



THE NORTHERN ADELAIDE PLAINS LEAKY WELLS PROJECT 1998 - 2003

DWLBC
Report

2002/25



**The Department of
Water, Land and
Biodiversity
Conservation**

The Northern Adelaide Plains Leaky Wells Project Summary

1998-2003

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Barossa Catchment Water
Management Board**



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Foreword

South Australia's natural resources are fundamental to the economic and social well being of the State. One of the State's most precious natural resources, water is a basic requirement of all living organisms and is one of the essential elements ensuring biological diversity of life at all levels. In pristine or undeveloped situations, the condition of water resources reflects the equilibrium between rainfall, vegetation and other physical parameters. Development of these resources changes the natural balance and may cause degradation. If degradation is small, and the resource retains its utility, the community may assess these changes as being acceptable. However, significant stress will impact on the ability of a resource to continue to meet the needs of users and the environment. Understanding the cause and effect relationship between the various stresses imposed on the natural resources is paramount to developing effective management strategies. Reports of investigations into the availability and quality of water supplies throughout the State aim to build upon the existing knowledge base enabling the community to make informed decisions concerning the future management of the natural resources thus ensuring conservation of biological diversity.

Bryan Harris
Director, Resource Assessment Branch
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1.0 EXECUTIVE SUMMARY

The Resource Assessment Branch of the Department of Water Land and Biodiversity Conservation (DWLBC) is currently undertaking the 'Northern Adelaide Plains Prescribed Wells Area Well Investigation Project' for the Northern Adelaide and Barossa Catchment Water Management Board (NABCWMB). This report provides an overview of the issues, results to date and future directions for the project.

Stage 1 of the Leaky Wells Project is designed to audit and compile an accurate list of licensed irrigation wells within the Northern Adelaide Plains (NAP) Prescribed Wells Area (PWA). Of these licensed wells pumped salinity samples were to be collected by the licence holder and submitted for analysis. From a review of these wells and recorded salinity information all wells determined to be contaminating the major production aquifers were to be identified, investigated and remedial action undertaken.

Stage 2 of the Leaky Wells Project aimed to assess the condition of the 2868 abandoned and disused wells throughout the NAP. As mentioned in the Administrative Agreement, it was expected that this phase of the project would be the most intensive, requiring considerable field investigations to determine the locations and current condition of these wells.

Summary of Work Completed

1998 to June 2001

It was identified that as of June 2001 there were 1499 licensed operational wells within the NAP PWA. A review of available salinity data indicated that 310 of these wells had no salinity information for the period from 1998/1999 or 1999/2000 water use year. The 2000/01 salinity sampling program resulted in 647 sample returns (Table 1) with 852 wells not sampled.

Table 1. Salinity Sampling Breakdown of Licensed Wells

Total Licensed Wells (June 2001)	1,499
Salinity Samples Submitted (by June 2001)	495
Bottle Returned Identifying Well Backfilled	126
Bottle returned Identifying Pump Broken	26
Total (for June 2001)	647
Wells Not Sampled (by June 2001)	852

Incorporation of the 2000/01 license holder salinity sampling into the review of recent (post 1998) salinity information identified a total of 872 wells that provide salinity data.

Table 2. Breakdown of Licensed Wells Providing Salinity Information (1998 – 2001)

Number of Wells with Salinity Data (1998 - 2001)	872
Salinity Data Representative of Regional Aquifer Salinity	733
Wells with High Salinity Readings – Presumed Leaking	80
Wells with Rising Salinity Trends – Listed for Future Monitoring	59

The wells identified to have salinities greater than regional aquifer salinity were considered to be potentially leaky. Investigations of these 80 wells were undertaken (Table 3) by checking well status and undertaking geophysical logging and salinity resampling where appropriate.

Table 3. Breakdown of Wells Identified as Potentially Leaky

Wells Investigated as Leaky	80
Well Marked for Rehabilitation/Backfilling due to Time Since Construction	16
Wells Geophysically Logged and Shown to be Leaky (of these 12 have been rehabilitated or backfilled already)	30
Wells Not Investigated due to Stuck Pumps	7
Wells Not Investigated due to Lack of Access Permission by Well Owner	4
Wells with Pumps to be Pulled (as at June 2001)	6
Wells Where Licence Holder yet to be Contacted (as at June 2001)	5
Wells Shown Not to be Leaking	6
Wells Resampled and Shown to have Regional Aquifer Salinity Levels	6

Further information on the geophysical logging work undertaken in respect with this project can be found in following report; "A Preliminary Report on the Geophysical Testing of Wells That Have Abnormally High Salinity, NAP Corroded Casing Survey 1999/2000"; PIRSA Report Book 2000/14.

June 2001 to June 2002

Continuing work on the 80 wells mentioned previously resulted in a total of 63 licensed wells identified as a source of groundwater contamination, which would require either backfilling or rehabilitation. Owners had previously remedied 17 wells. The NABCWMB implemented the Leaky Wells Incentive Project utilising Natural Heritage Trust (NHT) funding to subsidise remediation costs incurred by owners. A total of 106 registrations of interest have been received.

Completion of Stage 1 of the Leaky Wells Project has been consistently impeded by the low return of samples. As a result, DWLBC have undertaken to collect the remaining water samples to provide a complete salinity data set for the licensed wells in the NAP. Table 4 summarises the current status of the sample collection program for licensed irrigation wells. 310 samples remain and it is anticipated that these will be collected by March 2003.

Table 4. Number of Water Samples Collected from 1998-June2002

Total Licensed Irrigation Wells (1998-June 2002)	1282
Salinity data representative of regional aquifer salinity	671
Wells with abnormally high salinity – presumed leaking	80
Wells with rising salinity trends – listed for future monitoring	26
Wells with salinity data requiring analysis or further sampling	195
Total Wells with Salinity Data (1998-June 2002)	972
Total Wells Not Sampled (by June 2002)	310

Given these delays, DWLBC continued analyses of available salinity data for licensed wells and updated the list of licensed wells as identified by the project work. In addition, the collation of all available well information, well completion data and status for disused/abandoned wells commenced (Phase 1, Stage 2).

Project Expenditure

A summary of project expenditure from 1998 to June 2002 (Table 5) and proposed expenditure for 2002/2003 (Table 6) are provided below.

Table 5. Breakdown of Project Expenditure from 1998 to June 2002

Project Expenditure	DWLBC	NABCWMB	Whole of Project
1999/2000			
Employment	\$53 147	\$43 540	
Operational Costs	\$15 000	\$16 000	
99/00 Total Project Costs	\$68 147	\$59 540	\$127 687
2000/2001			
Employment	\$57 580	\$53 390	
Operational Costs	\$27 419	\$6 610	
00/01 Total Project Costs	\$84 999	\$60 000	\$144 999
2001/2002			
Employment	\$51 474	\$30 000	
Operational Costs	0	0	
01/02 Total Project Costs	\$51 474	\$30 000	\$81 474
Total Expenditure to 2002 (excl. GST)	\$204 620	\$149 540	\$354 160

Table 6. Proposed Project Expenditure for 2002/03

Proposed Project Expenditure (2002/03)	DWLBC	NABCWMB
Employment		
Volmer Berens	\$11 214	0.2
Tania Wilson	\$28 035	0.5
Scott Evans	\$14 662	0.2
Total Employment Costs	\$53 911	\$28 035
Operating Costs		
Various	\$6 089	\$4 965 (NEK)
Total Operational Costs	\$6 089	\$4 965
Total Project Costs (excl. GST)	\$60 000	\$33 000

Work Plan 2002/03

It is proposed that during the 2002/03 period the following activities will be undertaken:

- Complete the investigation of licensed wells not completed during 2000/01.
- Continue the identification, investigation and review of the remaining abandoned and disused wells within the NAP (Phase 1, Stage 2 of the original program).
- Continuation of DWLBC sampling program of all licensed irrigation wells throughout the NAP.

Table 7. Summary of proposed work program for 2002/03

Work Outline	Completion Date
Obtain water quality analysis for remaining 310 licensed irrigation wells, compile data and produce spatial salinity data maps	March 03
Production of time series salinity information, comparison with historical data and interpretation for remaining 310 licensed irrigation wells	May 03
Field verification of any wells identified with abnormally high salinity from the above analyses	June 03
Half yearly Summary Report	February 03
Annual Report	June 03
Continuation of identification, investigation and review of approximately 3000 abandoned and disused wells throughout the NAP	Ongoing

2.0 INTRODUCTION

The Northern Adelaide Plains (NAP) has been an established irrigation area since the 1950s with irrigators predominantly utilising available groundwater resources from two confined Tertiary aquifers (T1 and T2). In 1976 the NAP became a Proclaimed Water Resource area, and in 1997 a Prescribed Wells Area, as irrigation practices were utilising the groundwater resource at unsustainable levels.

Prior to the 1950s, water levels of both T1 and T2 were approximately 10 m above ground level. However, with over 50 years of heavy extraction, water levels have declined significantly in both Tertiary aquifers. Cones of depression have developed in the T1 aquifer around the Waterloo Corner irrigation area and the Penrice Soda Industrial area. The T2 aquifer cone of depression can have a water level decline of 75 m at its centre near Virginia (Gerges 2001).

Currently, extraction of groundwater from the Tertiary aquifers occurs from approximately 1400 production wells and is estimated to be between 17 500–18 500 ML/yr (Gerges 2001).

The NAP Leaky Wells Project was initiated in 1998 due to irrigators throughout the NAP expressing concern over increasing groundwater salinity. The DWLBC conducted an initial investigation into the causes and extent of increased salinity. It was established that of 199 representative production wells, completed in either T1 or T2, 34 wells indicated abnormal increases in salinity due primarily to leakage via corroded casing. From these initial results it has been estimated that the number of leaking wells throughout the NAP could be between 200-500 (Schuster and Gerges 1999).

In 2001 the Department of Water, Land and Biodiversity Conservation (DWLBC) and the Northern Adelaide and Barossa Catchment Water Management Board (NABCWMB) jointly signed a Memorandum of Administrative Agreement. Given the severity and extent of the issues facing the groundwater resources of the NAP, and as outlined by the Administrative Agreement, the NABCWMB agreed to contribute \$50 000 pa in matched funding to provide a Project Officer to address these issues.

The objectives of the project and details of the work involved in addressing these issues are outlined in the copy of the Administrative Agreement included in Appendix A.

3.0 PROJECT HISTORY

Prior to the signing of the Administrative Agreement between DWLBC and NABCWMB (May 2001) two preliminary investigations were undertaken by Resource Assessment Branch, DWLBC (then PIRSA). In response to concerns of irrigators throughout the NAP an initial study into the extent and causes of increasing salinity within wells commenced in 1997. Gerges and Schuster (1999) conducted an initial desktop study, with follow up fieldwork reported by Schuster (2000). These reports are summarised below.

A total of 199 wells, considered to be representative of different areas and aquifers within the region, were selected for this initial study. Of the 199 wells, 37 wells were completed in the T1 aquifer and 162 wells were completed in T2.

The main causes of increasing salinity within wells can be attributed to:

- Downward leakage of more saline water from overlying Quaternary aquifers due to the corrosion of old steel cased non-pressure cemented wells. In some cases where wells are not pressure cemented, water may migrate through the annulus outside of the casing.
- Increases in salinity may also be due to saline plumes created by adjacent leaking wells.

Additional reasons that may contribute to increasing salinity include:

- Heavy pumping causing a reversal of the hydraulic gradient, which may induce downward leakage from overlying more saline aquifers.
- Heavy pumping causing an increase in lateral migration of more saline water from the margins of the aquifer.
- Weakening, or damage to the confining layer during drilling or as a result of decreased pressure within the aquifer.
- Wells that are completed in more than one aquifer will allow migration of water between aquifers.

Available information for the 199 representative wells was collated from DEHAA and PIRSA databases. This information included the aquifer the well was completed in (either T1 or T2), well construction details, well location and an initial or earliest recorded salinity reading for each well.

Salinity point source maps for the T1 and T2 aquifers were produced showing initial and latest (1997/98) salinities for each of the 199 wells. These point source salinity maps were then compared to historical salinity maps for the T1 and T2 aquifers. Historical salinity maps for the NAP are based on initial salinity data from the 1950s and early 1960s. As the deeper Tertiary aquifers were not utilised prior to this time it is considered to be the closest representation of native salinity for the Tertiary aquifers throughout the area. A comparison between the native salinity and point source salinity maps would indicate whether a well has experienced an increase in salinity or has remained stable.

Initial salinity readings and subsequent salinity data for each well was plotted on salinity versus time graphs and a line of best fit plotted to create a time series trend line. From the historical salinity maps a native salinity range for each well was also plotted and compared to recent salinity trends.

The following criteria were used during analysis of the salinity data to determine if a well was experiencing saline contamination:

- Wells with salinity levels that exceed the expected rate of increase (3-5 mg/L per year) are considered to be contaminated.
- Wells that indicate steep linear increases in salinity during the past 10 years are considered to be contaminated.
- Wells without an increasing salinity trend but have had a higher than native salinity since construction are considered to be contaminated. These wells are thought to be contaminated by saline plumes from neighbouring leaky wells.
- Wells with sharp increases or decreases in salinity during 1997/98 require resampling and testing for accuracy.
- Wells with 1-3 salinity readings recorded between 1987-1997 and wells with no salinity readings for the last 2-3 years require sampling and testing.

Table 8 summarises the status of the 199 representative wells:

Table 8. Results of initial investigation of 199 representative wells

Wells	T1	T2
Wells backfilled prior to 1999	2	6
Wells that have issued permits to backfill in January 1999		1
Wells not considered to be experiencing salinity contamination	19	96
<i>Wells with abnormally high salinity</i>	9	24
Wells requiring more annual salinity data for accurate analysis	6	21
Wells that could not be sampled or resampled	1	9
Wells still requiring identification/location confirmation		4
Wells suspected to connect two aquifers		1
Total	37	162

From the 199 representative T1 and T2 production wells the initial results have identified 34 wells with abnormally high salinity levels. Field investigations, using geophysical logging, down-hole camera and site surveys, were conducted to determine the condition of individual well casings. A further six old steel cased wells were added to the list as they were potentially contributing to increasing salinity levels within the surveyed wells.

The results from the field assessment are summarised in Table 9.

Table 9. Results of field investigations of wells with abnormally high salinity identified from initial study

Well Categories	No.
Wells considered to be leaking and contaminating the production aquifers	8
Wells that are heavily corroded and considered to be potentially leaking	3
Wells considered to be contaminated by saline plumes from neighbouring wells	11
Wells suspected of contamination by induced leakage of saline water in the Waterloo Corner area	2
Wells not considered to be affected by saline contamination	7
Wells that could not be tested due to refusal of the owner	1
Wells that may be contaminated from neighbouring wells, where the neighbouring wells could not be logged due to use for irrigation	3
Wells that need to be logged but were in use for irrigation	5
Total	40

From initial investigations on the 199 representative wells, a total of 11 wells (5-6%) were considered to be leaking and contaminating the T1 and T2 production aquifers. As there are approximately 1400 licensed production wells throughout the NAP and an estimated 3000 disused/abandoned wells, between 250-300 wells could be expected to be leaking based on these initial results.

An initial investigation, separate to the NAP Leaky Wells Project, was conducted into the causes for abnormally high salinity in two recently drilled production wells in the Waterloo Corner Area (Osei-Bonsu, Gerges and Zulfic, 2000). This study concluded that the two wells were correctly constructed and the high salinity observed was most likely due to contamination from overlying saline aquifers via a corroded well. Further recommendations were proposed, however, progress has stalled due to funding constraints.

4.0 MEMORANDUM OF ADMINISTRATIVE AGREEMENT

4.1 General

Based on the results of the initial investigations, which suggests that between 250-300 leaking wells exist throughout the NAP, the NABCWMB required the DWLBC to continue addressing these issues. An Administrative Agreement between the NABCWMB and DWLBC was produced and is designed to detail each party's commitment and responsibilities for undertaking the leaky wells project (Appendix A).

This agreement was signed by both parties on the 29 May 2001 and is intended to continue until 30 June 2003. Minor modifications to the agreement were suggested by DWLBC in June 2002 and are included in the overview of obligations below:

4.2 Summary of DWLBC Obligations

As detailed in the Administrative Agreement the DWLBC is responsible for the following:

- Completion of outstanding work on the 199 wells selected for initial investigation.
- From the remaining licensed wells (approximately 1400), identify all wells requiring remedial work.
- Identify and assess the condition of all disused/abandoned wells throughout the NAP (approximately 3000).
- Collect samples from all licensed wells over the irrigation season.
- Forward completed analyses of samples to NABCWMB for preparation of reports for individual irrigators.
- Provide the NABCWMB with a half yearly 'action summary' report.
- Provide the NABCWMB with a detailed annual report at the end of each financial year including work to date, expenditure and projected timeframes for the following 12 months.

4.3 Summary of NABCWMB Obligations

- Liase between DWLBC and irrigators and media, if required, with reference to the NAP Leaky Wells Project.
- Provide individual reports on analysed samples to irrigators via a commissioned consultant.
- Provide \$30 000 pa of matched funding for the duration of the NAP Leaky Wells Project.

4.4 Summary of Progress from February 2001 to June 2002

As requested, the following is a brief summary of each progress report submitted to the NABCWMB since the signing of the Administrative Agreement.

February 2001

As of February 2001, prior to the signing of the Administrative Agreement, the Leaky Wells Project had progressed steadily.

Of the licensed operational wells, 764 had sufficient samples to allow salinity trends to be updated. 113 wells exhibited abnormally high salinity levels and were subsequently investigated (refer to Table 10).

Table 10. Results for all licensed wells with available salinity data (February 2001)

Well Categories	No.
Wells geophysically logged and determined to be leaking	18
Wells geophysically logged and suspected of leaking (The above wells have been recommended for rehabilitation or backfilling)	3
Wells with abnormally high salinity, due to be geophysically logged	13
Old non pressure cemented wells with abnormally high salinity levels (The above wells have been recommended for rehabilitation or backfilling)	11
Owners who will not allow their wells to be geophysically logged	4
Wells determined to be contaminated by a saline plume from a neighbouring well that has since been backfilled. Require continued monitoring.	53
Wells geophysically logged and determined not to be leaking	4
Wells resampled/construction details reanalysed and determined satisfactory	7
Wells with native salinity levels. Require continued monitoring.	651
Total	764

The balance of 596 licensed wells have not submitted water samples during 1999 or 2000, and 314 of these wells have no samples or only one sample submitted since the time of their construction. Failure of licensees to return samples to DWLBC has inhibited the progress of the Leaky Wells Project, as it is not possible to produce reliable salinity trends for each of the wells.

June 2001

From surveying available salinity data for the 1499 licensed production wells¹ it was found that:

- 603 wells had sufficient salinity data available for analysis.
- 126 wells had been backfilled but are still under licence.
- 269 wells had one or nil salinity readings.
- 501 wells did not have salinity readings for 1998/99/00 or 01.

Sample bottles for 2001 were issued to all licensed wells in March 2001. As of the end of June:

- 495 wells had submitted samples.
- 126 wells had been backfilled.
- 26 wells could not be sampled due to broken pumps, etc.
- **852 wells had not submitted samples.**

¹ Prior to February 2002, DWLBC records indicated a total of 1499 licensed production wells in the NAP. Of the 1499 wells, 1373 wells were operational and 126 had been backfilled.

For the 872 wells with available salinity data time series salinity graphs, including native salinity ranges, were constructed for the 872² wells. An initial interpretation of the salinity graphs and maps for the 872 wells indicated:

- 80 wells requiring geophysical logging/field surveying due to abnormally high salinity levels.
- 59 wells have abnormal salinity trends and will require monitoring.
- 733 wells have native salinity levels.

Results from field investigations and validation of the 80 wells are summarised in Table 11.

Table 11. Results of investigations of the 80 wells with abnormally high salinity identified from available salinity data (June 2001)

Well Categories	No.
Wells geophysically logged and determined to be leaking (14 have been backfilled or rehabilitated)	30
Old non pressure cemented wells with abnormally high salinity levels (Recommended backfilling without logging due to age)	16
Wells with stuck pumps, cannot be logged, but are potentially leaking (1 well since backfilled)	7
Wells due to be geophysically logged	6
Owners yet to be contacted	5
Owners who will not allow their wells to be geophysically logged	4
Wells geophysically logged and determined not to be leaking	6
Wells resampled/construction details reanalysed and determined satisfactory	6
Total	80

Various stages within the project outline have suffered delays due to 501 wells not having salinity readings for 1998/99/00 or 01. Project stages that have been delayed include data acquisition, data compilation, salinity spatial data mapping, generation of time series salinity data, data comparisons, interpretation and analysis.

Given these delays the well completion data and current status for all unlicensed wells (approximately 3000) throughout the NAP have been accessed and are currently being assessed.

February 2002

Of the 1387 listed licensed operational wells throughout the NAP only 882 wells have sufficient records to enable an assessment of salinity trends. A review of the salinity records for these wells indicates the following:

- 63 wells are identified as a source of groundwater contamination
- 741 wells have native salinity levels and do not require remedial work.
- 68 wells are contaminated by saline plumes formed by neighbouring leaking wells.
- 6 wells with high salinity were geophysically logged and found not to be leaking or corroded and therefore did not require remedial work.
- 4 wells with abnormally high salinity wells still require logging due to difficulties in contacting well owners.

² The time series salinity graphs referred to in the June 2001 progress report have not been incorporated in DWLBC reports to date.

The Leaky Wells Project has identified 63 licensed production wells that are acting as a source of groundwater contamination. Of these wells 17 have already undergone rehabilitation since the project commenced in January 1999. There are 46 wells remaining that require rehabilitation (refer to Table 12).

Table 12. Categories of 46 wells identified that require rehabilitation (February 2002)

Well Categories	No.
Wells geophysically logged and found to have corroded well casing	14
Old non pressure cemented wells with abnormally high salinity levels	16
Wells with stuck pumps or broken pumps and require rehabilitation	6
Wells found to be connecting two or more aquifers or leaking saline water into the production aquifers	10
Total	46

The Leaky Wells Project is on going and it is likely that a number of other licensed production wells will be identified as a source of contamination. Any additional wells will be identified and reported to the NABCWMB as required.

As of February 2002, a total of 505 licensed wells currently have no recent salinity data available. Water samples will need to be collected from these wells before their status can be determined.

DWLBC has commenced a review of all available data on the 2868 disused/abandoned wells throughout the NAP. The current work program is examining the following:

- Status of the wells (disused/abandoned irrigation well, stock/domestic well, observation wells etc.).
- Completion aquifer (Q1, Q2, T1, T2 etc.).
- Condition of these wells (backfilled, covered or open).

Amendments to the Administrative Agreement

On 24 June 2002 proposed changes to the Administrative Agreement were submitted by DWLBC to NABCWMB for consideration. Due to the consistent low return of samples from irrigators and, as a consequence, the delays in progress of the project, DWLBC will collect the 500 outstanding samples, ensuring a complete set of samples for the 2000-01 and 2001-02 irrigations seasons. It is also suggested that a Technical Officer be engaged by DWLBC to assist in the collection of samples during subsequent irrigation seasons. This would ensure the collection of quality samples from all irrigators over the irrigation season. Results of the collected water samples will be forwarded to a consultant, commissioned by NABCWMB, for preparation of reports for individual irrigators. A copy of the proposed changes to the Administrative Agreement is included in Appendix B.

Project Meetings: NHT Leaky Wells Incentive Project

Since March 2002 several meetings have been conducted between DWLBC and NABCWMB to discuss the implementation and progress of the NHT Leaky Wells Incentive Project. A total of 106 registrations were received and are categorised in Table 13:

Table 13. Current status of wells requiring rehabilitation whose owners have registered for the NHT Leaky Wells Incentive Project (September 2002)

Categories	No.
Complete – well backfilled or rehabilitated (17 include wells from the 56 issued well orders)	46
Well driller to complete	32
Salinity acceptable – no further action required	11
Registered but have had no further contact	10
Have registered and received well order, but heard nothing else	6
Unsure of status	1
Total Registrations	106

Figure 1 illustrates the distribution of well owners who have registered interest in receiving NHT funding for well rehabilitation.

4.5 Project Summary

As of June 2002 the total licensed irrigation wells² within the NAP was 1282. For these licensed irrigation wells current records indicate a total of 972 wells have submitted salinity samples during the period 1998-June 2002 (Appendix C). Due to the consistent low return of samples it was proposed that DWLBC undertake a sampling program for all licensed irrigation wells during 2002/03. This will incorporate the 505 wells without recent salinity data. As of October 2002, 310 wells of the 505 were yet to be sampled (Appendix D). An additional 195 samples have been collected by DWLBC with the remaining 310 samples (Appendix D) to be collected by March 2003.

Table 14 summarises the current information regarding salinity data of the 1282 wells. Table 15 provides a detailed breakdown of the total salinity samples by year and aquifer sampled for the period 1998-June 2002.

Table 14. Current status of salinity samples collected for the 1282 licensed irrigation well (June 2002)

Total Licensed Irrigation Wells (1998-June 2002)	1282
Wells with acceptable salinity levels	671
Wells with abnormally high salinity – presumed leaking	80
Wells with rising salinity trends – listed for future monitoring	26
Wells with salinity data requiring analysis or further sampling	195
Total Wells with Salinity Data (1998-June 2002)	972
Total Wells Not Sampled (by June 2002)	310

² As of June 2002, a total of 1282 licensed irrigation wells exist within the NAP. The figures referred to for June 2002 do not include the 217 licensed stock and domestic wells throughout the NAP.

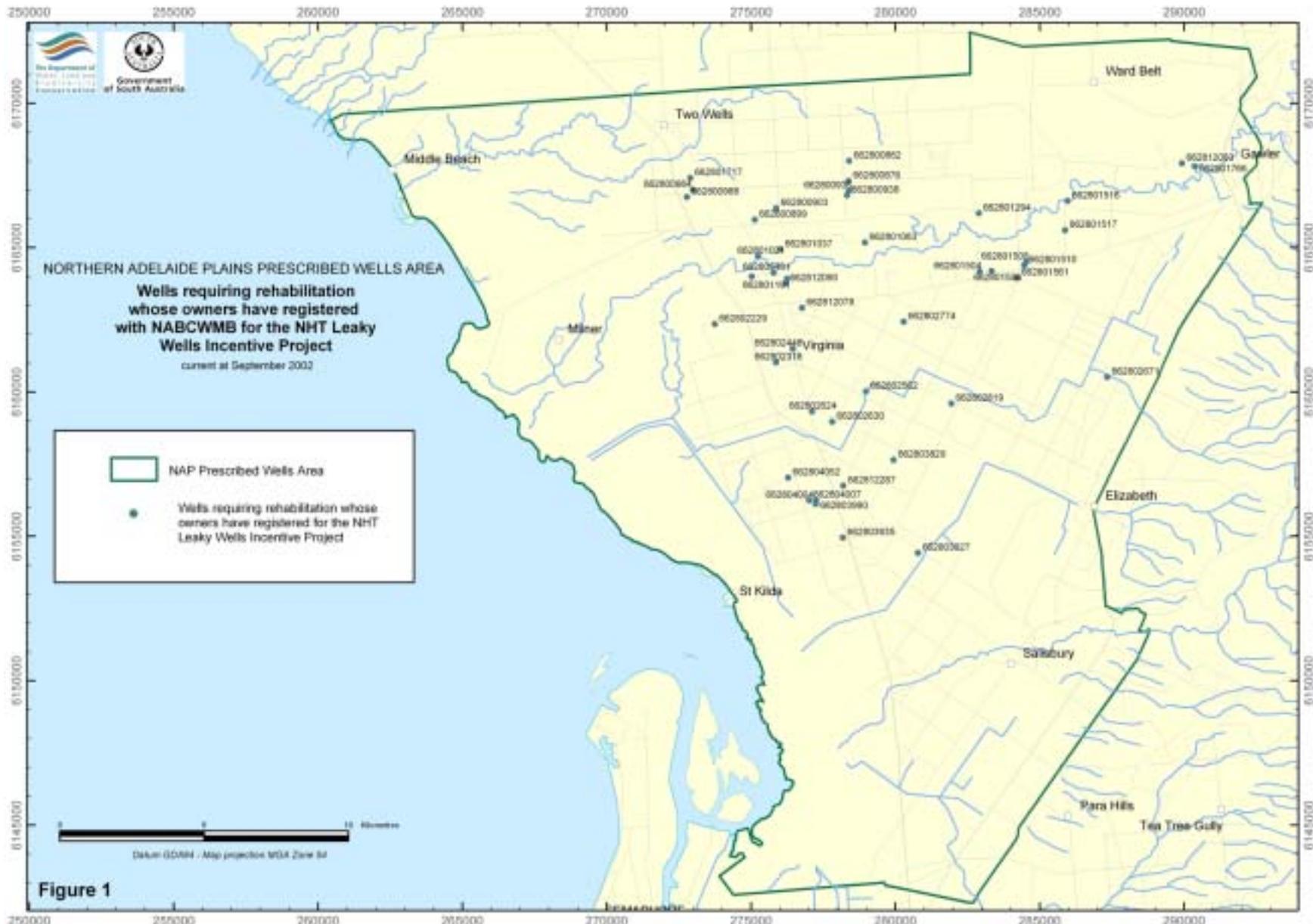


Table 15. Breakdown of salinity samples received for each year and aquifer sampled

Aquifer:	1998	1999	2000	2001	2002
Quaternary	27	36	41	66	24
T1	87	99	122	124	36
T2	214	217	315	306	141
aquifer unknown	7	3	10	10	2
Total samples collected (including duplicates)	406	503	590	601	203
Total wells sampled	335	355	488	506	203

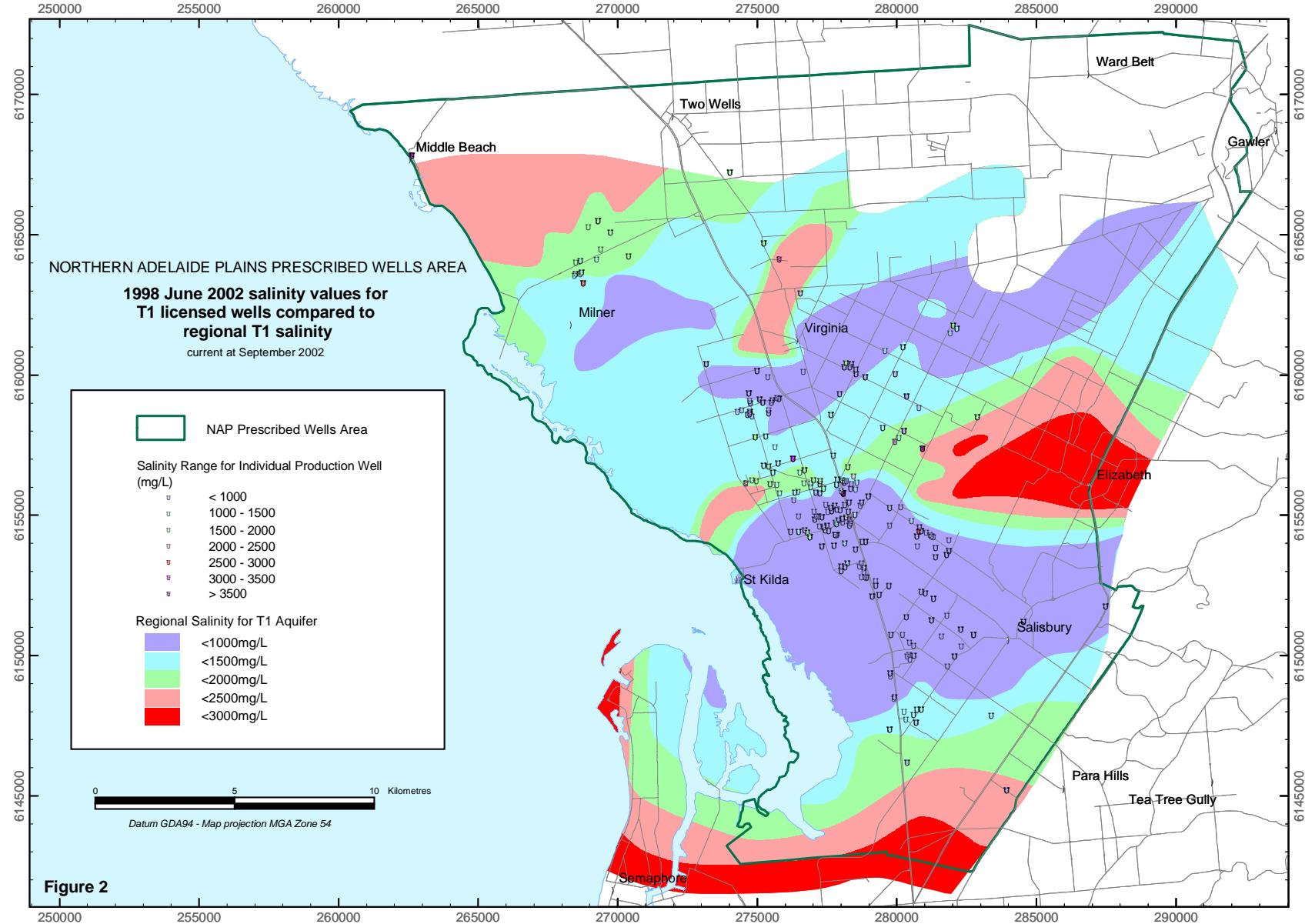
Individual salinity readings for wells completed in T1 and T2 with respect to regional salinity for each aquifer have been constructed and are included in Appendix C (Figures 2 and 3). Salinity readings for wells completed in the Quaternary aquifers have been plotted with respect to surface drainage (Figure 4).

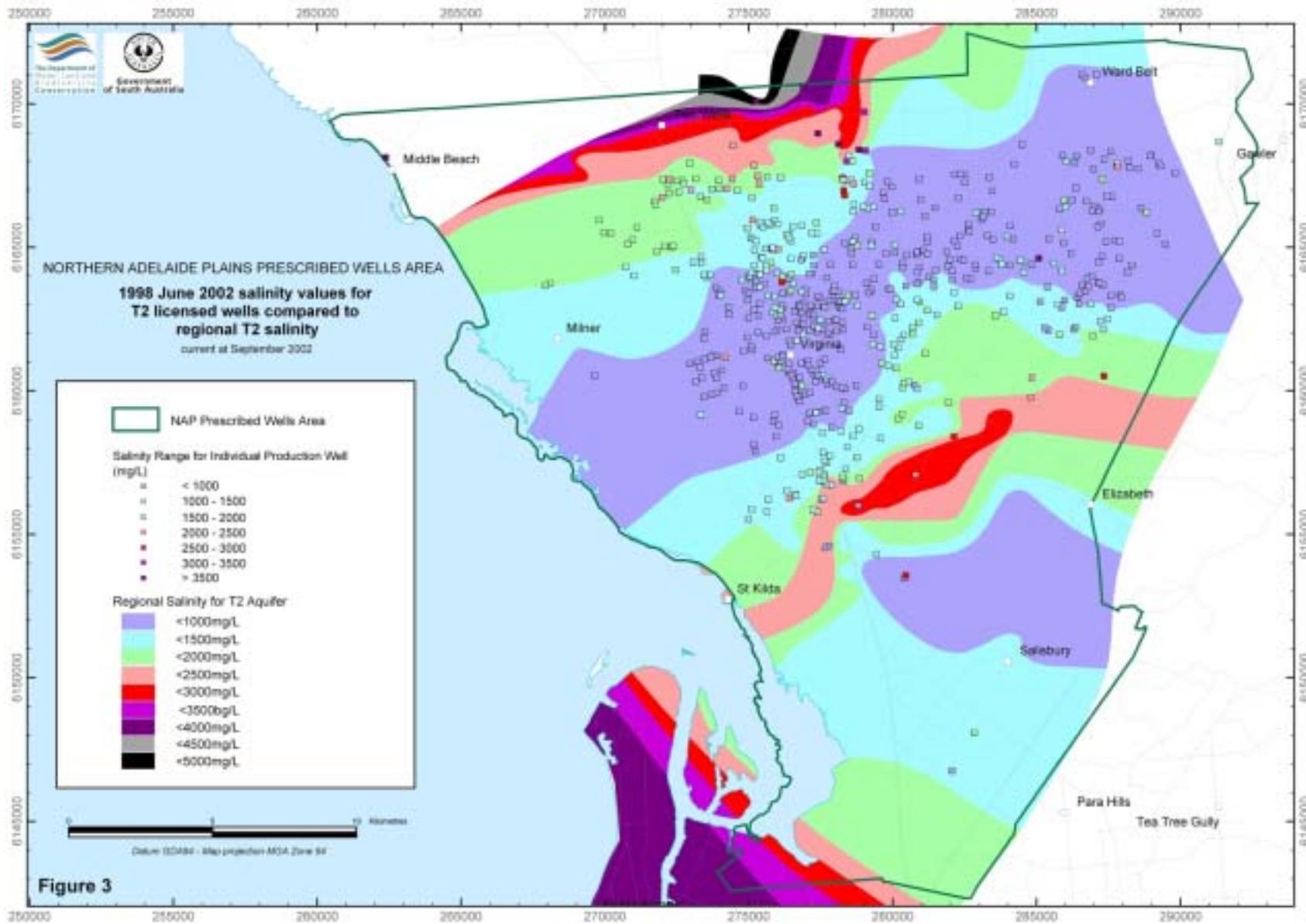
Details of the number of wells assessed and numbers of wells identified as leaking for each year of the project are detailed in Table 16.

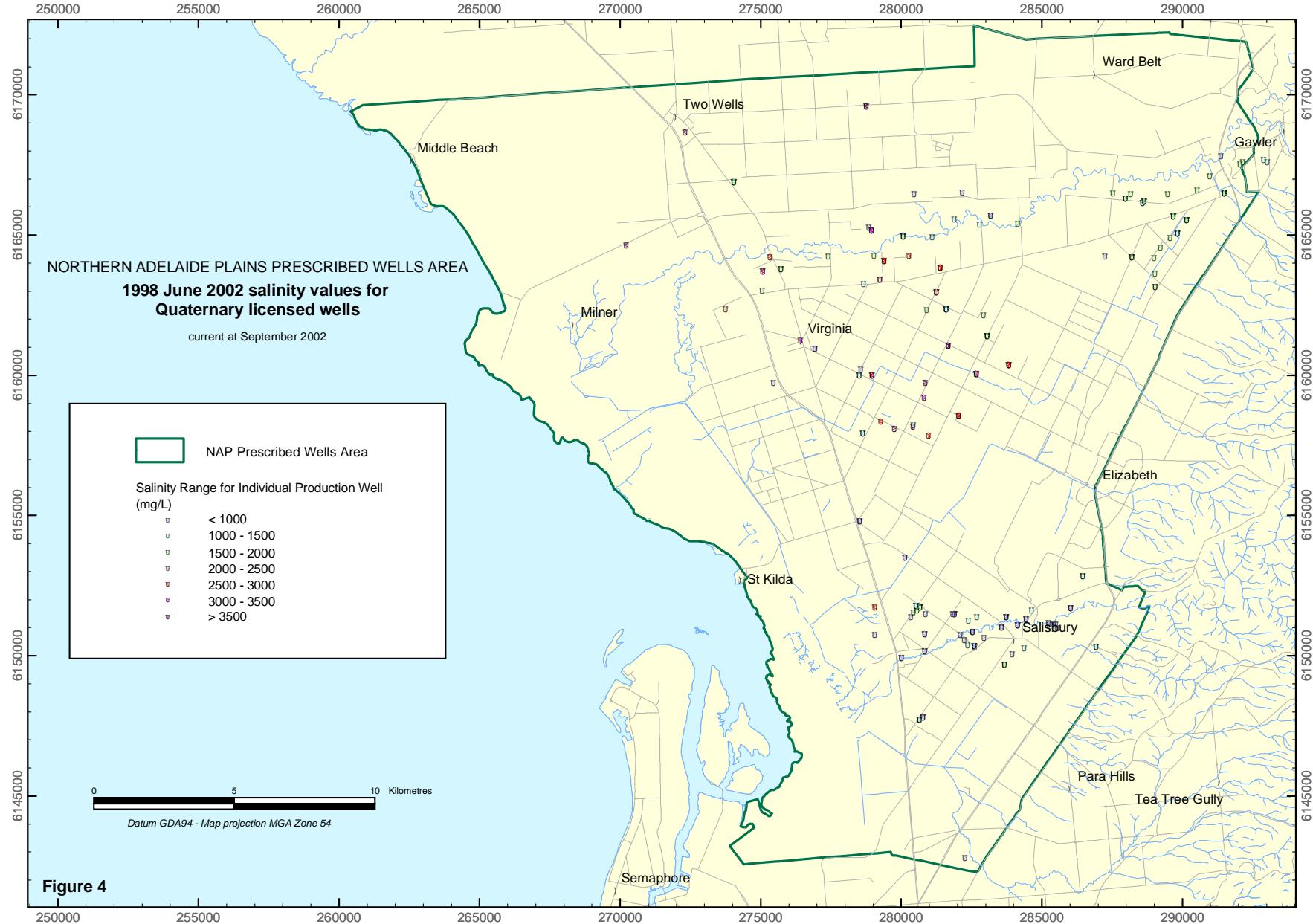
Table 16. Details of total number of wells identified as leaking for each year of the Leaky Wells Project

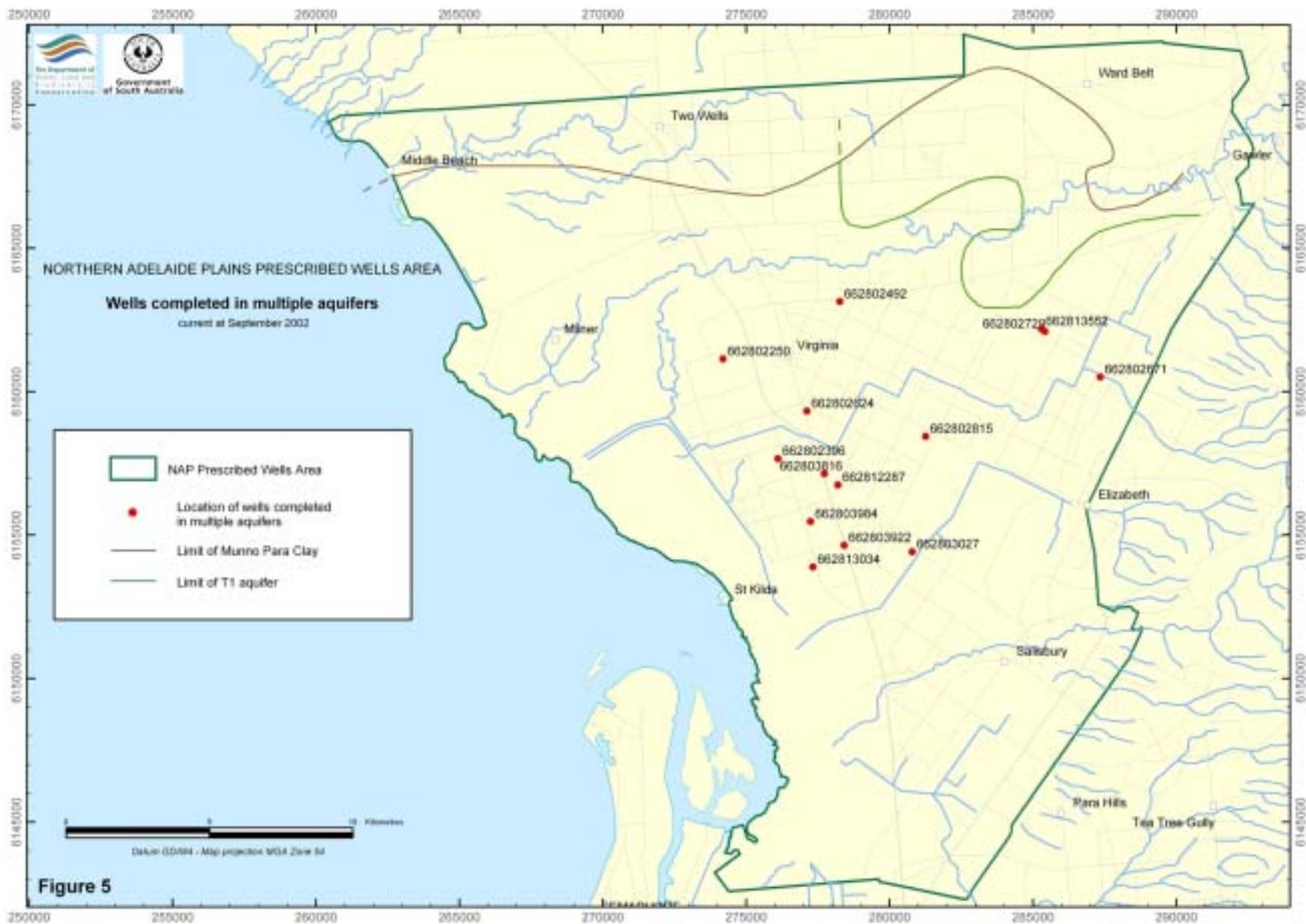
	1998-2000 ¹	2000-2001	2001-2002	2002-2003 (to date)
Total Licensed Wells² from Resource Management	1499	1360	1387	1282 (as of June 2002)
Salinity Sampling from Resource Assessment				
Wells Sampled	488	506	203	475
Wells Requiring Sampling	-	852	1184	807
Leaky Wells Investigations				
Wells Determined to be Competent	- 11 ³	745 46	747 46	to be advised “
Wells Determined to be Leaking	40 ³	22	4	“
Wells Requiring Investigation	-	59	68	“
Wells Noted for Specific Monitoring	-	15	2	78 ⁴
Wells Rehabilitated/Backfilled				

1. The initial desktop study and field investigations into the causes and extent of increasing groundwater salinity where conducted during the 1998-2000 period (Schuster and Gerges 1999, Schuster 2000).
2. The variation in the number of total licensed wells is due to backfilling of wells, new licenses and license transfers.
3. Results from initial investigations (Shuster and Gerges 1999, Schuster 2000).
4. Backfilling of the 78 wells is associated with the NHT Leaky Wells Incentive Program (March 2002 to present)









4.6 Wells Completed in Multiple Aquifers

Due to potentially detrimental effects on groundwater resources it is against current practice to complete wells in more than one aquifer. The connection of two or more aquifers potentially provides a conduit for the migration of lower quality water from one aquifer to the other. Depending on the difference in potentiometric head between the two aquifers, migration may either occur in either an upward or downward direction. In addition, depreciation of hydraulic head may occur. If a large difference in hydraulic head exists between the connected aquifers the aquifer with the higher hydraulic head will undergo a localised reduction in pressure.

Throughout the NAP a total of 14 wells have been identified as being completed in more than one aquifer, either Q4 and T1 or T1 and T2 (Figure 5). Of these 14 wells, 5 have been backfilled, owners of a further 7 wells have been contacted regarding rehabilitation of the wells and 2 well owners remain to be contacted. The details of these 14 wells are summarised in Appendix E.

4.7 Proposed Work Program for 2002-2003

Tables 17 and 18 outline the current work program for the Leaky Wells Project.

Stage 1 of the project, aimed to address the status of the licensed irrigation wells throughout the NAP, is described in Table 17. Each phase of Stage 1, the tasks involved, tasks completed, tasks remaining and expected completion dates are described.

Stage 2 of the project is outlined in Table 18 and is designed to assess the status of approximately 3000 disused/abandoned wells within the NAP. Again, each phase of the project and tasks involved are described. Current status and an expected completion date are provided for Phase 1 – Data Compilation and Phase 2 – Data Analysis. Given the potential extent of remediation work required in this stage of the project the Board will be provided with all compiled available data and analyses of the disused/abandoned wells for on the most appropriate and efficient method of addressing these problems.

Table 17. Summary of Stage 1 project details, current status and expected completion dates

Stage 1 Licensed Irrigation Wells	Task	Current Status	Expected Completion Date	
	Phase 1 Data Compilation	Obtain all available data for licensed wells including: location, unit no., license no., meter no., well construction details and completion aquifer. Obtain all available salinity data for all licensed wells. Compile and enter all data into a working database and SA Geodata. Produce maps of location, initial and latest salinity values.	Phase 1 is complete for the 972 licensed irrigation wells ¹ . The remaining 310 wells will be completed by 31 March 2003.	March 03
	Phase 2 Data Analysis	Produce time-series salinity graphs for all wells with native salinity range plotted for comparison. Initial interpretation of maps, salinity graphs and results. During this process wells with abnormally high salinity will be identified.	Phase 2 is complete for the 972 licensed irrigation wells. The remaining 310 wells will be completed by 31 May 2003.	May 03
	Phase 3 Field Verification	Field investigation of identified wells to confirm abnormally high salinity is due to well construction problems. Field work will include down hole geophysical logging and video camera inspection.	Phase 3 is complete for the 80 identified leaking licensed irrigation wells. Wells identified as leaking from the 2002/03 well sampling program will have all required field investigations completed by June 2003.	June 03
	Phase 4 Reporting	Report to the NABCWMB in the form of an Annual Report and a half yearly action summary. New direction is to provide a Project Summary Report from 1998-2003.	Draft Project Summary Report for 2002 complete. Updated results on the remaining 310 wells will be provided to the Board as information becomes available.	Ongoing

1. 1282 licensed wells as of June 2002

Table 18. Summary of Stage 2 project details, current status and expected completion dates

Stage 2 Disused/Abandoned Wells	Task	Current Status	Expected Completion Date	
	Phase 1 Data Compilation	Obtain all available data for approximately 3000 disused/abandoned wells including: location, unit no., well construction details and completion aquifer. Obtain all available salinity data for disused/abandoned wells. Compile and enter all data into a working database and SA Geodata. Produce maps of location, initial and latest salinity values.	Available well completion data recorded on microfiche and current status for disused/abandoned is being compiled and will subsequently be assessed.	January 05
	Phase 2 Data Analysis	Produce time-series salinity graphs for all wells with native salinity range plotted for comparison. Initial interpretation of maps, salinity graphs and results. During this process wells with abnormally high salinity will be identified.	Available well completion data recorded on microfiche and current status for disused/abandoned is being compiled and will subsequently be assessed.	January 05
	Phase 3 Field Verification	Field investigation of identified wells to confirm abnormally high salinity is due to well construction problems.	Upon completion of Phases 1 and 2 (Stage 2) the Board will be provided with all compiled data available and analyses of abandoned/disused wells for discussion and comment on future work programs.	
	Phase 4 Reporting	Reporting to NABCWMB regarding data verification and compliance. Report to the NABCWMB in the form of an Annual Report and a half yearly action summary.	Annual Reports and half yearly Action Summaries will continue to be submitted to the Board as outlined in the Administrative Agreement.	

5.0 SUMMARY OF EXPENDITURE

A grant application was submitted by DWLBC to NABCWMB in May 2001 (Administrative Agreement, Attachment 1) for subsidising the NAP Leaky Wells Project. Details of this application are outlined below:

Table 19. NAP Leaky Wells Project expenditure for the 1999/00 financial year

Project Expenditure (1999/00)	DWLBC	NABCWMB
Employment		
Chris Schuster		\$37 358
Kwadwo Osei-Bonsu	\$45 040	
On-Costs	\$8 107	\$6 642
Total Employment Costs	\$53 147	\$44 000
Operating Costs		
Travel	\$5 000	
Geophysical Logging (30 Wells)	\$10 000	\$10 000
Other		\$6 000
Total Operational Costs	\$15 000	\$16 000
Total Project Costs (excl. GST)	\$68 147	\$60 000

(Application/Project Number: N/10/02/005)

Table 20. NAP Leaky Wells Project expenditure for the 2000/01 financial year

Project Expenditure (2000/01)	DWLBC	NABCWMB
Employment		
Nabil Gerges	80 days	
Chris Schuster		218 days
Kwadwo Osei-Bonsu	120 days	
Julianne James-Smith	5 days	
Total Employment Costs	\$57 580	\$53 390
Operating Costs		
Vehicle Hire (30 days @ \$45/day)	\$1 350	
Operational Expenses	\$14 329	
Geophysical Logging	\$11 740	\$6 610
Total Operational Costs	\$27 419	\$6 610
Total Project Costs (excl. GST)	\$84 999	\$60 000

Table 21. NAP Leaky Wells Project expenditure for the 2001/02 financial year

Project Expenditure (2001/02)	DWLBC	NABCWMB
Employment		
0.2 FTE Senior Hydrogeologist Chris Schuster	\$9 125 (NEK)	\$24 673
Kwadwo Osei-Bonsu	\$33 423	
Volmer Berens	\$8 926 (NEJ)	\$5 327
Total Employment Costs	\$51 474	\$30 000
Total Operational Costs	NIL	NIL
Total Project Costs (excl. GST)	\$51 474	\$30 000

6.0 RECOMMENDATIONS

It is proposed that during the 2002-2003 the current DWLBC sampling program of all licensed irrigation wells throughout the NAP will continue. With the acquisition of outstanding salinity data Phase 1 – Data Compilation, Phase 2 – Data Analysis and Phase 3 Field Verification can be completed for the licensed wells. Completion of these tasks will meet the criteria for Stage 1 of the Leaky Wells Project (Table 17). The anticipated completion date for Stage 1 is March 2003. Reports updating the status of the remaining 505 wells will be provided to the NABCWMB as outlined by the Administrative Agreement.

In addition, all available well completion data for the disused and abandoned wells will continue to be compiled with all relevant information being forwarded to the NABCWMB.

Proposed expenditure for the Leaky Wells Project during the 2002-03 period is outlined in Table 22 below:

Table 22. Proposed expenditure for the NAP Leaky Wells Project for the 2002/03 financial year

Proposed (2002/03)	Project	Expenditure	DWLBC	NABCWMB
Employment			FTE	FTE
	Volmer Berens	\$11 214	0.2	
	Tania Wilson	\$28 035	0.5	\$28 035
	Scott Evans	\$14 662	0.2	0.5
Total Employment Costs		\$53 911		\$28 035
Operating Costs				
	Various	\$6 089		\$4 965 (NEK)
Total Operational Costs		\$6 089		\$4 965
Total Project Costs (excl. GST)		\$60 000		\$33 000

7.0 SI Units Commonly Used Within Text

Name of unit	Symbol	Definition in terms of other metric units	
Metre	m		length
Megalitre	ML	10^3 m^3	volume
Milligram	mg	10^{-3} g	mass

8.0 Abbreviations Commonly Used Within Text

Abbreviation	Name
DWLBC	= Department of Water Land and Biodiversity Conservation
NABCWMB	= Northern Adelaide and Barossa Catchment Water Management Board
NAP	= Northern Adelaide Plains
PWA	= Prescribed Wells Area
PIRSA	= Primary Industries and Resources of South Australia
NHT	= Natural Heritage Trust
DEHAA	= Department of Environment, Heritage and Aboriginal Affairs
Q1	= Quaternary Aquifer (first)
T1	= Tertiary Aquifer (first)
T2	= Tertiary Aquifer (second)
FTE	= Full Time Equivalent
NEK, NEJ	= DWLBC Project Codes

9.0 REFERENCES

Gerges N.Z. 2001. Northern Adelaide Plains groundwater review. Department for Water Resources. Report Book 2001/013.

Osei-Bonsu K., Gerges N.Z. and Zulfic H. 2000. Preliminary hydrogeological investigations at Waterloo Corner. Department of Primary Industries and Resources South Australia. Report Book 2000/00021.

Schuster C.D. 2000. A preliminary report on the geophysical testing of wells that have abnormally high salinity, NAP Corroded Casing Survey 1999/2000. Department of Primary Industries and Resources South Australia. Report Book 2000/00014.

Schuster C.D. and Gerges N.Z. 1999. Initial investigation of the salinity impact of leaking wells, Northern Adelaide Plains Prescribed Wells Area. Department of Primary Industries and Resources South Australia. Report Book 99/00005.

Additional references not cited in report:

Gerges N.Z. 1994. Leaky wells in the Northern Adelaide Plain – pamphlet presented to the NAPWRC and distributed to irrigators.

Gerges N.Z. 1996, 1996a and 1997. Statements presented to The Environment, Resources and Development Court, Adelaide.

McPharlin D. 1979. Examination of bores near the Gawler River, northern Adelaide Plains. Quarterly Geological Notes, Geological Survey of South Australia, 72.

Selby J. and Gerges N.Z. 1981. Saline groundwater at Waterloo Corner. Quarterly Geological Notes, Geological Survey of South Australia. 79: 16-19.

Shepherd R.G. 1975. Northern Adelaide Plains groundwater study, Stage II 1968-1974. Department of Mines South Australia. Report Book 75/38.

Fact Sheet 8 – Well Maintenance

www.dwr.sa.gov.au/water/publications/factsheets.html

APPENDIX A

DATED: **DAY OF** **2001**

**MEMORANDUM
OF
ADMINISTRATIVE ARRANGEMENT**

BETWEEN

DEPARTMENT FOR WATER RESOURCES

- AND -

**NORTHERN ADELAIDE and BAROSSA CATCHMENT WATER
MANAGEMENT BOARD**

ADMINISTRATIVE ARRANGEMENT dated the _____ day of _____ 2000

BETWEEN

DEPARTMENT FOR WATER RESOURCES of Level 6, 101 Grenfell Street, Adelaide SA 5000 (“DWR”)

AND

NORTHERN ADELAIDE and BAROSSA CATCHMENT WATER MANAGEMENT BOARD of 1st Floor,
59 Commercial Road, Salisbury SA 5108 (“NABCWMB”)

INTENT

- A. Within the Northern Adelaide Plains (NAP) Prescribed Wells area administered by NABCWMB groundwater is principally taken from the two deep Tertiary confined aquifers for irrigation purposes.
- B. Throughout this area the good quality groundwater within the Tertiary aquifer system is at risk from contamination as a result of leakage of more saline groundwater from the overlying aquifers due to;
 - Corroded casing
 - Inappropriate completion methods
 - Inappropriately abandoned or disused wells
- C. The NABCWMB requires DWR to continue the investigation program that commenced in 1999 to determine the extent and number of wells that may be “leaking” causing cross-aquifer contamination.
- D. This program shall continue from the date of acceptance of this agreement until 30 June 2003 unless otherwise agreed to in writing by both parties and involves;
 - analysis and reporting on water samples obtained from approximately 1350 licensed irrigation wells
 - assessment, location and status of abandoned or disused wells
 - advising landholders if their well is faulty on the appropriate strategy for rehabilitation
 - in the event that a leaky well is not rehabilitated within a prescribed timeframe, well orders and further follow-up action will be undertaken by the compliance group from within the Resource Management Division of DWR
 - six (6) monthly reporting on progress

THE ADMINISTRATIVE ARRANGEMENT IS AS FOLLOWS:

1. The Agencies acknowledge that this is an Administrative Arrangement between Administrative Units or instrumentalities of the Crown in right of the State of South Australia and it is not intended to create legal relations.

2. Commencement and Completion of Program

This Administrative Arrangement shall continue from the date of acceptance of this agreement until 30 June 2003 based on a satisfactory annual review of performance. The Administrative Units may seek to continue the Arrangement beyond the specified period by mutual written consent.

3. DWR's Obligations

DWR acknowledges that the work outlined in the attached schedules is undertaken in partnership with the NABCWMB and will carry out the following activities to complete the schedule of work identified in 2000-2001. Much of the remaining work to be undertaken is dependent upon the resolution of a number of outstanding matters that are currently being addressed. There are also some matters such as the co-operation of the licensed irrigators in the provision of the water sample in a timely fashion that may impact on the proposed timelines.

The program of work to be undertaken during 2000-2001 concentrated on the remaining licensed irrigation wells (approximately 1350) and completion of the outstanding work on the 255 wells selected as a pilot study. The work has been divided into four phases each with a number of tasks to be completed.

Phase 1 consisted primarily of data compilation for which task 1 (compilation of data on all currently licensed irrigation wells) and task 2 (well construction and aquifer completion details) have been completed. The remaining tasks are approximately 75% completed and are awaiting water samples to be submitted by some 600 irrigators. It is expected that these samples will be submitted by March 2001 and will allow completion of existing work for all currently licensed irrigation wells by June 2001.

DWR will continue to compile the salinity data as it comes to hand and forward results to well owners. If by the end of March 2001 all of the outstanding wells have not provided the appropriate water sample then DWR will be responsible for following up well owners who have not provided water samples for testing.

It is anticipated that by June 2001 all currently licensed irrigation wells that may require some remedial action will have been identified and owners notified of required action.

The next step in the leaky wells program once all work has been completed on the currently licensed irrigation wells is to identify the condition of the 2000 or so disused or abandoned wells in the NAP. It is likely that this program will be the most intensive requiring considerable field investigation to determine the physical location

of the disused or abandoned wells, geophysical logging and pumping by DWR field staff to obtain representative water samples if the well is not equipped. This part of the leaky wells program may take up to an additional two (2) years to complete. It is proposed to follow similar steps as undertaken for the licensed wells; however, a final program will be negotiated with the Board prior to undertaking this phase of the work.

DWR are currently establishing a compliance group that will assist in issuing of well orders and any follow-up action in relation to compliance that is required. The Project Manager appointed by DWR will liaise with the compliance group within DWR's Resource Management Division to identify where follow-up action is required.

The completion of tasks outlined in Phase 2 also requires the full set of salinity data in order to complete the time-series graphs and aquifer salinity maps. The Board will assist in the compilation and mailing out of salinity data reports to the licensed irrigators.

DWR Resource Assessment Division will complete this work once all of the salinity information is to hand and provide details of follow-up action in future reports.

Reporting involves the provision of a half yearly summary report in the form of an 'action summary' outlining in table format the progress of work against the proposed timelines. This report will also contain a summary of the follow-up action required, initiated and/or executed from previous. One detailed annual report will be made available to the board no later than three (3) months after the end of each financial year. The report will include location maps of areas covered, details of follow-up action, number of wells rehabilitated or backfilled and a statement of actual costs incurred by the project inclusive of salaries. A work plan with timeframes for the next twelve months will also be included.

4. Key Personnel

DWR will provide Nabil Gerges to act as Project Manager and will be the point of contact between DWR and NABCWMB. DWR will also appoint 2 Project Hydrogeologists each at 1.0 FTE whose time will be charged to the project to assist in data collection, evaluation and report preparation.

5. NABCWMB's Obligations

DWR may prevail upon the Board for assistance in renewed calls for co-operation in this project by all irrigators through their newsletters and possibly a mail-out.

NABCWMB may also need to convene and facilitate meetings between DWR staff and well owners to reinforce the need and importance of this project to preserving the groundwater quality within the aquifers.

Translation of any technical reports presented to NABCWMB by DWR into any other languages will be the responsibility of the NABCWMB.

NABCWMB is responsible for any liaison and provision of information to the media in relation to this project.

NABCWMB are to provide \$60,000 (inclusive of GST) of funding per year for the term of this project in order to accelerate the outcomes and a breakdown of costs is shown in Attachment 1.

6. Ownership of Intellectual Property/Data

Copyright of written reports will reside jointly with NABCWMB and DWR and all other intellectual property rights shall vest in the Crown in the right of the State of South Australia. Water quality data will be entered into the groundwater database managed by the State and this information can be made available to any member of the public for a nominal charge for data retrieval.

7. Dispute Clause

If any question, difference or dispute arises under this Administrative Arrangement, DWR and NABCWMB agree to designate a representative to settle the dispute. Each designated representative will meet within ten (10) days and seek to resolve the dispute by following whatever investigations each deems appropriate. If the designated representatives fail to resolve the dispute within the following sixty (60) days then the dispute shall be referred for mediation by CEO for DWR and Presiding Member for NABCWMB.

8. Costs

Costs in relation to the remaining tasks to be carried out during the respective phases of this project have been calculated inclusive of vehicles used by DWR staff together with any other ancillary charges and are presented in Attachment 1.

Detailed costs and a proposed timeframe for the remainder of this work are included in Appendix 1 of this agreement.

9. Termination

This Administrative arrangement can be terminated by either party:

- In the event that changes to personnel are likely to adversely affect the ability to meet the project objectives or DWR priorities change;
- In the event that NABCWMB fails to make payment against invoices on time;
- Without cause by giving either party two (2) weeks written notice. Payment must be made for work done and expenses incurred up to the date of termination.

SIGNED for the **DEPARTMENT FOR WATER**)

RESOURCES by **BRYAN HARRIS**)

Director Resource Assessment Division,)

Department for Water Resources, a person)

duly authorised in the presence of:)

.....

Witness:

[Print Name:]

SIGNED for the **NORTHERN ADELAIDE** and)

BAROSSA CATCHMENT WATER)

MANAGEMENT BOARD by **KYM GOOD**)

General Manager, Northern Adelaide and)

Barossa Catchment Water Management Board,)

a person duly authorised in the presence of:)

.....

Witness:

[Print Name:]

Attachment 1 Funding Details

COST ITEM	Board Funds Sought		Community, Local, Third Party Contribution		State, Federal Agency Contribution		Total Activity Cost	
	Exclude GST	Include GST	Excl GST	Incl GST	Excl GST	Incl GST	Exclude GST	Include GST
EMPLOYMENT Salaries/Wages (positions & names if possible)	37358				45040			
CONSULTANTS								
OTHER								
ON-COSTS (not to exceed 25% of the Salary)	6642				8107			
OPERATING TRAVEL					5000			
EQUIPMENT HIRE/LEASE Geophysical logging	10000				10000			
OTHER (itemise all operating expenses over \$500)	6000							
CAPITAL (Itemise all items of capital expenditure over \$500)								
TOTAL PROJECT COSTS	60,000				68,147			

APPENDIX (Detailed GANTT chart milestones & costing)

APPENDIX B

4 June 2002

Mr Kym Good
Chief Executive Officer
NAB Catchment Water Management Board
1st Floor
59 Commercial Road
SALISBURY SA 5108

Dear Kym

Leaky Wells Project

Further to the discussions held between the Department of Water, Land and Biodiversity Conservation officers and yourself on 8 May 2002, the following proposal is submitted for your consideration concerning the future of this program.

DWLBC entered into a partnership with the North Adelaide and Barossa Catchment Water Management Board to address the issues associated with leaking wells on the Northern Adelaide Plains. The Board agreed to accelerate the program by providing funding for a full-time hydrogeologist to assess the information gathered as a result of water samples being returned by irrigators.

Stage 1 of the program required samples to be returned from all licensed irrigators to assess if any changes in salinity had occurred in the wells from the original salinity (if known) or any subsequent analysis which may have occurred. The second stage of the program included an assessment and location of all disused, non-equipped or abandoned wells.

Stage 1 of the program has stalled as a result of a high proportion of irrigators failing to return samples during the required period after sample bottles had been mailed out. A second attempt where bottles were made available for collection from the Virginia Horticultural Centre resulted in an even lower rate of return.

In order to progress the project, the hydrogeologist assigned to the task has attempted to reconcile as many of the old abandoned wells as possible whilst awaiting for the remaining samples to be supplied for existing irrigation wells.

During the last few months the hydrogeologist assigned to this project has resigned from DWLBC. Another hydrogeologist has subsequently been assigned, however, there has been a small delay as this officer has finished up existing project commitments, and also reorganised the existing information to suit his work practices.

It is clear that these changes have resulted in delays to the program and the following steps will be taken to bring the program back on track.

- DWLBC will collect the remaining 500 samples for existing licences over the next few months, and will aim to complete this sampling by 30 June 2002.

This will ensure a complete set of samples being obtained over the irrigation seasons 2000-01 and 2001-02.

It is recognised that one of the key elements to the success of this program is the timely return of information to irrigators about the water quality of their individual sample within in a regional context.

The Board engaged a consultant to formulate an appropriate method of presentation of the results to the irrigators on the North Adelaide Plains.

DWLBC acknowledge that the required resources are not available in-house to undertake the degree of reporting as suggested by the consultant and to deliver within the timeframes indicated, as a result of the competing demands on DWLBC resources to deliver groundwater monitoring reports to the CWMBs.

In order for this program to be a success, it is crucial that samples continue to be collected on an annual basis and that results be reported to irrigators in a timely fashion.

DWLBC wish to continue the partnership with the Board to identify and advise which wells require remediation, and recognise that the progress has been impeded by the low return of samples.

In order to remedy these issues the following solutions are proposed for consideration by the Board.

- That half of the \$66,000 funding currently utilised to employ a full-time hydrogeologist be redirected to engage a Technical Officer at 0.5 FTE to collect samples during the six month irrigation season.
- This will ensure that quality samples are collected from all irrigators over one irrigation season.
- The aim would be to complete all sample collection by the end of March and final analyses to be completed by the end of April.
- At that time the complete analysis results could be passed over to a consultant commissioned by the Board to prepare individual reports for mail out to irrigators.
- The balance of the funding (\$33,000) be used to continue to engage a hydrogeologist on the project for 0.5 FTE to analyse the results from new water samples collected, and to continue with Stage 2 of the program (reviewing abandoned or disused wells).

- DWLBC will provide funding for the remaining 0.5 FTE for the hydrogeologist together with 0.2 FTE of a senior hydrogeologist for supervision.
- Given the delays the program has experienced as a result of staff resignation and staff reassignment, DWLBC propose to invoice the Board for only 0.75 FTE (\$49,500 GST inclusive) of the agreed schedule for 2001-2002.
- If these new arrangements are agreeable to the Board, it is proposed that they be implemented for the 2002-03 financial year.

If you have any questions concerning any of the information contained in this letter, please do not hesitate to contact me on telephone: 846 36948.

Regards

Russell Martin
MANAGER
GROUNDWATER ASSESSMENT

APPENDIX C

List of 955 Licensed Irrigation Wells with salinity readings between 1998 - June2002

SURNAME	FIRST NAME	LIC. NO.	UNIT_NO	AQUIFER
AGOSTINELLA	SALVITORE	6214	6628290WW20298	Not determined
MCCARTHY PASTORAL PTY LTD		6419	6628150WW01860	Q
CONNOLE	PETER JOHN	6759	6528150WW00143	Q1
D'ONFRIO	PASQUALE	6562	6628120WW01461	Q1
GEORGOLAS	TELEMACHOS	5005	6628200WW02478	Q1
CRAWFORD	COLIN WILLIAM	6477	6628190WW02809	Q1
MUSCAT	JOHN	6652	6628210WW03317	Q1
JOHNSON	IAN JOSEPH	5375	6628290WW05034	Q1
CURCIO	LUGI SALVATORE	5285	6628290WW05095	Q1
CARUSI	CHRISTOPHER	6780	6628120WW01366	Q2
SMITH	PHILIP	5144	6628120WW01367	Q2
CARUSI	FREDRICK JOHN	6128	6628120WW01399	Q2
PAPALIA	DOMENICO	6667	6628130WW01438	Q2
PETTINA	GIUSEPPE	5599	6628130WW01922	Q2
COSTA	JOHN	5652	6628130WW01928	Q2
PETTINA	ANGELA	5600	6628130WW01935	Q2
IULIANO	GUERINO	6601	6628200WW02642	Q2
SHELBOURN	REX BURTON	6478	6628200WW02653	Q2
HILL	GARY JOHN	6561	6628190WW02686	Q2
DAY	RONALD GEOFFREY	6623	6628190WW02687	Q2
BETHANY CHRISTIAN SCHOOL INC.		5723	6628290WW04847	Q2
CARBONE	FRANCESCO	5097	6628290WW04881	Q2
ZUMMO	GIULIANO	5870	6628190WW04913	Q2
CITY OF SALISBURY		6200	6628290WW04946	Q2
CURCIO	LUGI SALVATORE	5285	6628290WW04987	Q2
SCARFO	GIUSEPPE	6163	6628290WW05035	Q2
LATELLA	ANTONIO	5420	6628290WW05036	Q2
CITY OF SALISBURY		6200	6628290WW05058	Q2
GASPARINI	DOMENICA	5289	6628290WW05069	Q2
TEDESCO	ROSA	5061	6628290WW05085	Q2
CITY OF SALISBURY		6200	6628290WW05087	Q2
BOMBARDIERI	FRANCESCO	5068	6628130WW12016	Q2
REECE	SUZANNE MARGARET	6778	6628120WW12517	Q2
BEVERLEY JOY DAVISON TRUSTEE		6799	6628190WW14313	Q2
FOR BJ DAVISON FAMILY TRUST				
BRESSINGTON	PAUL MICHAEL	6452	6628190WW15617	Q2
CAMERON	MALCOLM DONALD	6084	6628190WW17373	Q2
THANH	VAN	6093	6628320WW18547	Q2
ROSITANO	ANTONIO	6125	6628190WW18619	Q2
SAFRALIDIS	ANTOINE	6417	6628120WW18878	Q2
IALEGGIO	DONATO	6136	6628190WW18879	Q2
ALEXANDROU	ANDREAS	6227	6628110WW00949	Q3
EVANGELISTA	DOMENICO	6565	6628110WW01063	Q3
BANNEAR	ALAN DOUGLAS	6510	6628110WW01112	Q3
COCCI	DOMINIC	6055	6628110WW01167	Q3
RASCHELLA	ITALIA	6207	6628120WW01263	Q3
CHEVEAT PTY LTD		5163	6628120WW01272	Q3
HUDSON	GEORGE CLIFFORD	5899	6628120WW01302	Q3
MCPHARLIN	DEAN WILLIAM	6636	6628120WW01368	Q3
ZUIANI	DELKI DANIEL	6747	6628120WW01374	Q3
RUGARI	PAOLO	5673	6628120WW01416	Q3
HARALAMPIDIS	GREGORIOS	5528	6628120WW01428	Q3

SURNAME	FIRST NAME	LIC. NO.	UNIT_NO	AQUIFER
VARELIAS	STAVROS	5816	6628120WW01442	Q3
FREELAND	TIMOTHY JOHN	5203	6628120WW01444	Q3
SERMON	HEDI	5405	6628130WW01952	Q3
HIDSON	ARTHUR	6589	6628130WW02020	Q3
MERCORELLA	SUSAN BETH	5884	6628200WW02229	Q3
TRIMBOLI	ROSARIO	6146	6628200WW02268	Q3
CAMPBELL	AH & MF	6529	6628200WW02327	Q3
GEORGOLAS	TELEMACHOS	5005	6628200WW02461	Q3
CARAVAGGIO	FRANK	5095	6628190WW02674	Q3
CDZ PTY LTD		6196	6628190WW02689	Q3
FORBY	BARRY DOUGLAS	6572	6628190WW02713	Q3
JAMES	MALCOLM EDWARD	6547	6628190WW02763	Q3
BD & MD NICOL & SON PTY LTD		6027	6628190WW02778	Q3
JOHNSON	HAROLD JAMES	6526	6628190WW02786	Q3
ARDOLINO	GIOVANNI	5026	6628300WW03279	Q3
RUGGIERO	VINCENZO	6156	6628300WW03280	Q3
RUGGIERO	VINCENZO	6156	6628290WW04871	Q3
SCUTERI	LUIGI	5700	6628290WW04873	Q3
FAZZALARI	ROCCO	5248	6628290WW04876	Q3
AMUSO	ANTONIO	5015	6628290WW04923	Q3
VEZIS	SYLVIA	5846	6628290WW04927	Q3
MUSOLINO	GIUSEPPE	5529	6628290WW04928	Q3
MITCHELL	WARREN KEITH	5272	6628290WW04945	Q3
TANDA	PAUL	5766	6628290WW04948	Q3
PENNINO	AMERICO	5586	6628290WW04983	Q3
PENNIINO	AMERICO	5586	6628290WW04985	Q3
COPPOLA	VITTORIA	5151	6628290WW05025	Q3
SCARFO	TONY DOMINIC	5692	6628290WW05026	Q3
COLOMBANI	CARMELA	5145	6628290WW05169	Q3
AG KONTOPOULOS NOMINEES PTY		6130	6628110WW06086	Q3
CURCIO	LUGI SALVATORE	5285	6628290WW09483	Q3
HEYLEN	IAN DAVID	6080	6628290WW10989	Q3
MILIADO	LEONE	5891	6628290WW11195	Q3
POZENEL	MARISSA	5719	6628130WW12164	Q3
CDZ PTY LTD		6196	6628100WW14222	Q3
BARBARO	GIUSEPPE	6586	6628290WW15156	Q3
CAMPBELL	RONALD ALLAN	5035	6628190WW15892	Q3
COPELAND	ANTHONY GEORGE	5574	6628190WW16277	Q3
NESTOROVIC	MICHAEL	5653	6628290WW16399	Q3
MIDWAY ESTATE PTY LTD		6824	6628120WW18142	Q3
HILL	BRIAN	6089	6628220WW19038	Q3
HOARE	LIAM PAUL	6512	6628110WW19890	Q3
HEAVEN	WAYNE	6815	6628130WW19922	Q3
FRESETEE PTY LTD		5102	6628200WW20486	Q3
BROOKS	HELEN DIANNE	6669	6628100WW00790	Q4
MITCHELL	CECIL JAMES	5660	6628110WW00853	Q4
CORSTON	ADAM ROBERTSON	5153	6628110WW01132	Q4
MANN	GREVILLE DUNCOMBE	6631	6628110WW01178	Q4
CARYPIDIS	KYRIAKOS	5004	6628110WW01220	Q4
MARSLAND	PETER KEMBLE	5815	6628120WW01301	Q4
FAZZARI	AGOSTINO	6026	6628120WW01497	Q4
SHEEDY	KEVIN JOSEPH	6765	6628200WW02382	Q4
CITY OF SALISBURY		5684	6628300OW03295	Q4
SA WATER CORPORATION		5706	6628300WW03341	Q4
WEST	ELMA FLORENCE	5228	6628210WW03770	Q4
MUMFORD	LEON REGINALD	5525	6628210WW03782	Q4

SURNAME	FIRST NAME	LIC. NO.	UNIT_NO	AQUIFER
CARUSO	ROCCO	5107	6628290WW05148	Q4
BERNO	FLAVIO	5060	6628290WW05168	Q4
CITY OF SALISBURY		6200	6628290WW10970	Q4
MITOLO HOLDINGS PTY LTD		6236	6628110WW11764	Q4
MATTHEWS	SANDRA	6725	6628200WW12911	Q4
CZUCHWICKI	HENRYK	6550	6628130WW13961	Q4
FH NICOL PTY LTD		6029	6628200WW16495	Q4
PROGRESS INTERNATIONAL PTY LTD		6124	6628110WW16533	Q4
MILES	LESTER CLAUDE	6549	6528150WW00086	T1
MILTON	DAVID WILLIAM	6646	6528150WW00117	T1
MILTON	WILLIAM EDWARD	5510	6528150WW00119	T1
CANALA	EZIO	6530	6628110WW01021	T1
APPLEBEE	WAYNE ROGER	5985	6528150WW01134	T1
APPLEBEE	KEITH LAURENCE	5997	6528150WW01143	T1
R & A MUSOLINO PTY LTD		6201	6528150WW01312	T1
SALT CREEK FARM PTY LTD		6035	6528150WW01455	T1
ZERELLA HOLDINGS PTY LTD		6430	6528150WW01558	T1
LESAN	MILAN	5428	6528120WW01580	T1
BATTYE	DAVID JOHN	6110	6528150WW02036	T1
SINCLAIR WATTERS	MARK	6112	6528150WW02037	T1
CLARKE	SHANE SIMON	6120	6528150WW02038	T1
CDZ PTY LTD		6196	6528150WW02067	T1
ABBISTON PTY LTD		6139	6528150WW02143	T1
CDZ PTY LTD		6196	6528150WW02155	T1
MINISTER FOR RECREATION, SPORT & RACING		6710	6628200WW02250	T1
DIMITROV	TERESA	5214	6628200WW02369	T1
VOZZO	VITTORIO	6531	6628200OW02396	T1
YAVUZ	METIN	5001	6628200WW02397	T1
GARAS	DON	5284	6628200WW02473	T1
VALLELONGA	VINCENZO	6666	6628200WW02475	T1
RULLO	FERNANDO ALFREDO	5677	6628200WW02484	T1
NGUYEN	HOANG HUY	5200	6628200WW02492	T1
NGUYEN	PHU SON	5124	6628200WW02557	T1
MAI	HO VAN	5413	6628200WW02559	T1
IULIANO	GUERINO	5364	6628200WW02643	T1
LOGOZZO	COSIMO	5438	6628200WW02654	T1
SMITHFIELD PLNS PRIMARY SCHOOL		6900	6628190WW02671	T1
POLLIFRONE PTY LTD		5164	6628190OW02729	T1
AJS PIERSON & SON PTY LTD		6150	6628190WW02766	T1
PACE	ALBERICO	5559	6628220WW03006	T1
CLECO NOMINEES NO. 29 PTY LTD		5578	6628220WW03007	T1
PISCIONERI	BEVERLEY JOY	5610	6628220WW03009	T1
VORRASI	GEORGE	6252	6628220WW03010	T1
VORRASI	GIOVANNANGELO	5826	6628220WW03018	T1
ANGELOFF	ANGEL PETEROFF	5020	6628220WW03019	T1
COTSANIS	MENELAS	5300	6628220WW03027	T1
NICOLOPOULOS	BASILIS	5543	6628220WW03028	T1
PAPATRAIANOU	PETER	5571	6628220WW03029	T1
CARUSO	ROCCO	5105	6628220WW03030	T1
MAILO	GIOVANNI	5461	6628220WW03031	T1
MOSCHOS	NICOLAS	5519	6628300OW03266	T1
DAMINATO	GIUSEPPE SILVESTRO	5179	6628300WW03274	T1
MALIVINDI	FRANCESCO	5318	6628300WW03281	T1
MUSOLINO	ANTONIO	5527	6628300WW03290	T1

SURNAME	FIRST NAME	LIC. NO.	UNIT_NO	AQUIFER
DEPASQUALE	ALFONSA	5202	6628300WW03291	T1
LEONELLO	SAVERIO	5761	6628300WW03293	T1
TRIPODI	SAVERIO	5799	6628300WW03300	T1
AMUSO	DOMENIC	5016	6628300WW03307	T1
SA HARNESS RACING CLUB INC.		6822	6628300WW03429	T1
ALEXOPOULOS	CHRIS	5518	6628300WW03430	T1
KOLOVINOS	GEORGE	5402	6628300WW03433	T1
ZALUNARDO	GUISEPPINA	5855	6628300WW03436	T1
VALENTINI	AMADIO	5812	6628210WW03765	T1
INGHAMS ENTERPRISES PTY LTD		5048	6628210WW03766	T1
GLOUFTSIS	JOHN	5351	6628210WW03773	T1
SILVESTRI	GINO	5717	6628220WW03777	T1
CHIERA	TERESA	5123	6628210WW03786	T1
HENG	SALY	5129	6628210WW03789	T1
HARDING	JEAN DIANE	6587	6628210OW03790	T1
KEIGHTLEY	GRAHAM REGINALD	5342	6628210WW03791	T1
LAO	BUN THAI	5308	6628210WW03793	T1
PESSIOS	KIRIACOS	5592	6628210WW03794	T1
DE RUVO	DOMENICO	6152	6628210WW03796	T1
DIMASI	ALFREDO	5211	6628210WW03797	T1
PUCCINI	ROCCO	5632	6628210WW03798	T1
NERIDA PTY LTD		5290	6628210WW03802	T1
REITANO	DOMENIC	5640	6628210OW03803	T1
DE RUVO	DOMENICO	6152	6628210OW03807	T1
NIKOPOULOS	PETROS	5056	6628210WW03816	T1
SOUTH AUSTRALIAN GUN CLUB INC.		6901	6628210WW03847	T1
GRECO	DONATO	5320	6628210WW038451	T1
CARBONE	DOMENICO	5096	6628210WW03852	T1
BERNO	ALBINO	5058	6628210OW03853	T1
VALENTE	RAFFAELE	5588	6628210WW03854	T1
PERRE	GIUSEPPE	5589	6628210WW03856	T1
STEFANO	GIUSEPPE	5748	6628210WW06857	T1
DICHIERA	TEODORO	5108	6628210WW03861	T1
RULLO	COSIMO	5199	6628210OW03870	T1
BOTH	ALAN GAVIN	5069	6628210WW03892	T1
DIEGO INVESTMENTS P/L		5445	6628210WW03900	T1
ZIZZO	ALESANDRO	5090	6628210WW03902	T1
SCUTELLA	GIUSEPPE	5698	6628210WW03903	T1
TRIPODI	COSMO	5403	6628210OW03912	T1
EMANUELE	CHARLIE	6244	6628210WW03923	T1
NGUYEN	NGOC	6240	6628210WW03931	T1
NGUYEN	HAI VAN	5526	6628210WW03933	T1
BRUNO	FILIPPO	5451	6628210WW03936	T1
CIRILLO	ROBERT	5132	6628210WW03940	T1
PISCIONERI	ROCCO	5612	6628210WW03941	T1
CAVALLARO	VITTORIO GIUSEPPE FELICE	5117	6628210WW03942	T1
TAYLOR	LESLIE GEORGE	5770	6628210OW03946	T1
FAZZARI	GIUSEPINA	5250	6628210WW03949	T1
FALLINS	ROBERT VINCENT	6210	6628210WW03950	T1
BAHOUCHE	FITEMA	5693	6628210WW03951	T1
NOBILE	DOMENICO	5067	6628210WW03952	T1
HALLAM VALLEY PTY LTD		5736	6628210WW03954	T1
GRECO	GIUSEPPE	5319	6628210WW03958	T1
PANUCCIO	GEORGE DOMINIC	5567	6628210WW03959	T1
DO	HUONG THI THUY	5055	6628210WW03962	T1
STILLISANO	FRANK	5878	6628210WW03968	T1

SURNAME	FIRST NAME	LIC. NO.	UNIT_NO	AQUIFER
KNOWLES	BRIAN LAWRENCE	5201	6628210WW03970	T1
SURE GROW HYDROPONICS PTY LTD		5240	6628210WW03973	T1
NGUYEN	VAN-TINH	5904	6628210WW03986	T1
NGUYEN	NGA THI THU	6122	6628210WW03987	T1
BAGNATO	FRANCESCA	6198	6628210WW03990	T1
DIFAVA	CARMINE	5881	6628210WW03991	T1
MACHEDA	GIUSEPPE	6229	6628210WW03992	T1
TRIPODI	ROSARIO	5798	6628210WW03995	T1
MACHEDA	GIUSEPPE	6229	6628210WW03997	T1
BRAZZALOTTO	UGO	6523	6628210WW03999	T1
DI FAVA	VITTORIO	5965	6628210OW04004	T1
ELMASSIH	ABDALLAH AND MAHA	5008	6628210WW04006	T1
DI FAVA	VITTORIO	5965	6628210WW04007	T1
CLARK	JOHN	5703	6628210OW04017	T1
DREW	WILLIAM FREDERICK	5217	6628210WW04025	T1
CHURCHER	BRIAN TERENCE	5162	6628210WW04026	T1
ZAGARI	ROCCO	5489	6628210WW04027	T1
FISI	PAUL	5263	6628210WW04038	T1
DAVIES	OWEN JOHN	5683	6628210WW04042	T1
TRONNOLONE	PETER	5784	6628210WW04044	T1
BRZIC	MIRKO	5395	6628210OW04046	T1
ABELA	JOE	5002	6628210WW04051	T1
BEIER	HORST	5049	6628210WW04052	T1
SUGARS	LEONARD CLARENCE	5762	6628210WW04054	T1
FLACCO	GIOVANNI	5264	6628210WW04087	T1
SAPIO	MARIA	5685	6628290WW04832	T1
ISAACSON	ROBERT LEONARD	5225	6628290OW04866	T1
ROCCA	GIUSEPPE	5658	6628290WW04878	T1
PIOVESAN	GIOVANNI	5607	6628290WW04880	T1
AMUSO	ANTONIO	5015	6628290WW04922	T1
CITY OF SALISBURY		6200	6628290OW04995	T1
BIVONE	GIUSEPPE	5064	6628290OW05016	T1
DE LEO	ANTONIO	5191	6628290WW05017	T1
RUSSO	ORSOLA	5626	6628290WW05023	T1
IMBROGNO	ENRICO	5271	6628290OW05092	T1
MARCIANO	PASQUALE	5476	6628290WW05167	T1
FIMMANO	FORTUNATA	5259	6628290WW05171	T1
MERCORELLA	FRANCESCO	5249	6628290WW05172	T1
BELPERIO	CARMINO	5092	6628300WW08000	T1
BAGNATO	FRANCESCA	6198	6628210WW08931	T1
ARDOLINO	GIOVANNI	5026	6628300WW09339	T1
FORBY	MURIEL ALMA	6090	6628110WW09481	T1
EITZEN	ANDREW MERVYN	6563	6628210WW10981	T1
VORRASI	GEORGE	6252	6628220WW11194	T1
LIOLIOS	METHODIOS	5434	6628200WW11985	T1
KIPAROGLOU	JOHN	5238	6628200WW12576	T1
PROGRESS INTERNATIONAL PTY LTD		5590	6628210WW12873	T1
MUSO NOMINEES PTY LTD		5712	6628200WW12945	T1
PENRICE SODA PRODUCTS P/L		6800	6628300WW13020	T1
MARTIN	TREVOR JOHN	5935	6628200WW13480	T1
POLLIFRONE PTY LTD		5164	6628190WW13552	T1
KEWLEY	STEPHEN MICHAEL	5934	6628200WW13553	T1
PANAGIOTAS	MICHAEL	6082	6628210WW13574	T1
PENPLAN PTY LTD		6168	6628210WW13840	T1
MICHELIZZI	FRANCESCA	5972	6628190WW13872	T1
CDZ PTY LTD		6196	6628190WW13927	T1

SURNAME	FIRST NAME	LIC. NO.	UNIT_NO	AQUIFER
PENRICE SODA PRODUCTS P/L		6800	6628310WW14027	T1
GOVAS	CONSTANTINOS	5991	6628220WW14253	T1
STAMATELOPOULOS	DIONYSIOS	5735	6628210WW14343	T1
DE RUVO	DOMENICO	6152	6628210WW14417	T1
BAREEMAL NOMINEES PTY LTD		6018	6628220WW15214	T1
PENFIELD ROSES PTY LTD		6175	6628190WW15350	T1
LUONGO	MICHELE	5447	6628210WW15352	T1
LE	VAN TUONG	5156	6628210WW15353	T1
COVINO	DOMENICO	5161	6628210WW15355	T1
HILL	GARY JOHN	6782	6628220WW15356	T1
ROBERTS	KENNETH GORDON	5657	6628210WW15373	T1
CIRILLO	DOMENICO	6010	6628210WW15450	T1
CATANZARITI	GIUSEPPE	6193	6628210WW15531	T1
NERIDA PTY LTD		5290	6628210WW15542	T1
ZIZZO	ALESANDRO	5090	6628210WW15588	T1
PANUCCIO	GEORGE DOMINIC	5567	6628210WW15589	T1
PISCIONERI	ILARIO	6030	6628190WW15674	T1
LOPRESTO	FRANK	5443	6628210WW15844	T1
PENFIELD ROSES PTY LTD		6175	6628190WW15893	T1
DIMASI	VINCENZO	5212	6628210WW15905	T1
CARETTI	GAETANO	6127	6628200WW16040	T1
RICHICHI	NATALE ROCCO	6443	6628200WW16074	T1
UREN	GRAHAM PAUL	6445	6628200WW16075	T1
PHAN	VAN TRAN	6438	6628200WW16106	T1
ROBERTS	REGINALD GEORGE	6440	6628200WW16107	T1
CLARK	JOYLYNE ANN	6160	6628200WW16108	T1
PHAN	THANH VAN	6444	6628200WW16110	T1
SCHMERL	ROLAND COLIN	6446	6628200WW16111	T1
BLACKMORE	GLEN CHARLES	6447	6628200WW16112	T1
MUDDE	MICHELLA ELIZABETH	6441	6628200WW16114	T1
HARRIS	BRIAN ROSS	6442	6628200WW16115	T1
DE RUVO	DOMENICO	6152	6628210WW16116	T1
PELLICONE	ADRIANO	6439	6628200WW16215	T1
BUTCHER	DEAN NORMAN	6436	6628200WW16221	T1
ZUPPA	TONY	6044	6628200WW16254	T1
DINH	TAM VAN	6437	6628200WW16278	T1
SEGULIN	ROBERT MICHAEL	6435	6628200WW16279	T1
BLACKER	GLEN FREDERICK	6434	6628200WW16280	T1
UPHAM	JEREMY SIMON RICHARD	6421	6628200WW16397	T1
NGOV	SAY	6427	6628200WW16398	T1
TSOGAS	VASSILIOS	6429	6628200WW16442	T1
PELLICONE	ANTONINO	5583	6628210WW16443	T1
PERILLI	UMBERTO	6037	6628210WW16444	T1
FLYNN	KATHLEEN YVONNE	6467	6628200WW16493	T1
BUI	ANH TUAN	5042	6628210WW16497	T1
DE IESO	SALVATORE	6048	6628210WW16561	T1
HERRAMAN	GREGORY BRUCE ARTHUR	6059	6628210WW16607	T1
LE	PHONG MINH	6423	6628200WW16622	T1
CITY OF SALISBURY		6913	6628320WW16623	T1
CITY OF SALISBURY		6914	6628310WW16624	T1
MARCHIORO	GIANCARLO	5475	6628300WW16692	T1
REVERUZZI	MARIO	5644	6628210WW16793	T1
SCINTO	LEONARDO	6063	6628300WW17136	T1
RASHLEIGH	JILLIAN MAREE	6066	6628200WW17165	T1
SCARFO	GIUSEPPE	6163	6628290WW17267	T1
VALENTE	RAFFAELE	5588	6628210WW17291	T1

SURNAME	FIRST NAME	LIC. NO.	UNIT_NO	AQUIFER
RUGGIERO	VINCENZO	6156	6628290WW17438	T1
CITY OF SALISBURY		6200	6628290W17787	T1
DIEGO INVESTMENTS PTY LTD		5009	6628220WW17923	T1
PENRICE SODA PRODUCTS P/L		6800	6628310WW18042	T1
SHEEDY	KEVIN JOSEPH	6765	6628200WW18069	T1
PENPLAN PTY LTD		6168	6628290WW18143	T1
PELLICONE	VINCENZO	6178	6628210WW18378	T1
TRIMBOLI	PASQUALE	5793	6628290WW18379	T1
GARAS	DON	5284	6628200WW18457	T1
BFG INVESTMENTS PTY LTD		6071	6628200WW18620	T1
DE IESO	SALVATORE	6048	6628210WW18802	T1
MARCOIONNI	TARQUINIO	6216	6628190WW18832	T1
PELLICONE	VINCENZO	6178	6628210WW19037	T1
KOUKOS	GEORGE	6247	6628210WW19250	T1
TONY MARRONE NOMINEES PTY LTD		6185	6628220WW19416	T1
CIRILLO	ROBERT	5922	6628210WW19517	T1
NGUYEN	Hien THANH	5286	6628210WW19895	T1
CATANZARITI	GIUSEPPE	6193	6628210WW19927	T1
KARAVOLOS	LAMBROS STEFANOS	5391	6628210WW20088	T1
CONSTANTINIDES	GEORGE	6223	6628110WW20350	T1
CARBONE	MICHELE ANTONIO	5122	6628200WW20487	T1
VORRASI	GIOVANNANGELO	5826	6628200WW20489	T1
NGUYEN	Hien THANH	5286	6628210WW20556	T1
ROUfos	NICKOLAS	5877	6628200WW20665	T1
NERIDA PTY LTD		6791	6628200WW20558	T2
BRADBROOK	PAUL DOUGLAS	6642	6528150WW00085	T2
KEVES	KAROLY	5580	6528150OW00106	T2
CANALA	UMBERTO	5331	6528150WW00108	T2
GREGSON	COLIN KELVIN	5332	6528150WW00111	T2
ALVARO	BRUNO	5012	6528150WW00116	T2
RUBY NOMINEES PTY LTD		5968	6528150WW00128	T2
FEIRCLOUGH	DEAN LEON	6036	6528150WW00129	T2
R & A MUSOLINO PTY LTD		6201	6528150WW00142	T2
LEUDERS	GRAHAM MORRIS	6821	6628100WW00770	T2
STAPLETON	CHRISTOPHER	6677	6628100OW00775	T2
PLEW	LINDSAY JOHN	5582	6628100OW00781	T2
RICCIO	SANTOLO	6682	6628100WW00795	T2
PIBROCH PTY LTD		5346	6628090WW00842	T2
BOURAS	JOHN	5739	6628110WW00864	T2
KATAKASI	JOHN	6735	6628100WW00868	T2
CONDINA	VINCENZO	5572	6628110OW00870	T2
MCLEAN	DARRAD JOHN	6804	6628110OW00873	T2
BOVE	ANTONIO	5310	6628110WW00876	T2
KASDALIS	ARTHUR	5394	6628110WW00878	T2
NACCARELLA	PIERINO	5833	6628110WW00882	T2
KALIVAS	STYLIANOS	5382	6628110WW00883	T2
CONTOURIS	CONSTANTINOS	5669	6628110OW00890	T2
KAPIRIS	CON MICHAEL	5386	6628110WW00893	T2
CARBONE	ROCCO	5098	6628110WW00899	T2
BEARDON	MARGARET ELLA	5738	6628110WW00901	T2
GRAY	ARTHUR ALFRED	5847	6628110WW00903	T2
MAVRIS	PATRICIA MATRONA	5491	6628100WW00904	T2
EVENGENA INVESTMENTS PTY LTD		5746	6628110WW00910	T2
KARATSINIDIS	VASILIOS	5390	6628110WW00915	T2
HUSELIC	HAMID	6596	6628110WW00917	T2
RICCIO	GIOVANNA	5432	6628110WW00918	T2

SURNAME	FIRST NAME	LIC. NO.	UNIT_NO	AQUIFER
ROWE	ROGER JOHN	5672	6628110WW00920	T2
PIETRIS	DIMITRIOS	5603	6628110OW00921	T2
ROWE	ROGER JOHN	5672	6628110WW00922	T2
PIETRIS	ATHANASIOS	5604	6628110WW00923	T2
HOWARD	DARREN CRAIG	5376	6628110WW00924	T2
CAFCAKIS	EMMAMOUEL	5085	6628110WW00926	T2
VARVERAKIS	CHRIS	6166	6628110WW00927	T2
VUKSAN	NIKOLA	5416	6628110WW00929	T2
DI LORETO	GESUE	5209	6628110WW00930	T2
TAVITIAN	DAVID	5417	6628110WW00932	T2
CARUSO	ANTONIO	5104	6628110WW00938	T2
DEL PIVO	IDA	5192	6628110WW00950	T2
ANARGYROS	VASILIOS	5017	6628110WW00951	T2
MAILOL	ANTONIO	5460	6628110WW00952	T2
BARONS	FRANK WOLFGANG	6719	6628110WW00953	T2
SERDAR	PAUL	6801	6628110WW00965	T2
MANNING	CHRISTOPHER DAVID	5743	6628110WW00966	T2
FATTORI	SUZANNE FAYEI	5245	6628110WW00967	T2
DOLLING	JULIE-ANNE REBECCA	5353	6628110WW00977	T2
COOMBE	MICHAEL BRIAN	5354	6628110WW00980	T2
EATON	KEVIN FRANCIS	5509	6628110WW00981	T2
TASSONE	COSIMO	5508	6628110WW00982	T2
ALTERNETTI	ANTONIO AND CARMELA	5011	6628110WW00982	T2
HANCOCK	WILLIAM STANLEY H	5646	6628110WW00984	T2
KYRIACOU	NICHOLAS	5412	6628110WW00987	T2
R & A MUSOLINO PTY LTD		6201	6628110WW01004	T2
STAMATOPOULOS	VASILIOS	5737	6628110WW01010	T2
PETER J CANALA P/L		6763	6628110WW01022	T2
CATANZARITI	GIUSEPPE	6193	6628110OW01028	T2
SONTHAVONG	BOUNTHONG	5013	6628110WW01036	T2
JACKS	ALFRED ERNEST	6751	6628110WW01037	T2
CONTI	ANGELO	5148	6628110WW01040	T2
NGUYEN	THI HA	5472	6628110WW01045	T2
ARCHAGELIDIS	EFSTATIHIOS	5025	6628110WW01046	T2
MELLOR	PETER ROBERT	6750	6628110WW01051	T2
SPARNON	IVAN JOSEPH	5730	6628110WW01056	T2
TRUONG	HOANG LAP	5505	6628110OW01057	T2
SPARNON	IVAN JOSEPH	5730	6628110WW01058	T2
FULLSTON	LYNETTE ANNE	6784	6628110WW01061	T2
GIANGREGORIO	GIUSEPPE	6157	6628110WW01065	T2
SICILIANO	JACK ROCCO	5418	6628110WW01067	T2
ZURCHER	JOHANN NIKOLAUS	5873	6628110WW01068	T2
BROWN	GARY LINDSAY	5832	6628110WW01070	T2
JOHNSTONE	MERVYN ARTHUR	5767	6628110WW01071	T2
FATCHEN	REBECCA KAY	5366	6628110WW01073	T2
PORROVECCHIO	PETER	5623	6628110OW01074	T2
HAINCOURT BROAD	WAYNE CHARLES	5277	6628110WW01075	T2
	HAINCOURT			
INSERRA	GIUSEPPE	6087	6628110WW01076	T2
SECCAFIEN	LINDA ANNE	5765	6628110WW01077	T2
PAGANO	VINCENZO	5231	6628110OW01090	T2
MARKOVIC	MICHAEL VIKTOR OTTO	5232	6628110OW01092	T2
RICE	ALAN CHARLES	5299	6628110WW01093	T2
MUSOLINO	GIUSEPPA VICTORIA	6203	6628110WW01099	T2
CATANZARITI	DOMINIC	6206	6628110WW01102	T2

SURNAME	FIRST NAME	LIC. NO.	UNIT_NO	AQUIFER
ROSITANO	CARMELO	5663	6628110WW01105	T2
CLARK	LYNETTE IRENE	5800	6628110WW01107	T2
MUSOLINO	GIUSEPPA VICTORIA	6203	6628110WW01109	T2
BRAICA	VITOMIR	6251	6628110WW01126	T2
MUSOLINO	GIUSEPPA VICTORIA	6203	6628110WW01131	T2
CALVARESI	BRUNO	5679	6628110WW01136	T2
TRIMBOLI	ANTONIO	6174	6628110WW01138	T2
COSTANZO	MICHAEL JOHN	5160	6628110WW01140	T2
RICCI	ANNA MARIA	6057	6628110WW01144	T2
TRIMBOLI	ROSARIO	6146	6628110WW01150	T2
COCCI	DOMINIC	6055	6628110WW01166	T2
NOVAK	ROBERT GEORGE	5265	6628110WW01174	T2
CATTELL	GEORGE FREDRICK	6497	6628120WW01264	T2
CANNIZZARO	JOSEPH	5094	6628120WW01266	T2
CANNIZZARO	JOSEPH	5094	6628120WW01268	T2
HALLIDAY	KAYE FRANCES	5733	6628120WW01269	T2
VAN AN DIEP	ITALIA	5641	6628120WW01271	T2
RASCHELLA	CARMINE	6207	6628120WW01275	T2
DI TROIA	HEATHER CLARENCE	5242	6628120WW01281	T2
POSSINGHAM	NICOLAS ZACHARIA	5165	6628120WW01289	T2
NICOLA	JOHN	5387	6628120WW01293	T2
GALLARELLO	SAMUEL TERRENCE	5281	6628120WW01294	T2
CONTOURIS	FRANK	5406	6628120WW01295	T2
SCHIFILLITI	RICHARD JAMES	5343	6628120WW01296	T2
PEARCE	ROBERT ANTHONY	5844	6628120WW01297	T2
BADER	GEORGE CLIFFORD	5109	6628120WW01299	T2
HUDSON	BRUNO	5899	6628120WW01303	T2
LUMOND PTY LTD		6171	6628120WW01306	T2
PASIN		6208	6628120OW01309	T2
VF & C SCAFFIDI PTY LTD		5687	6628120WW01312	T2
MONDELLO	GIUSEPPE	6218	6628120WW01313	T2
MONDELLO	GIUSEPPE	6218	6628120WW01319	T2
MESSENGER	KENNETH JOHN	5504	6628120OW01325	T2
RIDENTI	SIGNORINO	5647	6628120WW01329	T2
POLITO NOMINEES PTY LTD		6217	6628120WW01330	T2
MONDELLO	GIUSEPPE	6218	6628120WW01338	T2
LUMOND PTY LTD		6171	6628120WW01341	T2
BARKLEY	PATRICIA MARY	5047	6628120WW01352	T2
HARNIMAN	WILLIAM JOHN REGINALD	5337	6628120WW01354	T2
GAWLER RIVER INVESTMENTS P/L		5468	6628120WW01362	T2
ROBERTS	THOMAS GREGORY	6149	6628120WW01365	T2
CORMACK	VERONICA	5084	6628120WW01370	T2
AGROLIVE PTY LTD		6230	6628120WW01380	T2
CAVALLARO	LARRY PATRICK	5113	6628120WW01381	T2
MAILO	ANGELA	5462	6628120WW01383	T2
EVANSTON GARDENS PTY LTD		5116	6628120WW01384	T2
EVANSTON GARDENS PTY LTD		6155	6628120WW01387	T2
EVANSTON GARDENS PTY LTD		6155	6628120WW01388	T2
COSTA	DOMINIC VICTOR	5158	6628120WW01405	T2
STAVROU	SPIRO	5183	6628120WW01413	T2
MENADUE	KEVIN JOHN	5500	6628120WW01414	T2
PANUCCIO	MARIA	5431	6628120WW01419	T2
COSTA	MICHAEL HEDLEY	6062	6628120WW01449	T2
ROMEO	FRANK	6234	6628120WW01453	T2
S&G GASKIN GARDENERS P/L		6153	6628120WW01457	T2
D'ONFRIO	PASQUALE	5216	6628120WW01462	T2

SURNAME	FIRST NAME	LIC. NO.	UNIT_NO	AQUIFER
CDZ PTY LTD		6196	6628120WW01463	T2
CDZ PTY LTD		6196	6628120WW01464	T2
GIAN NOMINEES PTY LTD		5520	6628120WW01467	T2
GIAN NOMINEES PTY LTD		5520	6628120OW01468	T2
SKUSE	JEFFERY LEONARD	5838	6628120WW01471	T2
RUGGIERO	VINCENZO	5843	6628120WW01500	T2
DELUCA	FILIPPO	5147	6628120WW01506	T2
IMBROGNO	LUIGI	6194	6628120WW01508	T2
CITY OF PLAYFORD		5655	6628120WW01514	T2
VIRGARA	GIUSEPPE	5043	6628120WW01517	T2
PELLICONE	DOMENIC	5522	6628120WW01520	T2
PISCIONERI	DOMENICO	5611	6628120WW01523	T2
COSTA	PHILLIP	5175	6628120WW01527	T2
S&G GASKIN GARDENERS P/L		6153	6628120WW01528	T2
COSTA	PHILLIP	5175	6628120WW01532	T2
IMBROGNO	ENRICO	5271	6628120OW01535	T2
ROSSI	ANGELO	5688	6628120WW01546	T2
MOULDS	PAMELA AILEEN	5523	6628120WW01548	T2
STEVENS	BRENTON CRAIG	6612	6628150WW01562	T2
G, A & M INVESTMENTS PTY LTD		5553	6628120WW01569	T2
GARDEN GOODNESS PTY LTD		6161	6628120WW01577	T2
MANGIOLA	MARCO	5466	6628120OW01578	T2
COSTA	ANTHONY COSIMO	5474	6628120WW01580	T2
DE CASTO	ADDOLORATA	5260	6628110WW01717	T2
MONDELLO	GIUSEPPE	6218	6628130OW01752	T2
JACKSON	WILLIAM HERBERT	5367	6628130WW01757	T2
NORMAN	GREGORY REX	6802	6628130WW01759	T2
PEZZANITI	NICHOLAS	5336	6628120WW02054	T2
PALMER	THALIA MERCEA	6133	6528160WW02069	T2
FORREST	CLARENCE ALLEN	5138	6628200WW02267	T2
TSIROS	PETER	5900	6628200WW02280	T2
EMERY	PAUL JAMES	5480	6628200WW02281	T2
TZEREFOSS	JOHN CON	5808	6628200WW02282	T2
FH NICOL PTY LTD		6029	6628200WW02296	T2
EVANOFF	DENIS	5233	6628200WW02310	T2
NATSIAS	BASIL	5537	6628200WW02318	T2
HUYNH	THUY BICH	5613	6628200WW02320	T2
PALAZOFF	GEORGE	5561	6628200WW02323	T2
LE	KHANH QUOC	6231	6628200WW02324	T2
NIKOU	VASILIOS	5545	6628200WW02337	T2
LAZARIDIS	KONSTANTINOS	5622	6628200WW02340	T2
DADASOVIC	MILAN	5314	6628200WW02370	T2
TRIMBOLI	ANTONIO	6174	6628200WW02373	T2
SICILIANO	FRANCESCO	5714	6628200WW02375	T2
LE	KHANH QUOC	6231	6628200WW02404	T2
NGO	THACH NGAU	5198	6628200WW02407	T2
NGUYEN	RAPHAEL	5408	6628200WW02409	T2
DUONG	LUONG	5258	6628200WW02410	T2
ROUSANOFF	PETER MIHO	5670	6628200WW02412	T2
TRIFONOFF	GORDON	5786	6628200WW02416	T2
GEORGEFF	BLANKA STEPHANY	5297	6628200WW02420	T2
TRAN	BI VAN	5726	6628200WW02421	T2
PETSIOS	SAM	5598	6628200WW02425	T2
TSACOS	THEODORE	5596	6628200WW02426	T2
P GEORGARAS NOMINEES PTY LTD		5298	6628200WW02433	T2
NGUYEN	NGUYEN THANH	5827	6628200WW02440	T2

SURNAME	FIRST NAME	LIC. NO.	UNIT_NO	AQUIFER
SISSIS	ARTHUR	5720	6628200WW02443	T2
MICHOPoulos	GEORGE	5295	6628200WW02445	T2
NGUYEN	THANH TUNG	5389	6628200WW02449	T2
GRILLI	JOSEPH	6154	6628200WW02451	T2
GEORGOLAS	TELEMACHOS	5005	6628200WW02460	T2
GEORGOULAS	EMMANOUEL	6053	6628200WW02474	T2
COCCI	DOMINIC	6055	6628200WW02485	T2
CHIEM	NAM KIM	5851	6628200WW02493	T2
GHI VAN VO		5383	6628200WW02497	T2
MAVRA	BOZIDAR	5441	6628200WW02499	T2
BD & MD NICOL & SON PTY LTD		6027	6628200WW02501	T2
VAGNONI	SANTA	5810	6628200WW02504	T2
CHIEM	KIM Y	5381	6628200WW02507	T2
COCCI	DOMINIC	6055	6628200WW02508	T2
BD & MD NICOL & SON PTY LTD		6027	6628200WW02510	T2
TSIROS	PETER	5900	6628200OW02533	T2
TELIGIANNIDIS	KONSTANTINOS	5566	6628200WW02555	T2
STEVANOVIC	TOMISLAV	5751	6628200WW02558	T2
MANOLAS	NICK	5470	6628200WW02570	T2
DO	HOA TAN	5558	6628200WW02581	T2
LAM	VAN HON	5173	6628200WW02584	T2
IOANNOU	ELENI	5363	6628200WW02585	T2
CARPINELLI	MARIA	5103	6628200WW02592	T2
ARHARIDIS	SOTIRIOS	5279	6628200WW02593	T2
VU	DINH THI	5328	6628200WW02597	T2
RIGNANESE PTY LTD		6205	6628200WW02600	T2
PHUNG	DUY PHUONG	5769	6628200WW02601	T2
EONCHEFF	NICK	5224	6628200WW02606	T2
LE	VAN PHAN	5125	6628200WW02607	T2
LAM	HAU VAN	5544	6628200WW02608	T2
LY	MINH CANG	5484	6628200WW02652	T2
MERCURIO	SALVATORE	5501	6628290WW02659	T2
MARIN	FRANCESCO ADO	5481	6628190WW02668	T2
COSTANZO	ANTHONY JOHN	5159	6628190WW02711	T2
ZUPPA	GIOVANNI	5872	6628190WW02715	T2
PENFIELD ROSES PTY LTD		6175	6628190WW02723	T2
DAMIANI	RENATO	6999	6628190WW02734	T2
DAMIANI	RENATO	6999	6628190WW02739	T2
BARRESI INVESTMENTS PTY LTD		6116	6628190OW02808	T2
AJD ENTERPRISES PTY LTD		5450	6628190WW02810	T2
TRAN	DINH HUE	5689	6628190WW02819	T2
POLLIFRONE PTY LTD		6192	6628190WW02834	T2
DO	THAO THANH	5897	6628190WW02881	T2
BD & MD NICOL & SON PTY LTD		6027	6628190WW03189	T2
MARANDO	VINCENZO	6176	6628200WW03191	T2
DE RUVO	DOMENICO	6152	6628210WW03808	T2
GEMCI	RIFAT	6670	6628210WW03815	T2
DINH	THANH TUNG	5236	6628210WW03817	T2
CICCONE	MARIO	5130	6628210WW03818	T2
LOPRETE	LUIGI	5444	6628210WW03819	T2
TRIMARCHI	VINCENZO	5789	6628210WW03820	T2
VOZZO	VITTORIO	5829	6628210WW03901	T2
PERILLI	ANTONIO	5587	6628210WW03989	T2
BRAZZALOTTO	UGO	5076	6628210WW04003	T2
GLOUFTSIS	LAZAROS	5312	6628210WW04012	T2
RENTOULIS	EMMANOUEL	5355	6628210OW04013	T2

SURNAME	FIRST NAME	LIC. NO.	UNIT_NO	AQUIFER
TRAN	THI AN	5182	6628210WW04030	T2
NGUYEN	VAN LY	5540	6628210WW04035	T2
CARETTI BROTHERS PTY LTD		6173	6628110WW04634	T2
S&G GASKIN GARDENERS P/L		6153	6628120WW05939	T2
LE	KHANH QUOC	5718	6628200WW05983	T2
TRIANTAFYLLOS	NICOLAOS	5892	6628110WW06078	T2
NGUYEN	VAN SAT	5268	6628110WW06080	T2
CIAMPA	PAMELA MARY	5126	6628110WW06093	T2
RIGNANESE PTY LTD		6205	6628200WW06104	T2
KARAPAS	KYRIAKOS	5388	6628200WW06106	T2
BARBARO	FRANCES MARIA	5631	6628200WW06108	T2
S & E DIFAVA FAMILY TRUST		5512	6628210WW07162	T2
FOSTER	ROBERT GEORGE	5237	6628110WW08933	T2
BD & MD NICOL & SON PTY LTD		6027	6628200WW09462	T2
A & V BERGAMIN PTY LTD		5057	6628200WW10986	T2
STANEV	KONSTANTIN	5741	6628200WW11080	T2
MARANDO	VINCENZO	6176	6628110WW11164	T2
KASA PTY LTD		6123	6628120WW11166	T2
GIANGREGORIO	GIUSEPPE	6157	6628110WW11192	T2
A & V BERGAMIN PTY LTD		5057	6628200WW11193	T2
VO	THI-LANG	5898	6628190WW11358	T2
MCALLISTER	SCOTT ANTHONY	5333	6628110WW11407	T2
NGUYEN	NGOC TUYEN	5349	6628110WW11438	T2
MARSCHALL	BRIAN LESLIE	5486	6628110WW11475	T2
RUSSO	CLAUDIO ROMANO	5595	6628200WW11494	T2
NEMEA HOLDINGS PTY LTD		5906	6628200WW11497	T2
FH NICOL PTY LTD		6029	6628200WW11507	T2
CATANZARITI	GIUSEPPE	6193	6628110WW11508	T2
TRIN	LUIGI	5255	6628190WW11521	T2
TIPOUIKIDIS	JOHN	6181	6628190WW11541	T2
BOURAS	JOHN	5072	6628200WW11544	T2
C & I CIROCCO NOMINEES PTY LTD		5296	6628190WW11556	T2
BOWTHORPE PTY LTD		5503	6628190WW11562	T2
PHAN	THANG VAN	5517	6628110WW11563	T2
SLOAN SANDS PTY LTD		6803	6628120WW11580	T2
TRAN	PHUONG TRANG	5029	6628110WW11589	T2
BD & MD NICOL & SON PTY LTD		6027	6628110WW11612	T2
COCCI	DOMINIC	6055	6628200WW11640	T2
KAPIRIS	JOHN	6159	6628110WW11750	T2
BOWTHORPE PTY LTD		6189	6628190WW11757	T2
BOITCHEFF	KIRIL DENNIS	5066	6628200WW11776	T2
DE RUVO	DOMENICO	6152	6628210WW11791	T2
TRIMBOLI	ROSARIO	6146	6628190WW11795	T2
THOMSON	RICHARD GLENN	5732	6628200WW11855	T2
BOWTHORPE PTY LTD		6189	6628190WW11944	T2
CARYPIDIS	KYRIAKOS	5004	6628200WW11990	T2
NGUYEN	VAN DINH	5273	6628200WW11991	T2
POGAS	MICHAEL	5618	6628110WW11993	T2
POGAS	NICOLAOS	5617	6628110WW11994	T2
RICE	JOHN STANLEY	5483	6628110WW12031	T2
MARCOIONNI	PETER	6224	6628110WW12077	T2
CDZ PTY LTD		6196	6628200WW12079	T2
FH NICOL PTY LTD		6029	6628200WW12080	T2
SKUSE	JEFFERY LEONARD	5838	6628120WW12082	T2
BARRESI INVESTMENTS PTY LTD		6116	6628190OW12107	T2
ROGNETTA	FRANCESCO	5659	6628110WW12163	T2

SURNAME	FIRST NAME	LIC. NO.	UNIT_NO	AQUIFER
FH NICOL PTY LTD		6029	6628200WW12167	T2
STEFANIDIS	PAUL	5747	6628110WW12326	T2
BD & MD NICOL & SON PTY LTD		6027	6628190WW12327	T2
BRAZZALOTTO	FRANCO	5075	6628210WW12356	T2
KEANE	GREGORY STEPHEN	6202	6628190WW12379	T2
LIOLIOS	EVANGELOS	5433	6628200WW12380	T2
LIOLIOS	PETER	5435	6628200WW12414	T2
SHARPE	BRENTON LEWIS	5709	6628110WW12456	T2
SPARNON	IVAN JOSEPH	5730	6628110WW12462	T2
LUMOND PTY LTD		6171	6628120WW12463	T2
DO	MINH HO	5963	6628200WW12464	T2
FH NICOL PTY LTD		6029	6628200WW12465	T2
GRILLI	IDA	5325	6628200WW12504	T2
SHARPE	BRENTON LEWIS	5709	6628110WW12599	T2
SPARNON	MARK JOSEPH	6757	6628110WW12600	T2
FAZZARI	AGOSTINO	6026	6628120WW12601	T2
COSMIDIS	ALEX	5931	6628110WW12614	T2
HANN	ALAN MERVYN	6144	6628120WW12640	T2
BRADBROOK	EDWARD STEPHEN	5348	6628220WW12794	T2
CATANZARITI	DOMINIC	6206	6628110WW12870	T2
EVRENIADIS	PETER	5234	6628200WW12872	T2
NGUYEN	VAN PHUC	5633	6628110OW12935	T2
BD & MD NICOL & SON PTY LTD		6027	6628190WW13004	T2
RUGGIERO	SALVATORE	5879	6628190WW13005	T2
KONTOPOULOS	ATHANASIOS GEORGE	5404	6628110WW13010	T2
TRIMBOLI	ROSARIO	6146	6628110WW13023	T2
RUGGIERO	SALVATORE	5879	6628120WW13025	T2
SHARPE	BRENTON LEWIS	5709	6628110WW13031	T2
RIDENTI	SIGNORINO	5647	6628130WW13050	T2
YFANTIDIS	NIKOLAS	5853	6628200WW13052	T2
KASDALIS	ARTHUR	5394	6628110WW13169	T2
MAZZEO	MICHELE	5494	6628110WW13177	T2
ZUPPA	PELLEGRINO	5871	6628200WW13184	T2
TSANAKTSIDIS	PAUL	5928	6628200WW13215	T2
MICHOPoulos	GEORGE	5295	6628200WW13218	T2
M & B FARMER NOMINEES PTY LTD		6028	6628200WW13259	T2
ROSS	DAVID JOHN	5350	6628110WW13284	T2
KIM	THU VAN	6212	6628110WW13332	T2
GEORGOLAS	TELEMACHOS	5005	6628200WW13333	T2
SEMAK	TANIA	6756	6628200WW13380	T2
AJS PIERSON & SON PTY LTD		6150	6628200WW13381	T2
VALENTE	ULISSE VITTORIO	5811	6628110WW13388	T2
MAHONEY	ELIZABETH	5952	6628120WW13414	T2
BAKER	BRIAN STEWART	5939	6628120WW13415	T2
SCHULZE	FRANK JOHN VINCENT	6789	6628120WW13416	T2
NGUYEN	THONG	5749	6628200WW13417	T2
CIANCI	FERDINANDO	5127	6628110WW13433	T2
KONTOPOULOS	DIMITRIOS	5943	6628200WW13467	T2
RUSSELL	BEVERLEY KATHLEEN	5180	6628110WW13538	T2
CHHEN	HAN	5983	6628110WW134547	T2
ANDERSON	GRAHAM DENNIS	5019	6628120WW13548	T2
KEANE	GREGORY STEPHEN	6202	6628120WW13549	T2
POMAKIS	DEMOSTHENIS	5948	6628120WW13550	T2
KEANE	GREGORY STEPHEN	6202	6628190WW13577	T2
STANEF	STAVROULA	5740	6628110WW13632	T2
ROSSI	ARCANGELO	5966	6628120WW13633	T2

SURNAME	FIRST NAME	LIC. NO.	UNIT_NO	AQUIFER
NGUYEN	VAN THICH	5804	6628110WW13642	T2
NGUYEN	VAN THICH	5958	6628200WW13644	T2
BRUS	ALLEN ALFRED	5082	6628120WW13662	T2
COSTA	ANTHONY DOMINIC	5155	6628190WW13704	T2
COSTA	ANTHONY DOMINIC	5155	6628190WW13705	T2
TODOROFF	KOSTA	5384	6628200WW13706	T2
TRI	THUY LONG	5326	6628200WW13707	T2
CAVALLARO	ILARIO NATALI	6250	6628190WW13808	T2
SPANO	GIOVANNI	5728	6628110WW13816	T2
CALVARESI	BRUNO	5679	6628110WW13837	T2
AZZURRO	DOMENICA	5711	6628200WW13870	T2
POLLIFRONE PTY LTD		6192	6628190WW13873	T2
HAMOOD	PETER GORDON	5976	6628210WW13874	T2
PALOMBARO	MARIA AGNESE	5563	6628110WW13944	T2
CLEARY	CONSTANCE JOAN	6811	6628110WW13945	T2
THAIN	MALCOLM DAVID	5773	6628110WW13978	T2
CARETTI BROTHERS PTY LTD		6173	6628110WW13979	T2
CIAMPA	PAMELA MARY	5126	6628110WW13980	T2
SHARPE	BRENTON LEWIS	5709	6628110WW13981	T2
GERARDIS	FRANCESCO ANTONIO	5975	6628200WW13982	T2
ANGELO NOMINEES PTY LTD		5995	6628200WW13984	T2
KEANE	GREGORY STEPHEN	6202	6628190WW13985	T2
BOLLAND	ROBERT GEORGE	6009	6628120WW13997	T2
NEDELKOS	EVANGELOS	5539	6628200WW13998	T2
R&G MERENDA PTY LTD		6187	6628190WW14003	T2
LAM	THANH	5482	6628200OW14011	T2
LY	MINH CANG	5484	6628200WW14012	T2
MORAITIS	ZAHARIAS	5516	6628200WW14050	T2
NGUYEN	TAN VAN	5974	6628110WW14161	T2
COENRAAD	ANTHONY PETER	5973	6628110WW14162	T2
PAPANOTIS	CHRIS	5570	6628200WW14165	T2
CARETTI BROTHERS PTY LTD		6173	6628110WW14166	T2
GARDEN GOODNESS PTY LTD		6161	6628120WW14181	T2
TSIMIKLIS	NICK	5513	6628200WW14182	T2
TRAN	KHANG VINH	5986	6628200WW14202	T2
VINICKY	GEORGE DJURO	6796	6628200WW14210	T2
NGUYEN	VAN LUYEN	6493	6628200WW14223	T2
PITT	RUSSELL ANTHONY	6492	6628200WW14224	T2
TRESIDDER NOMINEES PTY LTD		5987	6628110WW14261	T2
MACOLINO	ANTONIO	5989	6628110WW14262	T2
ROMANO	NICOLA	5661	6628120WW14263	T2
MALCOLM LEWIS NOMINEES PTY LTD		5533	6628200WW14265	T2
S&G GASKIN GARDENERS P/L		6153	6628120WW14270	T2
ARHARIDIS	GEORGIOS	6020	6628200WW14272	T2
LOUPATATZIS	DIMITRIOS	5994	6628110WW14295	T2
NOTO FARMS PTY LTD		5554	6628190WW14306	T2
CDZ PTY LTD		6196	6628190WW14307	T2
HUYNH	THUAN TAN	5759	6628200WW14308	T2
AJS PIERSON & SON PTY LTD		6150	6628200WW14319	T2
MECOZZI	CESARE	6158	6628200WW14320	T2
TARIN ROCK PTY LTD		5040	6628210WW14321	T2
ROBERTS	PATRICIA ANN	5992	6628110WW14325	T2
BLOMFIELD	DENNIS RAYMOND	6002	6628100WW14342	T2
BTR EXCAVATIONS PTY LTD		5275	6628120WW14383	T2
DINH	THANH TUNG	6119	6628200WW14421	T2
CAFCAKIS	ANASTASIA	5086	6628200WW14422	T2

SURNAME	FIRST NAME	LIC. NO.	UNIT_NO	AQUIFER
GARDEN GOODNESS PTY LTD		6161	6628120WW14427	T2
RASCHELLA	ILARIO	5926	6628110WW14487	T2
LUMOND PTY LTD		6171	6628090WW14488	T2
ROMEO	FRANK	6234	6628120WW14490	T2
TRIMBOLI	DOMENICO NICOLA	6766	6628200WW14491	T2
VARVARICOS	ANTONIOS	5817	6628200WW14492	T2
KAPIRIS	JOHN	6159	6628110WW14512	T2
BAGGS	GEOFFREY THOMAS	6495	6628120WW14954	T2
CARETTI BROTHERS PTY LTD		6173	6628110WW14955	T2
GEORGULAS	EMMANOUEL	6053	6628200WW14960	T2
NGUYEN	CONG THI	5597	6628200WW14961	T2
TARIN ROCK PTY LTD		5040	6628210WW15129	T2
MECOZZI	CESARE	6158	6628200WW15136	T2
KAKAMANOUDIS	GEORGE	6480	6628200WW15137	T2
DEDES	JOHN	5883	6628200WW15139	T2
BAGNATO	MARIO	5909	6628110WW15140	T2
UN	THORL	6011	6628210WW15145	T2
PERILLI	ANTONIO	5587	6628210WW15149	T2
CHENOWETH	COLIN WILLIAM	6485	6628120WW15155	T2
MAIO	CRESCENZO	5902	6628120WW15182	T2
TSIMIKLIS	GEORGE	5423	6628200WW15184	T2
GEORGOLAS	TELEMACHOS	5005	6628200WW15213	T2
MONDELLO	GIUSEPPE	6218	6628120WW15260	T2
AJS PIERSON & SON PTY LTD		6150	6628200WW15295	T2
GRILLI	JOSEPH	6154	6628200OW15298	T2
ROMEO	FRANK	6234	6628120WW15301	T2
MCLEOD	BARBARA JEAN	5081	6628110WW15344	T2
CARYPIDIS	KYRIAKOS	5004	6628110WW15345	T2
CARYPIDIS	KYRIAKOS	5004	6628110WW15346	T2
PHAN	SINUON LYNDA	6786	6628200WW15351	T2
NGUYEN	THAI LAN	6052	6628210WW15354	T2
LAZENKA	NICK	5754	6628110WW15366	T2
FH NICOL PTY LTD		6029	6628200WW15374	T2
LAFTSIS	DIMITRIOS	5547	6628200WW15382	T2
SFARRA	GIUSEPPINA	5707	6628210WW15419	T2
SKOURTIS	PETER	5569	6628110WW15446	T2
CHAV	KHOUNG	6484	6628200OW15447	T2
MANOLAS	STAVROS	5471	6628200WW15523	T2
PELLICONE	ANTONINO	5584	6628120WW15529	T2
GRIVAKIS	THEODOROS	6482	6628200WW15532	T2
CORNFORD	RAE NANNETTE	6487	6628200WW15585	T2
COSTA	ANTHONY DOMINIC	5155	6628190WW15590	T2
CAVALLARO	ILARIO NATALI	6250	6628120WW15602	T2
BD & MD NICOL & SON PTY LTD		6027	6628190WW15606	T2
AUSSIE FLOWER FARM SA PTY LTD		6017	6628190WW15646	T2
COLLINS	JOHN LEONARD	6474	6628200WW15652	T2
PICARD	MICHAEL ANTHONY	6025	6628120WW15730	T2
MERENDA	ROSS	6007	6628110WW15785	T2
MERENDA	ROSS	6007	6628110WW15868	T2
RUGGIERO	SALVATORE	5879	6628120WW15891	T2
VO	VAN PHUONG	5779	6628200WW15894	T2
KATSARELIAS	FANIS	6141	6628120WW15903	T2
ZOGRAFIDIS	MARIA	5868	6628110WW16038	T2
HOWSE	NEVILLE FRANK	6031	6628120WW16039	T2
FREUNDT	RICHARD JOHN	6465	6628200WW16041	T2
TRIMBOLI	ROSARIO	6146	6628200WW16073	T2

SURNAME	FIRST NAME	LIC. NO.	UNIT_NO	AQUIFER
SECCAFIEN	GUERINO	5702	6628110WW16104	T2
PHUNG	DUY PHUONG	6015	6628200WW16113	T2
BD & MD NICOL & SON PTY LTD		6027	6628200WW16165	T2
STOYANOFF	LOUY	5758	6628200WW16222	T2
LE	VAN LIEM	6034	6628110WW16223	T2
PHAM	THONG TAN	5269	6628110WW16267	T2
CITY OF PLAYFORD		5654	6628190WW16275	T2
CITY OF PLAYFORD		5654	6628190WW16276	T2
BORRELLI	PELLEGRINO	5576	6628110WW16392	T2
SLIFKAS	ATHANASIOS	5724	6628200WW16393	T2
POLITO NOMINEES PTY LTD		6217	6628120WW16441	T2
CLOSE	WILLIAM JOSEPH	5135	6628120WW16485	T2
DALZIEL	LESLIE ALLEN	6073	6628200WW16490	T2
LE	KHANH QUOC	6231	6628200WW16491	T2
TRIMBOLI	ROSARIO	6146	6628200WW16492	T2
LEOMBRUNO	ANNA	5425	6628200WW16494	T2
MARSHALL WYATT	EDWARD	6805	6628110WW16534	T2
TODOROFF	EVANGELIA	5778	6628110WW16560	T2
GIANGREGORIO	GIUSEPPE	6157	6628110WW16584	T2
TRI	THUY LONG	5316	6628110WW16585	T2
DO	SANG-TAN	6042	6628210WW16588	T2
POGAS	PAUL	5959	6628200WW16605	T2
HABINIAK	MICHAEL	6464	6628200WW16606	T2
ECONOMOU	GEORGE	5219	6628200WW16658	T2
MITOLO HOLDINGS PTY LTD		6236	6628110WW16667	T2
ENCHEFF	DRAGNI	5223	6628200WW16668	T2
MUSOLINO	GIUSEPPA VICTORIA	6203	6628110WW16682	T2
NGUYEN	NHI	5262	6628110WW16785	T2
LAM	HONG DUC	5478	6628110WW16786	T2
VIRGARA	PASQUALE	5215	6628120WW16787	T2
PELLICONE	ANTONINO	5583	6628210WW16792	T2
NOTO	FRANCESCO SALVATORE	5969	6628120WW16872	T2
MARAGOZIDIS	JORDANIS	5621	6628190WW16899	T2
LAZENKAS	GEORGE	6461	6628200WW17064	T2
IVANOFF	DIMITAR	5365	6628200WW17065	T2
STOEFF	BORIS	5977	6628200WW17066	T2
FISCHER	WILLIAM GLEN	6449	6628200WW17128	T2
BRAICA	VITOMIR	6251	6628110WW17221	T2
VO	OANH THI KIEU	5862	6628200WW17222	T2
TRAN	VON BOI	6000	6628210WW17255	T2
MARCOIONNI	TARQUINIO	6216	6628190WW17258	T2
IRVINE	ROBERT MUNRO	6065	6628120WW17286	T2
LUMOND PTY LTD		6171	6628120WW17287	T2
POLLIFRONE PTY LTD		6192	6628190WW17289	T2
NGUYEN	VAN SAU	5514	6628200WW17290	T2
CALBRESE	PELLEGRINO	5176	6628110WW17820	T2
LAZENKAS	STEVE	6458	6628200WW17917	T2
TRUONG	HUNG THANH	6076	6628200WW17918	T2
ARHARIDIS	LEON	5916	6628200WW17919	T2
G, A & M INVESTMENTS PTY LTD		5553	6628190WW17920	T2
POLLIFRONE PTY LTD		6192	6628190WW17921	T2
BIRNIE	IAN ALEXANDER	5536	6628090WW17958	T2
KARELLAS	PANGIOTIS	5292	6628110WW18096	T2
DEM-AIRE INVESTMENTS PTY LTD		5186	6628200WW18165	T2
BARILLA	STEFANO	6086	6628190WW18166	T2
KASSOUDAKIS	JOHN	5876	6628210WW18189	T2

SURNAME	FIRST NAME	LIC. NO.	UNIT_NO	AQUIFER
NGUYEN	DAO	6469	6628200WW18376	T2
ANDERSON	ROSS WILLIAM	6460	6628200WW18377	T2
POSCIONERI	ILARIO	5638	6628200WW18422	T2
REVERUZZI	MARIO	6167	6628110WW18453	T2
PHAM	MINH QUANG	6100	6628200WW18455	T2
GUIDOLIN	DOMINIC	5329	6628200WW18456	T2
GEORGOLAS	TELEMACHOS	5005	6628200WW18497	T2
MARANDO	VINCENZO	6176	6628200WW18498	T2
CITY OF SALISBURY		6143	6628220WW18545	T2
CITY OF SALISBURY		6142	6628290WW18546	T2
IELASI	ANTONIO	5886	6628210WW18572	T2
LUPEZINNI	GIANNI	5101	6628110WW18578	T2
AKHAN	MUSLUM	6197	6628200WW18580	T2
NGUYEN	NHI	6096	6628210WW18581	T2
PEZZANITI	NICHOLAS	5336	6628120WW18589	T2
BD & MD NICOL & SON PTY LTD		6027	6628200WW18590	T2
LYMBERIS	FOTINA	6483	6628200WW18591	T2
MANNO	GIUSEPPE	6107	6628120WW18615	T2
UNDERHILL	RICHARD MAURICE	5018	6628120WW18616	T2
LE	TRAN QUANG THUONG	6105	6628200WW18621	T2
CARETTI BROTHERS PTY LTD		6173	6628110WW18622	T2
M&D FARMERS NOMINEES P/L		6042/6115	6628120WW18782	T2
F AGOSTINO NOMINEES PTY LTD		6129	6628210WW18787	T2
NGUYEN	DAI-TRUONG	5410	6628200WW18833	T2
ROSSI	ARCANGELO	5966	6628110WW18945	T2
PICARD	MICHAEL ANTHONY	6025	6628120WW18946	T2
ARENA	ANTONIO	5027	6628200WW18948	T2
LEE	MU TSAI	6114	6628210WW18949	T2
CATANZARITI	FRANK	5665	6628120WW19041	T2
COSTA	ANTHONY DOMINIC	5155	6628190WW19042	T2
ABORIGINAL CORP OF EMPLOYMENT		6145	6628120WW19162	T2
IENCO	JOHNNY	6134	6628200WW19163	T2
SAN ANGELES PTY LTD		6182	6628120WW19249	T2
JAWHARI	NOUHAD NASSIB	5371	6628200WW19390	T2
CARYPIDIS	KYRIAKOS	5004	6628210WW19391	T2
DOAN	DEP MINH THI	5496	6628200WW19392	T2
LF JEFFRIES NOMINEES PTY LTD		6819	6628200WW19481	T2
VAGNONI	SANTA	5810	6628200WW19483	T2
LAZARIDIS	KONSTANDINOS	5422	6628200WW19500	T2
VARVERAKIS	CHRIS	6166	6628110WW19512	T2
CONTI	CONSOLATO	6045	6628110WW19555	T2
COLANGELO	NICOLA	5982	6628120WW19891	T2
HAWKES	JULIE ELAINE	5184	6628120WW19892	T2
ELIZA JANE INVESTMENTS PTY LTD		5819	6628200WW19893	T2
SEMOLA	ANTONIO	5768	6628210WW19894	T2
LEO	VINCENZO	5490	6628110WW19921	T2
FACCHIN	GEORGE	5038	6628110WW19956	T2
TRINITY COLLEGE GAWLER INC.		6263	6628120WW20035	T2
HUYNH	TAN CO	5507	6628120WW20171	T2
ORLOVIC	IVAN	6774	6628110WW20173	T2
DAMIANI	CAMILLO	6225	6628120WW20253	T2
RYAN	EDWARD MICHAEL	5678	6628200WW20254	T2
PIBROCH PTY LTD		5346	6628090WW20271	T2
KAFANTARIS	DIMITRIOS	6075	6628190WW20292	T2
CITY OF SALISBURY		6254	6628290WW20328	T2
CITY OF SALISBURY		6143	6628220WW20392	T2

SURNAME	FIRST NAME	LIC. NO.	UNIT_NO	AQUIFER
DATSOPOULOS	ANGELA	6232	6628120WW20433	T2
WEBSTER	GEOFFREY FRANK	5524	6628120WW20434	T2
MA	THI MY DUNG	5557	6628200WW20482	T2
EVANSTON GARDENS PTY LTD		6155	6628120WW20484	T2
GAWLER HARNESS RACING CLUB		6239	6628290WW20490	T2
DANIELE	GIUSEPPE	5315	6628130WW20492	T2
AFOROZIS	DIMITRIOS	5006	6628200WW20559	T2
COLAGIOVANNI	ROBERT	5143	6628100WW20570	T2
SKOURTIS	PETER	5569	6628110WW20681	T2
FRANGOS	GEORGE	5397	6628200WW02467	T2
NGUYEN	VAN GANG	6456	6628200WW15592	T2
TIEM	PHAM THI	6256	6628200WW20648	T2

APPENDIX D

List of 310 Licensed Irrigation Wells with no salinity readings between 1998 - June2002

SURNAME	FIRST NAME	LIC. NO.	UNIT_NO	AQUIFER
LIPPASAAR	MICHAEL LOU	6496	662815252	aq (Basement)
TRIMBOLI	ROBYNE ELIZABETH	6539	6628120WW01502	Not determined
SEBASTIANI	CARMINE	6570	6628190WW02898	Q1
OULIANOFF	S	6664	6628190WW02902	Q1
MUMFORD	LEON REGINALD	6651	6628210WW03775	Q1
MUMFORD	LEON REGINALD	6651	6628210WW03781	Q1
BUGEJA	TONY	6527	6628210WW03831	Q1
TRAN	DUNG DANG	6507	6628210WW03833	Q1
RAMSAY	JENNIFER	6695	6628210WW04039	Q1
RENNEY	NG	6680	6628290WW05067	Q1
MARCIANO	VINCENZO	6634	6628290WW05182	Q1
SOLDI	PASQUALE	6779	6628190WW13344	Q1
APPLEBEE	KEITH LAURENCE	5997	6628150WW01143	Q2
THAIN	MALCOLM DAVID	6727	6628110WW01216	Q2
JENKINS	GREGORY LLOYD	6794	6628080WW01610	Q2
MAROTTI	ROSARIA	6635	6628130WW01727	Q2
LOVEDAY BARKER	KEITH	6511	6628130WW01765	Q2
RAYMOND	GARTH WILLIAM	5535	6628130WW01915	Q2
HOWCROFT	ROY	5340	6628130WW01932	Q2
ESTATE OF THELMA BERYL WHITBURN		5835	6628130WW01961	Q2
BOYLAN	PAUL GREGORY	5636	6628130WW01971	Q2
RIORDAN	JOSEPH PATRICK	5307	6628130WW01977	Q2
PRZIBILLA	GF	6762	6628130WW01984	Q2
MACALISTER	ROBERT ALASTAIR	6629	6628130WW02013	Q2
GONIS	ARDREA	5313	6628130WW02026	Q2
SEABREEZE RESOURCES PTY LTD		6706	6628200WW02259	Q2
RYAN	EDWARD MICHAEL	6692	6628200WW02342	Q2
RYAN	EDWARD MICHAEL	6692	6628200WW02344	Q2
GERARDIS	F	6579	6628200WW02378	Q2
SODA	TIM	6520	6628200WW02487	Q2
VU	TD	6542	6628200WW02514	Q2
J & H KARAFOTIAS & OTHERS		6773	6628200WW02554	Q2
HA & TJ STUTLEY		6633	6628190WW02726	Q2
GEORGARAS	ANTONIOS	6607	6628190WW02818	Q2
CITY OF SALISBURY		6200	6628290WW04982	Q2
CURCIO	LUGI SALVATORE	5170	6628290WW04987	Q2
CUFONE	MARIO	6557	6628290WW05065	Q2
DEVERSON	SHARON FIONA	6741	6628290WW05068	Q2
STRONG	KATHLEEN MARGARET	6718	6628290WW05074	Q2
KUHAN	KOTHYNAYAGIAMALL	6608	6628290WW05086	Q2
JOHNS	GRAHAM STEPHEN	6583	6628290WW05118	Q2
FONTANELLI	SALVATORE	5266	6628290WW05119	Q2
CITY OF SALISBURY		6200	6628290WW10974	Q2
LAZARIDIS	KONSTANDINOS	6814	6628200WW11978	Q2
FRYAR	GARY DEAN	5919	6628130WW12083	Q2
SHARPE	BRENTON LEWIS	5709	6628110WW13702	Q2
ROTHALL	DJ	6798	6628190WW14215	Q2
BLOMFIELD	DENNIS RAYMOND	6471	6628220WW15586	Q2
MITCHELL	GENEVIEVE FLORENCE	6432	6628220WW16416	Q2

SURNAME	FIRST NAME	LIC. NO.	UNIT_NO	AQUIFER
COULTER	STEPHEN WILLIAM	6067	6628200WW16691	Q2
P MARCOIONNI & AR RUSSO		6606	6628110WW01209	Q3
RJ CD & RP ZERELLA		6746	6628110WW01211	Q3
HAMILTON-BRUCE	ROBERT JOHN	6758	6628120WW01288	Q3
BISHOP	BRIAN ANTHONY	6522	6628120WW01371	Q3
UNDERHILL	RICHARD MAURICE	5018	6628120WW01390	Q3
MAIOLO	RON	6552	6628120WW01395	Q3
MAIOLO	RON	5181	6628120WW01397	Q3
MCMURRAY	JOHN FRANCIS	5241	6628130WW01475	Q3
VARACALLI	LUIGI	6736	6628120WW01507	Q3
OAKLEY	RICHARD GEORGE	6777	6628080WW01594	Q3
BELTRAME	LINO	5560	6628130WW01720	Q3
LOVEDAY BARKER	KEITH	5046	6628130WW01766	Q3
LAGANA	ANTONIO	6620	6628130WW01771	Q3
MANNO	GIUSEPPE	5114	6628130WW01917	Q3
GRAHAM	ROBERT COLIN	5036	6628130WW01968	Q3
GERLACH	ERIC EDWARD	5306	6628130WW01975	Q3
MACALISTER	ROBERT ALASTAIR	6629	6628130WW02009	Q3
VIRGARA	R	6657	6628130WW02019	Q3
YIN	CHANVA	6772	6628200WW02243	Q3
MARANDO	ROCCO SALVATORE	5473	6628200WW02278	Q3
FRESAN PTY LTD & TYNDATE PTY LTD		6678	6628200WW02301	Q3
ROCCA	A	6693	6628200WW02303	Q3
SEABREEZE RESOURCES PTY LTD		5149	6628200WW02354	Q3
JARMYN	ELEANOR PEARL	6603	6628200WW02458	Q3
COCCI	DOMINIC	6568	6628200WW02540	Q3
A CASTAFARO & SONS PTY LTD		6534	6628200WW02574	Q3
JAWHARI	HOUHAD NASSIB	5371	6628200WW02595	Q3
LEONELLO	GIOVANNI	5426	6628190WW02660	Q3
COSTANZO	ANTHONY JOHN	5159	6628190WW02712	Q3
NEILSON	GEOFFREY GORDON	6655	6628190WW02724	Q3
PLLIFRONE PTY LTD		6624	6628190WW02752	Q3
HOLDER	PETER OSBORNE	6591	6628190WW02767	Q3
MERENDA	GUISEPPE	6638	6628190WW02768	Q3
TRIMBOLI	ANTONIO	6519	6628190WW02785	Q3
NOTO	FRANCESCO SALVATORE	5550	6628190WW02788	Q3
DE RUVO	DOMENICO	6806	6628220WW03032	Q3
MEREDITH	TREVOR ARNOLD	6770	6628300WW03282	Q3
INGHAMS ENTERPRISES PTY LTD		5048	6628210WW03767	Q3
MUMFORD	LEON REGINALD	6651	6628210WW03780	Q3
DE RUVO	DOMENICO	6806	6628210WW03805	Q3
MILLER	DARRYL WILLIAM	5564	6628210WW04036	Q3
SERGI	F	6792	6628290WW04841	Q3
PENNINO	AMERICO	5856	6628290WW04985	Q3
DOAN'S SERVICE PTY LTD		6649	6628290WW05189	Q3
FH NICOL PTY LTD		5542	6628200WW08994	Q3
TWO WELLS TROTTING O & T ASS INC		6818	6628100WW12162	Q3
CUFONE	FRANK	5168	6628290OW12948	Q3
FH NICOL PTY LTD		5542	6628200WW13011	Q3
PELLICONE INVESTMENTS PTY LTD		5430	6628110WW01173	Q4
CRADDOCK	NOEL WILLIAM	6605	6628120WW01474	Q4
HOOLIHAN	TREVOR JOHN	6672	6628120WW01476	Q4
STEVENS	MARK JOHN	6753	6628120WW01529	Q4
DAVIDS	WC	6553	6628130WW01754	Q4

SURNAME	FIRST NAME	LIC. NO.	UNIT_NO	AQUIFER
LAGANA	ANTONIO	5414	6628130WW01769	Q4
LOAM NOMINEES PTY LTD		5437	6628130WW01953	Q4
CZUCHWICKI	HENRYK	6550	6628130WW01990	Q4
MORGOLD PTY LTD		5927	6628200WW02390	Q4
KALIGRO VINEYARDS PTY LTD		6515	6628190WW02746	Q4
BRADTKE	DARREN JAMES	5037	6628230WW03787	Q4
DE RUVO	DOMENICO	6806	6628210WW03804	Q4
VALENTE	RAFFAELE	6590	6628210WW03848	Q4
CAMBARERI	CARMELO	6528	6628290WW05184	Q4
WYTEN	PETER FRANCIS	6643	6628290WW05186	Q4
CATHOLIC CHURCH ENDOWMENT SOCIETY		5429	6628190WW02815	Q4+T1
LESAN	ZELJKO DAVID	6729	6528150WW00097	T1
HALL	HEATHER	6708	6528150WW00107	T1
SKIPPER	MICHAEL FRANCIS	5409	6528150WW00109	T1
RUBY NOMINEES PTY LTD		5968	6528150WW00130	T1
APPLEBEE	ROGER JOHN	6504	6528150OW00132	T1
APPLEBEE	ROGER JOHN	5023	6528150WW00147	T1
ADELAIDE UNI FARM SERVICES DEPT		6733	6528150WW00597	T1
HISLOP	JOCK	6222	6528150WW02035	T1
MORGOLD PTY LTD		6731	6628200OW02262	T1
DIMITROV	TERESA	5214	6628200WW02369	T1
MATHER	NEIL ROBERT	6609	6628200WW02383	T1
HADJISOTERIOU	K	6486	6628200WW02384	T1
BAKOPANOS	JIM	5984	6628200WW02399	T1
CLARK	DARROL RICHARD	5133	6628200WW02631	T1
LEONELLO	SAVERIO	5761	6628300WW03293	T1
D & S SECURITIES PTY LTD		6560	6628300OW03301	T1
BELPERIO	CARMINO	5053	6628300OW03305	T1
KITTEL	TREVOR WILLIAM	6614	6628300WW03344	T1
WHITE	RICHARD TERRENCE	5836	6628300WW03431	T1
WEST	ELMA FLORENCE	6564	6628210WW03771	T1
MUEGGE	W	6650	6628210WW03788	T1
PIERSON	CHRISTINE MARY	6739	6628210WW03806	T1
TRIMARCHI	GIOVANNI	5788	6628210WW03809	T1
DE RUVO	DOMENICO	6806	6628210WW03826	T1
SCHOLZ	DM	6698	6628210WW03909	T1
MAZZEO	ROSINA	5493	6628210WW03929	T1
LOPRESTO	FRANK	5443	6628210WW03943	T1
STAVROPOULOS	CONSTANTIN	5745	6628210OW03944	T1
KOUTOULOGENIS	TAXIARHIS	5032	6628210WW03953	T1
MARRONE	RAFFAELE	5485	6628210WW03955	T1
FUDA	ASSUNTA	5344	6628210WW03956	T1
CAVALLARO	ALEX	5112	6628210WW03957	T1
LAWLER	MINCHIN GORDON	5421	6628210WW03963	T1
ZIZZO	ALESANDRO	5090	6628210WW03969	T1
MAYBANK	MICHAEL JOHN	6907	6628210WW03971	T1
SURE GROW HYDROPONICS PTY LTD		5240	6628210WW03974	T1
GUIDOLIN	RINO	5330	6628210WW03975	T1
BRACE	ANDREW SCOTT	6724	6628210WW03984	T1
MACHEDA	FRANCESCO	5452	6628210WW03994	T1
MACHEDA	NAZZARENO	5454	6628210WW03996	T1
CAVALLARO	LG	6668	6628210WW04000	T1
SERGI	ANTONIO & ELISABETTA	5442	6628210OW04019	T1

SURNAME	FIRST NAME	LIC. NO.	UNIT_NO	AQUIFER
MIHAJLOVIC	DANICA	5372	6628210WW04028	T1
JANISZEWSKI	HANNA MARIA	5368	6628210WW04034	T1
PORROVECCHIO	MARIO	5831	6628210WW04040	T1
PANAGOPOULOS	DIMITRIOS	5716	6628210OW04047	T1
MYLONOPoulos	LEON	6616	6628210WW04050	T1
BELPERIO	CARMINO	5054	6628290WW04862	T1
TRIMBOLI	PASQUALE	5793	6628290WW04918	T1
LAGANA	ROSARIO	5415	6628290OW05028	T1
CIRILLO	ROBERT	5922	6628210WW12946	T1
BUGEJA	TONY	6527	6628210WW12947	T1
BOWTHORPE PTY LTD		6189	6628190WW15524	T1
CITY OF SALISBURY		6914	6628310WW16625	T1
PHAM	LOI VAN	6021	6628210WW16794	T1
CROWHURST	GEORGE ALISTAIR	6705	6628200WW16974	T1
M & B FARMER NOMINEES PTY LTD		6028	6628190WW17433	T1
M & B FARMER NOMINEES PTY LTD		6028	6628190WW17434	T1
CIRILLO	ROBERT	5132	6628210WW17762	T1
DEM-AIRE INVESTMENTS PTY LTD		5186	6628200WW02624	T1+T2
TRIPODI	COSMO	6615	6628210WW03922	T1+T2
GAMEAU	JT	6575	6628100WW00587	T2
BASILE	GIUSEPPE	5074	6628100WW00783	T2
PAOLETTI	NICOLA DONALD	6521	6628100OW00792	T2
LAUNER	MURRAY DEAN	6567	6628100WW00797	T2
GAZZOLA	GINESTA	5291	6628100WW00800	T2
HARNESS RACECOURSE		6799	6628090OW00844	T2
CICCARELLO	GIUSEPPE ANTONIO	5128	6628110OW00847	T2
AZZURRO	JIMMY ROCKY	5033	6628110WW00852	T2
COHEN	DONALD HARRY GABRIEL	5142	6628110WW00888	T2
CIRILLO	NATALE	5131	6628110WW00895	T2
STYLES	BRIAN HENRY	5347	6628110WW00909	T2
DALLI	JOSEPH	5866	6628110WW00925	T2
TRIMBOLI	GIUSEPPE	5791	6628110WW00933	T2
VIOLANTE	VINCENZO JOHN	5293	6628110OW00954	T2
STOPP	PETER GRAYSON	6577	6628110WW00955	T2
ZHANG	IRENA YAN XIA	5146	6628110WW00959	T2
PIMM	WILLIAM ALBERT	6709	6628110WW00960	T2
SEWARD	GEOFFREY CHARLES	6700	6628110WW00971	T2
MARKOVANOVIC	STEVE	5787	6628110WW00990	T2
KAPIRIS	CON	6645	6628110WW00992	T2
THORNBOROUGH ESTATE PTY LTD		6696	6628110WW00998	T2
COWLEY	NIGEL GRANT	5932	6628110WW01005	T2
LIOULIOS	JON	5651	6628110WW01026	T2
LIAPIS	THOMAS	6626	6628110OW01066	T2
TSONIS	GEORGE	5806	6628110WW01081	T2
KAPIRIS	JOHN	5487	6628110WW01086	T2
			662801087	T2
EVANOFF	NICHOLAS NACHEF	6566	6628110OW01088	T2
THORNBOROUGH ESTATE PTY LTD		6697	6628110WW01095	T2
TRIMBOLI	GIUSEPPE	5790	6628110WW01117	T2
MARCOIONNI	TARQUINIO	5477	6628110WW01152	T2
REED LEONARD		5637	6628110WW01157	T2
CARYPIDIS	KYRIAKOS	5004	6628110OW01219	T2
CHESINI	ANTONIO	5682	6628120WW01287	T2
REITANO	DOMENIC	5639	6628120WW01292	T2

SURNAME	FIRST NAME	LIC. NO.	UNIT_NO	AQUIFER
PASIN	RINO	5890	6628120OW01309	T2
POLITO NOMINEES PTY LTD		5577	6628120OW01310	T2
LIMAVADY PTY LTD		5121	6628120WW01315	T2
DELUCA	FILIPPO	5925	6628120WW01318	T2
DAMIANI	RENATO?	5178	6628120WW01321	T2
SCHIRILLO	GIOVANNI	5694	6628120WW01322	T2
MONDELLO	GIUSEPPE	5193	6628120WW01339	T2
LIMAVADY PTY LTD		5003	6628120WW01349	T2
LIMAVADY PTY LTD		5575	6628120WW01412	T2
			662801446	T2
CATANZARITI	FRANK	5665	6628120WW01452	T2
			662801455	T2
PELLICONE	ANTONIO	5584	6628120WW01492	T2
FAZZARI	AGOSTINO	5253	6628120WW01493	T2
LOPRESTO	SAVINA	5063	6628120WW01505	T2
YACOUMIS	JOHN MICHAEL	5850	6628120WW01510	T2
IMBROGNO	LUIGI	5360	6628120WW01511	T2
CITY OF PLAYFORD		5655	6628120WW01513	T2
DATSOS INVESTMENTS PTY LTD		5294	6628120WW01519	T2
RUGGIERO	SALVATORE	5879	6628120WW01525	T2
M & B FARMER NOMINEES PTY LTD		5498	6628120WW01549	T2
NOTO FARMS PTY LTD		5554	6628120WW01561	T2
NOTO	FRANCESCO SALVATORE	5969	6628120WW01565	T2
GARDEN GOODNESS PTY LTD		5305	6628120WW01566	T2
LIMAVADY PTY LTD		5141	6628120WW01567	T2
LIMAVADY PTY LTD		6569	6628120WW01568	T2
PIBROCH PTY LTD		5686	6628120WW01718	T2
DELANY	BD & HD	6536	6628130OW01755	T2
M & B FARMER NOMINEES PTY LTD		5498	6628120WW02053	T2
TRIMBOLI	DOMENICO NICOLA	5792	6628200WW02285	T2
NATSIAS	SAM	5538	6628200WW02326	T2
TIPOUIKIDIS	JOHN	5776	6628200WW02338	T2
ARHARIDIS	SOFIA	5864	6628200WW02339	T2
SACCA	CARMELLA	5681	6628200WW02371	T2
SUWINSKI	IRENEUSZ	5764	6628200WW02400	T2
HO	VAN HUYEN	5317	6628200WW02417	T2
HONG	THI PHUONG	6014	6628200WW02424	T2
KIET	HUYNH TUAN	5988	6628200WW02442	T2
SLIFKAS	ATHANASIOS	5724	6628200WW02444	T2
HOFACKER	NANCY	5930	6628200WW02448	T2
COCCI	DOMINIC	6541	6628200WW02500	T2
KRITIKOS	MANUEL	5937	6628200WW02580	T2
RIGNANESE PTY LTD		5506	6628200WW02599	T2
DI FAVA	FRANCO	5187	6628200WW02604	T2
KEANE	GREGORY STEPHEN	5398	6628190OW02664	T2
PIETROSANTI	RENZO	5605	6628190WW02666	T2
MARAGOZIDIS	JORDANIS	5621	6628190WW02676	T2
TRIMBOLI	ANTONIO	5797	6628190WW02706	T2
BOWTHORPE PTY LTD		6189	6628190WW02769	T2
MIHALOPOULOS	GEORGE	6106	6628190OW02876	T2
TOUCH	TOENG	5204	6628190WW02891	T2
F STEPHENS & SON PTY LTD		6712	6628210WW03822	T2
DE RUVO	DOMENICO	6906	6628210WW03824	T2
COVINO	DOMENICO	5161	6628210WW03965	T2

SURNAME	FIRST NAME	LIC. NO.	UNIT_NO	AQUIFER
JACKMAN	PETER DAVID	5591	6628210WW03983	T2
HATZIGEORGIOU	MICHAEL	5369	6628210WW04016	T2
STOJANOVSKI	T & S	6537	6628210WW04024	T2
IVANOVIC	MILORAD	6595	6628210WW04031	T2
MARRA	ROSS	6810	6628210WW04032	T2
LE	VAN TIEN	5341	6628210WW04041	T2
THATCHER	KEVIN GEORGE	6728	6628210WW04089	T2
VIRGARA	PAT	5962	6628120WW04128	T2
PIPICELLA	NICOLA	5608	6628130WW05006	T2
CITY OF SALISBURY		6902	6628290OW05103	T2
PANCIONE	RINALDO	5565	6628120WW11159	T2
GIANGREGORIO	GIUSEPPE	5887	6628110WW11192	T2
CASSIDY	JAMES	6767	6628110WW11860	T2
MYLONOPoulos	ARTHUR	5534	6628210WW12076 662812418	T2
T MUSOLINO & CO PTY LTD		6006	6628200WW12841	T2
GRILLI	IDA	5324	6628200WW13217 662813418	T2
MONDELLO	GIUSEPPE	5193	6628120WW13703	T2
SEABREEZE RESOURCES PTY LTD		5150	6628210WW13719	T2
DAHAK	DARWESH	5970	6628110WW13926	T2
CARBONE	FRANK	5971	6628110WW14018	T2
SPEEDWAY CITY PTY LTD		6904	6628200WW14167	T2
LIMAVADY PTY LTD		5575	6628120WW14271	T2
LIMAVADY PTY LTD		5575	6628120WW15128	T2
ARHARIDIS	SOFIA	5894	6628200WW15369	T2
JAMES	ELVIRA	6481	6628200WW15648	T2
HOLLAND	EDWARD LESLIE	5492	6628200WW16109	T2
KHUN	YA	5953	6628120WW16440	T2
PELLICONE	ANTONINO	5583	6628210WW16496	T2
M & B FARMER NOMINEES PTY LTD		5243	6628200WW16789	T2
ARHARIDIS	SOFIA	5894	6628200WW17523	T2
COSTANZO	ANTHONY JOHN	5159	6628190WW18570	T2
LAZARIDIS	KONSTANDINOS	5622	6628200WW18571	T2
LIMAVADY PTY LTD		6121	6628190WW18579	T2
F & A NOTO & SONS PTY LTD		6078	6628190WW18776	T2
ARHARIDIS	GEORGIOS	5007	6628200WW19516	T2
LIMAVADY PTY LTD		5003	6628120WW19669	T2
MERENDA	GIUSEPPE	5964	6628190WW20255	T2
E & I DI FAVA NOMINEES PTY LTD		5207	6628210WW20294	T2

APPENDIX E

List of 14 wells completed in multiple aquifers

SURNAME	FIRST NAME	LIC. NO.	UNIT_NO	AQUIFERS	CURRENT STATUS
INTERNATIONAL GUN CLUB		6710	6628200WW02250	T1&T2	Backfilled
VOZZO		6531	6628200OW02396	T1&T2	Letter sent to owner
NGUYEN	HOANG	5200	6628200WW02492	T1&T2	Letter sent to owner
DE MARIA INVESTMENTS P/L		5186	6628200WW02624	T1&T2	Letter sent to owner
SMITHFIELD PLNS PRIMARY SCHOOL		6900	6628190WW02671	T1&T2	Backfilled
PELLIFRONE PTY LTD		5164	6628190OW02729	T1&T2	Negotiating for rehabilitation
CATHOLIC CHURCH ENDOWMENT SOCIETY INC.		5429	6628190WW02815	Q4&T1	Owners remain to be contacted
COTSANIS	MENELAS	5300	6628220WW03027	Q4&T1	Permit issued
NIKOPoulos	PETROS	5056	6628210WW03816	T1	Owners remain to be contacted
PERILLI	ANTONIO	5587	6628210WW03989	T1&T2	Negotiating for rehabilitation
CATANZARITI	SAVERIO	5111	6628210WW12287	T2	Backfilled
REVERUZZI	M & R	5644	6628210WW13034	T1	Backfilled
PELLIFRONE PTY LTD		5164	6628190WW13552	T1&T2	Negotiating for rehabilitation
ARHARIDIS	ZOI	5946	6628200WW13554	T1&T2	Backfilled