SENATE INQUIRY

IMPACTS ON HEALTH OF AIR QUALITY IN AUSTRALIA

Response from North Queensland Bulk Ports Corporation (NQBP) to a Question on Notice

Question from Senator Waters (p41 of Hansard of 11 June 2013): "Can you clarify for me precisely how many kilometres away from the port operations each of those (dust monitoring) sites are. Perhaps you could take that on notice. "

Response from Mr Stewart-Harris: "We are happy to provide a map of that to show the distances."

NQBP Response:

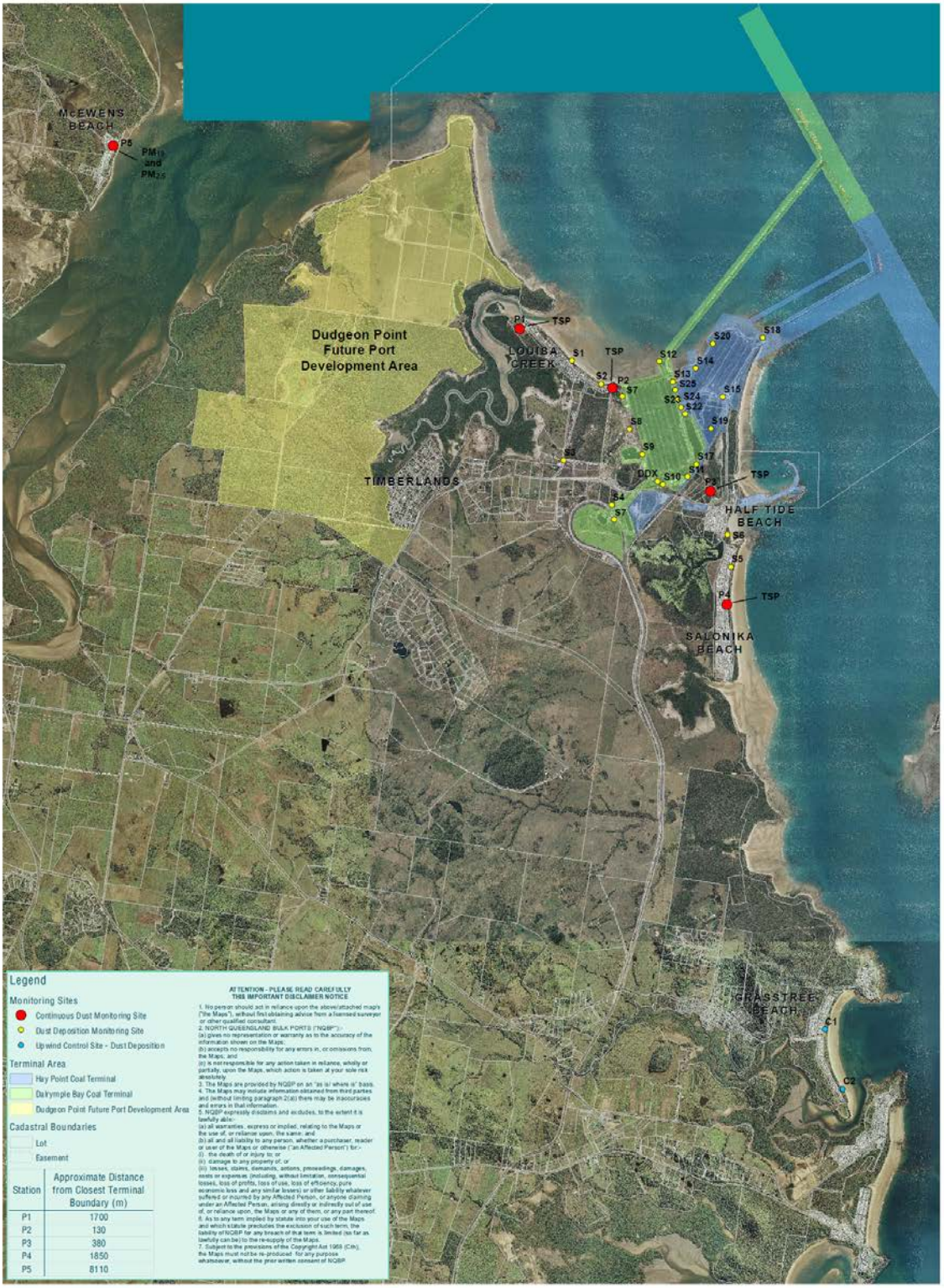
Two maps have been prepared by NQBP to answer this enquiry and these are attached:

1. Map of the dust monitoring sites around the existing coal terminals in the Port and in the surrounding communities. This monitoring program is funded through a joint program between NQBP and the operators of the two terminals. The monitoring is undertaken through an independent environmental consultant and the results are reported monthly on NQBP's website at: http://www.nqbp.com.au/hay-point/

   The legend of the attached map provides the distance of each of the five continuous dust monitoring stations, which are located in communities around the Port of Hay Point, from the closest terminal boundary. The type of dust monitor (Total Suspended Particulates or TSP, PM10 or PM 2.5) at each location is indicated on the map.

2. Map showing the location of the dust monitoring station operated at West Mackay by the Department of Environment & Heritage Protection and its distance from the coal terminals

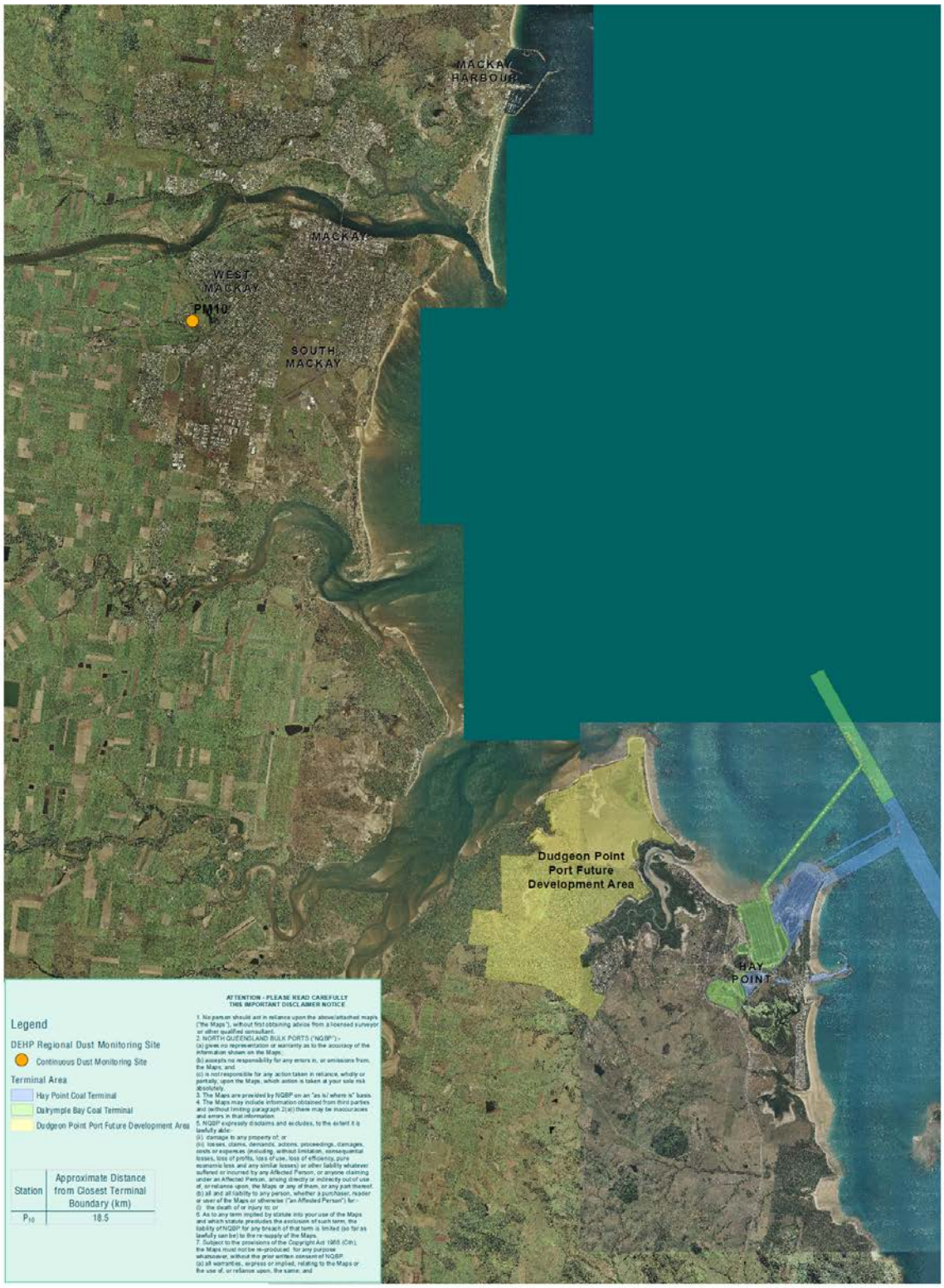
Prepared by R. Brunner, General Manager Planning – Hay Point
B.E. (Chem), M. Eng. St, M.Sc. Env. Man., M. I. Chem. E



PORT OF HAY POINT

PORT DUST MONITORING LOCATIONS

NQBP2013-040 19/06/2013



Legend

DEHP Regional Dust Monitoring Site

Continuous Dust Monitoring Site

Terminal Area

Hay Point Coal Terminal

Dalrymple Bay Coal Terminal

Dudgeon Point Port Future Development Area

Station	Approximate Distance from Closest Terminal Boundary (km)
P_{10}	18.5

NORTH QUEENSLAND BULK PORTS CORPORATION

N

0 400 800 1,600 2,400m

1:80,000

PORT OF HAY POINT

DEHP REGIONAL DUST MONITORING LOCATION

NQBP2013-DMa 19/06/2013

SENATE INQUIRY

IMPACTS ON HEALTH OF AIR QUALITY IN AUSTRALIA

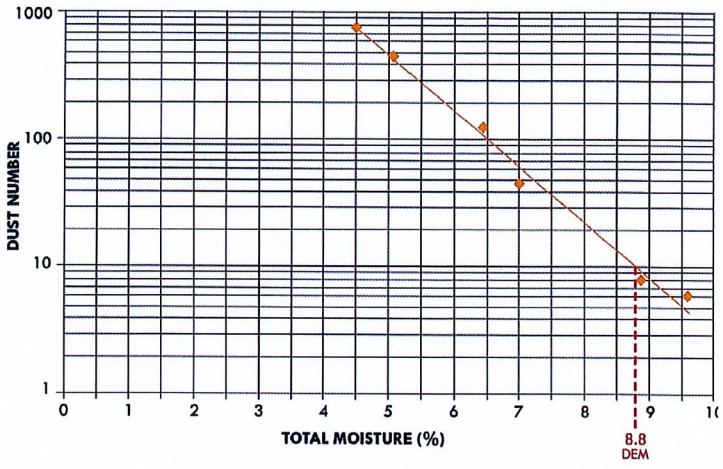
Response from North Queensland Bulk Ports Corporation (NQBP) to a Question on Notice

Question from Senator Waters (p43 of Hansard of 11 June 2013): "Could you take on notice the cost of spraying the stockpiles with veneer from the outset, as soon as they arrive, and any work you have done to establish that? Could you compare that with the cost of your current practices?"

NQBP Response:

Effective dust control cannot be achieved through a single method. Potential dust generation from the two terminals in the Port of Hay Point is managed through a combination of dust controls. The controls used include equipment design, wind barriers, dust containment and dust suppression. Dust suppression techniques include the use of moisture control throughout the coal chain (from mine to ship) and chemical veneers.

Moisture control is one of the key techniques used to minimise dust from coal in either transit or in storage. Each coal type has an optimum moisture content where dust generation is minimised, which is called the DEM (Dust Extinction Moisture Level). The DEM of each coal is determined in the laboratory using methods in the Australian Standard AS 4156.6 – 2000. A typical plot of dust level versus moisture is provided below.



Source: Australian Standard AS 4156.6-2000

Chemical veneering of coal in open rail wagons is being steadily implemented for the coal travelling by rail from Bowen Basin mines to the Port of Hay Point.

Chemical veneering is already used as a surface treatment for coal stored in stockpiles in the coal terminal stockyards in the Port of Hay Point. The product is mixed with water and sprayed on to the surface of the stockpile to form a crust. As soon as the surface is disturbed, the veneer needs to be reapplied. The product used in the port is a commercially available dust suppressant that is a biodegradable product based on natural gum. The material has been tested in laboratory conditions and in the field to prove it is effective as a complementary technique to moisture control.

The product needs to be applied to the surface of coal to form a crust – it cannot be applied to coal when coal arrives at a coal terminal because the coal is in motion from the point of unloading coal from wagons and there is no opportunity to form a crust over a stationary surface until the coal reaches the stockyard area.

The optimum dosage rate for dust suppression has been determined in conjunction with the chemical supplier through laboratory testing and field assessment.

Current practice in the Port of Hay Point, which has been determined to be the most cost-effective in reducing stockyard emissions, is to apply the veneer to coal stockpiles in high wind conditions only. It is also applied only to stockpiles that are not being actively stacked or reclaimed (estimated at a fifth of the stockyard), because the crust formed over the stockpile is broken by these activities. Where it is applied, it applied on average once per week to a stockpile (the crust is retained in place if not disturbed).

The Port of Hay Point exported 82.8 million tonnes of coal in 2011/12. Typical annual cost of application of the veneer based on applying to stockpiles using the above current practices for this annual throughput has been estimated at around $250,000 per year including the cost of the operator and water truck used to apply it.

If the chemical was applied each day to all coal handled as it is put into a stockpile, with the application being independent of the wind conditions and stockpile use, the cost for the same port throughput would increase significantly, estimated to increase to around $2 million per year. This additional veneer use would not be expected to measurably reduce terminal dust emissions.

References

Australian Standards, 2000. "AS 4156.6- 2000. Coal Preparation Part 6: Determination of Dust/Moisture Relationship for Coal"

Prepared by R. Brunner, General Manager Planning – Hay Point
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