



Figure 53. Central Section Site Map

### 6.3 COMPOUND

Area	Map Name	Group Name	Era	Date Recorded	Latitude	Longitude	Altitude	Site No.
Compound	Compound	Structure	Mine	2009/04/02	-29.76944	25.41771	1416 m	3.1
Compound	Compound	Structure	Mine	2009/04/02	-29.76963	25.41921	1406 m	3.2
Compound	Compound	Structure	Mine	2009/04/02	-29.77093	25.41929	1409 m	3.3
Compound	Compound	Structure	Mine	2009/04/02	-29.77079	25.4193	1408 m	3.4
Compound	Compound	Structure	Mine	2009/04/02	-29.77169	25.41735		3.5
Compound	Compound	Structure	Mine	2009/04/02	-29.77187	25.41895	1409 m	3.6
Compound	Hospital	Structure	Mine	2009/04/02	-29.77181	25.41762		3.7
Compound	Hospital	Structure	Mine	2009/04/02	-29.77174	25.41765		3.8
Compound	Hospital	Structure	Mine	2009/04/02	-29.77191	25.4176		3.9
Compound	Hospital	Structure	Mine	2009/04/02	-29.77172	25.41765		3.10
Compound	Hospital	Structure	Mine	2009/04/02	-29.7718	25.41821	1413 m	3.11
Compound	Hospital	Structure	Mine	2009/04/02	-29.77169	25.41735		3.12
Compound	Hospital	Structure	Mine	2009/04/02	-29.77187	25.4182	1413 m	3.13
Compound	Hospital	Structure	Mine	2009/04/02	-29.77189	25.41744	1409 m	3.14

Compound	Hospital	Structure	Mine	2009/04/02	-29.77179	25.41746		3.15
Compound	Hospital	Structure	Mine	2009/04/02	-29.77178	25.41734	1413 m	3.16
Compound	Isolation ward	Structure	Mine	2009/04/02	-29.77232	25.41813	1410m	3.17
Compound	Isolation ward	Structure	Mine	2009/04/02	-29.77225	25.41838	1410 m	3.18
Compound	Isolation ward	Structure	Mine	2009/04/02	-29.77225	25.41818		3.19
Compound	Isolation ward	Structure	Mine	2009/04/02	-29.77233	25.41835	1411 m	3.20
Compound	Mortuary	Structure	Mine	2009/04/02	-29.7721	25.4182		3.21
Compound	Mortuary	Structure	Mine	2009/04/02	-29.77211	25.41824		3.22
Compound	Mortuary	Structure	Mine	2009/04/02	-29.77212	25.41818	1410 m	3.23
Compound	Mortuary	Structure	Mine	2009/04/02	-29.77214	25.41823	1411 m	3.24

Site Table 2. Compound Sites



Figure 54. Map of Compound Sites

## 6.4 EAST SECTION

Area	Map Name	Group Name	Era	Date Recorded	Latitude	Longitude	Altitude	Site No.
East Section	Ash heap	Midden	Mine	2009/02/02	-29.77524	25.41806	1420 m	4.1
East Section	Cement Foundation	Cement Foundation	Mine	2009/05/02	-29.77941	25.41789	1410 m	4.2
East Section	Coal Depot	Structure	Mine	2009/05/02	-29.78396	25.4272	1410 m	4.3

East Section	Coal Depot	Structure	Mine	2009/05/02	-29.78372	25.42694	1412 m	4.4
East Section	Coal Depot	Structure	Mine	2009/05/02	-29.78357	25.42711	1413 m	4.5
East Section	Coal Depot	Structure	Mine	2009/05/02	-29.78385	25.42717	1412 m	4.6
East Section	Coal Depot	Structure	Mine	2009/05/02	-29.78361	25.42716	1411 m	4.7
East Section	Coal Depot	Structure	Mine	2009/05/02	-29.78383	25.42721	1412 m	4.8
East Section	Coal Depot	Structure	Mine	2009/05/02	-29.7837	25.42707		4.9
East Section	Coal Depot	Structure	Mine	2009/05/02	-29.78392	25.42725		4.10
East Section	Loading Ramp	Structure	Mine	2009/05/02	-29.78368	25.42714		4.11
East Section	Loading Ramp	Structure	Mine	2009/05/02	-29.78377	25.42721	1411 m	4.12
East Section	Loading Ramp	Structure	Mine	2009/05/02	-29.78375	25.42723	1412 m	4.13
East Section	Loading Ramp	Structure	Mine	2009/05/02	-29.7837	25.42711	1412 m	4.14
East Section	Mound Dam	Dam	Mine	2009/05/02	-29.78091	25.41861	1414 m	4.15
East Section	Power station	Cement Foundation	Mine	2009/06/02	-29.7728	25.4207	1411 m	4.16
East Section	Stores	Cement Foundation	Mine	2009/06/02	-29.77446	25.41935	1416 m	4.17
East Section	Train Bridge	Bridge	Historic	2009/03/02	-29.77778	25.42128	1411 m	4.18

Site Table 3. East Section Sites



Figure 55. East Section Site Map

## 6.5 GRAVEYARD

Area	Map Name	Group Name	Era	Date Recorded	Latitude	Longitude	Altitude	Site No.
Graveyard	Grave	Graveyard	Historic	2009/05/02	-29.77616	25.40599	1421 m	5.1
Graveyard	Grave	Graveyard	Historic	2009/05/02	-29.77615	25.406	1420 m	5.2
Graveyard	Grave	Graveyard	Historic	2009/05/02	-29.77613	25.40602	1421 m	5.3
Graveyard	Grave	Graveyard	Historic	2009/05/02	-29.77612	25.40603	1421 m	5.4
Graveyard	Graveyard	Graveyard	Historic	2009/03/02	-29.77627	25.40578	1425 m	5.5
Graveyard	Graveyard	Graveyard	Historic	2009/03/02	-29.77624	25.40556	1425 m	5.6
Graveyard	Graveyard	Graveyard	Historic	2009/03/02	-29.77693	25.40551	1414 m	5.7
Graveyard	Graveyard	Graveyard	Historic	2009/03/02	-29.77619	25.40643	1420 m	5.8
Graveyard	Graveyard	Graveyard	Historic	2009/03/02	-29.77578	25.40636	1422 m	5.9
Graveyard	Graveyard	Graveyard	Historic	2009/03/02	-29.77575	25.40635	1423 m	5.10
Graveyard	Graveyard	Graveyard	Historic	2009/03/02	-29.77537	25.40568	1425 m	5.11
Graveyard	Graveyard	Graveyard	Historic	2009/03/02	-29.77537	25.40586	1423 m	5.12
Graveyard	Graveyard	Graveyard	Historic	2009/03/02	-29.77512	25.40567		5.13
Graveyard	Graveyard	Graveyard	Historic	2009/03/02	-29.77621	25.40568	1423 m	5.14
Graveyard	Graveyard	Graveyard	Historic	2009/03/02	-29.776	25.40567	1428 m	5.15

Graveyard	Graveyard	Graveyard	Historic	2009/03/02	-29.77589	25.40566	1426 m	5.16
Graveyard	Graveyard	Graveyard	Historic	2009/03/02	-29.77571	25.40569	1426 m	5.17
Graveyard	Graveyard	Graveyard	Historic	2009/03/02	-29.77619	25.40573	1425 m	5.18
Graveyard	Graveyard	Graveyard	Historic	2009/03/02	-29.77561	25.40573	1426 m	5.19
Graveyard	Graveyard	Graveyard	Historic	2009/03/02	-29.77554	25.40634	1422 m	5.20
Graveyard	Graveyard	Graveyard	Historic	2009/03/02	-29.77523	25.40627	1421 m	5.21
Graveyard	Graveyard	Graveyard	Historic	2009/03/02	-29.77572	25.40581	1423 m	5.22
Graveyard	Graveyard	Graveyard	Historic	2009/03/02	-29.77576	25.40582	1423 m	5.23

Site Table 4. Graveyard Sites



Figure 56. Graveyard Sites Map

## 6.6 HOSPITAL SECTION

Area	Map Name	Group Name	Era	Date Recorded	Latitude	Longitude	Altitude	Site No.
Hospital Section	Building with Chimney	Cement Foundation	Mine	2009/02/02	-29.76025	25.41751	1418 m	6.1
Hospital Section	Cement foundation	Cement Foundation	Mine	2009/06/02	-29.75586	25.41912	1427 m	6.2
Hospital Section	Channel	Other	Mine	2009/02/02	-29.75928	25.4163 4	1420 m	6.3
Hospital Section	Cottage Hospital	Stone Foundation	Mine	2009/02/18	-29.75853	25.42115	1432 m	6.4

Hospital Section	Diggers Hospital	Structure	Mine	2009/02/18	-29.75784	25.42056	1427 m	6.5
Hospital Section	Diggers Hospital	Structure	Mine	2009/02/18	-29.75799	25.42072	1428 m	6.6
Hospital Section	Diggers Hospital	Structure	Mine	2009/02/18	-29.75796	25.42085	1428 m	6.7
Hospital Section	Farmstead Midden	Midden	Mine	2009/02/02	-29.75897	25.41551	1426 m	6.8
Hospital Section	Mechanical Haulage Foundation	Cement Foundation	Mine	2009/06/02	-29.75656	25.41984	1430 m	6.9
Hospital Section	Mechanical Haulage Foundation	Cement Foundation	Mine	2009/06/02	-29.75664	25.41992	1431 m	6.10
Hospital Section	Mechanical Haulage Foundation	Cement Foundation	Mine	2009/06/02	-29.75651	25.41994	1432 m	6.11
Hospital Section	Mechanical Haulage Foundation	Cement Foundation	Mine	2009/06/02	-29.75662	25.42	1432 m	6.12
Hospital Section	Moth Hall	Structure	Mine	2009/02/18	-29.75792	25.42111	1432 m	6.13
Hospital Section	Moth Hall	Structure	Mine	2009/02/18	-29.75765	25.42104	1433 m	6.14
Hospital Section	Moth Hall	Structure	Mine	2009/02/18	-29.75787	25.42117	1433m	6.15
Hospital Section	Stone Foundation 1	Stone Foundation	Mine	2009/06/02	-29.75597	25.41928	1427 m	6.16
Hospital Section	Stone Foundation 1	Stone Foundation	Mine	2009/06/02	-29.75599	25.41934	1427 m	6.17
Hospital Section	Stone Foundation 1	Stone Foundation	Mine	2009/06/02	-29.75605	25.41927	1428m	6.18
Hospital Section	Stone Foundation 1	Stone Foundation	Mine	2009/06/02	-29.75608	25.41932	1427m	6.19
Hospital Section	Stone Foundation 2	Stone Foundation	Mine	2009/06/02	-29.75676	25.41938	1429 m	6.20
Hospital Section	Stone Foundation 2	Stone Foundation	Mine	2009/06/02	-29.75652	25.41936	1427m	6.21
Hospital Section	Stone Foundation 2	Stone Foundation	Mine	2009/06/02	-29.75653	25.41933	1428 m	6.22
Hospital Section	Stone Foundation 2	Stone Foundation	Mine	2009/06/02	-29.75704	25.41945	1428m	6.23
Hospital Section	Stone Foundation 2	Stone Foundation	Mine	2009/06/02	-29.75706	25.41954	1427 m	6.24
Hospital Section	Stone Foundation 3	Stone Foundation	Mine	2009/02/18	-29.75748	25.42122	1432 m	6.25
Hospital Section	Stone Foundation 3	Stone Foundation	Mine	2009/02/18	-29.75752	25.42117	1432 m	6.26
Hospital Section	Stone Foundation 3	Stone Foundation	Mine	2009/02/18	-29.75764	25.42122	1432 m	6.27
Hospital Section	Stone Foundation 4	Stone Foundation	Mine	2009/02/18	-29.75774	25.42137	1436m	6.28
Hospital Section	Stone Foundation 4	Stone Foundation	Mine	2009/02/18	-29.75767	25.42139	1436m	6.29
Hospital Section	Stone Foundation 4	Stone Foundation	Mine	2009/02/18	-29.75777	25.42135	1435m	6.30

Hospital Section	Stone Foundation 6	Structure	Mine	2009/02/02	-29.75847	25.41579	1427 m	6.31
Hospital Section	Stone walling	Structure	Mine	2009/02/02	-29.75867	25.41566	1426 m	6.32
Hospital Section	Stone walling	Structure	Mine	2009/02/02	-29.75863	25.41543	1428 m	6.33
Hospital Section	Stone walling	Structure	Mine	2009/02/02	-29.75849	25.41554	1428 m	6.34
Hospital Section	Stone walling	Structure	Mine	2009/02/02	-29.7583 1	25.41559	1429 m	6.35
Hospital Section	Stone walling	Structure	Mine	2009/02/02	-29.75821	25.41567	1426 m	6.36
Hospital Section	Stone walling	Structure	Mine	2009/02/02	-29.75793	25.41565	1429 m	6.37
Hospital Section	Stone walling	Structure	Mine	2009/02/02	-29.758	25.41572	1427m	6.38
Hospital Section	Stone walling	Structure	Mine	2009/02/02	-29.75816	25.41627	1422 m	6.39
Hospital Section	Stone walling	Structure	Mine	2009/02/02	-29.75875	25.41606	1425m	6.40
Hospital Section	Stone walling	Structure	Mine	2009/02/02	-29.75833	25.41624	1423 m	6.41
Hospital Section	Stone walling	Structure	Mine	2009/02/02	-29.75827	25.41627	1423 m	6.42
Hospital Section	Unidentified Structure	Stone Foundation	Mine	2009/02/18	-29.75775	25.42131	1437m	6.43
Hospital Section	Unidentified Structure	Stone Foundation	Mine	2009/02/18	-29.7577	25.42127	1434m	6.44
Hospital Section	Unidentified Structure	Stone Foundation	Mine	2009/02/18	-29.75776	25.42116	1433m	6.45
Hospital Section	Water shaft	Structure	Mine	2009/02/02	-29.75946	25.41682	1417 m	6.46

Site Table 5. Hospital Section Sites



Figure 57. Hospital Section Map 1





Figure 58. Hospital Section Map 2

## 6.7 MINE AREA A

Area	Map Name	Group Name	Era	Date Recorded	Latitude	Longitude	Altitude	Site No.
Mine Area A	Bathroom	Structure	Mine	2009/06/02	-29.76841	25.41871	1417m	7.1
Mine Area A	Cement Foundation	Cement Foundation	Mine	2009/06/02	-29.76801	25.41875	1415 m	7.2
Mine Area A	Cement Foundation	Cement Foundation	Mine	2009/06/02	-29.76818	25.41874	1418 m	7.3
Mine Area A	Change House	Structure	Mine	2009/06/02	-29.76832	25.41892	1417 m	7.4
Mine Area A	Cooling Dam	Dam	Mine	2009/06/02	-29.76737	25.41851	1417 m	7.5
Mine Area A	Cooling Dam	Cement Foundation	Mine	2009/03/02	-29.76724	25.41792	1413 m	7.6
Mine Area A	Crushers	Cement Foundation	Mine	2009/06/02	-29.76848	25.41943	1417 m	7.7
Mine Area A	Dam	Dam	Mine	2009/06/02	-29.76862	25.41786	1416 m	7.8
Mine Area A	Dam	Dam	Mine	2009/06/02	-29.76864	25.41797	1415 m	7.9
Mine Area A	Engine Room	Structure	Mine	2009/02/02	-29.76714	25.41566	1418 m	7.10
Mine Area A	Engineers Offices	Structure	Mine	2009/02/02	-29.76834	25.41933	1414 m	7.11
Mine Area A	Offices	Structure	Mine	2009/06/02	-29.76904	25.41809		7.12
Mine Area A	Offices	Structure	Mine	2009/06/02	-29.76912	25.41809		7.13
Mine Area A	Offices	Structure	Mine	2009/06/02	-29.76912	25.41776	1414 m	7.14

Mine Area A	Offices	Structure	Mine	2009/06/02	-29.76904	25.41776		7.15
Mine Area A	Riggers	Cement Foundation	Mine	2009/06/02	-29.76757	25.4198	1415 m	7.16
Mine Area A	Riggers	Cement Foundation	Mine	2009/06/02	-29.76741	25.4195	1415 m	7.17
Mine Area A	Settling Dam	Dam	Mine	2009/06/02	-29.76889	25.41757	1418 m	7.18
Mine Area A	Shaft Offices	Structure	Mine	2009/06/02	-29.76819	25.41905	1418 m	7.19
Mine Area A	Shaft Timbermen	Cement Foundation	Mine	2009/06/02	-29.76738	25.41922	1414 m	7.20
Mine Area A	Structure 2	Dam	Mine	2009/06/02	-29.76734	25.41869	1417 m	7.21
Mine Area A	Study Offices	Structure	Mine	2009/06/02	-29.76724	25.41935	1413 m	7.22
Mine Area A	Underground Tunnel Entrance	Structure	Mine	2009/06/02	-29.76831	25.41886	1416 m	7.23
Mine Area A	Unidentified 1	Structure	Mine	2009/06/02	-29.76841	25.41897	1418 m	7.24
Mine Area A	Washing Plant	Dam	Mine	2009/06/02	-29.76875	25.41817	1418 m	7.25
Mine Area A	Water shaft no 2 Rock Shaft	Structure	Mine	2009/02/02	-29.76708	25.41559	1418 m	7.26

Site Table 6. Mine Area A Sites



Figure 59. Mine Area A Sites Map

## 6.8 MINE AREA B

Area	Map Name	Group Name	Era	Date Recorded	Latitude	Longitude	Altitude	Site No.
Mine Area B	Bridge over No. 2 drain	Structure	Mine	2009/06/02	-29.76837	25.42055	1418 m	8.1
Mine Area B	Cement Dam	Dam	Mine	2009/06/02	-29.76792	25.4214	1419 m	8.2
Mine Area B	Cement foundation	Cement Foundation	Mine	2009/06/02	-29.76685	25.42214	1423 m	8.3
Mine Area B	Cement foundation 1	Cement Foundation	Mine	2009/06/02	-29.76753	25.42241	1424 m	8.4
Mine Area B	Cement foundation 2	Cement Foundation	Mine	2009/06/02	-29.766	25.42364	1438 m	8.5
Mine Area B	Cement foundation 3	Cement Foundation	Mine	2009/06/02	-29.76681	25.42225	1423 m	8.6
Mine Area B	Cement foundation 3	Cement Foundation	Mine	2009/06/02	-29.76675	25.42222	1423 m	8.7
Mine Area B	Cement foundation 3	Cement Foundation	Mine	2009/06/02	-29.76678	25.4221	1423 m	8.8
Mine Area B	Clarification Dam	Dam	Mine	2009/06/02	-29.76548	25.42416	1433 m	8.9
Mine Area B	Clarification Dam	Dam	Mine	2009/06/02	-29.76578	25.42389	1432 m	8.10
Mine Area B	Clarification Dam	Dam	Mine	2009/06/02	-29.76582	25.42401	1433 m	8.11
Mine Area B	Clarification Dam	Dam	Mine	2009/06/02	-29.76546	25.42404	1432 m	8.12
Mine Area B	Fitter Shop	Stone Foundation	Mine	2009/06/02	-29.76699	25.42296		8.13
Mine Area B	Filter Shop	Stone Foundation	Mine	2009/06/02	-29.76696	25.42283		8.14
Mine Area B	Fitter Shop	Stone Foundation	Mine	2009/06/02	-29.76687	25.42281	1432 m	8.15
Mine Area B	Fitter Shop	Stone Foundation	Mine	2009/06/02	-29.76675	25.42288	1432 m	8.16
Mine Area B	Fitter Shop	Stone Foundation	Mine	2009/06/02	-29.76671	25.42289	1431 m	8.17
Mine Area B	Fitter Shop	Stone Foundation	Mine	2009/06/02	-29.76698	25.423	1433 m	8.18
Mine Area B	Filter Shop	Stone Foundation	Mine	2009/06/02	-29.76702	25.42284	1431 m	8.19
Mine Area B	Hydro Power plant	Structure	Mine	2009/05/02	-29.76677	25.4242	1447 m	8.20
Mine Area B	Loading Ramp	Structure	Mine	2009/06/02	-29.76792	25.4214	1419 m	8.21
Mine Area B	Pump House	Structure	Mine	2009/06/02	-29.76611	25.42398	1442 m	8.22
Mine Area B	Red Brick Building	Structure	Mine	2009/06/02	-29.76732	25.42099	1417 m	8.23
Mine Area B	Red Brick Building	Structure	Mine	2009/06/02	-29.76727	25.42123		8.24
Mine Area B	Red Brick Building	Structure	Mine	2009/06/02	-29.76738	25.42102	1417 m	8.25
Mine Area B	Red Brick Building	Structure	Mine	2009/06/02	-29.76733	25.42126	1418 m	8.26
Mine Area B	Reservoir	Dam	Mine	2009/06/02	-29.76694	25.42461	1448 m	8.27
Mine Area B	Reservoir	Dam	Mine	2009/06/02	-29.76688	25.42439	1446 m	8.28
Mine Area B	Reservoir	Dam	Mine	2009/06/02	-29.76665	25.42469	1447 m	8.29
Mine Area B	Reservoir	Dam	Mine	2009/06/02	-29.7666	25.42449	1448 m	8.30
Mine Area B	Reservoir	Structure	Mine	2009/05/02	-29.76701	25.42449		8.31
Mine Area B	Stone Foundation 2	Stone Foundation	Mine	2009/06/02	-29.76744	25.42247	1424 m	8.32

Mine Area B	Stone Foundation 2	Stone Foundation	Mine	2009/06/02	-29.76732	25.42291	1428 m	8.33
Mine Area B	Stone Foundation 2	Stone Foundation	Mine	2009/06/02	-29.76723	25.42287	1428 m	8.34
Mine Area B	Stone Foundation 2	Stone Foundation	Mine	2009/06/02	-29.76735	25.42243	1424 m	8.35
Mine Area B	Stone Foundation 3	Stone Foundation	Mine	2009/06/02	-29.76674	25.42222	1423 m	8.36
Mine Area B	Stone Foundation 3	Stone Foundation	Mine	2009/06/02	-29.76681	25.42226	1424 m	8.37
Mine Area B	Stone Foundation 3	Stone Foundation	Mine	2009/06/02	-29.76677	25.42234		8.38
Mine Area B	Stone Foundation 3	Stone Foundation	Mine	2009/06/02	-29.7667	25.42231		8.39
Mine Area B	Stone tool Scatter	Stone tool Scatter	Stone Age	2009/05/02	-29.76622	25.42167		8.40
Mine Area B	Unidentified Stone Foundation	Structure	Mine	2009/06/02	-29.7658	25.42365	1439 m	8.41

Site Table 7. Mine Area B Sites



Figure 60. Mine Area B Sites Map

## 6.9 MINE SQUARE

Area	Map Name	Group Name	Era	Date Recorded	Latitude	Longitude	Altitude	Site No.
Mine Square	Acrobatic Club	Structure	Mine	2009/06/02	-29.76371	25.42381	1425 m	9.1
Mine Square	Bowling Clubhouse	Structure	Mine Square	2009/06/02	-29.76334	25.4237	1424 m	9.2
Mine Square	Bowling Green	Other	Mine Square	2009/06/02	-29.76318	25.42384	1425 m	9.3
Mine Square	Building	Structure	Mine	2009/06/02	-29.7648	25.42281	1421 m	9.4
Mine Square	Engineers Office	Structure	Mine	2009/05/02	-29.76399	25.42281	1422 m	9.5
Mine Square	Engineers Office	Structure	Mine Square	2009/06/02	-29.76407	25.42298	1418 m	9.6
Mine Square	Garage	Structure	Mine Square	2009/06/02	-29.76403	25.42341	1425m	9.7
Mine Square	Head Office	Structure	Mine Square	2009/06/02	-29.76271	25.42318		9.8
Mine Square	House	Structure	Mine Square	2009/06/02	-29.76434	25.42435		9.9
Mine Square	House	Structure	Mine Square	2009/06/02	-29.7642	25.42443		9.10
Mine Square	House	Structure	Mine Square	2009/06/02	-29.76351	25.42351		9.11
Mine Square	House	Structure	Mine Square	2009/06/02	-29.76366	25.42282		9.12
Mine Square	House	Structure	Mine Square	2009/06/02	-29.76437	25.42403		9.13
Mine Square	House	Structure	Mine Square	2009/06/02	-29.76406	25.42452		9.14
Mine Square	House	Structure	Mine Square	2009/06/02	-29.7645	25.42423		9.15
Mine Square	House	Structure	Mine Square	2009/06/02	-29.76317	25.42302		9.16
Mine Square	House	Structure	Mine Square	2009/06/02	-29.76332	25.42296		9.17
Mine Square	House	Structure	Mine Square	2009/06/02	-29.76353	25.42287		9.18
Mine Square	House	Structure	Mine Square	2009/06/02	-29.76376	25.42317		9.19
Mine Square	House	Structure	Mine Square	2009/06/02	-29.76408	25.42494		9.20
Mine Square	House	Structure	Mine Square	2009/06/02	-29.8305	25.42333		9.21
Mine Square	House	Structure	Mine Square	2009/06/02	-29.76428	25.42386		9.22
Mine Square	House	Structure	Mine Square	2009/06/02	-29.76444	25.42383		9.23
Mine Square	Managers House	Structure	Mine Square	2009/06/02	-29.7618	25.42192	1426 m	9.24
Mine Square	Single Quarters	Structure	Mine Square	2009/06/02	-29.76246	25.42392		9.25
Mine Square	Single Quarters	Structure	Mine Square	2009/06/02	-29.76229	25.42368		9.26
Mine Square	Single Quarters	Structure	Mine Square	2009/06/02	-29.76215	25.42377		9.27
Mine Square	Single Quarters	Structure	Mine Square	2009/06/02	-29.76183	25.42289		9.28
Mine Square	Survey Office	Structure	Mine Square	2009/06/02	-29.76296	25.42303		9.29
Mine Square	Swimming pool	Other	Mine	2009/06/02	-29.76351	25.4248	1426 m	9.30
Mine Square	Tennis Courts	Other	Mine	2009/06/02	-29.76337	25.42432	1426 m	9.31
Mine Square	Underground Managers Office	Structure	Mine Square	2009/06/02	-29.76251	25.42271		9.32

Site Table 8. Mine Square Sites



Figure 61. Mine Square Sites Map

### 6.10 NORTH SECTION

Area	Map Name	Group Name	Era	Date Recorded	Latitude	Longitude	Altitude	Site No.
North Section	Cement Foundation	Cement Foundation	Mine	2009/06/02	-29.74956	25.41847	1436 m	10.1
North Section	Cement Foundation	Cement Foundation	Mine	2009/06/02	-29.74961	25.41844	1434 m	10.2
North Section	Cement Foundation	Cement Foundation	Mine	2009/06/02	-29.74957	25.41832	1437 m	10.3
North Section	Ostrich eggshell scatter	Other	Other	2009/06/02	-29.75143	25.41209	1435 m	10.4
North Section	Stone and Cement Channel	Structure	Mine	2009/06/02	-29.75518	25.41287	1429 m	10.5
North Section	Stone and Cement Wall	Wall	Mine	2009/06/02	-29.75299	25.40907	1437 m	10.6
North Section	Stone Bridge	Bridge	Mine	2009/06/02	-29.75575	25.414	1422 m	10.7
North Section	Stone tool Scatter	Stone tool Scatter	Stone Age	2009/06/02	-29.75276	25.40995	1436 m	10.8
North Section	Stone tool Scatter	Stone tool Scatter	Stone Age	2009/06/02	-29.75207	25.41148	1436 m	10.9

Site Table 9. North Section Sites

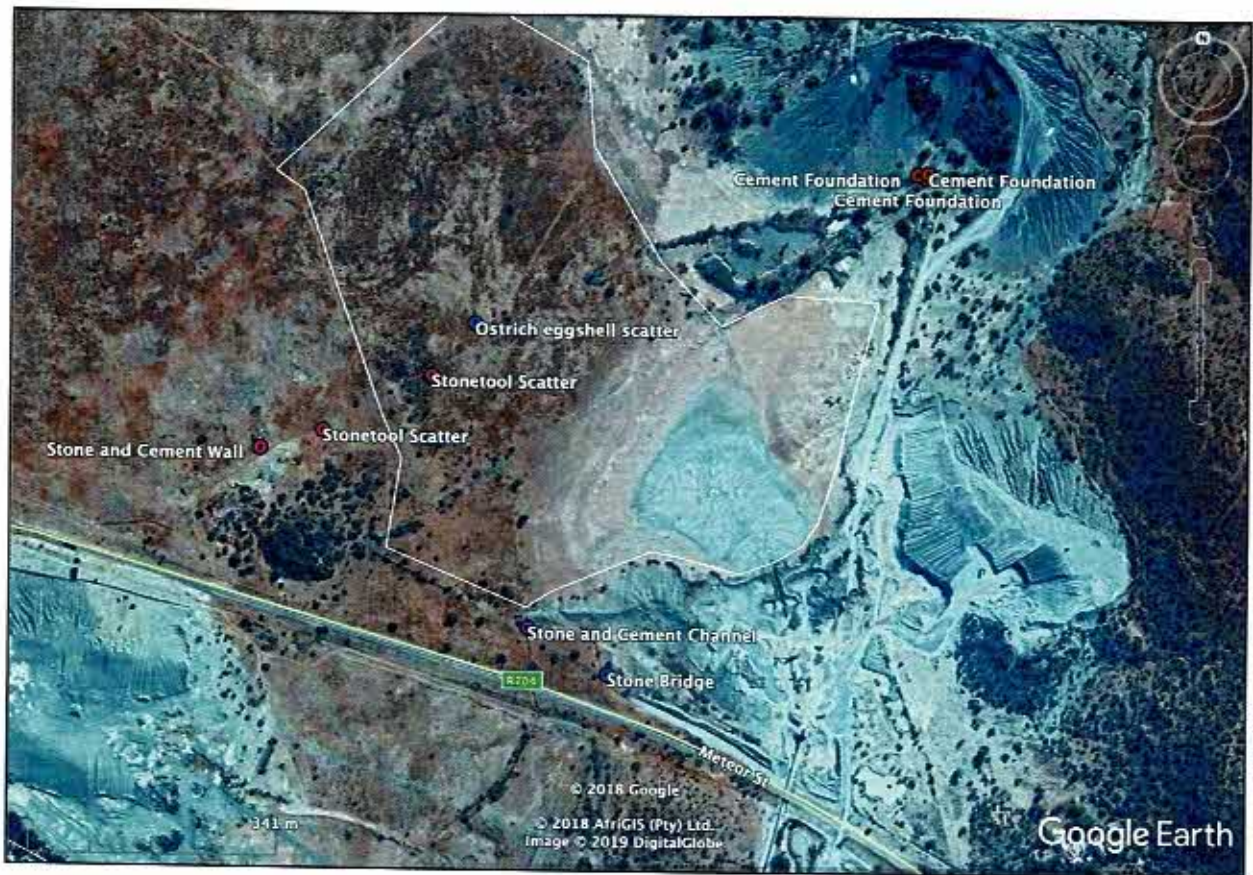


Figure 62. North Section Site Map

## 6.11 SOUTH SECTION

Area	Map Name	Group Name	Era	Date Recorded	Latitude	Longitude	Altitude	Site No.
South Section	Mechanical Haulage Foundation	Cement Foundation	Mine	2009/05/02	-29.79005	25.39898	1434 m	11.1
South Section	Mechanical Haulage Foundation	Cement Foundation	Mine	2009/05/02	-29.79001	25.39887	1433 m	11.2
South Section	Mechanical Haulage Foundation	Cement Foundation	Mine	2009/05/02	-29.78996	25.39895	1434 m	11.3
South Section	Mechanical Haulage Foundation	Cement Foundation	Mine	2009/05/02	-29.79017	25.40338	1426 m	11.4
South Section	Mechanical Haulage Foundation	Cement Foundation	Mine	2009/05/02	-29.79011	25.39895	1433 m	11.5
South Section	Mechanical Haulage Foundation	Cement Foundation	Mine	2009/05/02	-29.78833	25.40036	1433 m	11.6
South Section	Mechanical Haulage Foundation	Cement Foundation	Mine	2009/05/02	-29.7829	25.40454	1430 m	11.7
South Section	Mechanical Haulage Foundation	Cement Foundation	Mine	2009/05/02	-29.7901	25.40344	1426 m	11.8
South Section	Mechanical Haulage Foundation	Cement Foundation	Mine	2009/05/02	-29.77938	25.40729	1429 m	11.9

South Section	Mechanical Haulage Foundation	Cement Foundation	Mine	2009/05/02	-29.77931	25.40731	1428 m	11.10
South Section	Mechanical Haulage Foundation	Cement Foundation	Mine	2009/05/02	-29.78832	25.40043	1432 m	11.11
South Section	Mechanical Haulage Foundation	Cement Foundation	Mine	2009/05/02	-29.78118	25.40587	1431 m	11.12
South Section	Mechanical Haulage Foundation	Cement Foundation	Mine	2009/05/02	-29.78114	25.4059	1431 m	11.13
South Section	Mechanical Haulage Foundation	Cement Foundation	Mine	2009/05/02	-29.78296	25.40449	1429 m	11.14
South Section	Mechanical Haulage Foundation	Cement Foundation	Mine	2009/05/02	-29.78648	25.40179	1433 m	11.15
South Section	Mechanical Haulage Foundation	Cement Foundation	Mine	2009/05/02	-29.78652	25.40173	1433 m	11.16
South Section	Packed stones	Structure	Mine	2009/05/02	-29.7904	25.39923	1432 m	11.17
South Section	Packed stones	Structure	Mine	2009/05/02	-29.79051	25.39939	1433 m	11.18
South Section	Packed stones	Structure	Mine	2009/05/02	-29.79049	25.39908	1432 m	11.19
South Section	Stonewall / Retainer wall	Wall	Mine	2009/05/02	-29.7826	25.40438	1440 m	11.20
South Section	Stonewall / Retainer wall	Wall	Mine	2009/05/02	-29.78578	25.40021	1438 m	11.21
South Section	Stonewall / Retainer wall	Wall	Mine	2009/05/02	-29.78698	25.39862	1441 m	11.22
South Section	Stonewall / Retainer wall	Wall	Mine	2009/05/02	-29.78774	25.39757	1441 m	11.23

Site Table 10. South Section Sites



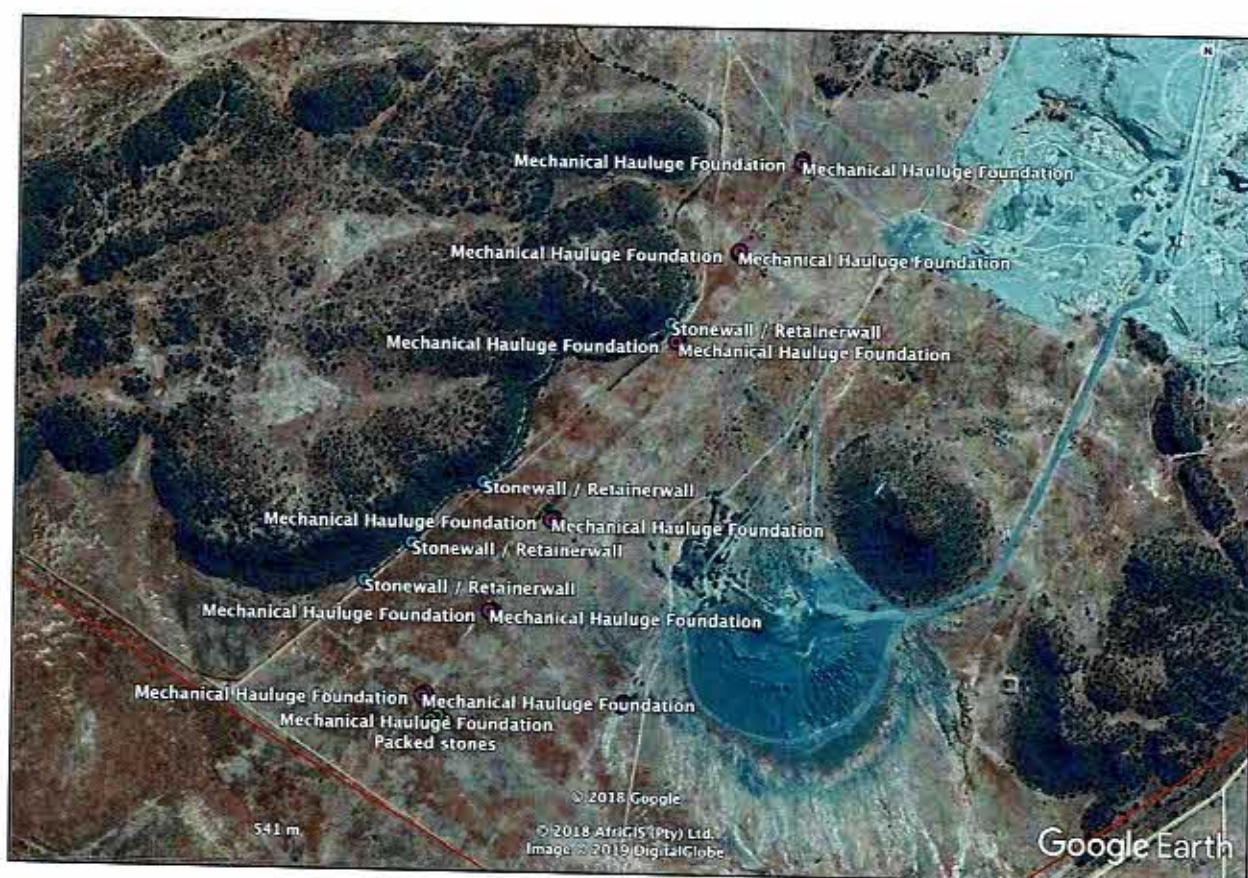


Figure 63. South Section Sites Map

## 6.12 WEST SECTION

Area	Map Name	Group Name	Era	Date Recorded	Latitude	Longitude	Altitude	Site No.
West Section	Airfield Bathroom	Structure	Mine	2009/03/02	-29.77421	25.38478	1460 m	12.1
West Section	Airfield Hanger	Coment Foundation	Mine	2009/05/02	-29.77431	25.38561	1460 m	12.2
West Section	Cattle Kraal	Kraal	Farming activities	2009/04/02	-29.76577	25.38248	1493 m	12.3
West Section	Dam Wall	Dam	Mine	2009/04/02	-29.77099	25.38596	1457 m	12.4
West Section	Dam Wall	Dam	Mine	2009/04/02	-29.77208	25.38563	1457 m	12.5
West Section	Dam Wall	Dam	Mine	2009/04/02	-29.77176	25.38599	1456 m	12.6
West Section	Dam Wall	Dam	Mine	2009/04/02	-29.7715	3 25.38622	1456 m	12.7
West Section	Dam Wall	Dam	Mine	2009/04/02	-29.77132	25.38627	1455 m	12.8
West Section	Grave	Graveyard	Historic	2009/05/02	-29.77747	25.39319		12.9
West Section	Kraal	Kraal	Farming activities	2009/05/02	-29.78239	25.3868	1481 m	12.10
West Section	Stone Heap	Stone Heap	Mine	2009/04/02	-29.76704	25.3821	1489 m	12.11
West Section	Stone Heap	Stone Heap	Mine	2009/04/02	-29.76676	25.38228	1486 m	12.12
West Section	Stone Heap	Stone Heap	Mine	2009/04/02	-29.76655	25.38213	1488 m	12.13
West Section	Stone Heap	Stone Heap	Mine	2009/04/02	-29.7656	25.38204	1493 m	12.14

West Section	Stone tool Scatter	Stone tool Scatter	Stone Age	2009/04/02	-29.78321	25.3824	1473 m	12.15
West Section	Stone tool Scatter	Stone tool Scatter	Stone Age	2009/04/02	-29.76532	25.38187	1495 m	12.16

Site Table 11. West Section Sites



Figure 64. West Section Sites Map

## 7. METHODOLOGY

This study defines the desktop heritage component of the EIA process being undertaken for the Prospecting Rights Application for the Remainder of Portions 1 and 16 of the Farm Jagersfontein.

It is described as a first phase (HIA). This report attempts to evaluate both the accumulated heritage knowledge of the area as well as information derived from direct physical observations.

### 7.1 INVENTORY

There are a number of different methodological approaches to conducting inventory studies. Therefore, the proponent, in collaboration with the archaeological consultant, must develop an inventory plan for review and approval by the SAHRA prior to implementation (*Dincause, Dena F., H. Martin Wobst, Robert J. Hasenstab and David M. Lacy 1984*).

### 7.2 EVALUATING HERITAGE IMPACTS

A combination of document research as well as the determination of the geographic suitability of areas and the evaluation of aerial photographs determined which areas could and should be accessed.

Known Information was combined with information from an extensive literature study as well as the result of archival studies based on the SAHRA (South African Heritage Resource Agency) provincial databases.

This Desktop Heritage Impact Assessment relies on the analysis of written documents, maps, aerial photographs and other archival sources. Site investigations were not performed.

The following documents were consulted in this study;

- South African National Archive Documents
- SAHRIS (South African Heritage Resources Information System) Database of Heritage Studies
- Historic Maps
- 2925 CB 1968, 1988 & 2005 and 2925 CD 1948, 1988 & 2005 Surveyor General Topographic Map series
- 1952 1:10 000 aerial photo survey
- Google Earth 2018 imagery
- Published articles and books
- JSTOR Article Archive

## 8. MEASURING IMPACTS

In 2003 the SAHRA (South African Heritage Resources Agency) compiled the following guidelines to evaluate the cultural significance of individual heritage resources:

### 8.1 TYPE OF RESOURCE

- Place
- Archaeological Site
- Structure
- Grave
- Paleontological Feature
- Geological Feature

## 8.2 TYPE OF SIGNIFICANCE

### 8.2.1 HISTORIC VALUE

It is important in the community, or pattern of history

- Important in the evolution of cultural landscapes and settlement patterns
- Important in exhibiting density, richness or diversity of cultural features illustrating the human occupation and evolution of the nation, province, region or locality.
- Important for association with events, developments or cultural phases that have had a significant role in the human occupation and evolution of the nation, province, region or community.
- Important as an example for technical, creative, design or artistic excellence, innovation or achievement in a particular period.

It has strong or special association with the life or work of a person, group or organisation of importance in history

- Importance for close associations with individuals, groups or organisations whose life, works or activities have been significant within the history of the nation, province, region or community.

It has significance relating to the history of slavery

- Importance for a direct link to the history of slavery in South Africa.

### 8.2.2 AESTHETIC VALUE

It is important in exhibiting particular aesthetic characteristics valued by a community or cultural group.

- Important to a community for aesthetic characteristics held in high esteem or otherwise valued by the community.
- Importance for its creative, design or artistic excellence, innovation or achievement.
- Importance for its contribution to the aesthetic values of the setting demonstrated by a landmark quality or having impact on important vistas or otherwise contributing to the identified aesthetic qualities of the cultural environs or the natural landscape within which it is located.
- In the case of an historic precinct, importance for the aesthetic character created by the individual components which collectively form a significant streetscape, townscape or cultural environment.

### 8.2.3 SCIENTIFIC VALUE

It has potential to yield information that will contribute to an understanding of natural or cultural heritage

- Importance for information contributing to a wider understanding of natural or cultural history by virtue of its use as a research site, teaching site, type locality, reference or benchmark site.
- Importance for information contributing to a wider understanding of the origin of the universe or of the development of the earth.
- Importance for information contributing to a wider understanding of the origin of life; the development of plant or animal species, or the biological or cultural development of hominid or human species.
- Importance for its potential to yield information contributing to a wider understanding of the history of human occupation of the nation, Province, region or locality.
- It is important in demonstrating a high degree of creative or technical achievement at a particular period
- Importance for its technical innovation or achievement.

(a) Does the site contain evidence, which may substantively enhance understanding of culture history, culture process, and other aspects of local and regional prehistory?

- internal stratification and depth
- chronologically sensitive cultural items
- materials for absolute dating
- association with ancient landforms
- quantity and variety of tool type
- distinct intra-site activity areas

- tool types indicative of specific socio-economic or religious activity
  - cultural features such as burials, dwellings, hearths, etc.
  - diagnostic faunal and floral remains
  - exotic cultural items and materials
  - uniqueness or representativeness of the site
  - integrity of the site
- (b) Does the site contain evidence which may be used for experimentation aimed at improving archaeological methods and techniques?
- monitoring impacts from artificial or natural agents
  - site preservation or conservation experiments
  - data recovery experiments
  - sampling experiments
  - intra-site spatial analysis
- (c) Does the site contain evidence which can make important contributions to paleoenvironmental studies?
- topographical, geomorphological context
  - depositional character
  - diagnostic faunal, floral data
- (d) Does the site contain evidence which can contribute to other scientific disciplines such as hydrology, geomorphology, pedology, meteorology, zoology, botany, forensic medicine, and environmental hazards research, or to industry including forestry and commercial fisheries?

#### 8.2.4 SOCIAL VALUE / PUBLIC SIGNIFICANCE

- It has strong or special association with a particular community or cultural group for social, cultural or spiritual reasons
- Importance as a place highly valued by a community or cultural group for reasons of social, cultural, religious, spiritual, symbolic, aesthetic or educational associations.
- Importance in contributing to a community's sense of place.

(a) Does the site have potential for public use in an interpretive, educational or recreational capacity?

- integrity of the site
- technical and economic feasibility of restoration and development for public use
- visibility of cultural features and their ability to be easily interpreted
- accessibility to the public
  
- opportunities for protection against vandalism
- representativeness and uniqueness of the site
- aesthetics of the local setting
- proximity to established recreation areas
- present and potential land use
- land ownership and administration
- legal and jurisdictional status
- local community attitude toward development

(b) Does the site receive visitation or use by tourists, local residents or school groups?

#### 8.2.5 ETHNIC SIGNIFICANCE

(a) Does the site presently have traditional, social or religious importance to a particular group or community?

- ethnographic or ethno-historic reference
- documented local community recognition or, and concern for, the site

### 8.2.6 ECONOMIC SIGNIFICANCE

- (a) What value of user-benefits may be placed on the site?
- visitors' willingness-to-pay
  - visitors' travel costs

### 8.2.7 SCIENTIFIC SIGNIFICANCE

- (a) Does the site contain evidence, which may substantively enhance understanding of historic patterns of settlement and land use in a particular locality, regional or larger area?
- (b) Does the site contain evidence, which can make important contributions to other scientific disciplines or industry?

### 8.2.8 HISTORIC SIGNIFICANCE

- (a) Is the site associated with the early exploration, settlement, land use, or other aspect of southern Africa's cultural development?
- (b) Is the site associated with the life or activities of a particular historic figure, group, organization, or institution that has made a significant contribution to, or impact on, the community, province or nation?
- (c) Is the site associated with a particular historic event whether cultural, economic, military, religious, social or political that has made a significant contribution to, or impact on, the community, province or nation?
- (d) Is the site associated with a traditional recurring event in the history of the community, province, or nation, such as an annual celebration?

### 8.2.9 PUBLIC SIGNIFICANCE

- (a) Does the site have potential for public use in an interpretive, educational or recreational capacity?
- visibility and accessibility to the public
  - ability of the site to be easily interpreted
  - opportunities for protection against vandalism
  - economic and engineering feasibility of reconstruction, restoration and maintenance
  - representativeness and uniqueness of the site
  - proximity to established recreation areas
  - compatibility with surrounding zoning regulations or land use
  - land ownership and administration
  - local community attitude toward site preservation, development or destruction
  - present use of site
- (b) Does the site receive visitation or use by tourists, local residents or school groups?

### 8.2.10 OTHER

- (a) Is the site a commonly acknowledged landmark?
- (b) Does, or could, the site contribute to a sense of continuity or identity either alone or in conjunction with similar sites in the vicinity?
- (c) Is the site a good typical example of an early structure or device commonly used for a specific purpose throughout an area or period of time?
- (d) Is the site representative of a particular architectural style or pattern?

## 8.3 DEGREES OF SIGNIFICANCE

### 8.3.1 SIGNIFICANCE CRITERIA

There are several kinds of significance, including scientific, public, ethnic, historic and economic, that need to be taken into account when evaluating heritage resources. For any site, explicit criteria are used to measure these values. These checklists are not intended to be exhaustive or inflexible. Innovative approaches to site evaluation which emphasize quantitative analysis and objectivity are encouraged. The process used to derive a measure of relative site significance must be rigorously documented, particularly the system for ranking or weighting various evaluated criteria.

Site integrity, or the degree to which a heritage site has been impaired or disturbed as a result of past land alteration, is an important consideration in evaluating site significance. In this regard, it is important to recognize that although an archaeological site has been disturbed, it may still contain important scientific information.

Heritage resources may be of scientific value in two respects. The potential to yield information, which, if properly recovered, will enhance understanding of Southern African human history, is one appropriate measure of scientific significance. In this respect, archaeological sites should be evaluated in terms of their potential to resolve current archaeological research problems. Scientific significance also refers to the potential for relevant contributions to other academic disciplines or to industry.

Public significance refers to the potential a site has for enhancing the public's understanding and appreciation of the past. The interpretive, educational and recreational potential of a site are valid indications of public value. Public significance criteria such as ease of access, land ownership, or scenic setting are often external to the site itself. The relevance of heritage resource data to private industry may also be interpreted as a particular kind of public significance.

Ethnic significance applies to heritage sites which have value to an ethnically distinct community or group of people. Determining the ethnic significance of an archaeological site may require consultation with persons having special knowledge of a particular site. It is essential that ethnic significance be assessed by someone properly trained in obtaining and evaluating such data.

Historic archaeological sites may relate to individuals or events that made an important, lasting contribution to the development of a particular locality or the province. Historically important sites also reflect or commemorate the historic socioeconomic character of an area. Sites having high historical value will also usually have high public value.

The economic or monetary value of a heritage site, where calculable, is also an important indication of significance. In some cases, it may be possible to project monetary benefits derived from the public's use of a heritage site as an educational or recreational facility. This may be accomplished by employing established economic evaluation methods; most of which have been developed for valuating outdoor recreation. The objective is to determine the willingness of users, including local residents and tourists, to pay for the experiences or services the site provides even though no payment is presently being made. Calculation of user benefits will normally require some study of the visitor population (*Smith, L.D. 1977*).

### 8.3.2 RARITY

It possesses uncommon, rare or endangered aspects of natural or cultural heritage.

- Importance for rare, endangered or uncommon structures, landscapes or phenomena.

### 8.3.3 REPRESENTIVITY

- It is important in demonstrating the principal characteristics of a particular class of natural or cultural places or objects.
- Importance in demonstrating the principal characteristics of a range of landscapes or environments, the attributes of which identify it as being characteristic of its class.
- Importance in demonstrating the principal characteristics of human activities (including way of life, philosophy, custom, process, land-use, function, design or technique) in the environment of the nation, province, region or locality.

## 9. ASSESSMENT OF HERITAGE POTENTIAL

### 9.1 ASSESSMENT MATRIX

#### 9.1.1 DETERMINING ARCHAEOLOGICAL SIGNIFICANCE

In addition to guidelines provided by the National Heritage Resources Act (Act No. 25 of 1999), a set of criteria based on Deacon (J) and Whitelaw (1997) for assessing archaeological significance has been developed for Eastern Cape settings (Morris 2007a). These criteria include estimation of landform potential (in terms of its capacity to contain archaeological traces) and assessing the value to any archaeological traces (in terms of their attributes or their capacity to be construed as evidence, given that evidence is not given but constructed by the investigator).

#### Estimating site potential

In 2006 SAHRA prescribed classification standards for determining the heritage significance of sites within the SADC region. These recommendations were subsequently approved by ASAPA and are reproduced here to indicate the measuring standards for heritage sensitivity used in this report;

Field Rating	Grade	Significance	Mitigation
National Significance (NS)	Grade 1	-	Conservation; National Heritage Site nomination
Provincial Significance (PS)	Grade 2	-	Conservation; Provincial Heritage Sites nomination
Local Significance (LS)	Grade 3A	High	Conservation; mitigation not advised
Local Significance (LS)	Grade 3B	High	Mitigation with part of site retained in original
Generally Protected A (GP.A)	-	High/Medium	Mitigation before destruction
Generally Protected B (GP.B)	-	Medium	Recording before destruction
Generally Protected C (GP.C)	-	Low	Destruction

Table 3. SAHRA Assigned Heritage Site Significance Grading

Table 4 (below) is a classification of landforms and visible archaeological traces used for estimating the potential of archaeological sites (after J. Deacon and, National Monuments Council). Type 3 sites tend to be those with higher archaeological potential, but there are notable exceptions to this rule, for example the renowned rock engravings site Driekopseiland near Kimberley which is on landform L1 Type 1 – normally a setting of lowest expected potential. It should also be noted that, generally, the older a site the poorer the preservation, so that sometimes any trace, even of only Type 1 quality, could be of exceptional significance. In light of this, estimation of potential will always be a matter for archaeological observation and interpretation.

Table 4. Classification of landforms and visible archaeological traces for estimating the potential for archaeological sites (after J. Deacon, NMC as used in Morris)

Class	Landform	Type 1	Type 2	Type 3
L1	Rocky Surface	Bedrock exposed	Some soil patches	Sandy/grassy patches
L2	Ploughed land	Far from water	In floodplain	On old river terrace
L3	Sandy ground, inland	Far from water	In floodplain or near features such as hill/dune	On old river terrace
L4	Sandy ground, coastal	>1 km from sea	Inland of dune cordon	Near rocky shore
L5	Water-logged deposit	Heavily vegetated	Running water	Sedimentary basin



L6	Developed urban	Heavily built-up with no known record of early settlement	Known early settlement, but buildings have basements	Buildings without extensive basements over known historical sites
L7	Lime/dolomite	>5 myrs	<5000 yrs	Between 5000 yrs and 5 myrs
L8	Rock shelter	Rocky floor	Loping floor or small area	Flat floor, high ceiling
Class	Archaeological traces	Type 1	Type 2	Type 3
A1	Area previously excavated	Little deposit remaining	More than half deposit remaining	High profile site
A2	Shell of bones visible	Dispersed scatter	Deposit <0.5 m thick	Deposit >0.5 m thick; shell and bone dense
A3	Stone artefacts or stone walling or other feature visible	Dispersed scatter	Deposit <0.5m thick	Deposit >0.5 m thick

Table 5. Site attributes and value assessment (adapted from Whitelaw 1997 as used in Morris)

Class	Landforms	Type 1	Type 2	Type 3
1	Length of sequence /context	No sequence Poor context Dispersed distribution	Limited sequence	Long sequence Favourable context High density of arte / ecofacts
2	Presence of exceptional items (incl. regional rarity)	Absent	Present	Major element
3	Organic preservation	Absent	Present	Major element
4	Potential for future archaeological investigation	Low	Medium	High
5	Potential for public display	Low	Medium	High
6	Aesthetic appeal	Low	Medium	High
7	Potential for implementation of a long-term management plan	Low	Medium	High

## 9.2 ASSESSING SITE VALUE BY ATTRIBUTE

Table 5 is adapted from Whitelaw (1997), who developed an approach for selecting sites meriting heritage recognition status in KwaZulu Natal. It is a means of judging a site's archaeological value by ranking the relative strengths of a range of attributes (given in the second column of the table). While aspects of this matrix remain qualitative, attribute assessment is a good indicator of the general archaeological significance of a site, with Type 3 attributes being those of highest significance.

## 9.3 IMPACT STATEMENT

### 9.3.1 ASSESSMENT OF IMPACTS

A heritage resource impact may be broadly defined as the net change between the integrity of a heritage site with and without the proposed development. This change may be either beneficial or adverse. Beneficial impacts occur wherever a proposed development actively protects, preserves or enhances a heritage resource. For example, development may have a beneficial effect by preventing or lessening natural site erosion. Similarly, an action may serve to preserve a site for future investigation by covering it with a protective layer of fill. In other cases, the public or economic significance of an archaeological site may be enhanced by actions, which facilitate non-destructive public use. Although beneficial impacts are unlikely to occur frequently, they should be included in the assessment.

More commonly, the effects of a project on heritage sites are of an adverse nature. Adverse impacts occur under conditions that include:

- (a) destruction or alteration of all or part of a heritage site;
- (b) isolation of a site from its natural setting; and
- (c) introduction of physical, chemical or visual elements that are out-of-character with the heritage resource and its setting.

Adverse effects can be more specifically defined as direct or indirect impacts. Direct impacts are the immediately demonstrable effects of a project which can be attributed to particular land modifying actions. They are directly caused by a project or its ancillary facilities and occur at the same time and place. The immediate consequences of a project action, such as slope failure following reservoir inundation, are also considered direct impacts.

Indirect impacts result from activities other than actual project actions. Nevertheless, they are clearly induced by a project and would not occur without it. For example, project development may induce changes in land use or population density, such as increased urban and recreational development, which may indirectly impact upon heritage sites. Increased vandalism of heritage sites, resulting from improved or newly introduced access, is also considered an indirect impact. Indirect impacts are much more difficult to assess and quantify than impacts of a direct nature.

Once all project related impacts are identified, it is necessary to determine their individual level-of-effect on heritage resources. This assessment is aimed at determining the extent or degree to which future opportunities for scientific research, preservation, or public appreciation are foreclosed or otherwise adversely affected by a proposed action. Therefore, the assessment provides a reasonable indication of the relative significance or importance of a particular impact. Normally, the assessment should follow site evaluation since it is important to know what heritage values may be adversely affected.

The assessment should include careful consideration of the following level-of-effect indicators, which are defined below:

- magnitude
- severity
- duration
- range
- frequency
- diversity
- cumulative effect
- rate of change

## 9.4 INDICATORS OF IMPACT SEVERITY

### **Magnitude**

The amount of physical alteration or destruction, which can be expected. The resultant loss of heritage value is measured either in amount or degree of disturbance.

### **Severity**

The irreversibility of an impact. Adverse impacts, which result in a totally irreversible and irretrievable loss of heritage value, are of the highest severity.

### **Duration**

The length of time an adverse impact persists. Impacts may have short-term or temporary effects, or conversely, more persistent, long-term effects on heritage sites.

### **Range**

The spatial distribution, whether widespread or site-specific, of an adverse impact.

### **Frequency**

The number of times an impact can be expected. For example, an adverse impact of variable magnitude and severity may occur only once. An impact such as that resulting from cultivation may be of recurring or on-going nature.

### Diversity

The number of different kinds of project-related actions expected to affect a heritage site.

### Cumulative Effect

A progressive alteration or destruction of a site owing to the repetitive nature of one or more impacts.

### Rate of Change

The rate at which an impact will effectively alter the integrity or physical condition of a heritage site. Although an important level-of-effect indicator, it is often difficult to estimate. Rate of change is normally assessed during or following project construction.

The level-of-effect assessment should be conducted and reported in a quantitative and objective fashion. The methodological approach, particularly the system of ranking level-of-effect indicators, must be rigorously documented and recommendations should be made with respect to managing uncertainties in the assessment. (Zubrow, Ezra B.A., 1984).

## 9.5 BUILT ENVIRONMENT

Several structures associated with mining and industrial activities was identified on site. A large amount of these buildings have significant heritage value.

## 9.6 HISTORIC SIGNIFICANCE

No	Criteria	Significance Rating
1	<b>Are any of the identified sites or buildings associated with a historical person or group?</b> Yes. Early Mining activities. Cecil John Rhodes	Grade 3A
2	<b>Are any of the buildings or identified sites associated with a historical event?</b> Yes. Emergence of mining in the Free State	Grade 3A
3	<b>Are any of the identified sites or buildings associated with a religious, economic social or political or educational activity?</b> Colonial Mining Activities	Grade 3B
4	<b>Are any of the identified sites or buildings of archaeological significance?</b> No, only historical significance	-
5	<b>Are any of the identified buildings or structures older than 60 years?</b> All the buildings listed above are older than 60 years.	Grade GP. A

## 9.7 ARCHITECTURAL SIGNIFICANCE

No	Criteria	Rating
1	<b>Are any of the buildings or structures an important example of a building type?</b> Yes.	Grade 3B
2	<b>Are any of the buildings outstanding examples of a particular style or period?</b> Yes. Early Mining Vernacular	Grade 3A
3	<b>Do any of the buildings contain fine architectural details and reflect exceptional craftsmanship?</b> No.	-
4	<b>Are any of the buildings an example of an industrial, engineering or technological development?</b> Yes. Early mining	Grade 3B

5	<b>What is the state of the architectural and structural integrity of the building?</b> All the buildings were in a reasonable state of structural integrity.	Grade 3B
6	<b>Is the building's current and future use in sympathy with its original use (for which the building was designed)?</b> Yes.	Grade 3B
7	<b>Were the alterations done in sympathy with the original design?</b> No	Grade 3B
8	<b>Were the additions and extensions done in sympathy with the original design?</b> No	Grade 3B
9	<b>Are any of the buildings or structures the work of a major architect, engineer or builder?</b> Unknown	Grade 3B

## 9.8 SPATIAL SIGNIFICANCE

Even though each building needs to be evaluated as single artefact the site still needs to be evaluated in terms of its significance in its geographic area, city, town, village, neighbourhood or precinct. This set of criteria determines the spatial significance.

No	Criteria	Rating
1	<b>Can any of the identified buildings or structures be considered a landmark in the town or city?</b> Yes	Grade 3A
2	<b>Do any of the buildings contribute to the character of the neighborhood?</b> Yes	Grade 3 A & B
3	<b>Do any of the buildings contribute to the character of the square or streetscape?</b> Yes	Grade 3A
4	<b>Do any of the buildings form part of an important group of buildings?</b> Yes	Grade 3A & B

## 10. IMPACT EVALUATION

This HIA Methodology assists in evaluating the overall effect of a proposed activity on the heritage environment. The determination of the effect of a heritage impact on a heritage parameter is determined through a systematic analysis of the various components of the impact. This is undertaken using information that is available to the heritage practitioner through the process of heritage impact assessment. The impact evaluation of predicted impacts was undertaken through an assessment of the significance of the impacts.

### 10.1 DETERMINATION OF SIGNIFICANCE OF IMPACTS

Significance is determined through a synthesis of impact characteristics, which include context and intensity of an impact. Context refers to the geographical scale i.e. site, local, national or global whereas intensity is defined by the severity of the impact e.g. the magnitude of deviation from background conditions, the size of the area affected, the duration of the impact and the overall probability of occurrence.

Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. The total number of points scored for each impact indicates the level of significance of the impact.

### 10.1.1 IMPACT RATING SYSTEM

Impact assessment must take account of the nature, scale and duration of effects on the heritage environment whether such effects are positive (beneficial) or negative (detrimental). Each issue / impact is also assessed according to the project stages:

- planning
- construction
- operation
- decommissioning

Where necessary, the proposal for mitigation or optimisation of an impact will be detailed. A brief discussion of the impact and the rationale behind the assessment of its significance has also been included.

### 10.1.2 RATING SYSTEM USED TO CLASSIFY IMPACTS

The rating system is applied to the potential impact on the receiving environment and includes an objective evaluation of the mitigation of the impact. Impacts have been consolidated into one rating. In assessing the significance of each issue the following criteria (including an allocated point system) is used:

Table 10: Classification of Impacts

<b>NATURE</b>		
Including a brief description of the impact of the heritage parameter being assessed in the context of the project. This criterion includes a brief written statement of the heritage aspect being impacted upon by a particular action or activity.		
<b>GEOGRAPHICAL EXTENT</b>		
This is defined as the area over which the impact will be expressed. Typically, the severity and significance of an impact have different scales and as such bracketing ranges are often required. This is often useful during the detailed assessment of a project in terms of further defining the determined.		
1	Site	The impact will only affect the site.
2	Local/district	Will affect the local area or district.
3	Province/region	Will affect the entire province or region.
4	International and National	Will affect the entire country.
<b>PROBABILITY</b>		
This describes the chance of occurrence of an impact		
1	Unlikely	The chance of the impact occurring is extremely low (Less than a 25% chance of occurrence).
2	Possible	The impact may occur (Between a 25% to 50% chance of occurrence).
3	Probable	The impact will likely occur (Between a 50% to 75% chance of occurrence).
4	Definite	Impact will certainly occur (Greater than a 75% chance of occurrence).
<b>REVERSIBILITY</b>		
This describes the degree to which an impact on a heritage parameter can be successfully reversed upon completion of the proposed activity.		
1	Completely reversible	The impact is reversible with implementation of minor mitigation measures.

2	Partly reversible	The impact is partly reversible but more intense mitigation measures are required.
3	Barely reversible	The impact is unlikely to be reversed even with intense mitigation measures.
4	Irreversible	The impact is irreversible and no mitigation measures exist.

**IRREPLACEABLE LOSS OF RESOURCES**

This describes the degree to which heritage resources will be irreplaceably lost as a result of a proposed activity.

1	No loss of resource.	The impact will not result in the loss of any resources.
2	Marginal loss of resource	The impact will result in marginal loss of resources.
3	Significant loss of resources	The impact will result in significant loss of resources.
4	Complete loss of resources	The impact is result in a complete loss of all resources.

**DURATION**

This describes the duration of the impacts on the heritage parameter. Duration indicates the lifetime of the impact as a result of the proposed activity.

1	Short term	The impact and its effects will either disappear with mitigation or will be mitigated through natural process in a span shorter than the construction phase (0 – 1 years), or the impact and its effects will last for the period of a relatively short construction period and a limited recovery time after construction, thereafter it will be entirely negated (0 – 2 years).
2	Medium term	The impact and its effects will continue or last for some time after the construction phase but will be mitigated by direct human action or by natural processes thereafter (2 – 10 years).
3	Long term	The impact and its effects will continue or last for the entire operational life of the development, but will be mitigated by direct human action or by natural processes thereafter (10 – 50 years).
4	Permanent	The only class of impact that will be non-transitory. Mitigation either by man or natural process will not occur in such a way or such a time span that the impact can be considered transient (Indefinite).

**CUMULATIVE EFFECT**

This describes the cumulative effect of the impacts on the heritage parameter. A cumulative effect/impact is an effect, which in itself may not be significant but may become significant if added to other existing or potential impacts emanating from other similar or diverse activities as a result of the project activity in question.

1	Negligible Cumulative Impact	The impact would result in negligible to no cumulative effects.
2	Low Cumulative Impact	The impact would result in insignificant cumulative effects.
3	Medium Cumulative impact	The impact would result in minor cumulative effects.

4	High Cumulative Impact	The impact would result in significant cumulative effects.
<b>INTENSITY / MAGNITUDE</b>		
Describes the severity of an impact.		
1	Low	Impact affects the quality, use and integrity of the system/component in a way that is barely perceptible.
2	Medium	Impact alters the quality, use and integrity of the system/component but system/ component still continues to function in a moderately modified way and maintains general integrity (some impact on integrity).
3	High	Impact affects the continued viability of the system/component and the quality, use, integrity and functionality of the system or component is severely impaired and may temporarily cease. High costs of rehabilitation and remediation.
4	Very high	Impact affects the continued viability of the system/component and the quality, use, integrity and functionality of the system or component permanently ceases and is irreversibly impaired (system collapse). Rehabilitation and remediation often impossible. If possible rehabilitation and remediation often unfeasible due to extremely high costs of rehabilitation and remediation.

**SIGNIFICANCE**

Significance is determined through a synthesis of impact characteristics. Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. This describes the significance of the impact on the heritage parameter. The calculation of the significance of an impact uses the following formula:

**(Extent + probability + reversibility + irreplaceability + duration + cumulative effect) x magnitude/intensity.**

The summation of the different criteria will produce a non weighted value. By multiplying this value with the magnitude/intensity, the resultant value acquires a weighted characteristic which can be measured and assigned a significance rating.

Points	Impact Significance Rating	Description
6 to 28	Negative Low impact	The anticipated impact will have negligible negative effects and will require little to no mitigation.
6 to 28	Positive Low impact	The anticipated impact will have minor positive effects.
29 to 50	Negative Medium impact	The anticipated impact will have moderate negative effects and will require moderate mitigation measures.
29 to 50	Positive Medium impact	The anticipated impact will have moderate positive effects.
51 to 73	Negative High impact	The anticipated impact will have significant effects and will require significant mitigation measures to achieve an acceptable level of impact.

51 to 73	Positive High impact	The anticipated impact will have significant positive effects.
74 to 96	Negative Very high impact	The anticipated impact will have highly significant effects and are unlikely to be able to be mitigated adequately. These impacts could be considered "fatal flaws".
74 to 96	Positive Very high impact	The anticipated impact will have highly significant positive effects.

## 1 1. ANTICIPATED IMPACT OF THE DEVELOPMENT

### 1 1.1 RESERVOIR SITE AT SECTION D

Table 11: Mitigation of Impacts

IMPACT TABLE FORMAT		
Issue/Impact/Heritage Impact/Nature	<i>Concrete Reservoir Structures at Area D</i>	
<i>Extent</i>	<i>Local (2)</i>	
<i>Probability</i>	<i>Unlikely (1)</i>	
<i>Reversibility</i>	<i>Partly reversible (2)</i>	
<i>Irreplaceable loss of resources</i>	<i>Insignificant loss of resources (1)</i>	
<i>Duration</i>	<i>Medium term (2)</i>	
<i>Cumulative effect</i>	<i>Low cumulative effect (2)</i>	
<i>Intensity/magnitude</i>	<i>Low (1)</i>	
<i>Significance Rating of Potential Impact</i>	<i>10 points: Positive Low impact. The anticipated impact will have minor positive effects.</i>	
	Pre-mitigation impact rating	Post mitigation impact rating
<i>Extent</i>	2	2
<i>Probability</i>	1	1
<i>Reversibility</i>	2	2
<i>Irreplaceable loss</i>	1	1
<i>Duration</i>	2	2
<i>Cumulative effect</i>	2	2
<i>Intensity/magnitude</i>	1	1
<i>Significance rating</i>	10 (low negative)	10 (low negative)
<i>Mitigation measure</i>	<i>No further mitigation is needed</i>	

### 1 1.2. UNIDENTIFIED STONE AGE DEPOSITS

IMPACT TABLE FORMAT	
Issue/Impact/Heritage Impact/Nature	<i>Heritage sites of significance including Palaeontology</i>
<i>Extent</i>	<i>Local (2)</i>
<i>Probability</i>	<i>Possible (2)</i>
<i>Reversibility</i>	<i>Barely reversible (3)</i>



<i>Irreplaceable loss of resources</i>	<i>Significant loss of resources (3)</i>	
<i>Duration</i>	<i>Medium term (2)</i>	
<i>Cumulative effect</i>	<i>Low cumulative effect (2)</i>	
<i>Intensity/magnitude</i>	<i>High (3)</i>	
<i>Significance Rating of Potential Impact</i>	<i>42 points: Positive Medium impact. The anticipated impact will have moderate positive effects.</i>	
	Pre-mitigation impact rating	Post mitigation impact rating
Extent	2	2
Probability	2	1
Reversibility	3	2
Irreplaceable loss	3	1
Duration	2	2
Cumulative effect	2	2
Intensity/magnitude	3	1
Significance rating	42 (medium negative)	10 (low negative)
Mitigation measure	<i>It is recommended that any ground works in Area D be monitored by a qualified heritage expert to assess the possible occurrence of Fauresmith and Smithfield Industry remains.</i>	

### 1 1.3 THE CAVALRY ENCLOSURE

IMPACT TABLE FORMAT		
Issue/Impact/Heritage Impact/Nature	<i>The stone walled Cavalry Enclosure at Area B</i>	
<i>Extent</i>	<i>Local (2)</i>	
<i>Probability</i>	<i>Definite (4)</i>	
<i>Reversibility</i>	<i>Irreversible (4)</i>	
<i>Irreplaceable loss of resources</i>	<i>Significant loss of resources (3)</i>	
<i>Duration</i>	<i>Long term (4)</i>	
<i>Cumulative effect</i>	<i>Low cumulative effect (2)</i>	
<i>Intensity/magnitude</i>	<i>High (3)</i>	
<i>Significance Rating of Potential Impact</i>	<i>57 points: Negative High impact. The anticipated impact will have minor positive effects.</i>	
	Pre-mitigation impact rating	Post mitigation impact rating
Extent	2	2
Probability	4	1
Reversibility	4	2
Irreplaceable loss	3	1
Duration	4	2
Cumulative effect	2	2

Intensity/magnitude	3	1
Significance rating	57 (negative high)	10 (low negative)
Mitigation measure	<i>It is recommended that the Cavalry Enclosure site be subjected to a second phase of investigation. No alteration to the site may be done without a permit from SAHRA.</i>	

#### 1 1.4 EVALUATING DESKTOP STUDY SITES (As per Philip, 2013)

Level	Heritage component	Action
National (Grade I) (National significance) preferably World Heritage Site	Open pit mine	Should be nominated to be declared by SAHRA
Provincial (Grade II) (Provincial significance)	Mine Square	Should be nominated to be declared by Provincial Authority
Local Grade IIIA (High significance locally)	Graveyard	The site should be retained as heritage site. Urgent maintenance and management plan for future maintenance required
Local Grade IIIA (High significance locally)	Compound (native hostel)	The site should be retained as heritage site pending results of specialist report from Heritage Architect on soundness of structure.
Local Grade 1I 1B (High significance locally)	Historical buildings/structures includes Diggers Hospital, train bridge, "cavalry" area and sites described as mud-brick and stone-wall enclosed "farmsteads" but excludes stonewalled dam	These sites should be mitigated and part retained as heritage site
Local Grade 1I 1B (High significance locally)	All mining related structures within the mining area related to mining operations but excluding office buildings	These sites should be mitigated and part retained as a heritage site
Generally Protected A	Office buildings within mining area	Mitigation necessary before destruction

Generally Protected B (Provisional rating pending specialist report from heritage architect)	Charlesville	The site needs to be recorded before destruction (should the latter be required on any of the buildings older than 60 years)
Generally Protected C	Stone- wall dam (Historical farming area)	No further recording is required

### Recommendations

Cultural Heritage sites are fragile and can easily be destroyed if sufficient care is not taken during any development or activity in its vicinity. However, the presence of cultural heritage sites does not necessarily mean that no further development can take place. Sites can be mitigated under permit and then destroyed should they not be deemed worthy of conservation (refer to table 3 above). The entire town of Jagersfontein and its associated mine and mining activities, however, has the potential to be utilized as tourist attraction and its associated mine and mining activities, however, has the potential to be utilized as tourist attraction to a similar fashion as is the case with Pilgrim's Rest in Mpumalanga. Jagersfontein mine is a perfect example of early mining practices and there is sufficient information by means of photographic and other records as well as remaining structures to recreate at least certain facets of the mining history for tourism purposes.

A socio-economic study was done in 1968 prior to the closure of the mine in 1971 in an attempt to determine the effect the closure of the mine would have on the social and economic wellbeing of the town and its inhabitants. In this report it was recommended that Jagersfontein and Fauresmith be combined under one municipality and that the mining town Charlesville be demolished. Then already it was predicted that should these recommendations not be followed, the result would be three struggling small towns. This prediction seems to be true for at least two of these towns, being Jagersfontein and Charlesville. Several attempts have been made since to create some form of economy, to include a brickmaking factory utilizing the material from one of the old dumps. None seem to have been successful to date in terms of sustainability and the overall condition of the town suggests a serious lack of economically viable industries and very few employment opportunities for a large portion of its inhabitants. The preservation of the heritage components should, therefore, be weighed against the economic possibilities of other activities such as the mining of the dumps that would improve the economic well-being of the town but not in such a way that it destroys its potential for tourism purposes which also has the potential to boost the local economy. The following recommendations, therefore, are with this factor in mind. In the case of cultural heritage sites and material recorded during this survey, the following recommendations are made:

1. That application is made for the open pit area to be nominated as National Heritage Site and that no further development takes place that would alter its appearance or endanger it in any way.
2. That all the buildings in the mine square area are nominated to be declared as Provincial Heritage sites and that the necessary precaution is taken to maintain it accordingly. It is worthy of mentioning that all of these buildings are older than 60 years and are already protected in terms of the National Heritage Resources Act and should be maintained accordingly.
3. That immediate attention is paid to the maintenance of the graveyard in the following:
  - a. Ensuring it is properly fenced in
  - b. Graves that have eroded out require immediate repair by a suitably qualified person (e.g. an archaeologist specializing in grave relocation). Please note that under provisions of section 36(3)(a) of the National Heritage Resources Act no 25 of 1999 a permit is required for these operations.
  - c. That a specialist report is obtained regarding the condition of the graveyard as well as providing a maintenance plan for its upkeep.
  - d. That a concerted effort is made in determining its origin
  - e. That the cattle pen immediately adjacent the graveyard is moved to a suitable distance away from the graveyard so that underground seepage and cattle traffic can cause no further damage

4. That a specialist report is obtained from a suitably qualified person, e.g. a heritage architect, on all structures within the mining area to include the historical components mentioned in table 3, compound, offices and remains of support service buildings, e.g. study office, etc.
5. That arrangements are made for the necessary mitigation (under permit) of structures and buildings as identified in table 3 above
6. That care is taken that no buildings/structures with a field rating of "Local Grade III" and higher deteriorate any further than its current recorded state and in that render it (or portion thereof depending on its rating) useless for retaining as heritage site (refer to section 45 of the National Heritage Resources Act, no 25 of 1999) and similarly that no site that requires mitigating in any way is allowed to fall in such a state that mitigation is no longer possible.
7. That no further mining activities (e.g. reworking the mine dumps) or any other development and/or activities take place within the reported area unless the necessary mitigation of structures as recommended in table 3 have been completed and the Heritage Management Plan mentioned in point 9 below is in place.
8. It is further recommended that a complete heritage audit be done of the remainder of the town not included in this report. The majority of these structures were erected during the early lifetime of the mine, not to mention as a direct result of the mine, and provided the necessary infrastructure by means of shops, churches, recreation, etc. and should therefore not be viewed as separate from the mine (and its associated buildings).
9. As a final measure a Heritage Management and Maintenance Plan should be drawn up for all the heritage structures and features mentioned in this report and should form part of the global environmental management plan to ensure future preservation of all heritage factors.

### 11.5 ASSESSING VISUAL IMPACT

Visual impacts of developments result when sites that are culturally celebrated are visually affected by a development. The exact parameters for the determination of visual impacts have not yet been rigidly defined and are still mostly open to interpretation. CNdV Architects and The Department of Environmental Affairs and Development Planning (2006) have developed some guidelines for the management of the visual impacts of wind turbines in the Western Cape, although these have not yet been formalised. In these guidelines they recommend a buffer zone of 1km around significant heritage sites to minimise the visual impact.

### 11.6 ASSUMPTIONS AND RESTRICTIONS

- It is assumed that the South African Heritage Resources Information System (SAHRIS) database locations are correct
- It is assumed that the paleontological information collected for the project is comprehensive.
- It is assumed that the social impact assessment and public participation process of the Basic Assessment will result in the identification of any intangible sites of heritage potential.

## 12. RESOURCE MANAGEMENT RECOMMENDATIONS AND CHANCE FINDS PROTOCOL

Sub-surface remains of heritage sites could still be encountered during the construction activities associated with the project. Such sites would offer no surface indication of their presence due to the high state of alterations in some areas as well as heavy plant cover in other areas. The following indicators of unmarked sub-surface sites could be encountered:

- Ash deposits (unnaturally grey appearance of soil compared to the surrounding substrate);
- Bone concentrations, either animal or human;
- Ceramic fragments such as pottery shards either historic or pre-contact;
- Stone concentrations of any formal nature.
- Paleontological remains such as fossils.

The following recommendations are given should any sub-surface remains of heritage sites be identified as indicated above:

- All operators of excavation equipment should be made aware of the possibility of the occurrence of sub-surface heritage features and the following procedures should they be encountered.
- All construction in the immediate vicinity (50m radius of the site) should cease.
- The heritage practitioner should be informed as soon as possible.
- In the event of obvious human remains the South African Police Services (SAPS) should be notified.
- Mitigation measures (such as refilling etc.) should not be attempted.
- The area in a 50m radius of the find should be cordoned off with hazard tape.
- Public access should be limited.
- The area should be placed under guard.
- No media statements should be released until such time as the heritage practitioner has had sufficient time to analyze the finds.

### 13. CONCLUSION

The Remainder of Portion 1 and Portion 16 of the Farm Jagersfontein 14 was subjected to a two phased HIA. Four core areas were identified that the client intends to disturb. These areas were subjected to a field based survey. The rest of the PRA area was only subjected to a Desktop Study.

The study found the following;

An important site in terms of the Cavalry Enclosure is within one of the areas earmarked for prospecting. This site needs to be managed and mitigated before any impact on it is allowed. The site is of major heritage importance.

The Area D where prospecting is proposed could produce Stone Age deposits of the Fauresmith and Smithfield types and any excavations here should be monitored.

Several other sites of significance was identified within the larger prospecting rights application area and these should be mitigated as per the recommendations supplied.

Should the client decide to alter the size or location of any of the prospecting sites labelled A,B,C & D in this report, the new areas should be subjected to a field based HIA before any work can commence. This HIA and Desktop study only applies to the areas indicated as A,B,C & D.

A previous Palaeontological Assessment of the area indicated that there is a negligible possibility of finding any paleontological deposits within the area. The whole PRA area is underlain by the same strata as for which SAHRA has previously issued an exemption (L. Rossouw, 2013).

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