




INSPECTION AND MAINTENANCE PLAN

RAW WATER SUPPLY OEMP – ATTACHMENT G

JUNE 2018



Revision History

Version	Revision Date	Details	Authorised	
			Name/Position	Signature
1.0	09/05/16	Draft for review	M Haege/Geolyse	
2.0	09/05/16	Issue for implementation	M Haege/Geolyse	
3.0	15/06/18	Updated to address actions identified in the Internal Compliance Audit	M Haege/Geolyse	

ABBREVIATIONS

AEMP	Aquatic Environmental Monitoring Program
AHD	Australian height datum
AMS	Adaptive management strategy
ANZECC	Australian and New Zealand Environment and Conservation Council
ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand
BSCSHS	Blackmans Swamp Creek stormwater harvesting scheme
CCS	Community communication strategy
CTF	Cease to flow
CoA	Condition of approval
DST	Decision Support Tool
DoI	Department of Industry
EA	Environmental Assessment
EP&A Act	NSW Environmental Planning and Assessment Act 1979
GL	Gigalitre (1,000 megalitres)
GMP	Groundwater monitoring program
ha	Hectares
HMP	Hydrology monitoring program
IMP	Inspection and maintenance plan
kL	Kilolitre (1,000 litres)
km	Kilometre (1,000 metres)
kWhr	Kilowatt hour
L	Litre (1,000 millilitres)
LGA	Local Government Area
L/s	Litres per second
m ³	Cubic metre (1,000 litres)
m ³ /hr	Cubic metres per hour
m ³ /s	Cubic metres per second
mg/L	Milligrams per litre
mL	Millilitre
ML	Megalitre (1 million litres or 1,000 kilolitres)
ML/day	Megalitres per day
m	Metre
mm	Millimetre
MOP	Macquarie River to Orange pipeline
OCC	Orange City Council
OEMP	Operation Environmental Management Plan
PA	Project approval


PCSHS	Ploughmans Creek stormwater harvesting scheme
ScWMP	Scour water management plan
SEP	Stakeholder engagement plan
STP	Sewage treatment plant
µg/L	Micrograms per litre
µS/cm	Micro Siemens per centimetre
WAL	Water access licence
WFP	Water filtration plant
WSP	Water sharing plan

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FORMS

Form IMP-01

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Background

1.1 INTRODUCTION

This Inspection and Maintenance Plan (IMP) forms part of the Orange *Raw Water Supply Operational Environmental Monitoring Plan* (OEMP).

It has been developed to provide an overview of routine inspection and maintenance regimes for components of the raw water system.

1.2 SCOPE

The IMP covers:

- The Blackmans Swamp Creek stormwater harvesting scheme (BSCSHS);
- The Ploughmans Creek stormwater harvesting scheme (PCSHS);
- Water supply bores; and
- The Macquarie River to Orange pipeline (MOP).

Inspection and maintenance of OCC's dams is managed under a dam safety monitoring program.

1.3 REQUIREMENT

Specific approval requirements are provided below.


Project Approval for the Macquarie River to Orange pipeline

There are no specific Project Approval conditions relating to inspection and maintenance.

The management of scour water that may be generated during maintenance activities is outlined in the Scour Water Management Plan (**Attachment F**) and addresses CoA C5.


Environmental Assessment

The outline operational environmental management plan included in the Macquarie River to Orange pipeline environmental assessment included the requirement to manage flora and fauna, property access and traffic. These aspects are included in this IMP.

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1.4 STARTING PREMISE

The starting premise is that all construction related activities have been completed and relevant property restoration agreements have been accepted by land owners on which water supply infrastructure is located.

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Inspection and Maintenance Regime

2.1 OPERATING YEAR

The operating year is defined as 1 July to 30 June.

This is to be consistent with the water year as used by the NSW Department of Industry – Water (DoI Water) for reporting under the *Water Management Act 2000*.

All reporting will be consistent with the operating year and will be reported for the year ending 30 June.

2.2 BIANNUAL INSPECTIONS

When: Required 2 times per water year: Conducted in August and February

Actions: 1 Follow procedure outlined in Section 4.1 if access to private land is required.

- 2 The **Water and Sewer Engineer** shall schedule biannual inspection of the:
- MOP
 - BSCSHS
 - PCSHS; and
 - Bores

The scope of the biannual inspection is outlined in **Table 2.1**.

The **Technician** shall undertake the biannual inspections.

Who: The **Water and Sewer Engineer** shall be responsible for:

- Ensuring the biannual inspections are undertaken.
- Approving records using **Form IMP-02**.

The **Technician** shall be responsible for:

- Undertaking biannual inspections.
- Maintaining records using **Form IMP-01**.

Records: Records will be maintained using **Form IMP-01**.


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Table 2.1 – Routine inspection and maintenance summary

Type	Coverage	Scope	Records
Biannual	MOP BSCSHS PCSHS Bores Third Crossing	<p>MOP:</p> <ul style="list-style-type: none"> • Drive-by inspection of pipeline route observing: <ul style="list-style-type: none"> – Weeds – Vegetation coverage – Any suckers within 3 m either side of pipeline – Any areas of erosion – Any areas of subsidence – Fencing • Inspect screens at PS1 intake (if river level low enough) • Check data communications <p>BSCSHS and PCSHS:</p> <ul style="list-style-type: none"> • Weirs are free from obstructions • Any areas of erosion around weirs and harvesting ponds/wetlands • Any areas of subsidence around weirs and harvesting ponds/wetlands • Security at pump stations • Fencing (where required) • Data communications <p>Bores:</p> <ul style="list-style-type: none"> • Check bore heads and pumps • Check meters • Security and illegal access • Data communications <p>Third Crossing</p> <ul style="list-style-type: none"> • Weir is free from obstructions 	Form IMP-01

General

3.1 SCOUR WATER

Scour water shall be managed in accordance with the **Attachment F: Scour Water Management Plan**.

3.2 TRAFFIC

All vehicle access shall be via public roads and/or existing formed access tracks.

All OCC staff shall drive to the posted speed limit and/or prevailing conditions.

Lower speeds shall be adopted in dry periods to minimise dust generation.

3.3 KEY STREAM GAUGING STATIONS

Key stream gauging stations shall be maintained under a contract with DoI Water in accordance with the **Attachment E: Hydrology Monitoring Program**.

3.4 TRAPPED FAUNA

Fauna may become trapped in scour pits, air valve pits or pump wells. Care shall be exercised when opening access pit covers.


WIRES (1300 094 737) shall be contacted in the event that trapped fauna is located during routine inspection and maintenance activities. The trapped fauna shall be monitored until WIRES can safely remove the animal away from the maintenance area.

3.5 NO FISHING

There shall be no fishing from any of the rivers, stream or dams that form part of the Orange raw water supply system during inspection and maintenance activities.

3.6 WEED CONTROL

OCC's weed control procedures shall be followed if access is required across private land.

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Notification

4.1 NOTIFICATION OF LAND OWNERS


When: Required if inspection or maintenance activities are required on private land.

- Actions:**
- 1** If scheduled maintenance:
 - Identify affected land owner(s)
 - Advise each land owner at least two (2) days prior to undertaking the work using one, or all, of the following methods:
 - In writing
 - Phone call
 - Door knocking
 - 2** If unplanned/emergency work:
 - Identify affected land owner(s)
 - Contact the land owner by telephone as soon as practicable once aware of the need to scour the pipeline; and/or
 - Contact the land owner by door knocking on the day of the unplanned/emergency work.

Who: The **Water and Sewer Engineer** shall be responsible for:

- Making contact with land owners in accordance with this procedure.
- Maintaining records using **Form IMP-01**.

Records: A record of land owner contact will be maintained using **Form IMP-01**.

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4.2 IMP REVIEW

4.2.1 REVISION TO STRATEGIES, PLANS AND PROGRAMS

CoA C6 requires that OCC shall review, and if necessary revise, strategies, plans and programs included in the OEMP to the satisfaction of the Director-General within 3 months of:

- a) the Annual Review (**Section 4.4 – OEMP Reporting**);
- b) any Incident Report (**Section 3.2.18 – Environmental Incident Management**);
- c) an Audit Report (**Section 5.3 – Environmental Auditing and Compliance**); or
- d) any modification to the conditions of the Project Approval,

This is to ensure that plans and programs are updated on a regular basis, and incorporate any recommended measures to improve environmental performance.

4.2.2 DOCUMENT CONTROL

The following will be classed as ‘major’ revisions:

- Changes to processes;
- Changes to monitoring programs, either timing or parameters monitored;
- Changes made in response to an incident; and/or
- Changes requested by a relevant Government agency.


Major revisions will be identified by the whole number in the version number (i.e. 1.0, 2.0, 3.0....) and will be reviewed, approved and re-circulated as necessary.

The following will be classed as ‘minor’ revisions:

- Minor typing and grammar corrections;
- Changes to position titles; and
- Updates to recording forms to suit changes in operations.

Minor revisions will be identified by the decimal point in the version number (i.e. 1.1, 2.2, 3.3....) and will not require review and approval prior to re-circulation.

Major and minor revisions will be listed in the Revision History at the front of this document.

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Forms

Form IMP-01: Biannual Inspection Record

WATER YEAR: 1 July _____ to 30 June _____

DATE: _____

If private land access required: Owner: _____

Owner Contacted:	Letter <input type="checkbox"/>	Date: _____	Initials: _____
	Phone <input type="checkbox"/>	Date: _____	Initials: _____
	Door Knock <input type="checkbox"/>	Date: _____	Initials: _____

MOP

1. Pipelines corridor clear of weeds
2. Vegetation coverage adequate (>70% or consistent with adjacent land)
3. Pipeline alignment clear of suckers within 3m either side of pipe
4. Any areas of erosion along the pipeline alignment
5. Any areas of subsidence along the pipeline alignment
6. Pipeline corridor fencing ok
7. Any signs of unwanted activity in pipeline easement
8. River intake screens in place
9. River intake screens free of debris
10. Data communications working

Yes	No

BSCSHS and PCSHS

11. Weirs free from obstructions
12. Any areas of erosion around weirs and harvesting ponds
13. Any areas of subsidence around weirs and harvesting ponds
14. Pump station buildings secure
15. Any signs of unwanted activity at pump stations
16. All relevant security fencing in place and secure
17. Data communications working

Bores

18. Bore head and pumps operational
19. Bore flow meters operational
20. Any signs of unwanted activity at bores and pump stations
21. All relevant security fencing in place and secure
22. Data communications working

Third Crossing

23. Weirs free from obstructions

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