

Visual Assessment of Proposed Cell Structure

Pasminco Cockle Creek Smelter Site, Boolaroo

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1.0 INTRODUCTION

PCCS is planning to remediate its Lands at Cockle Creek with the construction of a large containment cell. An Environmental Assessment (EA) report is being prepared as part of a Part 3A approval application to the Minister for Planning. The subject report is in support of the EA and assesses the visual impact of the proposed containment cell on the visual amenity of the area. The methodology used in the visual assessment process comprises identification of the existing visual environment, site visibility (in particular that of the proposed containment cell), and evaluation of the visual impact of the cell as viewed from various locations. This process has been undertaken with the use of a series of photographs and montages.

1.1 Existing Visual Environment

The PCCS and Incitec-Pivot sites are located at the base of the north and north-western slopes of Munibung Hill, north of the township of Boolaroo and east of Cockle Creek as shown on Figure 1.



Figure 1: Aerial view of the PCCS site, Boolaroo (1998) with industrial buildings, viewed to the east



Figure 2: Direct aerial view of the PCCS site with outline of the site and future cell structure (shown dotted)

The existing visual environment is discussed in depth in the Visual Analysis Report for the site prepared by Conybeare Morrison in August 2004.

The PCCS operations on the site ceased in September 2003. Figures 1 and 2 show the extent of the buildings and structures existing at closure. Since its closure and as a precursor to the proposed site remediation, most of the main structures have been demolished. A small number of buildings will remain on-site for the present including the STS building (currently used as the site office), the Old Laboratory Building on Fotheringham Road, the Effluent Treatment Plant (ETP), the Gatehouse and a few small work sheds/switch rooms.

Figures 1 and 2 also show that there are two large existing slag stockpiles within the PCCS site which are covered in high density black plastic (HDPE). The eastern stockpile is to remain on site in its present location and the western stockpile is to be relocated to join into the eastern stockpile as part of the ultimate cell configuration. Both of the existing stockpiles are visually prominent at present due to their size and the black colour of the HDPE covers which contrasts strongly with the background views. Since the stockpiles are to be centrally located with the containment cell, this visual assessment focuses on how they may be viewed now and in the future.

1.2 The Proposed Project

PCCS proposes to remediate its lands principally by excavating contaminated material from the various land areas containing that contaminated material and placing the excavated material and other contaminated material related to the site in a capped containment cell to be located generally on and around the existing eastern slag stockpile. The remediated areas will be re-filled and re-graded in anticipation of their future redevelopment. At this stage of the project, it can be assumed that they will be of a similar level to the existing levels and the areas will be stabilised with a grass cover.

The existing western slag stockpile will be merged with the eastern stockpile and together with the other contaminated materials they will be formed (by being compacted in layers) into one large containment cell. Figure 3 shows the approximate location of the final cell as currently envisaged. While the exact cell size and location is yet to be finalised, the configuration shown in this report is considered to be generally representative of the ultimate cell configuration.



Figure 3: Aerial view of the PCCS site illustrating proposed footprint of future cell (shown dotted)

The final top surface of the cell, which will be relatively flat in profile but graded, will be self draining. Because of the existing slope of the land that the cell is to be built on, (sloping from the east down to the west), the height of the cell above the adjacent ground will increase towards the western portion of the cell.



The cell top will be capped with an impermeable layer of clay and other materials comprising topsoil, of approximately 2m thick. As the final dimensions of the cell cannot be determined at this stage, the EA is seeking approval to build the cell within an envelope defined by a footprint and an upper height limit. The upper height limit of the top surface of the cell including the capping will be no higher than RL 34 (equivalent to 12m above the adjacent existing ground level to the east of the eastern stockpile).

The EA is using a cell location with a defined footprint, dimensions and height, and this cell configuration is assessed in this report. The maximum height of the cell in this case will be RL 30 at the eastern end. It is noted that the top level of the existing eastern stockpile is approximately RL 28. The cell will have an approximately rectangular footprint 440m x 485m, equivalent to an area of approximately 21 ha.

The ground level at the south-western side of the cell has an existing RL of 14-15m. The batters of the cell are sloped at between 1:4 and 1:5 and run principally along the western and southern edges of the cell. The top of the batter at the western portion of the top of the cell is approximately 15m in height above the base of the batter. However, the ground levels at the base of the cell may be altered post-remediation to follow more developable contours.

Directly to the north of the cell is the north-western spur of Munibung Hill, with a ridge height of approximately RL 35, with a small localised high point at the north-western tip rising to RL 38.

The backdrop of Munibung Hill to the east, rising to approximately RL 60m, is approximately 32m above the top level of the existing stockpile.

The batter slopes of the cell structure will be vegetated with dense shrubs to stabilise the surface. It is likely that separate to the cell construction, the north-eastern edge of the cell may additionally be sensitively contoured with clean fill to merge with the slope of north-western spur of Munibung Hill.

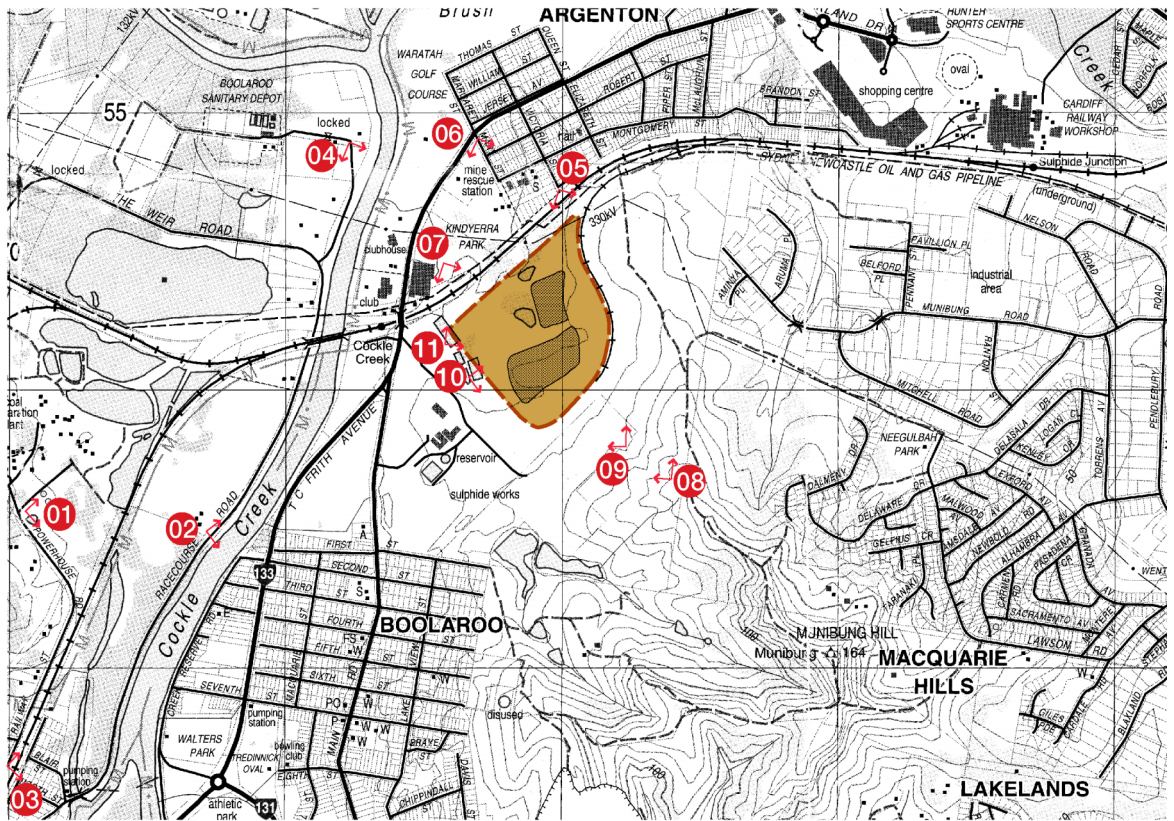
2.0 SITE VISIBILITY

The visual assessment concentrates only on the potential impact of the cell as it is the major change in land form on the site. As stated above, the eastern slag stockpile is used as the main focal point in assessing the present views.

The procedure for assessing the site visibility involves:

- Determination of various categories of viewing situation (from outside the site); and
- Identification of those viewing situations outside and inside the site which will be able to easily view the cell.

Eleven locations have been identified, shown on Figure 4, and are as listed below:



Legend

- Proposed cell profile
- Existing slag piles

Figure 4: Location of views

2.1 Long Distance Views

Location 1:

From Powerhouse Road, south-west of the site, west of Cockle Creek and the Main Northern Railway Line. This is a long distance view about 1.7km from the proposed cell as shown in Photo 1. The cell is not noticeably visible from this vantage point due to the distance, topography and the vegetation.



Photo 1: View of the PCCS site from Powerhouse Road, south-west of the site, west of Cockle Creek and Main Northern Railway line prior to demolition.



Location 2:

From Racecourse Road, south-west of the site directly west of Cockle Creek. This is a long distance view about 1.1km from the proposed cell as shown in Photo 2. The cell is not visible from this vantage point due to trees and shrubs along the eastern foreshore of the creek.



Photo 2: View of the site from Racecourse Road, south-west of the site directly west of Cockle Creek.

Location 3:

From Teralba railway bridge to the south-west of the site. This is a long distance view about 2.2km from the proposed cell as shown in Photo 3. The cell is not visible from this vantage point due to distance, topography and tree cover.



Photo 3: View to the south-west of the site from Teralba railway bridge.

2.2 Medium Distance Views

Location 4:

From Griffen Road, north-west from the site. This is a medium distance view about 0.75km from the proposed cell as shown in Photo 4. View of the cell is screened by existing mature trees and shrubs planted along the site's northern boundary.



Photo 4: View of the site from Griffen Road, north-west of the site.

2.3 Near Distance Views

Location 5:

From Victoria Street Argenton, north of the site. This is a near distance view about 0.15km from the proposed cell as shown in Photo 5. The cell view will be screened by the railway embankment and by existing trees and shrubs along the site boundary.



Photo 5: View of the site from Victoria Street, Argenton, north of the site.

Location 6:

From the corner of Mary Street and Lake Road north-west of the site. This is a near view about 0.45km from the proposed cell as shown in Photo 6. The cell will be directly visible from this location.



Photo 6A: View of the site and existing cell structure (slag stockpile) from corner of Mary Street and Lake Road.



Photo 6B: View of the site and proposed cell as above, with vegetation cover.

Location 7:

From Kindyerra Park, west of the site. This is a near view about 0.2km from the proposed cell. The upper part of the cell will be clearly visible from this location as seen in Photo 7.



Photo 7A: View of the site and existing cell from Kindyerra Park, west of the site.



Photo 7B: Same view of the cell structure as above, from Kindyerra Park west of the site, with vegetation cover.

Locations 8 and 9:

From Munibung Hill, south-east of the site. These are near views of 0.48km and 0.2km respectively. The whole cell is clearly seen from these locations as shown in the Photos 8 and 9.



Photo 8A: View of the site and existing cell structures from the upper ridges of Munibung Hill, to the east. Buildings in the cell foreground will be demolished.



Photo 8B: Same view of the proposed cell structure.



Photo 9A: View of the site and existing cell structures from the lower slopes of Munibung Hill, to the east. Buildings in the foreground of the cell will be demolished.



Photo 9B: Same view of the site with proposed cell structure.

2.4 Immediate views

Location 10:

From within the PCCS site, behind the former Laboratory building (to be retained for heritage purposes), located on the main internal access roadway. The cell structure is clearly seen from this location as shown in Photo 10.



Photo 10A: View within the PCCS site behind the former Laboratory building, northwards towards the cell structure with existing buildings to be demolished.



Photo 10B: Same view of the site and proposed cell structure with vegetation over.

Location 11:

From within the PCCS site, view of the cell structure from among the trees from a similar vantage point as in Photo 10, but looking to the left of the photo. The proposed cell structure is seen screened from the foliage of trees located within the site as shown in Photo 11.



Photo 11A: View from PCCS site, towards the existing cell structure



Photo 11B: Same view from the site towards the proposed cell structure with vegetation over.



3.0 IMPACT ASSESSMENT

At the completion of site remediation and prior to later development on the site, the whole of the site will be re-grassed to stabilise the surface. The cell, which will resemble a hillock (or largish hill), will also be grassed on top with landscaping on its north-west and south-east batter areas.

From locations on the site and in close proximity to the cell, the containment cell will present a large and imposing mound or hill, covered with vegetation.

This landscaped hill is an improvement on the visual impact of the large mounds of industrial stockpiles located on the site.

3.1 Mitigation Measures

To augment the description above, the slopes of the cell structure will be vegetated with dense shrubs with a band of informally planted trees along the perimeter edge of the top of the structure to provide the appearance of a wooded hill. While serving a functional purpose of stabilising the batters and providing a relatively low maintenance environment, the landscaping will also act as a visual mitigation measure. Despite the obvious size of the hill, viewers will perceive it as a sculptured part of the landscape, blended into the existing lower spurs of Munibung Hill.

The cell will additionally be sensitively contoured to merge with the north-western spur of Munibung Hill. The cell will form part of the natural landscape with the top of the cell providing a practical surface for redevelopment.

It is also expected that as part of the future development of the site that landscaping will be provided at strategic locations on the boundary of the PCCS site, alongside the corridor of the Main Northern Railway line as well as TC Frith Avenue and Main Road. Landscaping on the boundaries will be an important component to moderating direct views of the cell from off the site (as described below).

3.2 Visual Sensitivity

Visual sensitivity is a measure of the level of concern attached by a user group to a change in the existing landscape. It is largely determined by visibility and the distance from viewing areas, but is also influenced by the pre-development disposition of the viewer to development of that type.

The visual importance of Munibung Hill is well established, but for over 100 years, the views of the PCCS site have been representative of heavy industrial buildings and equipment and associated activities.

The transformation of the site by the demolition of the buildings and equipment and the replacement by sloping vegetated hills will represent a major change in the local perception. At the same time, the Incitec Pivot fertiliser factory will now become more prominent without any visual protection from the PCCS processes and buildings. In this regard, Incitec Pivot has publicly announced closure of the factory by September 2009 and while its future is not yet certain, it is likely that the current building structures would not be retained.



It is expected that the future end use of the remediated PCCS site will ultimately determine the community's visual sensitivity. It is expected that more interest will be shown in residential developments in comparison to industrial or commercial developments.

3.3 Visual Impact Assessment

This assessment focuses on the impact of the containment cell prior to any future redevelopment. Visual assessment of any proposed future development on the site will be subject to normal approval processes managed by LMCC.

The locations as shown on Photos 6A, 7A, 8A and 9A are representative of viewpoints which will be available to the community. Photos 10A and 11A show view of the proposed cell structure from within the site. The corresponding photos 6B, 7B, 8B, 9B, 10B and 11B are montages which show how the proposed site landscaping will greatly diminish the visual impact of the cell from these locations. It is considered that despite the cell representing a major change in the local landform, that its visual impact will be relatively low from viewpoints external to and within the site.

This point is further demonstrated by the series of Photos 12A, 12B, 13A and 13B. Photos 12A and 13A show aerial photos of the existing slag stockpiles. Photo 12A is from the south-west and shows Munibung Hill in the background. Photo 12B is a montage showing the proposed cell, but without any landscaping on the front batters. From the aerial view, the montage clearly shows the rise in elevation of the cell with a valley behind and at the foothills of Munibung Hill. This change in elevation would not be very apparent from lower elevations such as in Argenton, on the Main Road or on the railway.

Photo 13A shows how visible the slag stockpiles are from the top of Munibung Hill. Their high visibility arises not only from their size, but also from the highly visible and contrasting black colour of the plastic (HDPE) covering. Photo 13B is a montage that shows the finished and grassed cell (without any landscaping). This montage demonstrates that even though the cell size will be very apparent, because of the grass cover that matches the surrounding landscape colour, the visual impact of the cell is much diminished. Note that the buildings shown at the foot of the cell have been left in the montage to give perspective, but would not be there after the site remediation.

Overall, while acknowledging that the cell will result in major change to the topography of the local area of the PCCS site, the visual impact of the cell with the mitigation measures outlined in this report will be relatively muted. It is expected that over time, the new hill in the area will become part of the background landscape and represent a visually interesting addition for the off-site viewers.

3.4 3D Images

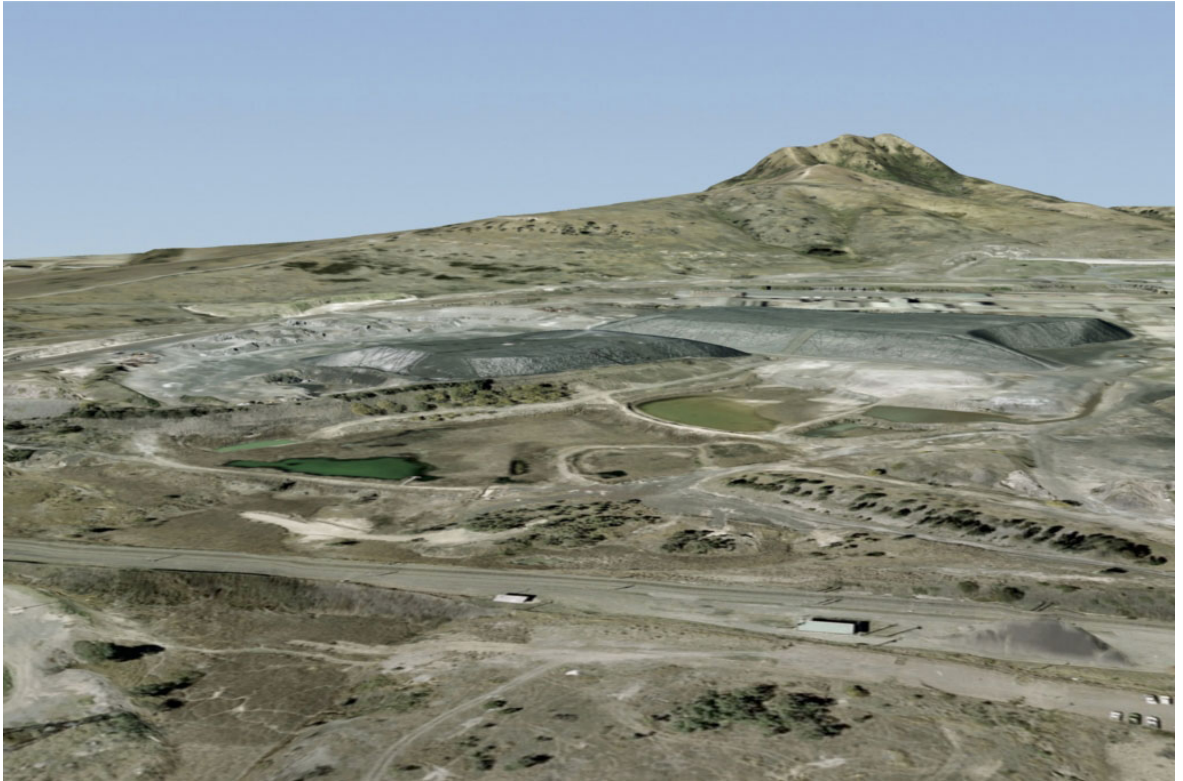


Photo 12A: 3D image of the site with existing cell structures, viewed from the west with Munibung Hill in the distance to the east.

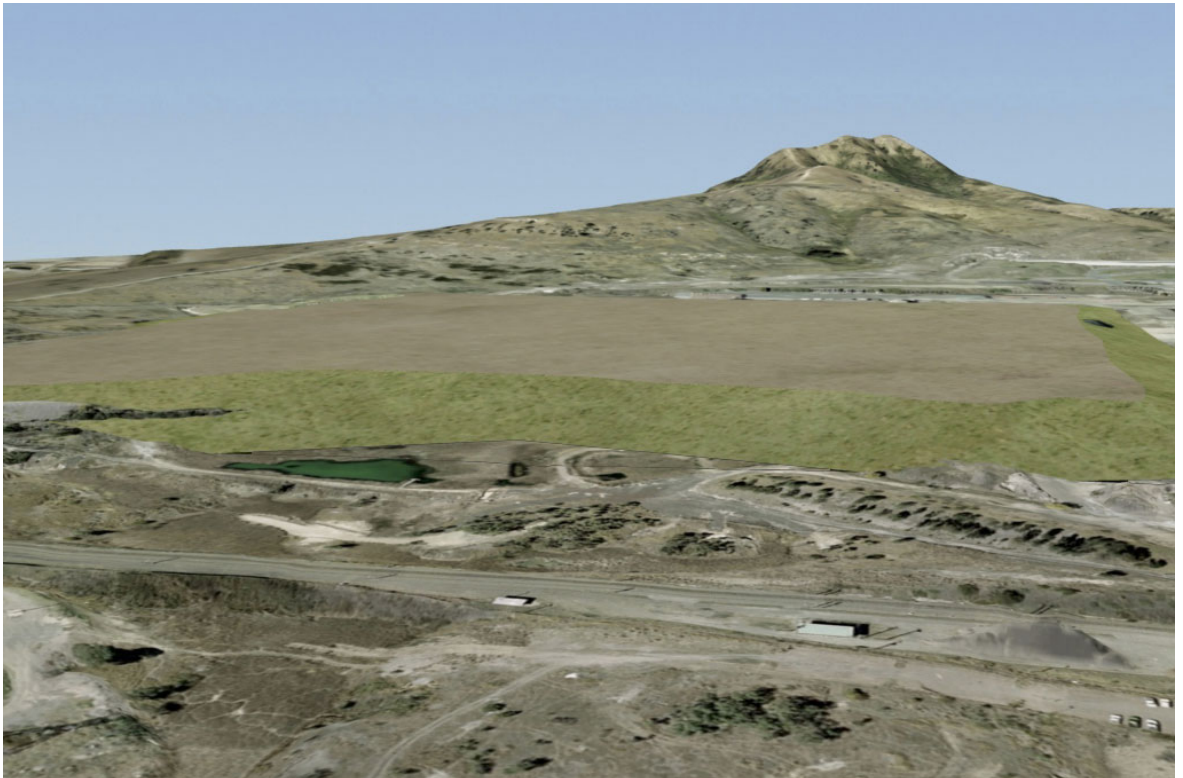


Photo 12B: Same view of the site with proposed cell structure with vegetation cover.



Photo 13A: 3D image of the site with existing cell structures, viewed from Munibung Hill.



Photo 13B: Same view of the site with proposed cell structure with vegetation cover.