MINISTER FOR THE ENVIRONMENT;
EMPLOYMENT AND TRAINING

Statement No.
000470

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

Title: KWINANA AMMONIA PROJECT, KWINANA INDUSTRIAL AREA

Proposal: Construction and operation of a 650 tonne per day (tpd) ammonia plant to replace the existing 300 tpd ammonia plant, at CSBP Kwinana site (immediately to the east of the existing ammonia plant), which is located within the Kwinana heavy industrial area, Town of Kwinana, about 33 km south of Perth, as documented in schedule 1 of this statement.

Proponent: Wesfarmers CSBP Limited

Proponent Address: 40 The Esplanade, PERTH W A 6000

Assessment Number: 1140

Report of the Environmental Protection Authority: Bulletin 882

The proposal to which the above report of the Environmental Protection Authority relates may be implemented subject to the following conditions and procedures:

1 Implementation

1-1 Subject to these conditions and procedures, the proponent shall implement the proposal as documented in schedule 1 of this statement.

2 Proponent Commitments

2-1 The proponent shall implement the consolidated environmental management commitments documented in schedule 2 of this statement.

2-2 The proponent shall implement subsequent environmental management commitments which the proponent makes as part of the fulfilment of conditions and procedures in this statement.

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3 Environmental Management System

3-1 In order to manage the environmental impacts of the project, and to fulfil the requirements of the conditions and procedures in this statement, prior to construction, the proponent shall prepare Environmental Management System documentation with components such as those adopted in Australian Standards AS/NZS ISO 14000 series, to the requirements of the Environmental Protection Authority on advice of the Department of Environmental Protection.

3-2 The proponent shall implement the Environmental Management System referred to in condition 3-1.

4 Decommissioning Management Plan

4-1 At least six months prior to decommissioning of the new ammonia plant, the proponent shall prepare a Decommissioning Management Plan to the requirements of the Environmental Protection Authority on advice of the Department of Environmental Protection.

This Plan shall address:

1 removal or, if appropriate, disposal on-site of plant and infrastructure;

2 rehabilitation of all disturbed areas to agreed final land uses; and

3 identification of contaminated areas, including provision of evidence of notification to relevant statutory authorities.

4-2 The proponent shall implement the Decommissioning Management Plan required by condition 4-1.

4-3 The proponent shall make the Decommissioning Management Plan required by condition 4-1 publicly available, to the requirements of the Environmental Protection Authority.

5 Changes to Implementation

5-1 Where, in the course of implementing the proposal, the proponent seeks to change any aspect of the proposal as documented in schedule 1 of this statement in any way that the Minister for the Environment determines, on advice of the Environmental Protection Authority, is not substantial, those changes may be effected.

6 Proponent

6-1 The proponent for the time being nominated by the Minister for the Environment under section 38(6) or (7) of the Environmental Protection Act 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 in respect of the proposal.

6-2 Any request for the exercise of that power of the Minister referred to in condition 6-1 shall be accompanied by a copy of this statement endorsed with an undertaking by the proposed replacement proponent to carry out the proposal in accordance with the conditions and procedures set out in the statement.

6-3 The proponent shall notify the Minister for the Environment of any change of proponent contact name and address within 30 days of such change.

7 Commencement

7-1 The proponent shall provide evidence to the Minister for the Environment within five years of the date of this statement that the proposal has been substantially commenced.

7-2 Where the proposal has not been substantially commenced within five years of the date of this statement, the approval to implement the proposal as granted in this statement shall lapse and be void. The Minister for the Environment will determine any question as to whether the proposal has been substantially commenced.

7-3 The proponent shall make application to the Minister for the Environment for any extension of approval for the substantial commencement of the proposal beyond five years from the date of this statement.

7-4 Where the proponent demonstrates to the requirements of the Minister for the Environment on advice of the Environmental Protection Authority that the environmental parameters of the proposal have not changed significantly, then the Minister may grant an extension not exceeding five years for the substantial commencement of the proposal.

8 Compliance Auditing

8-1 The proponent shall submit periodic Performance and Compliance Reports, in accordance with an audit program prepared in consultation between the proponent and the Department of Environmental Protection.

8-2 Unless otherwise specified, the Department of Environmental Protection is responsible for assessing compliance with the conditions contained in this statement and for issuing formal clearance of conditions.

8-3 Where compliance with any condition is in dispute, the matter will be determined by the Minister for the Environment.

Note

1 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.

CHERYL EDWARDES (Mrs) MLA
MINISTER FOR THE ENVIRONMENT

18 MAR 1998

Schedule 1

PROPOSAL

The new ammonia plant will be located immediately to the east of the existing ammonia plant at the CSBP site, within the Kwinana Industrial Area (attached Figures 1 and 2).

The ammonia project involves construction and operation of:

- a new 650 tpd or 225,000 tpa ammonia plant; and
- ancillary equipment to support the ammonia plant including:

  - installation of a 25 tonne per hour (tph) natural gas fuelled steam boiler for use during plant start-up and shutdown operations;
  - "polishing water unit" to produce boiler quality feed water by treating demineralised water from an existing CSBP water treatment plant; and
  - a cooling water tower.

The proposed plant will be integrated with a number of existing CSBP facilities during its operation (attached Figure 3).

This project does not include the transport and distribution of ammonia throughout the State. The preliminary layout of the components of the proposed plant is shown in Figure 4 (attached).

The general arrangement of the plant will include the following sections:

1 reforming;
2 synthesis loop;
3 carbon dioxide removal;
4 heat exchange/cooling;
5 water polishing unit;
6 ammonia synthesis;
7 power generation;
8 process and motor control centre;
9 refrigeration;
10 groundwater bore; and
11 storage.

The main characteristics of the proposal are summarised in Table 1 (attached).

The new ammonia plant will incorporate the Haldor Topsøe technology, for which a licence was made available to CSBP by Technipetrol SpA of Italy.

The process flow diagram (attached Figure 5) shows various stages of the ammonia production process, which include:

1 desulphurisation of natural gas feed (methane);
2 reforming of methane and steam to carbon monoxide and hydrogen;
3 shift conversion of carbon monoxide to carbon dioxide;
4 removal of carbon dioxide by absorption;
5 purification of "synthesis gas" by methanation;
6 compression of the "synthesis gas";
7 synthesis of ammonia from "synthesis gas"; and
8 refrigeration and storage of ammonia.

Following commissioning and stabilisation of the new plant, the existing plant will be shutdown and in due course dismantled.

PROPOSAL TABLE AND FIGURES

Table 1: Summary of key proposal characteristics

Proposal Characteristics	Unit	Proposed Plant
Capacity	tonnes per day NH_3	650
	tonnes per annum NH_3	225,000
Natural Gas Consumption	Gigajoules/tonne NH_3	32 - 34
	Petajoules/year	7.4
Water Consumption	tonnes per day	6,000 (make-up)
Location	-	CSBP Kwinana
<u>Gaseous emissions:</u>		
NO_x (as NO_2)	kg/tonne NH_3	0.54
	kg/day	350
CO_2	tonnes/tonne NH_3	1.8
	tonnes per day	1,200
Fugitive Gases:-		
• NH_3	-	flared
• H_2	-	flared
<u>Aqueous discharge:</u>		
Cooling System (including polishing unit blowdown)	-	recirculating treated sub-artesian water
Flow	tonnes per day	2,100
Heat Load	-	mainly to atmosphere
Nitrogen	kg/day	6 - 10
Phosphorus	kg/day	6
Oily water	-	de-oiled to contain less than 30 ppm of oil
Noise at boundaries	59 dB(A) at BP boundary	will comply with regulations
Individual risk at CSBP boundary:-		
• BPRK fence	deaths/million/year	< 50
• Kwinana Beach Road	deaths/million/year	< 10
• Nearest residential	deaths/million/year	< 1

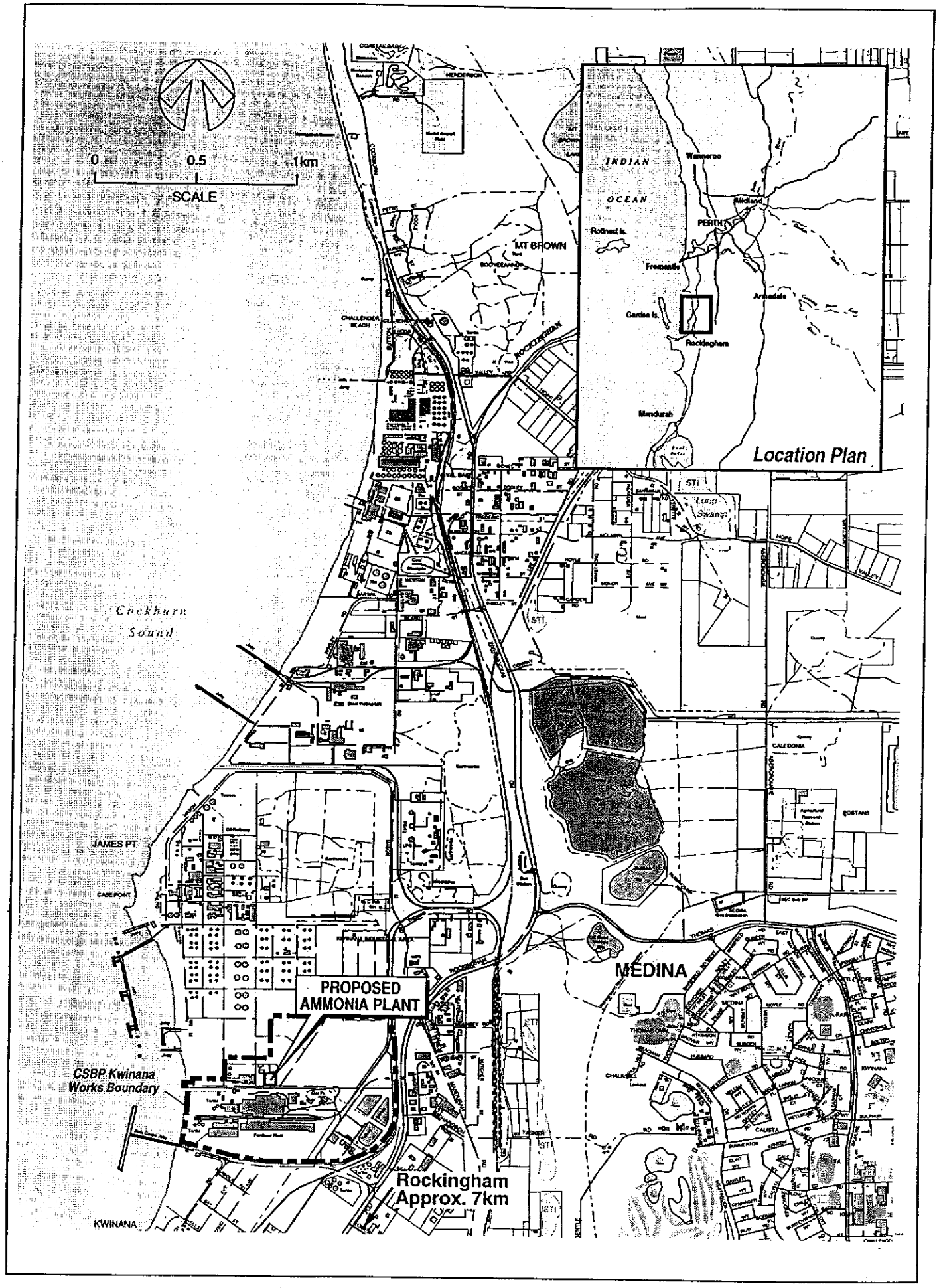


Figure 1. Location map.

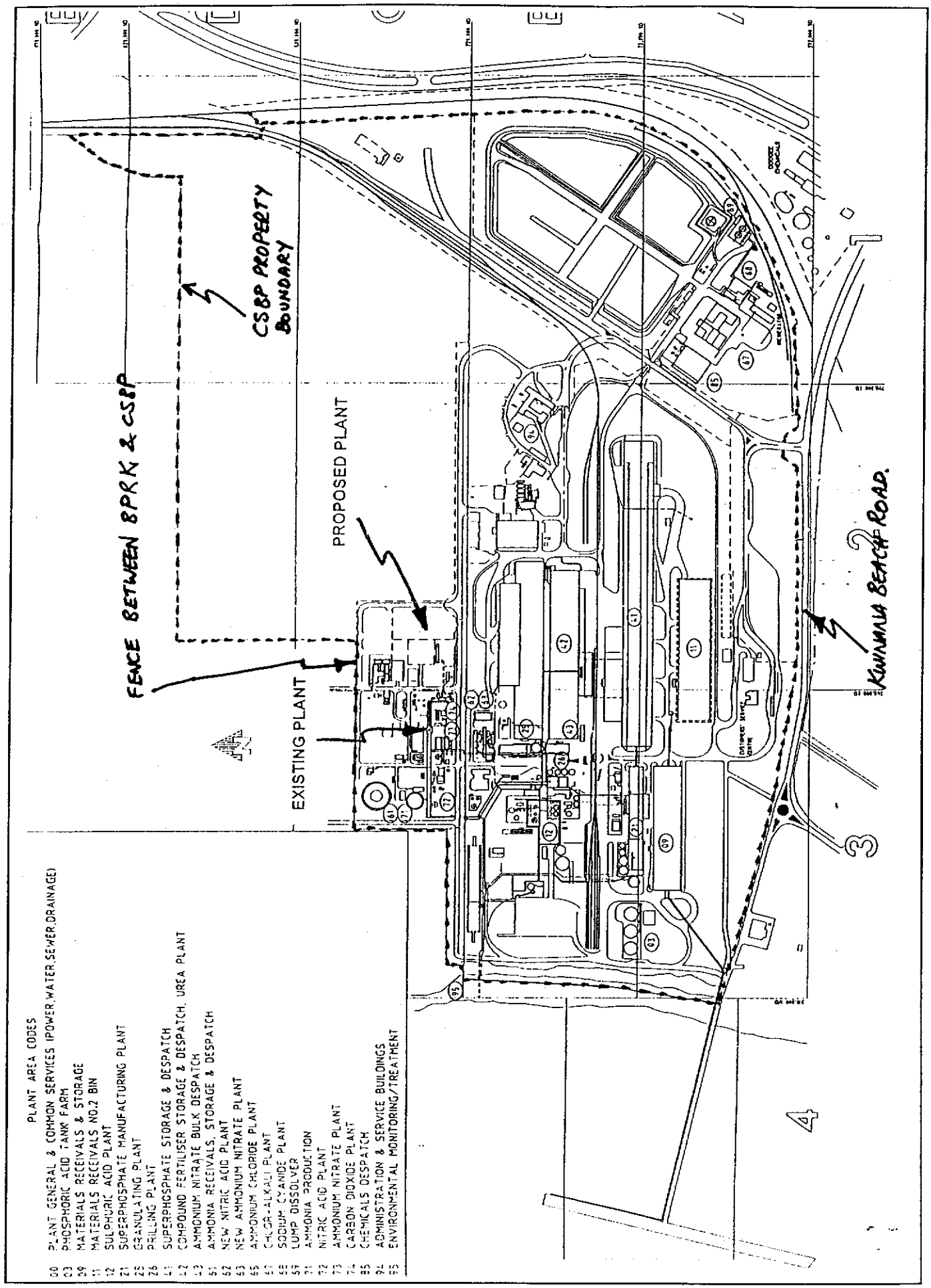


Figure 2. Proposed ammonia plant location.

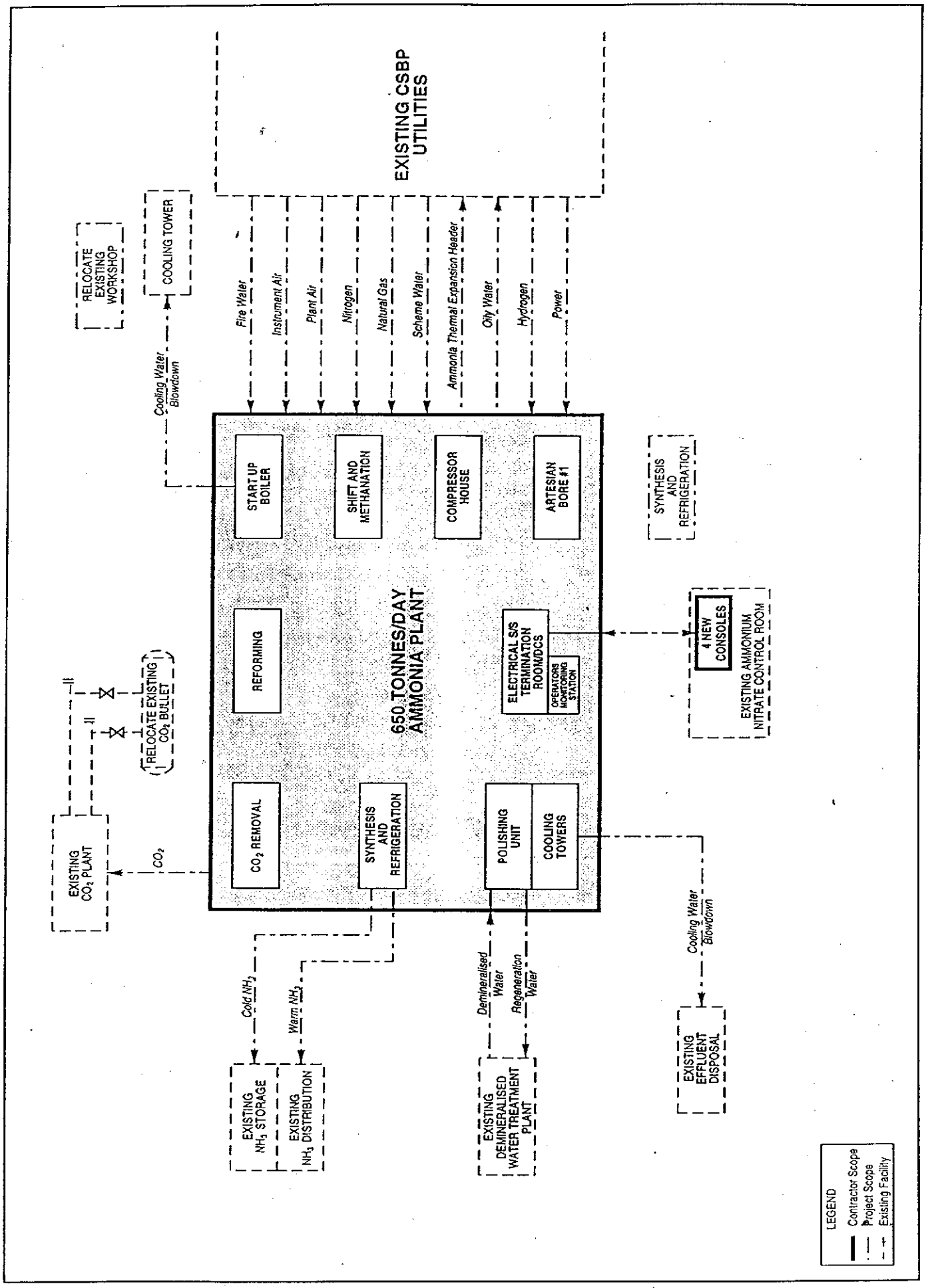


Figure 3. Project integration with existing CSBP facilities.

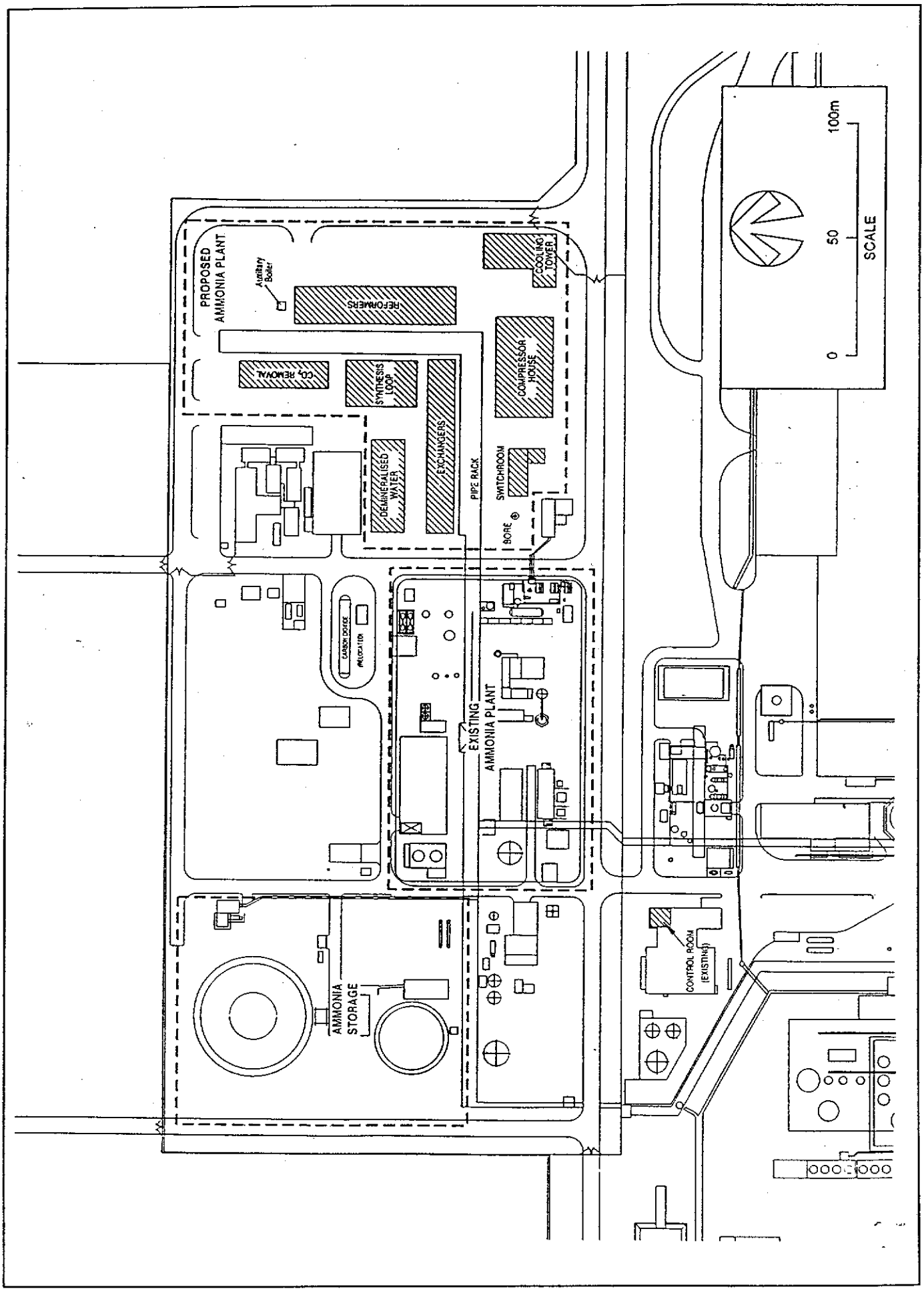
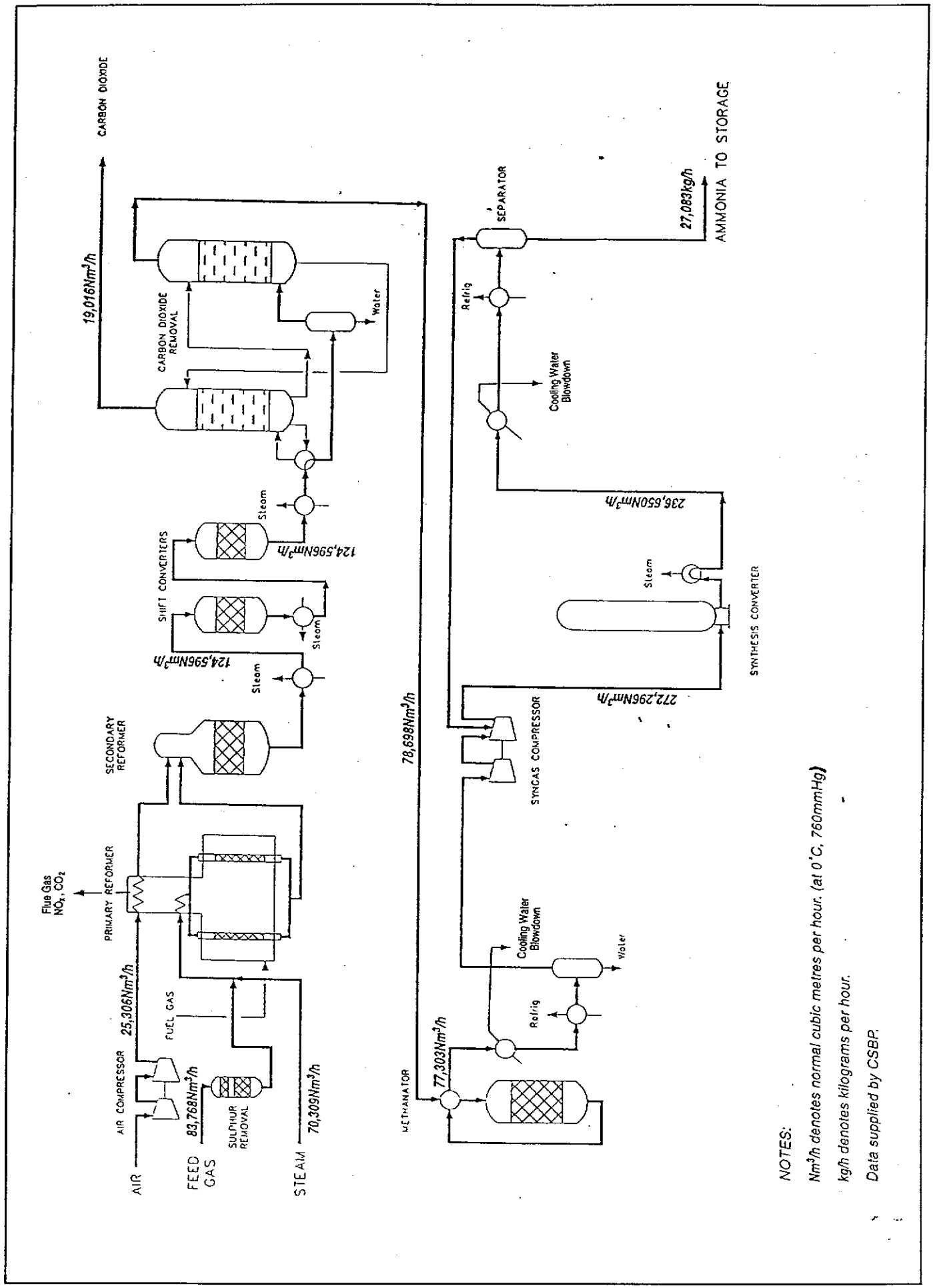


Figure 4. Proposed ammonia plant layout.



NOTES:

Nm³/h denotes normal cubic metres per hour. (at 0°C, 760mmHg)

kg/h denotes kilograms per hour.

Data supplied by CSBP.

Figure 5. Process flow chart.

Schedule 2

Proponent's Consolidated Environmental Management Commitments

KWINANA AMMONIA PROJECT
KWINANA INDUSTRIAL AREA (1140)

WESFARMERS CSBP LIMITED

KWINANA AMMONIA PROJECT, KWINANA INDUSTRIAL AREA (1140)

COMMITMENT	OBJECTIVE	ACTION	TIMING	WHOSE ADVICE	MEASUREMENT/ COMPLIANCE CRITERIA
1. The proponent will minimize the impacts of discharges of phosphorus and nitrogen from the Kwinana Ammonia Project (KAP).	To protect the biota and amenity of Cockburn Sound.	• By selecting processes and equipment which give rise to the lowest discharges of nitrogen and phosphorus. (The selection of cooling water treatment process is of particular significance). • By continuing the implementation of measures to reduce discharges from other sources on CSBP's Kwinana site.	• Before construction. • By 1 January 2000	DEP	• Confirmation of advice on expected N+P discharges contained in CER. • Monitoring and reporting site discharges as required under current licence conditions
2. The proponent will seek to reduce discharges of greenhouse gases from the Kwinana Ammonia Project.	To minimize the effects of global warming arising from the discharge of greenhouse gases to the atmosphere.	• By implementing commercially viable opportunities to recover and reuse CO_2 discharged from the Kwinana Ammonia Project. • By incorporating, where practicable, advances in ammonia catalyst technologies which reduce the generation of CO_2 from the production of ammonia.	• Ongoing. • Ongoing.	Office of Greenhouse Challenge.	Include new ammonia plant in annual reporting of Greenhouse Gas inventories.
3. The proponent will ensure that noise generated from the Kwinana Ammonia Project will not exceed current regulations.	To maintain the amenity of nearby industrial, residential and recreational areas.	• By specifying the procurement of equipment which complies with current requirements. • By conducting noise surveys of the operating plant and implementing noise abatement measures if non-compliance is detected.	• Before construction. • Within 6 months of commissioning.	DEP	Reporting of results of surveys and agreeing plans to achieve attenuation if required.
4. The proponent will minimize the risk to the community arising from the operation of the Kwinana Ammonia Project.	To protect the nearby communities from exposure to unacceptable levels of risk to health and safety.	• By preparing and implementing a comprehensive Safety Management System for the operation of the plant. • By incorporating risk reduction measures recommended by Quantarisk into plant design.	• Before commissioning. • Completed as at 1/1/1998.	DME	• Approval of the SMS** by relevant authorities. • Regular independent audit of compliance with the SMS** reported to the DME. •
5. The proponent will minimize the risk to persons involved in construction of the KAP from the operation of adjacent plants on the Kwinana site.	To protect the health and well being of people employed in the construction of the KAP.	By preparing and implementing a Construction Safety Management Plan.	Before construction.	DEP DME	Auditing and reporting as required by the plan.
6. The proponent will revise the preliminary risk assessment for the project.	To demonstrate compliance with EPA criteria at fenceline with BP and reduction of cumulative risk level for whole CSBP site.	Revise preliminary risk assessment and include knock-on effects, loss of control releases, mitigation measures to meet ALARP*, sensitivity analysis with respect to probit equations and weather data.	Before construction.	DME DEP	The EPA's criteria for individual fatality risk off-site.
7. The proponent will conduct a final quantified risk assessment on the project.	To confirm that the final plant design meets EPA risk criteria and that there is a reduction in risk for the whole CSBP site.	Conduct final risk assessment taking into account final plant design.	Before commissioning.	DME DEP	The EPA's criteria for individual fatality risk off-site.
8. The proponent will decommission the existing ammonia plant, following commissioning and stabilisation of the new plant.	To ensure that decommissioning is carried out in an environmentally acceptable manner.	Prepare and implement a Decommissioning Management Plan.	At least 6 months before decommissioning.	DEP	The EPA's requirement.

* - As Low As Reasonably Practicable.

** - Safety Management System.