Victorian Desalination Project | Independent Reviewer & Environmental Auditor

IR&EA REPORT

COMPLIANCE WITH ENVIRONMENTAL PERFORMANCE REQUIREMENTS QUARTER 1 2011

QUARTERLY REPORT TO THE MINISTER FOR ENVIRONMENT AND CLIMATE CHANGE

April 2011


MWH
BUILDING A BETTER WORLD


Davis Langdon

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SUMMARY

The Victorian Desalination Project (VDP – the Project) is being constructed on the coast in South Gippsland near Wonthaggi by the AquaSure consortium in a public-private partnership with the Victorian Government. The Project includes a desalination plant, a pipeline to transfer water to the Melbourne water distribution network near Cardinia, and an underground power supply, which will be largely in the same alignment as the pipeline. AquaSure has contracted Thiess Degrémont Joint Venture (TDJV) to design and construct, and Degrémont Thiess Services (DTSJV) to operate and maintain the VDP.

The overall environmental management framework for the VDP was initially defined in the Environmental Effects Statement (EES) for the reference project. This framework was further refined and included in the Project Deed as a contractual requirement for both the Design and Construction (D&C) and Operations and Maintenance (O&M) Stages of the Project. The main components of the Environmental Management Framework are:

- The VDP must be designed and constructed in accordance with a set of documented Environmental Performance Requirements, included in Appendix S3 of the Project Deed. In addition, Commonwealth and Victorian environmental legal requirements must be met.
- An Environmental Management System and Environmental Management Plans to support delivery of compliance with the Environmental Performance Requirements; and
- Additional requirements in the Project Deed to support environmental management.

The Independent Reviewer and Environmental Auditor (IR&EA) provides independent oversight of design engineering, construction, and environmental performance of the VDP. The IR&EA is jointly appointed by the State Government and AquaSure; the consortium building the VDP, and which will subsequently operate it. In particular, the IR&EA audits the Project Activities to assess whether the environmental requirements of the Project are being met. The Department of Sustainability and Environment (DSE) Capital Projects Division administers the Contract with AquaSure on behalf of the State.

This report provides a summary of the IR&EA's monthly environmental audit outcomes from January – March 2011.

Works commenced at the desalination plant site on the coast near Wonthaggi on 30 September 2009. The Project Activities occurring during the reporting period were:

- **Plant site**: minor bulk earthworks, civil works, building works, electrical works and mechanical installation. The outlet tunnel was completed. Preparatory works for site revegetation (outside the construction footprint) commenced.
- **Utilities alignment**: final clearing and grading and Right of Way construction, pipe stringing and trenching, pipe and conduit laying, power cable installation and trench back-filling. Preliminary reinstatement works commenced in March.
- **Marine works**: Drilling and installation of the outlet works was finished in January and the JUB demobilised.

During the reporting period a total of 9 formal audit findings were raised including six Areas for Improvement and three Observations. A list of these findings, as well as corrective and preventive actions to the end of March 2011 taken by AquaSure and TDJV to close the findings is given in Appendix 1.

The number of findings raised during the reporting period is less than that for the previous period. One of the factors influencing the number of audit findings is the revised D&C Environmental Management Plan (EMP), which better reflects actual environmental management practice. In addition, on ground environmental management continues to effectively address environmental issues.

At the plant site, water and sediment management continue to be important due to a number of heavy rain events, and was generally well implemented. The treatment of Acid Sulfate Soils (ASS) increased as the site dried out and all treated ASS will be reused on site. Preparation for site revegetation works commenced outside the construction footprint.

Activities along the utilities alignment increasingly focused on the southern sections, and on waterway crossings. Careful management of construction near waterways is important to ensure waterway values are maintained. Sediment control along the entire length of the alignment continued to be a challenge.

Marine works were completed in January and the Jack-up barge demobilised in early February 2011. Post construction monitoring and pre-operations monitoring continued.

The conclusions in relation to the objectives for the Environmental Audits in the Project Deed are given below.

Operation of the Environmental Management System

The AquaSure Environmental Management System (EMS) is independently certified to the Australian and international standard AS/NZS ISO 14001:2004. It provides overall guidance for environmental management across the project.

The EMS continued to be implemented effectively during the reporting period. The AquaSure Environmental Management representative (EMR), who has major responsibility for implementing the EMS, actively manages relationships with key stakeholders, including TDJV, DSE and regulators. Formal mechanisms for auditing, reviewing and reporting on environmental management continued to be well managed.

Implementation of each component of the EMP

The D&C EMP and the Area EMPs were generally well implemented during the reporting period. No Non-compliances were raised, and the audit findings were mainly related to housekeeping matters. Chemicals and waste storage, as well as documentation were the principal themes of the findings.

Marine works were completed during the reporting period. It is pleasing to note that the works were completed as anticipated without adverse environmental impacts.

Work has commenced on revising the D&C EMP to take into account construction verification activities, and to prepare the Commissioning Sub Plan.

Other Environmental requirements

Construction related Environmental Performance Requirements are integrated into the relevant sub plans of the Area EMPs. Accordingly, the audits of the EMPs provide assurance that the Performance Requirements are being met. In addition, construction requirements and methodologies are defined in Site Establishment Packages and Temporary Works Packages, which refer to the D&C EMP and the Performance Requirements. These packages are certified by the IR&EA.

The design related Performance Requirements are integrated into the relevant Design Package. The IR&EA certification of the Design Packages includes assurance that the related performance requirements have been adequately addressed.

During the reporting period there were no material findings which would suggest that the Performance Requirements had not been met. It is noted that two Non-compliances relating to resource efficiency remained open during the reporting period, and have been open for some time. Some progress was made on closing these Non-compliances during the reporting period, and they were closed in the April

audit. The implementation of the Resource Efficiency Sub Plans will continue to be a focus of IR&EA audits.

1 INTRODUCTION

The Victorian Desalination Project (VDP) is being constructed on the coast in South Gippsland near Wonthaggi by the AquaSure consortium in a public-private partnership with the Victorian Government. The project includes the desalination plant, a pipeline to transfer water to the Melbourne water distribution network near Cardinia, and an underground power supply, which will be largely in the same alignment as the pipeline.

Environmental management for both the design and construction, and operational stages of the VDP was a major part of planning for the Project. The Project was the subject of a comprehensive Environmental Effects Statement, including a Panel hearing, and requires compliance with a range of environmental requirements and approvals as outlined in the Project Deed between the State and AquaSure. Design and construction of the VDP is being carried out under a formal environmental management framework which includes an overarching Project Environmental Management System (EMS), and specific Environmental Management Plans (EMPs) for the overall Design and Construction phase and each area of construction (the plant site, the pipeline and power supply corridor, and the marine works). The operational and maintenance stage similarly will operate under specific Environmental Management Plans. In addition a range of environmental requirements has been defined relating to the design and operation of the desalination plant, and to the construction activities.

The Independent Reviewer and Environmental Auditor (IR&EA) provides independent oversight of design engineering, construction, and environmental performance of the VDP. The IR&EA is jointly appointed by the State Government and AquaSure; the consortium building the VDP, and which will subsequently operate it. In particular, the IR&EA audits the Project Activities to assess whether the environmental requirements of the Project are being met. The Department of Sustainability and Environment (DSE) Capital Projects Division administers the contract with AquaSure on behalf of the State.

This report provides a summary of the IR&EA's monthly environmental audit outcomes from January – March 2011.

2 THE VDP ENVIRONMENTAL MANAGEMENT FRAMEWORK

The overall environmental management framework for the VDP was initially defined in the Environmental Effects Statement (EES) for the reference project. This framework was further refined and included in the Project Deed as contractual requirements for both the Design and Construction (D&C) and Operations and Maintenance (O&M) phases of the Project. The main components of the Environmental Management Framework are:

- The VDP must be designed and constructed in accordance with a set of documented Environmental Performance Requirements, included in Appendix S3 of the Project Deed. In addition, Commonwealth and Victorian environmental legal requirements must be met.
- An Environmental Management System and Environmental Management Plans to support delivery of compliance with the Environmental Performance Requirements; and
- Additional requirements in the Project Deed to support environmental management.

The main elements of the Environmental Management Framework for the D&C stage are summarised below.

2.1 Environmental performance requirements

The Project Deed, in Appendix S3, sets out over 200 individual Environmental Performance Requirements in 39 environmental areas. They apply variously to the D&C and/or the O&M stages of the Project, and are required to be met as a condition of the Project Deed. Many of the Environmental Performance Requirements must be considered in the design of the desalination plant, to ensure that operational environmental performance requirements can be met.

Some of the Environmental Performance Requirements are relevant to construction activities. The D&C EMPs should effectively incorporate these requirements, and include mechanisms to ensure that they are met.

Specific project approvals, and general environmental requirements are necessary under both Commonwealth and Victorian legislation. Some of the key environmental legal requirements derive from the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* and Victorian legislation including the *Environment Effects Act 1978*, the *Environment Protection Act 1970*, the *Planning and Environment Act 1987*, the *Flora and Fauna Guarantee Act 1988* and the *Wildlife Act 1975*. A full list of applicable legislation is given in the EES (Technical Appendix 2).

AquaSure must have a process to manage the identification of the compliance requirements associated with all the Environmental Performance Requirements, including approvals. In addition, AquaSure must identify how they will comply with these requirements and track progress of compliance actions.

2.2 EMS and EMPs

The Project is being designed and constructed, and will be operated, under the guidance of a set of formal environmental management documents:

- AquaSure maintains an overarching project Environmental Management System (EMS), which is required to be independently certified to the Australian and International standard AS/NZS ISO 14001:2004[1]. The EMS guides all aspects of environmental management for the project, including on-the-ground management of environmental issues and risks, as well as supporting mechanisms such as compliance management, delivery of relevant training, communication, auditing, inspections and monitoring.
- Specific documented Environmental Management Plans (EMPs) for the Plant Site, the Utilities corridor (covering the construction of the transfer pipeline and the underground power supply), and the marine intake and outlet structures. These Area EMPs are consistent with AquaSure's EMS, and include explicit requirements defined in Appendix S3 of the Project Deed. They are managed by AquaSure as part of their obligations under the Project Deed, and maintained by the D&C contractor, Thiess Degrémont Joint Venture (TDJV).

2.3 Other project environmental requirements

The Project Deed defines a number of other environmental conditions. The key ones are included in Appendix S3 and include:

- The appointment by AquaSure of a suitably qualified Environmental Management Representative (EMR), with appropriate resources to manage the implementation of the EMPs and to monitor compliance with the Environmental Requirements.
- Requirements for management of environmental incidents, provision of environmental training, control by AquaSure of subcontractors, and reporting and auditing.

The Project Deed also includes requirements for revision and approval of the EMS and EMPs, and for communication on environmental matters between AquaSure, the State and the IR&EA.

[1] AS/NZS ISO 14001:2004. Environmental management systems. Requirements with guidance for use.

2.4 IR&EA environmental audits

The IR&EA is required under the Project Deed to conduct monthly audits of the Project Activities to determine whether they have been undertaken in accordance with the EMS, the EMP and Environmental Requirements.

The independent environmental audits are carried out on a rolling monthly basis. Audit and surveillance activities include field surveillance of construction activities, formal audits of the EMS and subordinate D&C and Area EMPs, and review of design documentation for compliance with design-based environmental performance requirements.

A risk-based approach is used to select the monthly activities and areas for surveillance and audit. AquaSure is required by the Project Deed to provide a Certificate of Environmental Compliance to the IR&EA and the State confirming that the Project Activities have been carried out in accordance with the EMP and the Environmental Requirements. These certificates are to be provided monthly on the first business day of each month.

The IR&EA has developed a Verification and Monitoring Plan under which all audit and surveillance activities are carried out.

Monthly Environmental Audit Reports are provided to AquaSure and the State, providing a summary of the audit activities, findings and conclusions.

As a condition of the EMP approval, quarterly reports are prepared for the State to provide to the Minster for Environment and Climate Change on performance against the environmental requirements of the Project Deed, based on the findings of the monthly environmental audits. This report provides a summary of the environmental audit activities and outcomes conducted from January – March 2011. In addition the Design Review and Certification process provides evidence that the Project design is in accordance with the Environmental Performance Requirements defined in the Project Deed.

3 CONDUCT OF ENVIRONMENTAL AUDITS

The overall conduct of the environmental audits is consistent with the conduct of audit activities given in ISO 19011:2002[2]. The required timing of audit activities, including conducting audits and reporting, is defined in the Project Deed. An overview of the audit process is provided below and is shown in Figure 1 at the end of this section.

The environmental audits assess whether environmental management arrangements, as defined by AquaSure and approved by the State, in the EMS and D&C and Area EMPs, are being implemented. The environmental audits also address whether environmental risks are being adequately managed, and whether the Project Environmental Requirements are being met.

3.1 Audit objective

The objective for the environmental audit is given in clause 13.9 of the Project Deed, which requires that "*the Independent Reviewer & Environmental Auditor … form an opinion as to whether or not the Environmental Management Plan and Environmental Requirements are being complied with, … [and] to assess performance in relation to:*

- *the operation of the Environmental Management System;*
- *the implementation of each component of the Environmental Management Plan; and*
- *each other Environmental Requirement."*

Environmental requirements are set out in Appendix S3 (Environmental Requirements) of the Project Deed, Environmental Approvals, and Ministers' requirements.

The environmental audits focus on:

- Construction-related Environmental Performance Requirements (including conditions of environmental approvals), which are the subject of a monthly rolling audit program designed to determine conformance with the EMS and D&C EMPs;
- Specific requirements of the EMS, D&C EMP, D&C Area EMPs, and subordinate documents which relate to the implementation of the overall EMS and EMPs; and
- Design-related Environmental Performance Requirements, conformance with which is assessed through audits of AquaSure/TDJV's internal processes for

[2] ISO 19011:2003. Guidelines for quality and/or environmental management systems auditing

integrating Performance Requirements into design requirements, and during the Design Review and Certification process.

3.2 Pre-audit activities

The audit activities for each month period are determined through the following activities:

1. ***Review of the Construction Program*** to identify the Project Activities occurring during the audit period.
2. ***Review of the AquaSure/TDJV Environmental Risk Registers*** to identify environmental risks relevant to the identified Project Activities, and the related identified controls (EMP Sub Plans or other requirements). The relevant elements of the controls form part of the audit criteria.
3. ***Review of the IR&EA field surveillance checklist and results of previous audits*** to identify any areas in which the planned environmental arrangements may not be met.
4. ***Review of EMS and EMP requirements.*** EMS and EMP requirements not directly related to control of identified environmental risks (e.g. training, communication, document and record management requirements) are reviewed to identify any key requirements which should form part of the audit.
5. ***Review of the relevant environmental approvals.*** The environmental approvals relevant to the identified Project Activities are reviewed to identify compliance requirements. The key compliance requirements are generally integrated into the Area EMPs, and are included as part of the audit criteria.
6. ***Review of AquaSure and TDJV records*** relating to***:*** internal audits; environmental monitoring; non-conformance, corrective and preventive actions; and incidents.
7. ***Confirmation of audit criteria and development of checklists.*** Audit criteria are developed from the audit areas identified in the tasks above and included in checklists which were used to guide audit interviews, records reviews and inspections.

3.3 Audit scope

A scope for each audit is defined, and generally includes:

- AquaSure EMS implementation, including the responsibilities of the Environmental Management Representative (EMR) as required in Appendix S3 of the Project Deed;
- Implementation of the requirements of the D&C EMP;
- Implementation of the D&C Area EMPs as related to high risk areas identified by the AquaSure/TDJV environmental risk identification and management processes.

3.4 Audit reference documents

Audit reference documents are defined, relevant to the project activities and audit scope. These are generally the relevant EMP, and particularly the relevant sub plan. Specific audit issues are identified from the reference documents, and included in a checklist, which are completed with audit observations and evidence each month and maintained as audit records.

3.5 Audit activities

Audit and surveillance activities include:

- Field surveillance of construction activities;
- Formal audits of the EMS and subordinate D&C and Area EMPs, both in the field to check on-ground compliance with environmental management arrangements, and office-based audits to assess the implementation of necessary environmental management procedures and processes; and
- Review of design documentation for compliance with design-based environmental performance requirements.

Activities and areas for surveillance and audit activities are chosen monthly on a risk basis.

3.6 Audit findings classification

Audit findings are classified according to the following definitions:

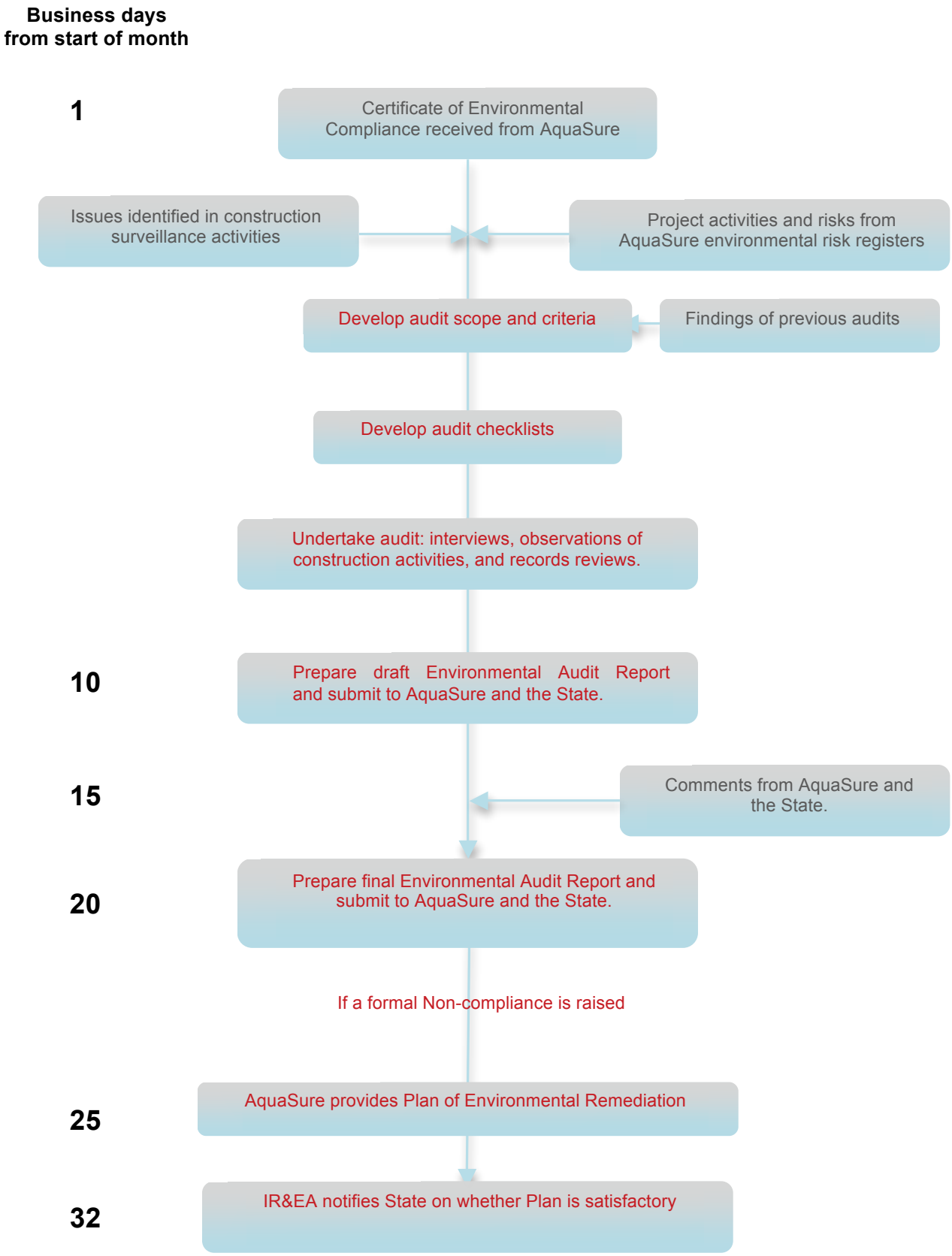
Non-compliance: The absence of, or the failure to implement and maintain, one or more requirements of the relevant EMP or subordinate documentation, or a situation, which would, on the basis of available objective evidence raise significant doubt as to the effectiveness of environmental management.

> ***Note:*** A non-compliance may be an individual non-compliance or a number of minor but related audit non-conformances, which when considered in total are judged to constitute a non-compliance.

Area for improvement: A deficiency in the implementation of the relevant EMP or subordinate documentation judged to be a risk to the environment, or to environmental management, without constituting an overall failure in the area concerned.

Observation: An audit finding which may relate to an incidental or isolated system discrepancy, which does not compromise the effectiveness of environmental management, or constitute an actual or potential environmental risk.

Figure 1. Overview of the environmental audit process



4 PROJECT ACTIVITIES AND ENVIRONMENTAL AUDITS

4.1 Project activities

Project activities during the reporting period were:

- **Plant site**: minor bulk earthworks, civil works, building works, electrical works and mechanical installation. The outlet tunnel was completed. Preparatory works for site revegetation (outside the construction footprint) commenced.
- **Utilities alignment**: final clearing and grading and Right of Way construction, pipe stringing and trenching, pipe and conduit laying, power cable installation and trench back-filling. Preliminary reinstatement works commenced in March.
- **Marine works**: Drilling and installation of the outlet works was finished in January and the JUB demobilised.

Views of these construction activities are shown in Figures 2, 3 and 4 below.

Figure 2. Installing the growing medium on the Green Roof, February 2011

Photo courtesy of TDJV

Figure 3. Boundary Drain crossing, February 2011.

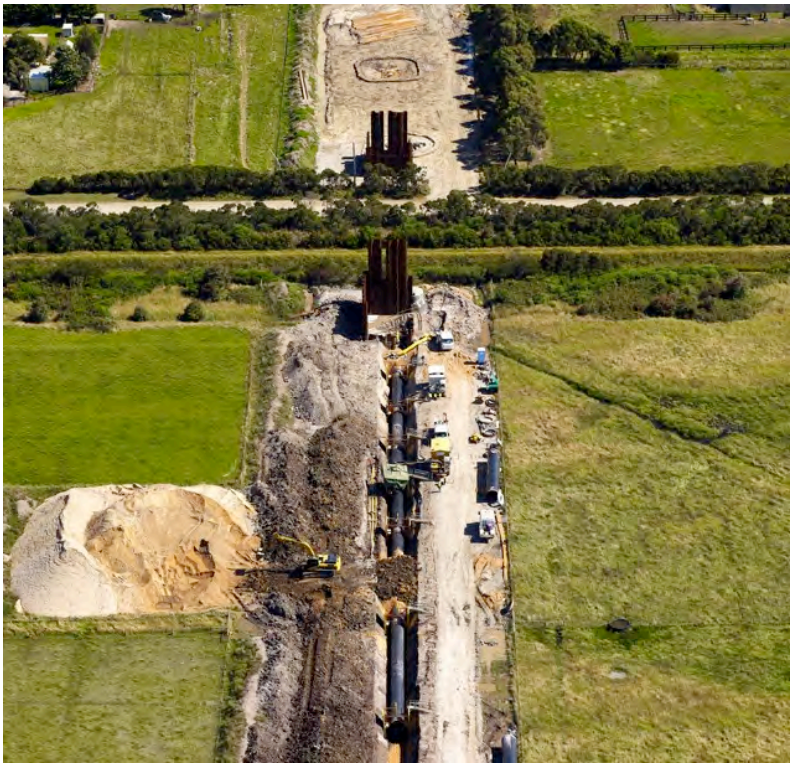


Photo courtesy of TDJV

Figure 4. Outlet riser delivery, January 2011

Photo courtesy of TDJV

4.2 Environmental audits

The IR&EA conducted the following audits during the reporting period:

Audit No	Date	Scope
64	17/1/2011	Office audit of implementation of the Environmental Management Representative's (EMR's) responsibilities and relevant requirements of the Project Deed.
65	10/1/2011	Office audit of documentation and records related to requirements of the D&C EMP.
66	13/1/2011	Field audit of implementation of key requirements and sub-plans of the D&C Plant and General Area EMP
67	12/1/2011	Field audit of implementation of key requirements and sub-plans of the D&C Utilities Area EMP
68	7/1/2011	Office audit of the key elements of the D&C Marine Area EMP
69	4/2/2011	Office audit of implementation of the Environmental Management System (EMS), and the Environmental Management Representative's (EMR's) responsibilities and relevant requirements of the Project Deed
70	7/4/2011	Office audit of documentation and records related to requirements of the D&C EMP
71	10/2/2011	Field audit of implementation of key requirements and sub-plans of the D&C Plant and General Area EMP
72	8/2/2011	Field audit of implementation of key requirements and sub-plans of the D&C Utilities Area EMP
73	9/2/2011	Office audit of the construction elements of the D&C Marine Area EMP
74	4/3/2011	Office audit of implementation of the Environmental Management System (EMS), and the Environmental Management Representative's (EMR's) responsibilities and relevant requirements of the Project Deed
75	2/3/2011	Office audit of documentation and records related to requirements of the D&C EMP
76	3/3/2011	Field audit of implementation of key requirements and sub-plans of the D&C Plant and General Area EMP
77	7/3/2011	Field audit of implementation of key requirements and sub-plans of the D&C Utilities Area EMP

5 AUDIT FINDINGS AND CONCLUSIONS

5.1 Audit findings

During the reporting period a total of 9 formal audit findings were raised, including six Areas for Improvement and three Observations. A list of the findings and the corrective and preventive actions to the end of March 2011 taken by AquaSure and TDJV to close these findings is given in Appendix 1. A summary of the numbers of audit findings is given in Table 1 below.

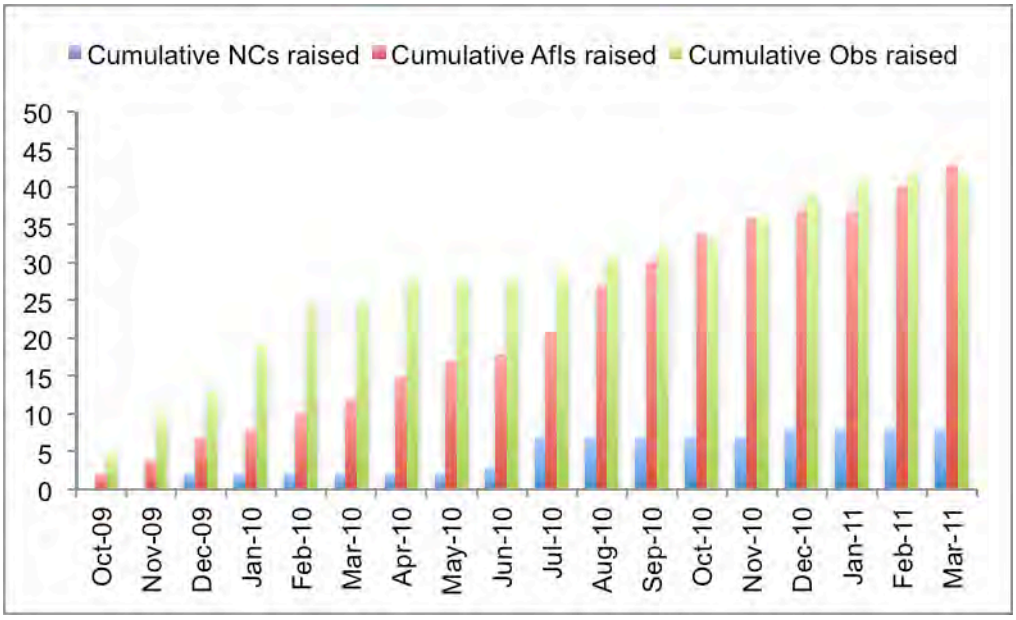
Table 1. Summary of environmental audit findings Q1 2011

Audit finding type	No. Open at Jan '11	No. Raised Jan – March '11	No. Closed Jan – March '11
Non-compliance	3	0	1
Area for Improvement	2	6	2
Observation	7	3	5
Totals	**12**	**9**	**8**

The number of findings raised during the reporting period is less than that for the previous period. One of the factors influencing the number of audit findings is the revised D&C EMP, which better reflects actual environmental management practice. In addition, on ground environmental management continues to effectively address environmental issues.

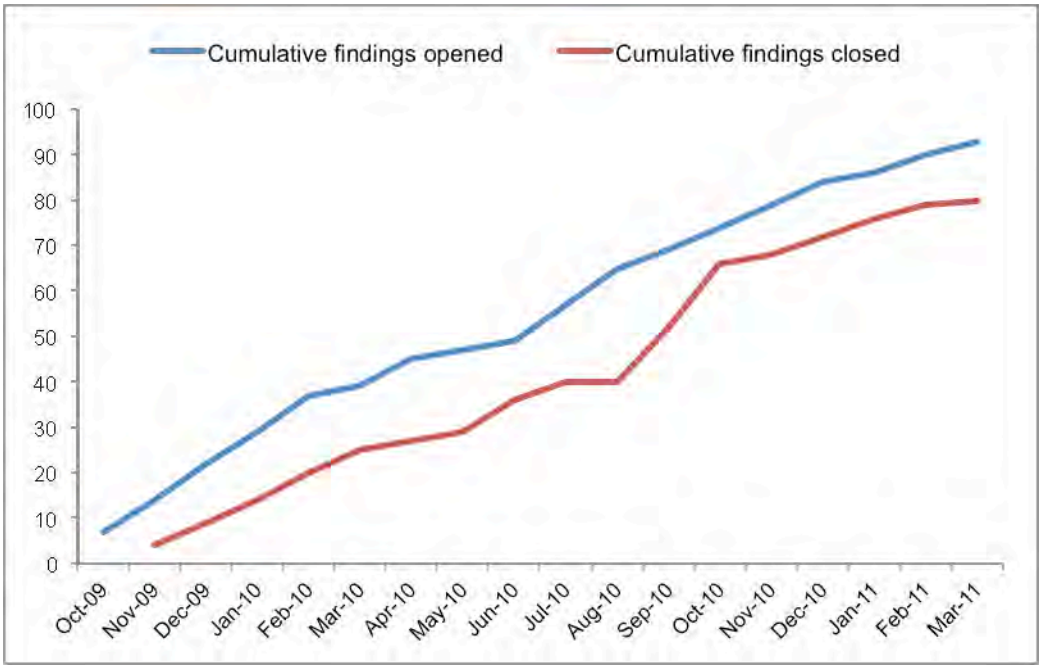
The cumulative number of each type of audit finding raised since project inception is given in Figure 5 below.

Figure 5. Cumulative audit findings by category.



The overall number of audit findings raised (and closed) since the project started is given in Figure 6 below.

Figure 6. Cumulative number of audit findings, Project inception to date.



At the plant site, water and sediment management continue to be important due to a number of heavy rain events, and was generally well implemented. The treatment of Acid Sulfate Soils (ASS) increased as the site dried out, and all treated ASS will be

reused on site. Preparation for site revegetation works commenced outside the construction footprint (see Figure 7and Figure 8).

Figure 7. Separating ASS into fractions for treatment and reuse, February 2011

Figure 8. Burning off in preparation for revegetation, February 2011

Photo courtesy of TDJV

Activities along the utilities alignment increasingly focused on the southern sections, and on waterway crossings. Careful management of construction near waterways is

important to ensure waterway values are maintained. Sediment control along the entire length of the alignment continued to be a challenge.

Figure 9 and Figure 10 below show aspects of waterway environmental management controls.

Figure 9. Water quality monitoring Station, Powlett River crossing, March 2011,

Figure 10. Environmental signage at a waterway crossing, March 2011.

Marine works were completed in January and the Jack-up barge demobilised in early February 2011. Post construction monitoring and pre-operations monitoring continued.

5.2 Audit conclusions

The conclusions in relation to the objectives for the Environmental Audits in the Project Deed are given below.

5.2.1 Operation of the Environmental Management System

The AquaSure Environmental Management System (EMS) is independently certified to the Australian and international standard AS/NZS ISO 14001:2004. It provides overall guidance for environmental management across the project.

The EMS continued to be implemented effectively during the reporting period. The AquaSure Environmental Management representative (EMR), who has major responsibility for implementing the EMS, actively manages relationships with key stakeholders, including TDJV, DSE and regulators. Formal mechanisms for auditing, reviewing and reporting on environmental management continued to be well managed.

5.2.2 Implementation of each component of the EMP

The D&C EMP and the Area EMPs were generally well implemented during the reporting period. No Non-compliances were raised, and the audit findings were mainly related to housekeeping matters. Chemicals and waste storage as well as documentation were the principal themes of the findings.

Marine works were completed during the reporting period. It is pleasing to note that the works were completed as anticipated without adverse environmental impacts.

Work has commenced on revising the D&C EMP to take into account construction verification activities, and to prepare the Commissioning Sub Plan.

5.2.3 Other Environmental requirements

Construction related Environmental Performance Requirements are integrated into the relevant sub plans of the Area EMPs. Accordingly, the audits of the EMPs provide assurance that the Performance Requirements are being met. In addition, construction requirements and methodologies are defined in Site Establishment Packages and Temporary Works Packages, which refer to the D&C EMP and the Performance Requirements. These packages are certified by the IR&EA.

The design related Performance Requirements are integrated into the relevant Design Package. The IR&EA certification of the Design Packages includes assurance that the related performance requirements have been adequately addressed.

During the reporting period there were no material findings which would suggest that the Performance Requirements had not been met. It is noted that two Non-compliances relating to resource efficiency remained open during the reporting period, and have been open for some time. Some progress was made on closing these Non-compliances

during the reporting period, and they were closed in the April audit. The implementation of the Resource Efficiency Sub Plans will continue to be a focus of IR&EA audits.

Appendix 1. Environmental audit findings Q1 2011

The following table summarises the audit findings which were open at the beginning of the reporting period, and those raised during the reporting period.

AUDIT NO.	DATE	TYPE.	FINDING NO.	FINDING	ACTION	STATUS
2	Oct 09	OBS	2/04	The roles and responsibilities of the Environmental Management Representative as defined in Appendix S3, Clause 2 of the PS&PR have been only partially implemented in the following areas: the role of the EMR in environmental communication channels is not clearly defined (subclause (vii)). While the EMR provided evidence of involvement in internal and external environmental communications, these responsibilities are not formally defined in the EMS. The EMS Manual (at section 4.4.2) references the Community Involvement Plan, which does not include defined communications responsibilities for the EMR.	December 2009: Update EMS s4.4.2 & s4.4.3, and the AquaSure CIP, to reflect what external communication input the EMR is involved with. January 2010: the identified action is still being implemented February 2010: the identified action is still being implemented March 2010: the identified action is still being implemented April 2010: the following draft documents are under preparation: • Draft protocol for communication with eternal agencies • Draft protocol for communication with stakeholders on environment issues and complaints • Draft revised CIP; including definition of EMR roles and responsibilities May 2010: The role of the EMR in environmental communication channels is to be defined in the revised EMS Manual and in the Community Involvement Plan. The mechanism has been prepared and approved internally and will be presented to the Environmental Agency Group. June 2010: The mechanism was presented to the EAG, which provided no comments. Finding to remain open until the EMS and revised CIP are formally approved by DSE July 2010: EMR is involved in communication channels through the Community Involvement Manager. The CIP has not yet been formally amended to include a formal process. Finding to remain open until the EMS and revised CIP are formally approved by DSE. August 2010: CIP revision not yet completed.	Remains open

AUDIT NO.	DATE	TYPE.	FINDING NO.	FINDING	ACTION	STATUS
					September 2010: A revised CIP had been submitted to DSE for formal approval as a revised Project Plan. This finding to remain open until the revised CIP is formally approved. November 2010: the CIP has been revised in response to comments from DSE, and is awaiting a revised TDJV CIP before being finalised and resubmitted to DSE for approval. December 2010: Action is on-going January 2011: CIP not yet approved. February 2011: DSE has some minor comments still outstanding. March 2011: The revised draft of the CIP adequately addresses the role of the EMR. The CIP is to be revised for other purposes, and to be submitted for state consent. This finding to remain open until the revised CIP has received consent.	
	36	8-Jul-2010	NC	36/03	**D&C Plant and General Area EMP, Resource Efficiency sub-plan**. The Resource Efficiency sub-plan is not being adequately implemented. In particular:· • While waste, water and energy data are now being collected in some form, these data are not being analysed.· • There is no systematic identification of waste and resource efficiency opportunities.· • Procurement procedures and practises including environmental purchasing criteria and evaluation could not be demonstrated.	August 2010: a formal Plan for Environmental Remediation was submitted on 3 August by TDJV and included the following actions: Ongoing - 'Resource efficiency is under review across the project. Waste, water and energy usage is being collected and reviewed by the environmental team to look for improvement opportunities. Procurement safety and environmental checklist (which is provided to all subcontractors and suppliers as part of the tender process) will be reviewed by a member of the environmental team to ensure environmental evaluation in procurement is completed and best practice applied. Procedure is being developed to document this process. September 2010: actions are still in progress. Resource Efficiency data are being collected, and a project wide Resource Efficiency Plan is to be prepared.Procurement practices are handled in Melbourne.A Project Wide Resource Efficiency report will be prepared for period from the commencement of works to the end of the 09/10 financial year. This report will include reporting of:- water usage - NGER [National Greenhouse and Energy Reporting] reporting, and - Waste	Remains open

AUDIT NO.	DATE	TYPE.	FINDING NO.	FINDING	ACTION	STATUS
					reporting.Based on the findings of the reporting, opportunities will be identified for improvements in resource efficiency.The report will require a request for NGER reporting data from major subcontractors, as such the report will be for the end of September 2010, with the report to be provided by 18 October 2010. The data will then be reviewed quarterly and reported annually based on the financial year to align with NGER reporting requirements.' October 2010: Actions are on-going. November 2010: Actions are on-going December 2010: The Resource Efficiency Plan is being managed through TDJV for the whole of the Project. January 2011: The Resource Efficiency Plan is being managed through TDJV for the whole of the Project. February 2011: Consultant has been retained to prepare a waste management plan. Draft available, with some data from Marine works still to come. Draft for comment scheduled to be available by end February. March 2011: A draft construction waste management report has been developed. The draft report has an initial assessment of waste generation and disposal (including statements of reuse and recycling rates), and water usage. The report identifies data gaps, and identifies actions to be taken to address these gaps. The report and included data and recycling / reuse rates will be subject to The Non-compliance will be closed when the final version of the waste management report is issued and a Part D Notice (Rectification of Environmental Non-Compliance Certification) is received.	

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37	6-Jul-2010	NC	37/04	**D&C Utilities Area EMP Resource Efficiency sub-plan.** The Resource Efficiency sub-plan is not being adequately implemented. In particular:· • While waste, water and energy data are now being collected in some form, these data are not being collated or analysed.· • There is no systematic identification of waste and resource efficiency opportunities, and no documented Waste and resource Management Strategy as identified in the sub-plan.· • Procurement procedures and practises including environmental purchasing criteria and evaluation could not be demonstrated.	August 2010: a formal Plan for Environmental Remediation was submitted on 3 August by TDJV and included the following actions: Ongoing - 'Resource efficiency is under review across the project. Waste, water and energy usage is being collected and reviewed by the environmental team to look for improvement opportunities. Procurement safety and environmental checklist (which is provided to all subcontractors and suppliers as part of the tender process) will be reviewed by a member of the environmental team to ensure environmental evaluation in procurement is completed and best practice applied. Procedure is being developed to document this process. A Project Wide Resource Efficiency report will be prepared for period from the commencement of works to the end of the 09/10 financial year. This report will include reporting of: - Water usage - NGER [National Greenhouse and Energy Reporting] reporting, and - Waste reporting. Based on the findings of the reporting, opportunities will be identified for improvements in resource efficiency.The report will require a request for NGER reporting data from major sub-contractors, as such the report will be for the end of September 2010, with the report to be provided by 18 October 2010. The data will then be reviewed quarterly and reported annually based on the financial year to align with NGER reporting requirements.' September 2010: actions are still in progress. Resource Efficiency data are being collected and a project wide Resource Efficiency Plan is to be prepared. October 2010: Actions are on-going November 2010: Actions are on-going December 2010: The Resource Efficiency Plan is being managed through TDJV for the whole of the Project.	Remains open

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					January 2011: The Resource Efficiency Plan is being managed through TDJV for the whole of the Project. February 2011: Consultant has been retained to prepare a waste management plan. Draft available, with some data from Marine works still to come. Draft for comment scheduled to be available by end February. March 2011: A draft construction waste management report has been developed. The draft report has an initial assessment of waste generation and disposal (including statements of reuse and recycling rates), and water usage. The report identifies data gaps, and identifies actions to be taken to address these gaps. The report and included data and recycling / reuse rates will be subject to audit in the near future. The Non-compliance will be closed when the final version of the waste management report is issued and a Part D Notice (Rectification of Environmental Non-Compliance Certification) is received.	
	49	6-Oct-2010	Obs	49/01	**AquaSure EMS Manual, 9.5.1 AquaSure Audits**. The AquaSure EMR is the internal auditor, but he is not registered in accordance with Att E.4	November 2010: No action December 2010: No further action. Revision to EMS being considered. January 2011: Action is on going. A management review to be arranged to consider EMS revisions. February 2011: Management Review meeting scheduled for 16 February. March 2011: Management review meeting held on 21 February. Minutes provided noting approval of revision. A revised EMS is to be submitted for State consent.	Remains open
	50	5-Oct-2010	AfI	50/01	**D&C EMP, 8.2.3 Training**. The Training matrix (Attachment H) identifies Senior management environmental due diligence training and Green Star familiarisation for senior Project and environmental staff, which is not considered by TDJV to be relevant, and accordingly is not conducted.	TDJV response:Section 8.2.3 will be revised to reflect the current senior Project and environmental staff training requirements. November 2010: Action is on going. Revision to D&C EMP requires DSE approval December 2010: sighted changes register. January 2011: Ministerial consent is required for an amendment to the EMP. February 2011: Revisions to the D&C EMP are to be	Remains open

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					submitted to DSE for consent. March 2011: No further action	
54	4-Nov-2010	Obs	54/01	**AquaSure EMS Manual. 7.5 Legal and other requirements**. Standards Australia publications are not regularly checked or reviewed unless included ion the notification by LawLex. It is noted this may not be relevant for environmental standards.	December 2010: Requirement to review Standards Australia publications to be removed from EMS. Still to be completed January 2011: Action is on-going. A management review is to approve revision. February 2011: Management Review meeting scheduled for 16 February. March 2011: Management review meeting held on 21 February. Minutes provided noting approval of revision. A revised EMS is to be submitted for State consent.	Remains open
54	4-Nov-2010	Obs	54/02	**AquaSure EMS Manual**. **9.2 Non-conformity, corrective and preventative actions.** Non-conformities are not managed in accordance with the AquaSure procedure "Non Compliance, Corrective and Preventive Action" AQS-SYS-PR003. The EMR has developed a separate audit findings register.	December 2010: AQS NC procedure may be revised to accommodate EMRs process. In progress January 2011: Action is on-going. Management review meeting to endorse change. February 2011: Management Review meeting scheduled for 16 February. March 2011: Management review meeting held on 21 February. Minutes provided noting approval of revision. A revised EMS is to be submitted for State consent.	Remains open
61	8/12/10	Obs	61/01	**Plant & General Area EMP, Hazardous Material Sub Plan**. Two spill kits at the TBM compound were empty. A small stain, presumably diesel, was observed on the ground near a refuelling trailer, parked next to the bulk fuel store. It appeared the refuelling trailer had been refilled outside the bunded area.	January 2011: The spill kit was stocked on the day of the last audit. Sighted photos. **Finding closed**	Finding closed Audit No 66, January 2011.
61	8/12/10	NC	61/02	**D&C EMP, Plant and General Area, Waterways and Wetlands Sub Plan**. The defined macroinvertebrate monitoring of the Powlett River has not been conducted.	TDJV Response: Macro Invertebrate monitoring was completed in the wetlands and onsite water bodies but the Powlett River was not conducted. Ecology Partners have now been engaged to complete this monitoring and will begin work shortly. Macro Invertebrate monitoring has now been added to HSE System Eyes Activity Scheduler so that it is not missed into the future Verification: January 2011: Monitoring now done. Email from	Finding closed Audit No 71 February 2011

AUDIT NO.	DATE	TYPE.	FINDING NO.	FINDING	ACTION	STATUS
					Ecology Partners sighted. Report not yet available. Finding to be closed when the Part D notice is received from AquaSure. February 2011: Part D Notice certifying implementation of the rectification plan was received on 2 February 2011. **Finding closed**	
	62	7/12/10	AfI	62/01	**D&C EMP, Utilities Area, Acid Sulfate Soils Sub Plan**. Works in the GM Proving Ground area are largely complete, and were undertaken within the requirements of Attachments B3 and B4 of the ASS Sub Plan. These Attachments were provided to the EPA before works commenced, and they had no comments on the Attachments. The Attachments were not provided to the State or to the IR&EA as required under the D&C EMP. The approval and authorisation of the Attachment within TDJV and AquaSure is not clear.	January 2011: ASS MPs have now been prepared and provided to DSE and the IREA. The Powlett River ASS MP is still to be prepared. Mainline pipe lay is not complete. **Finding closed**	Finding closed Audit No 67, January 2011
	62	7/12/10	OBS	62/02	**D&C EMP, Utilities Area, Air Quality Sub Plan**. The air quality monitors were calibrated in preparation for the summer. Three of the meters were required to be repaired in addition to being calibrated, and were not available at the time of the audit. As a consequence, the six meters defined in the Dust Monitoring Protocol of the Sub Plan are not available, and it was not clear if these monitors would be available when required. Accordingly adequate dust monitoring could not be guaranteed. It is noted that hand held air quality meters are available.	January 2011: The meters are available and were deployed before the shut down. **Finding closed**	Finding closed Audit No 67, January 2011
	62	7/12/10	Obs	62/03	**D&C EMP Utilities Area, Flora and Fauna Sub Plan**. At the Bass River pipe jack site the biosecurity sign and chemicals were available, but not well located with respect to the access gate to the river. A biosecurity register was not available for the area. IR&EA surveillance personnel advised that biosecurity boot washes were not always conducted when the riparian zone was visited.	January 2011: The sign has been moved and there are now signs on both gates. Chemical Tubs and registers have been placed closer to the entry to the riparian zone. Pre start will include a reminder of biosecurity requirements. **Finding closed**.	Finding closed Audit No 67, January 2011

AUDIT NO.	DATE	TYPE.	FINDING NO.	FINDING	ACTION	STATUS
66	10/01/11	O	66/01	**D&C EMP Plant and General Area EMP, Site Inspections**. Plant site environmental personnel are undertaking inspections of Williamsons Beach while the JUB is in place and marine works are being conducted. This is a commendable initiative and good environmental practice, providing assurance that marine works are not impacting on the beach. The beach inspections were not conducted during the plant site shut down period from 17 December 2010 and the first inspection of the new year was conducted on 7 January 2011. Marine drilling works were underway over this period.	TDJV response: While not formally part of the D&C EMP this activity was conducted up until 17 December 2010 and resumed immediately following the shutdown period on 7 December 2011. Between this period Hooded Plover Monitoring continued weekly along the Williamson's beach area as per the EMP which included visual inspections of the beach and surrounding habitat adjacent to the Marine works zone. No issues were identified. Verification: February 2011: Noted and accepted. **Finding closed**	Finding closed Audit No 71, Februaruy 2011
66	10/01/11	O	66/02	**D&C EMP, Plant and General Area, Hazardous Materials sub plan**. A refuelling truck was being filled outside the provided bunded area.	TDJV response: This issue was addressed immediately with the refuelling operator. The environmental manager advised the operator of the correct refuelling procedure and the equipment was moved to the correct refuelling location within the bunded area and refuelling recommenced. Verification: February 2011: Noted and accepted. **Finding closed**	Finding closed Audit No 71, February 2011
70	7/02/11	O	70/01	**D&C EMP 7.5.3. Licence, permit and approval requirements**. Works on Waterways permits had been reissued to TDJV in December. These were not communicated to the AquaSure EMR.	TDJV response: The Works on Waterways permits reissued to TDJV in December had been updated in the HSE database and were therefore available to the EMR as part of the TDJV Monthly Report. To ensure the EMR is notified of any future new or reissued licenses, permits or approvals, the TDJV Environmental Coordinator will provide a monthly update of the HSE register to the EMR. This task has been added to the HSE activity scheduler. March 2011: Noted and accepted. **Finding closed**	Finding closed Audit No 75, March 2011.

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71	10/02/11	AfI	71/01	**D&C EMP, Plant and General Area, Water quality and erosion management sub plan**. Water was discharged from the sediment pond on 2 February. Water quality was measured prior to discharge in the pond, and upstream and downstream of the discharge site in the Powlett River. Turbidity in the sediment pond was higher than that measured in the River, and well within discharge limits. The current approved procedure for management of discharges from the sediment pond requires daily field measurements during discharges. During the 9 hours of the discharge (approximately 1400 hrs to 2300 hrs) no *in situ* measurements were taken.	TDJV response: The water discharged from the sedimentation ponds was done so in accordance with the site procedure and well within the discharge requirements. The discharge began at 1400 hours and which lab samples and in situ samples were taken as per the requirements. The discharge stopped at 2300 hours on the same day. During this time the real time telemetry logging system in the sedimentation ponds and upstream and downstream in the Powlett River were used to monitor discharge in-situ as required. This data is recorded and available on site, during the 9 hours of discharge event SMS notification is used to monitor discharge (including pond level) and communicate with night shift personnel as required. March 2011: Noted and accepted. **Finding closed**	Finding Closed Audit No 76, March 2011.
71	19/02/11	AfI	71/02	**D&C EMP Plant and General Area. Acid Sulfate Soils Sub Plan**. Management and treatment of Acid Sulfate Soil at the plant site is not consistent with the control measures documented in the sub plan. Independent technical experts have recently formally endorsed these variations to ASS management and treatment. TDJV advise that the EPA Appointed Auditor, engaged to audit ASS management under the conditions of the Pollution Abatement Notice, is reviewing the revised control measures. It is further advised that the revised sub plan is to be submitted to the State and the IR&EA for consent as required in the Project Deed.	TDJV response: The Acid Sulfate soils sub-plan has been amended to reflect on site management practices as further understanding of the site specific requirements develops. These amendments to ASS management and treatment were then sent to the projects independent technical experts Golder and Associates for review as per the attached documentation (107631033-022-L-Rev1). TDJV have adopted all of Golder & Associates recommendations to the proposed changes as outlined in the review document. This has been forward to the EPA appointed auditor and will form part of the 53V audit. The amended sub-plan (as per Golder's review) will be sent to the minister for approval with the next round of documentation. As such the sub-plan documentation will not match the appropriate on site management practices until the revised sub-plan has ministerial sign off. The implementation of each control measure is recorded in the monthly control measures compliance checklist and provided to the EMR as supporting evidence of compliance. In response to the particular control	Remains open

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					measures listed in the NCR, the following evidence is provided (as extracts from the January 2011 Checklist): TDJV will submit the revised D&C Plant and General Area EMP Attachment I11 – Acid Sulfate Soils Sub-Plan to the State for consent. March 2011: Comments have been received by TDJV from DSE and have been incorporated into the revised sub plan	
	72	8/02/11	AfI	72/01	**D&C EMP, Utilities Area, Acid Sulfate Soils Sub Plan.** Excavation on the utilities alignment near the Powlett River has commenced without a formally approved and authorised site specific Attachment to the ASS Management Plan.	TDJV response: Works in the area of the Powlett River are being completed in accordance with the control measures and contingency measures outlined in the D&C Utilities EMP - AttI12 Acid Sulfate Soil Subplan. Following finalisation of the Acid Sulfate Soil drilling in this area, Attachment B1 to the D&C Utilities EMP - AttI12 Acid Sulfate Soil Subplan was completed and submitted to DSE, IREA and EPA for review and comment. March 2011: Submitted as defined and comments received and responded to. Submitted to DSE for comment.	Remains open
	76	3/03/11	AfI	76/01	D**&C EMP, PGA Hazardous Chemicals sub plan**. Some hazardous chemicals stored on an unpaved area near the box cut were observed.		Remains open
	77	7/03/11	AfI	77/01	**D&C EMP, Plant and General Area, Resource Efficiency sub plan**. Inert construction waste was observed at a number of areas around the site to be stored on the ground, not in containers as required by the sub plan. Some wastes were clearly segregated, but other wastes were unsorted. IR&EA surveillance personnel have previously noted this issue.		Remains open
	77	7/03/11	AfI	77/02	**D&C EMP, Utilities Water Quality and Erosion Management sub plan**. Sediment fencing on both sides of the Powlett River requires repair to ensure that turbid water is not discharged to the river.		Remains open