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Planning

ASSESSMENT REPORT

Section 75W Modification
Mayfield West Remediation Project

1. BACKGROUND

On 2 August 2002, the then Minister for Planning granted development consent (under part 4 of the *Environmental Planning and Assessment Act 1979*) to BHP Billiton (BHP) for the remediation and rehabilitation of land described as Lot 223, Industrial Drive, Mayfield, in the Newcastle local government area (see Figure 1).



Figure 1: Regional Context

The site was formerly used by BHP as part of its steel works, and was filled with waste materials from those operations. The site has been declared a remediation site by DECCW, under the *Contaminated Land Management Act 1997* because it represents a significant risk of harm to the environment if not remediated. The development consent permits remediation of the site, and re-contouring to allow for the industrial redevelopment of the land.

The approved remediation strategy includes the:

- demolition of the remaining structures on the site, including the Jubilee Shed, the light towers within the former Spares Area, and a range of disused infrastructure;
- excavation and re-contouring of about 67,000m³ of contaminated material on the site, capped with about 88,000m³ of coal washery reject from the Lake Macquarie area, and about 10,400m³ of clay from parts of the site;
- upgrade of the stormwater management system on the site; and
- construction of a new entrance to the site off the existing Industrial Drive/Vine Street intersection.

The consent was subsequently modified in February 2005 to allow BHP Billiton to stage the remediation of the site (see Figure 2 and 3). Since consent was granted, sections of Lot 223 have been remediated including areas known as Lot 223 West and Lot 223 South. Remediation of Lot 223 North and East has not yet commenced.

Koppers Carbon Materials and Chemicals (KCMC) operate a coal tar processing plant adjacent to Lot 223 and is proposing to acquire the portion of Lot 223 known as Lot 223 North, from BHP in order to expand its operations. KCMC recognises the opportunity to develop the vacant land in Lot 223 to extend their processing facility, due to its close proximity to existing and proposed rail; wharf; and road transportation infrastructure, which would position KCMC closer to other industrial activities in the area.

On 8 January 2010, RCA Australia (RCA) on behalf of KCMC, submitted an application to the Department, seeking to modify the Minister's approval under section 75W of the *Environmental Planning and Assessment Act 1979* (EP&A Act). KCMC proposes to undertake the remediation of Lot 223 North, as approved, while BHP would complete the remediation of Lot 223 East. At the same time KCMC would also rehabilitate parts of Lot 11 and Lot 2 (see Figure 3), which were not included as part of the original proposal. KCMC proposes to include refinements to the remediation strategy, which would allow for more comprehensive remediation to be undertaken than previously approved. The remediation work is predicted to take approximately 18 months following construction of the barrier wall. Groundwater monitoring would be undertaken for a further 2 years following the completion of remediation works.

KCMC recognises that the remediation of existing contamination issues is an important and necessary step in order to satisfy development protocol and allow for the immediate and long term environmental management of lands within the project area.

2. PROPOSED MODIFICATION

KCMC proposes to modify the remediation strategy to include the following additional works:

- excavation of fill to bedrock for the installation of a deep, low permeability 4 sided barrier wall containment facility in a portion of Lot 223 North, constructed around an existing area of contaminated soil and groundwater;
- excavation and stockpiling of clean fill from within the barrier wall containment area for use elsewhere onsite;
- excavation of soil/fill from within areas of known hydrocarbon contamination, to be backfilled into the barrier wall containment area;
- limited treatment of hydrocarbon contaminated groundwater in Lot 11;

- installation of a final capping layer to prevent groundwater infiltration and human exposure of contaminated fill materials; and
- installation and monitoring of an Attenuation Bore field.



Figure 2: Proposed Site Layout

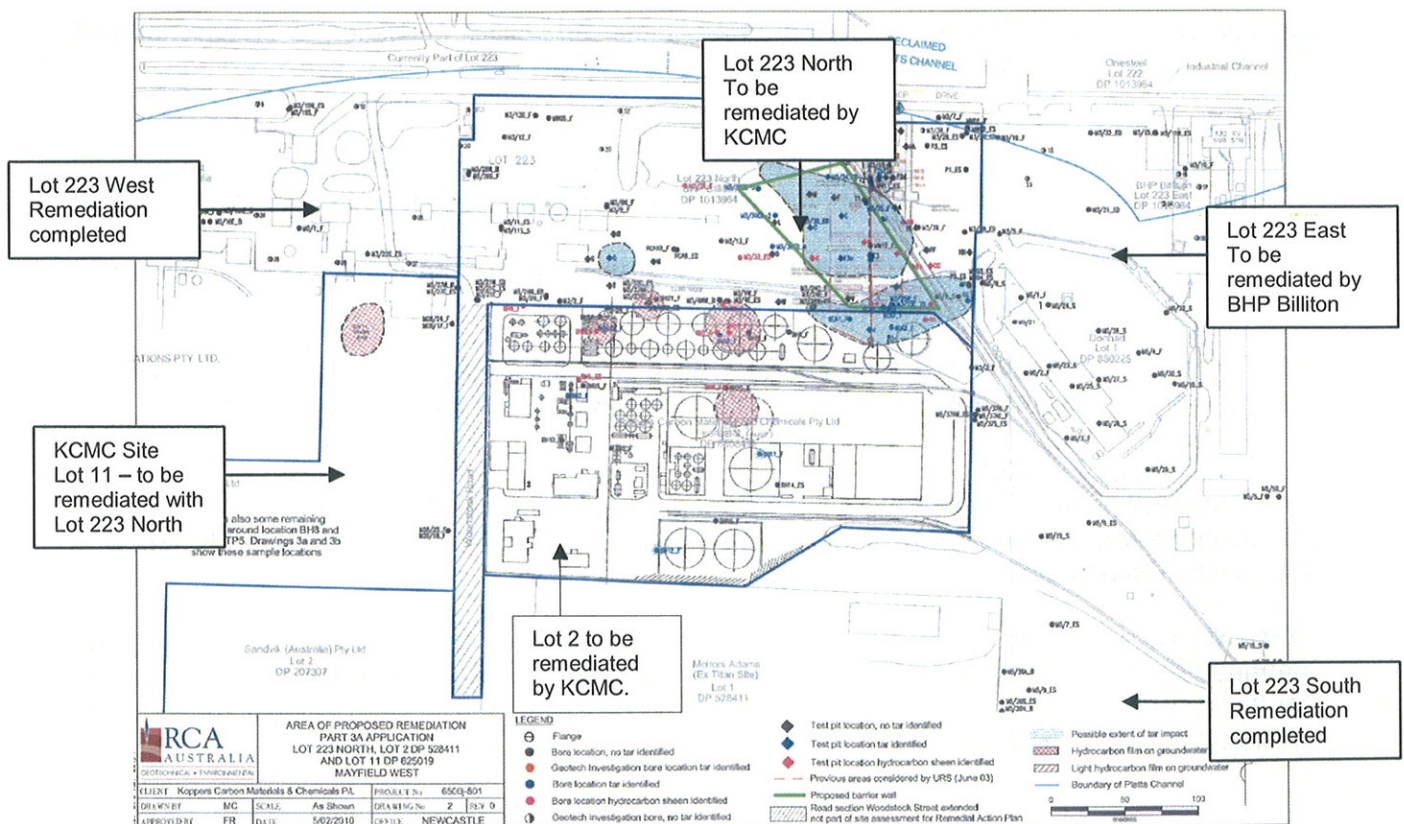


Figure 3: Site Details

The first stage of remediation involves the construction of the barrier wall in Lot 223 to contain the most concentrated area of hydrocarbon contamination. The proposal also includes the excavation of hydrocarbon impacted soils/fill from KCMC's Lot 11 and Lot 2, and soils/fill impacted by tar on Lot 223 North, to be placed within the barrier wall area. As well as this, KCMC propose the removal of a limited area of asbestos contaminated soil/fill in Lot 11, which will be disposed of at an appropriate licensed facility.

Also, the pump and treatment of contaminated groundwater from Lot 11 would be undertaken and would involve the circulation of groundwater through a small scale activated carbon treatment system and back into the open excavation.

The remediation of these three areas together would facilitate the effective environmental remediation of the site and provide for an area suitable for future industrial use. The remediation strategy proposed would represent a continuation of the remediation strategy currently being undertaken throughout Lot 223 and allow for the additional treatment of hydrocarbon impacted soils/fill identified on Lots 2 and 11 and enhance protection of the Hunter River.

A remedial action plan, which deals with remediation issues on the three lots (Lot 223 North, Lot 11 and Lot 2) and the movement of contaminated fill over the Lot boundaries within the project area, has been approved by a NSW DECCW accredited site auditor and has been accepted by DECCW.

3. STATUTORY CONTEXT

3.1 Approval Authority

The Minister was the consent authority for the original application, and is consequently the consent authority for this application. However, the Executive Director, Major Projects Assessment may determine the application under the Minister's delegation of 25 January 2010.

Section 75W of the EP&A Act confers on the Minister an implicit obligation to be satisfied that the modification request falls within this section of the EP&A Act.

The Department notes that:

- the proposed modification does not seek approval for a new and different project and would not change the essential function of the remediation of the site for which approval was granted; and
- the proposed changes to the project approval would not result in any additional environmental impacts (see Section 4).

It is therefore recommended that the Executive Director, Major Projects Assessment, as delegate of the Minister, agree that the modification request falls within section 75W.

4. CONSULTATION

The Department is not required to notify the application, however, it consulted the Department of Environment, Climate Change and Water (DECCW), NSW Office of Water (NOW) and Newcastle City Council.

DECCW did not object to the proposed modification, however raised concerns regarding the permeability of the capping layer, the odour control measures and odour monitoring proposed for the remediation strategy. DECCW also made recommendations regarding dust suppression, air monitoring and the future development of the site.

NOW did not object to the proposal, however recommended that KCMC assess whether any groundwater works are utilised on neighbouring properties and if so request to be included in the monitoring and risk assessment.

Council did not object to the project, however recommended that a condition of consent be included requiring KCMC to submit copies of all relevant contamination reports to Council.

5. ASSESSMENT AND CONCLUSION

Following consideration of the EA and submissions, the Department has identified the following key environmental issues associated with the proposal.

5.1 Soil and Groundwater Quality

The assessment of soil and groundwater quality is intricately related in this remediation project. The previous approval sought to cap the contaminated soils on-site with coal washery reject, but did not propose to carry out any soil or groundwater remediation. The amended remediation strategy proposes a more holistic approach, to enhance the protection of the Hunter River.

Limited groundwater treatment, using a mobile activated carbon treatment plant, would be undertaken on Lot 11, from the area excavated for the removal of contaminated soil.

The 4 sided barrier wall with a vertical extension to bedrock, would create a hydraulic barrier to ensure that contaminants from the soil and groundwater do not migrate to the Hunter River, which is located to the north and northeast of the site. Once source removal has been undertaken, it is proposed that natural attenuation would be the primary remediation method for this area of Lot 223. Additives, such as the introduction of exotic microbes, nutrients and oxygen, may be incorporated to boost natural attenuation and increase the effectiveness.

KCMC propose to install a bore field of groundwater monitoring wells in order to monitor the assumed natural attenuation of the groundwater. This would be used to determine whether the naphthalene plume, creosote plume and DNAPL dissolved plume are stable on Lot 223 and that natural attenuation indicators are present. The monitoring results would be assessed in conjunction with additional groundwater modelling, in order to determine the need for further groundwater assessment, remediation and/or the reassessment of risk.

The soil and groundwater treatment would not remove all contaminants and therefore a capping layer of coal washery reject, similar to that previously approved, has been proposed for Lot 223. The capping layer would also include an appropriately designed pavement surface seal, incorporating surface water drainage requirements, in order to immobilise the further vertical infiltration of contaminants and ensure that groundwater recharge through infiltration is prevented. These additional measures have been agreed to by an accredited site auditor. DECCW recommends that the capping layer, proposed for Lot 223, has an average permeability of 10^{-9} and a thickness of approximately 500mm. The Department has included this as a requirement in the conditions of approval.

The Department is satisfied that the proposed modification would deliver a more sustainable environmental outcome than the previously approved remediation project. Notwithstanding, the Department has included a number of conditions requiring KCMC to monitor groundwater flows and quality; and demonstrate that the capping layer proposed is sufficient in preventing groundwater recharge through infiltration.

5.2 Air Quality

The remediation works have the potential to increase dust and odour levels in the area. Potential sources include dust from earthworks; loading trucks; wheel generated dust from construction traffic; wind erosion; and odour from disturbed hydrocarbon contaminated

materials. In addition, air emissions would include diesel emissions from vehicles such as excavators and trucks.

The nearest sensitive receivers include residential properties located approximately 100m to the south of the site, the Riverview day care centre located 300m to the west and schools located 450m and 500m to the south-west and south-east respectively.

Modelling undertaken for the original project found that the proposal would comply with all relevant dust criteria, however would exceed the TSP and 24-hour PM10 criteria at the Hunter Christian School, when re-contouring and capping works are undertaken concurrently. Dust control measures were implemented in order to reduce any dust related impacts at surrounding receivers.

Further, since the original approval the project was modified to allow for the remediation works to be staged. This reduced the potential dust impacts predicted, as works are only carried out in one of two areas of the site at a time.

KCMC propose to continue on-site dust mitigation measures such as the use of a water cart for dust suppression. This coupled with the reduction in traffic to and from the site as a result of the proposed modification utilising coal washery reject already available onsite, would limit dust related impacts at surrounding sensitive receivers. Further, during the removal of asbestos contaminated fill, a qualified professional would be appointed to assess the likelihood of asbestos fibres entering the air. If required, monitoring would be undertaken during these works.

Although KCMC considers there to be limited potential for odour generation to occur, as a result of the exposure of volatile contaminated soils, KCMC proposes to include in the Environmental Management Plan, a vapour/odour management strategy, which would potentially use hydrocarbon odour suppressants such as Biosolve in order to reduce any odour related impacts occurring as a result of the modified proposal.

KCMC has committed to monitoring air quality both onsite and at the Mayfield Recreation Club during remediation works, to ensure dust and odour related impacts are minimised. However, DECCW finds the odour control measures proposed to be inadequate in light of the potential for odour generation as a result of the remediation works. DECCW recommended that odour monitoring be undertaken at the site boundaries and dispersion plume modelling be undertaken to identify whether impacts to surrounding sensitive receivers are likely and whether it is necessary for additional odour mitigation measures to be included in the odour management for the site. The Department has included these recommendations in the conditions of approval.

The Department is satisfied that air emissions from the remediation strategy would be minimal and that any residual impacts would be managed through the mitigation measures and monitoring strategy proposed for the project. Notwithstanding, the Department has included conditions of approval requiring KCMC to further validate odour modelling prior to the construction of the barrier wall and undertake odour monitoring at the site boundary during the remediation works.

5.3 Other Issues

Table 1: Summary of Other Issues

Issue	Key Impacts	Conclusions of Assessment
Stormwater Management	- A detailed Soil and Water Management Plan was developed as part of the original project and forms part of the project approval. - Stormwater generated from the modified remedial	The Department requires that the Soil and Water Management Plan be updated to include the proposed modifications.

Issue	Key Impacts	Conclusions of Assessment
	works would be managed in accordance with the current approval.	
Traffic	- The modified project does not propose to import any additional coarse coal washery reject, nor would it remove the majority of contaminated material from the site (except for asbestos contaminated fill). - No significant impacts to traffic are predicted.	The Department is satisfied that the existing Construction Traffic Management Plan is adequate in managing the traffic generated as a result of the proposal.
Noise	- The site is surrounded by industrial uses. - The closest residential receivers are approximately 100m to the south of the site. - The proposal would continue to be undertaken during current construction hours for the site, with the provision for extended hours during the construction of the barrier wall.	- The Department is satisfied that the existing conditions regarding noise criteria, monitoring and construction hours are sufficient in managing any potential noise impacts to arise as a result of the modification. - The Department recommends that KCMC update the Construction Noise Management Plan to accommodate for the modified proposal.
Visual Amenity	- The visibility of the modified project would be similar to the existing remediation project. - The area is generally industrial and as there would be no night time remediation activities undertaken, there are no significant lighting impacts predicted for the modified project. - The landscape design of the amended remediation strategy is consistent with that detailed in the original approval.	The proposed modification would not result in any significant increase in visual impacts. The Department considers that no additional conditions of approval are required in this regard.
Waste	- Offsite disposal of fill material is not anticipated for the amended remediation strategy, apart from minor amounts of asbestos contaminated fill. - A Construction Waste Management Plan has been prepared for the original project, and addresses type, storage, treatment and disposal of waste generated by the project in accordance with EPA guidelines.	- The Department is satisfied that this issue has been adequately addressed. No additional conditions of approval are required. - However, the Department recommends that the Construction Waste Management plan be updated to include provision for the modified project.
Hazards	- Although there is the risk for human and environmental hazards to occur on-site from exposure to contaminated soils and groundwater, all hazards would be managed under the existing Contaminated Site Remediation Management Plan for the duration of the proposed works. - The potential risks to off-site receptors have been assessed to be negligible.	The Department requires that the plan be updated if necessary, to include provision for the modified project.
Cumulative Impacts	The proposed development is located within an existing industrial area, and is not considered likely to result in excessive cumulative air or traffic impacts.	The Department considers that potential cumulative impacts can be appropriately managed through the proposed mitigation measures. No additional conditions of approval are required.

6. CONCLUSION

The Department has assessed the application in accordance with the relevant requirements of the EP&A Act.

This assessment has found that the proposed modification is unlikely to cause any significant impacts beyond that assessed and approved and would improve the remediation outcome for the site as a whole. Consequently, the Department believes the proposed modification should be approved.

The Department therefore believes that the modifications are in the public interest and should be approved.

7. RECOMMENDATION

It is **RECOMMENDED** that the **Executive Director, Major Projects Assessment**:

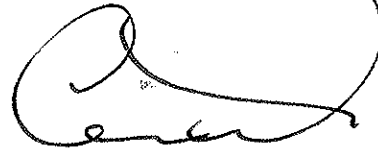
- **consider** the findings and recommendations of this report;
- **determine** that the proposed modifications fall within the scope of section 75W of the EP&A Act;
- **approve** the proposed modifications under Section 75W of the EP&A Act; and
- **sign** the attached Notice of Modification.



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28/7/10.

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Chris Wilson
**Executive Director
Major Projects Assessment**

28-7-10