Melbourne Water

Environmental Compliance

Six Monthly Report

Quarters Three and Four 2009/2010
(January - June)

Incidents, Initiatives and Issues

Incidents

On 25 February 2010 primary sedimentation tanks at ETP overflowed spilling approximately two ML of partially treated sewage into the surrounding plant (including the main administration building, maintenance building and external areas). Approximately 200 KL entered the road drainage system discharging into Thompsons Rd earthen roadside drain.

The spill was caused by the failure of a temporary air compressor supplying air to a level control system in the primary sedimentation tanks. The compressor was installed as part of the Aeration Tank Augmentation Project.

The partially treated sewage in the drain was educted and returned to the Plant and the roadway drain was triple flushed with fresh water. This water was also educted and returned to the Plant and the other Plant areas affected were cleaned up. The spill was contained to a short section of earthen drain in front of the Plant and local waterways were not affected.

The incident debrief resulted in a number of actions including improving the "management of change" around capital works, implementing an electronic permit to work system, improving the management of alarms and counselling staff on diligent alarm management.

EPAV is investigating this incident but has not yet indicated what regulatory action they will take.

Initiatives and Issues

Corporate Licence

Melbourne Water and EPAV are working together to develop a Corporate Licence. These have been established by EPAV to make administering licences simpler, especially for those with many licences. While Melbourne Water has only two discharge licences, the nature and extent of our relationship with EPAV means that a Corporate Licence will have benefits.

Corporate Licences have two parts, the first covers general sustainability agreements on how the two organisations work together and the second contains amalgamated discharge requirements that replace the existing licences. The second part also incorporates the licence reforms that have been underway since 2009 (eg including having common parameter descriptions and limits).

Melbourne Water has established an internal working group to contribute to this process. An internal draft has been developed for circulation internally in both organisations and it is expected that a Corporate Licence will be finalised by the end of 2010.

Work underway by EPAV to establish a Water Industry Strategy through VicWater will be incorporated into the Corporate Licence.

Launch of CAPIM

Melbourne Water is participating in the Centre for Aquatic Pollution Identification and Management (CAPIM). The Centre, formally launched by the Environment Minister in June, is a research consortium of University of Melbourne, Melbourne Water, DPI, RMIT, and EPAV. CAPIM will contribute to understanding pollution impacts on aquatic environments.

Vin Pettigrove from Strategic Planning is CAPIM's Chief Executive Officer. The Centre will support the development of new tools and approaches for stream, wetland and estuarine systems, with the objective of improving the management of ecotoxicological issues in waterways.

100 tonne Nitrogen Reduction Target Reached

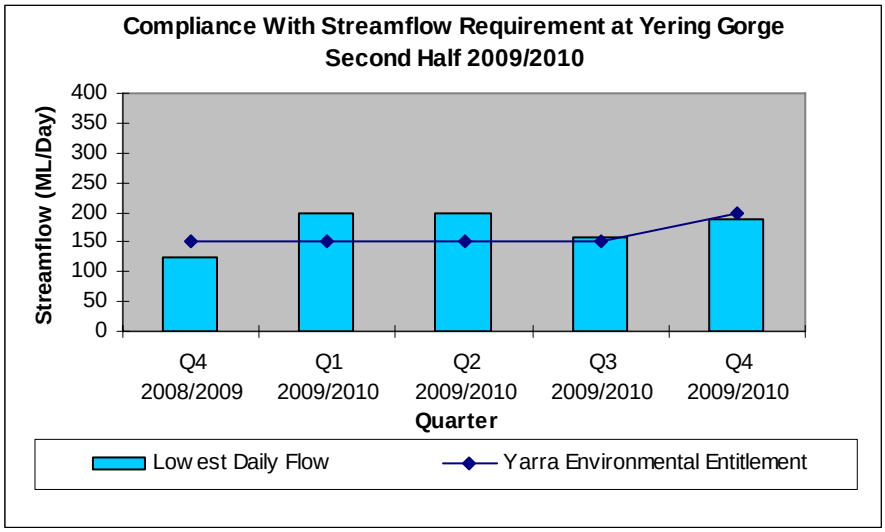
Melbourne Water has achieved its ten year target of reducing the load of Nitrogen going to Port Phillip Bay in storm water by 100 tonnes by 2010. The target was achieved in May this year with the practical completion of the Dandenong Wetland making a total of 109 tonnes removed by the program. Achieving the target has enabled the growth of the Melbourne wetland industry, with new companies growing wetland plants and the development of new technologies and science around wetland construction.

Stream Water Quality Data Stored on Hydstra

Data from the stream water quality network are now being stored on the Hydstra database. Summary statistical reports on water quality indicators can now be prepared much more quickly compared with the time needed using the previous method. Hydstra is used by Melbourne Water's hydrographic people and flow data can now be linked with water quality data.

Statutory Compliance

State Environment Protection Policy Requirement for Passing Flow in the Yarra River



Melbourne Water is required to comply with the environmental flow rules specified in the Yarra River Environmental Entitlement and the subsequent phase 1 and 2 qualifications described in detail within previous compliance reports. These supersede the interim requirement specified in Schedule F7 (Waters of the Yarra Catchment) of the Waters of Victoria State environment protection policy to provide to the extent practicable a flow of no less than 245 ML/day in the Yarra River downstream of the Yering Gorge diversion.

Yarra River monitoring by Melbourne Water has shown that when flows fall below 150 ML/day environmental conditions deteriorate due to low dissolved oxygen levels in the river. This has been taken into account in the Yarra River Qualification and Melbourne Water is required to make releases from the Yarra Headworks to attempt to maintain 150ML/Day at Yering Gorge. During low inflows to the Upper Yarra and O'Shannassy Reservoirs, releases are limited to either 50% of these inflows or 80ML/day. An Environmental Emergency Contingency Plan is in place for the duration of the Qualification and releases from the Yarra Headworks are required when emergency trigger levels are reached.

The Phase 1 Qualification will cease after either construction of the desalination plant or the removal of Stage 3 restrictions (whichever occurs first) and the Phase 2 qualifications will cease after the removal of Stage 2 restrictions.

As a result of increased storage volumes due to new water sources and increased inflows to reservoirs, the Government announced the return of 7GL of water per year to the Yarra River on 1st April 2010. This water will be used to maintain water quality and habitat for priority species in the Yarra and increased the minimum required flow to 200 ML/day.

The minimum flow at Yering Gorge was 157 ML/day during Quarter three and 187 ML/day during Quarter four. Melbourne Water met the requirements of the Yarra Drought Response Plan and no releases were required under the Emergency Contingency Plan. The 10 day rolling result in Quarter four was more than 200 ML/d as the increased flows were introduced.

Sewerage System Summary of Statutory Compliance by Facility

Summary of Compliance by Facility

Quarter Three and Four 2009/2010

Facility	Compliance * of Samples					
	Q3 (%)	Q4 (%)	2009/10 (%)	Non-Sample Compliance**	Sewage Spills***	Odour Complaints
Eastern Treatment Plant					1	18
Western Treatment Plant					0	1
Wastewater Transfer	N/A	N/A	N/A	N/A	3	15
Total	N/A	N/A	N/A	N/A	4	34

	Compliance achieved for all parameters
	Compliance not achieved for one or more parameters.

* Compliance of samples details the compliance status for maximum/minimum/range or annual discharge parameters as indicated by the quarter's results.
**Non sample compliance covers licence breaches for issues other than discharge parameter limits Details on compliance breaches appear in following sections.
***Sewage spills include all spill types (operational failures, less than 1:5 rainfall event compliant and non-compliant spills and greater than 1:5 rainfall event spills)

Sewerage System Statutory Compliance Detail

Compliance of Samples – 2nd Half 2009/2010

The following table shows compliance of Melbourne Water's wastewater treatment plants with parameters in EPAV licences where limits are expressed as a maximum, minimum or a range.

Treatment Plant Compliance with EPAV Licences by Parameter *

Quarter Three 2009/2010

SITE	Amm	Surf	Metals	PH	D.O.	Flow	TRC	Other#
	Max	Max	Max	Range	Min.	Max	Max	
WTP all outlets								
ETP								
Air Emissions								

Quarter Four 2009/2010

SITE	Amm	Surf	Metals	PH	D.O.	Flow	TRC	Other#
	Max	Max	Max	Range	Min.	Max	Max	
WTP all outlets								
ETP								
Air Emissions								

	Compliance achieved
	Compliance not achieved ** **- See following sections for details**
	Not applicable

***** See Appendix One for a guide to the above parameters and Appendix Five for the location map of Western Treatment Plant Outlets.
# Parameters that are less significant and rarely fail to meet the required standard.
** EPAV is given an explanation for each non-compliance

Eastern Treatment Plant

Annual Parameters

The following details Eastern Treatment Plant's performance for critical parameters. Performance with respect to other parameters is reported here only if the results exceed licence limits, in which case explanatory information is contained in the following section.

NOTE: The plant has been granted a waiver for BOD compliance by EPAV on the understanding that CBOD is also monitored and CBOD limits are complied with.

	Median	**90th Percentile**
BOD	Limit not specified **26**	Limit not specified **5**
CBOD	Limit 20 mg/L **0** / **26**	Limit 40 mg/L **0** / **5**
SS	Limit 30 mg/L **0** / **26**	Limit 60 mg/L **0** / **5**
E.coli	Limit 200 org/100mL **1** / **26**	Limit 1,000 org/100mL **0** / **5**
Ammonia (as N)	Limit 5 mg/L **2** / **26**	
Anionic Surfactants	Limit 0.4 mg/L **0** / **13**	Limit 0.7 mg/L **0** / **3**

	Number of sample results to date greater than the Licence Limit – exceeds the total allowance for the year (licence breach).
	Number of sample results to date greater than the Licence Limit – exceeds the allowance for the year to date.
	Number of sample results to date greater than the Licence Limit – within the allowance for the year to date.
	Number of sample results during the year allowed to exceed the Licence Limit.

General Licence Requirements

ETP fully complied with the EPAV discharge licence parameters.

Groundwater Monitoring

Groundwater monitoring performed in November 2009 and May 2010 indicated that there was no significant change to parameters in the majority of the perimeter bores. Groundwater elevations continued to exhibit seasonal variations similar to those observed historically with groundwater quality parameters unchanged from historic levels. The concentration of nitrate reported from a bore where the sludge drying pans have been refurbished recently fell between the last two monitoring rounds.

Details of Licence Non-Compliance/Parameter Exceedances

An E.coli sample taken on 17 February 2010 at the Truemans Road Sample point was 920 Orgs/100 mL. While this single result was above the annual limit, the annual median result for E.coli was 15 Orgs/100 mL compared with the discharge licence annual limit for E.coli. of 200 Orgs/100mL.

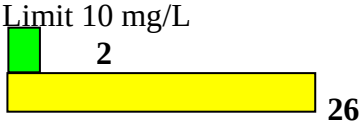
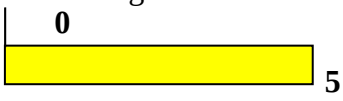
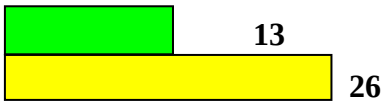
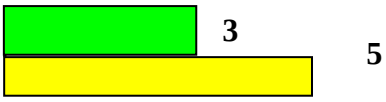
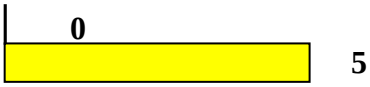
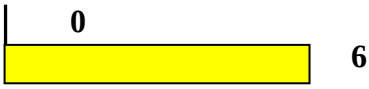
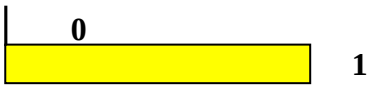
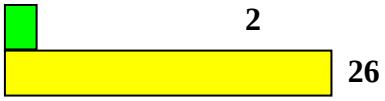
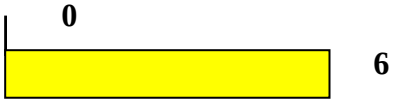
Primary Sedimentation Tank Spill

There was a spill at Eastern Treatment Plant on 25 February 2010 due to overflow of primary sedimentation tanks. More information on this is reported in the Incidents, Initiatives and Issues section.

Western Treatment Plant

The following details Western Treatment Plant's performance for critical parameters. Performance with respect to other parameters is reported here only if the results exceed licence limits.

Annual Parameters - flow weighted average of all four licensed outlets

	Median	90th Percentile
CBOD	Limit 10 mg/L  	Limit 20 mg/L 
SS	Limit 30 mg/L  	Limit 60 mg/L 
Total P		Limit 15 mg/L 
Colour	Limit 200 Pt-Co Units  	Limit 400 Pt-Co Units 
Ammonia (as N)	Limit 10 mg/l  	
Anionic Surfactants		Limit 0.8 mg/L 

	Number of sample results to date greater than the Licence Limit – exceeds the total allowance for the year (licence breach).
	Number of sample results to date greater than the Licence Limit – exceeds the allowance for the year to date.
	Number of sample results to date greater than the Licence Limit – within the allowance for the year to date.
	Number of sample results during the year allowed to exceed the Licence Limit.

General Licence Requirements

WTP fully complied with the EPAV discharge licence parameters.

Details of Licence Non-Compliance/Parameter Exceedances

None to report.

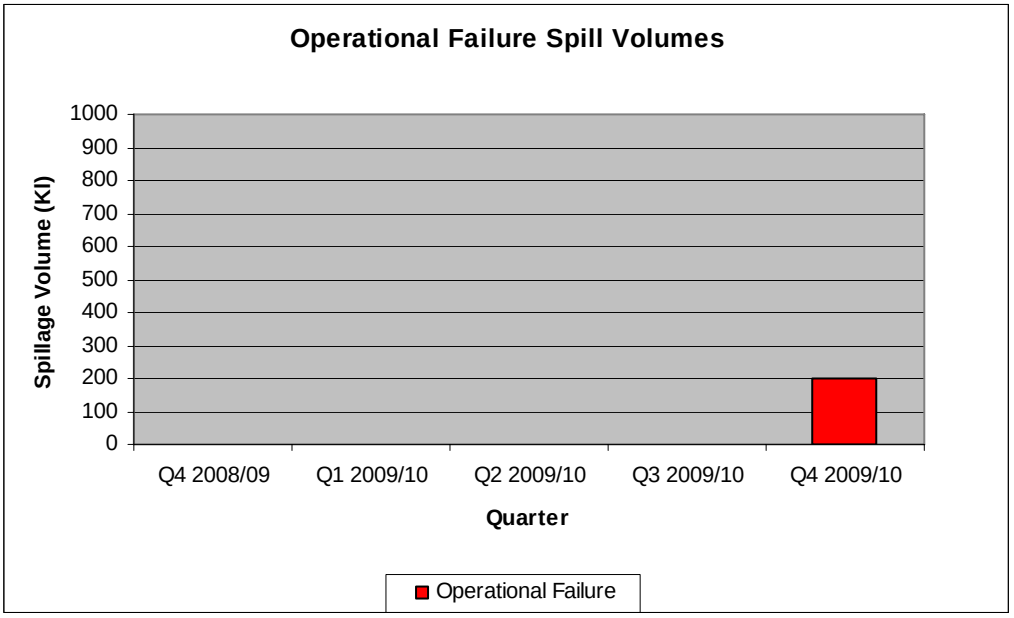
Groundwater Monitoring

The groundwater monitoring program has been completed and the report has not yet been received.

Sewage Spills Summary

Number of Spills	Q4 2008/09	Q1 2009/10	Q2 2009/10	Q3 2009/10	Q4 2009/10
Number of Spills	1	1	2	4	0
Operational failure	0	0	0	1	0
<1:5 compliant	1	1	2	1	0
<1:5 non-compliant	0	0	0	0	0
>1:5	0	0	0	2	0
Significance*	**Q4 2008/09**	**Q1 2009/10**	**Q2 2009/10**	**Q3 2009/10**	**Q4 2009/10**
Minor (Rating 1 - 3)	1	0	0	3	0
Significant (Rating 4 – 5)	0	0	2	0	0
Not Rated	0	0	0	0	0
EPAV Reporting Protocol Met	Yes	Yes	Yes	Yes	Yes

*Melbourne Water reports spills according to the Melbourne Water-EPAV spill reporting protocol that is contained in Appendix Three. The rating assigned to a spill is determined by applying the potential impact rating to the incident (refer to Appendix Two). If a spill is contained on site with no damage to the environment it will be reported in this report but not included in spills publicly reported.



The above graph indicates the volume of sewage spilt due to equipment breakdown or human error.

Spills Due to Operational Failures

There were no spills in the transfer system due to operational failure during the two quarters.

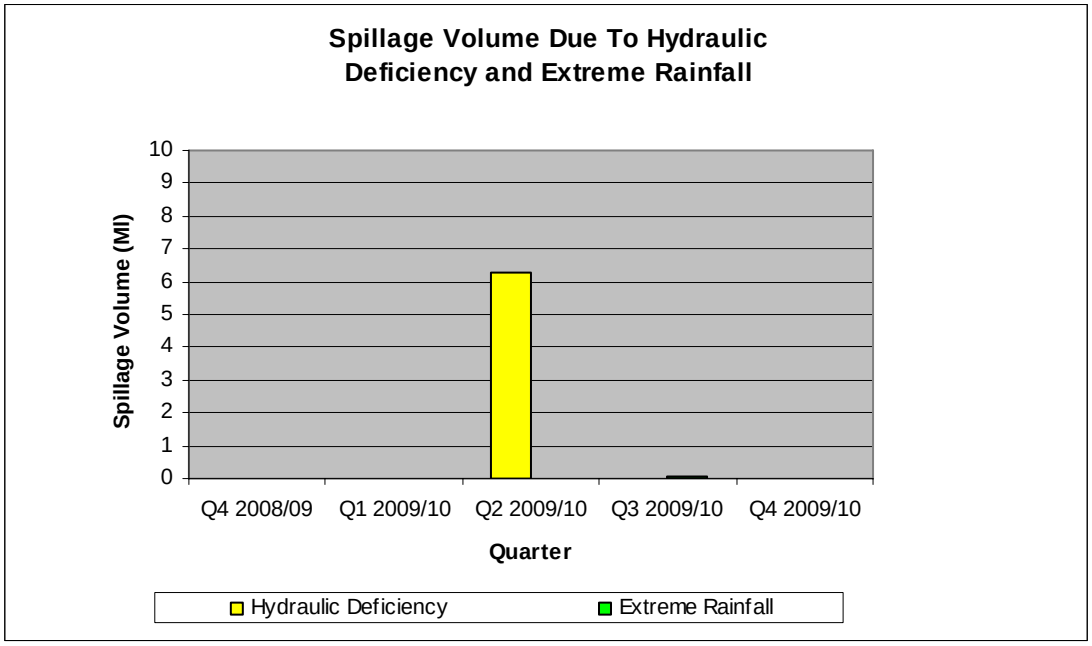
Eastern Treatment Plant

There was one spill at Eastern Treatment Plant of 200KL on 25 February 2010 when the Primary Sedimentation Tanks overflowed. Information on this spill is reported in the Incidents, Initiatives and Issues section. This spill was not rated as it was not an ERS spill.

Western Treatment Plant

There were no spills at Western Treatment Plant during the two quarters.

Spills Due to Rainfall Events Greater than 1:5 Year Return Frequency (Extreme Rainfall) and Hydraulic Deficiency



Hydraulic Deficiency - Spills due to insufficient pipe/pump capacity
Extreme Rainfall - Spills due to rainfall events greater than 1: 5 year return frequency

There were three spills due to hydraulic deficiency or extreme rainfall (greater than 1 in 5 event) during the two quarters.

Significant rainfall was experienced on 11 February 2010 across the Melbourne metropolitan area. This event resulted in the hydraulic overload of the sewerage system in the Moonee Ponds catchment. Despite optimal operation of the system one ERS located on the Pascoe Vale Main Sewer spilled approximately 0.001 ML into the Moonee Ponds Creek over a period of approximately 30 minutes. The discharge was of highly diluted sewage that flowed into the creek which was also experiencing high flows.

Follow up inspections were undertaken to ensure that surrounding areas were clean of debris and that the flap gates on the ERS were reseated correctly to prevent any odour issues.

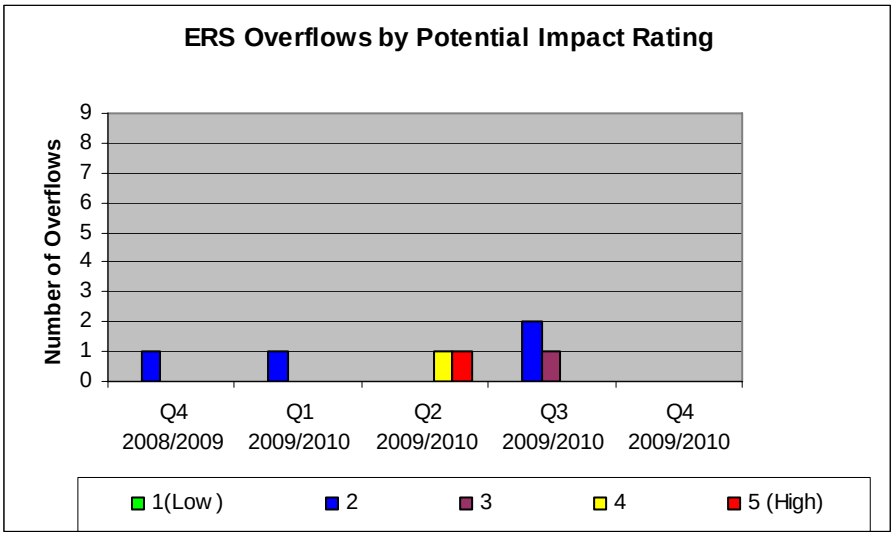
Significant rainfall greater than 1 in 5 was experienced on 6 March 2010 across the Melbourne metropolitan area. This event resulted in the hydraulic overload of the sewerage system in the Moonee Ponds catchment. Despite optimal operation of the system one ERS located on the Pascoe Vale Main Sewer spilled approximately 0.086 ML into the Moonee Ponds Creek over a period of approximately 90 minutes. The discharge was of highly diluted sewage that flowed into the creek which was also experiencing high flows.

The same rainfall event resulted in the hydraulic overload of the sewerage system in the Maribyrnong River catchment. Despite optimal operation of the system one ERS located on the Maribyrnong River Main Sewer spilled approximately 0.002 ML into the Maribyrnong River over a period of approximately 60 minutes. The discharge was of highly diluted sewage that flowed into the creek which was also experiencing high flows.

Follow up inspections were undertaken at both sites to ensure that surrounding areas were clean of debris and that the flap gates on the ERS had reseated correctly to prevent any odour issues.

Implementation of the Northern Suburbs Sewerage Strategy will eliminate sewerage spills in these areas within the 1:5 year containment standard and provide for long term growth.

ERS Overflows



Unreported spill from Quarter 1

Significant rainfall was experienced on 21 September 2009 across the Melbourne metropolitan area. This event resulted in the hydraulic overload of the sewerage system in Moonee Ponds catchment. Despite optimal operation of the system one ERS located on the Pascoe Vale Main Sewer spilled approximately 0.001 Ml into the Moonee Ponds Creek over a period of approximately 6 minutes. The discharge was of highly diluted sewage that flowed into the creek which was also experiencing high flows.

Tables in this report have been updated to account for this previously unreported spill.

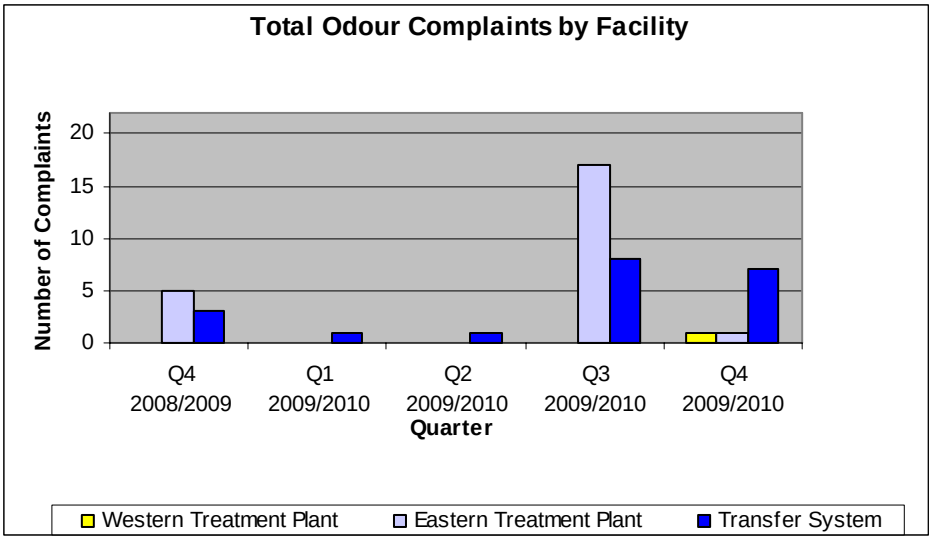
Odour Complaints

EPAV regulates odour and this requires Melbourne Water to have no offensive odour attributable to its activities. New facilities have to be designed to meet this requirement and existing facilities with odour have to establish improvement programs to achieve this in agreement with EPAV. Melbourne Water has an odour management strategy to ensure that treatment plant and transfer system odour performance meets regulatory requirements. This strategy has been developed with EPAV agreement. This includes targeted actions for Eastern and Western Treatment Plants and the Transfer System.

Odour performance from facilities is measured through odour complaints attributable to the facility. EPAV will consider an odour complaint a discharge licence breach if it is attributable to Melbourne Water and if either the relevant improvement program is not being implemented or the program is considered unsatisfactory. Odour complaints from facilities without a discharge licence could result in a requirement to develop and implement a neighbourhood improvement plan. Should odour become a significant local issue EPAV could strengthen this approach and require a review of improvement strategies or issue sanctions such as penalty infringement notices.

None of the odour complaints described below is considered to be a licence breach by EPAV at this time.

A review of odour compliance and reporting is currently underway and changes from the review will be incorporated into this section.



Eastern Treatment Plant

There were 18 odour complaints received during the two quarters. Details are as follows:

On 8 February 2010, a complainant reported an odour at the CFA training grounds. Wind prior to the odour complaint was slight and from the SSW. A Plant check was undertaken and a visit to the complainant site was completed. Odour was detectable within the boundary of

the sludge drying pans. The wind track analysis showed that this contributed to the odour. Melbourne Water is continually investigating ways to minimise odour from sludge drying pans and procedures to improve the dewatering, turning, drying and harvesting of biosolids will continue to be implemented until odour emissions are minimised.

On 15 February 2010 a resident in Bangholme reported an odour complaint experienced over the previous days. A visit to the complainant was completed. On the way, odours were detectable from the screening and compost storage facility on Worsley Rd as a stockpile was being turned over and from the sludge drying pans. Wind track analysis showed slow wind from the SE and the Plant was likely to have contributed to the odour.

On 25 February 2010 a local resident in Bangholme reported an odour that was first noticed at 7am and was still detectable at the time of the complaint at 11:00am. Wind track analysis showed that wind was from the ESE moving at 2.8 knots. A visit to the site of the complaint was completed and a sludge harvesting odour was present. The Plant was the likely source of the odour.

On 3 March 2010 a resident from Patterson Lakes reported an odour. Wind track analysis showed light variable wind changing from an Easterly to a WSW direction. This showed that ETP was unlikely to have contributed to the odour detected as the wind track did not cross any boundaries of ETP.

On 4 March 2010 a local Bangholme resident reported odour over the previous two weeks. As the complainant did not specify dates and times for the odours a reconciliation of odour complaints from the area for the previous weeks was completed. Wind conditions were from the ESE and SE respectively and crossed known odour sources at the Plant and the screening and compost storage facility on land leased from ETP.

On 5 March 2010 a resident in Patterson Lakes reported an odour on the day and from 3 March 2010. Wind track analysis showed that ETP was unlikely to have contributed to the odour detected as the wind track did not cross any boundaries of ETP. The wind track passed close to Eel Race Drain which could have been a source of the odour detected.

On 5 March 2010 a local Carrum resident reported an odour in the Carrum area. Wind track analysis showed light wind from the SE indicating that ETP was unlikely to have contributed to the odour. A drive to the Carrum area was completed and no odour was detected, although there was odour noticeable within the plant. Wind did cross over parts of the Seaford wetlands which may have contributed to the odour detected

On 7 March 2010 a local Bangholme resident reported an odour from the direction of ETP. Wind track analysis showed light wind from the ESE indicating that ETP was the likely source of the odour detected. The wind crossed the sludge drying pans and biosolids stockpiles. The onsite screening and compost storage facility may have also contributed to the odour detected in the area.

On 7 March 2010 a local resident of Bangholme reported an odour. Wind track analysis showed light wind from the ESE changing to the East and crossing the sludge drying pans and biosolids stockpiles indicating ETP was the likely source of the odour detected. The onsite screening and compost storage facility may have also contributed to the odour detected in the area.

On 10 March 2010 a resident reported an odour from 4 March 2010 via the Melbourne Water Web feedback system. Wind track analysis showed light wind from ESE. A visit to the site was unable to be completed. The slow moving nature of the wind in the ESE direction is likely to have picked up odours from the sludge harvesting and composting biosolids stockpiles in the storage area. A site odour check of the sludge drying pans and dried sludge recently added to the stockpiles in the early afternoon of the 4th March. It found a few of the windrowed dried sludge piles awaiting removal from the pans to the biosolids stockpile had begun to compost and emit some odour. Works to thinly spread out the newly dried sludge on the stockpile area were completed later that afternoon to reduce the composting of the sludge and the intensity of the offensive odour

On 13 March 2010 a local Bangholme resident reported an odour. Wind track analysis showed calm conditions with light wind from ENE. A visit to the site of the complaint was completed and a sludge odour was detectable and was likely to have come from the sludge drying pans and the stockpiles. ETP is the likely source of the odour detected.

On 13 March 2010 three local residents in the Bangholme, Patterson Lakes and Chelsea Heights areas respectively reported odours via EPAV. EPAV visited ETP later that morning at 9:30 am. As no individual times were available weather data for the date found a slow ENE wind in the area from 3am till 7am that morning. Wind track analysis from the other odour complaint on this day was replotted to each area of complaint and showed wind had crossed known odour sources of the site, the sludge drying pans and stockpiles. When EPAV visited the site, wind was light from ESE. ETP is the likely source of the odour detected.

On 15 March 2010 a local Bangholme resident reported odours that occurred earlier that morning and previously that week. Wind track analysis showed light wind from ESE. A check of the sludge drying areas and stockpiles was completed and they had an unpleasant odour. There was also a strong offensive earthy smell detectable at the site for most of the morning and ETP is the likely source of the odour complaint.

On 16 March 2010 a local Patterson Lakes resident reported an odour from 15 March via the Brooklyn call centre. Wind track analysis showed light wind from ESE. ETP was unlikely to have contributed to the odour detected. A visit to the site of the complaint was unable to be completed as the details were received after the event. The wind track analysis settled over Eel Race Drain which may have contributed to the odour detected. There was a strong odour at the site for most of the day linked to the sludge drying pans

On 16 March 2010 a local Patterson Lakes resident reported an odour on 15 March. Wind track analysis showed light wind from ESE indicating ETP was unlikely to have contributed to the odour. A visit to the site of the complaint was unable to be completed as the details were received after the event. There was a strong odour at the site for most of the day linked to the sludge drying pans

On 16 March 2010 a local Bangholme resident reported an odour. Wind track analysis showed very light wind from the South. A visit to the site of the complaint was unable to detect an odour. The wind track analysis indicated that ETP is the likely source of the odour detected.

On 16 April 2010 a local Bangholme resident reported an odour. Wind track analysis showed wind from ESE indicating ETP was likely to have contributed to the odour. The wind track crossed over ETP boundaries and known odour sources. A visit to the area of the complaint detected odour from the sludge drying pans.

On 17 March 2010 two EPAV officers, who were driving past the area, reported an odour and when they returned to their office they had received an odour report from a local Bangholme resident. Wind track analysis showed light wind from SSW indicating that ETP was likely to have contributed to the odour. The EPAV officers were shown the sludge harvesting area to enable them to better understand the sludge harvesting activities.

Western Treatment Plant

There was one odour complaint received during the two quarters. Details are as follows:

On 18 May 2010 a community representative on the WTP Community Liaison Committee reported an odour on the freeway.

Light winds present at the time are conducive to odour transmission. A shutdown of aeration systems for high voltage maintenance may have contributed to the odour on that day. This maintenance is an essential annual program that ensures the integrity of the HV systems and safety of our operators. The shutdown outages are scheduled at this time of the year to take advantage of stable weather conditions and treatment performance and low demand for recycled water and they are managed to reduce potential odour impacts.

Transfer System

There were fifteen odour complaints received during the two quarters. Details are as follows:

On 27 January 2010 a member of the public reported an odour in the vicinity of Albert Park. The odour was from a vent stack on South Yarra Main Sewer Manhole 3 that was operating normally. Monitoring has been arranged to assist in determining the most appropriate solution for this site as part of the Odour and Corrosion Strategy.

On 25 January 2010 a member of the public reported an odour in the vicinity of Hawthorn. The odour was from a vent stack on Hawthorn Main Sewer Manhole 9 that was operating normally. Monitoring has been arranged to assist in determining the most appropriate solution for this site as part of the Odour and Corrosion Strategy.

A letter dated 12 January 2010 was received from the Federal Member of Parliament for Wills on behalf of a constituent regarding odour in the vicinity of Oak Park. Melbourne Water employees investigated the source of the odour and determined that odour was a result of corrosion refurbishment works on a sewer manhole in Pascoe Vale Road between October and late December 2009.

Ventilation was required to provide a safe atmosphere to allow workers to complete the works and this is believed to be source of the odours. A site inspection confirmed that other manholes were sealed appropriately.

On 16 February 2010 a member of the public reported an odour via EPAV and City West Water to Melbourne Water from a small road vent on the Moonee Ponds Main Sewer in the vicinity of North Melbourne. The small road vent was replaced the next day with an airtight cover.

On 11 February 2010 a member of the public reported an odour from a small road vent on the Hobsons Bay Main Sewer in the vicinity of the Gasworks Museum. The small road vent was replaced the next day with an airtight cover.

On 23 February 2010 City West Water reported an odour from a failed sealing plate on North Yarra Main Manhole 52. The cover was replaced with an airtight cover.

On 17 March 2010 Yarra Valley Water contacted Melbourne Water regarding several odour complaints they had received in the vicinity of Merri Creek Main Manhole 53. Melbourne Water investigated and found the odour to be coming form a diamond cover manhole. This cover was replaced with an airtight cover

On 31 March 2010 the Member for Carrum reported an odour complaint received from a constituent in the vicinity of the Bondi Rd Pump Station. The treatment facility is not coping with current load. Interim remedial works were implemented and investigations to review the asset to ensure odours are adequately treated were commenced.

On 17 April 2010 Yarra Valley Water reported several odour complaints they had received in the vicinity of North Yarra Main Manhole 75. Melbourne Water investigated and determined the odour was caused by a blocked drop pipe, which had been running freely four months previously. The drop pipe was cleared and the odour eliminated.

On 9 April 2010 Melbourne Water received a report regarding odour in the vicinity of Port Melbourne. Inspections showed that the sealing plates on Hobsons Bay Main manholes 13 & 14 were ineffective and airtight covers were installed at both sites.

On 19 May 2010 a member of the public reported odour in the vicinity of Fisherman's Bend. The odour was from the mechanical ventilation of the East Drop Structure to ensure a safe working environment for workers undertaking major rehabilitation of the manhole.

On 1 May 2010 a member of the public reported odour in the vicinity of the upper section of the Upper Moonee Ponds Main Sewer. Site inspections revealed damaged manhole covers, possibly due to grass cutting, were allowing odour to escape. The covers were replaced.

On 18 May 2010 a member of the public reported odour in the vicinity of Albert Park. It was determined that the odour was from a vent stack on Hobsons Bay Main Sewer Manhole 25 that was operating normally. Monitoring has been arranged to assist in determining the most appropriate solution for this site as part of the Odour and Corrosion Strategy.

On 25 May 2010 a member of the public reported an odour in the vicinity of North Yarra Main Sewer Manhole 69. A raised manhole cover was reseated but the odour persisted and it has been determined that the odour is from a vent stack that was operating normally. Monitoring has been arranged to assist in determining the most appropriate solution for this site as part of the Odour and Corrosion Strategy.

On 8 June 2010 a member of the public reported an odour in the vicinity of the Hockey Club at the corner of Curzon and Banksia Streets, Ivanhoe. Investigations showed there was no visible deficiency with Melbourne Water assets that could have caused this odour. It was determined that the odour was from a normally operating vent stack at Darebin Creek Relieving Sewer Manhole 22. Monitoring has been arranged to assist in determining the most appropriate solution for this site as part of the Odour and Corrosion Strategy.

Corporate Compliance
Melbourne Water Passing Flow Compliance in Rivers and Streams

The qualifications on environmental entitlements for the Thomson and Yarra Rivers remains in place until level 2 restrictions are lifted. The table below outlines compliance with passing flow requirements at various sites. Some of these passing flows may vary due to the Yarra bulk entitlement conversion process.

Melbourne Water Passing Flow Compliance
Quarter Three 2009/2010

Site	Passing Flow (ML/d)	Actual Min. Flow (ML/d)	Comp-liance	Comments
RESERVOIRS:				
Cardinia Res. to Cardinia Ck	5	5	√	The lesser of 5 ML/d and the Natural flow
Maroondah Res. to Watts River.	1	1	√	Operating rule - 1 ML/d released via ungauged outlet pipe
O'Shannassy Res. to O'Shannassy Riv.	4	4	√	Operating rule - 4 ML/d released via ungauged outlet pipe
Silvan Res. to Olinda Ck	2	2	√	Operating rule - 2 ML/d released via "V" notch, outlet pond.
Drouin West Gauging Station*				
Tarago Weir Inflow for the months of Jan, Feb, Mar, Apr, Nov, Dec.**	N/A	N/A	N/A	Inflow>20 then passing flow=10 OR Inflow<20 then passing flow=50% inflow
Tarago Weir Inflow for the months of May, Jun, Jul, Aug, Sep, Oct.**	N/A	N/A	N/A	Inflow >40 then passing flow = 20 OR Inflow <40 then passing flow = 50% inflow
Bunyip Weir Inflow for the months of Jan, Feb, Mar, Apr, Nov, Dec.**	N/A	N/A	N/A	Inflow >12 then passing flow = 6 OR Inflow <12 then passing flow = 50% inflow
Bunyip Weir Inflow for the months of May, Jun, Jul, Aug, Sep, Oct.**	N/A	N/A	N/A	Inflow >16 then passing flow = 8 OR Inflow <16 then passing flow = 50% inflow
Tarago Res to Tarago River Nerrim South (Scalp Ck)	5	5	√	Bulk entitlement provision
Thomson Res. To Thomson R: Below Dam At Narrows At Coopers Ck	 25 0 145	 30 48 146	 √ √ √	Melbourne Water Bulk Entitlement provision for Thomson Reservoir.
Toorourrong Res. to Plenty Riv.	0.2	0.2	√	Melbourne Water operating rule - 0.2 ML/d released for stock
Upper Yarra Res. to Yarra Riv: Upper Yarra Dam At Yering Gorge Pump Stn At Chandler Highway	 10 200/150 150	 10 157 164	 √ √ √	• At Doctors Ck. Gauging Station • Cease harvesting when flow <= 200ML/d./ or minimum Env .Flow =150 ML/d when not pumping. • When flow less than 150 MLD, cease harvesting at Yering Gorge.

* Gauge has been rerated but not yet commissioned due to local problems. Investigations are underway to move the station

** Data is not yet available as telemetry has not yet been commissioned for the Bunyip Weir

WEIRS:

Armstrong Ck Weir	5	5	√	Melbourne Water operating rule
Coranderrk Ck Weir	3	3	√	Melbourne Water operating rule – via ungauged outlet pipe
Donnelly Ck Weir	1	1	√	MWC Melbourne Water operating rule– via ungauged outlet pipe
Graceburn Ck Weir	3	3	√	The lesser of 3 ML/day and the natural flow reduced to 1 ML/d if required to maintain Healesville supply.
McMahons Ck Weir	2	2	√	Melbourne Water operating rule
Silver Ck Weir	1	0#	√	Bulk Entitlement provision - 1 ML/d is released when streamflow is 4 ML/d or greater
Starvation Ck Weir	2	2	√	Melbourne Water operating rule
Wallaby Ck Weir	1	1	√	Bulk Entitlement provision - 1 ML/d is released when streamflow is 2 ML/d or greater

Silver Creek Weir stream flow range was between 0 ML/d and 6 ML/d during this period

Melbourne Water Passing Flow Compliance
Quarter Four 2009/2010

Site	Passing Flow (ML/d)	Actual Min. Flow (ML/d)	Comp-liance	Comments
RESERVOIRS:				
Cardinia Res. to Cardinia Ck	5	5	√	The lesser of 5 ML/d and the Natural flow
Maroondah Res. to Watts Riv.	1	1	√	Operating rule - 1 ML/d released via ungauged outlet pipe
O'Shannassy Res. to O'Shannassy Riv.	4	4	√	Operating rule - 4 ML/d released via ungauged outlet pipe
Silvan Res. to Olinda Ck	2	2	√	Operating rule - 2 ML/d released via "V" notch, outlet pond.
Drouin West Gauging Station*				
Tarago Weir Inflow for the months of Jan, Feb, Mar, Apr, Nov, Dec.**	N/A	N/A	N/A	Inflow>20 then passing flow=10 OR Inflow<20 then passing flow=50% inflow
Tarago Weir Inflow for the months of May, Jun, Jul, Aug, Sep, Oct.**	N/A	N/A	N/A	Inflow >40 then passing flow = 20 OR Inflow <40 then passing flow = 50% inflow
Bunyip Weir Inflow for the months of Jan, Feb, Mar, Apr, Nov, Dec.**	N/A	N/A	N/A	Inflow >12 then passing flow = 6 OR Inflow <12 then passing flow = 50% inflow
Bunyip Weir Inflow for the months of May, Jun, Jul, Aug, Sep, Oct.**	N/A	N/A	N/A	Inflow >16 then passing flow = 8 OR Inflow <16 then passing flow = 50% inflow
Tarago Res to Tarago River at Nerrim South (Scalp Ck)	5	10	√	Bulk entitlement provision
Thomson Res. To Thomson R: • Below Dam • At Narrows • At Coopers Ck	 25 0 145	 37 57 155	 √ √ √	Melbourne Water Bulk Entitlement provision for Thomson Reservoir.
Toorourrong Res. to Plenty Riv.	0.2	0.2	√	Melbourne Water operating rule - 0.2 ML/d released for stock
Upper Yarra Res. to Yarra Riv: • Upper Yarra Dam • At Yering Gorge Pump Stn • At Chandler Highway	 10 200 150	 10 187*** 230	 √ √ √	• At Doctors Ck. Gauging Station • Cease harvesting when flow <= 200ML/d./ or minimum Env .Flow =150 ML/d when not pumping. • When flow less than 150 MLD, cease harvesting at Yering Gorge.

* Gauge has been rerated but not yet commissioned due to local problems. Investigations are underway to move the station

** Data is not yet available as telemetry has not yet been commissioned for the Bunyip Weir

*** The 10 day rolling average was above operating tolerances for April 2010.

WEIRS:

Armstrong Ck Weir	5	5	√	Melbourne Water operating rule
Coranderrk Ck Weir	3	3	√	Melbourne Water operating rule – via ungauged outlet pipe
Donnelly Ck Weir	1	1	√	Melbourne Water operating rule– via ungauged outlet pipe
Graceburn Ck Weir	3	3	√	The lesser of 3 ML/day and the natural flow reduced to 1 ML/d if required to maintain Healesville supply.
McMahons Ck Weir	2	2	√	Melbourne Water operating rule
Silver Ck Weir	1	0#	√	Bulk Entitlement provision - 1 ML/d is released when streamflow is 4 ML/d or greater
Starvation Ck Weir	2	2	√	Melbourne Water operating rule
Wallaby Ck Weir	1	0##	√	Bulk Entitlement provision - 1 ML/d is released when streamflow is 2 ML/d or greater

Silver Creek Weir stream flow range was between 0 ML/d and 6 ML/d during this period
Wallaby Creek Weir stream flow was less than 2 ML/d during this period.

Maribyrnong River Bulk Entitlement

Melbourne Water is required to manage its share of releases from Rosslynne Reservoir and water extractions from the Maribyrnong River to ensure that, as a result of diversion activities, passing flows in the river at Keilor do not fall below requirements specified in the Maribyrnong Bulk Entitlement Orders - 5 ML/day or the natural flow, whichever is the lesser. Natural flow is based on flow at Deep Creek at the Bulla gauging station. Compliance is considered to be achieved provided water extractions are banned when flows fall below 5 ML/day or supplementary releases from Rosslynne are being made.

Days when flow at Keilor was below that required	0

	Compliance achieved
	Compliance non achieved

Sewage Quality Management (Formerly the Trade Waste section) Reporting Results for Quarter 3 and Quarter 4 2009/2010

To ensure best practice sewage quality management, the four metropolitan Melbourne water businesses have achieved ISO 22000 certification for an Integrated Sewage Quality Management System (ISQMS). The development and certification of the ISQMS reflects the change in focus from "trade waste" to "sewage quality". Trade waste represents a key input to the sewerage system. However, other sources include commercial, domestic, inflow, infiltration and illegal discharges. The ISQMS is designed to manage all inputs and issues associated with the sewerage system, not just those related to trade waste.

As the components and systems of the ISQMS are still evolving, trade waste non-compliance figures from the retail water businesses are reported below.

Sewage Quality Management Reporting Results for Quarter 3 and Quarter 4 2009/10

Melbourne Water's key performance indicator for sewage quality management is as follows:

- Zero high risk non-compliant trade waste discharges to Melbourne Water's sewer system.

The following table shows the number of non-compliant discharges for each retail water business, categorised by risk level.

	CWW	YVW	SEW		CWW	YVW	SEW
January				**April**			
Insignificant	61	12	15	Insignificant	59	10	19
Moderate	0	0	0	Moderate	0	0	0
High	0	0	0	High	0	0	0
February				**May**			
Insignificant	62	11	15	Insignificant	56	9	19
Moderate	0	0	0	Moderate	0	0	0
High	0	0	0	High	0	0	0
March				**June**			
Insignificant	53	10	16	Insignificant	58	4	12
Moderate	0	0	0	Moderate	0	0	0
High	0	0	0	High	0	0	0

Table 1 - Risk level of non-compliant discharges as reported by retail water companies

The table above reflects the number of non-compliant trade waste discharges (categorised by risk level) in place at the end of each calendar month. The chart below summarises the data presented in the table above, with totals representing non-compliances across all retail water businesses.

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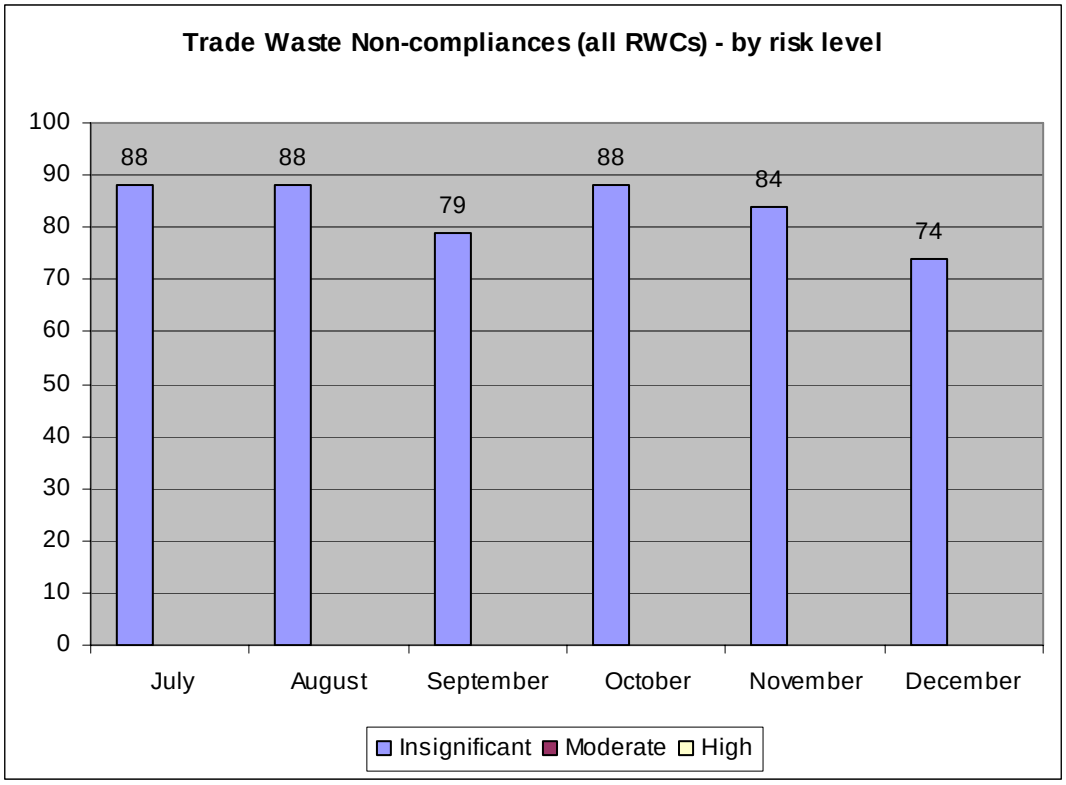


Figure 1- Total non-compliant discharges by risk level

Discussion of Trade Waste Reporting Results for Quarter 3 and Quarter 4 2009/2010

High Risk:

There were zero high risk non-compliances in Q3 and Q4 2009/2010.

High risk non-compliances could strongly affect the OH&S of sewer workers, inhibit the treatment plant process affecting product compliance, significantly impact on receiving environment, breach Melbourne Water's operating licence or ability to supply customers with recycled water, biogas or biosolids. "High" risk non-compliances would require both retail water companies and Melbourne Water incident management response and debrief procedures to be followed.

Moderate Risk:

There were zero moderate risk non-compliances in Q3 and Q4 2009/2010.

Moderate risk non-compliances could affect the OH&S of sewer workers, inhibit the treatment plant process without affecting product compliance, impact on the receiving environment which can be easily remediated, impact on the licence compliance for a short period of time and/or affect Melbourne Water's ability to supply customers with recycled water, biogas and biosolids. The likelihood of impact of "Moderate" risk non-compliances is low due to existing Melbourne Water and retail water companies control measures in place. "Moderate" risk non-compliances would require a follow-up report of the incident including actions taken to resolve the issue, increased monitoring and contingencies in place to prevent re-occurrence.

Insignificant Risk:

The number of insignificant risk non-compliances ranged from 74 to 88 per month over the six month period.

Non-compliant discharges ranked as “Insignificant” present very little or no risk to Melbourne Water. They can be easily managed through procedures and control measures in place to ensure customers take actions to rectify issues and return to compliance.

The risk assessment framework that has been developed aims to ensure that the appropriate management actions for each risk level are appropriately undertaken and consistently applied.

Water Recycling at Western and Eastern Treatment Plants

Waste minimisation, through effluent and biosolids reuse and by other means, is a licence objective for both ETP and WTP. Melbourne Water has established a target to recycle on average 20 % of effluent by 2010. In 2009/10 Melbourne Water recycled 19.5 % contributing to achieving the metropolitan target of 20 %.

Eastern Treatment Plant

During the two quarters approximately 817 ML of recycled water was supplied to customers along the South East Outfall and 3,081 ML was supplied to the Eastern Irrigation Scheme. In addition to this approximately 6,876 ML of water was used onsite at the Eastern Treatment Plant.

The Eastern Irrigation Scheme provides “Class A” recycled water from their plant off Thompson Road supplying quality recycled water to the Sandhurst Club, Wedge Rd Reserve and other customers in the Cranbourne and Five Ways districts.

Western Treatment Plant

During the two quarters approximately 6,766 ML of recycled water was supplied to Southern Rural Water for the Werribee Irrigation District, and 245 ML was supplied to the Werribee Tourist Precinct, incorporating the Werribee Park Golf Club, State Equestrian Centre and other minor uses. In addition to this, approximately 12,608 ML of recycled water was used onsite at the Western Treatment Plant.
The chlorination and UV disinfection plant is supplying Class A recycled water to both the Werribee Tourist Precinct customers and the Werribee Irrigation District.

Influent Total Dissolved Solid Limit

To ensure that flows into Western Treatment Plant do not have total dissolved solids levels that would compromise effluent reuse opportunities, the revised discharge licence from EPAV has a future influent limit of median total dissolved solids to not exceed 1000 mg/L.

Influent limit of 1000 mg/L total dissolved solids		
Compliance	Not Achieved	Achieved

Biosolids Reuse at Western and Eastern Treatment Plant

Melbourne Water had developed a biosolids management strategy that included targets to beneficially use 100% of annual production at Eastern Treatment Plant by 2005 and Western Treatment Plant by 2010. This was adjusted to 0 % at WTP by 2012/13 and 95,000 cubic meters at Eastern Treatment Plant as a result of the 2006 Biosolids Beneficial Use Strategy and the 2009 Water Plan.

EPAV approved the Eastern and Western Treatment Plant biosolids management plans in January 2004. These plans describe biosolids inventories, address quality/quantity issues and beneficial use options and set relevant Melbourne Water operational targets. Discussions between Melbourne Water and EPAV about the changed targets have occurred as part of the Water Plan process.

The Board noted the 2006 Biosolids Beneficial Use Strategy in July 2006. The Strategy outlined actions to achieve the use of clay-rich biosolids stored onsite at ETP as structural fill in roads in the short to medium term. In addition, a research program for identifying future innovative options for beneficial use of biosolids from both ETP and WTP is being implemented.

Eastern Treatment Plant

During the two quarters there were 1275 m^3 biosolids removed from ETP for beneficial use. Due to the high clay content of ETP stockpiled biosolids, Melbourne Water is pursuing the use of biosolids as a geotechnical fill in roads. Melbourne Water worked with EPAV to develop guidelines for using biosolids in this application, with EPAV finalizing and releasing the guidelines for "Use of Biosolids as Geotechnical Fill" in 2009. These guidelines will allow biosolids structural fill projects to proceed under an approved Environment Improvement Plan.

Melbourne Water has received confirmation from EPAV that proposed projects are consistent with regulatory obligations and has gained in-principle support from EPAV to proceed in accordance with the EPAV guidelines for use of biosolids as a geotechnical fill.

Towards the end of May 2010, two roads in the Sludge Drying Pan area at ETP were constructed using 1275m^3 of clay enriched biosolids to demonstrate and trial the use of the material as a geotechnical fill in accordance with the geotechnical fill guidelines and with approval from EPAV. The intent of the trial was to specifically demonstrate:

- that Melbourne Water is able to supply amended clay enriched biosolids at the required rates, scale and quality required for freeways and roads;
- the use of amended clay enriched biosolids in road applications on-site at ETP to provide confidence in the suitability of this beneficial geotechnical application of biosolids.
- and provide Melbourne Water with an opportunity to refurbish roads without having to import clay from external sources for use in the road bases.

EPAV, VicRoads, South East Water, Yarra Valley Water and various Freeway Construction Alliances visited the Trial to gain an understanding of how such road projects would be undertaken and ensure the risks would be appropriately managed. This was essential to

provide confidence to external parties and to industry. The trial and associated visit generated much interest and has assisted in gaining acceptance of the concept.

A quantitative risk assessment of the potential to reuse biosolids for land application progressed and is expected to be completed in late 2010.

Further road projects using clay enriched biosolids are planned to be used towards the later part of 2010 at ETP.

Western Treatment Plant

During the two quarters no biosolids were removed from the Western Treatment Plant for beneficial use.

Due to the high contaminant levels and potentially useful calorific value of WTP biosolids, Melbourne Water completed a feasibility study into energy recovery. The study investigated both onsite and offsite energy recovery alternatives and found that use of biosolids as a fuel at an external commercial enterprise was the preferred option.

During 2008/09, Melbourne Water began a biosolids energy recovery trial at WTP in collaboration with a private sector business and using Federal Government funding assistance. This trial is continuing through 2010.

Status Report - Meeting SEPP Targets for Melbourne's Waterways

The following information describes the physico-chemical and bacteriological condition of Melbourne's waterways during the reporting period. Objectives set out in the three relevant State Environment Protection Policies (SEPPs) are the long-term targets for water quality. There is no specific statutory obligation on Melbourne Water to meet these targets.

The Waters of Victoria SEPP has a provision for the development of interim waterway water quality objectives if there is little chance of attaining the desired quality within the ten-year time frame of the SEPP. Melbourne Water will be developing interim objectives where relevant as part of the Regional River Health Strategy. Melbourne Water has adopted a long-term target to achieve good waterway health in all natural waterways by 2025.

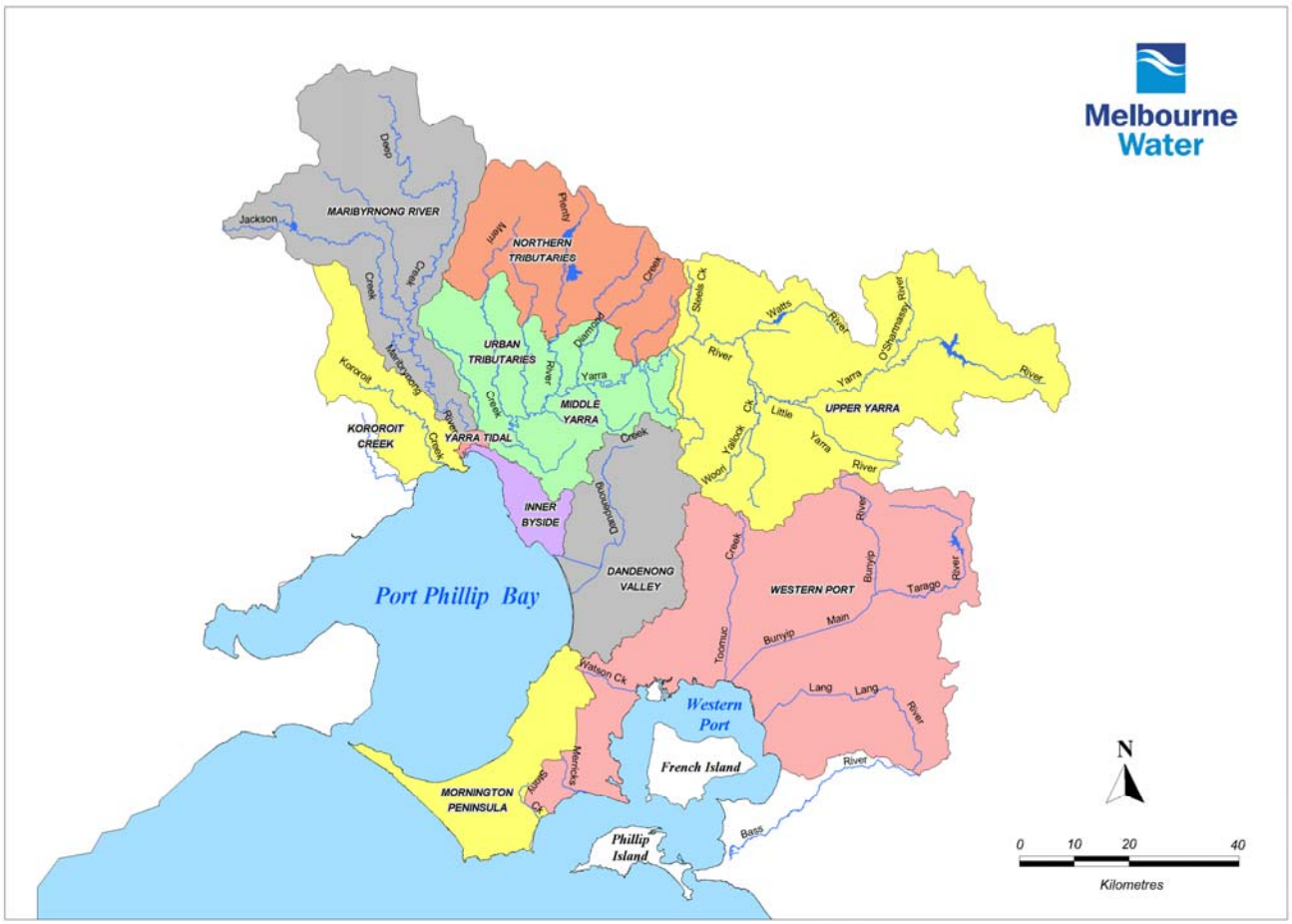
This quarterly report uses a rolling twelve months of waterway water quality data and uses the relevant statistical measure from the particular SEPP schedule and segment a waterway falls within. The map shows SEPP segments and where monitoring points are located. The performance tables show performance against relevant SEPP objectives with red indicating a failure to meet SEPP and green indicating compliance with SEPP. The number in each cell is the result for the previous 12 months.

SEPP compliance calculations require eleven samples for most parameters. For a small number of sites in this report, a reduced number of data were available due to drought or access conditions.

Waterway monitoring data from the last twelve months showed that waterways within Greater Melbourne performed well for pH, with most catchments complying with their SEPP objectives. Catchments vary from zero to full compliance for turbidity. All waterways perform poorly for dissolved oxygen and nutrient levels with most catchments having no site that complies with oxygen and/or nitrogen objectives.

Waterway Water Quality

Quarters Three and Four, 2009/2010



The table below shows the environmental quality of Greater Melbourne's waterways during the reporting period, sorted by catchment. Results indicate the percentage of samples taken in each catchment that comply with State water quality guidelines.

Definitions

DO	Dissolved oxygen
EC	Electrical conductivity
Turb	Turbidity
T-P	total phosphorus
T-N	total nitrogen
min	Minimum
max	maximum
...%tile	..th percentile
geo	geometric mean
*****	This SEPP requires 5 samples at regular intervals within 30 days, however these figures have been calculated using 12 monthly readings
******	This SEPP requires a 42 day geometric mean, however these figures have been calculated using 12 monthly readings.
%sat	percentage saturation
uS/cm	micro Seimen per centimetre
NTU	nephelometric turbidity units
mg/l	milligrams per litre
org/100ml	organisms per 100 millimitres
NA	none applicable

Chart showing SEPP Compliance

Waters of Victoria									
Waterway	**MEL-WAYS**	**EC 75 %**	**DO % 25 %**	**pH 25 %**	**pH 75 %**	**E Coli Geo mean**	**Turb 75 %**	**TP 75 %**	**TN 75 %**
Cleared Hills & Coastal Plains									
Werribee / Maribyrnong		*1500*	*85*	*6.5*	*8.3*	*150*	*10*	*0.045*	*0.6*
Arundel Creek	14K1	3075	55	7.6	8.0	39	11	0.047	0.5
Deep Creek	598G12	1800	64	7.7	8.5	23	12	0.068	1.2
Deep Creek	177A6	3725	54	7.9	8.2	77	29	0.092	1.4
Jacksons Creek	620F7	1100	55	7.6	7.8	39	15	0.039	0.9
Jacksons Creek	382G5	1125	50	7.5	7.7	63	51	0.061	1.0
Jacksons Creek	3C3	1200	51	7.8	8.0	146	39	0.225	1.6
Maribyrnong River	14H2	1825	67	7.7	8.1	38	14	0.051	1.8
Maribyrnong River	14H8	1900	56	7.5	7.7	64	15	0.057	1.5
Maribyrnong River	27B8	2400	59	7.7	8.1	85	19	0.071	1.2
Maribyrnong River	28D11	46000	64	7.6	7.8	43	11	0.155	1.1
Riddells Creek	620E4	1200	54	7.5	7.8	35	9	0.022	0.9
Steele Creek	27J2	1225	64	7.7	8.1	339	19	0.072	0.9
Stony Creek	41J11	508	74	7.7	8.5	484	23	0.518	2.6
Taylors Creek	14G8	3200	65	7.6	7.7	169	23	0.087	1.1
Cherry MD	54E5	1035	29	7.0	7.6	75	16	0.905	2.1
Kororoit Creek	25D7	1425	39	7.4	7.7	141	11	0.081	0.9
Kororoit Creek	55C8	23750	79	7.8	8.3	159	22	0.243	1.3
Laverton Creek	53J10	755	48	7.1	7.8	272	36	0.198	1.0
Lerderderg River	617G8	265	50	7.6	8.2	36	19	0.043	0.7
Lerderderg River	334H9	780	47	7.1	7.9	25	22	0.033	0.6
Little River	730J7	8400	64	8.0	8.4	25	12	0.035	1.0
Lollypop Creek	205A8	313	60	7.8	8.2	227	64	0.153	1.2
Skeleton Creek	53B12	4425	43	7.2	7.5	354	16	0.160	0.9
Yangardook Creek	343A5	180	42	7.2	7.7	77	31	0.120	1.1
Werribee River	VICR294H3	903	52	7.6	7.8	19	16	0.044	1.2
Werribee River	333G8	3000	56	7.5	7.9	98	19	0.034	0.6
Werribee River	227B10	3400	57	7.7	8.0	193	20	0.069	0.8
Werribee River	205F2	3000	65	7.9	8.2	59	14	0.081	0.8

Waters of Victoria

Waterway	MELWAYS	EC 75 %	DO % 25 %	pH 25 %	pH 75 %	E Coli Geo mean	Turb 75 %	TP 75 %	TN 75 %
Cleared Hills & Coastal Plains Westernport		*500*	*85*	*6.4*	*7.7*	*150*	*10*	*0.045*	*0.6*
Blind Creek	72D3	843	41	6.9	7.2	511	25	0.096	2.4
Boggy Creek	99K2	1475	56	7.5	8.6	492	51	0.298	2.4
Corhanwarrabul Creek	81C2	538	61	7.0	7.4	349	27	0.100	1.4
Croydon MD	64D2	765	32	6.8	7.1	482	21	0.155	3.5
Dandenong Creek	63D5	513	37	7.1	7.4	420	24	0.095	1.6
Dandenong Creek	81G9	505	73	7.0	7.5	332	35	0.099	1.5
Dandenong Creek	94H7	933	69	7.1	7.6	290	61	0.095	1.4
Elster Creek	67F5	913	72	7.7	8.1	1491	26	0.143	2.8
Eumemmerring Creek	94H10	830	63	7.0	7.5	389	30	0.140	1.2
Ferny Creek	73C8	368	60	7.0	7.5	277	30	0.091	1.1
Hallam Main Drain	95K4	1025	54	6.9	7.4	182	29	0.091	1.2
Heatherton Drain	87H12	383	73	7.6	8.1	624	20	0.233	1.5
Kananook Creek	102C2	52750	55	7.4	7.8	187	10	0.153	0.7
Mile Creek	86J9	1950	76	7.2	7.8	571	11	0.083	1.7
Monbulk Creek	73D9	345	66	7.2	7.4	343	38	0.083	1.3
Mordialloc Creek	92J2	6325	47	7.2	7.7	194	38	0.190	1.6
Patterson River	97J3	580	60	7.6	8.3	76	57	0.138	1.6
Balcombe Creek	145C11	2000	51	7.3	7.6	284	15	0.145	2.0
Chinamans Creek	169J3	1325	30	7.2	7.5	390	11	0.168	1.8
Dunns Creek	160C2	3500	67	7.5	7.7	288	10	0.086	0.8
Kackeraboite Creek	101H8	2500	66	7.4	7.6	585	10	0.069	1.3
Main Creek	260A9	2300	84	7.4	7.7	84	9	0.030	1.1
Sweetwater Creek	102A6	1850	78	7.4	7.7	794	18	0.068	1.3
Forest – A		*100*	*90*	*6.4*	*7.7*	*150*	*5*	*0.025*	*0.5*
Dandenong Creek	65K5	160	67	7.1	7.8	55	13	0.023	1.2

Waters of Western Port Bay & Catchment

Waterway	MELWAYS	DO% Min	pH Min	pH Max	E Coli Geomean	Turb 50%	TP Max	TN Max
Lowlands & Phillip Island		*80*	*6.5*	*9.0*	*200*	*15*	*0.05*	*0.6*
Cardinia Creek	767C13	72	6.5	8.5	107	21	0.08	1.3
Deep Creek	767D13	30	6.8	7.7	124	58	1.80	7.2
Toomuc Creek	767D13	44	6.4	8.2	84	24	0.68	2.6
Warrangine Creek	164G1	41	6.3	8.3	273	22	0.15	16.0
Watsons Creek	149E1	18	6.2	8.2	443	14	6.80	255.4
Northern Hills		*85*	*6.5*	*9.0*	*200*	*5*	*0.03*	*0.2*
Bunyip River	742A7	57	6.4	7.5	75	16	0.06	1.6
Bunyip River	770A5	66	6.4	8.3	572	17	0.33	2.6
Cardinia Creek	210B7	55	6.3	7.8	109	7	0.03	0.8
Diamond Creek	741J11	21	6.1	7.9	144	12	0.13	2.2
Tarago River	770B5	8	6.9	8.4	447	10	0.23	2.0
Toomuc Creek	215K4	45	6.8	8.0	108	13	0.11	1.4
Upper Tarago River	VR 80G9	8	7.2	7.9	78	14	0.04	1.5
Peninsula		*80*	*6.5*	*9.0*	*200*	*15*	*0.05*	*0.6*
Merricks Creek	193C9	17	6.2	7.8	185	11	0.24	2.6
Olivers Creek	154K6	24	6.3	7.7	176	13	1.50	4.6
Stony Creek	256E8	39	6.1	7.9	305	5	0.43	2.7
South Eastern Rural		*80*	*6.5*	*9.0*	*200*	*15*	*0.05*	*0.6*
Ararat Creek	319J10	43	6.7	7.9	146	30	0.09	1.6
Bass River	825I10	6	6.9	8.2	77	13	0.20	5.4
Bass River	851A9	12	6.7	7.8	493	23	0.22	5.5
Bunyip Main Drain	769E10	69	6.7	8.5	402	17	0.09	1.3
Lang Lang River	798D9	14	7.0	8.1	353	18	0.51	4.8
Minnieburn Creek	798H9	32	6.4	8.1	189	11	0.24	3.5

Waters of the Yarra Catchment

Waterway	MELWAYS	DO% Min	pH Min	pH Max	E Coli Geomean	Turb 50%	TP Max	TN Max
Rural Eastern Waters		*80*	*6.0*	*8.5*	*200*	*15*	*0.1*	*0.6*
Arthurs Creek	185K4	14	6.6	8.3	107	24	0.2	2.4
Cockatoo Creek	310E1	30	6.6	8.2	30	15	0.0	2.2
Coranderrk Creek	278C10	52	6.5	7.5	82	3	0.0	0.8
Hoddles Creek	287F6	25	6.3	8.2	263	16	0.0	0.8
Little Yarra River	288C6	29	6.4	8.6	311	11	0.0	0.9
McCrae Creek	305K10	26	6.6	8.2	374	22	0.0	0.9
New Chum Creek	270C6	49	6.5	7.8	77	11	0.0	3.0
Shepherd Creek	308F11	26	6.6	8.3	304	18	0.0	1.1
Stringybark Creek	275A9	33	6.6	7.8	55	10	0.0	1.0
Wandin Yallock Creek	285G4	31	6.5	8.2	48	11	0.1	2.5
Watsons Creek	24F1	34	7.0	7.8	71	9	0.1	2.3
Woori Yallock Creek	305K8	25	6.6	8.2	122	16	0.0	1.5
Woori Yallock Creek	286A10	33	6.6	8.6	163	12	0.0	1.4
Watts River	650H10	47	6.6	8.1	246	9	2.2	1.3
Yarra River	289E4	29	6.5	8.3	133	5	0.0	0.7
Yarra River	287H6	29	6.2	8.8	229	6	0.0	0.8
Yarra River	277G7	44	6.3	7.5	158	10	0.0	1.0
Yarra River	274E8	47	6.9	8.2	176	14	0.1	1.0
Rural Western Waters		*60*	*6.0*	*8.5*	*200*	*25*	*0.1*	*0.6*
Bruces Creek	246G8	13	6.9	9.1	99	25	0.4	2.2
Merri Creek	387H2	22	7.1	8.5	53	15	0.1	2.0
Plenty River	183K11	27	6.8	8.0	63	13	0.1	1.8
Upper Estuary		*60*	*6.5*	*8.5*	*200*	*30*		
Yarra River	43J9	53	6.8	8.4	236	6	0.1	1.2
Urban Waters		*60*	*6.0*	*8.5*	*200*	*25*	*0.1*	*1.0*
Andersons Creek	23B12	41	7.0	7.7	347	17	0.3	3.7
Brushy Creek	279B9	49	6.9	7.6	641	24	0.4	10.5
Darebin Creek	31E11	35	6.8	8.6	429	7	0.1	3.3
Diamond Creek	21H9	38	7.1	7.8	397	37	0.3	7.9
Edgars Creek	18A10	56	6.9	8.5	1170	3	0.1	1.2
Gardiners Creek	60J10	60	7.0	10.0	544	12	0.2	2.5
Gardiners Creek	59C2	49	6.6	8.5	862	8	0.1	2.3
Jumping Creek	24A11	33	6.8	8.0	146	9	0.2	2.3
Koonung Creek	32D10	32	7.1	7.6	1033	16	0.3	2.5
Merri Creek	2D C4	38	6.8	8.9	206	5	0.2	2.0
Moonee Ponds Creek	6D8	44	7.2	8.6	241	14	0.2	3.3
Moonee Ponds Creek	43B1	38	7.1	8.8	740	8	0.2	3.9
Mullum Mullum Creek	34F3	29	7.0	8.0	385	31	0.4	3.3
Olinda Creek	38H10	21	6.6	8.1	358	13	0.1	2.2
Olinda Creek	280J1	31	6.5	7.6	342	12	0.2	3.5
Plenty River	20K12	30	7.0	7.8	336	27	0.2	2.2
Ruffey Creek	33D4	66	7.1	7.9	532	13	0.2	2.9
Scotchman Creek	69D1	33	6.9	8.2	291	12	0.1	2.3

Yarra River	23F11	57	7.0	8.3	79	13	0.1	1.7
Yarra River	45B1	31	6.7	7.8	178	27	0.1	2.0
Parks and Forests		***85***	***6.5***	***8.5***	***200***	***5***	***0.0***	***0.2***
Big Pats Creek	291A11	29	6.6	8.6	82	7	0.0	0.7
McMahons Creek	686G2	30	6.6	8.3	70	6	0.0	0.6
O'Shannassy River	686C3	31	6.5	8.4	19	4	0.0	1.4
Starvation Creek	292G1	29	6.5	8.6	40	7	0.0	0.8

Reporting Alert Levels for Waterway Water Quality

EPAV no longer requires this information so this section is no longer required.

Renewable Energy and Greenhouse Gas Emissions Performance

Melbourne Water has established Key Performance Indicators for increased renewable energy and reduced greenhouse gas emissions. While there are no strict regulatory requirements for these, there are increasing 'soft' regulatory requirements such as EPAV's requirement to implement energy efficiency projects with pay back periods of three years or less. The Commonwealth Government has also introduced similar requirements for businesses that use more than 0.5 PJ of energy each year (Melbourne Water uses about 2 PJ).

The following graphs show performance against the two Key Performance Indicators. The definition for each is included with each graph. The graphs use data calculated according to the National Greenhouse and Energy Reporting System (NGERS) methods. For information two additional charts are included showing the energy content of sewage and water and the fuel efficiency of Melbourne Water's vehicle fleet.

NGERS reporting

2008/09 was the first year Melbourne Water was required to report under NGERS. Previously the Greenhouse Challenge Plus process was used to guide reporting. The NGERS process is a statutory process and Melbourne Water now uses the NGERS Determination to estimate and report on emissions and energy.

The Determination's estimation methods are significantly different to the Greenhouse Challenge Plus and Melbourne Water's emissions will increase using it. Melbourne Water is actively involved through WSAA in working with the Commonwealth Government to establish estimation methods that more accurately reflect our treatment processes. Success on this has not yet been achieved and Melbourne Water, through WSAA, will continue to discuss this with the Department of Climate Change.

Melbourne Water's emissions performance uses 2000/01 as a baseline year. Emissions previously estimated for 2000/01 have been changed using the NGERS determination to measure and report consistently.

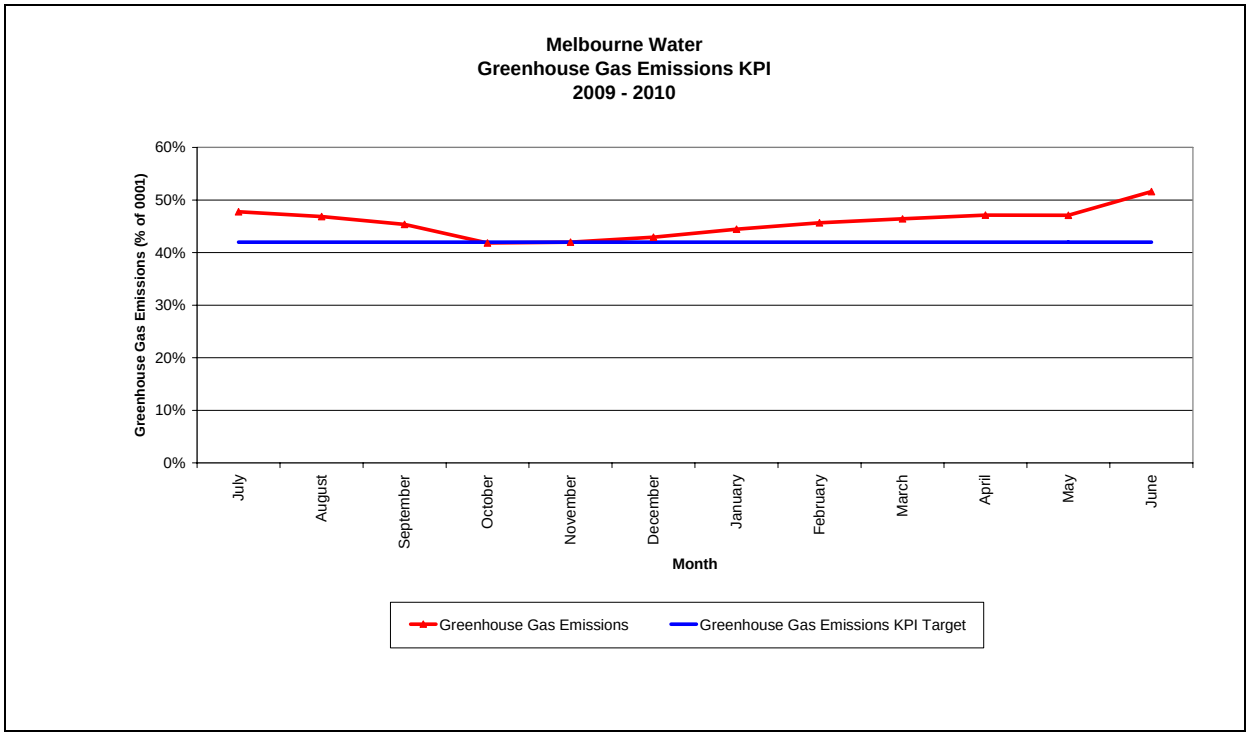
Changes to emissions are related to:

- Different estimations methods prescribed for sewage treatment
- Inclusion of capital works (Alliance Program in, Major Project Alliances not in)
- Exclusion of agricultural activities
- Exclusion of estimated sinks from Melbourne Water plantings.

It is possible that the outcomes reported in this section will change as more appropriate estimations methods are allowed and estimates of Melbourne Water's energy usage and emissions are finalised.

Greenhouse Emissions KPI

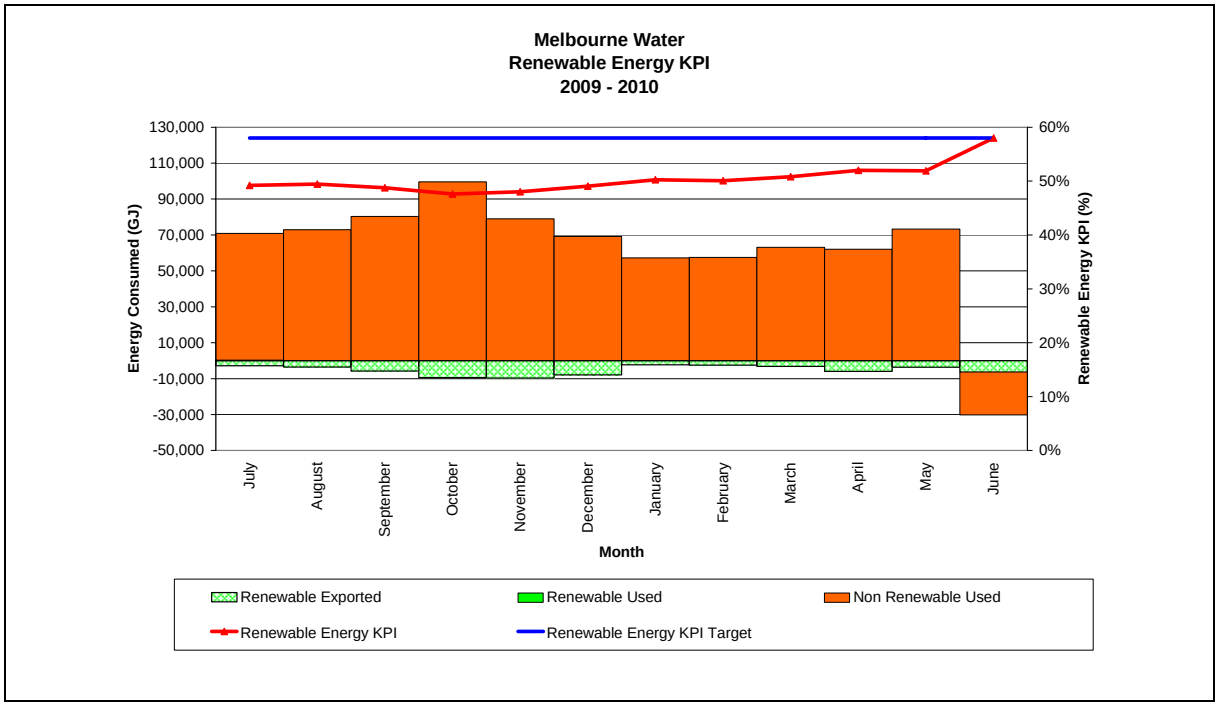
= (Total Emissions 2000/01 – Total Emissions 2009/10) / Total Emissions 2000/01



The above chart shows Melbourne Water's emissions reduction performance calculated according to NGERS.

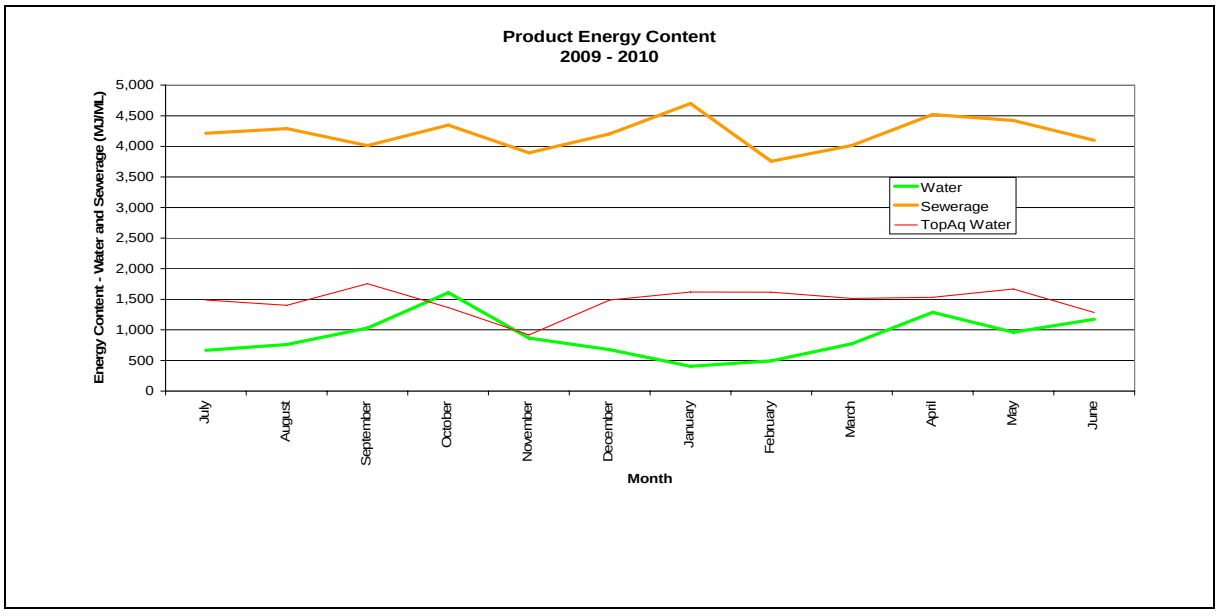
Renewable Energy KPI

= Renewable Energy Produced or Used / Total Energy used by Melbourne Water



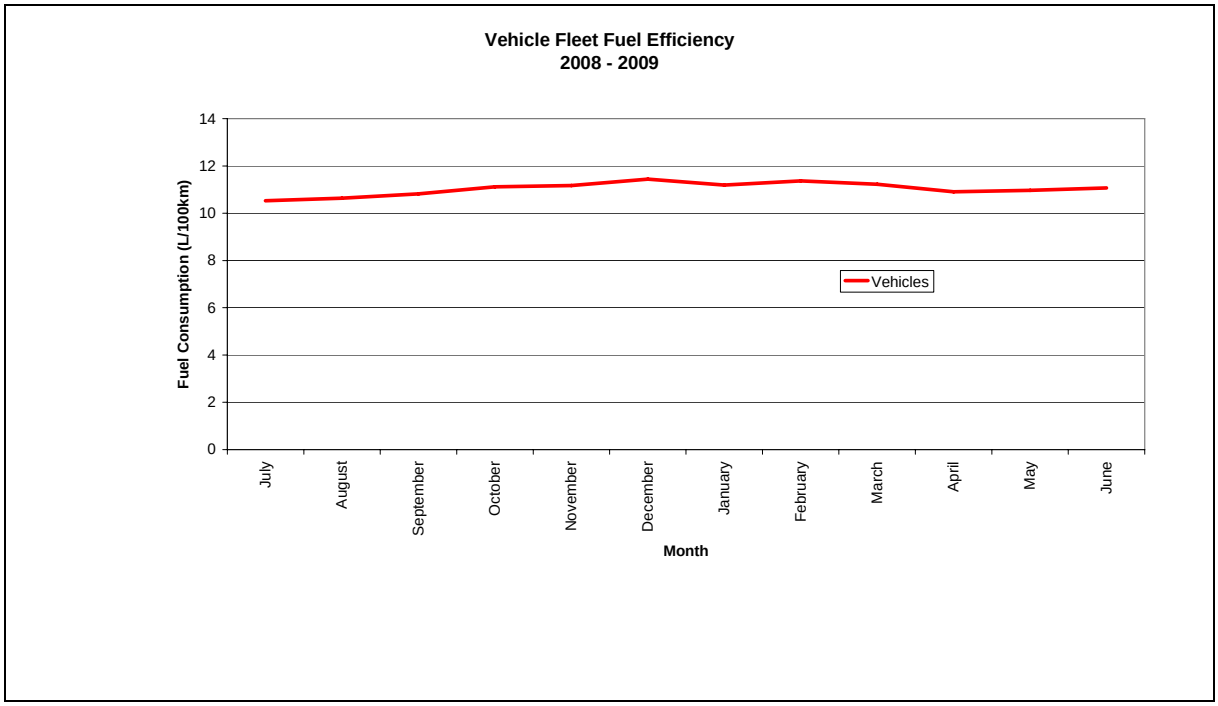
Energy content

Energy content is how much energy Melbourne Water or Earth Tech (TopAq Water) uses to produce a ML of product. Earth Tech's line is the average energy required per ML of Class A water from ETP effluent.



Vehicle fleet efficiency

On average how much fuel is used to travel 100 kms. It is expected that, over time, the new Sustainable Fleet Policy will have an impact on this.



Catchment Profile – Biodiversity investigations in the South East region

Melbourne Water's aquatic scientists conduct investigations into issues related to the health of rivers in their region. The following information summarises work undertaken by aquatic scientists in the South East Region over the last six months. Information from these investigations is used to inform the work carried out by River Health officers and ensures these works don't adversely affect the biodiversity.

Fish:

- Ongoing monitoring and tracking of the nationally threatened Australian grayling in the lower Bunyip River that uses acoustic tags implanted in fish to track their movement and spawning in the lower Bunyip River in response to flood-related triggers.

- Surveys of dwarf galaxias in the Cardinia Creek Retarding Basin and selected locations in the Cardinia Creek catchment to confirm the presence of the nationally listed species at one of Melbourne Waters Sites of Biodiversity Significance, the Cardinia Creek Retarding Basin. The investigation also included selected sites throughout the catchment including Grasmere Creek and Brisbane Creek and provided an update on the status of the species in the Cardinia Creek catchment.

  In addition to finding dwarf galaxias at various locations, southern pigmy perch, common galaxias and short finned eel were also identified. Unfortunately numerous introduced eastern gambusia were also found.

Platypus:

- Platypus surveys have been undertaken around Devils bend Reservoir but none was caught despite earlier sightings by farmers.

- Two dead platypus were collected by a local resident from a pond upstream of Pedersen Dam in the upper reaches of the Tarago River. The platypus were caught and presumably drowned in two Cray pots and investigations are ongoing in this matter.
- Two platypus were found in Cohranwaranbul Creek.

Biodiversity:

- Macroinvertebrate surveys in upper reaches of Toomuc Creek investigating the effect of urbanisation in the Pakenham area were completed during the year.
- Two Warragul burrowing crayfish were found near Labertouche in an area affected by the 2009 bushfires.

Appendices

Appendix One: Guide to Terms

Parameter	Units	Explanation
BOD ***Biochemical Oxygen Demand***	mg/L*	A measure of the oxygen depleting potential of waste - usually measured over a five day period.
CBOD ***Carbonaceous Biochemical Oxygen Demand***	mg/L*	A measure of the oxygen depleting potential of the carbonaceous (organic) portion of the waste - usually measured over a five day period.
SS ***Suspended Solids***	mg/L*	A gravimetric measure of undissolved matter, when retained on filter.
Amm ***Ammonia***	mg/L*	A form of nitrogen, present in untreated sewage and many industrial wastes. Is toxic to certain fish and marine species.
Surf ***Anionic Surfactants***	mg/L*	Surface active agents, associated with detergents
pH	numeric	A measure of the acidity (pH 0-7) or alkalinity (pH 7-14) of sample. Pure water is slightly acidic, due to dissolved carbon dioxide.
TRC ***Total Residual Chlorine***	mg/L*	A measure of the remaining chlorine associated with the disinfection of effluent.
D.O. ***Dissolved Oxygen***	mg/L*	An indication of "waterway health". Levels may deviate from saturation by pollutant depletion, or supersaturation due to algal activity.
Metals	mg/L* or μg/L#	Are an indication of contamination. Metals tested include lead, cadmium, chromium, copper, zinc, nickel and mercury.
E. coli *Escherichia coli*	no. of organisms/ 100ml	A common bacteria from the intestines of warm blooded animals. Used as an indicator of faecal contamination.
PAH's ***Polynuclear Aromatic Hydrocarbons***	μg/L#	Polynuclear Aromatic Hydrocarbons are by-products of petro-chemical industries and combustion processes. Many PAH's are highly carcinogenic.
Total P or TP ***Total Phosphorus***	mg/L*	Measured as phosphate after acid digestion of total sample to convert all combinations of phosphorus to phosphate.
Phenols	μg/L#	Phenols are widely used in resins, disinfectants and industrial products. Trace residuals are resistant to decomposition.
Total N or TN **Total Nitrogen**	mg/L*	The total amount of nitrogen comprising organic nitrogen, ammonia, nitrate and nitrite
Turb **Turbidity**	NTU	Cloudiness caused by materials suspended in water
EC **Electrical conductivity**	μS/cm	A measure of the ability to conduct an electrical current and used as an indicator of salinity
Org N ***Organic Nitrogen***	mg/L*	A distinction between the inorganic nitrogen forms (ammonia, nitrite and nitrate), and the organic compounds present in food/body wastes. (proteins, amines)

* milligrams per litre of water sampled - is equivalent to parts per million

\# usually expressed as micrograms per litre of water sampled - is equivalent to parts per billion

Appendix Two: Details of the Environmental Impact Rating of Sewer Spillages

The development of an environmental impact rating for sewer spills includes the following factors:

- environmental quality of the receiving water;
- spill content;
- dilution of effluent in receiving water; and
- the volume of the spill.

The impact rating is based on a procedure that considers the various combinations of grade for each of the factors together and then groups them into an impact rating based on a simple model. Each possible combination of grades has been put into one of the ratings from one to five. Although this may appear to be an arbitrary process, the results represent a reasonable estimation of the potential environmental impact of a spill from a sewer.

The environmental impact rating is an indication of the potential impact of spill events, not a measure of actual impact.

Examples

An example of a significant spill achieving an impact rating of "5" occurred during Period 12 1994/95. ERS number 327 discharged 10 826 Kl of untreated sewage into the Maribyrnong River. The volume of this spill was the key determinant in the spill classification of "5".

ERS number 327 discharged on another occasion during Period 12 1994/95 resulting in 68 Kl of sewage being discharged into the Maribyrnong River. This spill was given a rating of "2" due to the relatively minor volume of sewage discharged into the waterway and was not regarded as significant.

Appendix Three: Melbourne Water Spillage Reporting

How Melbourne Water reports sewerage system spills within Melbourne Water and to EPA Victoria is described below.

All spills, regardless of volume or content, are reported internally or to an external authority. The significance of the spill determines the reporting process.

Spills where there may be an environmental or public health hazard*

1. Immediately by phone or fax using the EPA NOTIFICATION OF SEWER SPILL form by a senior manager to EPA Victoria.
2. These spills require a SEWER SPILL NOTIFICATION FOLLOW-UP report to EPA Victoria within 21 days of the spill.
3. Subsequent written reports are provided to Melbourne Water executives (as required) and EPA Victoria (quarterly).

Where there is potential for a public health impact DHS is also notified.

All Spills (including spills of low significance)

1. Each period, a summary of all spills is included in the Business Unit's Operating Report to Board.
2. The Quarterly Board Environmental Compliance Report provides more details on all spills.
3. A Quarterly Spills Report summary of spills is forwarded to EPA Victoria.

*Hazards that require immediate follow up include where there is a:

- public health concern
- sensitive receiving environment
- large industrial or commercial waste component
- sewer spill very visible in a public area
- potential for media involvement
- sewer pipe 300mm diameter or greater
- flow >80L/min (ie: two house taps going flat out for approx hour = 5 KL)

Appendix Four: Description of the Phases of Trade Waste Agreement Restrictions

The retail water companies use a risk-ranking model as one of the tools used to manage trade waste discharged to sewer. The risk-ranking model has been developed over many years and takes into account key aspects of each customer's circumstances.

These include:

- Location of the discharge in relation to the receiving sewage treatment plant;
- Volume of trade waste discharged to sewer;
- Compliance history of the customer;
- Activities undertaken on the customer's site which generate trade waste; and
- Substances in the trade waste.

The risk-ranking model calculates a risk weighting for each customer and from this customers are allocated to one of five risk categories, with a risk ranking of 1 being the highest risk and 5 being the lowest. The risk rating determines the level of monitoring required for a company.

Retail water companies initiate a three-step management process when a customer does not comply with the conditions of their Trade Waste Agreement or Consent.

Stage 1:
When a non-compliant sample is identified, an Initial Trade Waste Notice is issued. The Notice specifies how the trade waste fails to comply and requires the customer to remedy the problem, provide written documentation explaining reasons for the non-compliance and the steps taken to ensure it will not happen again.

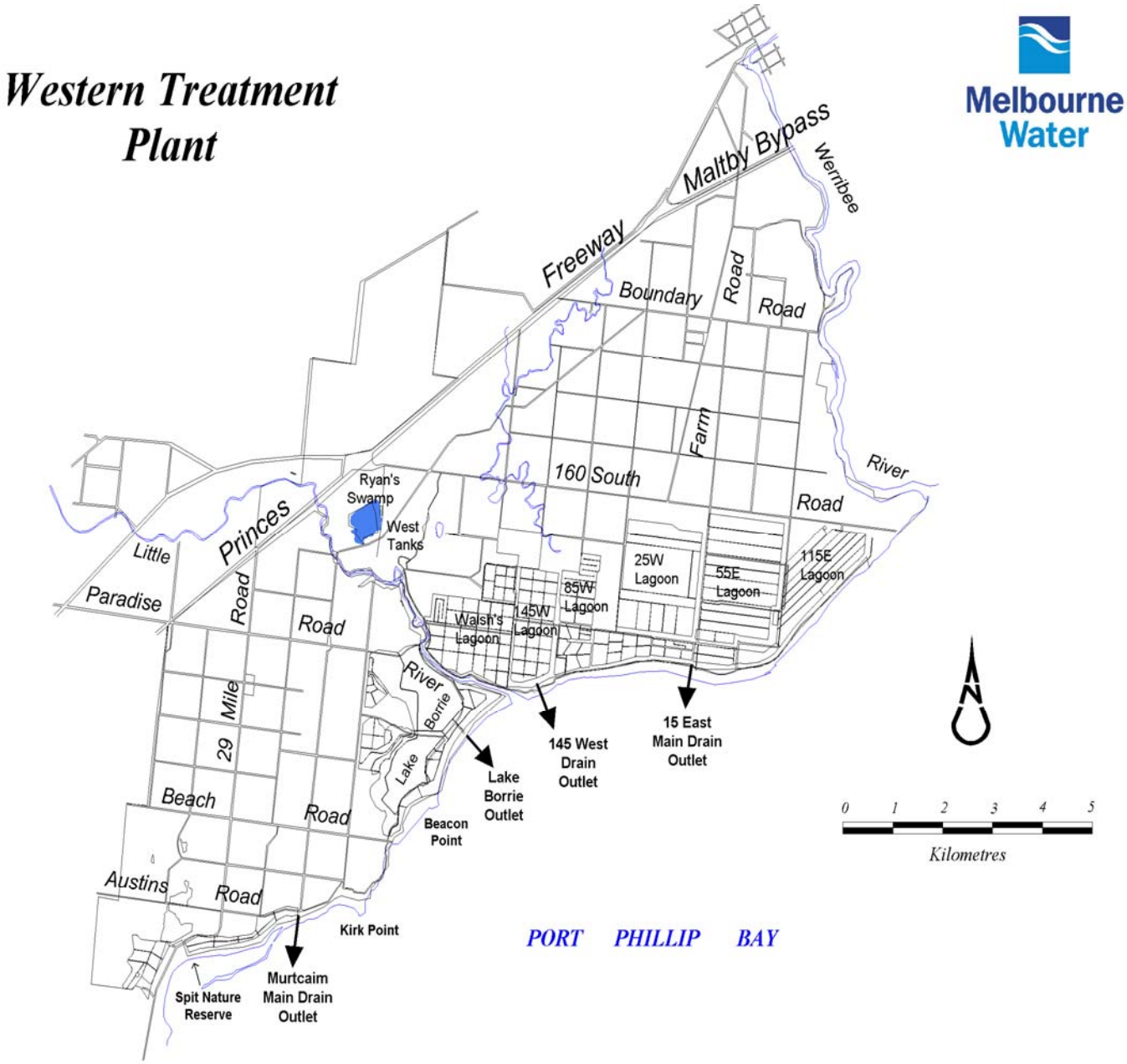
Stage 2:
If further samples of trade waste do not comply after the date specified in the Notice a letter is issued requiring the customer to:

- review its waste treatment processes;
- attend a meeting to discuss the cause of the non-compliance and processes to prevent a recurrence; and
- meet costs in ensuring trade waste complies with the Agreement.

Stage 3:
Samples of trade waste will continue to be taken and analysed and no further action will be taken if the trade waste becomes compliant. However if a sample does not comply a Notice of Breach will be issued setting out a date by which the trade waste must comply with the Agreement.

If the trade waste does not comply by the set date the customer must cease discharging trade waste to the sewer immediately, the trade waste connection point will be sealed and the media may be informed. Any further discharge of waste will be liable to a fine of up to $20,000 and up to $8000 for each day during which waste is discharged. Before any further trade waste can be discharged, a new Agreement must be negotiated and the customer must prove it will achieve on-going compliance.

Appendix Five: Map of Western Treatment Plant Discharge Points



Appendix Six: Environment Protection Authority (EPA) Enforcement Policy

The Environment Protection Act (1970) establishes the Environment Protection Authority to provide for a system of administration to ensure a high standard of environmental quality. The Act allows for a range of regulatory and non-regulatory activities including implementation of State environment protection policies, environmental monitoring and community education programs.

EPA Investigations

After an incident has been reported to the EPA, authorised officers from the EPA have the power under the Environmental Protection Act (1970) to embark upon an investigation. The investigation may involve:

- entry to the premises to take samples, photographs, tests, etc
- requesting information such as files, maps and or other documents relating to the incident
- identifying the occupier of the premises
- ordering clean-up procedures
- conducting formal interviews with management or individuals associated with the incident

Enforcement Measures

After investigation of a particular incident by the EPA the following enforcement measures are available under the Environment Protection Act (1970):

- warnings
- directions by an authorised officer
- notices
- infringement notices
- prosecutions
- licence suspension or revocation
- injunctions

Mounting a Prosecution - What is considered

In brief, the following factors are taken into account when deciding upon the most appropriate enforcement measures following an incident:

- the seriousness of the offence and harm to the environment
- previous history of offences
- the prevalence of the offence in the eyes of the public
- enforcement costs for the EPA
- the precedent which may be set by not taking enforcement action
- the cooperation of the alleged offending individual or company.

Melbourne Water and EPA Victoria

Melbourne Water could be subject to formal investigation by EPA Victoria in relation to incidents such as the 1992 Epsom Road Sewer Collapse and subsequent unlicensed discharge into the Maribyrnong River.

Melbourne Water has maintains a long-term cooperative relationship with EPA Victoria, including Quarterly Liaison Meetings of senior managers. This working relationship has resulted in open and honest communication so that the interaction between Melbourne Water's environmental performance and EPA Victoria's expectations holds no surprises.

Every incident such as the overflow of untreated sewage from an Emergency Relief Structure into a waterway could be regarded as an unlicensed discharge and an offence under the Environment Protection Act (1970). Where such incidents lead to unclear regulatory requirements steps are taken so that a clear position is developed. For example EPA Victoria has clarified that releases from the sewerage system through Emergency Relief Structures are compliant if they occur during rainfall events in excess of 1 in 5 years.

Appendix Seven: Emergency Response Procedures in Melbourne Water

A critical element of Melbourne Water's risk management process is ensuring the Corporation is prepared for and can effectively respond to and recover from incidents with potential to have an impact on our stakeholders, customers, the broader community or the environment.

Melbourne Water has established PERFORM (Prompt Emergency Response for Melbourne), which outlines the responsibility all Melbourne Water people have in incident management and details how we will respond to an incident in an integrated manner. The program highlights the need for thorough planning, preparation and training as a means of ensuring the effective and efficient management of any incident.

PERFORM is more than an incident management program, it is a comprehensive risk management program which incorporates prevention, preparedness, response and recovery for any adverse incident which could affect Melbourne Water.

The aims of PERFORM are to:

- Prevent or reduce the risks of incidents occurring in Melbourne Water
- Prevent or reduce the impact and consequences of incidents on customers, local community, stakeholders, environment, service delivery, system assets and operations
- Promote and support the maintenance and control of effective incident and emergency management processes

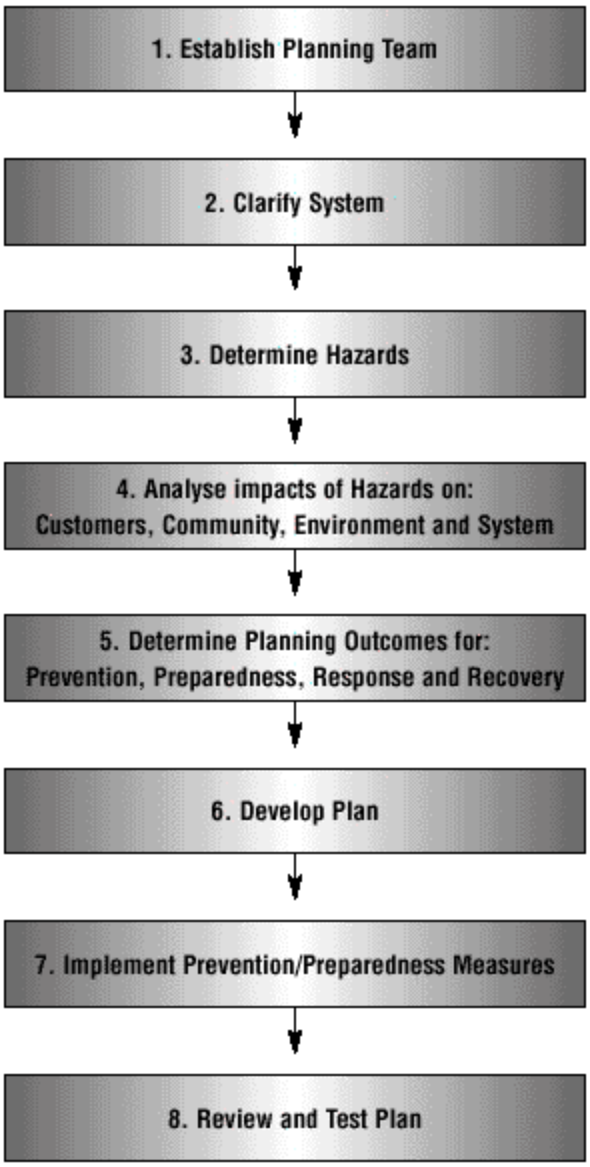
An *Incident* is any event or circumstance within our or our customers operations that causes or is likely to cause:

- An interruption of service to customers
- A threat to our systems
- A threat to community health and safety
- A threat to the environment
- A threat to private or public property.
- The creation of the need for urgent action under statute or legislation

PERFORM incidents are categorised into five types. The following table defines the incident types and provides some examples of each type:

Category	Definition	Examples
Near Miss	A Near Miss is an unintended event that, but for the intervention of a risk control measure or human intervention, is likely to have resulted in a minor, significant or major incident, or in an emergency.	• Detection of a chlorine release of greater than two ppm, but less than 10 ppm at Winneke water treatment plant • Lost bush walkers in catchment area
Minor	A Minor Incident is one where local work teams, under normal supervision, can effectively cope with little or no adverse effects on the Corporation, its customers and the community. ***Note: If the media become involved, a Minor Incident becomes a Major Incident.***	• Minor motor vehicle accident • Short duration computer system malfunction • Minor flooding • Vandalism in catchment area • Employee or contractor/visitor injury • Intentional access to catchment area
Significant	A Significant Incident is one that can be managed at the site level but: • May need external resourcing over and above that which is usually used by the work team; and/or • The actual or potential impact on the Corporation, its customers, the community and the environment is more widespread. ***Note: If the media become involved, a Significant Incident becomes a Major Incident.***	• Burst main causing some property damage • General sewer stoppage with contained spill • Moderate flooding • Prolonged SCADA outage • Minor industrial actions • Asset or system failure causing property damage • Intentional damage to catchment area
Major	A Major Incident is one which requires off-site co-ordination with major levels of external resourcing and support; and/or causes or has the potential to cause major impact on the Corporation, its customers, the community and the environment. ***Note: All incidents which involve the media are to be considered as Major Incidents***	• Burst main in a large shopping centre • General sewer stoppage resulting in an uncontained spill • Major or widespread flooding • Bushfire in water supply catchments (natural or intentional) • Dam failure • Major industrial action • Asset or system failure causing major property damage
Emergency	An Emergency is an event which significantly impacts Melbourne Water's ability to continue its operations. It will affect Melbourne Water's: • Operability (acceptable level of service) • Image or reputation(community, media, political) • Liability (legal, financial)	• Any of the above major incidents • Fatality or multiple injuries • Loss of stakeholder support • Corporate governance/compliance issue • Occurrence of any of the five key metropolitan water industry threats

PERFORM does not only involve cleaning up after an incident. It also involves planning, training, procedure documentation and test planning. The incident management planning process is described below;



PERFORM applies to all Melbourne Water operations and business areas. Each group has generic plans to cover routine system faults for the different water supply, wastewater and drainage operations or for any other activity that has potential to have an impact on Melbourne Water's business, its customers or the community.

A contingency plan is a series of processes or procedures to prevent, prepare for, and respond to and recover from events that can be foreseen to occur that can affect our operations or service delivery. It identifies any potential problem areas, and provides options for containing and controlling such events.

Each manager is responsible for determining the probability and consequences of failure of assets, systems and work practices, as well as for preparing contingency plans to deal with any failure.