

The importance of having an agreed plan

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Abstract

Rehabilitation plans, whilst are regulatory requirements, are often out of date or constantly on the “to do list”. A recent experience highlighted the importance of having an approved rehabilitation plan with the regulator in terms of managing corporate reputation and also preventing a residual liability following the transfer of ownership.

This case study outlines the uncertainty and, therefore, impacts to standard business operations as a result of changing regulatory and community expectations and natural events. In the absence of an approved rehabilitation plan this paper aims to reinforce the necessity of having a plan not only for regulatory compliance, but also for the bottom line.

In response to this and in recognition that operators deal with numerous sites, this paper outlines how using a risk based approach adverse outcomes as noted in the case study can be prevented.

Keywords: rehabilitation, closure, liability, risk, assessment

Introduction

A requirement of the extractive industry is to develop, implement and maintain a number of management plans. These include environment, receiving environment, water, emergency response, air, noise, safety, community engagement / stakeholder and quality assurance management plans. In addition to these plans is, of course, a rehabilitation plan.

Site rehabilitation needs to be an integral part of planning and funding the mine from the beginning of operations as rehabilitation requires ongoing expenditure throughout the life of the mine. In fact demonstrating ongoing rehabilitation of the site is a licensing condition. Progressive rehabilitation is becoming more common place, however, for older mines, progressive rehabilitation has been, to date less practiced and or has been not regulated as rigidly. For older sites rehabilitation has been seen, at least traditionally, as an issue to consider and implement as mines near the end of their economic life. This approach of delaying rehabilitation, while unpopular with the regulator and stakeholders in general, is also an unquantified liability. This delayed attention is amplified when consistent across a portfolio of sites.

This paper uses a case study to demonstrate what could happen in the absence of having a rehabilitation plan when attempting to exit a site. In response to this and given that this position is common across many sites, this paper also puts forward a process by which site liabilities can be systematically quantified and progressively addressed and therefore mitigate the likelihood of the adverse outcomes occurring.

Background

The case study focuses on a sand quarry positioned in an increasingly populated area of Queensland to demonstrate the ramifications of what could happen should a site be in the position of not having a rehabilitation plan in foresight of a transferring site ownership.

The quarry is located within a watercourse which has been mined for decades by a number of operators upstream and downstream of the case site. The alluvium was dredged from a depth of approximately 2 metres (m) below the natural surface to up to 15 m below. The results of this dredging process over approximately 40 years created 2 lakes covering an area of approximately 41 hectares (ha) and approximately 78 ha of former workings having been backfilled and rehabilitated.

The area around the sand quarry is very low lying and, as such, is flood affected during low and high flows. Water quality in the watercourse has been degraded from quarrying at multiple sites. The case site is the last known operational quarry in the area.

Case Study

The owner engaged in a process of determining a suitable end use approximately four years from the end of the site's economic life. This included the owner actively engaging with the community, local and state governments and sporting groups as well as the land development industry. The outcome of this process was that the site would ultimately be rehabilitated in accordance with community expectations as well as changing the land use to be more compatible with the development of the area.

After this, the site owner, as part of readying to transfer title of its former sand quarry to new owners, engaged in a series of investigations to better understand the geotechnical conditions, potential site development costs, water quality of the dredge lakes in comparison to the receiving environment, and potential ground contamination. In addition, the site owner engaged with the regulator to commence the process of notifying the state of its intentions to transfer title and therefore the transfer of responsibilities (to the new owner).

In early 2011, it is well reported that the majority of Queensland was flood affected. Although there was some minor level of flooding on site, it was not to the degree experienced by the majority of the state where significant flood affected damage occurred. In response to this and in order for production to continue at the mines to meet coal production contractual conditions, the Department of Environment and Resource Management (DERM, now Department Environment and Heritage and Planning – DEHP), issued numerous Transitional Environment Plans (TEPs), primarily for regulating the release of mine affected water. The level of state wide flooding also resulted in the formation of a Queensland Floods Commission of Inquiry to investigate matters arising out of the 2010/2011 floods (Holmes 2012).

In this heightened regulatory environment, although it is unknown if this was directly attributable to the case site, the site owner received an Environmental Protection Order (EPO) under the Environmental Protection Act to respond to a

series of regulator concerns. In summary, these concerns requested immediate changes to landforms, changes to the site water management and also asserted that the site was adversely contributing to the receiving creek water quality.

In response to these points with the support of legal opinion, the site owner reiterated the following points:

- the transfer of ownership would mean the liability of rehabilitating the site would be undertaken as part of transforming the site to an appropriate end use which would be in accordance with community expectations and local government development plans
- site landforms were in the process of being re-graded and re-vegetated
- long term records showed water quality was better immediately downstream of the site than immediately upstream of the site and also the dredge pond's water quality was improving over time and this had been demonstrated previously to the regulator (Coffison 2010)
- a concept rehabilitation plan (KBR 2002) had been prepared but needed to be updated taking into account community engagement outcomes as well as the final landform.

Ultimately, despite these assurances and facts, the site did not have an agreed rehabilitation plan. As a result, in response to the EPO being unresolved, and hence the uncertainty, the site owner was placed in the position of having to prepare a rehabilitation plan (Robertson 2011) in accordance with its development conditions, although it would not be in accordance with the outcomes of its stakeholder engagement and it would be prepared in a short timeframe, clearly not the ideal approach. In addition the short timeframe prevented having a clear understanding of:

- nature of tailings existing within the lakes from sand conditioning and what, if any, rehabilitation works / management was required
- flow regime of adjacent water courses interacting with the site dredge ponds (low flow as well as flood flow) and therefore the sediment load entering and exiting the site (records showed site was acting as a sediment sink)

In addition to these uncertainties, there were overlapping and conflicting jurisdictional priorities. For example retention of the lakes (from dredging) long term was seen by the local authority as a valuable community asset whereas the regulator's position was that filling in of the lakes would be a preferable outcome.

In summary not having a rehabilitation plan had resulted in the site owner:

- having to instigate and participate in legal proceedings to preserve its legal position
- being unable to divest the site (currently by more than 2 years) and as such has had to continue involvement in the site
- potentially impacting its relationship and corporate reputation with the regulator

- creating uncertainty both for the existing owners and the likely new owners
- retaining a residual liability for the site even beyond title transfer

This may seem like an extreme scenario but the question clearly is “was this scenario foreseeable and could it have been identified and outcome mitigated?” The following puts forward an alternative approach where this scenario could have been identified and prevented from occurring.

An alternative approach

The site owner in this case study had a significant portfolio of sites, all at different stages in their economic life. As a result at any one time there are numerous issues to deal with, ranging from approvals for new sites, operations and compliance and as mentioned divestment of old sites.

Each of the properties is subject to environmental and planning conditions which govern how the operations are conducted. In this case study the site owner has a number of sites which have reached the end of their economic life and as a result, compliance with environmental requirements in respect to closure becomes a greater focus. In addition, natural events such as the floods in Queensland, even though not affecting substantially any of the site owner’s properties, brought into focus some of the risks associated with closure and divestment of properties prior to all environmental obligations being met.

Within this context, it was identified that an assessment of environmental compliance risk, in particular related to operations that are reaching the end of their economic life, would mitigate potential breaches of environmental and/or planning regulations. Environmental compliance risk however is clearly not the only risk to the site but rather economic, social, and reputational risks are relevant. That is there have been many cases where technical risk (environmental compliance in this case) has been assessed to be low but where the resulting outcome severely compromised the service of the asset. An example of this is where regular bridge inspections of a city onramp to an express way in Brisbane did not reveal any issues but only a few weeks later the structure was required to be taken out of service and as such compromised traffic in the city for months.

As a result the following process is put forward as part of a rigorous risk management process which could be applied to prevent the scenario which resulted in this noted case study:

- Review current closure priority list in consideration with market opportunities and resources
- Create a full set of scenarios that might impact the divestment of the sites
- Determine dependency relationships between exogenous drivers that might impact operations
- Complete a risk assessment process to understand likelihood and consequence of scenarios
- Develop marginal risk abatement strategy to elucidate trade-offs between risk and resilience and risk offset costs.

- Re-prioritise the sites in the context of risks, costs and work required for sites to be available to be divested

Figure 1 gives an example output of such a process which aggregates the findings and one which is typical of applying this process. In this example Figure 1 shows that that approximately 70% of risk can be mitigated by undertaking low cost work. Beyond that the costs of work to further mitigate the risks increase substantially.

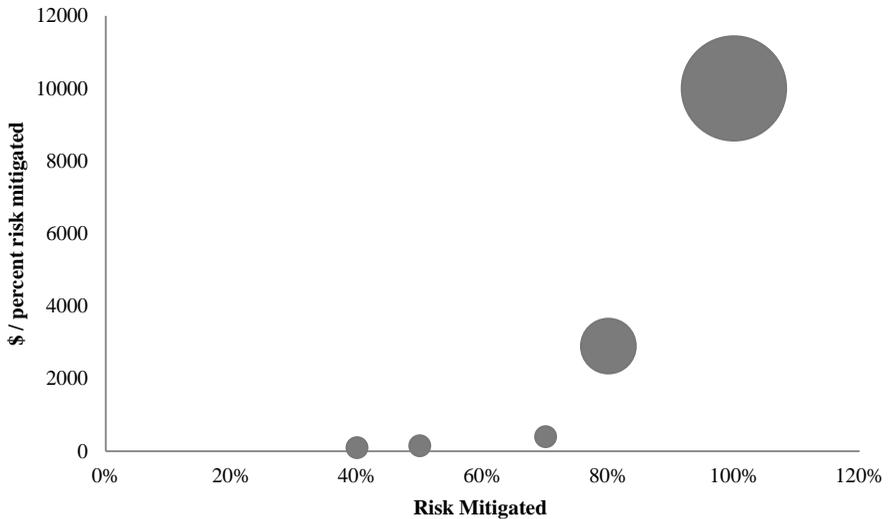


Figure 4 – Example Risk marginal abatement curve for the portfolio of sites. The size of the circles is proportional to the costs of works required to make the portfolio of sites more resilient

Application of this approach spread over a large portfolio would represent a significant portion of work. In this case it would require collation of all documents, knowledge of different jurisdictional approvals (state to state, and local governments) and also various technical input from scientists, statutory planners and engineers. As a result the process outlined above could be undertaken on a limited number of sites, refining the process and then ultimately deployed on all sites.

A rigorous analysis of risk to service expectations and obligations would enable site owners to establish clear priorities for rehabilitation and maintenance and as a result demonstrate the application of effective business continuity / risk management policies; clearly a defensible approach. Business continuity in this context is having confidence in divestment of sites and as such release of capital and reduction in liabilities.

Summary

Rehabilitation Plans and their implementation are common place today however there remains many older sites where the level of site rehabilitation, both planning and implementation, could be improved. Delaying this investment, firstly in developing the plan could result in delaying site divestment, creates uncertainty in site liability costs and importantly could damage corporate reputation.

The case study presented in this paper clearly resulted from not having an agreed rehabilitation plan. As such, the site owner's expectations for the costs associated with rehabilitating the site were not sufficient as the goal posts had changed. In response to preparing a rehabilitation plan as part of legal proceedings, the plan was hastily prepared and, while compliant with the license conditions, was not considered sufficient by the regulator given today's expectations and, finally was not in accordance with the outcomes of the stakeholder engagement process.

Rather than having to deal with the adverse conditions of the case study and in the recognition that many operators have multiple and "aging sites" this paper outlines a process for developing a divestment plan using effective business continuity and risk management practises. In doing so, achieving stakeholder acceptance, regulatory compliance and even a commercially acceptable outcome would appear to be more likely than not.

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