Good example of report on australian resource management problem

Business, Company

The control of Natural Resource Management in Australia is a critical concern and hence the responsibility of governments, communal groups and regional bodies to support projects and programs delivery that consequently inform policy makers on natural resources issues. (Brueckner, Durey, Mayes & Pforr 2014).

Water pollution is a significant natural resource management issue in Australia that is caused by different anthropogenic, as well as natural factors (Pigram 2007). The northern Jarrah Forests of Western Australia have been a source of water to the Perth metropolitan Region, however, the water supply system is under a threat of pollution from Industrial activities taking place within the region. The paper is going to specifically analyze the impact of the Alcoa Mining Company in Australia on water pollution of the water systems. The problem will, therefore, be assessed from the viewpoint of the Alcoa Company. The company exploits Bauxite for the manufacture of Aluminum. It operates two bauxite mines within the northern Jarrah forest of Western Australia. The Huntly Mine is found approximately 15 km to the north east of Dwelling up while the Willowdale Mine is found approximately 9 km to the east of Waroona. They operate 24 hours each day to be able to supply the bauxite ore to the alumina refineries of Alcoa that are located in Pinjarra, Kwinana and Wagerup.

The supply of portable water in the Perth Community and local farms area is a priority land use system that has been a significant practice in the area. Environmental management is, therefore, important in the mines to ensure there is a focus on the effective management of hydrocarbon spills; emergency spills response as well as storage of the hydrocarbons.

Some of the high risks environmental activities from the mining include spills and Loss of Containment (LOC) from the storage facilities as well as the use of the hydrocarbons in highly vulnerable areas. This, for instance, can include the Perth Community that acquires it drinking waters from the water supply systems within the Alcoa's WA Mining operations. As a result, the handling and the storage of oils and fuels are seen as a critical environmental measure (Richards 2009).

Water from the Jarrah forested catchments are usually of good quality and therefore little need for standard minimal treatment plans before distribution, however as a result of the mining activities, there has been an increasing need to monitor the water that is supplied to Perth metropolitan region.

Pollution prevention measures in the area have a significant component of the mining environment management program that ensures a careful management of all the waste waters, hydrocarbons, dangerous goods as well as other chemicals that have a potentially adverse effect to the water systems (Richards, 2009).

Alcoa is committed to ensuring that it minimizes all its hydrocarbons loss of containment whereby the hydrocarbons include grease, diesel and oils. Most of the LOC cases are similarly usually associated with the use of heavy machinery. There is the need for systems to be put in place that ensure operators are well trained and that all the equipment are regularly inspected and well maintained.

The company has attempted to reduce its overall pollution effects from its initial establishment of the Mining LOC Reduction Team in 2001 that aimed

at investigating the potential preventative measures for the reduction of LOC's and investigation of the root causes of the same. Although there has been a large number improvements on implementation by the team the overall reduction in hydrocarbon is yet to reduce significantly. However, there have been cases of the significant reduction as was experienced in 2006 where there was recorded 43 per cent reduction of the LOCs that was greater than approximately 20litres that were achieved by the mines. To effectively reduce the level of LOCs, all those present in the environment should be cleaned up immediately, and all the contaminated material should be disposed of appropriately to ensure that no hydrocarbon is left in the environment.

The following are some of the Regulations and Acts that can be instituted as the basic guidelines to monitor and mitigate the operations and pollution effects of Alcoa's WA Mining that is in regard to management of LOCs:

Contaminated Sites Act 2003 (WA)

The Act provides for the amendment of contaminated sites after identification, recording, remediation and management. The Act will help to protect the health of all the communities surrounding the Jarrah Forests together with the environment and environment values of the Perth Community. The CSA 2003 with its associated regulations came to effect in December 2006. Under this Act, Alcoa should report all the suspected contaminated sites to the Department of Environment and Conservation (DEC).

Some of the crucial areas of the hydrocarbon contamination that can be addressed include the tank removal program (Haigh and Deakin University

1997). All known contaminated sites should, therefore, be cleaned up according to the Contaminated Sites Act 2003. The following table illustrates the significant principle the act abides by:

Contaminated Sites Regulations 2006 (WA)

The Contaminated Sites Regulations of 2006 is a much stronger legal framework that reports, assesses and manages contaminated sites. The act is significant because it will address the increasing number of contaminated sites within the area that have the potential of adversely affecting the ecosystem and health of the communities in Perth. The Act is administered by the Department of Environment and Conservation (DEC). However, the advice on DEC is offered by the Environmental Health Directorate of the Department of Health of WA on the aspects of contamination of the public health (Haigh and Deakin University 1997). The involvement of WA in the health aspects of the act will that the site clean-up process will not expose the Perth community and all its eventual residents and tenants to unacceptable soil, air or water contaminant levels.

Dangerous Goods Safety Act 2004 (WA)

The DGSA will help to regulate the storage, manufacture, transport and handling of all the dangerous goods as well as the operation of all the major hazard facilities (MHFs) that exists in Western Australia (Haigh and Deakin University 1997). Its significant purpose will be to ensure that all the dangerous goods from the mining sites will be adequately managed to help minimize the risk and harm to the health of persons in the area as well as

significant or unreasonable damage to the environment and property in the area.

Dangerous Goods Safety (Storage and Handling of Non-Explosives) Regulations 2007

All the hazardous materials should be managed and stored according to the Dangerous Goods Safety Act 2004 together with the Dangerous Goods Safety Regulations 2007. All the hazardous materials should only be allowed in the site after approval by the Cross Site Mine Environmental Scientist and the Industrial Hygienist (Haigh and Deakin University 1997).. It is Alcoa's policy to prohibit the installation of new underground storage tanks, to remove or decommission existing underground storage tanks, and remove any soil polluted by leaks. This consequently helps to minimize the potential risk of soil or groundwater contamination. As a result, all the underground storage tanks will have to be removed from the mines. .

Environmental Protection Act 1986 (WA)

The EPA of 1986 provides for an Environmental Protection Authority for the control, prevention and abatement of environmental harm and pollution. This will ensure the preservation, conservation, enhancement, protection and management of the environment.

All the mines should hold on to the EPA license to discharge treated wastewater that is treated.

The Act will ensure that the water catchments will be protected through strict guidelines that ensure that mine sites discharge off-site (Haigh and Deakin University 1997).

As part of its hydrocarbon management, WA Mining should also adhere to guidelines like the AS 1940-2004: that dictates how the handling and storage of the combustible and flammable liquids are managed. The HB 76-200 can also be observed to guide on how the dangerous goods are transported and managed together with an initial emergency response guide.

External Reporting can also be practiced whereby the company reports all of its total

LOC's that are greater than 20 L in a company based Annual Environmental Review for its mining operations (Gao, 1998). The review can be submitted annually to the Government Department of Mines and Petroleum (DMP) which is in accordance with the agreements of the Alumina Refinery (Wagerup) Agreement Act 1978 together with its subsequent amendments. Once the review is distributed by DMP to the Department of Water (DoW) as well as all other relevant government agencies, comments can be made and necessary action taken on cases of deviation from set rules and guidelines (Haigh and Deakin University 1997).

There is however a new reporting protocol that has been developed by DMP that is in line with the Dangerous Goods Safety (Storage and Handling of Non-Explosives) Regulations 2007 allows for the reporting of dangerous goods and spills from hazardous industrial companies.

Similarly, working arrangements can be made between the Alcoa World Alumina Australia, the Water Corporation that covers Alcoa's Mining Operations within the Darling Range and the Department of Water. Such working arrangements are written and reviewed amongst the organizational boards involved which in this case will be the DoW, Alcoa and Water

Corporation. They are designed to cover a period of three years. Its main intent is to ensure the maintenance of a coordinated approach to mining management operations together with water resources (Haigh and Deakin University 1997). With such working arrangement, WA Mining will see through its commitment to minimizing LOC's with an extra emphasis on the inspection of equipment together with reinforcement and regular training on the significance of reducing LOC's. Within the working arrangements, contacts and reporting requirements are similarly usually included.

All LOC's should be contained and cleaned up as well as a proper disposal of contaminated soil. An LOC Clean-Up Policy should similarly be developed to guide the facilitation of the clean-up of LOC's depending on its potential risk to the environment (Haigh and Deakin University 1997).

All of the mentioned laws and guideline will ensure that the Perth Community as well as the natural environment and ecosystem in the area is protected from contamination of the mining wastes from the Alcoa company operations and hence ensure sustainability and health.

References

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Glossary

Table 1: Principles of Containment Sites Act 2003