Revised Proposal - Dampier Port Increase in Throughput to 120 Mtpa

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Hamersley Iron Pty Limited

Report and recommendations
of the Environmental Protection Authority

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1. Introduction

This report provides the advice and recommendations of the Environmental Protection Authority (EPA) to the Minister for the Environment on the environmental factors relevant to a proposal by Hamersley Iron Pty Limited (Hamersley Iron) to expand its iron ore operations at Dampier Port from 95 million tonnes per annum (Mtpa) to 120 Mtpa.

The EPA was advised of the proposal in April 2005. Based on the information provided, the EPA considered that while the proposal had the potential to have an effect on the environment, the proposal could be readily managed to meet the EPA's environmental objectives. Consequently it was notified in *The West Australian* newspaper on the 18 April 2005 that, subject to preparation of a suitable Environmental Protection Statement document, the EPA intended to set the level of assessment at Environmental Protection Statement (EPS).

The proponent has prepared the EPS, which accompanies this report (SKM, 2005). The EPA considers that the proposal described can be managed in an acceptable manner subject to the commitments to the proposal being legally binding.

The EPA therefore has determined under Section 40 (1) that the level of assessment for the proposal is EPS, and this report provides the EPA advice and recommendations in accordance with Section 44 (1).

2. The proposal

Hamersley Iron proposes to expand its iron ore operations at Dampier Port from a throughput of 95 Mtpa to 120 Mtpa. The proposal is described in detail in Section 2 of the proponent's "*Dampier Port Increase in Throughput - 120 Mtpa*" EPS document (SKM, 2005).

The Hamersley Iron Dampier Port operations include rail and port facilities, rail maintenance workshops, a 120MW power station, laboratories and other service and administrative functions.

The port operations are located at two terminals – Parker Point (PP) and East Intercourse Island (EII). The proposal is to increase the capacity of the Parker Point terminal from 50 Mtpa to 75 Mtpa. The capacity of the EII will remain at 45 Mtpa. No new construction works, dredging, marine works or equipment is proposed as part of this upgrade.

As part of the 95 Mtpa upgrade, which is still in its construction phase, a new car dumper and circuit was designed to deliver approximately 50 Mtpa through PP. Utilisation of the new circuit and the reduced usage of the existing circuit was predicted to decrease noise emissions in Dampier while dust impacts were expected to remain at about the same levels.

The increase in throughput to 120 Mtpa will be achieved by the simultaneous operation of both the new and existing circuits. Dust and noise emissions will increase as a result of increased utilisation of the existing circuit. The number of trains per day and the number of shipments will also increase as a result of the proposal.

The first upgrade from 80 Mtpa to 95 Mtpa was assessed at a level of EPS in September 2003. The EPA's report and recommendations for this proposal are recorded in Bulletin 1114 (EPA, 2003) and the conditions are recorded in Ministerial Statement Number 638.

The key components of the upgrade to 120 Mtpa are detailed in Table 1 below.

Table 1: Summary of Key Proposal Characteristics, identifying the changes from the 95 Mtpa (once completed) to the 120 Mtpa.

Characteristic	Parker Point Operations (as total port throughput of 95 Mtpa as described in 95 Mtpa EPS).	Parker Point Operations following the increased throughput to 120 Mtpa.
Project life	50 years	50 years
Total Licensed Port Capacity (PP and EII)	95 Mtpa	120 Mtpa
Licensed Capacity of PP	50 Mtpa	75 Mtpa
Berth capacity	220 000 DWT	220 000 DWT
Wharf capacity	895m*	895 m
Number of ship loading berths	2 at 220 000 DWT and 1 at 180 000 DWT	2 at 220 000 DWT and 1 at 180 000 DWT
Blending stockpile capacity	4.7 Mt	4.7 Mt
Bulk stockpile live capacity	4 Mt	2.5 Mt
Number of products	7	7
Number of train arrivals	6 per day	8-9 per day
Rail dump cycle	80 seconds	80 seconds (average cycle)
Facility footprint	186 ha	186 ha
Major plant components	2 Car Dumpers 2 Lump Re-screening Plants 1 Sample Stations 4 Stackers 3 Reclaimers 2 Shiploaders 24 Stockpiles	2 Car Dumpers 2 Lump Re-screening Plants 1 Sample Stations 4 Stackers 3 Reclaimers 2 Shiploaders 24 Stockpiles
Plant operation	24 hours, 7 days per week	24 hours, 7 days per week
Water requirements	1 700 Ml/year	2 160 Ml/year
Shipping Movements at PP **	Approximately 390 ships per year	Approximately 500-550 ships per year
Workforce	Operations approximately 430 personnel.	Operations approximately 440 personnel.

* the length of the wharf was increased by 100m (from 795m to 895m) following a Section 45C approval by the Minster for the Environment in December 2004.

** the number of ship movements per year at East Intercourse Island will remain unchanged at approximately 300.

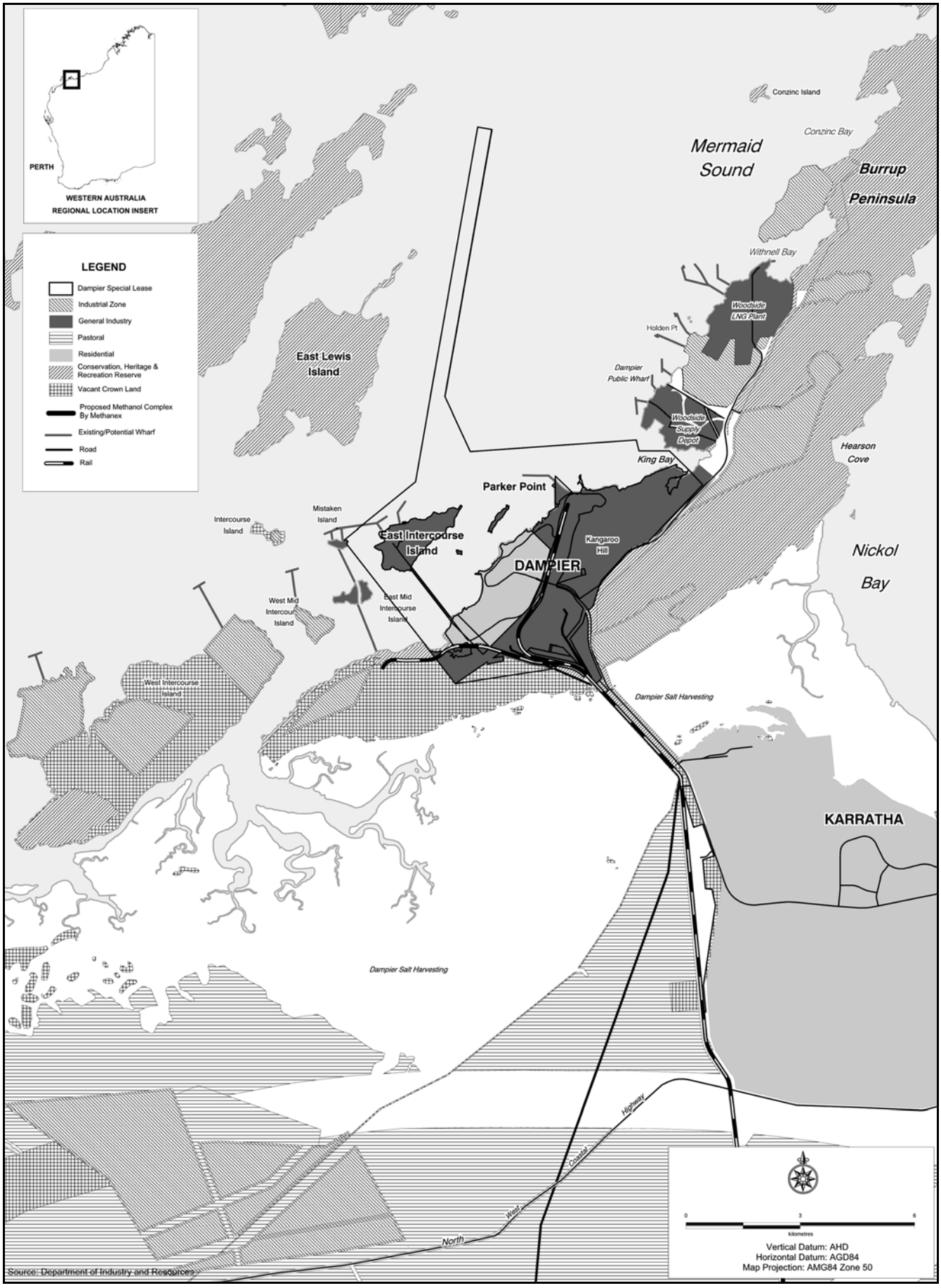

Figure 1: Hamersley Iron Dampier Port Operations (SKM, 2005).

Figure 2: Dampier Operations – increased throughput to 120 Mtpa proposed Parker Point Layout (SKM, 2005).

3. Consultation

During the preparation of the EPS, the proponent has undertaken consultation with government agencies and companies with a direct interest in the project and other key stakeholders. Hamersley Iron regularly meets with the Dampier Community Advisory Group and the Coastal Community Environmental Forum. The Shire of Roebourne, the involved government agencies (DoE, DoIR, CALM, DPA and DPI) and the Water Corporation have also been briefed. The comments received and the proponent's responses are included in Appendix A of the EPS (SKM, 2005).

Hamersley Iron commissioned a survey of Dampier residents in early 2002 to better understand dust concerns. Out of the 279 responses received a difference in attitude to dust issues was identified between Karratha and Dampier (SKM, 2005). Dampier residents in particular were concerned about dust and Hamersley Iron's impact on the town. Following this survey a revised consultation programme began in 2002.

For the upgrade to 95 Mtpa, Hamersley Iron prepared the 2003-2004 Community Consultation Programme. A detailed program was implemented to brief stakeholders and to receive feedback on the proposal. During this time Hamersley Iron also continued with six-monthly meetings with the Coastal Community Environmental Forum (previously Dampier Sampson Dust Working Group). During these meetings they addressed specific environmental and social issues relevant to the local community including dust, marine, noise, expansion projects, dredging works and water issues (SKM, 2005).

Community consultation for the proposed 120 Mtpa upgrade project (Section 4.5 of the EPS (SKM, 2005)) has been ongoing, following the 95 Mtpa upgrade. The programme has focused on delivering detailed information and seeking feedback from those key stakeholders, either participating in the environmental approval process or likely to be affected by the project (SKM, 2005).

The methods used to inform the stakeholders varied and depended on interests, knowledge base, needs and the potential level of impact of each stakeholder (SKM, 2005). The involved stakeholders were kept informed on the project by technical presentations, briefings and site visits. Other stakeholders that were not directly involved were kept informed by information displays and newsletters (SKM, 2005). The consultation schedule is shown in Table 4-1, of the EPS (SKM, 2005).

The issues raised by each of the groups (broadly divided up into Dampier Community Advice Group, State Government Agencies, Shire of Roebourne and residents of Karratha, Dampier and Other) are detailed in Tables A1 – A4, respectively (Appendix A of the EPS (SKM, 2005)). The main issues raised are as follows:

- dust;
- noise;
- marine impacts through sedimentation and shipping;
- water use and management on site; and
- employment and economic opportunities for local residents.

The EPA considers dust, noise and water use and management to be the most important issues and these are addressed below in Section 4.

4. Relevant environmental factors

The summary of all of the environmental factors and their management is outlined in Table ES-1: Summary of Environmental Issues and Management (pages xv-xvii, SKM, 2005). In the EPA's opinion the following are the environmental factors relevant to the proposal:

a) dust;

b) noise; and

c) water use and management.

4.1 Dust

Description

The towns of Dampier and Karratha (to a lesser extent) are exposed to dust generated from Hamersley Iron operations at EII and PP, as well as from natural sources.

Hamersley Iron has been undertaking dust monitoring as part of a dust monitoring program in the Dampier Region since 1993 (SKM, 2005). The locations of the monitors are provided in the Appendix D of the EPS (SKM, 2005). Monitoring in Karratha assists in determining background levels of ambient dust in the Pilbara. Currently the dust monitors are located at:

- Dampier Primary School;
- Parker Point – north of main administration;
- East Intercourse Island – boat jetty near marine workshop; and
- Karratha Water Corporation's Pump Station.

Hamersley Iron also has a simple 'gloss meter slide' meter that is a portable unit, which measures nuisance dust and is used at residences when complaints are made. Section 6 of Appendix E (Hamersley Iron, 2004) describes this meter further.

Hamersley Iron have produced a polar plot showing the average Total Suspended Particulate (TSP) and Particulate Matter less than 10µm (PM_{10}) concentrations at the Dampier Primary School (DPS) site correlated with wind conditions (SKM, 2005), see Figure 3. This plot demonstrates that Hamersley Iron operations contribute to dust levels in Dampier. The two increased concentrations to the west and north-north east relate to EII and PP respectively. The highest dust levels will occur down wind under light wind conditions where dust plumes are relatively undispersed. Table 6-5 in the EPS (p 57, SKM, 2005) detail the main sources of dust, general controls used, emission frequency and the emission rate.

Under the Ambient Air Quality National Environmental Protection Measures (NEPM) the maximum 24-hour average PM_{10} concentration is 50µg/m^3. The goal is for no more than 5 exceedences a year accounting for natural events such as cyclones and fires. Table 2 shows the number of exceedences per year of the standard at the monitoring sites. The NEPM standard was only exceeded on 3 occasions in 2004, which is significantly less than previous years. Hamersley Iron advises that the three exceedences at Dampier Primary School in 2004 are related to natural events. The highest exceedence recorded in December 2004 was due to a dust storm. TSP is also monitored at Dampier Primary School. The *Environmental Protection (Kwinana)(Atmospheric Wastes) Policy* (EPA, 1999) target is 90µg/m^3 and the number of exceedences of this target is shown in Table 2.

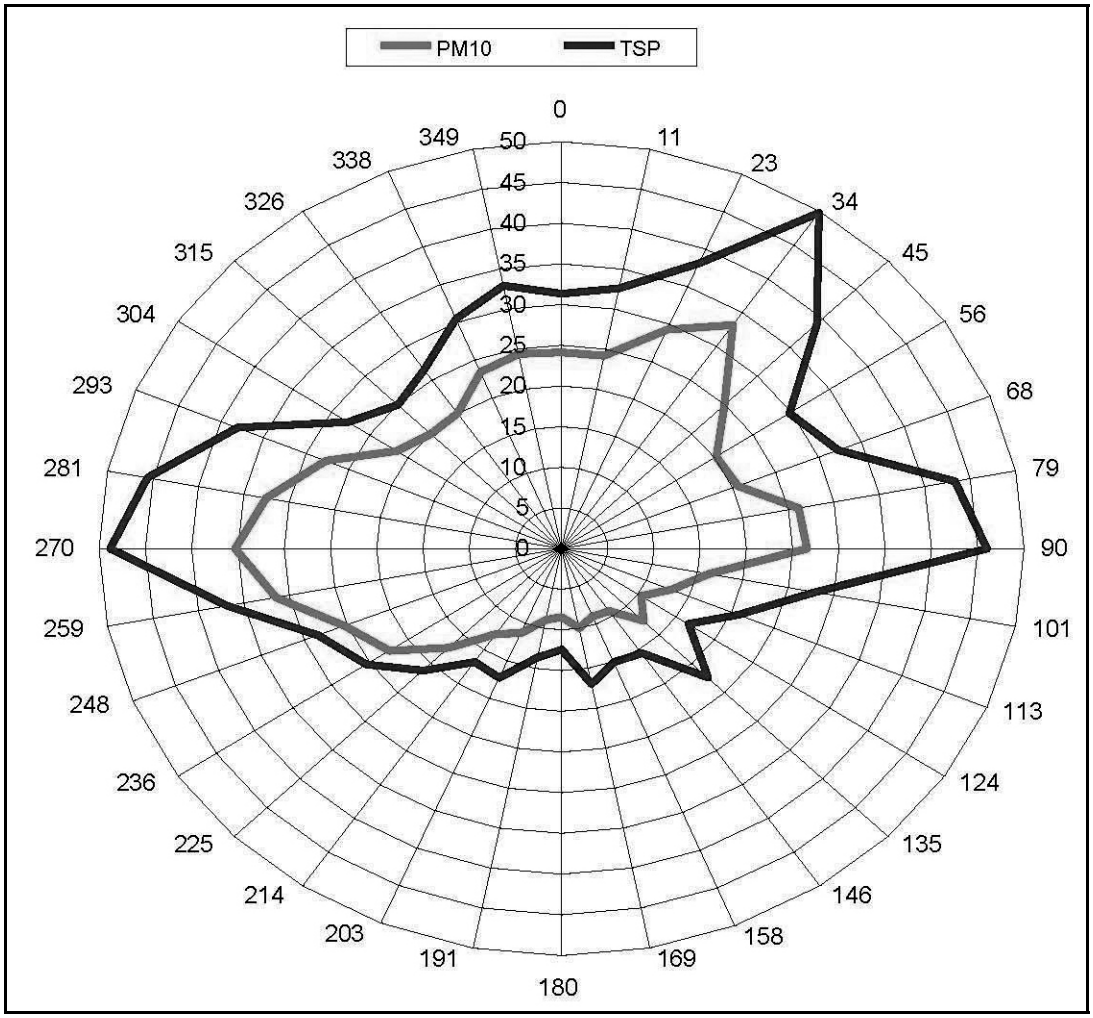

Figure 3: Polar Plot of Average TSP and PM_{10} Concentrations ($\mu g/m^3$) with Wind direction at DPS 4/6/2003 - 31/05/2004, (SKM, 2005).

Table 2: Annual Exceedences Of Target Levels Of Airborne Particles At The Dampier and Karratha Monitoring Sites.

Year	Number of exceedences of 24-hour averages				
	DPS $[PM_{10}] \geq 50$ $\mu g/m^3$	**DPS [TSP] ≥ 90 $\mu g/m^3$**	**Boat Jetty $[PM_{10}] \geq 50$ $\mu g/m^3$**	**Admin Building $[PM_{10}] \geq 50$ $\mu g/m^3$**	**Karratha $[PM_{10}]$ ≥ 50 $\mu g/m^3$**
2000	10[a]	-	-	-	-
2001	7	-	-	-	-
2002	13	6[b]	-	-	5[c]
2003	14	7	4[d]	12[e]	18
2004	3	3	29[f]	46[g]	2
Instrument	TEOM	TEOM	E-BAM	E-BAM	TEOM

[a] 13/4/2000 to 31/12/2000 only.

[b] 1/3/2002 to 31/12/2002 only.

[c] 1/6/2002 to 31/12/2002 only.

[d] 4/6/2003 to 31/12/2003 only.

[e] Note that data from Port Hedland indicates that PM10 measurements made using high volume air samplers may be higher than those made using TEOMS (DoE 2004).

[f] Note data recovery for the year was only 52%.

[g] Note data recovery for the year was only 50%.

[h] A 24-hour average concentration is calculated from the 10-minute HI data when there is more than 67% valid data for the 24-hour period.

Due to the direction and frequency of prevailing winds in the area, the dust emissions from EII operations (which includes the 5E conveyor and associated roadways) have the greatest impact on Dampier. However no changes to the EII operations are proposed as part of the 120 Mtpa upgrade.

The increased utilisation of the existing equipment at PP will increase dust emissions but impacts on Dampier are expected to be minimal. The modelling undertaken by SKM (2005) show that following the 120 Mtpa upgrade the annual average predicted concentrations of PM_{10} and TSP are expected to increase by about 1% at Dampier and 3% in the King Bay Industrial area, (SKM 2005).

Dust emissions are dependent on the ore type, moisture content and prevailing meteorological conditions and therefore the amount of dust generated can vary from one year to another. This combined with the available data from the two new ambient data monitors has resulted in a difference in the modelled emissions for the 95 Mtpa upgrade. The dust emissions for the 95 Mtpa upgrade were re-estimated, using the latest meteorological and monitoring data, to be calculated at 230.6g/s. The dust emissions for the 120 Mtpa upgrade were estimated to be 232.5g/s.

The bulking activity for the 120 Mtpa upgrade will be different to that proposed for the 95 Mtpa upgrade. In the 95 Mtpa upgrade Hamersley Iron proposed the establishment of a single bulk area to the east of the live stockpiles, the estimated surface area was to be approximately 280 000m^2. Hamersley Iron now proposes to construct a new bulk stockpile in the row north of the live stockpiles on land planned to be reclaimed (Environmental Alliances, 2005). When completed the two stockpiles will have a combined surface area of 130 000m^2. Environmental Alliances (2005) estimate that this reduction in bulking will reduce wind generated dust emissions by approximately 17g/s. However, total dust emissions at PP are estimated to increase by approximately 2.3g/s as a result of an increase in activity at the site (Environmental Alliances, 2005).

To help mitigate dust emissions Hamersley Iron developed a Dust Management Plan (DMP) as part of the requirements for the 95 Mtpa upgrade. The objectives of this plan are to:

- determine long term trends in ambient dust levels;
- determine TSP and PM_{10} concentrations at representative locations within Dampier for comparison to criteria levels;
- determine PM_{10} concentrations at a nearby town (Karratha) that will have negligible impacts from Dampier Operations and therefore be representative of a typical Pilbara town; and
- provide scientific data to the community.

The first DMP detailed the dust mitigation measures for the 2003/2004 operating period. These actions are listed in Table 6-8 of the EPS (SKM 2005) and were all completed by September 2004. The measures that were completed in the 2003/2004 period included the:

- installation of dust suppression hood sprays on the 5E conveyor across EII;
- inclusion of two additional real-time PM_{10} monitors at the Administration Building and Boat Jetty in Dampier;
- installation of a belt washer to reduce dust from the 5E conveyor return stand; and

- installation of low volume dust sprays on the bulk hopper as part of the water reduction project.

In the opinion of Hamersley Iron these and the other eight measures have resulted in a visible reduction in dust (SKM, 2005).

The DMP will be reviewed annually as part of Hamersley Iron's Industry Licence, Part V of the *Environmental Protection Act, 1986*. The DMP was updated for the 2004-2005 operating period and additional dust mitigation measures were identified, these included:

- improving the dust monitoring network to more thoroughly monitor dust generated from operations;
- commission additional PM_{10} dust monitors at King Bay;
- commission additional $PM_{2.5}$ dust monitoring equipment at Dampier Primary School (DPS) and King Bay;
- investigate using forecasted weather predictions to predict high dust levels in the Dampier Township;
- seal the DPS car park to better monitor the ambient dust levels in Dampier;
- refine the gloss meter monitor program and expand it to include Karratha;
- assess the recommendations for the external study on the 5E Conveyor;
- commission an external consultant to investigate dust improvement opportunities for EII Stockyard;
- install automated water sprays on EII conveyors 13E and 14E;
- investigate improving dust suppression on the access road to EII stock yard;
- trial improved belt cleaning mechanisms on at least one conveyor; and
- an extension of the dust deposition-monitoring programme (SKM, 2005).

Assessment

The area for assessment is the town of Dampier and surrounds, including the King Bay Industrial Area.

The EPA's environmental objectives for this factor are to:

- ensure that dust emissions, including dust from natural sources do not cause an environmental or health problems;
- ensure that dust emissions in the townsite of Dampier are kept as low as reasonable and practicable; and
- improve the amenity at Dampier in the short to medium term.

The EPA notes that Hamersley Iron contributes to dust levels at Dampier from its operations at PP and EII. The EPA also notes that the PM_{10} NEPM standard is exceeded at Dampier on occasions as a result of natural occurrences and Hamersley Iron's dust emissions.

The EPA notes that the DMP was revised as a requirement of approval for the 80 Mtpa upgrade to 95 Mtpa. The EPA considers that the implementation of the revised DMP is likely to result in a reduction in dust levels in Dampier. The EPA also notes that the proponent annually reviews their DMP as part of their Industry Licence (part V, *Environmental Protection Act, 1986)* conditions.

Hamersley Iron has undertaken dust dispersion modelling to predict dust levels following the proposed upgrade. However it is difficult to estimate fugitive dust emissions accurately. The Department of Environment advised the EPA that modelling should be used to give a quantative comparison between alternate dust management strategies rather than to predict actual dust levels.

The EPA notes that the proponent proposes to reduce the size of the bulk stockpiles, which is expected to significantly reduce dust emissions. However, total dust emissions from PP are likely to increase slightly following the upgrade to 120 Mtpa. The EPA also notes that dust modelling predicts a slight increase (1%) in PM_{10} and TSP dust levels in Dampier.

The EPA notes that the modelled increase in throughput for the 120 Mtpa upgrade is not significantly increasing dust levels in Dampier. However, the EPA recommends the proponent continue with ongoing best practice management methods and dust mitigation measures with an aim to meet EPA objectives for dust levels in the future. This will be reflected in the recommended conditions and the proponent's commitments.

The EPA notes that Hamersley Iron have previously trialled source apportionment modelling. However, the EPA recommends that Hamersley Iron continue to investigate and implement, if successful, source apportionment methods to continually try to establish their contribution to dust levels in Dampier.

The EPA notes that there is currently research being conducted on the health effects from iron ore dust in Port Hedland. The results of this study, when completed should be taken into account in future revisions of the DMP.

Summary

Having particular regard to the:

a) increase in throughput only occurring at PP;

b) implemented and planned dust reduction measures detailed in the DMP;

c) annual review and update of the DMP;

d) proposed reduction in the size of the bulk stockpiles;

e) dust dispersion modelling results;

f) compliance with conditions listed in Ministerial Statement 638, for the 95 Mtpa upgrade; and

g) recommended Ministerial Conditions and proponent commitments,

it is in the EPA's opinion that Hamersley Iron is doing all that is reasonable and practicable to meet the EPA's environmental objective for this factor.

4.2 Noise

Description

Hamersley Iron's operations at PP and EII are located close to the Dampier townsite and King Bay Industrial Area. The closest residents are located approximately 1km away from the PP rail lines.

Noise from the plant's operations is regulated under the *Environmental Protection (Noise) Regulations, 1997* (Noise Regulations). Rail noise is excluded from these regulations and is therefore considered separately.

Fixed Plant Noise

Hamersley Iron engaged SVT Engineering Consultants (SVT) to model environmental noise resulting from the operations. SVT also completed the noise assessment for the 95 Mtpa upgrade.

Primarily, the proposed increase in capacity is achieved through greater utilisation of the existing car dumper (CD1), the existing screen house SH1P and the ship loaders (SL). Currently, as part of the 95 Mtpa, CD1 is only expected to operate 10% of the time but for the 120 Mtpa upgrade it will increase to approximately 63% operating time (Figure 4). The new car dumper circuit will be fully utilised. The utilisation of the ship loaders (SL1 and SL3) will also increase from a combined use of 32% in the 95Mtpa upgrade to 68% in the 120Mtpa upgrade.

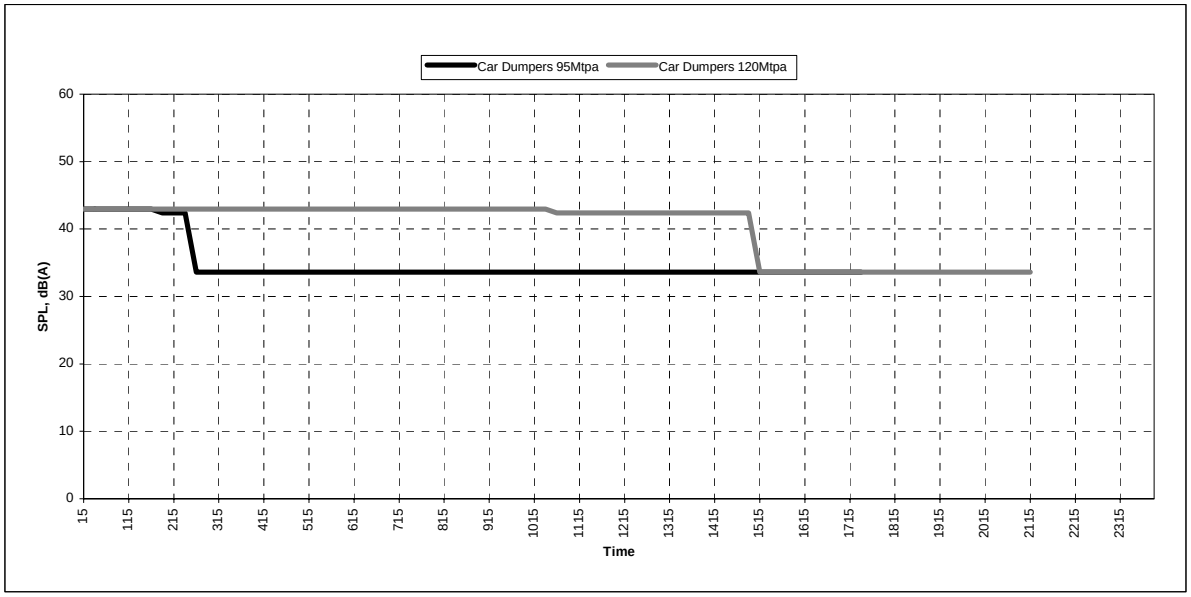

Figure 4: Comparison of Car Dumper Usage Between 95 Mtpa and 120 Mtpa (Lloyd, 2005).

It is this increase in the utilisation of the existing equipment that will contribute to the increase in noise levels in Dampier. The new equipment proposed as part of the 95Mtap upgrade, when assessed in isolation, is not expected to contribute to increased noise levels.

The maximum noise output for the plant is not expected to increase with the 120 Mtpa upgrade as shown in Table 3. However greater utilisation of the CD1 and SL is predicted to increase L_{A10} levels (noise level exceeded for greater than 10% time) by approximately 2.5dB(A).

The predicted L_{A10} noise level of 46.2 dB(A) for the 120 Mtpa upgrade exceeds the L_{A10} limit set for noise sensitive premises by 1 dB in the day, 6 dB in the evening and 11 dB at night. The L_{A10} noise levels were assessed for a worst case scenario, measuring at the closest noise sensitive position for a $3ms^{-1}$ northerly wind direction and a 2ºC/100m inversion as the northerly wind will produce the highest noise propagation from Parker Point to Dampier (SVT 2005).

Table 3: Maximum and L_{A10} Noise Levels for the 95 Mtpa and 120 Mtpa Upgrades (SVT, 2005).

Individual Plant Noise Levels	Maximum noise emission for all plant running in dB(A)	L_{A10} noise levels in dB(A).	
		95 Mtpa	120 Mtpa
Car Dumpers	43.5	35.2	40.7
Ship Loading	45.3	42.9	44.5
Screen Houses	40.6	30.0	31.7
Total Noise Level	48.3	43.7	46.2

Rail

The number of trains per day will increase from 6 to 8 or 9 a day. For the 120 Mtpa upgrade noise modelling has been based on 9 trains a day.

SVT assessed the impact of rail noise for the 120 Mtpa upgrade.

Primary noise resulting from the trains is due to:

- train arrival and departures;
- idling locomotives; and
- noise from ore-car collisions.

Hamersley Iron have several measures to reduce train noise for the 95 Mtpa upgrade. These are described in Section 6.3.4 and include:

- collecting empty ore on a new Section of track, which will increase the distance between the empty train and Dampier townsite; and
- a new track layout designed to minimise collision forces between ore cars.

The construction of both of these initiatives was part of the 95 Mtpa upgrade. Average noise levels will now rise from increased rail movements as both rail circuits are required to meet the additional throughputs. The increase in train numbers will increase daytime LA_{eq} by 1.3 dB and by night-time LA_{eq} by 0.9 dB

Assessment

The area for assessment is the townsite of Dampier.

The EPA's environmental objectives for this factor are to ensure that:

- noise emanating from the increased throughput of the plant and the associated rail activities will be continuously reduced to as low as reasonably practicable; and
- impacts on the noise amenity of the townsite of Dampier are minimised as low as reasonably practicable.

Hamersley Iron is predicted to exceed L_{A10} noise levels by 1 dB in the day, 6 dB in the evening and 11 dB at night. The EPA notes that to deal with these modelled exceedences, Hamersley Iron have prepared and commenced implementing a *Noise Management Program for Dampier Port Facilities* (SVT, 2004). This was a requirement for the 95 Mtpa upgrade (Ministerial Statement Number 638, Condition 8). This plan is provided in Appendix G of the EPS (SKM, 2005).

One of the major initiatives was the establishment of a Noise Management Team in 2004. The team has already undertaken several trial projects to try to reduce noise levels. Low noise conveyor belt idlers are currently being trialed. The improvements are described further in

Section 6.3.5 of the EPS (SKM, 2005). The EPA recommends that these improvements be implemented. The EPA also recommends that greater attention needs to be focused on existing equipment (e.g. CD1 and SL1) and that this will form part of the Noise Management Plan review.

The EPA notes that Hamersley Iron operations at Dampier, even with the proposed mitigation measures are unlikely to meet the noise regulations. However, the EPA also notes that Hamersley Iron has applied for a Regulation 17 approval under the Noise Regulations. The regulation 17 process will determine the extent to which Hamersley Iron can reasonably and practicably reduce noise from its operations and, in so doing, will ascertain the lowest noise level that can be practicably achieved within the Dampier townsite.

The EPA notes that as part of this assessed upgrade to 120 Mtpa, L_{A10} noise levels will increase by 2.5dB(A) from increased utilisation of existing equipment and approximately by 1dB from rail and transport noise. However it is noted that these results have been predicted in a 'worst case' scenario ($3ms^{-1}$ northerly wind direction and a 2ºC/100m inversion). Table 6-12 in the EPS (SKM, 2005) shows the frequency of these two events. The EPS states, "…they are likely to only occur between 7 hours and 24 hours a year between 2200 and 0700 hours." Therefore, under all other weather conditions the noise levels will be lower than stated.

Summary

Having particular regard to:

a) that there is not a significant increase in noise levels from fixed plant and rail noise;

b) the implementation of noise reduction measures that are part of the 95 Mtpa upgrade and will continue into the 120 Mtpa upgrade;

c) the creation of a detailed Noise Management Programme and the establishment of a noise management team to oversee the improvements; and

d) the recommended Ministerial Conditions and proponent's commitments;

it is in the EPA's opinion that Hamersley Iron is doing all that is reasonable and practicable to meet the EPA's environmental objective for this factor.

4.3 Water Use and Management

Description

Hamersley Iron requires water mainly for dust suppression but is also used as potable water for staff facilities. The dust suppression water must be of a very good quality to prevent product contamination, which limits the sources of water available (SKM, 2005). Hamersley Iron purchases their water from the Water Corporation.

Currently Hamersley Iron's water usage expected to increase by another 460 ML/year bringing the total usage to 2160 ML/year as shown in Table 4.

Table 4: Projected Water Consumption for the Dampier Port Operations (Parker Point and East Intercourse Island) (SKM, 2005).

Water usage	Projected water consumption		
	2004	95 Mtpa	120 Mtpa
Water Use ML/year	1 500	1 700	2 160
Water use efficiency (L/t shipped)	20.3L	17.9L	18.0L

Assessment

The area for assessment is the Hamersley Iron Dampier Port Operations as shown in Figure 1. The EPA's environmental objectives for this factor are to:

- conserve water resources in the Pilbara Region by minimising water usage.

The EPA notes that although water use will increase there will be improvements in water efficiency over current levels. The projected water use efficiency is from several initiatives that have already been established or will be established by Hamersley Iron as part of the previous 95 Mtpa upgrade. The primary initiatives include improved dust conveying, dust and spillage control by using wider/slower conveyors and the use of a dry dust collection system at the new car dumpers and screen house (SKM, 2005). The EPA notes that further management strategies are planned or underway and are detailed in Section 6.6.4 of the EPS (SKM, 2005). This follows Hamersley Iron's commitment to reduce, recycle or reuse water for the existing operations and the port upgrade.

The EPA notes that Hamersley Iron is planning a water use program. This program proposes the installation of additional water meters and key points areas including the water lines for stockpile cannons and conveyor sprays. The information gathered from the metering will help establish the proponent's commitment to develop a water balance for the operations.

Summary

Having particular regard to the:

a) increased efficiency Hamersley Iron have achieved and are planning to achieve; and

b) monitoring under Part V of the *Environmental Protection Act 1986*.

it is the EPA's opinion that the proposal can be managed to meet the EPA's environmental objective for this factor.

5. Conclusions

Section 44 of the *Environmental Protection Act, 1986* requires the EPA to report to the Minister for the Environment on the environmental factors relevant to the proposal and on the conditions and procedures to which the proposal should be subject, if implemented. In addition, the EPA may make recommendations as it sees fit.

Dust

The proponent has already reviewed the Dust Management Plan and implemented dust mitigation measures for the 95 Mtpa upgrade. This plan will continue to be reviewed annually to ensure best practical measures are adopted. This plan will also ensure the all future improvements to Hamersley Iron Dampier Port operations meet the EPA's objectives for dust.

The proponent proposes to reduce dust emissions from sources that cause a high level of dust in the Dampier region. Hamersley Iron has committed to continue to reduce dust emissions by investigating new dust mitigation measures and implementing them where practicable.

The EPA notes that the increase in throughput for the 120 Mtpa upgrade is not expected to significantly increase dust levels in Dampier. However, the EPA has recommended the proponent continue with ongoing best practice management methods and dust mitigation measures with an aim to meet EPA objectives for dust levels in the future. This has been reflected in the recommended conditions and the proponent's commitments.

The EPA concludes that Hamersley Iron is doing all that is reasonable and practicable to meet the EPA's objective of ensuring that dust emissions, including dust from natural sources do

not cause an environmental or health problems; that dust emissions in the townsite of Dampier are kept as low as is reasonable and practicable and to improve the amenity at Dampier in the short to medium term.

Noise

The EPA notes that, under certain operational and weather conditions, Hamersley Iron's current activities exceed the prescribed standard for noise in the townsite of Dampier. The EPA acknowledges that the proponent has prepared an *Environmental Noise Management Program for Dampier Port Facilities* (SVT, 2004), as part of a previous proposal to increase throughput to 95 Mtpa. Hamersley Iron has begun implementing a number of noise control initiatives, and has in place a noise improvement plan that will further reduce noise. Nevertheless, the EPA accepts that, in all likelihood, Hamersley Iron will be unable to meet the assigned levels for noise, even with the implementation of best practice noise management and control.

The EPA notes that Hamersley Iron has already applied for a noise regulation 17 approval to vary the assigned levels for noise from its Dampier operations. The regulation 17 process will determine the extent to which Hamersley Iron can reasonably and practicably reduce noise from its operations and, in so doing, will ascertain the lowest noise level that can be practicably achieved within the Dampier townsite.

Therefore, the EPA's objective with this current proposal to 120Mtpa is to ensure that noise impacts on the townsite of Dampier are kept as low as is reasonable and practicable. To this end, the EPA recommends that the Noise Management Program be reviewed, with an increased focus on noise improvement options for those existing items plant that will be greater utilised under this proposal.

It is expected that the revision of the Noise Management Program will form a basis of the Regulation 17 approval assessment, and that these processes can be combined. The EPA will consider the broader social context of any residual noise emissions, as part of the regulation 17 assessment.

Water

The EPA concludes that water use can be managed to meet the EPA's objective to minimise the impact on water resources of the Pilbara region by minimising water usage where practicable.

The proponent has considered the potential impacts and is increasing its water use efficiency. Hamersley Iron has implemented several water use reduction methods.

6. Other Advice

As part of the upgrade in throughput to 120 Mtpa it is predicted that shipping movements at PP could increase from approximately 390 ships per year to 500-550 ships per year (SKM, 2005). Potential impacts from the increase include:

- an increase in the risk of marine pest introductions;
- increased risk of oil/chemical spills;
- increased turbidity from ship, tug and tender prop wash causing more stress on sensitive marine communities (eg corals);
- probably greater frequency of maintenance dredging;

- increased risk of collisions;
- increased exposure of marine biota to antifoulants;
- more materials handling and hence spillage; and
- increased air emissions.

These issues have been addressed in the Marine Management Programme (MMP) that was required in condition 9-3 of the 95 Mtpa upgrade. To manage this increase the EPA recommends that the MMP be updated to address all the above issues.

7. Recommendations

The EPA considers that the proponent has demonstrated in the EPS that the proposal can be managed in an environmentally acceptable manner and provides the following recommendations to the Minister for the Environment:

1. That the Minister notes that the proposal being assessed is for the Dampier Port Increase in Throughput – 120 Mtpa.
2. That the Minister considers the report on the relevant environmental factors as set out in Section 4.
3. That the Minister notes that the EPA has concluded that it is unlikely that the EPA's objectives would be compromised provided there is satisfactory implementation by the proponent of the recommended conditions and proponent commitments as set out in Appendix 2, including the provision for implementation of an environmental management system.
4. That the Minister imposes the conditions and procedures recommended in Appendix 2 of this report.

Appendix 1

References

Department of Environmental Protection Authority, 1997. *Environmental Protection (Noise) Regulations 1997 – Summary of the Regulations.* Department of Environmental Protection, Perth, Western Australia.

Environmental Alliances, 2004. *Dust Dispersion Modelling for Hamersley Iron DampierPort Expansion to 120 Mtpa,* Prepared for Sinclair Knight Merz by Environmental Alliances Pty Ltd, Perth, Western Australia.

Environmental Protection Authority, 1992. *Environmental Protection (Kwinana) (Atmospheric Waste) Policy 1992*. Environmental Protection Authority, Perth, Western Australia.

Environmental Protection Authority, 1992. *Environmental Protection (Kwinana) (Atmospheric Waste) Regulations 1992*. Environmental Protection Authority, Perth, Western Australia.

Environmental Protection Authority, 1998a. *Draft Environmental Protection Guidance Statement 8: Environmental Noise.* Environmental Protection Authority, Perth, Western Australia.

Environmental Protection Authority, 1998b. *Draft Environmental Protection Guidance Statement 14: Rail Noise*. Environmental Protection Authority, Perth, Western Australia.

Environmental Protection Authority, 2001. *Towards an Environmental Protection Policy (EPP) for Ambient Air Quality in Western Australia.* Perth, Western Australia.

Environmental Protection Authority, 2003. *Hamersley Iron – Dampier Prot Upgrade to 95 Mtpa Capacity – Bulletin 1114.* Perth, Western Australia.

Hamersley Iron Pty Ltd, 2004. *Dust Management Plan - Dampier Operations.* Hamersley Iron Pty Ltd, Perth, Western Australia.

Lloyd Acoustics, 2005. *A Review of the Work Undertaken by SVT Engineering Consultants with Regards to a Proposed Upgrade to the Hamersley Iron Dampier Port Facilities to 120 Mtpa*. Lloyd Acoustics, Perth, Western Australia.

National Environment Protection Council (NEPC), 1998. *National Environmental Protection Measure for Ambient Air Quality, 26 June 1998 and Variations dated 23 May 2003*. National Environment Protection Council, Australia.

Sinclair Knight Merz, 2005. *Dampier Port Increase in Throughput – 120 Mtpa, Environmental Protection Statement*. Sinclair Knight Merz, Perth, Western Australia.

SVT Engineering Consultants, 2004. *Environmental Noise Program for Dampier Port Facilities*. Sinclair Knight Merz, Perth, Western Australia.

SVT Engineering Consultants, 2005. *Environmental Noise Assessment of the Proposed Dampier Port Upgrade to 120 Mtpa.* Sinclair Knight Merz, Perth, Western Australia.

Appendix 2

Status of 95 Mtpa Environmental Conditions

Table 1: Summary of Condition Status for Hamersley Iron's Dampier Port Upgrade to 95 Mtpa.

	1.1 Condition	Condition summary	1.1.1 When Required	1.2 Status
Dust				
7.1	**Dust Management**	Review of Dust Monitoring Program	Within 2 years following publication of statement 638	**Cleared 17/01/05**
7.2	**Upgrade Dust Monitoring Program**	Implement the modifications arising out of 7.1	Within 3 years following publication of statement 638	**Not Audited – managed under Part V**
7.3	**Onsite Dust sampling**	Report on the study of on-site dust sampling	Within 12 months following commissioning	2. Not due yet
7.4	**Dust emission inventory**	Update the inventory based on sampling in 7.3	Operation	Not due yet
7.5	**Dust Dispersion Modelling**	Undertake dust dispersion modelling for upgraded operations based on 7.4	Operation	3. Not due yet
7.6	**Report on modelled dust impacts**	Report by consultant on the dust impacts on Dampier and King Bay	Within 18 months following commission	4. Not due yet
7.7	**Updated Dust Management Plan**	Update the Dust Management Plan	Prior to commissioning	**Cleared 03/06/05**
7.8	**Community Survey**	Conduct a survey in Dampier and Karratha addressing concerns on impacts from dust. To be completed by a consultant	Within 3 years following publication of statement 638	5. Not due yet
7.9	**Analysis to reduce of eliminate dust**	Conduct an analysis to explore options to reduce or eliminate dust from 5E conveyor and roadway. To be conducted by a consultant	Within 9 months following publication of statement 638	**Cleared 03/06/2005**
Noise				
8.1	**Noise Management Plan**	Prepare and implement a Noise Management Plan to be completed by an independent engineer	Prior to commissioning	**Cleared - in part 17/01/05** (further work required)
8.2	**Noise Monitoring Program**	Prepare and implement a Noise Monitoring Program to verify the accuracy of the acoustic modelling and confirm accuracy of reduction measures	Prior to commissioning	**Cleared – in part 17/01/05**

8.3	**Noise Emissions**	Review and modify the maintenance and operating procedures	Within 12 months following commissioning	6. Not due yet
8.4	**Acoustic Modelling assessment**	Undertake acoustic modelling of the new plant in isolation	Within 18 months following commissioning	Not due yet
8.5	**New Plant Noise Levels**	If plant does not meet the assigned levels, noise abatement measures should be implemented	Overall (after commissioning)	Not due yet
Marine				
9.1	**Marine Flora and Fauna**	Conduct a field survey on current distribution of coral reef habitat	Prior to December 2005	**In the process of being assessed**
9.2	**Coral Reef Habitat Distribution and Loss**	Determine historical distribution and determine cumulative loss from human activity	Prior to December 2005	**In the process of being assessed**
9.3 / 9.4	**Marine Management Program**	Prepare and implement a Marine Management Program. Make the plan publicly available	Prior to commissioning	**In the process of being assessed**
9.5	**Stockpile and bulk heap storage areas**	Design the blending stockpile and bulk heap storage areas to avoid stormwater run-off and other marine impacts	Construction Pre-Operation	**Cleared 17/01/05**
P1	**Construction Environmental Management Program**	Develop and implement a construction Environmental Management Program	Before Construction	**Cleared 12/12/03**

Appendix 3

Recommended Environmental Conditions

and Proponent's Commitments

RECOMMENDED CONDITIONS AND PROCEDURES

STATEMENT THAT A REVISED PROPOSAL MAY BE IMPLEMENTED (PURSUANT TO THE PROVISIONS OF THE ENVIRONMENTAL PROTECTION ACT 1986)

HAMERSLEY IRON DAMPIER PORT UPGRADE TO A THROUGHPUT CAPACITY OF 120 MTPA.

Proposal: To expand its iron ore operations at Dampier Port, which includes Parker Point and East Intercourse Island facilities, specifically increasing the capacity at Parker Point to 75 million tonnes per annum (Mtpa), to a total of 120Mtpa by greater utilisation of existing equipment, and an increase in rail transport and shipping movements, as documented in schedule 1 of this statement.

Proponent: Hamersley Iron Pty Ltd

Proponent Address: Level 22, Central Park, 152 - 158 St George's Terrace, and PERTH WA 6000

Assessment Numbers: 1586 and 1489

Reports of the Environmental Protection Authority: Bulletins 1191 and 1114

The revised conditions and procedures of this statement supersede the conditions and procedures of Statement No: 638 in accordance with section 45B of the *Environmental Protection Act, 1986.*

The revised proposal to which the above reports of the Environmental Protection Authority relate may be implemented subject to the following conditions and procedures:

1 Implementation

The proponent shall implement the proposal as documented in schedule 1 of this statement subject to the conditions of this statement.

2 Proponent Commitments

The proponent shall implement the environmental management commitments documented in schedule 2 of this statement, to the requirements of the Minster for Environment on the advice of the Environmental Protection Authority.

3 Proponent Nomination and Contact Details

3-1 The proponent for the time being nominated by the Minister for the Environment under section 38(6) or (7) of the Environmental Protection Act 1986 is responsible for the implementation of the proposal until such time as the Minister for the Environment has exercised the Minister's power under section 38(7) of the Act to revoke the nomination of that proponent and nominate another person as the proponent for the proposal.

3-2 If the proponent wishes to relinquish the nomination, the proponent shall apply for the transfer of proponent and provide a letter with a copy of this statement endorsed by the proposed replacement proponent that the proposal will be carried out in accordance with this statement. Contact details and appropriate documentation on the capability of the proposed replacement proponent to carry out the proposal shall also be provided.

3-3 The nominated proponent shall notify the Department of Environment of any change of contact name and address within 60 days of such change.

4 Commencement and Time Limit of Approval

4-1 The proponent shall substantially commence the proposal within five years of the date of this statement or the approval granted in this statement shall lapse and be void.

Note: The Minister for the Environment will determine any dispute as to whether the proposal has been substantially commenced.

4-2 The proponent shall make application for any extension of approval for the substantial commencement of the proposal beyond five years from the date of this statement to the Minister for the Environment, prior to the expiration of the five-year period referred to in condition 4-1.

The application shall demonstrate that:

1. the environmental factors of the proposal have not changed significantly;

2. new, significant, environmental issues have not arisen; and

3. all relevant government authorities have been consulted.

Note: The Minister for the Environment may consider the grant of an extension of the time limit of approval not exceeding five years for the substantial commencement of the proposal.

5 Compliance Audit and Performance Review

5-1 The proponent shall prepare an audit program and submit compliance reports to the Department of Environment which address:

1. the status of implementation of the proposal as defined in schedule 1 of this statement;

2. evidence of compliance with the conditions and commitments; and

3. the performance of the environmental management plans and programs.

Note: Under sections 48(1) and 47(2) of the Environmental Protection Act 1986, the Chief Executive Officer of the Department of Environment is empowered to monitor the compliance of the proponent with the statement and should directly receive the compliance documentation, including environmental management plans, related to the conditions, procedures and commitments contained in this statement.

5-2 The proponent shall submit a performance review report every five years after the start of operations, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority, which addresses:

1. the major environmental issues associated with the project; the targets for those issues; the methodologies used to achieve these; and the key indicators of environmental performance measured against those targets;

2. the level of progress in the achievement of sound environmental performance, including industry benchmarking, and the use of best available technology where practicable;

3. significant improvements gained in environmental management, including the use of external peer reviews;

4. stakeholder and community consultation about environmental performance and the outcomes of that consultation, including a report of any on-going concerns being expressed; and

5. the proposed environmental targets over the next five years, including improvements in technology and management processes.

6 Decommissioning Plans

6-1 At least six months prior to the anticipated date of decommissioning operations at Dampier (Parker Point and / or East Intercourse Island Facilities), or at a time agreed with the Minister for the Environment, the proponent shall prepare a Final Decommissioning Plan designed to ensure that the site is left in an environmentally acceptable condition to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

The Final Decommissioning/Closure Plan shall address:

1. removal or, if appropriate, retention of plant and infrastructure in consultation with relevant stakeholders;

2. rehabilitations of all disturbed areas to a standard suitable for the agreed new land use(s); and

3. identification of contaminated areas, including provisions of evidence of notification and proposed management measures to relevant statutory authorities.

6-2 The proponent shall implement the Final Decommissioning Plan required by condition 6-1 until such time as the Minister for the Environment determines, on

advice of the Environmental Protection Authority, that the proponent's decommissioning responsibilities have been fulfilled.

6-3 The proponent shall make the Final Decommissioning Plan required by condition 6-1 publicly available.

7 Dust Management

7-1 The proponent shall implement the Dust Management Plan (*Dust Management Plan Dampier Operations* by Hamersley Iron, 2005) to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority

7-2 The proponent shall implement the Dust Monitoring Program (*Hamersley Iron Dampier Port Operations Compliance with Dust Management Conditions in Ministerial Statement of Approval for 95 Mtpa Expansion* by Environmental Alliances, 2005) to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority

7-3 Prior to September 2006, the proponent shall revise the Dust Emissions Inventory. The revised Dust Emissions Inventory shall:

1. Be undertaken by an approved consultant;

2. Include on-site dust sampling of Total Suspended Particles (i.e. particulate matter less than 50 μm) and PM_{10} particulates;

3. Determine the effectiveness of dust abatement measures which have been completed within the existing plant;

4. Confirm, where practicable, assumptions made in the proponent's Environmental Protection Statement (SKM, 2003) regarding dust emissions, including the Particulate Matter less than 10 μm component; and

5. Compare the estimated total dust emission with the predicted total dust emission presented in the abovementioned Environmental Protection Statement,

to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

7-4 The proponent shall engage an approved consultant to undertake Dust Dispersion Modelling of operations at 95 Mtpa, at Dampier.

The study shall use the updated Dust Emissions Inventory referred to in Condition 7-3 to demonstrate that dust impacts (Total Suspended Particulates and Particulate Matter less than 10 μm) on the town of Dampier are no greater than those prior to the upgrade (as documented in the Environmental Protection Statement, SKM, 2003).

This study shall be competed to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

7-5 Prior to December 2006, the proponent shall submit a 95 Mtpa Dust Study Report that details the findings of the Dust Dispersion Modelling work, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

The 95 Mtpa Dust Study Report shall compare and contrast the dust dispersion modelling results with those presented in the abovementioned Environmental Protection Statement and the results obtained from the Dust Monitoring Program.

7-6 The proponent shall engage an approved consultant to undertake Dust Dispersion Modelling of operations at 120 Mtpa at Dampier, using the updated emissions inventory data, to demonstrate that dust impacts (Total Suspended Particulates and Particulate Matter less than 10 μm) on the town of Dampier are not more than 1% greater than impacts prior to the upgrade to 95 Mtpa (as documented in the proponent's Environmental Protection Statement, SKM, 2003).

7-7 Prior to December 2007, the proponent shall submit a 120 Mtpa Dust Study Report that details the findings of the Dust Dispersion Modelling work, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

The 120 Mtpa Dust Study Report shall compare and contrast the dust dispersion modelling results with those presented in the abovementioned Environmental Protection Statement and the results obtained from the Dust Monitoring Program.

7-8 Prior to September 2007, the proponent shall update the Dust Management Plan (*Dust Management Plan Dampier Operations* by Hamersley Iron, 2005), to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

The updated Dust Management Plan shall incorporate strategies to achieve an overall reduction in dust impacts on the town of Dampier and Aboriginal rock art sites, and shall include:

1. Identification of potential dust remediation works;

2. Commitments to undertake practicable dust remediation works;

3. Timelines to implement practicable dust remediation works;

4. A review of operational and maintenance procedures to ensure that dust emissions are minimised using all 'reasonable and practicable' measures, including optimising the performance of dust suppression equipment, and where practicable, restricting potentially dusty operations during adverse weather conditions;

5. A dust level (PM_{10}) reduction target on existing dust levels within the town of Dampier, and a plan to achieve the target dust level reduction.

6. An action trigger level based on the real time monitoring which when exceeded shall be reported to the Department of Environment within 24

hours of being recorded, the report shall include management actions taken to reduced dust levels below the trigger level.

7. Frequent reporting of ambient dust levels to the community;

8. Recording and investigating community complaints;

9. Investigation and recording of the cause for all exceedences of the National Environment Protection Measure (for particles as PM_{10}) in the town of Dampier;

10. Reporting of dust monitoring, complaints and progress on dust remediation works; and

11. Management of dust levels to protect Aboriginal rock art sites.

7-9 The proponent shall implement the Dust Management Plan referred to in condition 7-8 to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

7-10 Prior to December 2006, the proponent shall conduct a survey in Dampier and Karratha to gauge the success in addressing community concerns related to impacts from dust, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

The survey shall be undertaken by an approved consultant and build upon the survey commissioned by the Dampier-Sampson Dust Working Group in 2001, such that outcomes can be readily compared.

8 Noise Management

8-1 Prior to December 2005, the proponent shall commence the implementation of the Noise Management Plan (*Environmental Noise Management Program for Dampier Port Facility* by SVT, 2004) to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

8-2 Prior to December 2005, the proponent shall commence the implementation of the Noise Monitoring Program (*Environmental Noise Management Program for Dampier Port Facility* by SVT, 2004) to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

8-3 Prior to December 2006, the proponent shall submit a 95 Mtpa Noise Monitoring Report to verify the accuracy of the acoustic model and to confirm the effectiveness of the proposed noise reduction measures as set out in the Noise Monitoring Program required by condition 8-2, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

8-4 Prior to December 2006, the proponent shall undertake an acoustic modelling assessment of the new plant (in isolation) using noise emissions data from the noise monitoring program, to determine if the assigned noise levels under the Environmental Protection (Noise) Regulations 1997 are met in the town of Dampier, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

8-5 In the event that the new plant (in isolation) operating at capacity does not meet the assigned noise levels, the proponent shall implement further noise abatement measures, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

8-6 Prior to December 2006, the proponent shall review the Noise Management Plan (*Environmental Noise Management Program for Dampier Port Facility* by SVT, 2004) to identify and implement all reasonable and practicable measures to reduce noise emissions from new and existing plant, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

The review shall include the maintenance and operating procedures for the new and existing plant with a view to restricting the out-of-hours operations of noisy items of equipment (such as the existing car dumper), or scheduling of operations to minimise the out-of-hours use of noisy equipment, where practicable.

9 Marine Flora and Fauna

9-1 Prior to 31 December 2005, the proponent shall conduct a field survey of the current distribution of coral reef habitat* within the “Special Lease 3126/3471 (Dampier Offshore Lease)”, outside periods when water clarity is affected by dredging in the vicinity of the survey area, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

In the survey, the proponent shall:

1. Identify the location, spatial extent and percent cover of the different scleractinian coral communities in the area; and

2. Record existing scleractinian corals observed within the communities to species level.

* Note: “Coral reef habitat” is defined as “areas of the seafloor that support scleractinian corals at a density of greater than 10% cover”.

9-2 Prior to 31 December 2005, the proponent shall determine the original historical* distribution of scleractinian coral reef habitat within the Hamersley Iron State Agreement Act area and determine the cumulative coral loss resulting from human activity, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

This investigation shall:

1. employ historical aerial photographic records, previous environmental review documents, management plans, monitoring programs and other relevant information to assist in determining the original extent of coral habitat and historical losses; and

2. provide best, most probable and worst case estimates of coral reef habitat loss and the assumptions used for each estimate.

* Note: “Historical distribution of scleractinian coral reef habitat” is defined as “the original distribution of coral reef habitat with a density of greater than 10% cover of the seafloor prior to European impact”.

9-3 Prior to commissioning, the proponent shall prepare, and subsequently implement, a Marine Management Program, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

This Program shall address the following:

1. establishment of the environmental values and environmental quality objectives (as defined in the Environmental Protection Authority document Perth’s Coastal Waters, Environmental Values and Objectives) which explicitly identify uses and values and where they will be protected;

2. the environmental quality criteria to be met in order to sustain each environmental quality objective;

3. water and sediment quality surveys, including the determination of contaminants, turbidity, temperature, dissolved oxygen and pH;

4. contaminant accumulation in biological tissues (eg. deployed oysters);

5. characterisation of the effluent and spatial extent of the Power Station outfall;

6. benthic habitat health surveys, including clear objectives to measure spatial and temporal changes/variation;

7. spatial changes to distribution of coral habitat;

8. regular marine pest surveys (every three years);

9. oil and chemical spill response;

10. a management framework to prevent or mitigate any identified environmental impacts; and

11. other parameters as determined by the Environmental Protection Authority from time to time.

Note: In preparation of advice to the Minister, the Environmental Protection Authority expects that advice of the following agencies will be obtained:

- Department for Planning and Infrastructure (Maritime Transport)
- Department of Fisheries; and
- Department of Conservation and Land Management.

9-4 The proponent shall make the Marine Management Program required by condition 9-3 publicly available, and report annually on its implementation, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

9-5 The proponent shall design the blending stockpile and bulk heap storage areas to avoid stormwater run-off and other potential impacts on the adjacent marine environment, particularly the coral community, to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority.

Procedures

1 Where a condition states "to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority", the Environmental Protection Authority will provide that advice to the Department of Environment for the preparation of written notice to the proponent.

2 The Environmental Protection Authority may seek advice from other agencies or organisations, as required, in order to provide its advice to the Department of Environment.

3 Where a condition lists advisory bodies, it is expected that the proponent will obtain the advice of those listed as part of its compliance reporting to the Department of Environment.

4 The Minister administering the Iron Ore Processing Agreement Act (or its equivalent following its gazettal) will establish a formal review mechanism to ensure that a bond is placed on the proponent at the appropriate time to facilitate completion of environmental programs.

Notes

1 The Minister for the Environment will determine any dispute between the proponent and the Environmental Protection Authority or the Department of Environment over the fulfilment of the requirements of the conditions.

2 The proponent is required to apply for a Works Approval and Licence for this project under the provisions of Part V of the Environmental Protection Act 1986.

3 Compliance and performance reporting will endeavour to be in accord with the timing requirements of the Iron Ore (Hamersley Range) Agreement Act 1963.

4 It is expected that the revision of the Noise Management Program required by condition 8-6 will form the basis for assessment of a Regulation 17 application in the future.

Schedule 1

The Proposal (Assessment No. 1586)

Hamersley Iron Pty Ltd proposes to expand its iron ore operations at Dampier Port from 95 million tones per annum (Mtpa) to 120 Mtpa. The proposal is to increase the throughput of Parker Point terminal from 50 Mtpa to 75 Mtpa. The capacity of the East Intercourse Island terminal will remain at 45 Mtpa. This proposal does not include any construction work. The increase in throughput will be achieved through greater utilisation of the existing equipment.

The main characteristics of the proposal are summarized in Table 1 below.

Table 1: The Key characteristics Parker Point (SKM, 2005).

Characteristic	Parker Point Operations (as total port throughput of 95 Mtpa as described in 95 Mtpa EPS).	Parker Point Operations following the increased throughput to 120 Mtpa.
Project life	50 years	50 years
Total Licensed Port Capacity	95 Mtpa	120 Mtpa
Licensed Capacity of PP	50 Mtpa	75 Mtpa
Berth capacity	220 000 DWT	220 000 DWT
Wharf capacity	895m*	895 m
Number of ship loading berths	2 at 220 000 DWT and 1 at 180 000 DWT	2 at 220 000 DWT and 1 at 180 000 DWT
Blending stockpile capacity	4.7 Mt	4.7 Mt
Bulk stockpile live capacity	4 Mt	2.5 Mt
Number of products	7	7
Number of train arrivals	6 per day	8-9 per day
Rail dump cycle	80 seconds	80 seconds (average cycle)
Facility footprint	186 ha	186 ha
Major plant components	2 Car Dumpers 2 Lump Re-screening Plants 1 Sample Stations 4 Stackers 3 Reclaimers 2 Shiploaders 24 Stockpiles	2 Car Dumpers 2 Lump Re-screening Plants 1 Sample Stations 4 Stackers 3 Reclaimers 2 Shiploaders 24 Stockpiles
Plant operation	24 hours, 7 days per week	24 hours, 7 days per week
Water requirements	1 700 Ml/year	2 160 Ml/year
Shipping Movements at PP **	Approximately 390 ships per year	Approximately 500-550 ships per year
Workforce	Operations approximately 430 personnel.	Operations approximately 440 personnel.

* the length of the wharf was increased by 100m (from 795m to 895m) following a Section 45C approval by the Minster for the Environment in December 2004.

** the number of ship movements per year at East Intercourse Island will remain unchanged at approximately 300.

Figures (attached)

Figure 1 – Hamersley Iron Dampier Port Operations

Figure 2 – Hamersley Iron Parker Point Layout

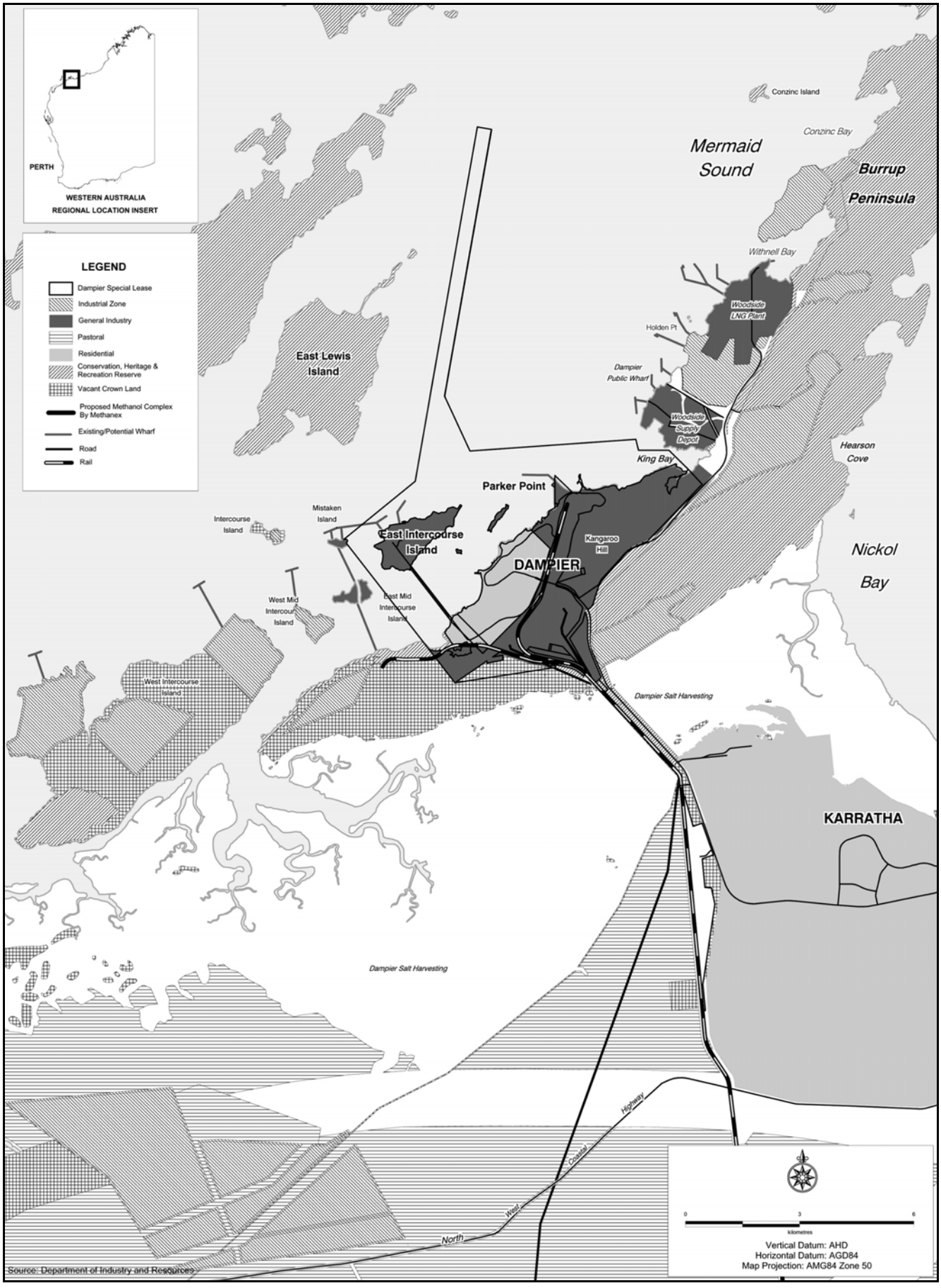

Figure 1: Hamersley Iron Dampier Port Operations (SKM, 2005).

Figure 2: Dampier Operations – increased throughput to 120 Mtpa proposed Parker Point Layout (SKM, 2005).

Schedule 2

Proponent's Environmental Management Commitments

15 August 2005

Hamersley Iron Dampier Port Increase in throughput – 120Mtpa

(Assessment No. 1586)

Hamersley Iron Pty Limited

Proponent's Environmental Management Commitments – August 2005

Dampier Port Increase in Throughput – 120Mtpa (Assessment No. 1586)

Note: The term "commitment" as used in this schedule includes the entire row of the table and its six separate parts as follows:

- a commitment number;
- a commitment topic;
- the objective of the commitment;
- the 'action' to be undertaken by the proponent;
- the timing requirements of the commitment; and
- the body/agency to provide technical advice to the Department of Environment.

Table 1: Dampier Port Upgrade to 95Mtpa Capacity (Assessment No. – 1586) – 15 August 2005)

No.	Topic	Objective	Action	Timing	Advice
1	Dust	Reduce dust levels within the town of Dampier from the Dampier Port Operations through continuous improvement.	1) Hamersley Iron will review and update the current Dust Management Plan to set long-term targets to achieve overall reduction in existing impacts. This is to be done annually 2) Hamersley Iron will implement the updated Dust Management Plan	Pre-commissioning On-going	Department of Environment
2	Dust	Improve existing dust monitoring programme Confirm the modelling assessment and understand the implications of dust from the Dampier operations on the town of Dampier and King Bay Industrial Estate	1) Hamersley Iron will modify the current dust monitoring program in order to take account of the port capacity increase and to better understand its contribution to dust levels within Dampier and King Bay 2) Hamersley Iron will review the dust monitoring data from the modified dust monitoring program against the predictions of the dust modelling assessment.	Pre-commissioning Pre-commissioning	Department of Environment
3	Noise	Work towards compliance with Noise Regulations	1) Hamersley Iron will develop a Noise Management Program to identify key areas of the existing operation that require nose remediation works 2) Hamersley Iron will implement the Noise Management Program.	Pre-commissioning On-going	Department of Environment
4	Water Supply	Better understand where water is used and minimise water use	1) Hamersley Iron will develop a water balance for the port operations, incorporating the port upgrade, to identify opportunities for reductions in water demand.	Pre-commissioning	Department of Environment
5	Water Supply	Reduce the water supply demand from port operations	2) As part of the port upgrade, Hamersley Iron will implement water recycling and water minimisation initiatives and progress a staff awareness program of water use and	On-going	Department of Environment

No.	Topic	Objective	Action	Timing	Advice
			minimisation.		
6	Marine Environment	To identify any impacts on the marine environment due to Hamersley Irons Operations.	1) Hamersley Iron will develop and implement a long – term marine monitoring program	On-going	Department of Environment CALM
7	Community Consultation	Maintain ongoing community consultation on local environmental issues.	1) Hamersley Iron will continue to actively support and discuss local environmental issues though the Coastal Community Environmental Forum.	On-going	Department of Environment