

PHASE I IMPACT ASSESSMENT OF THE DORMANT JAGERSFONTEIN MINE (FREE STATE) IN TERMS OF ARCHAEOLOGICAL AND OTHER HERITAGE SITES




Jagersfontein Mine : No. 1 Rock Hoist and a section of the Treatment Plant on day of closing 28th May 1971

Report compiled for: De Beers Consolidated Mining

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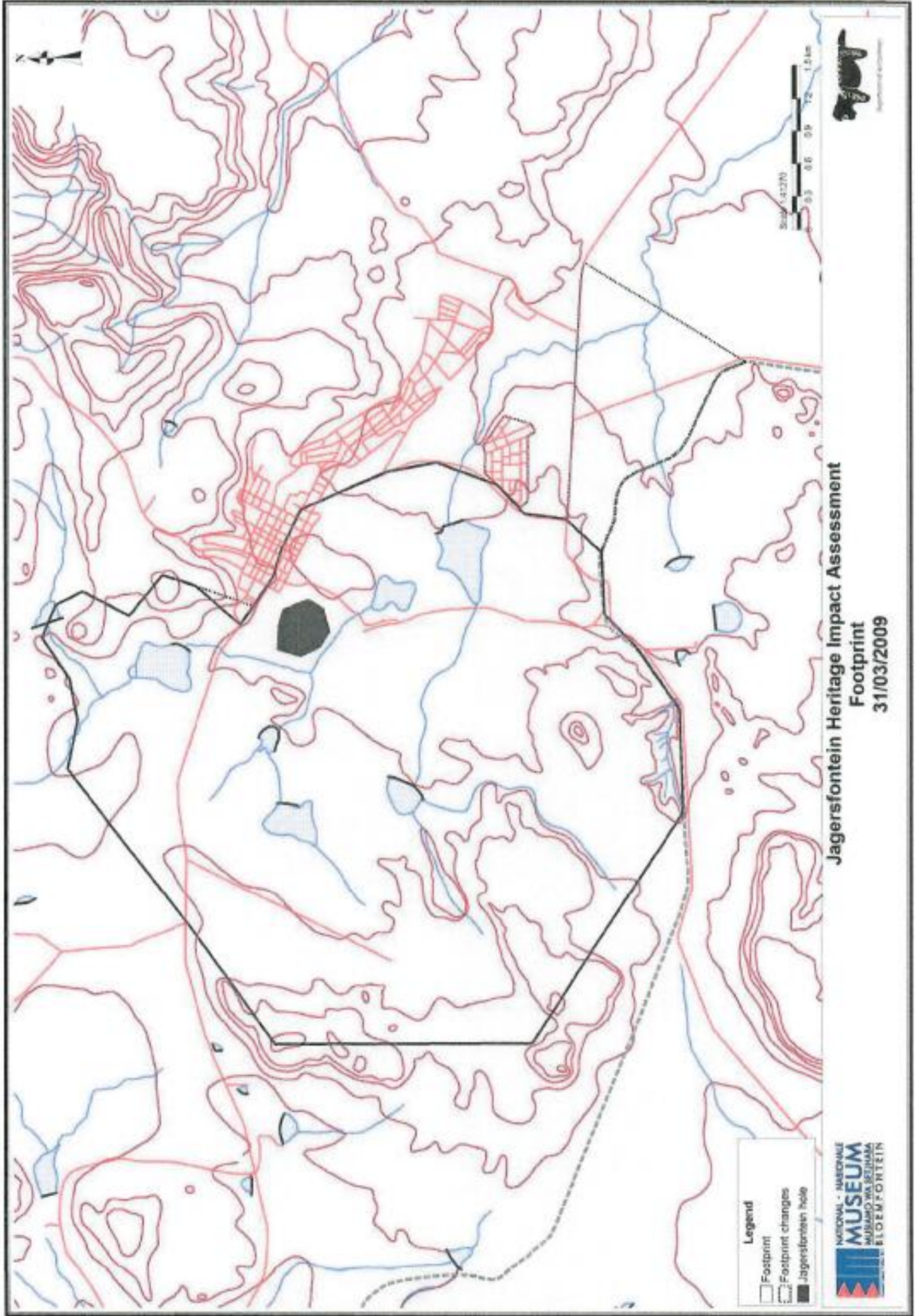
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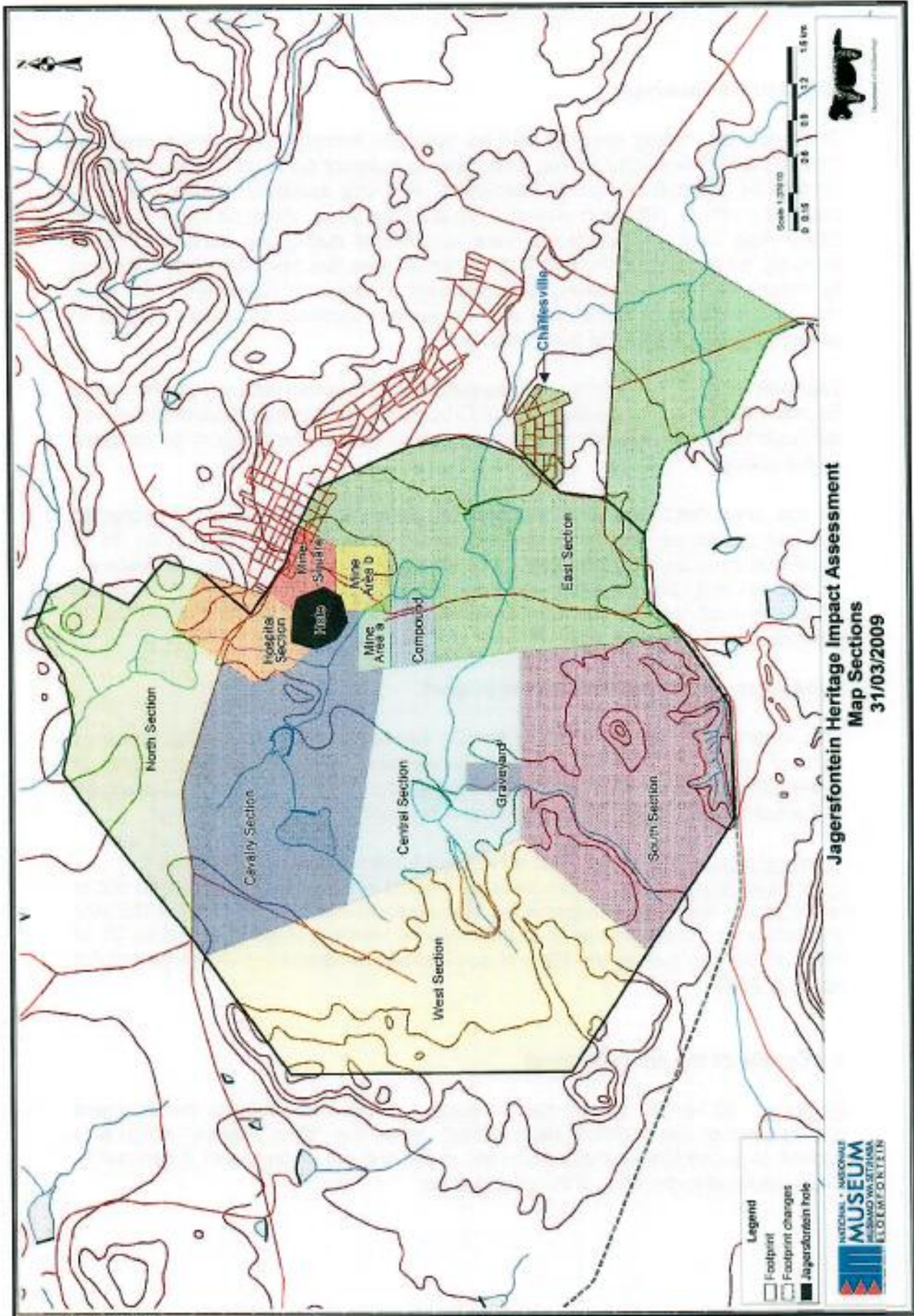
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**Jagersfontein Heritage Impact Assessment
Footprint
31/03/2009**

Legend
 — Footprint
 - - - Footprint changes
 ■ Jagersfontein hole





Jagersfontein Heritage Impact Assessment
Map Sections
31/03/2009

1. Executive Summary

The enclosed mining area as well as adjacent farming areas which originally formed part of the earlier mining area (refer to footprint on page 1) were surveyed on foot by a group of four archaeologists and one assistant, mainly using the transect method. Although various lithic artefacts were observed in the area, no Stone Age sites of importance were discovered during the survey. This is primarily on account of the fact that the entire area has been severely disturbed by means of intensive mining activities over a period of 100 years. This area, however, contains a burial site and numerous historical structures related to earlier mining as well as farming activities.

The buildings in the section of Jagersfontein Township known as the "Mine Square" and the entire mining town of Charlesville also formed part of the survey although the latter was not initially indicated as part of the footprint as provided by the client.

All the sites described in this report fall within the description of protected heritage resources defined by the National Heritage Resources Act no 25 of 1999 and includes the following: The open pit mine, mining related features, structures and buildings (to include support service buildings), historical structures such as the old farmstead and buildings in the town areas, burial grounds, and Stone Age sites.

2. Background information on the project

This report was commissioned by the De Beers Consolidated Mining group as part of an Environmental Impact Assessment of the dormant mine at Jagersfontein and its associated buildings in both Jagersfontein and Charlesville as part of the requirements for obtaining a closing certificate for the mine.

Terms of reference: To carry out a Heritage Impact Assessment (Phase I)

Legislative requirements: The Heritage Impact Assessment was carried out in terms of the National Environmental Management Act no 107 of 1998 (NEMA) and following the requirements of the National Heritage Resources Act no 25 of 1999 (NHRA) as well as the Mineral and Petroleum Resources Development Act no 28 of 2002.

2.1 Details of the area surveyed

Footprint: 20.76 km² as per map on page 1. This area includes the enclosed mining area of the dormant Jagersfontein mine, the "Mine Square" which is a section of Jagersfontein that adjoins the mine, and the mining town, Charlesville, that is situated to the east of the mining area.

Current land use: Agricultural (grazing) for the farming sections on the western and northern sides of the surveyed area, accommodation/business for the buildings situated in the "mine square" area of Jagersfontein as well as the whole of the mining town Charlesville. The old "Diggers' Hospital" is also currently being used as accommodation. The enclosed mining area is not currently being utilised.

2.2 General information on the environment:

Morphology: Low lands with hills

Geology: Mudstone, sandstone and shale with dolerite intrusions and kimberlite pipes (volcanic intrusion) at Jagersfontein

Soils:

General Description:

1. Rock with limited soils
2. Soils with a marked clay accumulation – strongly structured and a non-reddish colour. In addition one or more vertic-melanic and plinthitic soils will be present

Soil depth: < 450mm

Clay class of top soil: $\geq 15\%$ and $< 35\%$

Leaching status: calcareous soils

Catchment: Vaal River Primary Catchment

Rainfall: Mean annual precipitation = 290 – 455 mm per quaternary catchment

Mean annual runoff: 10^9 m^3 per primary catchment is 3990.96 – 4567.41

Land cover: Shrubland as well as Thicket and Bushland

Veld types: False upper Karoo

Conservation areas: None officially recorded

Sensitivity factor: 0-5 sensitive features mapped

3. Background to the Archaeological history of the area

3.1 Previous research in the area

No records were found of any previous archaeological research in the surveyed area although it is assumed that a Heritage Impact Assessment of the area for the pipeline to the new water reservoir must have been done as required by legislation. (A portion of this pipeline runs through the enclosed mining area that was surveyed for this report – this is still in the process of being constructed.) An extensive survey was, however, done in 2001 and 2004 at the nearby Koffiefontein Mine and surrounding area. This mining area was similarly also very disturbed on account of mining activities but the undisturbed areas adjacent the mining area contained rock art and stone artefacts (mostly from the Middle Stone Age dating to between 250,000 and $\pm 30 - 25,000$ years ago).

3.2 Archaeological background to the survey

Similar to the Koffiefontein area this area would also have contained Stone Age artefacts but since the entire surveyed area was at some stage or another disturbed on account of either mining activities and/or building activities very little was expected to be found *in situ*.

3.3 Historical Background

3.3.1 General history of the mine and town

In November 1869 diamonds were discovered on the farm Jagersfontein. The farm belonged to the widowed Mrs Visser and was situated in the District of Fauresmith in the Orange Free State. At this stage the alluvial finds on the banks of the Orange River enjoyed far more attention and Jagersfontein remained fairly unnoticed except amongst those in the immediate neighbourhood. The main reason for this was that up to that point diamonds were known only to be found in alluvial deposits. Jagersfontein was the first so-called "dry mine" to be discovered.

For a monthly licence fee of £2 family and neighbours were allowed to dig in allotted patches. In spite of the fact that progress was slow and finds few and far between the digging population grew to such a degree that the Government found it necessary to proclaim the farm as a Public Diggings in 1871. Mr Charles Hutton of the nearby town Fauresmith was appointed as the first Inspector.

Wonderful finds on the Vaal River once again deferred attention from Jagersfontein as thousands swarmed there to try their luck at instant riches. Subsequent discovery of diamonds at Du Toitspan, Bultfontein and Colesberg Kopje (Kimberley), however, once again brought attention to Jagersfontein and the illusion of finding diamonds in alluvial beds alone was finally dispelled. Primitive methods, scarcity of water and lack of sufficient capital, however, made for little success at Jagersfontein during its early years of existence.

The first organized efforts:

Towards the end of 1878 efforts at systematic working were made by a number of Fauresmith¹ people, some of whom had gained the necessary experience in diamond digging in the Griqualand West mines. Among these were names like Beddy, Chas, Wiebe, Reid, Wertheim, Dowsett, etc. They formed the "Fauresmith Diamond Mining Company" with Mr C Bannau as manager. Their equipment, however, was primitive and not very effective. An apparatus known as the "whim", drawn by a couple of horses, formed the motive power for washing the diamondiferous soil and the ground was hauled from the mine by

¹ Fauresmith is located 14km north-west of Jagersfontein – see Locality Map on Page 22

means of Scotch carts running on roadways constructed at comparatively easy angles.

It was during that same year that the real pioneers arrived in the form of experienced Australian gold miners. Among these were the well-known Kerr brothers (renowned for having tested and laid the real foundation of the mining industry at Jagersfontein), William Miller, Thomas McCrea, Tom Dunn, Forster, Garrett Harrington and Richard Smith.

At this stage the government appointed Mr J.W. Lotz as Inspector and steps were taken to have the mine surveyed and chartered. The latter was done by Mr G.C. Brand and the mine plan showed 1,244 claims, each 30 X 30 feet (9.144 X 9.144 meters).

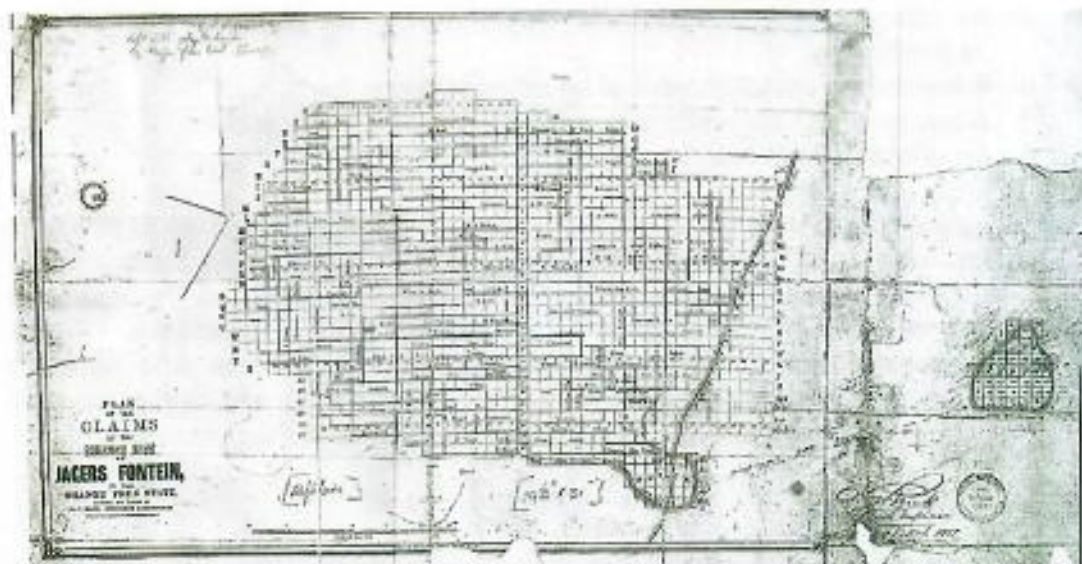


Figure 1: First plan of claims at Jagersfontein Mine (dd 1870s)(see Attachment A for larger view)
(DBMC archives)

At the same time the township was laid out. Although buildings shot up like mushrooms it was mostly constructed of sun-dried bricks and corrugated iron due to the uncertainty that existed as to the profitability and therefore long-term probability of the mine.

In 1879 Mr M.G. Keyter took up the position of Government Inspector with the combined function of trialing petty offences. A Management Committee was formed with Mr Keyter as Chairman (*ex officio*) and Mr J.G. Brink the Secretary. The Government offices was housed in the old farmstead situated immediately west of the mine. An old blue-gum tree in front of the house served as "goal". The prisoners were detained by being hand-cuffed together, forming a ring around the tree and in this peculiar manner served their time. In 1881 the new Government Offices (in the township) was completed and the farmhouse evacuated.

Jagersfontein directly responsible for new laws:

Illegal diamond trafficking brought Jagersfontein to the attention of the Volksraad. In March 1882 a special session of the Volksraad was convened and the President in his opening speech stated that the affairs of Jagersfontein were of such an urgent matter that he would have felt justified in calling a special session of the "Raad" for them alone. That this view was fully shared by the Volksraad was shown by the large number of laws passed – all directly affecting the welfare of Jagersfontein. They were as follow:

1. A most drastic ordinance for the suppression of the illicit traffic in diamonds;
2. An ordinance establishing a Special Court exclusively for the trial of I.D.B. (Illegal Diamond Buying) cases;
3. An ordinance providing for the appointment of an Assistant Landdrost at Jagersfontein;
4. A law for the establishment of an efficient police force;
5. A law by which Jagersfontein was proclaimed a town, and
6. An effective searching law.

Mr J.J. Wilson was appointed as the Assistant Landdrost and Mr J.G. Brink landdrost Clerk and Public Prosecutor to the Special Court. The Special Court was composed of the Landdrost of Fauresmith as chairman and the Assistant Landdrost and Government Inspector of Jagersfontein as members. Major Maxwell received the appointment of Commissioner of Police and as such directed the trapping system which was now set in motion and carried on with relentless vigor during the time that he remained at head of the police.

A community divided:

It was the latter that turned Jagersfontein in a seething cauldron of discontent and anger. Public meetings were of daily occurrence, petitions to the Government and letters to the press seemed endless, and the community was divided into two distinctly hostile camps which continued with much bitterness for several years. One of the principal demands was the want of representation by the town on the Mining Board. It was only in 1884 that the Government appointed a Commission of Enquiry to investigate the matter. The evidence given before the Commission brought out clearly the extreme tension which existed between the mining community and a portion of townspeople. The enquiry, which was very exhaustive, lasted ten days and embraced the following subjects:-

1. Management of the mine
2. The searching system
3. The trapping system
4. Sanitary measures, and
5. General

The town of Jagersfontein established:

The following year, 1885, the report of the Commission came before the Volksraad with the result that the Special Court was abolished and the offices of the Government Inspector and Assistant Landdrost combined in one official, Mr J.G. Brink. A Dorpsbestuur² for the management of the affairs of the town was also established at this time. This division of authority promised well for the peaceful advancement of the community as a whole, and from this time forward the hatchet of discontent may be said to have been buried.



Figure 2: Early photograph of Jagersfontein town - the Roman Catholic Church on the right hand side was erected in 1881 (DBMC archives)

More amalgamations in the mining business:

In general, however, Jagersfontein was still far from prosperous. About one third of the number of claims in the mine lay abandoned.

² Town Council

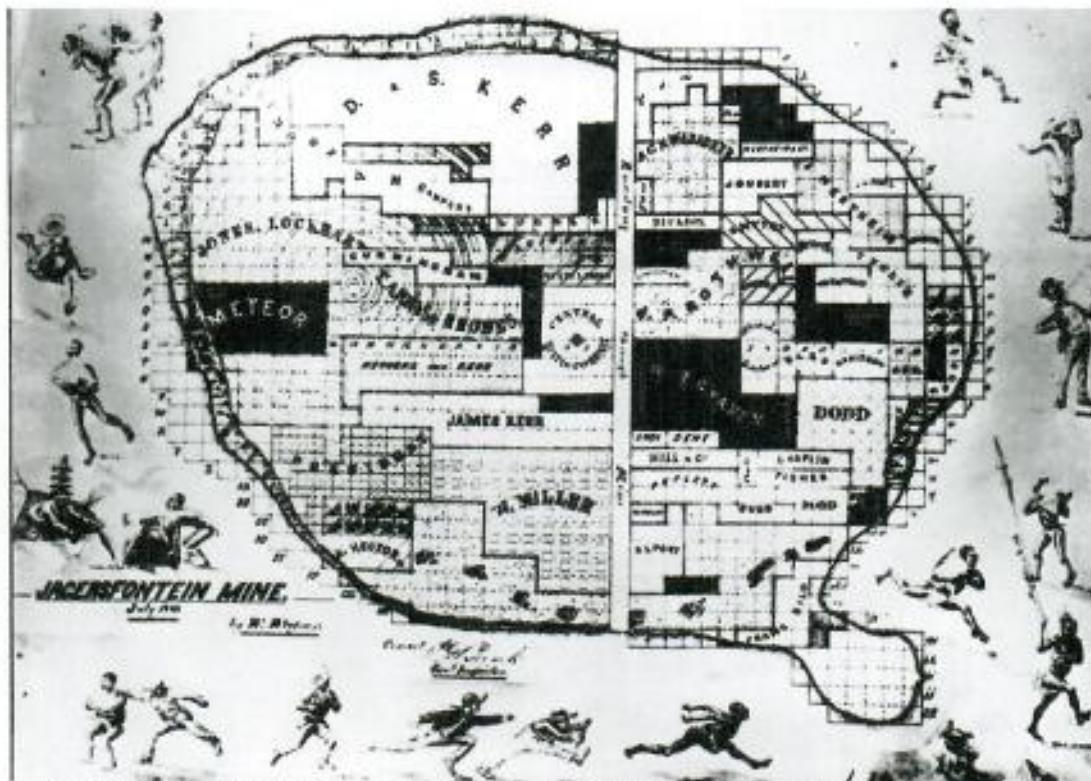


Figure 3: Map of claims dd July 1886 (DBMC archives)(see Attachment B for larger view)

A change came about when a number of people, mostly from Kimberley, applied for and obtained these claims (mainly for speculation). On 1 January 1887 the New Jagersfontein Mining and Exploration Company Limited was incorporated with the object of gradually effecting the amalgamation of all the claims. They started with 220 claims, two hauling and two washing machines, 52,000 loads of blue ground (formerly the property of C.J. Rhodes and his associates), and a capital of £131,000.

By February 1888 the New Jagersfontein Mining & Exploration Company acquired the holdings of four other companies and an individual viz:

Kohinoor company	: 46 claims
President Company	: 44 claims
Kerr Diamond Mining Co	: 382 claims (including machinery, plant and blue ground on their floors)
East End Company	: 164 claims
Mr A Wertheim	: 9 claims

In 1889 the Visser family sold their farm by public auction to the Jagersfontein Mine & Estate Company Ltd for £89,000. The estate company owned the farm on which the mine was situated and it also drew licences from all the stands in the township, and in addition was entitled to 50% of the claim licences collected by the Orange Free State Government. The Jagersfontein Mining and

Exploration Company purchased 68,486 claims out of a capital of 98,500 shares in the Estate Company, thus holding nearly three quarters of the shares.

By March 1890 the Jagersfontein & South African Mining Association amalgamated their 26 claims and machinery with the New Jagersfontein Mining & Exploration Company.

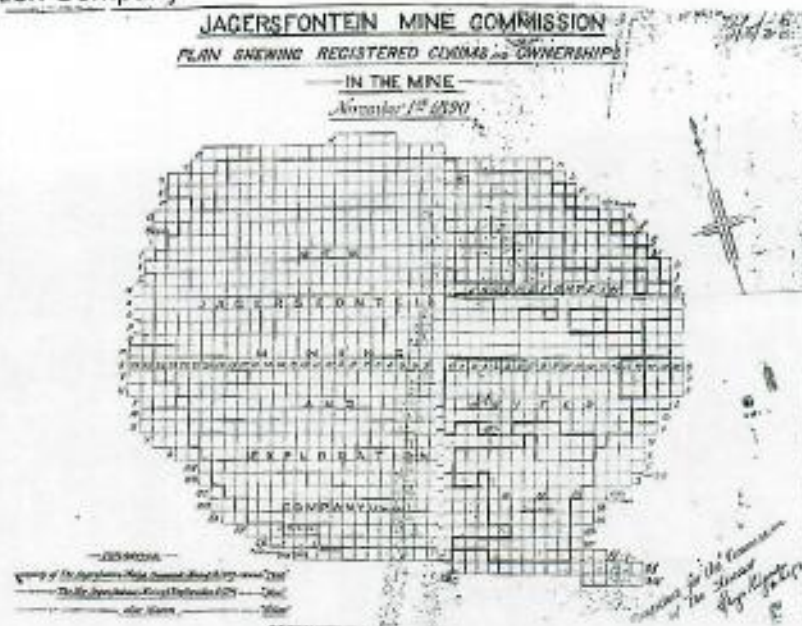


Figure 4: Map of claims as on 1 November 1890 (DBMC archives) – ownership now mainly resides with NJM&E and UDM companies (See Appendix C for larger view)

In July 1891 the United Diamond Mining Company accepted 17,000 fully paid up shares in New Jagersfontein Mining and Exploration Company in exchange for their

277 claims in Jagersfontein mine
 25,223 shares in the Jagersfontein Mine & Estate Company
 Machinery, plant, cash and diamonds on hand

This amalgamation in 1891 secured total ownership of the mine for the New Jagersfontein Mining and Exploration Company with the exception of 4 shares of £1 each.

On account of this amalgamation the mining board fell away and the Government appointed a Mine Inspector. One of the directors of the newly amalgamated company became the managing director and under his able management the beneficial effects of the amalgamation were soon apparent. Steps were taken at once to enclose the area with a barbed wire fence and to further safeguard the company from illicit traffic in diamonds large compounds were erected for their native employees.



Figure 5: Early enclosed Compound area (DBMC archives)

In June 1893 one of the world's largest diamonds was discovered at Jagersfontein mine. It was found by a native mine worker who received £500 as reward as well as a horse complete with saddle and bridle. The "Excelsior", a blue-white diamond, weighed 971 $\frac{3}{4}$ carats and was eventually cut into 21 big diamonds with a total weight of 364 carats. (Until 1905 when the "Cullinan" was discovered at Premier mine in the Transvaal, weighing 3,106 metric carats, the "Excelsior" remained the world's largest diamond discovered.)

Two years later in November 1895 another big diamond weighing 634 carats was found at Jagersfontein. From it was obtained a faultless brilliant of 239 carats. It was initially named the "Reitz" after the then President of the Orange Free State but later renamed the "Jubilee" diamond in honour of Queen Victoria's 60th birthday.

Negative influences:

1899-1902 Anglo-Boer War: Both Jagersfontein town and mine were seriously affected by the Anglo-Boer War. For 19 months until July 1902 the town was

deserted. The mine was severely damaged and water had accumulated in the mine. By 1903 the mine was dry and restoration completed.

1908 Depression in America: This led to retrenchment and the restricted output of diamonds.

1914-1916 World War I: On the outbreak of the First World War washing was suspended until the beginning of 1916 and mining operations resumed two years later.

1920 Post-war Depression: In consequence of the post-war depression of 1920 and the wholesale selling of diamonds by Russia after the Bolshevik revolution, mining operations were suspended in 1921 until November 1922.

1926 Alluvial discoveries at Alexander Bay

1928 Alluvial discoveries at Lichtenberg

1929 Wall Street crash

The beginning of De Beers Consolidated Mines Ltd involvement:

In 1931 De Beers Consolidated Mines Ltd was appointed the secretaries and consulting engineers of Jagersfontein mine to affect economies. However, in 1932 (during the Depression) underground work was stopped except for pumping and maintenance. The mine was closed and remained so until 1949.

De Beers took a 10-year lease on the company's property at a specified rental in 1940. (The lease was renewed in December 1959 and 1969.) Six years later De Beers instructed their consulting engineers (AAC) to proceed with development for the re-equipping and re-opening of the mine. Production was restarted in July 1949 and the mine was officially re-opened 12 December 1949. At the same time a new hospital was built to serve the needs of the natives. It had the most modern equipment. A new township, Charlesville, was also built to house the company's employees. The mine remained in production until 28 May 1971 when it was finally closed down.

3.3.2 History of mining techniques employed at Jagersfontein Mine

1871-1931

Mining operations started with open pit mining and was carried out for more than 40 years. The transition to the underground system was brought about gradually, open cast mining being finally abandoned in March 1913.



Figure 6: Photograph of the early years of the open mine pit area (DBMC archives)

Sinking of the main shaft started in 1904 but the first skip was only hoisted in February, 1911. The main hoisting level was at a depth of 900 ft and blue ground above this level was removed by inclined chambering from working levels approximately 60 ft apart. During this period Jagersfontein shaft recorded the highest hoisted tons rate in the world – 12,800 tons in 24 hours. Open pit mining still continued and eventually ceased in 1913.

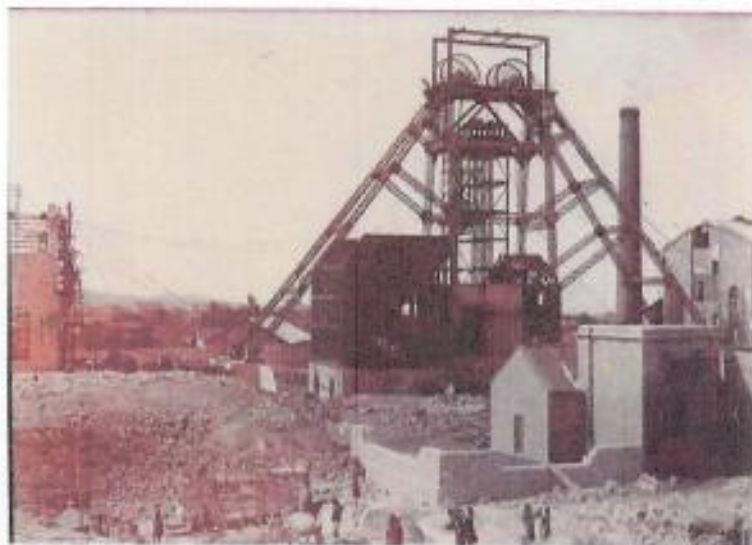


Figure 7: The first hoist shaft (DBMC archives)

Until closedown in 1932 ground was treated in several small washing plants spread out over the property. The later ones had crushers but the earlier ones were for washing only – the breaking down of the ground being done on the old “floors” system. Ground from the mine was laid out on prepared surfaces in the veld for several months, where the natural weathering processes, assisted by watering and ploughing, caused it to pulverize. The early washing plants were, therefore, placed close to areas of flat veld suitable for floors, and close to koppies, up which skip haulages could be laid for tailings disposal. The dumps created during this period are referred to as the washing machine dumps and are still visible today.

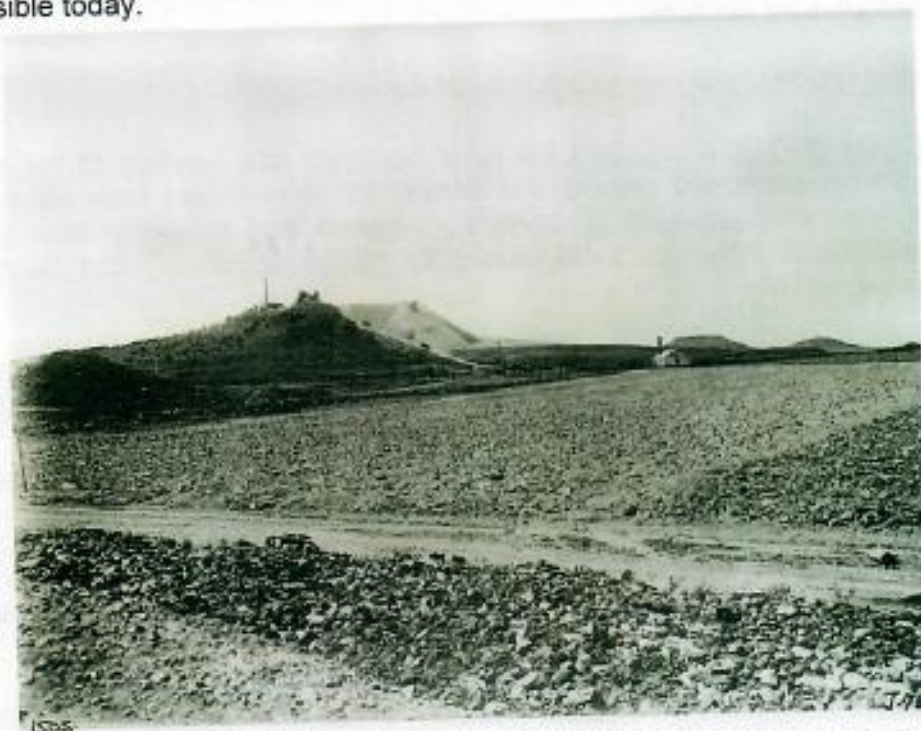


Figure 8: DBMC Archive photograph of No 2 Floors and gear (Incline haulage and Washing Machine)

The crushed blueground hoisted to the surface by the small air hoists was loaded from the haulage boxes into coco pans for removal to the floors, where the ground was laid out to weather (about 16" deep) for about 8 months. A small crushing plant was erected at Jagersfontein in 1909 but that was used only for cylinder-lumps of the various washing gears and "hardebank" found in the mine. From the floors the ground was taken to the various washing plants. There were at Jagersfontein, until the building of a large central washing plant, a number of small two-pan washing plants. These washing plants were very often at the summit of high koppies thus necessitating the incline haulages as shown in Figure 8 from the floors to the washing plants. The ground to be treated and the water to wash have therefore to be elevated but the disposal of the tailings was very easy as it could just be thrown down the side of the kopje.

1949-1971

More modern mining techniques were employed after the re-opening of the mines on 12 December 1949. The first "block cave" installation was on the 1840 ft level and operated successfully up until May 1968. The second installation was on the 2460 ft level with the loading station on the 2430 ft level. The Modern Tailings Dump was created during this period (i.e. 1949-1971) and represents a second period of dump creation.

A new plant³ was constructed involving primary and secondary crushing with concentration using rotary pans. Diamonds were recovered using grease tables and side shaking vanners.

*Brief description of the various sections of the new plant:*⁴

The Crushing Plant is adjacent the mine headgear and handled all the ground hoisted from stockpiled ground and ground for re-treatment from old dumps. Waste rock was removed by hand sorting and the remaining blue ground reduced from 6 inches to 1-1/4 inches by means of Primary and Secondary crushing screening.

The Washing Plant: From the crushing plant the ground is conveyed to the storage bins of the washing plant where it is distributed to the various chambers.

Extraction of the Concentration: Concentrates of kimberlite of specific gravity approaching and exceeding that of the diamond only constitute 0.25 per cent of the ore. However, with a valuable product, such as the diamond, a high factor of safety is allowed and therefore a primary concentrate of 2 per cent of the original feed is obtained, heavy media separation and grease tables being used for the final concentration.

Primary concentration is done in three stages. Ore fed to the primary or course pan is un-sized below 1 ¼ inches. Prior to entering the pans the ground is mixed with puddle (a viscous mixture of water and kimberlite at a S.G. of 1.430).

The lighter constituents of the feed overflowing the weir of the inner periphery, pass over 3/8 and 1 1/8 inch long slot screens. The oversize from these screens passes through rolls set at 3/8 inch and rejoins the screen undersize which in turn constitutes the feed to the secondary pans. At this stage "make-up" water is added for pan control.

The overflow from secondary pans passes over seven mesh screens. The seven mesh screens constitute the tailings while the minus seven mesh is pumped through hydrocyclone classifiers. The cyclone underflows are fed to the tertiary

³ This is the area discussed on pages 34-88

⁴ Refer to figure 22 on page 35 for a layout of the Treatment Plant

pans for the final stage of primary concentration. The overflow of the cyclones returns as puddle and re-circulates through the plant.



Figure 9: Aerial view of the mining area with the Modern Tailings Dump in the foreground, the new compound (the large rectangular set of buildings to the right) and the modern washing plant immediately north of that in line with the open pit mine. (DBMC archives)

Disposal of tailings: As in all concentrating plants, the disposal of tailings constitutes a problem, here especially as the tailings contain up to 13 per cent moisture. All tailings, - 3/8 inch + .095 inches, are conveyed to the tailings dump for disposal by flingers which are short centre, high speed conveyors traveling at 2,400 feet per minute. These flingers deposit the tailings a distance of 40 feet away in the desired direction.

Excess puddle is pumped to slimes dam, and constitutes 12 – 15 per cent of the head feed to the Washing Plant.

Recovery Plant: In the production of diamonds, recovery, which is the final concentration of the ore following the initial concentration by crushing and washing, has always been kept in a separate department. This has been mainly for security reasons as the very high concentration effected in the washing process gives a rich concentrate with visible values, requiring treatment under careful security control.

The 2 per cent concentrate from the Washing Plant is screened over 7 mesh with the -7 mesh going via cyclones to the recovery plant fine tables.

The + 7 mesh is conveyed to the Heavy media separation plant where it is reduced to a 6.5 per cent sink concentrate.

The 5 foot diameter cone is charged with a mixture of "knapsack" cyclone grade ferrosilicon (85% iron, 15% silicon) and water, and operated at 3.03 density top, and 3.22 density bottom. Control of medium density in the cone is by increasing or decreasing the amount of ferrosilicon delivered from the densifier.

The sink product is fed to the grease tables and belts for final recovery. Diamonds which occur in kimberlite are peculiar in that their surfaces are not wetted when they come into contact with water. Water is used in all stages of diamond recovery, both as a medium of conveyance and as a cleansing agent. If a diamondiferous concentrate of this type is fed to an inclined grease surface over which flows a stream of water, the diamonds adhere to the grease, and the associated minerals are washed away.

The diamonds which adhere to the grease with about an equal quantity of gangue material are removed by scraping with a large knife, and the surface of the table is redressed with a new layer of petrolatum ("grease"). The scrapings are placed in 28 mesh stainless steel screen cloth covered containers which are agitated in boiling water for initial degreasing and finally degreased by immersing in trichloroethylene vapour.

Due to the fact that a percentage of the ground comes from old dumps, provision had to be made for refractory diamonds. Due to salts attached to the surface of refractory diamonds, it will not adhere to grease. All concentrates after passing over the +7 mesh grease tables are therefore treated with a flotation reagent which makes the diamonds water repellent. These concentrates are run over grease belts, which are more suitable than grease tables, for the recovery of diamonds.

The final cleaning and sorting process is done in Kimberley and entails hand sorting of the coarse material, milling of the fine material, electrostatic separation, flotation and acidising.

3.3.3 The Anglo-Boer War and its effect on Jagersfontein

Special mention needs to be made of this event because it directly affected the operation of the mine and could have some connection to a certain portion of the unmarked burial grounds found within the mining area.

Colonel Sir David Harris⁵ wrote in his memoirs as follows:

⁵ Sir David Harris was not only the Chairman of Jagersfontein Diamond Company but also the leading Director of De Beers)

"I can give many instances of this feeling of regard for the Dutch. I will give one notable example. I have been Chairman of the Jagersfontein Diamond Mining Company for many years. I occupied the position during the Boer War. Just before the War that company employed 90 per cent, of Free Staters, and a few Transvaalers, and the balance were tradesmen from overseas. When the war broke out these white employees joined their different Commandoes. The mine was closed for three years at a loss of three-quarters of a million of money to the shareholders. When the war was over the General Manager wrote and asked me what policy to adopt with regard to the old employees. I said that every employee who was there when war broke out, and who joined his Commando, could re-join the Company, and those who did not do so should never be re-employed. I fought against the Republic in those days, and I respected the men who fought so bravely for it. Some of those men are still in the employ of this Company."

Elsewhere in his memoirs he continues as follows:

"About ninety per cent of our employees are South African born. When the Anglo-Boer War was imminent, many of these men, including two brothers of General Hertzog—the present Prime Minister—were compelled to join their several Commandos according to the burgher law. Loyalty, they responded to a man, and this had the effect of stopping mining operations. Even without their assistance, the Jagersfontein Mining Company could only have carried on for a limited time, as supplies of fuel and explosives were unobtainable through the railway line being cut, thus preventing communication with the ports.

...

For three years mining operations were at a standstill. Water accumulated in the mine, while a British garrison was in occupation of the town. On several occasions the Boers attacked this force, but did not succeed in getting them to shift an inch of ground. The debris heaps were trenched and afforded good cover to the troops, who, nevertheless, suffered many casualties.

...

Long before the end of the war the garrison was withdrawn. It was now that all the English and the remaining employees, including the manager, vacated the mine through having to accompany the column. Nobody was left in charge, and the company's property remained at the mercy of the enemy forces. Be it said to the credit of the Boers that no damage or looting to any serious extent took place during the long evacuation.

When peace was at length declared, Mr. Debell, the manager of the mine, and some members of the staff returned to Jagersfontein, and made the necessary arrangements to de-water the mine. Considerable time elapsed, however, before the requisite number of natives could be obtained to start normal working operations.

The manager wrote to the head office for instructions concerning the taking on of white men. My reply pointed out that all those who had been in the employ of the company when war was declared, and who had joined their respective Commandos, should be re-engaged, but those who had not been loyal to their own cause should be overlooked."

From the Boer side General De Wet gives the following account:

"I had appointed Judge Hertzog as a second Vice-Commander-in-Chief, to carry out the same work in the districts of Fauresmith, Philippolis and Jacobsdal. He had under him Commandant Hendrik Pretorius (of Jacobsdal) and Commandant Visser. The latter was the man who, when the burghers from Fauresmith, even before the taking of Bloemfontein, had remained behind, broke through with seventy or eighty troops. He had always behaved faithfully and valiantly until, in an engagement at Jagersfontein, he gave up his life, a sacrifice for the rights of his nation. His name will ever be held in honour by his people."

...

For the space of a day I remained quiet, so that I might be quite sure that the English had received the report I had spread. ...I soon discovered that my plan had been quite successful. The English marched off in the direction I wished, believing, no doubt, that the rumours they had heard were true; whilst I, on the evening of the 5th of February, 1901, took some of the burghers, with the guns and waggons, to a spot between the stations of Springfontein and Jagersfontein, and the following day remained in hiding."
... "I crossed the railway line that evening without any mishap to my force ...",

Arthur Conan Doyle in his book "Great Boer War" relates the following regarding the skirmishes in this area and more specifically the battle in Jagersfontein on 16 October 1900:

Apart from the operations of De Wet there appeared to be no large force in the field in the Orange River Colony, but early in October of 1900 a small but very mobile and efficient Boer force skirted the eastern outposts of the British, struck the southern line of communications, and then came up the western flank, attacking, where an attack was possible, each of the isolated and weakly garrisoned townlets to which it came, and recruiting its strength from a district which had been hardly touched by the ravages of war, and which by its prosperity alone might have proved the amenity of British military rule. This force seems to have skirted Wepener without attacking a place of such evil omen to their cause. Their subsequent movements are readily traced by a sequence of military events.

On October 1st Rouxville was threatened. On the 9th an outpost of the Cheshire Militia was taken and the railway cut for a few hours in the neighbourhood of Bethulie. A week later the Boer riders were dotting the country round Phillipolis, Springfontein and Jagersfontein, the latter town being occupied upon October 16th⁶, while the garrison

⁶ 1900

held out upon the nearest kopje. The town was retaken from the enemy by King Hall and his men, who were Seaforth Highlanders and police. There was fierce fighting in the streets, and from twenty to thirty of each side were killed or wounded. Fauresmith was attacked on October 19th, but was also in the very safe hands of the Seaforths,"

...
De Wet meanwhile moved south as far as Smithfield, and then, detaching several small bodies to divert the attention of the British, he struck due west, and crossed the track between Springfontein and Jagersfontein road, capturing the usual supply train as he passed. On February⁷ 9th he had reached Phillipolis, well ahead of the British pursuit, and spent a day or two in making his final arrangements before carrying the war over the border. His force consisted at this time of nearly 8000 men, with two 15-pounders, one pom-pom, and one maxim. The garrisons of all the towns in the south-west of the Orange River Colony had been removed in accordance with the policy of concentration, so De Wet found himself for the moment in a friendly country."

From the Seaforth Highlanders' records the following:

"When the enemy moved south of Bloemfontein three companies of the Seaforths were sent, about 13th October 1900, to occupy Jagersfontein and Fauresmith. Both places were attacked before daybreak on the 16th. At the former place the Boers got into the town in darkness, indeed into the camp, but were driven out. The Seaforths, however, lost 12 killed and 1 officer and 5 men wounded. ..."

From the 2nd Battalion East Yorkshire Regiment's records the following:

"He (Hanbury, 2nd Lieutenant Edward Mansfield) was killed at Jagersfontein on October 13th, 1900, while in command of the Mounted Infantry of the 3rd Battalion South Lancashire Regiment. ... He entered the East Yorkshire Regiment, in April 1900, from the 3rd Battalion South Lancashire Regiment and Lieutenant Hanbury fell while on patrol duty..."

Thorneycroft's Mounted Infantry:

In May and June Thorneycroft's column was employed in the Brandfort-Senekal-Hoopstad district, and made useful captures. On 1st July they were ordered to march to the Basutoland border, and thereafter from Ladybrand through the south-east of the Orange River Colony to Aliwal in Cape Colony, where they arrived about 28th July. They now moved back across the Orange towards Jagersfontein, arriving there about 6th August. On this last march Thorneycroft took 28 prisoners, 1000 horses, and much stock.

Cape Town Highlanders:

As a corps the most prominent appearance of the Cape Town Highlanders in despatches was in connection with a mishap for which, however, they were in no way to blame. It will be remembered that in October 1900 the enemy, having beaten in the Transvaal,

⁷ 1901

4. Background information of the survey

4.1. Methodology:

A team of four trained archaeologists and one assistant from the National Museum in Bloemfontein undertook a foot survey of the area from the 2nd to the 7th of February 2009. Various areas were targeted for investigation, such as the known mining structures and areas as per mining map obtained from De Beers Consolidated Mining archives, dongas, ridges and historical remains, while the rest of the survey was undertaken by walking transects at random intervals. Research on the property included consultation of the NM Department of Archaeology's database, various literature sources including the De Beers archives and National Archives as well as interviews. On the 18th and 19th of March two members of the team returned to Jagersfontein for further collection and verification of data collected during the first trip.

4.2. Restrictions encountered during the survey:

Visibility:

Visibility was variable in the area of the survey. It was good in the dongas, erosion areas and on most of the hillsides. However, it was difficult in certain of the grazing areas and in some of the more wooded areas. This did not, however, have any significant effect on the recording of recent mining material for the survey but might have hidden remains from the early mining operations and/or other remains.

Disturbance:

Although the greater part of the mining area was disturbed at some stage or another during the mining history of the area, these areas were investigated for the remains of old mining structures. On account of this disturbance it is assumed that most of the Stone Age remains (tools) found is not *in situ*. Ploughing of the floors areas would have disturbed the distribution of these artefacts.

Restricted areas:

The area around the periphery of the open pit mine (enclosed by a fence) as well as the old mine dumps were restricted areas and could therefore not be surveyed.

Other: Free roaming ostriches in the western section prohibited an extensive foot survey in this area and were only the hills surveyed on foot and the flat areas by means of a quad bike.

4.3. Details of equipment used in the survey:

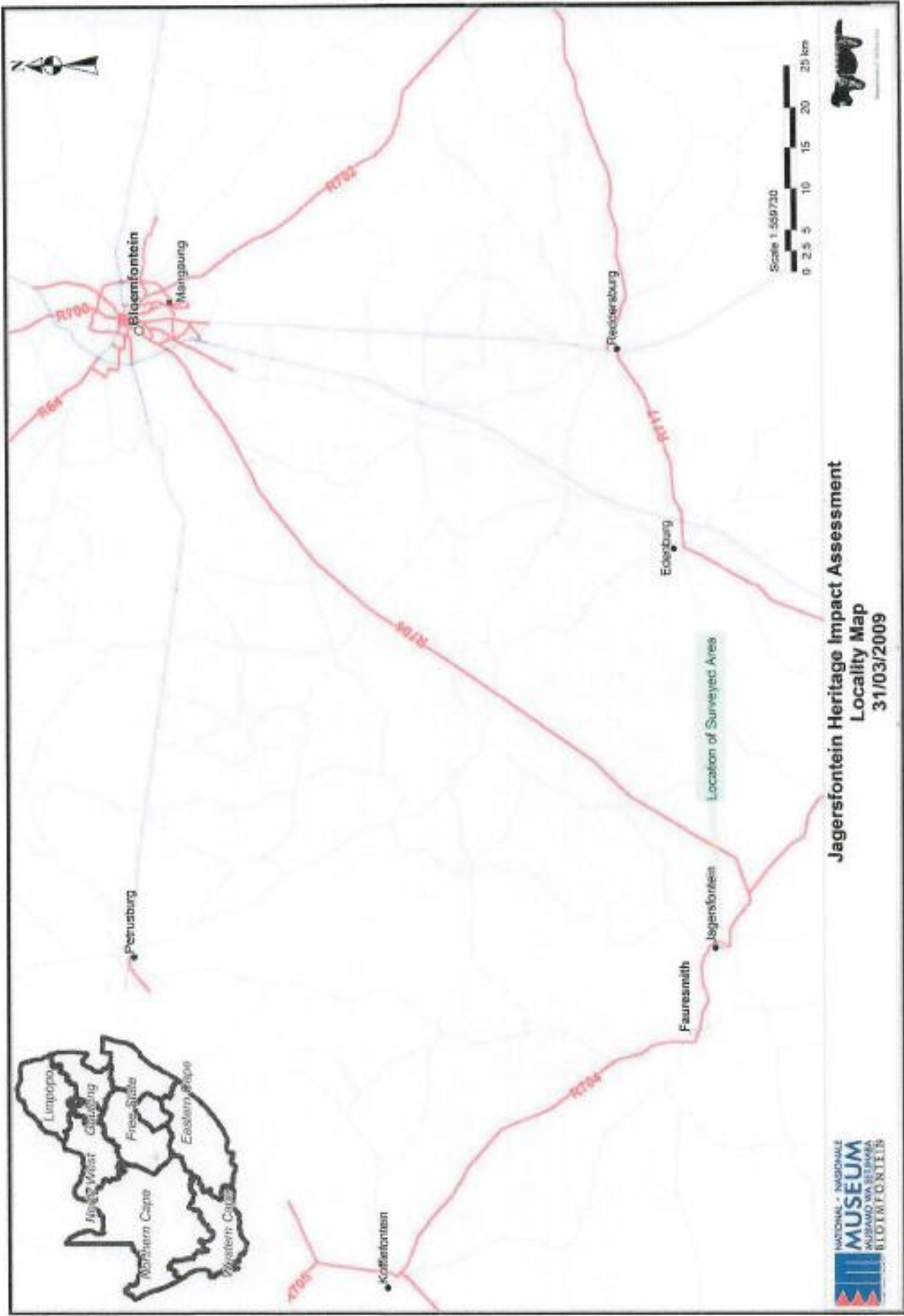
GPS: Garmin Map60CSx and Garmin etrex Summit

Datum: WGS 84

All readings were taken using the GPS. Accuracy was to a level of 3-5 m.

Maps created using Planet GIS software.

Digital cameras: Sony DSC H50; Sony DSC H7; Canon Powershot S5IS



**Jagersfontein Heritage Impact Assessment
Locality Map
31/03/2009**

5. Description of sites and material observed:

5.1. Locational Data (see locality map on page 22)

Map reference: 2925 CB & 2925 CD

Province: Free State

Magisterial District: Xhariep District (Kopanong Local Municipality)

Nearest Town: Fauresmith (other than Jagersfontein)

5.2 Description of the general area surveyed (See Appendix E – Google Map)

A small section of the surveyed area forms part of the town of Jagersfontein as well as the mining town Charlesville to the east of the mining area and the remainder is the old mining area. This area is bounded on the north and north-eastern as well as southern and western side by ridges varying in height and length. Relatively flat areas occur within the surveyed area but it is also dotted with small hillocks. A large portion of the surveyed area is taken up by old machine dumps, the Modern Tailings Dump as well as the open pit mining area. These areas are restricted areas and were not surveyed. The majority of flat areas currently covered by grass were previously either slime dams or mining floors. On the eastern side are the remains of an old gravel airfield strip suitable for small aircraft. The eastern section where the airfield strip is situated as well as the section north of the R704 is currently utilized as farming area (game farming and grazing for cattle).

5.3. Description of sites and material observed

5.3.1 Mining related features

5.3.1.1 The dumps:

The machine dumps were created by tailings from the 14 "washing machines" operated by the New Jagersfontein Company. These dumps can be divided into two categories namely those created by two-pan plants and those created by larger plants.

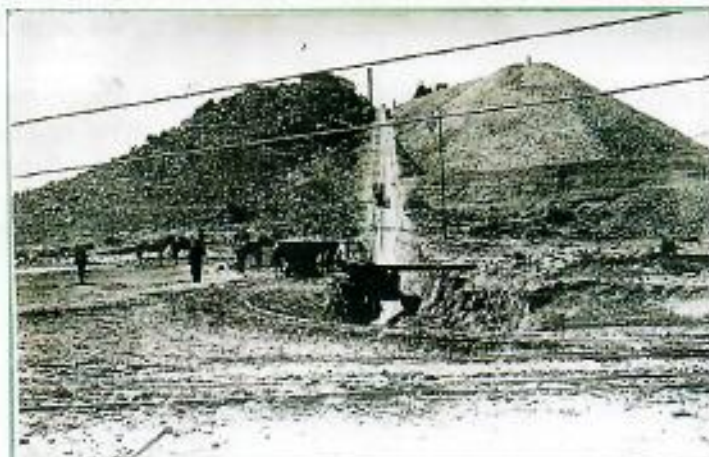


Figure 11: Archive picture of a two-pan washing plant with its machine dump on the right hand side

The two-pan plants had no crushing facilities and were operated from before 1900 through to 1917-1921. Dumps MD1, MD2, MD3, MD4, MD5, MD7, MD8 and MD9 as marked on the map on page 26 were created by these plants.

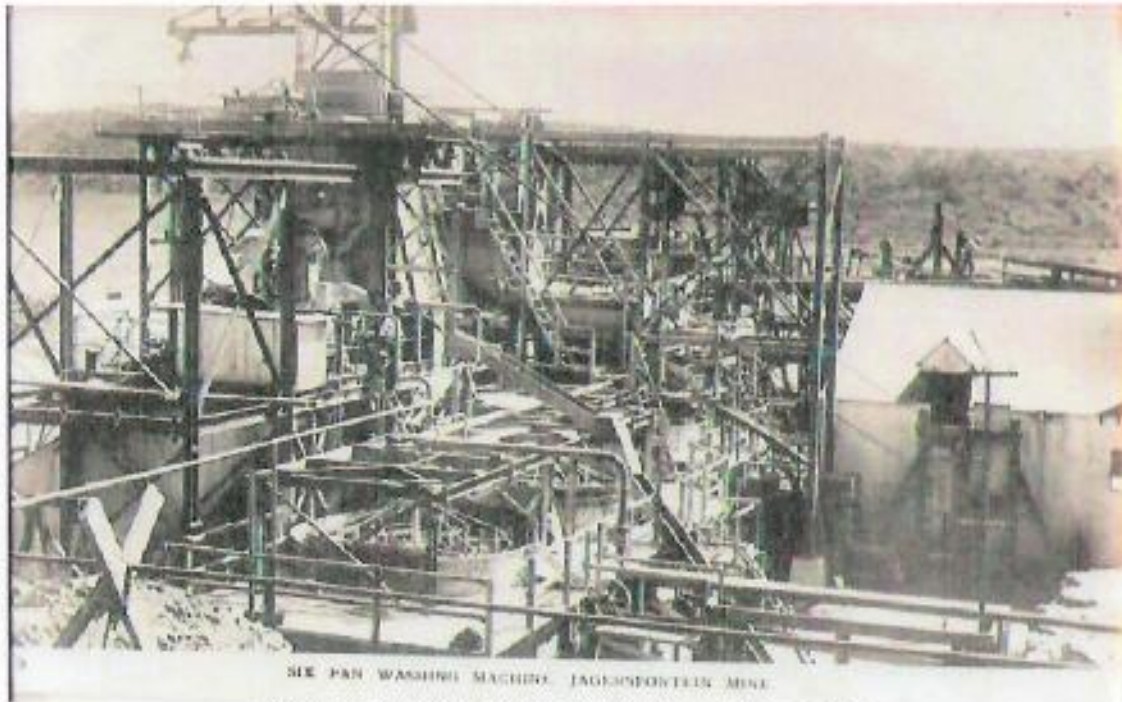


Figure 12: Archive picture of a 6-pan washing machine

Dumps MD10 and MD14 on the same map were created by larger plants containing up to 6 pans each. These plants were equipped with crushers and rollers as well and commenced operation in 1908 and continued operating until 1922.

Both the 2-pan and larger plants were dismantled and removed after they fell in disuse and all that remain are the machine dumps and cement slabs in certain areas where the machinery was anchored. (See figure 13 on page 25.)

The Modern Tailings Dump (indicated as MTD on the above-mentioned map) was created by treatment of mined kimberlite after the mine re-opened in 1947, until final closure in 1971. This material was treated through a typical "pan" plant of that period, with incorporated primary and secondary crushing. The buildings associated with the MTD (i.e. the plant) will be discussed under the section on "mining-related structures/buildings".



Figure 13: Pre-1922 Machine dump with remnants of the haulage system to the top

5.3.1.2 Open pit mine:

The mine pit which is the result of more than 40 years of open pit mining is within a restricted enclosed area which could not be surveyed.



Figure 14: Southern side of open pit mine

5.3.1.3 "Floors" areas:

These areas are less visible today than the above-mentioned dumps and open pit mine but at the time of being in use would have been clearly visible (refer to figure 8 on page 13). The following are two early floor plan maps that indicate where these floors were situated during the early history of the mine. Refer to fold-out map on page 32 for a plan of the later floors. As a consequence these areas, although today overgrown by grass and dotted by the odd concrete slab, were severely disturbed at some stage or another which explains the lack of earlier archaeological material such as Stone Age material which normally would have been found in abundance in this area.

Although naturally flat areas were selected for the floors areas it was also prepared by compacting the surface before a layer of mined blue gravel was spread out to weather. The weathering process was speeded up by wetting and ploughing the gravel layer which would have caused even further disturbance of the original surface.

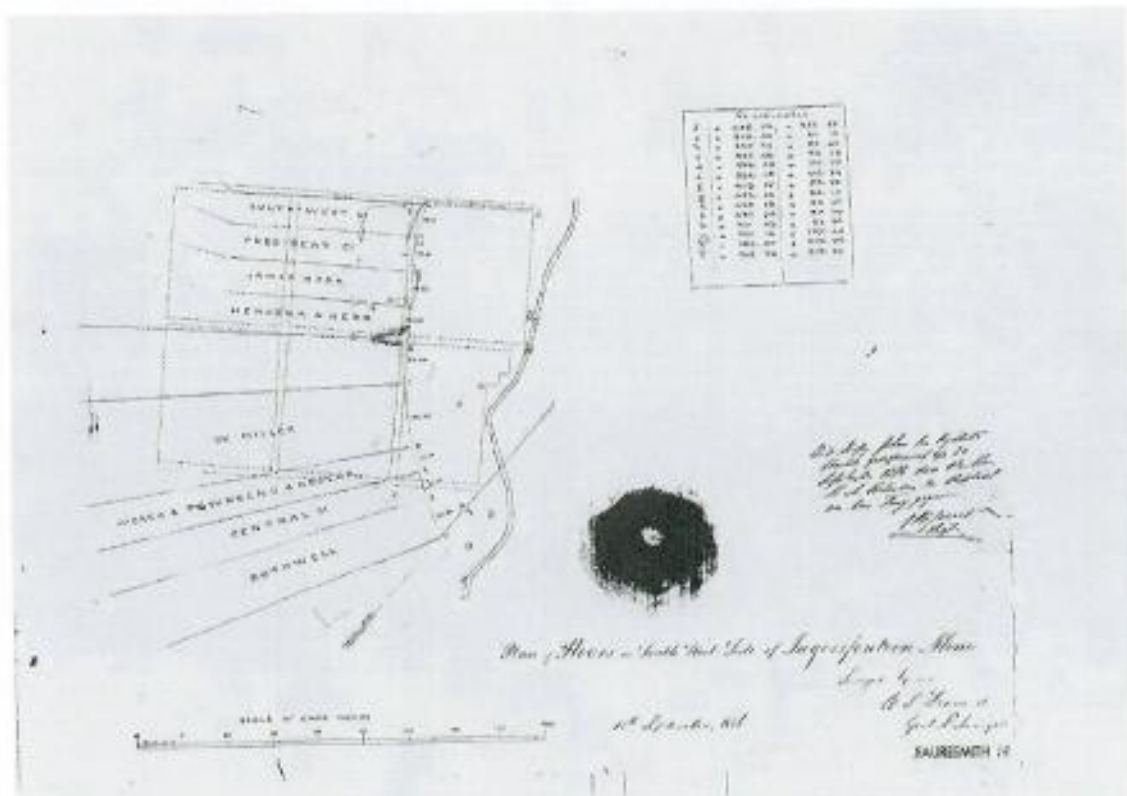


Figure 15: Plan of floors on south-western side of open pit mine dd September 1884



Figure 17: Concrete slabs - remains of haulage system at floors area (see map of South Section on page 33)



Figure 18: Concrete slabs in "floors" area



Figure: 19 (group)
 Various items found in "floors"
 area of southern section
 labeled "25" and "13 floors"
 (see map on P32) Note cement
 slab with the number "24"

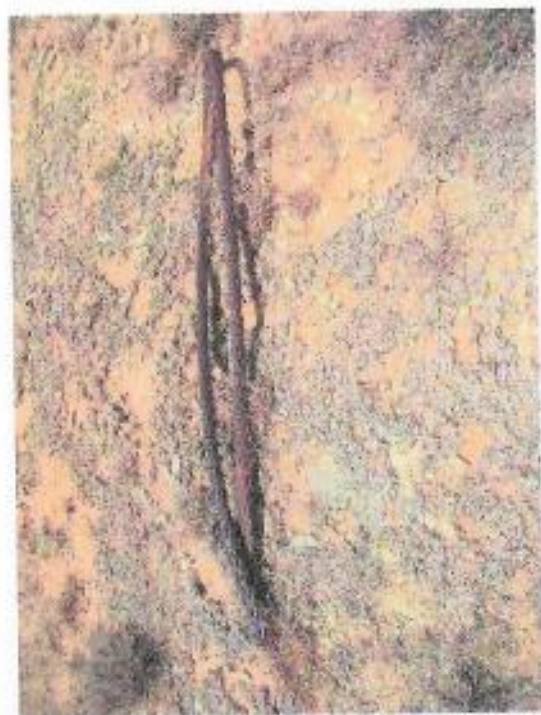
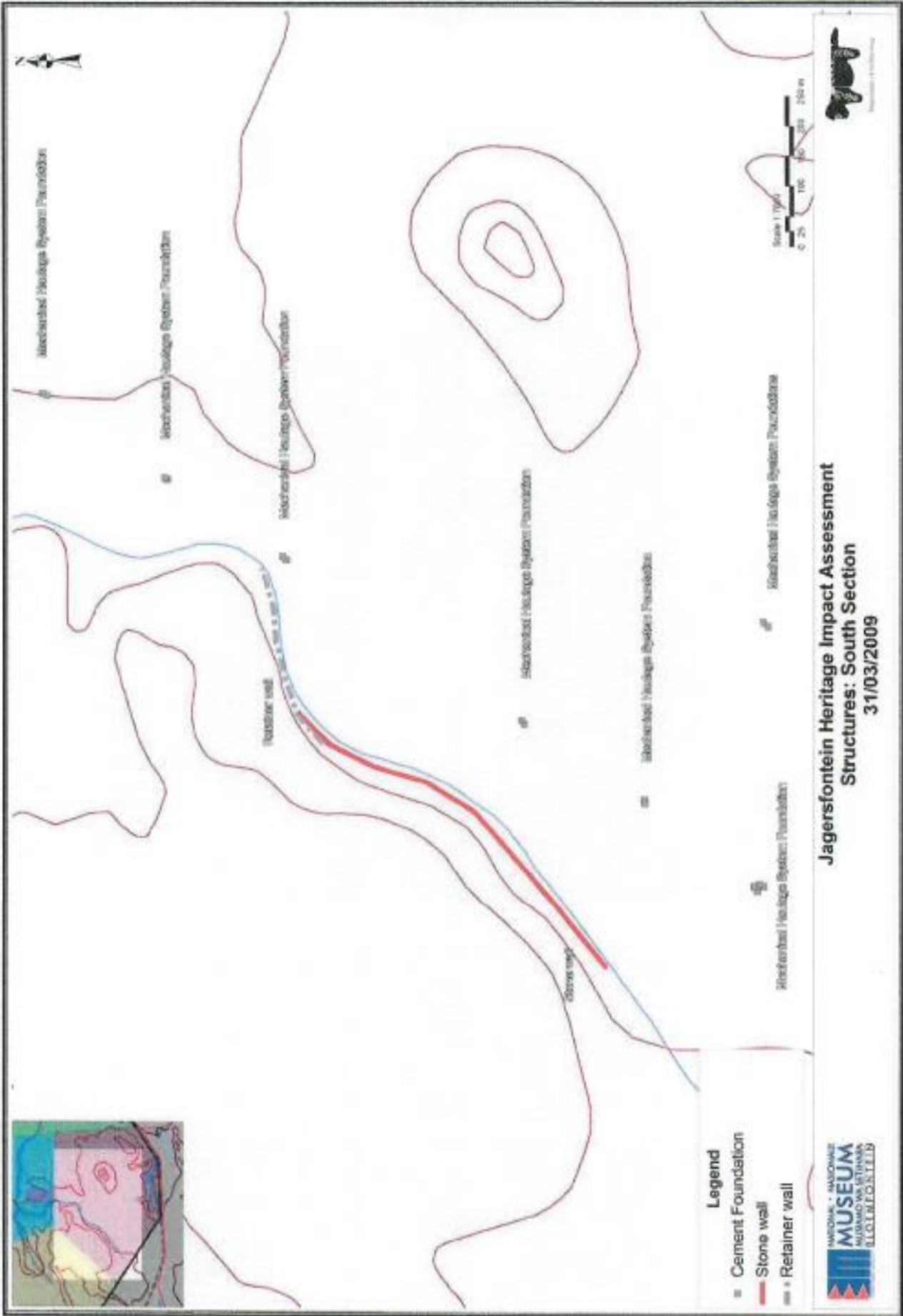


Figure 20 (group): Old buckets, pulleys, industrial sized hooks, steel cables, spades, etc are scattered over the floors areas



5.3.2 Mining-related structures/buildings:

The majority of cement slabs (foundations) and structures found within the mining area could be identified by means of the mine plans obtained from the De Beers archive in Kimberley. The remainder in this section will be referred to as "unidentified structures" but have a clear connection with mining activities either by its location or the nature of the structure and will therefore be dealt with in this section.

5.3.2.1 Mine Area A (refer to map of finds on page 93):

This is the area described as the "treatment plant" and is situated immediately west of the stock pile where the mined gravel was stored and north of the compound (or hostel) where the native workers lived.

In this area only the office buildings were constructed of bricks and mortar whereas the plant itself consisted of an extensive network of dams, underground chambers, canals/channels (on which the conveyor belts ran) and buildings constructed of concrete and corrugated iron. All that remains of this today are the cement foundations with the machinery and corrugated iron walls and roof long removed. Included in the latter would be the No 1 Mine Rock Shaft, the crushers, washing plant, settling dams cooling dam, boilers area, rock shaft plant, various smaller and larger dams and the foundations of riggers. Some of the dams are constructed of both concrete and rocks from the local area or concrete and bricks.



Figure 21: No 1 M.R. Shaft is covered with a steel cover and enclosed in an area fenced in with a high security fence and a padlocked gate. The headgear is now at the museum at the northern side of the open pit mine.

Rock Shaft Plant Area

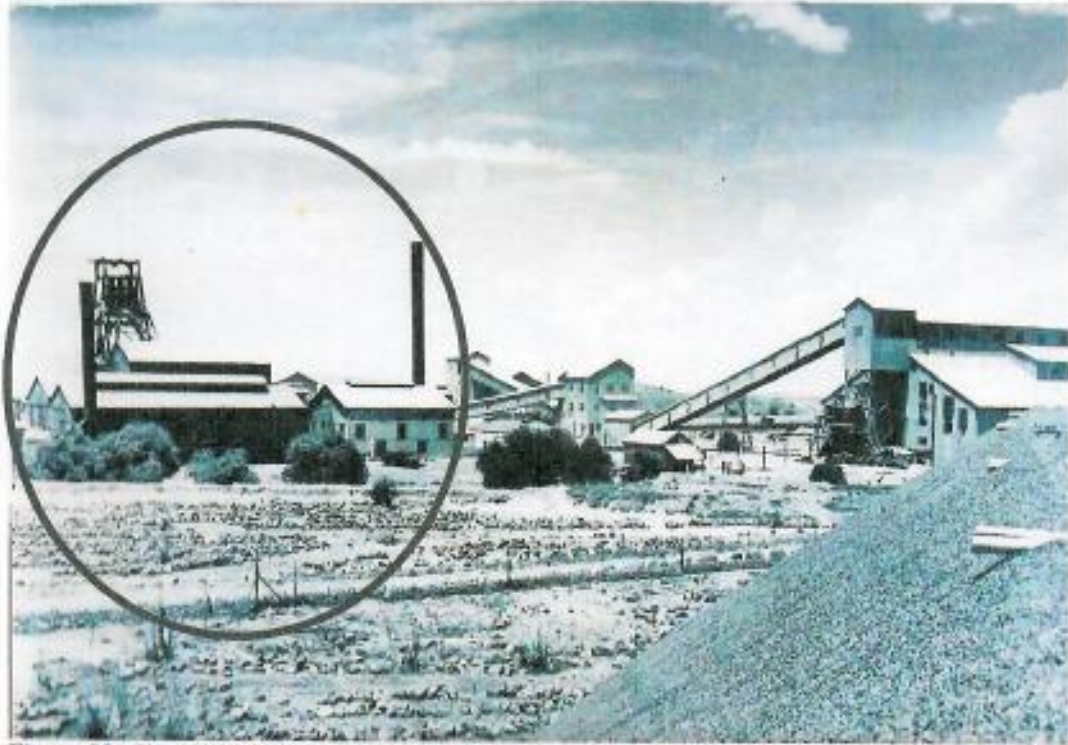


Figure 23: Rock Shaft area encircled with Crushers, Shaft Office, Change House and Engineers office adjacent and Washing Plant to the far right



Figure 24 (group): Top and side views of dam on northern side of the Rock Shaft Plant – constructed of cement and rocks



Figure 25: Unidentified concrete foundations at Rock Shaft area



Figure 26: Concrete canal at Rock Shaft area



Figure 27: On the south-eastern side of the dam in the previous pictures are the remains of the following structures – remains of shaft office in far background

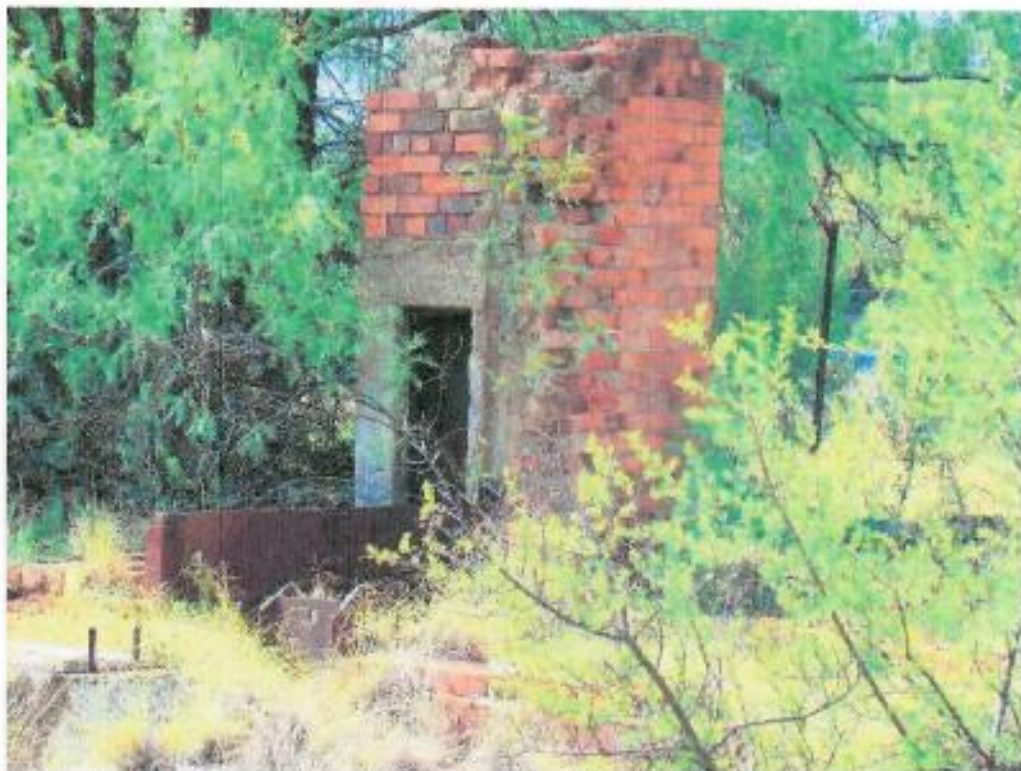


Figure 28: As Above (immediately to the south-east and left of this structure is the No 1 Rock Shaft)

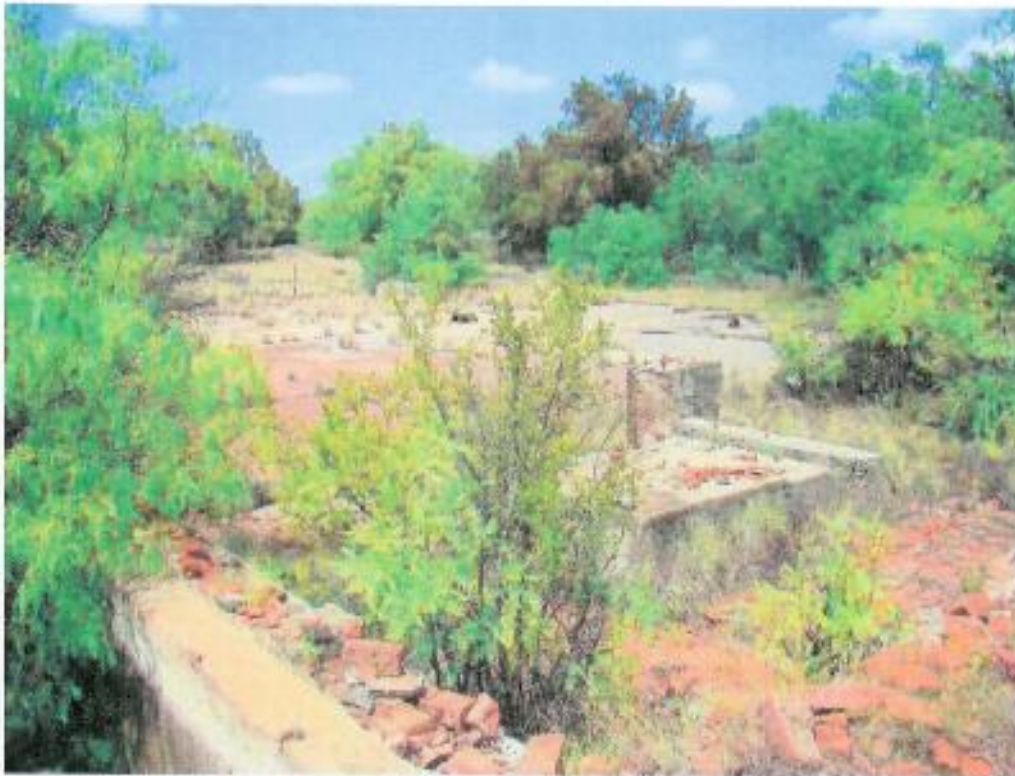


Figure 29: Cement foundations at Rock Shaft area



Figure 30: Remains of a small dam adjacent the dam in figure 24 – Shaft offices visible behind the brick ruins in the background



Figure 31: A cement foundation and rectangular structure of bricks and mortar to the west of the dam in figure 30