Ass # 737

Bull # 631

State # 279

WESTERN AUSTRALIA

MINISTER FOR THE ENVIRONMENT

STATEMENT TO AMEND CONDITIONS APPLYING TO A PROPOSAL (PURSUANT TO THE PROVISIONS OF SECTION 46 OF THE ENVIRONMENTAL PROTECTION ACT 1986)

PROPOSAL: SILICON PROJECT, KEMERTON (165/737)

CURRENT PROPONENT: SIMCOA OPERATIONS PTY LTD

CONDITIONS SET ON: 13 MAY 1988

Condition 1 has been amended to read as follows:

1A In implementing the proposal, including the proposed amendment reported on in Environmental Protection Authority Bulletin 631, the proponent shall fulfil the commitments (which are not inconsistent with the conditions or procedures contained in this statement) made on 4 May 1988 (copy attached).

1B Subject to the conditions in this amended statement, the manner of detailed implementation of the proposal shall conform in substance with that set out in any designs, specifications, plans or other technical material submitted by the proponent to the Environmental Protection Authority with the proposal. Where, in the course of that detailed implementation, the proponent seeks to change those designs, specifications, plans or other technical material in any way that the Minister for the Environment determines on the advice of the Environmental Protection Authority, is not substantial, those changes may be effected.

The original condition 3 is deleted and a new condition 3 is inserted as follows:

3A The proponent shall pass all furnace off-gases through an approved dust collection facility except as otherwise permitted by the Environmental Protection Authority during planned maintenance or emergencies.

3B Within three months of the date of this statement, the proponent shall prepare and subsequently implement a contingency plan as an additional part of the environmental monitoring and management plan required by condition 19, with the specific objective of minimising the periods of direct venting, to meet the requirements of the Environmental Protection Authority.

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This "Procedure" is to be added following condition 19:

Procedure

The Environmental Protection Authority is responsible for verifying compliance with the conditions contained in this statement, with the exception of conditions stating that the proponent shall meet the requirements of either the Minister for the Environment or any other government agency.

If the Environmental Protection Authority, other government agency or proponent is in dispute concerning compliance with the conditions contained in this statement, that dispute will be determined by the Minister for the Environment.

Bob Pearce, MLA
MINISTER FOR THE ENVIRONMENT

10 AUG 1992

BARRACK SILICON PROJECT

ENVIRONMENTAL COMMITMENTS

MAY 1988

1.0 PREAMBLE

Barrack Silicon Pty Ltd as proponent for the Barrack Silicon Project to be located at Kemerton undertakes to make various environmental commitments in relation to the project. This document outlines those commitments.

2.0 PUBLIC ENVIRONMENTAL REPORT

The proponent engaged consultants Maunsell & Partners to prepare a Public Environmental Report, dated November 1987. That report should be read in conjunction with this document.

3.0 ENVIRONMENTAL COMMITMENTS

3.1 Kemerton Site - General

3.2 Quartzite Supply

3.3 Wood Supply

3.4 Charcoal Production

3.5 Silicon Production

4.0 ATTACHMENTS

4.1 Wood Transport Corridors

3.1 KEMERTON SITE GENERAL

3.1.1 The proponent is committed to being a good corporate citizen and to complying with reasonable and justifiable EPA requirements, but in particular to the two main environmental issues of the project, dust emission and noise control.

3.1.2 A site specific landscaping plan capable of tolerating the local environment adjacent to a chloride plant and opposite the future Aluminium Smelter, will be developed in consultation with CALM.

3.1.3 The proponent expects to draw water from the "Yarragadee" aquifer and is committed to monitor/test bore water as required by WAWA. Adoption of a closed circuit water cooling circuits in the silicon process greatly help to conserve water usage. The proponent will optimize usage of plant water to its fullest practical extent.

3.1.4 In the event that runoff water is required to be treated, application will be made with EPA prior to discharge into nearby water courses. As appropriate the local authority and WAWA will be consulted should existing drains be used.

3.1.5 The wood stockpile and the plant site in general has a ground level graded to drainage falls into surface drains which in turn are routed to a stormwater sedimentation pond designed to cater for a one in five year return period storm.

3.1.6 The proponent is committed to the installation and maintenance of a first-aid vehicle, a fire tender, appropriate trained personnel and developing safety and contingency planning both during construction and operation of the project. Application annually will be made to the Minister for Emergency Services through the Bush Fires Board of Western Australia to operate fire risk areas of the plant during the high risk summer months of November through to March.

3.1.7 The proponent will develop a comprehensive air emission and atmospheric monitoring programme in consultation with the EPA, to establish the environmental impacts from the project's operation.

3.1.8 The proponent, in addition to seeking practicable and economic methods to consistently reduce noise emissions at their source, will routinely monitor the efficiency of silencers and noise attenuation equipment and will take remedial actions where necessary to maintain efficiency of same.

3.1.9 Solid wastes will be carefully monitored to maximise recycling and resale wherever possible. Solids requiring disposal will be collected and transported to an approved landfill and will be subject to control by EPA.

3.2 QUARTZITE SUPPLY

3.2.1 Quarrying operations will be managed to ensure minimum practicable noise disturbance to the surrounding environment and to that end quarrying operations will generally be restricted to the hours of 0600 to 1700 Monday to Friday, during annual mining campaigns not expected to exceed three to five months each year.

3.2.2 The contract quarry operators will be required to implement appropriate blasting techniques to achieve a maximum 115 dB peak linear limit. This may include the use of sequential timers or alternative approved methods of blast initiation.

3.2.3 Blasting activities will not proceed during periods when wind conditions would result in the transport of significant dust from such blasting operations towards the nearby vicinity of neighbouring farms.

3.2.4 With the exception of the first year of operations when the delayed timetable for the Project may necessitate a summer/autumn mining campaign, quarrying operations will be scheduled for the period mid August through mid-December when post winter moist soil conditions should assist in dust suppression and dust control around the mine site.

3.2.5 The proponent is committed to mine site rehabilitation in accordance with the requirements of the Department of Mines. This plan will include rehabilitation where practicable using local native vegetation. In addition the proponent will seek advice from CALM on the management of Regelia megacephala populations, including the practicality of establishing trial experimental plots to determine criteria for successful regrowth. Where there is a risk of direct impact of mining or service equipment on populations of Regelia megacephela these populations will be fenced off.

3.2.6 Haul roads will be selectively routed by the proponent to provide minimum disturbance to the environment. Dust suppression by water spray on haul roads and at the crushing plant will be implemented should significant dust occur. Tree-planting for screening purposes will be undertaken, in consultation with the farmer/landowner, where necessary and practicable.

3.2.7 Mining operations will leave some areas of inferior grade ore thereby preserving to some degree the visual amenity of the quartzite hills to the north of Moora.

3.2.8 Mining operations including drilling, excavating, quarry haulage and crushing and screening will include dust suppression and dust control measures designed to ensure compliance with occupational health statutes.

In particular drilling will be carried out by an airtrack drill fitted with a "filterclone" dust control system or similar, with separated dust being disposed of in accordance with the Mines Department requirements.

Fine mist water sprays will be installed at the receival hopper and crusher, and provision will be made to damp down muck piles, haulroads and stockpile areas to control fugitive dust.

3.2.9 Efforts will be made to recycle extracted waters to minimise water consumption where practicable.

3.3 WOOD SUPPLY

Wood supply to the Silicon Plant at Kemerton is a responsibility of the W.A. Department of Conservation and Land Management through its contract with the proponents to fall, extract, load, transport and deliver log timber onto the Kemerton site. The proponent will rely on CALM to meet its contractual obligations in relation to the following commitments.

3.3.1 Wood will be transported on 20m long articulated 70 tonne log haulage trucks. Proposed routes for the period 1989 - 1992 and for the period 1993 - 1998 are shown in the attached figure. These routes are presently used by log haulage trucks.

Major transport corridors for the first 5 years will be developed in consultation with MRD and CALM subject to EPA approval.

3.3.2 Log haulage vehicles, immediately after entrance to the site, will be specifically diverted away from day to day traffic primarily for safety reasons. Timber will only be received at the plant site during daylight hours Monday to Friday, with possible extensions to Saturday if agreed between CALM and the proponents.

3.3.3 The proponent intends to purchase wood to produce charcoal from the Department of Conservation and Land Management (CALM) under the Government approved Department's General Working Plan No. 87. CALM has developed and is committed as is the proponent to the quarantine and hygiene procedures designed to minimize and reduce the risk of spreading jarrah dieback.

3.3.4 The proponent recognizes that the maintenance of flora and fauna within the State Forest is highly desirable. Currently there is no information on the use of tree hollows by fauna in the Jarrah forest so the proponent will fund and supervise with CALM a post graduate research project to evaluate these predictions and the effects of silvicultural practices specifically for the project. Information from this project will be made available to EPA within 3 years of the start of plant production.

3.3.5 If the research project detects any significant impact of the silicon project on fauna, wood collection operations will be more widely dispersed over the areas being cut for timber to reduce the effect subject to CALM approval. Alternatively some firewood trees and logs will be left in the forest to ensure niche retention.

3.3.6 The General Forest Working Plan No. 87 divides the forest into areas with different Management Priority Areas (MPA's). Subject to hygiene controls firewood extraction is permitted within MPA's however timber extraction from MPA's for recreation will not be carried out under this proposal.

3.3.7 Forest areas allocated to flora, fauna and landscape conservation are not available for timber extraction.

3.3.8 The proponent through CALM, is committed to the current silvicultural management practices for jarrah forests which will, wherever practicable, be enforced for wood produced for this project to provide optimal conditions for the growth of preferred young trees by reducing competition. The objective of the proponent is to ensure an economical supply of dry wood substance to the Project for the purposes of charcoal and silicon manufacture consistent with forest conservation through comprehensive long term strategy planning.

3.4 CHARCOAL PRODUCTION

3.4.1 The design of the overall docking mill complex is under review. The concept selected will incorporate systems designed to reduce noise levels in the vicinity of the complex, consistent with the proponents overall undertakings for control of noise as contained with the PER.

3.4.2 An incinerator will be incorporated by the proponent in the retort complex to combust volatile material in the rinse gas and pyroligneous vapour.

3.4.3 Retort loading arrangement consists of:

1) Upper retort door (swing gate design).
2) Lower retort door (slide gate design).

The system is designed to minimise gas release during charging of the retort.

3.4.4 The retort upper compartment will be operated slightly below atmospheric pressure as a further safeguard against accidental release of retort vapours.

3.4.5 Charcoal dust generated at the belt discharge chute into the furnace bins will be contained by a suppression system or dust collector and re-cycled back to the bin.

3.4.6 Transfer points on belt conveyors transporting charcoal will be fitted with dust suppression systems. The charcoal screen will be fitted with a dust collector, collected dust will be combined with charcoal fines from the screening operation.

3.4.7 The design of the waste wood handling system is under review; should an incinerator be utilised for burning wastes it will be of the "smokeless" refractory silo type.

3.4.8 The comprehensive fire suppression system for the charcoal process will consist of a water tank and pumping station which will feed a ring main and hydrant system around the charcoal retorts and docking mill area as well as the remainder of the plant. A sprinkler system will be installed for fire protection in the docking mill.

Personnel will be trained in fire-fighting procedures, equipment locations clearly marked and a fully operational fire tender will be maintained on site. Portable fire extinguishers and serviced hose reels will be located within the buildings as required.

3.4.9 Provision will be made for bleeding gas cooling water to a settling pond prior to further treatment. Washdown water will be fed through an oil separator prior to entering an evaporation pond or leach drain.

3.4.10 The retort controls will incorporate automatic shutdown system in the event of serious malfunction in shutdown mode top gases would continue to be passed through the high temperature incinerator until a stable cycle has been achieved.

3.5 SILICON PRODUCTION

3.5.1 The quartzite hopper, transfer point and conveyor system will be fitted with water mist sprays for dust suppression.

3.5.2 Each charcoal bin will be fitted with an emergency dumping gate, fitted to the lower section of bin, for use in case of spontaneous combustion of the charcoal.

3.5.3 The proponent will be exerting its best efforts to minimise and if practicable, eliminate the use of petcoke in its furnaces consistent with its commitment for safe and economical operations. The operation will be both environmentally and quality conscious.

3.5.4 The exhaust gas from each furnace and the entrained amorphous silica fume will be collected by the furnace and tapping area hoods and ducted through pre-collector/spark arrester units and a baghouse.

3.5.5 The fume will be discharged from the filter bags into sealed collection hoppers from where it will be pneumatically conveyed to storage silos. The fume will be discharged into sealed road vehicles or pelletised.

3.5.6 The proponent will introduce a programme for regularly sampling the fume and submitting the samples to X-ray diffraction analysis to detect any contamination by crystalline silica. (Public Health Implications Study p15).

3.5.7 The building housing the electric furnaces will be steel-clad. Appropriate ventilation and housekeeping measures will be adopted to ensure control and containment of dust within this building.

3.5.8 Waste water system is being reviewed. A disposal strategy for this waste water will be developed in consultation with the EPA after chemical analyses have been made.

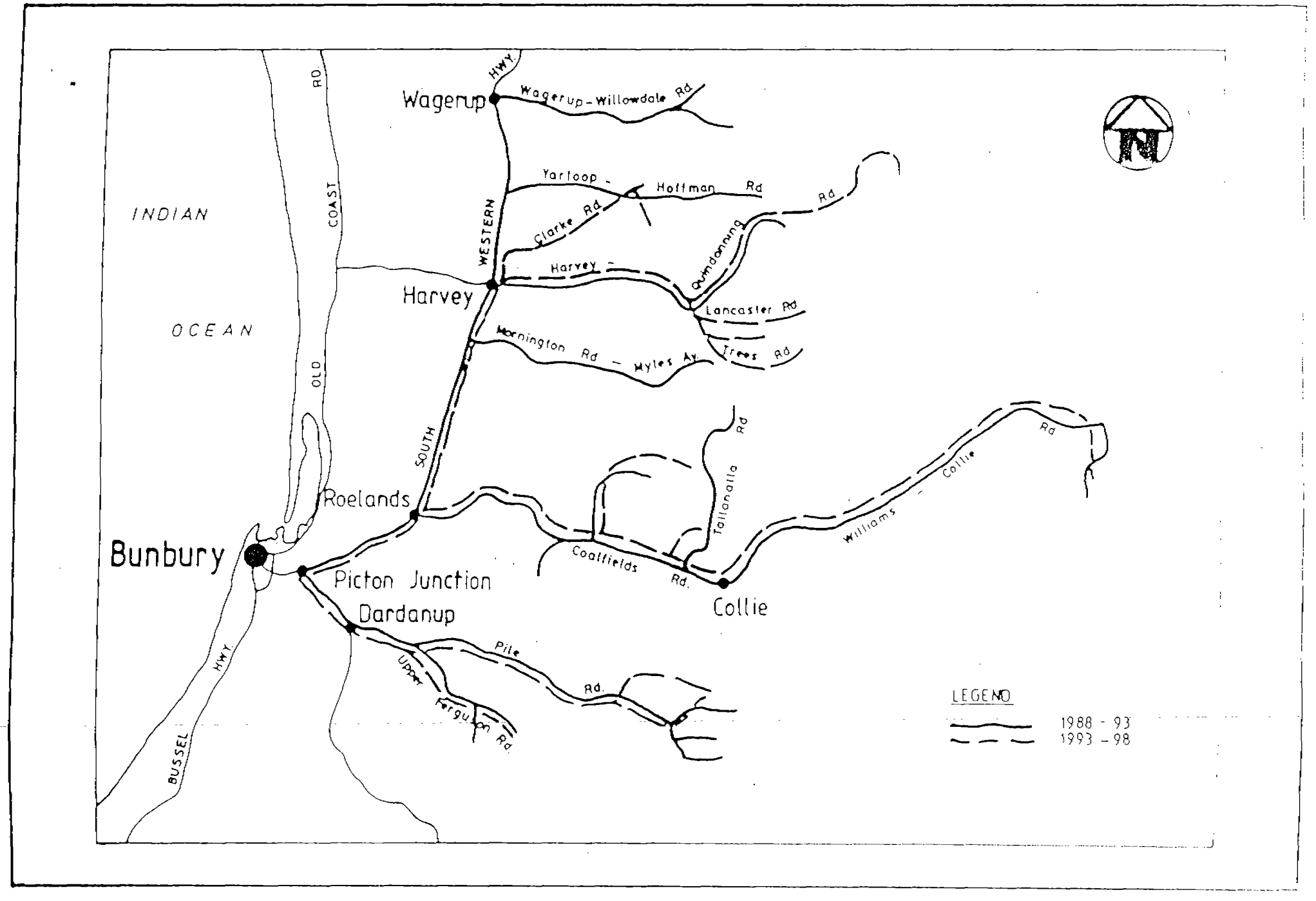
3.5.9 The oxygen storage facility of approximately 6000 litres will be isolated from the heat of the furnace, and fire hydrants will be installed in the general area.

3.5.10 The baghouse system will have reserve capacity to deal with abnormal dust burdens.

3.5.11 A monitoring programme will be established around the plant. That programme will be designed after consultation with the EPA.

3.5.12 Silicon dust generated in the product treatment area will be collected via hoods and extraction fans and ducted to a baghouse. Residual dust levels will be regularly monitored to ensure that the control system is operating with the required efficiency.

3.5.13 Although no significant discharge of organics is predicted, samples of emissions will be collected during early operation of both furnaces and baghouses.



WOOD TRANSPORT CORRIDORS

Attachment to Statement 27 & 279

Change to Description of Proposal

Proposal: Silicon Project, Kemerton

Proponent: Simcoa Operations Pty Ltd

Change: to add the third of four furnaces

From:

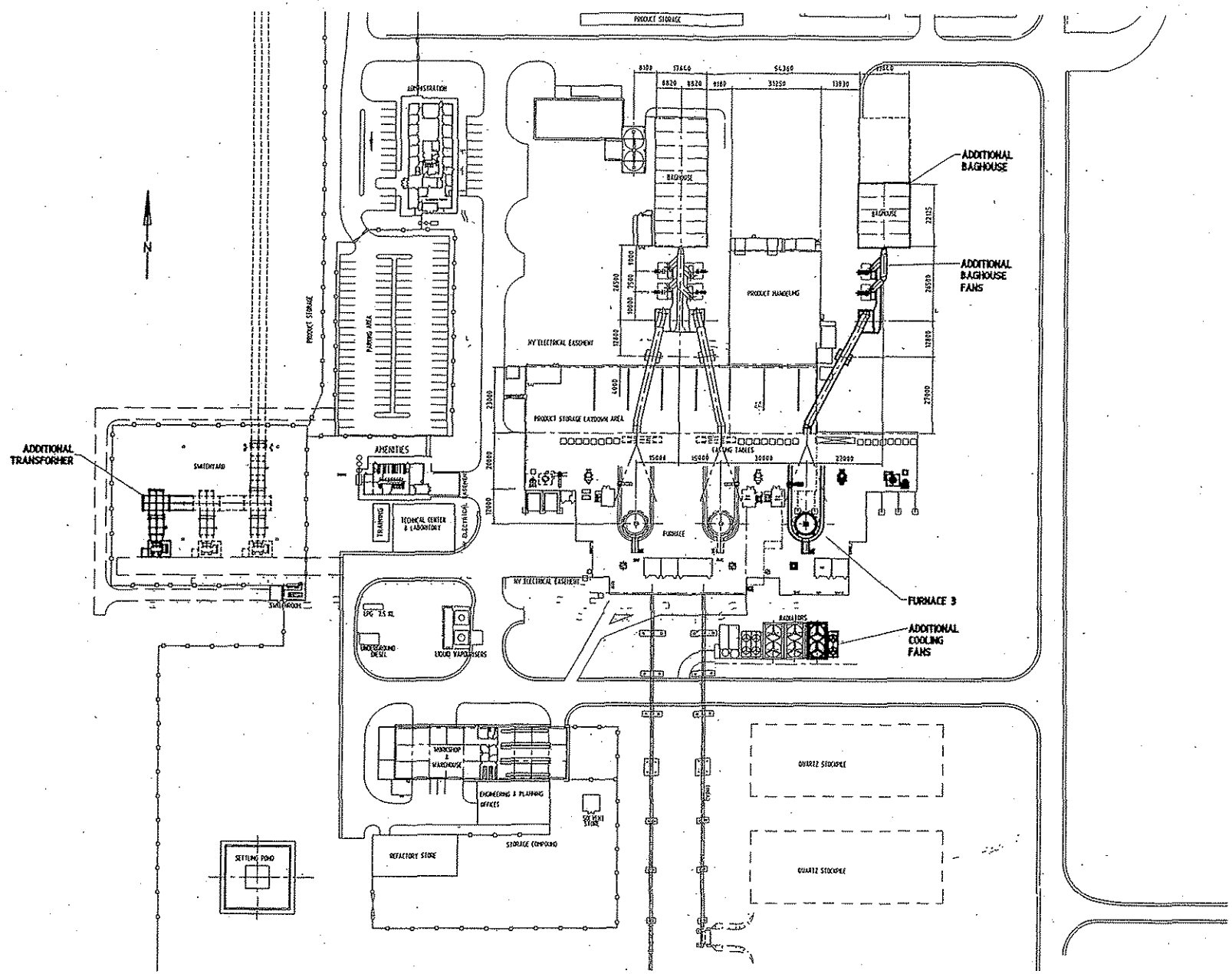
Element	Quantities/Description
Silicon production	32,000 tpa (current licensed capacity)
Quartzite	80,000 tpa
Wood for charcoal	100,000 – 110,000 tpa
Charcoal production	26,000 tpa (current licensed capacity)
Smelter	2 submerged electric arc furnaces

To:

Element	Quantities/Description
Silicon production	48,000 tpa
Quartzite	120,000 tpa
Wood for charcoal	110,000 tpa
Charcoal production	27,000 tpa
Smelter	3 submerged electric arc furnaces

Figure 1. Plant layout plan.

Approval Date: 17/05/06



No.	DWG. No.	TITLE
8	200-A-5009	SECTION COLUMN ROW 'E'
7	200-A-5008	SECTION COLUM ROW 'J'
6	200-A-5007	PLAN ON 4th FLOOR R.L. 37.008 F.F.L.
5	200-A-5006	PLAN ON 3rd FLOOR R.L. 32.306 F.F.L.
4	200-A-5005	PLAN ON 2nd FLOOR R.L. 26.640 F.F.L.
3	200-A-5004	PLAN ON 1st FLOOR R.L. 22.600 F.F.L.
2	200-A-5003	PLAN ON TAPPING FLOOR R.L. 18.500 F.F.L.
1	200-A-5002	PLAN ON GROUND FLOOR R.L. 16.300 F.F.L.

REFERENCE DRAWINGS

No.	DATE	BY	CHK.	DESCRIPTION

DRAWING REVISIONS

TOLERANCING

0 to 10 ——— : 1mm
2m to 5m ——— : 2mm
6 to 2m ——— : 3mm
NO ANGLE SHALL EXCEED 45°C

DO NOT SCALE THIS DRAWING
IF IN DOUBT ASK

	NAME	DATE
DRAWN	G.BEWLEY	18/06/2005
CHECKED		
ENGINEER		
SCALE	1:750	SHT - A3

3RD ANGLE PROJECTION

SIMCOA OPERATIONS PTY.LTD.
A.C.N. 105 154 453

SIMCOA OPERATIONS EXPANSION 1 PROJECT
OVER ALL GENERAL ARRANGEMENT

Figure: 1.

EQUIPMENT No :

DWG. No. 200-A-5001-0

REV. 0