the relevant landowners. Damage to infrastructure will be	
	subject to compensation which will be negotiated with the project developer.	
53	FAQ's	
	What will be done to prevent damage to buildings and infrastructure due to	
	mining activities?	
	A Blast and Vibration study is currently underway. Mining activities will be	
	carefully monitored and should any damage to any property occur due to	
	mining activities, the owner of the property will be fairly compensated after	
	consultation and negotiation with the project developer.	
54	FAQ's	
	How many jobs will the mine create?	
	It is foreseen that the mine will create approximately 190 employment	
	opportunities at full production.	
55	FAQ's	
	What about local suppliers supplying services to the mine?	
	MG listed the potential suppliers to the mine. He stated that the second and	
	third tier benefits of the mine in terms of socio-economic benefits may far	
	and the series of the finite in terms of socio economic benefits may far	





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surpass the direct socio-economic benefits.

Discussion and Questions

MG opened the floor for discussion. He invited attendees to also submit comments following the meeting. Ms Jeanne du Toit (JdT) from the farm Strydfontein asked about seepage. AES clarified that she was referring to Acid Mine Drainage (AMD). He stated that sulphides result in AMD forming but due to the dolomitic nature of the area there were no sulphides and therefore there would be no AMD associated with the proposed mine. He stated that the tailings from the Witkop Mine are being used for agricultural lime. MG stated that a geochemical study is underway in terms of the National Environmental Management: Waste Act (NEMWA) to assess and classify the waste materials from the mine and the provisional results from the study supported Mr Saad's statement with regards to AMD. FM stated that the dolomitic environment also allowed for a larger buffer capacity due to the alkaline environment. JdT asked whether this information was included in the information provided. MG answered in the affirmative and stated that a dropbox link to the DSR had been provided but that electronic copies of the report could also be collected from Ms Chantal Uys. JdT indicated that she would collect an electronic copy following the meeting. Mr Loek van den Heever (LvdH) asked whether a liner is required. MG stated that a drainage barrier system will in all probability be required and the technicalities associated with this will need to be determined but not necessarily be required. LdvH asked whether the classification of the waste material in terms of the NEMWA was known. FM answered in the negative and indicated that the study in this regard is still underway. MG stated that the preliminary results from the geochemical study were favourable.

Please note that electronic copies of the DSR were couriered to Ms du Toit following the meeting.

Mr Herman Peters stated that he was from Marikana just outside Rustenburg which was a beautiful farming area until the mines started approximately 20 years ago which led to an Influx of people, lack of employment, housing problems and theft. He further stated that fluorite is poisonous and has health impacts for people and animals. He stated that blasting disturbs the poisonous fluorite which then leaches into the groundwater. MG stated that he was familiar with the socio-economic impacts in the Marikana area, and that past mining activities had a bad reputation however the legal environment associated with mining was now much more stringent than 20 years previously. He stated that enforcement in this regard was also on the increase. The draft socio-economic mitigation measures for the proposed Doornhoek Fluorspar Mine are provided in the DSR. Mine workers will not be accommodated on site but in the town of Zeerust and surrounding area. MG stated that he was not familiar with the toxicity of fluorite and asked for input from Mr Saad and Mr Mostert in this regard. FM indicated that the existing fluorite baseline is currently above the SANS drinking water standards, but that the toxicity of fluorite will be investigated and addressed as part of the EIA process.

HP stated that water monitoring undertaken by Metago indicated that the water in the Marikana area is not suitable anymore for even animals. He also stated that no rehabilitation had been done for the Witkop Fluorspar Mine. He asked whether the same impacts will happen again or whether measures will be put in place to prevent this. MG stated that the older mines did not have Storm Water Management Plans (SWMP's), but that a SWMP will be developed for the proposed Doornhoek mine. Dirty water will be captured and





re-used in the mining process. MG stated that the location of the proposed open pits is above that of the Tailings Storage Facility (TSF) and would thus act as a sink. He stated that the potential pollution points are therefore higher than the water being abstracted. FM stated that a groundwater model and monitoring protocol would be developed in order to determine early on whether there was any seepage. HP was of the opinion that this would be too late. He stated that the EMP only focused on pollution in a specific area. He recommended that a combined EIA be done with other proposed mines in the area in order to determine the cumulative impacts. MG stated that the EIA Regulations required an assessment of cumulative impacts and that Doornhoek would be assessing the impacts from the Witkop Mine along with its own. MG stated that the DMR has to consider and advice as to the number of proposed mines which are approved. He explained the monitoring methodology for the mine. Monitoring boreholes will be placed strategically and not just around the open pits.

HP stated that new mines tell you all these " nice stories", but that they needed to ensure that everything is done correctly. FM stated that monitoring is a requirement by the DWS. HP asked whether the people responsible for the monitoring are from the mine or independent. FM answered that they were independent, however the mine could also conduct their own monitoring but this would be subject to independent external audits.

Ms Imaan Suliman (IS) asked how much water is required at full production considering that water levels in the area are actually declining. She asked how much groundwater will be used. She also asked of the 190 jobs, who will be employed. She stated that use was usually made of cheap labour which consisted mostly of foreigners and not locals and asked what guarantees were in place that locals will be employed. MG stated that he is aware of the water supply problems in the area and therefore studies are being done in this regard. The water demand of the mine was unknown at this stage and would be determined going forward. He stated that the studies are scientifically based and will inform whether groundwater is a viable option. This will be a recommendation from the specialists. MG stated that in terms of labour, a Social and Labour Plan (SLP) is required for the project which in turn requires a certain percentage of local employment. AES stated that use will be made of local labour as far as possible, and that they had no wish to use foreigners as there were existing skills in area due to the Witkop Mine. The proposed Doornhoek Fluorspar mine was in favour of local community upliftment. AES stated that another water supply option identified was to use grey water from the Zeerust Sewage Treatment Plant (STP) and this was being investigated in terms of costs and viability. MG stated that the municipal Integrated Development Plan (IDP) was reviewed as part of the SLP and consisted of mostly proposed water projects. Meeting were held with both the district and local municipalities and the mine propose to assist in this regard as part of SLP. IS confirmed that water supply was a large problem within the municipality.

HP stated that monitoring had been done on Mr Badenhorst's farm and that a pump had been broken and asked what was being done in this regard. FM stated that he was not aware of any damage to pumps but that he will follow-up in with the contractor in this regard. HP asked what the usage of electricity by the mine in MW will be and whether Eskom had sufficient capacity. MG answered that the mine would require a 132 KV line and that an application

Please note that this matter was resolved.





was being made to Eskom in this regard.

JdT asked for the relevant contact person in both the Ramotshere Moiloa Local Municipality (RMLM) and the Ditsobotla Local Municipality (DLM). MG answered that the relevant contact persons and contact details was provided in the CRR in the DSR.

Please refer to the CRR in the

LvdH asked whether fluorite was soluble or not. FM answered that is was soluble.

Mr Geo Booysen (GB) asked about water monitoring and whether the Water Use Licence (WUL) will be awarded with certain conditions. He stated that monthly monitoring is reactive and not proactive. FM stated that a monitoring programme will be recommended and this programme is usually part of the conditions issued by the DWS. FM stated that independent monthly monitoring could take place but that the mine could also monitor more frequently and independently audit this. FM suggested that an automated system to monitor water levels every 5 minutes be considered.

Noted.

GB asked what the lengths of the access roads were. CU answered that the access haul roads would be approximately 18 km. HP stated that dust is a concern with regards to access roads. MG stated that potential air quality impacts, such as dust, was being investigated and an air quality model would be compiled in this regard. Recommendations would also be made with regards to wetting of access roads. GB stated that firstly there needs to be determined whether water is available for this purpose. MG concurred and suggested that chemical dust suppressants may be used. GB asked what happens to the dewatering water. FM answered that this water will be re-used in the mine processing process.

Noted. To be determined in Air Quality Impact Assessment.

HP asked about housing and whether housing will be provided by mine or whether workers will be accommodated in town. MG stated that there would be no housing on site as they were aware of the game farming taking place in the area and the potential socio-economic impacts in this regard. It was being planned for the workforce to be integrated with the local community, i.e. accommodated in town and the surrounding area.

IS asked about the impact associated with the loss of land. MG stated that this will be assessed in the EIA phase but that a 400 Ha footprint will be lost to mining.

HP asked how directly affected parties will benefit. MG answered through local employment. Legislation also requires that the mine contributes a percentage of its profits as per the SLP. The current suggestion was to spend the profits on a water supply development and management plan project for the existing municipal wellfield. MG and FM stated that the RMLM only had 8 existing boreholes but that these were not being managed properly at present. Additional boreholes could also be drilled to supplement water supply.

GB asked about the registration process and transfer of water allocations and who would initiate and manage this process. FM stated that the transfer of existing agricultural allocations will need to be further researched and a land use study will be undertaken should the re-allocation of agriculture water use

Noted.





	be considered further. MG stated that Exigo had been appointed to undertake an IWULA whether this was for a licencing or registration process. The applicant will need to apply for the relevant licences and/or registrations in this regard. The transfer of existing water rights will take place as part of the IWULA. GB stated that water cannot be bought. FM stated that individuals were also not allowed to sell water, but that detailed consultation and negotiation with landowners will take place in this regard.	
57	Closing MG thanked everyone for attending the meeting and closed the meeting. Refer to slide 57 for Exigo's contact details.	





Annexure A: Meeting Presentation





Annexure B: Meeting Agenda



Annexure C: Attendance Register



An EOH Company



Proposed Doornhoek Fluorspar Mine - Scoping Phase Public Meeting

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AGENDA



- 1. Welcome and Introductions
- Meeting Conduct & Attendance Register
- 3. Purpose of the meeting
- 4. Ownership
- 5. Project History/Background
- 6. Project Description
- 7. Applicable Legislation
- 8. EIA Process

- 9. Specialist Studies
- 10. Baseline Description
- 11. Alternatives Considered
- 12. Draft Site Plan
- 13. Public Participation
- 14. Way Forward
- 15. Frequently Asked Questions
- 16. Discussion and Questions
- 17. Closure



INTRODUCTIONS – PROJECT TEAM (present)



- Environmental Assessment Practitioners (Exigo)
 - Michael Grobler Lead EAP & Project Manager & Technical
 - Chantal Uys EAP & Public Participation Coordinator
 - Ferdinand Mostert Hydrogeological Specialist
- Applicant (SA Fluorite Pty Ltd & Southern Palace Pty Ltd)
 - Allan Saad Project Manager, Applicant Contact Person
 - Allan Daniel Saad Project Geologist



MEETING CONDUCT & ATTENDANCE REGISTER



- 1. Questions or comments to be kept until the end of the presentation
- 2. English for minute purposes/Questions in Afrikaans welcome
- 3. Voice recording will be done for meeting minute purposes
- 4. Minute purposes: Briefly introduce yourself (name and interest in the project) before asking a question or making a comment
- 5. Please switch off cell phones
- 6. Please do not interrupt others
- 7. Attendance register will be circulated



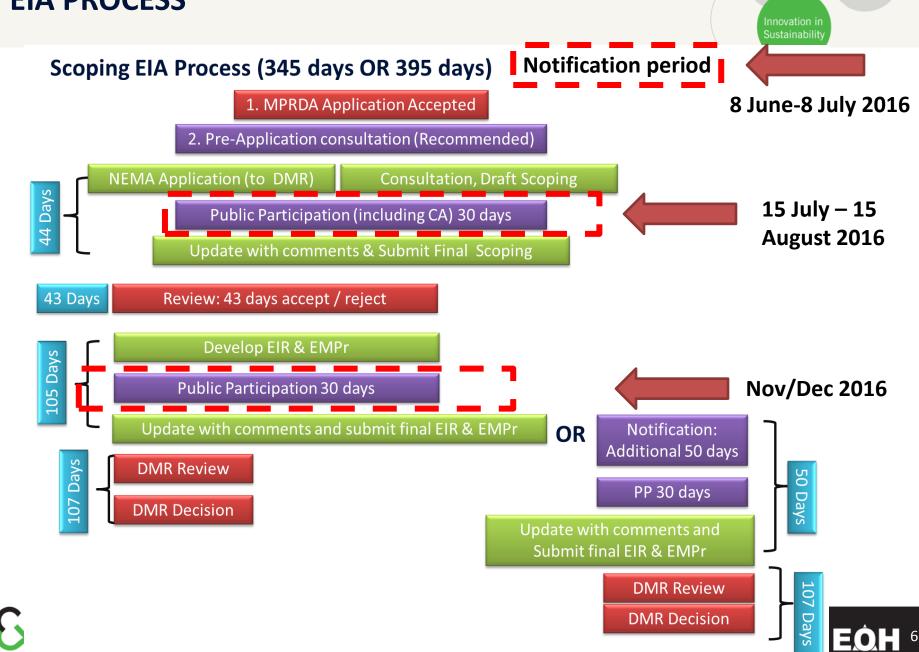
PURPOSE OF THE MEETING



- To provide feedback on the proposed Doornhoek Fluorspar Mine Environmental Authorisation and Mining Right Application Process to Interested and Affected Parties (I&APs)
- 2. To discuss potential impacts
- To obtain input and guidance from I&APs for the Environmental Impact Assessment and Environmental Management Programme Phase
- 4. To clarify the way forward



EIA PROCESS



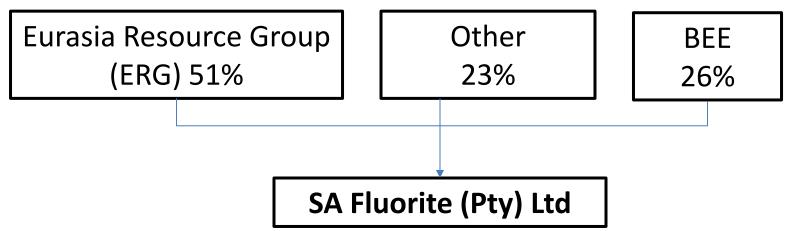
Doornhoek Fluorspar Projecters

"The worlds largest known fluorspar exploration project"



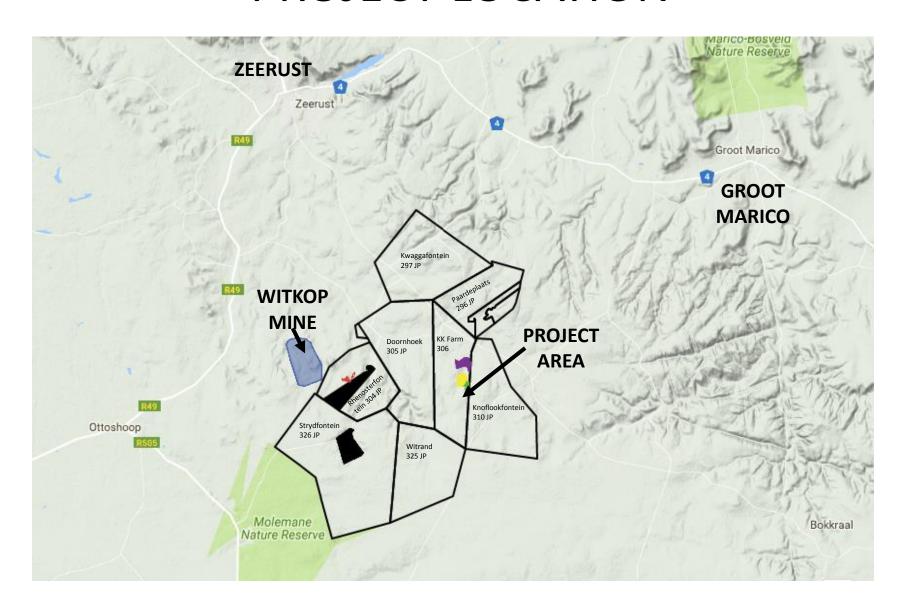
SA Fluorite (Pty) Ltd and Southern Palace (Pty) Ltd Northwest Province - South Africa

OWNERSHIP



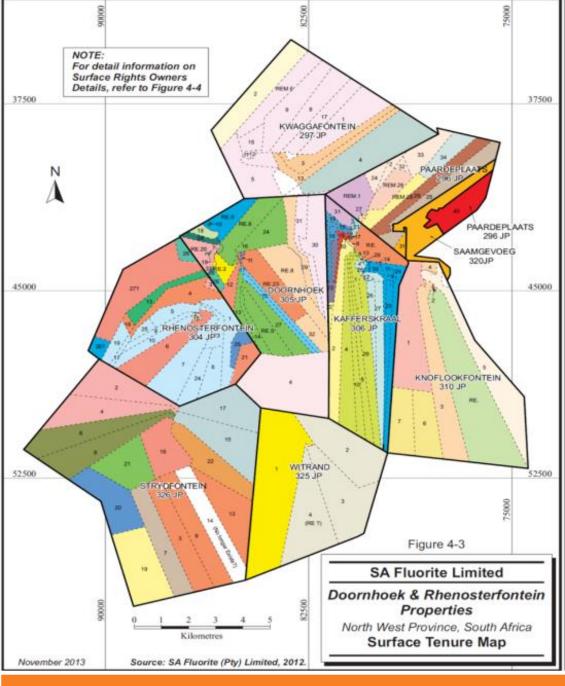
- ERG is a Luxembourg-based leading diversified natural resources group.
- It operates in:
 - Kazakhstan,
 - Africa
 - and Brazil
- ERG is the world's largest ferrochrome producer by chrome content and one of the key producers of iron ore and alumina worldwide
- ERG is represented by more than 75,000 people globally

PROJECT LOCATION



PROJECT HISTORY – WHY NOT DEVELOPED SOONER?

- Private and complex mineral rights holding until 2004
- Historically rights were subdivided together with surface
- Some mineral rights were sold to mining companies and sterilized
- Result was complex ownership with many subdivisions
- 2004 mineral rights revert to State
- 2005 SA Fluorite consolidate and secure mineral rights
- 2005 Exploration Commenced



HISTORICAL RIGHTS

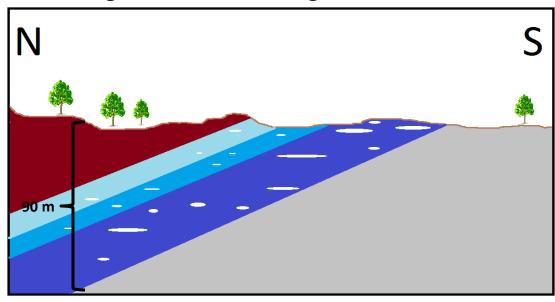
Complexity of rights have historically delayed development

WORK COMPLETED SINCE ACQUISITION

- Drilling
 - Approximately 2000 holes totaling 145 000m
- Geological mapping detailed groundwork
- Aerial Surveys- Aeromagnetic and Lidar
- Surface rights acquisitions strategic landholding
- Metallurgical test work
- Environmental studies remain in progress
- Preliminary Economic Assessment

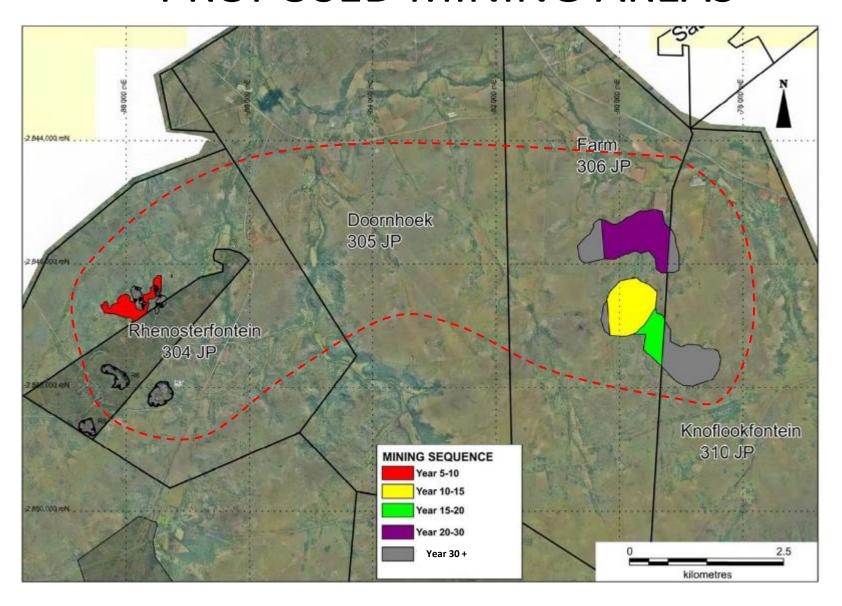
GEOLOGY OVERVIEW

- The Ore is an extension of that found at the Witkop Mine
- The Fluorspar is found hosted within the Dolomite rocks therefore no acid mine draining is expected
- It is a very clean fluorspar product No contaminants
- Partial outcrop on surface dipping underground to a maximum drilled depth of 90m
- Further down-dip extensions not drilled.
- High Grade zones targeted





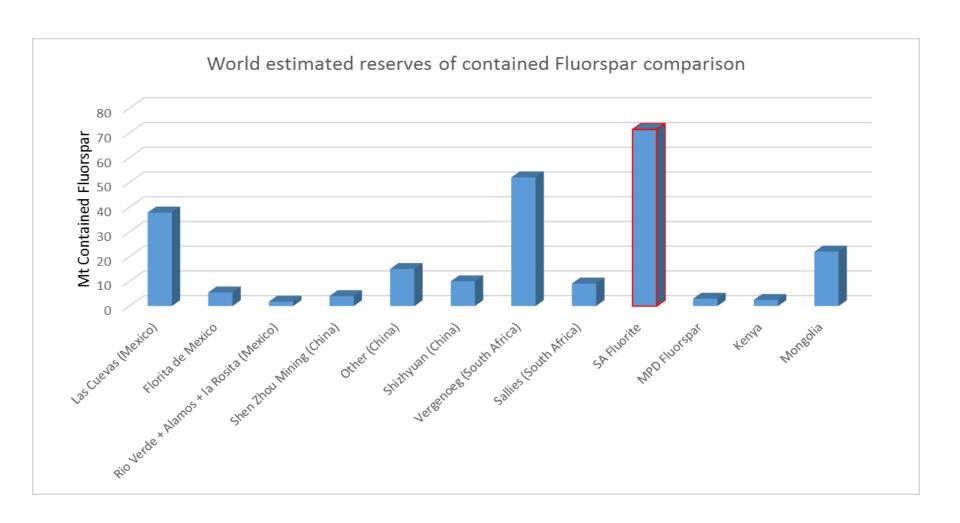
PROPOSED MINING AREAS



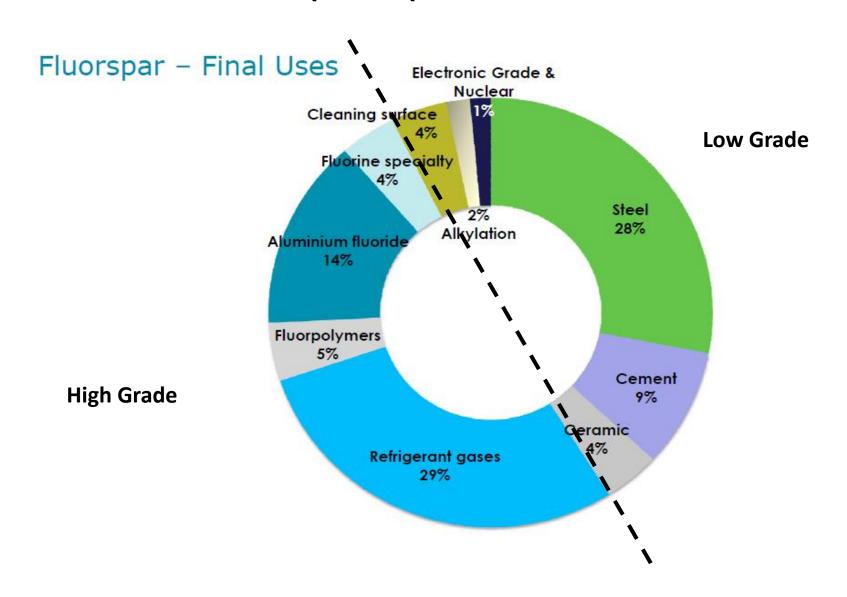
ECONOMIC ANALYSIS

- Resource sufficient for +100 life-of-mine (LOM)
- Pre Feasibility Economic analysis is calculated on a 30 year mine life
- Focus on thick opencast orebodies
- Small Global market demand 6Mt per year
- Size and quality make it favourable for downstream processing and development of secondary industries

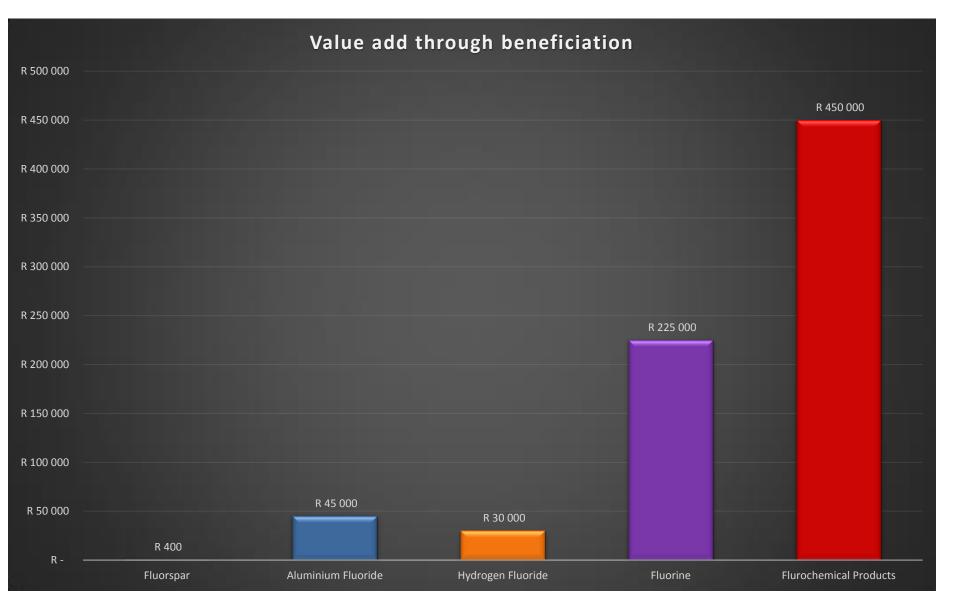
CONTAINED FLUORSPAR COMPARISON



FLUORSPAR (CaF₂), PRIMARY USES



VALUE ADD THROUGH BENEFICIATION



PROJECT DEVELOPMENT

- Application for mining right and permits
- Complete bankable feasibility
- Approach development partners
- Develop a successful mine that will create positive benefits to the community and surrounding area
- Recreate job opportunities lost from the adjacent
 Witkop mine closure. Approximately 191 direct jobs to be created
- Advance the development of downstream processing
 - The global market for chemicals from fluorine is about US\$16 billion per year

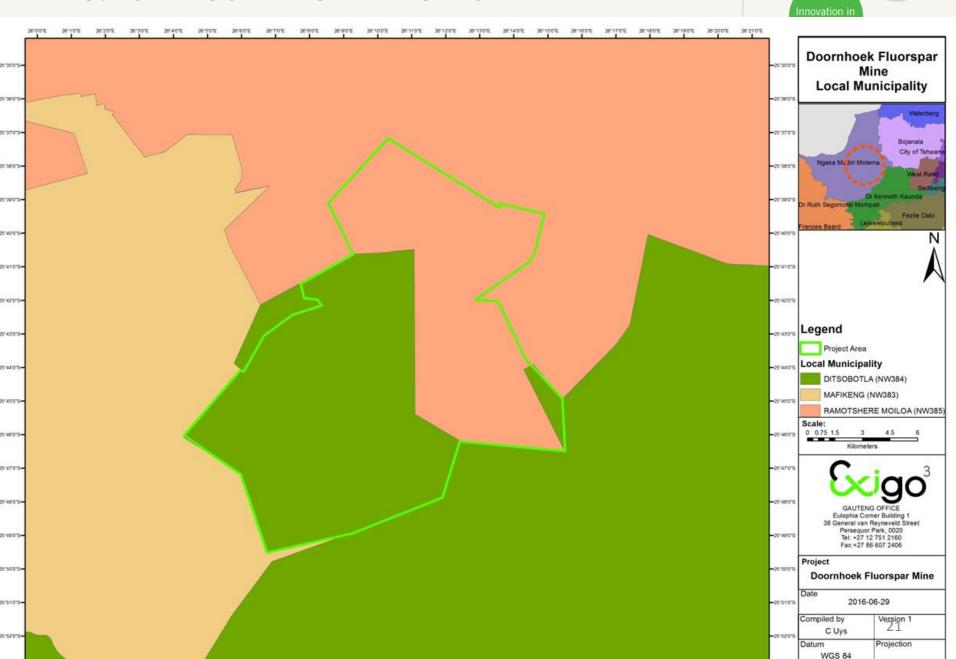
PROJECT DESCRIPTION



- 1. Location: Jurisdiction of the Ditsobotla and Ramotshere Moiloa Local Municipalities; the Ngaka Modiri Molema District Municipality. Site is adjacent to the Witkop open pit fluorspar mine. Centre point of the site: Latitude: 25°44'11.85"S; Longitude: 26°10'29.75"E
- 2. Surface and underground resources sufficient to justify an initial life of mine of 30 years. At full production the resource is proposed to be mined at 1.5 million tonnes per annum as follows:
 - Resource Area A: Opencast mining up to a depth of aprrox 60 m from year 5 to 10.
 - o Resource Area C: Opencast mining up to a depth of aprrox 90 m from year 20 to 30.
 - Resource Area D: Opencast mining to a depth of aprrox 90 m from year 10 to 20 with the possible mining of the areas to the side of the resource - from year 20 to 30.
 - Construction of the mining infrastructure and access road(s) during year 1 to 5.
- 3. Size of entire mining right area: 22,255.32 hectares



PROJECT DESCRIPTION - MUNICIPAL MAP

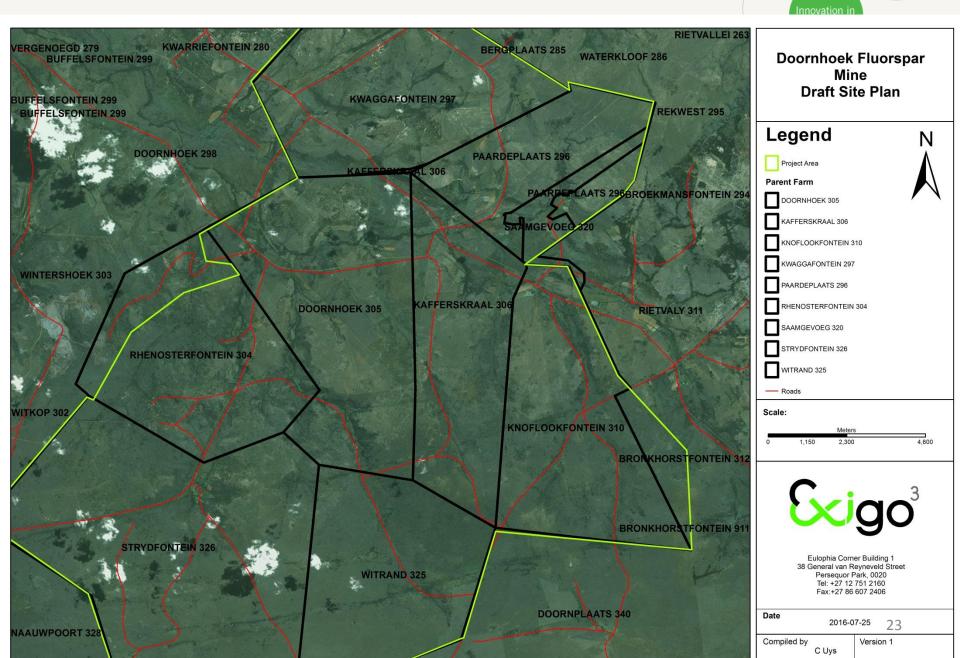


PROJECT DESCRIPTION - SURFACE INFRASTRUCTURE

- Mining right application includes various portions of farms Doornhoek 305 JP, Farm 306 JP, Knoflookfontein 310 JP, Strydfontein 326 JP, Rhenosterfontein 304 JP, Kwaggafonteing 297 JP, Paardeplaats 296 JP, Saamgevoeg 320 JP and Witrand 325 JP; mining infrastructure is only planned to be located on the following portions:
 - o Farm 306 JP (Portion 1, 5, 24, 25, 26, 27, 29, 30)
 - Rhenosterfontein 304 JP (Portion 9, 10)
 - Possible future extension onto Knoflookfontein 310 JP (Portion 1)
- 2. Mine infrastructure: Ore Handling and Storage facilities, Overburden and topsoil dumps; General Buildings; Potable and Service Water Dams (including a Storm Water Dam), Processing Plant, Emergency and Power facilities (substations), Fuel Storage, Site Access Road and Haul Roads, Tailings Storage Facility (TSF), Water and sewage reticulation, Sewage and Water Treatment Plant.



PROJECT DESCRIPTION – AERIAL LOCALITY MAP



APPLICABLE LEGISLATION



- NWA, NEMA and NEMWA
- MPRDA
- Competent Authority: Department of Mineral Resources
- EIA (NEMA and MPRDA) Application lodged: 13 July 2016
- DMR Acknowledgement of receipt: 20 July 2016
- Various Listed activities applied for in terms of the EIA Regulations
- IWUL Application in terms of NWA to be submitted to the Department of Water Sanitation (DWS) during the Environmental Authorisation process
- A Land Development Application will be submitted to the relevant municipality along with the EA and MR in terms of SPLUMA



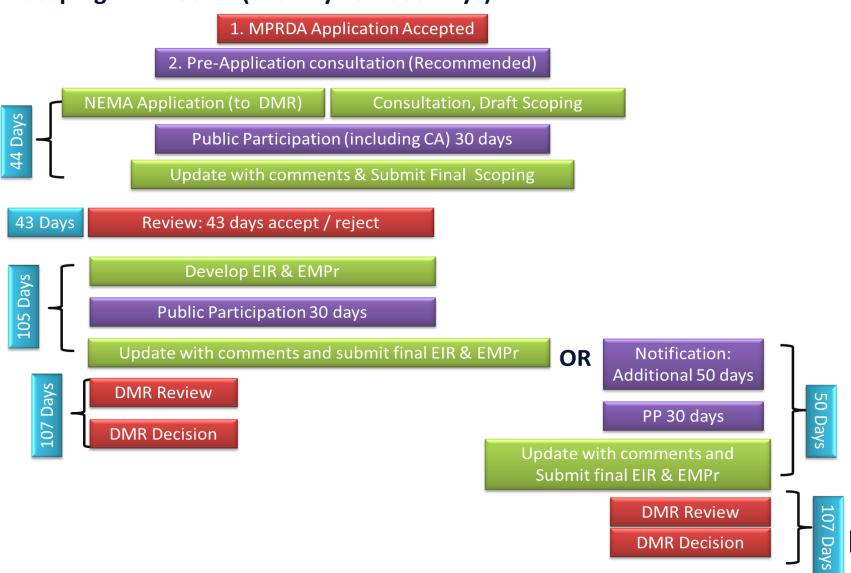




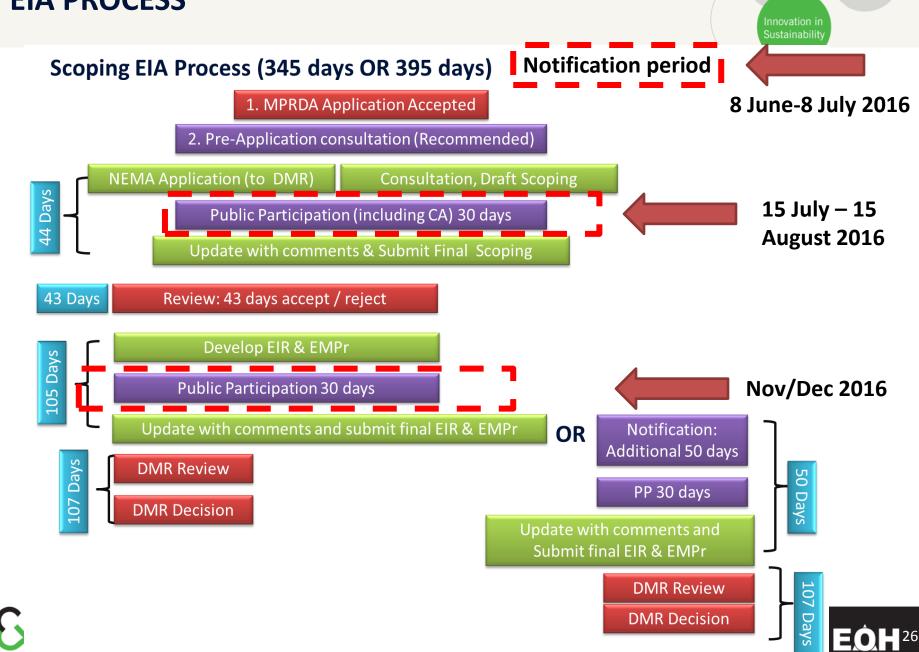
EIA PROCESS



Scoping EIA Process (345 days OR 395 days)



EIA PROCESS



SPECIALIST STUDIES BEING CONDUCTED



- Land Use & Soil Potential Assessment (Exigo)
- Floodline Determination and Stormwater Management Plan (CWT)
- Hydrogeological Impact Assessment (Exigo)
- Water supply options analysis (Exigo)
- Geochemical Numerical Model & Waste Classification (GeoDyn)
- Ecological Impact Assessment (Exigo)
- Wetland Delineation & Impact Assessment (Exigo)
- Traffic Impact Assessment (Havenga Transportation Engineers)
- Aquatic Impact Assessment (SAS)
- Archaeological Impact Assessment (Exigo)
- Palaeontological Desktop Assessment (Dr Francois du Randt)



SPECIALIST STUDIES BEING CONDUCTED

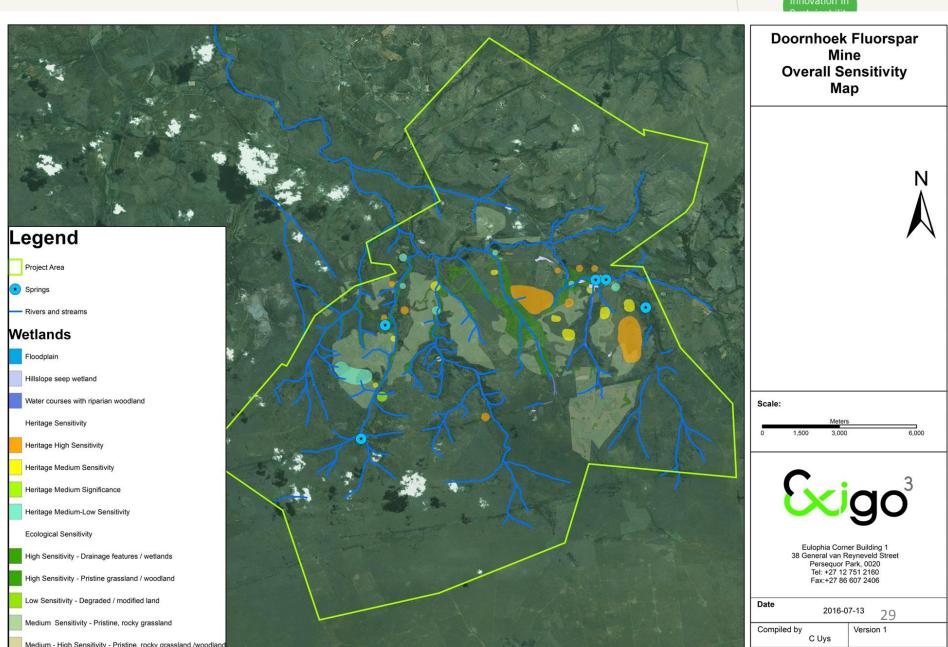


- Blasting & Vibration Impact Assessment (Blast Management & Consulting)
- Air Quality Impact Assessment (Airshed)
- Noise Impact Assessment (EARES)
- Visual Impact Study (Newtown Landscape Architects)
- Socio-Economic Impact Assessment (Urban-Econ)
- Closure Provision and Rehabilitation Plan (REDE)



BASELINE DESCRIPTION – OVERALL SENSITIVITY



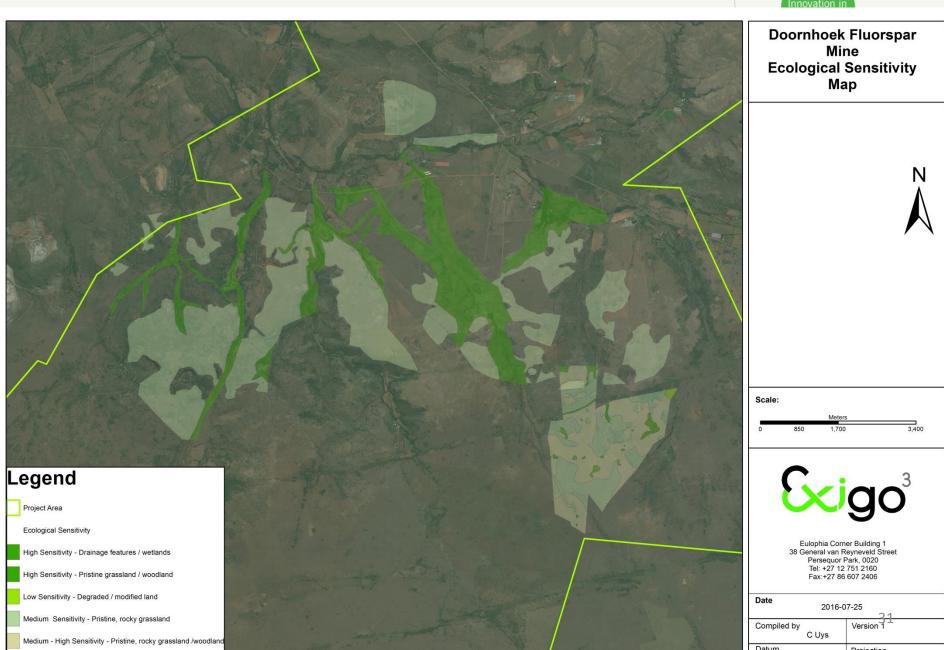


BASELINE DESCRIPTION - VEGETATION

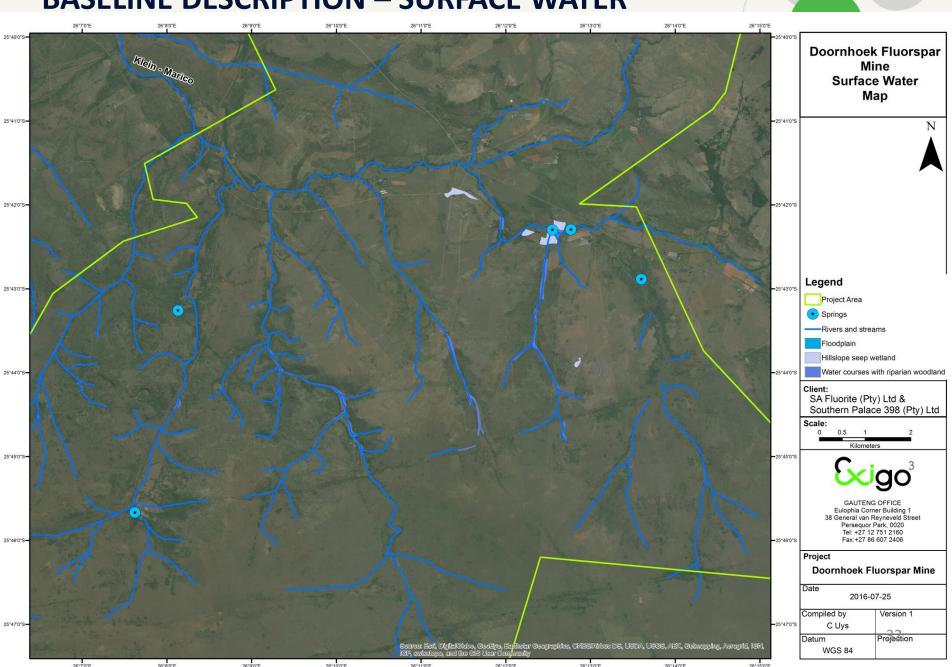


BASELINE DESCRIPTION – ECOLOGICAL SENSITIVITY





BASELINE DESCRIPTION – SURFACE WATER



HYDROGEOLOGICAL BASELINE ASSESSMENT



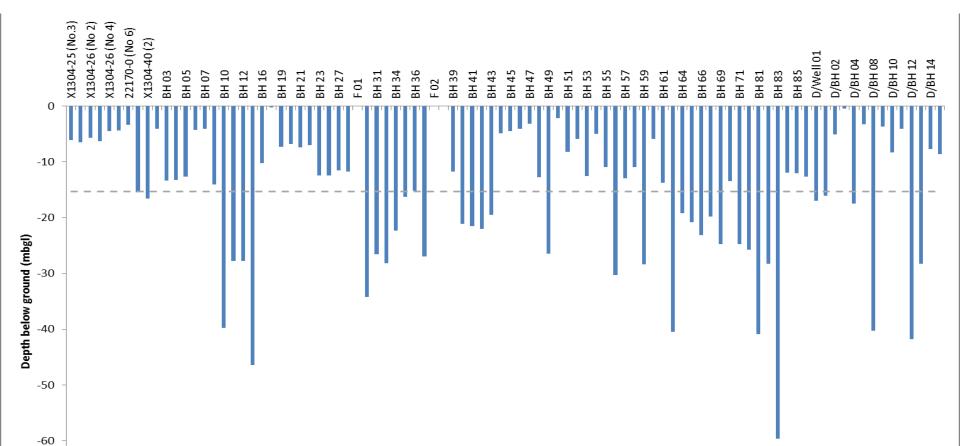
- Resource is located in a dolomitic aquifer, consisting of following hydro-stratigraphic units:
 - Shallow aquifer: Weathering of the Pretoria group shales and quartzites, creates good medium for groundwater storage.
 - Deeper aquifer: Below mineralisation zone the dolomites are characterised as massive and secondary structures form preferential flow paths for groundwater flow.
- Aquifer compartmentalised by diabase dykes structures, occurrence and location of a spring within the study area.
- Aquifer parameters:
 - Country dolomite rock units display low median hydraulic conductivities in the order of 0.05 m/d.
 - Based on literature the conductivity of shale and quartzite units vary between 1.00 e-08 m/d up to 0.015 m/d (Spitz and Moreno, 1996).
- Recharge:
 - Harvest Potential Map, recharge within the catchment is in the order of 25 -50 mm/a (relatively high).



HYDROCENSUS USER SURVEY - 2016

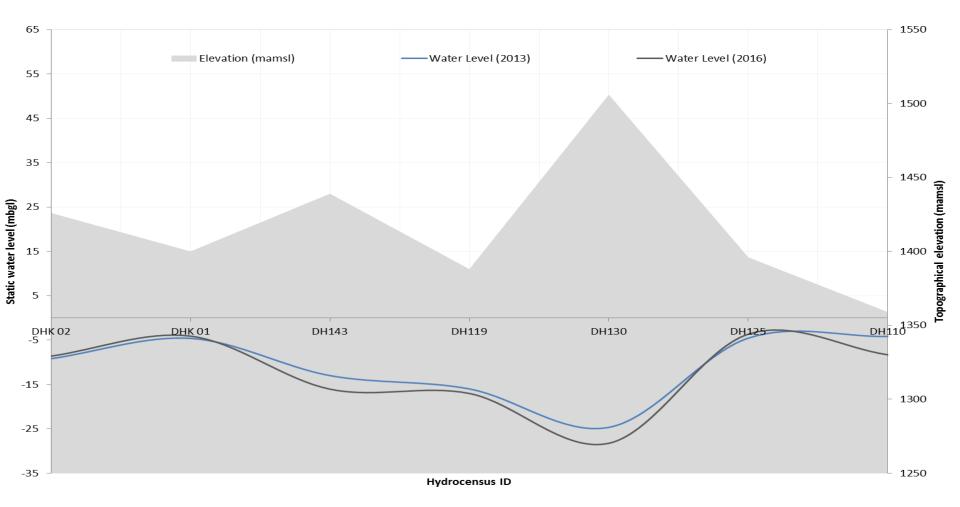
Innovation in Sustainability

- 2016 hydrocensus user survey = 116 geosites.
 - ⁻ 112 boreholes.
 - ⁻ 3 springs.
 - 2 surface water bodies.
- Water supply application = 78% AND 22% of boreholes not in use.
- Avg WL=16.5 mbgl; Max=59.61 mbgl; Min= 0 mbgl; Std.Dev. = ~12 m.(dynamic system)

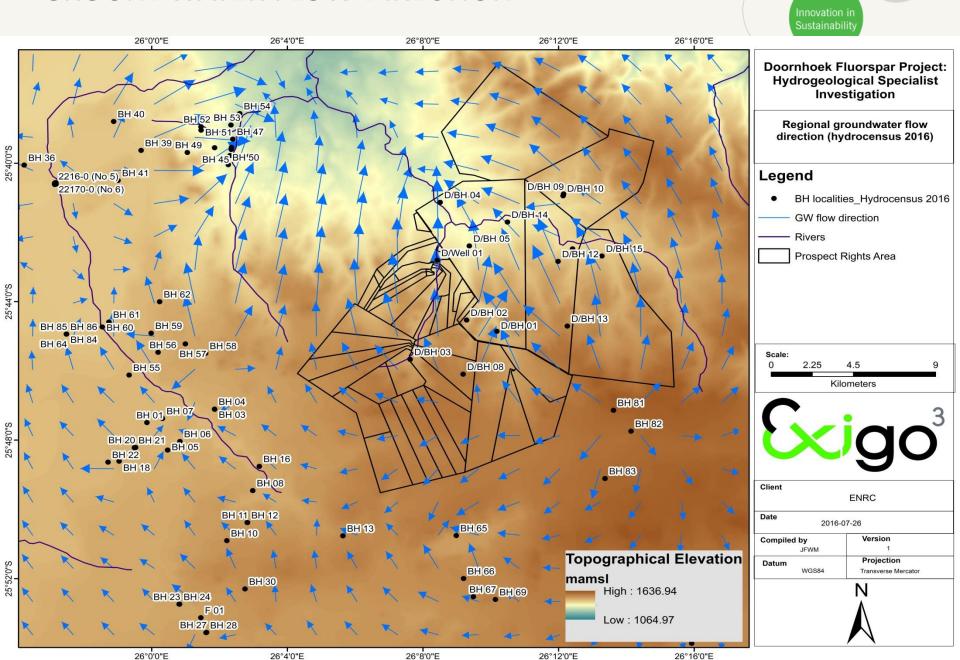


REGIONAL GROUNDWATER LEVELS - STATIC

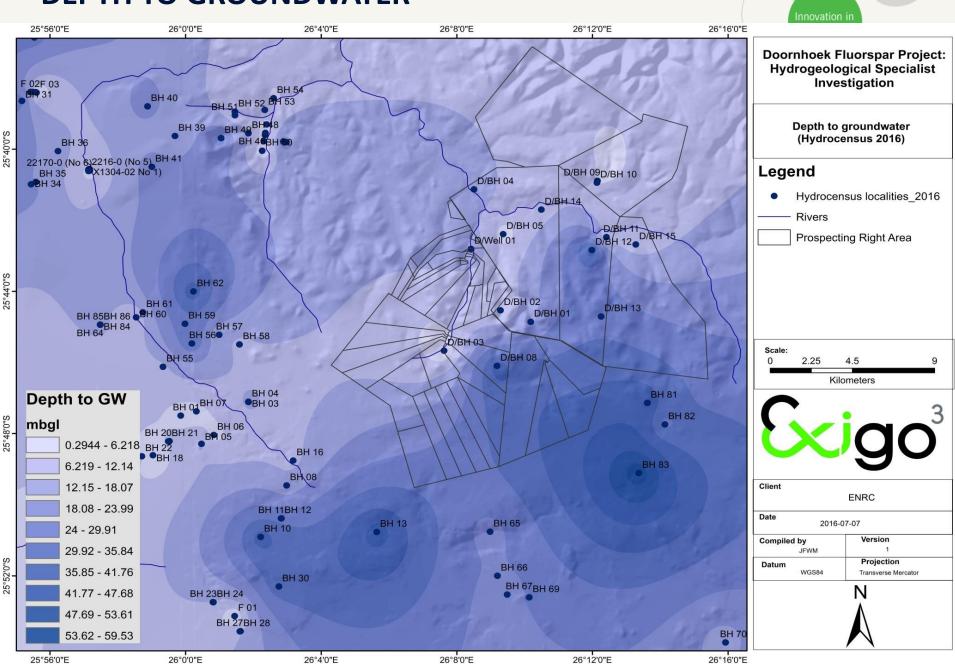
- Innovation in Sustainability
- Comparison 2013 vs. 2016 water levels recorded indicate escalation in deeper water levels prevailing draught conditions + abstraction.
- Correlation of topographic elevation vs. water level elevation: moderate relationship (>0.75).



GROUNDWATER FLOW DIRECTION

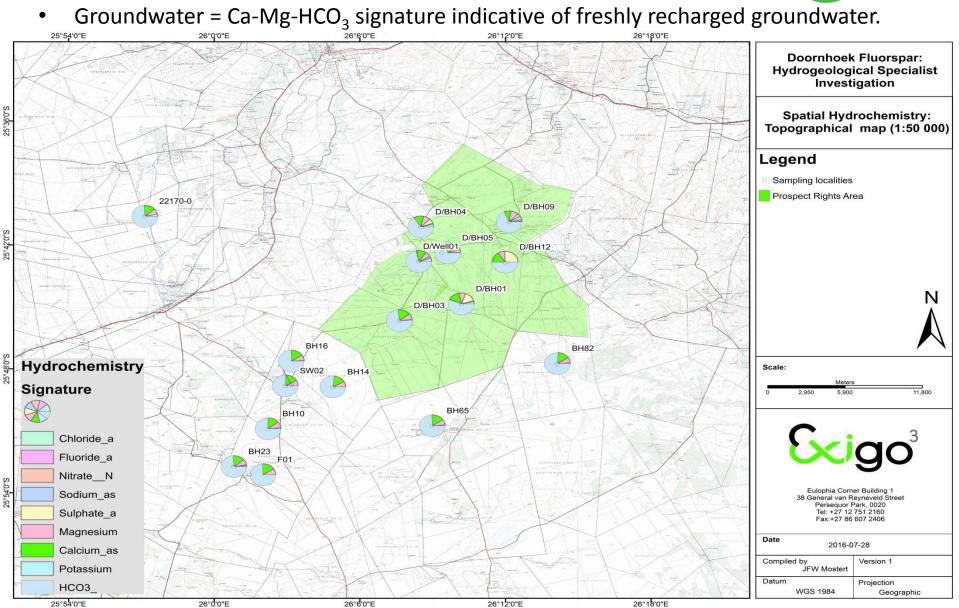


DEPTH TO GROUNDWATER

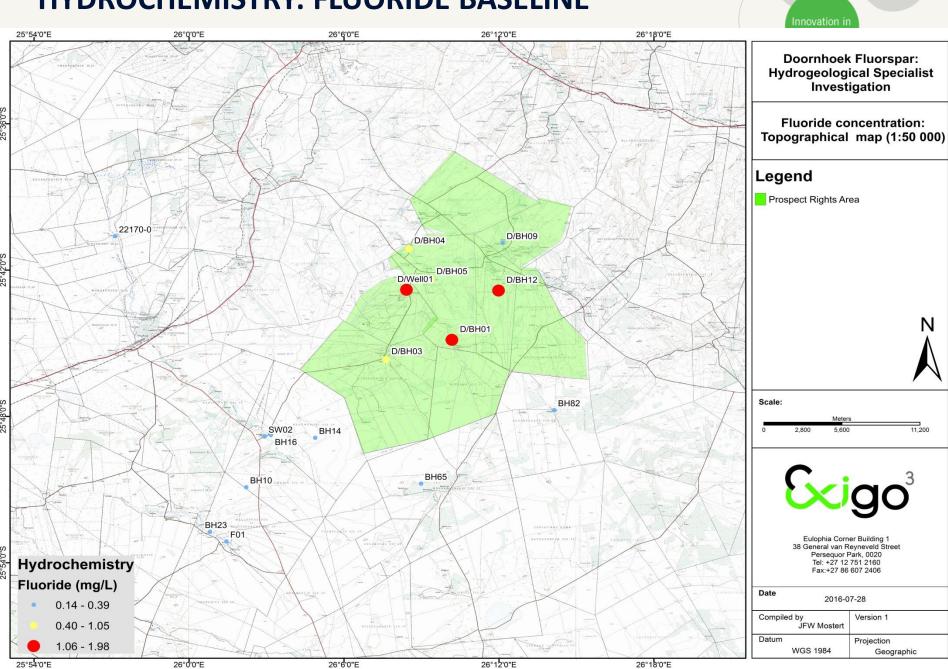


HYDROCHEMISTRY SPATIAL DISTRIBUTION

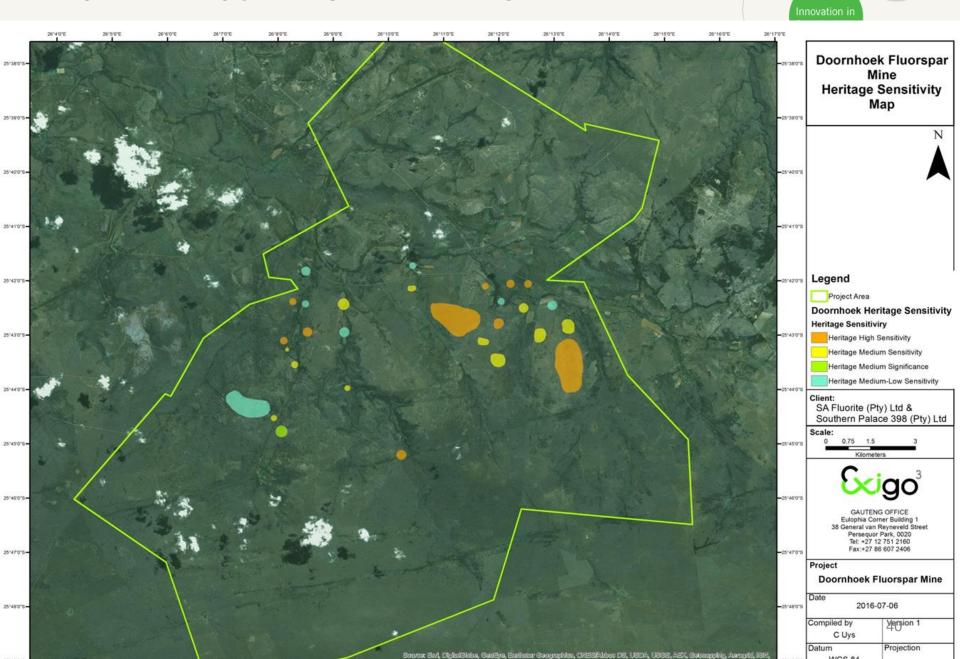
Innovation in Sustainability



HYDROCHEMISTRY: FLUORIDE BASELINE



BASELINE DESCRIPTION – HERITAGE



ALTERNATIVES CONSIDERED

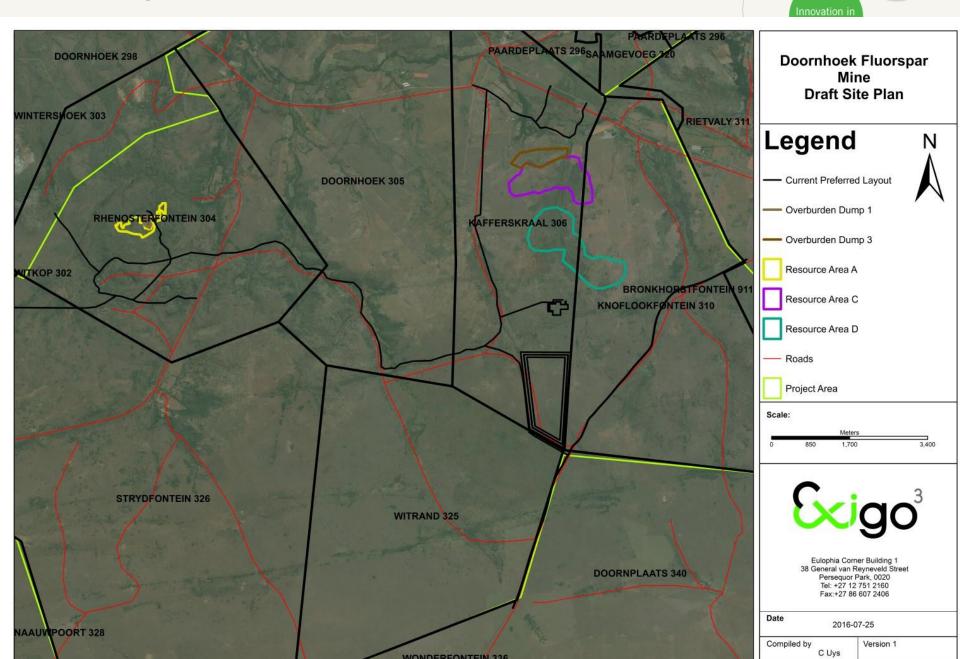


The following alternatives in line with Appendix 2 and 3 of GNR 982 were considered for the project:

- Site Location alternatives
 - Location of processing plant and TSF
- Layout alternatives
 - Layout of processing plant and TSF
 - Layout of overburden dumps
- Service alternatives
 - Water provision
 - Energy alternatives
 - Access alternatives
 - Waste disposal
- Technology alternatives
- Mining Methodology alternatives
- The "no-go" alternative



DRAFT SITE PLAN





Advertisements:

Mafeking Mail (15 July 2016)

Site Notices (15 July 2016):

- Zeerust Public Library
- Lichtenburg Public Library
- Ramotshere Moiloa Local Municipality
- Ditsobotla Local Municipality
- On site at the following coordinates:
 - o 25°43'51.2"S; 26°08'20.2"E
 - o 25°46'06.3"S; 26°12'30.8"E

Emails, fax, post and SMS notifications (15 July 2016)





Direct Notification of Identified I&AP's amongst others (15 July 2016):

- The owners and occupiers of the site where the activity is or is to be undertaken or to any alternative site;
- The owners and occupiers of land adjacent to the site where the activity is or is to be undertaken or to any alternative site;
- Municipal Manager of the Ngaka Modiri Molema District Municipality (NMMDM);
- Municipal Manager of the Ramotshere Moiloa Local Municipality (RMLM);
- Municipal Manager of the Ditsobotla Local Municipality (DLM);
- Department of Rural, Environment and Agricultural Development, North West Province;
- Department of Water and Sanitation (DWS) Limpopo North West Proto CMA;
- Department of Public Works and Roads North West;
- Department of Community Safety & Transport Management North West;



Innovation in Sustainability

Direct Notification of Identified I&AP's amongst others (15 July 2016):

- Department of Finance, Economic & Enterprise Development North West;
- Department of Agriculture North-West;
- Department of Rural Development and Land Reform (DRDLR);
- SANRAL (Northern region);
- South African Heritage Resources Agency (SAHRA) (North West);
- Regional Manager of Land Development and Environmental Management for ESKOM;
- AGRI North West;
- Afriforum;
- North West Farmers Union;
- Molemane Eye Nature Reserve;
- Other mines in the area;
- And other stakeholders.





Draft Scoping Report (SR) review:

Review period: 15 July to 15 August 2016

Draft SR available as follows:

- Published on Dropbox website;
- Electronic copies on request; and
- Hard copies at the following venues:
 - Zeerust Public Library
 - Lichtenburg Public Library



WAY FORWARD



PUBLIC REVIEW OF <u>DRAFT</u> SCOPING REPORT: TILL MONDAY 15 AUGUST 2016

PUBLIC MEETING

Thursday, 28 July 2016 at 18h00 at the Ramotshere Moiloa Local Municipality Hall (C/O President & Coetzee Street, Zeerust)

SUBMISSION OF FINAL SCOPING REPORT TO DMR (August 2016)

APPROVAL OF FINAL SCOPING REPORT BY DMR (October 2016)

PUBLIC REVIEW OF DRAFT EIR & EMPR (30 DAY REVIEW PERIOD) (November/December 2016)

SUBMISSION OF FINAL EIR & EMPR TO DMR (January 2017)

AUTHORITY DECISION

APPEAL PROCESS

Public notification within 14 days

20 days from date of Authorisation





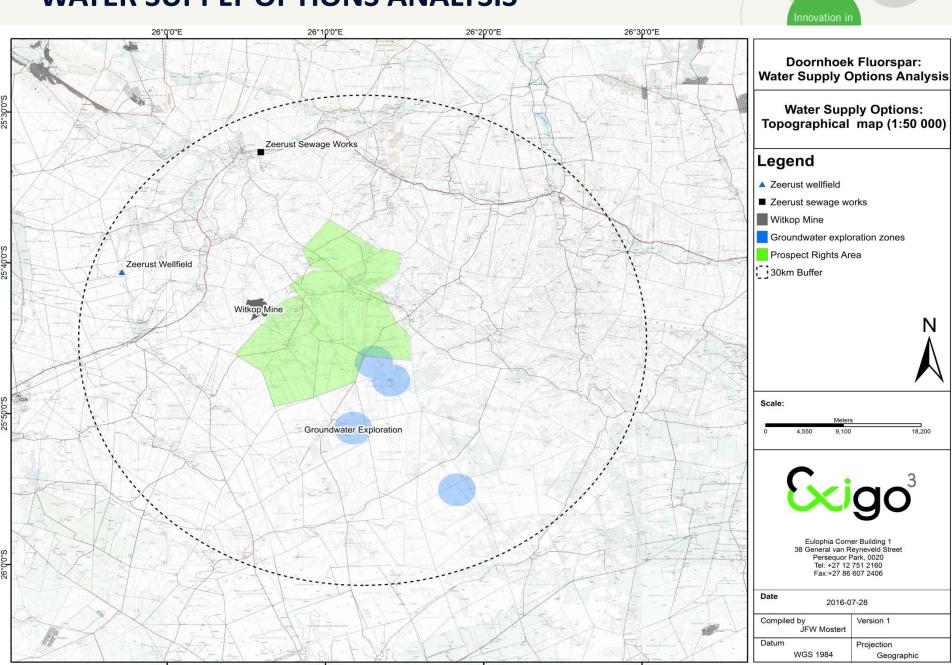
Where will water be sourced from?

A water supply options analysis study is currently underway. The following water supply options have been identified:

- Municipal supply Witkop Mine infrastructure (transfer of Witkop water allocation).
- Grey water discharge from Zeerust sewage treatment plant. Water transferred via Witkop infrastructure or via a new pipeline.
- Expansion and additional development of current groundwater supply for municipal use and utilization of Witkop infrastructure.
- Development of a standalone wellfield, targeting dolomitic formations south and southeast of the project area.
- Transfer of existing irrigation water allocations from the Zeerust dam, use of groundwater from existing boreholes no longer in use by landowners.



WATER SUPPLY OPTIONS ANALYSIS



METHODOLOGY



How will water impacts be determined?

The following methodology will be applied to determine potential impacts:

- Desktop review of baseline groundwater information and analog sites.
- Hydrocensus user survey to evaluate the existing surface and groundwater users.
- Identification of contamination sources, potential pathways and receptors.
- Aquifer characterisation and classification through pump tests.
- Development of a numerical groundwater flow model to be used to simulate management scenario's.
- Environmental Impact Assessment through evaluation of outcomes of the specialist investigation based on specific criteria.





When will the mine be built and how long will it take?

- The DMR will take approximately one year to grant the mining right (2017)
- Construction of the mining infrastructure and access road(s) will take place during year 1 to 5 (2018-2022)
- Mining will probably commence in 2023 and sufficient resources exist for an initial life of mine of 30 years







What about surface lease agreements and compensation?

- Surface lease agreements will be negotiated with the relevant landowners on awarding of the mining right
- Any possible compensation for damages will also be negotiated with the relevant landowners and affected parties on awarding of the mining right.





What will be done to prevent damage to buildings and infrastructure due to mining activities?

- A Blast and Vibration study is currently underway
- All mining activities will be carefully monitored and disturbances to the ground will be kept to a minimum
- Site surveys will be done on local houses prior to mining activities commencing
- Should any damage to any property occur due to mining activities, the owner of the property will be fairly compensated after consultation and negotiation with the applicant





How many jobs will the mine create?

At full production the mine expects to create around 190 employment opportunities





What about local suppliers supplying services to the mine?

- The proposed Doornhoek Fluorspar Mine's intention is to use local suppliers as far as possible
- Ideal suppliers would include the following services:
 - Security
 - Gardening
 - Accommodation
 - Transport
 - Fuel Supply
 - Safety Equipment

- Catering
- Cleaning
- Housing
- Fencing
- Construction
- Aggregate





DISCUSSION & QUESTIONS





THANK YOU

For any comments or queries please contact: Chantal Uys

Address: Exigo Sustainability (Pty) Ltd, Postnet

74, Private Bag X07, Arcadia, 0007.

Telephone: (012) 751 2160

Fax: 086 607 2406.

Email: chantal@exigo3.com





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Vat nr: 4910184854

Innovation in Sustainability

www.exigo3.com

<u>Proposed construction and operation of Doornhoek Fluorspar Mine and associated infrastructure located near Zeerust, North-West Province</u>

Scoping Phase Public Meeting

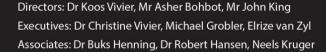
VENUE: Ramotshere Moiloa Local Municipality Town Hall, Zeerust

DATE: 28 July 2016

TIME: 18:00 PM

NO

NO	DESCRIPTION		
1.	PURPOSE OF THE MEETING		
	 To provide feedback on the proposed Doornhoek Fluors Mining Right Application Process to Interested and Affects To discuss potential impacts To obtain input and guidance from I&APs for the 	ed Parties (I&APs)	
	Environmental Management Programme Phase To clarify the way forward	2e.mai impact 7.000	oomone and
2.	MEETING AGENDA		
No	Agenda Item	Speaker	Time
1	Welcoming and Introductions	All	18:00
2	Meeting Conduct & Attendance Register	Michael Grobler	
3	Purpose of the Meeting	Michael Grobler	
4	Ownership	Allan Saad	
5	Project History/Background	Allan Saad	
6	Project Description	Michael Grobler	
7	Applicable Legislation	Michael Grobler	
8	EIA Process	Michael Grobler	
9	Specialist Studies	Michael Grobler	
10	Baseline Description	Michael Grobler	
11	Alternatives Considered	Michael Grobler	
12	Draft Site Plan	Michael Grobler	
13	Public Participation	Michael Grobler	
14	Way Forward	Michael Grobler	
15	Frequently Asked Questions	Michael Grobler/Allan Saad	
16	Discussion and Questions	All	
17	Meeting closure	Michael Grobler	19:45





ATTENDANCE REGISTER: PROPOSED DOORNHOEK FLUORSPAR MINE, NORTH-WEST PROVINCE S SCOPING PHASE PUBLIC MEETING

28 JULY 2016, 18:00 PM – RAMOTSHERE MOILOA LOCAL MUNICIPALITY TOWN HALL, ZEERUST

ATTENDANCE DECISATED. TOTAL

NAME	ADRESS	CONTACT NUMBER	EMAIL/FAX NUMBER	SIGNATURE
O.C.). Rasson	Kwagga Pontin 0796701730	056701730		Je J
G. Boysen	KNOGBANGE	78 21 79E ZLO	booksenged Ignail. con	
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F. Moster7	EXIGO SUST. PTA	1208 7778 2051	fedinand @exigos. com	Jet.
Karien Batha	Jacobe plaatz	1982 ST 13144	jan-Nel Barasland-00.29	CB-i.
Jeanne du toit	Shydfontein farm	0731310803	hothyena @yahoo.com	MountoWork.
The Shilman.	Kungganontein	079,5388813.	ks.graphæulagmail.a	
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