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23 December 2009

WSN Ref: F4251

Your Ref: Lucas Heights AWT Facility Project
MP_08_163

Christine Chapman
Major Development Assessment
NSW Department of Planning (DOP)
Ground floor, 23-33 Bridge Street
Sydney NSW 2000

Submission Report – Proposed Alternative Waste Technology Facility (AWT), Lucas Heights Waste and Recycling Centre (LHWRC), NSW

Dear Christine

I am writing to you in reference to the submissions received during the recent public exhibition of the Environmental Assessment (EA) for the Proposed Alternative Waste Technology (AWT) Facility at Lucas Heights Waste and Recycling Centre (DA 08_163).

The Department of Planning (the Department) requested that WSN Environmental Solutions (WSN) respond to key issues contained within the submissions received from the community, government agencies and Sutherland Shire Council. WSN's responses to these key issues raised in the submissions are detailed as follows, in order of date received.

RESPONSE TO SUBMISSIONS

SUBMISSION 1: Roads & Traffic Authority (RTA), 8 October 2009

The Sydney Regional Development Advisory Committee (SRDAC) considered the application at its meeting on the 8 October 2009 and the Committee and RTA assessed the application and raised no objection. The Committee and RTA provided ten (10) recommendations and comments and the RTA reiterated its comments raised in its letter to the Department dated 30 April 2009.

Response:
WSN note that eight (8) of the ten (10) recommendations and comments are a repeat of those issues raised in the RTA letter to the Department dated 30 April 2009. WSN have incorporated these recommendations in the Environmental Assessment (EA) (refer to the Traffic and Transport Chapter 11 and the supporting Appendix C Traffic Impact Assessment).

WSN's response to the two (2) remaining items:

Item 1: SRDAC and the RTA requested the provision of facilities to clean wheels/tyres of vehicles exiting the site. Unlike vehicles disposing of waste at a landfill, the vehicles disposing of waste at the proposed facility will be on sealed roads and not exposed to direct contact with waste. Therefore the need to clean the wheels and tyres at the exit is reduced significantly and not deemed necessary. WSN will however, monitor the situation once operation commences and will install a wheel wash facility if required.

Item 9: SRDAC and the RTA advised that WSN has responsibility for all public utility adjustment/ relocation works as required. WSN have noted this requirement.

SUBMISSION 2: Sydney Water, 26 October 2009

Sydney Water has no objection to the proposal. Sydney Water notes that servicing arrangements will be required. For example a 150mm extension from the 300mm main in New Illawarra Road and a pump to the sewer system to serve the development. They also request that WSN obtain a Section 73 Certificate from Sydney Water and fund any adjustments required to Sydney Water infrastructure.

Response:
WSN have noted these requirements.

SUBMISSION 3: Department of Environment, Climate Change and Water (DECCW), 30 October 2009

In noting that the proposed facility would require an Environmental Protection Licence (EPL), the DECCW submission suggested a range of conditions of approval in terms of waste management, wastewater management, stormwater management, dust control, potentially offensive odour, stack emission limits, requirement to monitor pollutants discharged, odour emissions validation, noise and road traffic noise.

Response:
WSN generally accepts the issues detailed in the DECCW submission, however, would like to comment specifically on the following 2 draft conditions:

Condition 7: Above-ground tanks and vats including those used for treating or processing waste/water slurry and tanks for storing wastewater from these activities must be surrounded by a bund with a capacity of 110% or greater than that of the tanks within the bund.

DEC requires 110% capacity in case of accidental leakages of waste/water slurry from aboveground tanks and vats.

Based on the type of tanks proposed (steel construction on concrete base) and the relatively benign nature of the processing liquid), WSN recommend that the bund

capacity should be 110% of the largest tank rather than the implied 110% of the total tank capacity.

WSN propose to resolve this issue with a two-staged solution. Stage one would involve individual bunding of the Separation Plant and Biological Plant - providing a 110% emergency storage capacity based upon the largest tank within the bund area. Stage two would include perimeter site bunding – again designed to retain a minimum of 110% of the volume of the largest tank.

By way of comparison, the sizing for the tank farm and the perimeter site bund at the Mixed Waste Ecolibrium facility at Macarthur Resource Recovery Park (also known as the Jacks Gully AWT) is 110% of the largest tank plus fire fighting water plus rainfall as per AS1940 - 1993 Storage and handling of flammable and combustible substances. While the material stored isn't flammable or combustible this is the default used for bund sizing.

Condition 16

Condition 16.1(a) – the DECCW suggested criteria stipulates that noise from the premises at all residential locations referred to in the Noise Impact Assessment undertaken by Heggies (report 10-6701-R3 of 27 July 2009, Appendix H of the Environmental Assessment) does not exceed:

a) *a $L_{Aeq,15\ minute}$ noise emission criteria of 35dB(A) during the day/evening*

b) *a L_{Amax} sleep disturbance noise emission limit of 45dB(A) during the night.*

WSN's response to this condition is as follows:

The specified noise emission criteria are not consistent with those determined in accordance with the DECCW's Industrial Noise Policy (INP), as presented in the Heggies report. The recommended criteria are:

a) An $L_{Aeq(15minute)}$ noise *emission* criteria at Barden Ridge Residences of 47 dB(A) daytime, 43 dB(A) evening and 38 dB(A) night-time, and at North Engadine Residences of 45 dB(A) daytime, 41 dB(A) evening and 37 dB(A) night-time.

b) An L_{Amax} sleep disturbance criteria of 48 dB(A) during the night at Barden Ridge and 47 dB(A) during the night at North Engadine.

WSN request that the suggested noise emissions be amended to reflect those determined in accordance with the DECCW's Industrial Noise Policy (INP), as presented in the Heggies report.

Condition 16.2 – In relation to the meteorological conditions under which the noise criteria is required to comply, the specified conditions are slightly broader (and potentially more onerous) than those determined in the Heggies report (10-6701R3), in that the DECCW require compliance for all meteorological conditions (ie winds in any direction). Whereas the analysis of the meteorological data in accordance with the DECCW INP and presented in Heggies report (10-6701R3) required only south-

easterly and south westerly winds. It is noted the residences are to the east and north-east hence the south-westerly wind generally represents a 'worst case' wind scenario in any event.

Condition 16.3(a) – indicates that the "*meteorological data to be used for determining meteorological conditions is the data recorded by the meteorological weather station to be determined in consultation with the DECCW*".

WSN have a requirement to monitor meteorological parameters under their current Environmental Protection Licence (EPL 5065) for the Lucas Heights Waste and Recycling Centre (LHWRC). As this EPA licence for LHWRC already specifies the weather station and standards to be used, WSN recommend that the condition be modified to mirror the existing licence (EPL 5065) requirements and include the additional requirement that validation is to be sought (in consultation with the DECCW) if weather data other than that from the LHWRC weather station is used.

Condition 16.4 – This condition requires noise monitoring equipment to be placed at the residence(s). In their report Heggies makes the comment that predicted noise levels under worst case meteorological conditions are 25 dB(A) at Barton Ridge and 26 dB(A) at North Engadine, hence well below the existing ambient and not likely to be able to be measured. Compliance monitoring/validation would therefore most likely require the assumptions in the assessment to be verified by plant measurement (eg reverberant levels in the AWT, forklift noise etc) and nearby plant measurement (eg at ANSTO or a distance of 200m for example) and receiver noise levels interpolated and/or verified by modelling.

SUBMISSION 4: Sutherland Shire Council, 3 November 2009

Sutherland Shire Council has no objection to the proposal.

Response:
WSN notes that the Sutherland Shire Council's submission. No further response is required.

SUBMISSION 5: Warren and Cheryl King, 14 October 2009

The King family have concerns regarding odour and safety in regards to the potential for more traffic accidents as a result of the additional trucks visiting the proposed facility. Their concerns arise from existing odorous conditions they have experienced and have complained about on numerous occasions.

Response:

Odour: WSN acknowledge that LHWRC has on occasions experienced odour detected offsite. Monitoring is conducted regularly and it has been identified that most odour was associated with gas emissions from existing gas infrastructure and filling activities.

WSN acknowledge that in June and July 2009 there was an intermittent increase in odours. It has been determined that the main source of odour identified was caused by landfill gas released during maintenance work on gas capture infrastructure (gas that is normally captured and used for green energy production). The movements between landfill stages (Stages 5-1 and 5-2) had caused gas infrastructure to be off-line during some tipping periods which resulted in gas emissions. WSN have addressed these issues by installing above ground lines in the operational areas to keep damage to a minimum and use odour neutralising machines during times of off-line infrastructure and essential maintenance works.

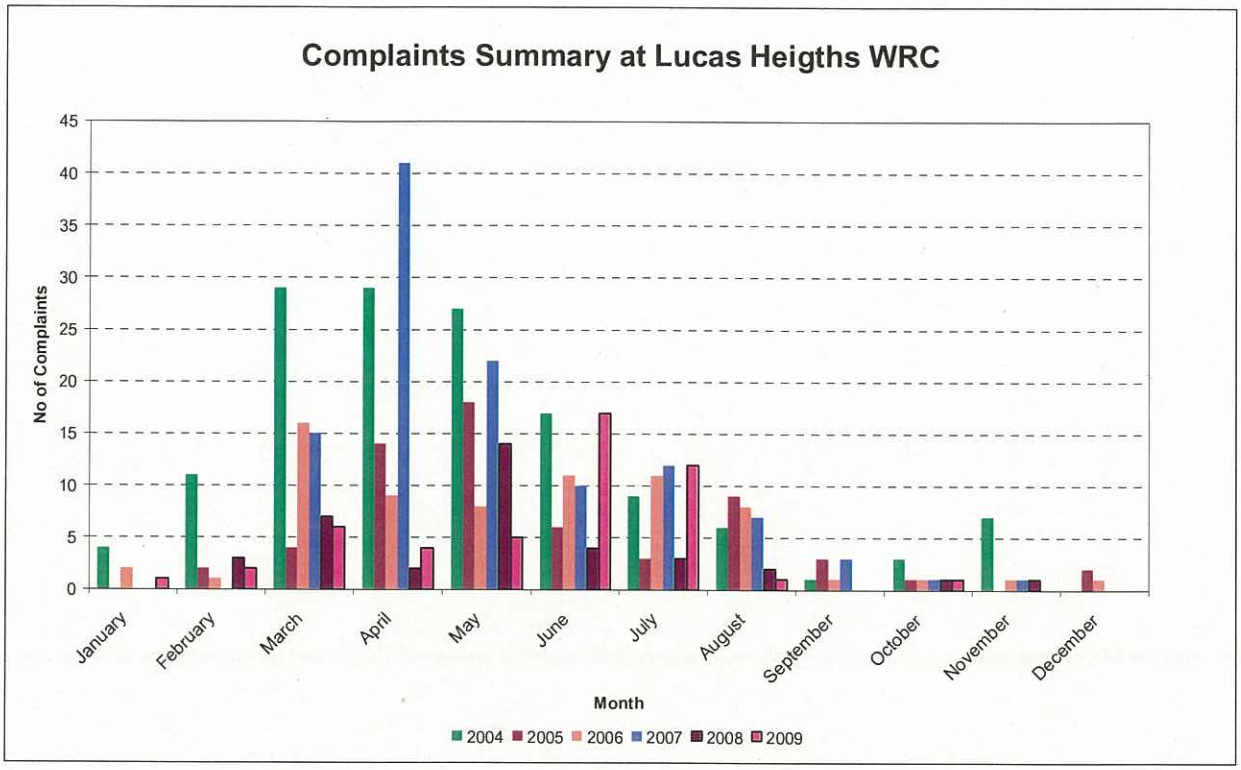
In an effort to minimise odour on site WSN is also implementing the following measures:

- increased monitoring to better identify and fix odour 'hot spots'
- daily reviewing of the performance of gas infrastructure
- a dedicated crew whose priority will be gas repair
- priority given to gas repair over and above other site projects
- ensure works are carried out in accordance with the Odour Management Plan for Landfill Gas Extraction Systems, as per the current EPL condition O8.2

At the most recent Community Advisory Committee (CAC) meeting (held on 3 December 2009) it was reported that all gas infrastructure installation works (to repair damaged or faulty infrastructure on the site in both completed and operational areas) have been completed. It was also reported that gas monitoring conducted on the 29th of September 2009 identified that there were no instances of boundary monitoring points where odours were detected.

Odour Notifications

The chart below illustrates odour notifications received from the community through our Odour Hotline and EPA pollution line for the last 6 years (including 2009). Based on these trends odour complaints have tended to subside apart from the recent odour experienced due to the gas infrastructure works in June and July (as noted above). LHWRC received no odour complaints in September, one (1) odour complaint in October, and no odour complaints in November 2009.



The proposed AWT facility is a minor odour source in comparison to the activities of the existing landfill at LHWRC. Low odour emissions are one of the main features of the technology (ArrowBio process) which has the following characteristics to reduce the potential for odour:

- Immersion of waste in water very early in the process
- Continuous circulation of water within the vats help prevent anaerobic activity in the wastes and thereby reduce production of potentially odorous volatile organic compounds
- Partial enclosure of the receival hall and processing hall
- Deodorisation of air prior to discharge
- Located a reasonable distance from sensitive receivers

WSN have completed an Air quality Assessment of the proposed facility (Chapter 10 and Appendix B in the EA) and the results indicate that off-site odour levels are expected to be minimal, and the current amenity of existing developments within the area should not be altered by site operations.

Traffic: The King family have raised some concern over adequacy of the current road infrastructure and believe that government maintenance is lacking, which they conclude has the potential to cause more traffic accidents as a result of the additional trucks visiting the proposed facility.

WSN completed a Traffic Impact Assessment (refer to Chapter 11 and Appendix C of the EA) which indicated that the additional traffic entering all intersections as a result of the project is considered to be low in comparison to the background traffic levels. The traffic impact assessment concluded that the project would not result in any notable changes in external intersection operating characteristics.

Maintenance of the road infrastructure is beyond the control of WSN as this is the responsibility of the state government organisation, the Roads and Traffic Authority (RTA). The number of reported crashes in the vicinity was obtained for a five year period from the RTA (refer to Section 3.7 of the Traffic Impact Assessment in Appendix C of the EA). The number of crashes could be reduced through a change in the intersection control at New Illawarra Road and Heathcote Road, where the majority of accidents occurred. The RTA have advised that traffic control signals are proposed to be installed at the intersection of New Illawarra and Heathcote Road as part of the RTA's five (5) year works program.

SUBMISSION 6: Lee Cordon, 15 October 2009

The Cordon family have expressed concern regarding the following matters: safety, alternative locations, distance from residences, traffic congestion, additional AWT infrastructure, air quality and odour, hazards and noise.

Response:

Safety – Concern was raised regarding whether the proposed facility would compromise the Australian Nuclear Science and Technology Organisation (ANSTO) buffer zone. The site is owned by ANSTO and leased to WSN and falls within the ANSTO 1.6 km radius exclusion zone that provides a safety buffer for ANSTO activities. WSN received ANSTO's consent for the development application on the Major Project Application Form dated 15/8/08.

The site is managed as per ANSTO's current "*Lucas Heights Science and Technology Centre Buffer Zone - Plan of Management*" (2001) which includes:

- the consideration of the establishment and expansion of LHWRC; and
- Staged development rehabilitated to create parkland to become available for passive recreational activities.

In addition, this proposed facility was allowed for in the 1999 development consent for LHWRC, granted by the Minister for Planning (DA No 11-01-99 consent ref R97/00029) as shown in the masterplan (refer to Figure 3-8 in the EA), referred to as "Recycling Resource Recovery".

The site is also zoned to accommodate the proposed facility as per the Sutherland Shire Local Environmental Plan 2006 (the LEP). The site falls within Zone 12 – Special Uses, with waste recycling indicated as the use of the land on the LEP maps. The project is consistent with the use indicated in respect of the land by the lettering on the LEP map.

Alternative locations – It was requested that WSN provide more detail on the alternative locations at LHWRC that were considered by WSN for positioning the proposed facility.

WSN evaluated potential sites to locate the proposed facility and identified 7 alternative locations within LHWRC and ranked them in order of suitability. WSN's site selection was based on a number of criteria including:

- Area
- Accessibility
- Proximity to services (road, electricity, water and sewer connections)
- Minimum Costs
- Future Developments Works
- Loss of Opportunity
- Environmental Impact
- OH&S Issues
- Industrial Relations (IR) issues
- Visual Impact/Screening
- Proximity to Residents
- Impact on Collection Contracts
- Impact on Cleary Bros
- Leasing arrangements

The proposed site on the former PCYC minibike club was the most appropriate site that best met the relevant criteria. Refer to Appendix A which details the various site options.

Distance from residences – The Cordon family are located approximately 1.8km from LHWRC and disagree with the statement in the EA that this distance is "*relatively far from existing residential areas*".

There are no specific guidelines for separation distances for waste facilities or landfills in NSW, however the use of separation distance guidelines from other regulatory jurisdictions for Western Australia, Victoria and South Australia are provided below for comparison purposes.

State	Industry Description	Separation Distance
South Australia[1]	Putrescible landfill	500m
Western Australia[2]	Putrescible landfill	500m
Western Australia[2]	Inert landfill	150m
Victoria[3]	Putrescible landfill	500m

1. EPA South Australia: Guidelines for Separation Distances, December 2007.
2. EPA Western Australia: Guidelines for the Assessment of Environmental Factors – Separation distances between industrial and sensitive land uses, No. 3, June 2005; and
3. EPA Vic: AQ 2/86: Recommended Buffer Distances for Industrial Residual Air Emissions.

The proposed site is approximately 2 km from the nearest residences in Engadine. Using the minimum separation distance of 500m proposed by other jurisdictions, this

is a reasonable distance when it comes to mixing new development in an existing residential area. Therefore WSN believe that there is an adequate separation distance provided and does not consider the Cordon residence is significantly close.

Traffic Generation – Concern was raised that the road network leading to the proposed facility consists of single lane roads and that additional traffic from the facility would cause traffic congestion, especially travelling north along New Illawarra Road and east along Heathcote Road. They are concerned the additional truck traffic could increase the potential for accidents on the bridge at the eastern end of Heathcote Road.

An assessment of the future mid-block traffic volume capacity (v/c) ratio and level of service of New Illawarra Road, Little Forest Road and Heathcote Road in the vicinity of the site was undertaken. It concluded that the additional traffic entering all intersections as a result of the project is considered to be low in comparison to the background traffic levels. The traffic impact assessment concluded that the project would not result in any notable changes in external intersection operating characteristics (refer to Chapter 11 and Appendix C of the EA).

Additional AWT infrastructure – The Cordon family's concern relates to the potential for additional AWT facilities which may magnify the environmental impacts raised in their submission. Any future proposed AWT facilities would be subject to a separate development application and approvals process. The assessment of potential and cumulative environmental impacts would be assessed during that process.

Air quality and odour – The Cordon family's concern relates to experiencing odours from the existing facility (LHWRC) on occasions and that it would be unacceptable that odours may increase.

Refer to WSN's response to Submission 5 (above).

Hazards – Concern was raised that a fire or explosion within the ANSTO buffer zone was could be a high risk. A Preliminary Hazard Analysis (PHA) was undertaken for the project (refer to Chapter 14 and Appendix F of the EA), and concluded that a fire or explosion of biogas does not exceed risk criteria and operation and engineering controls would minimise the risk to as low as reasonably practical. Furthermore, a comprehensive safety management system would be implemented to ensure that all hazards associated with the site are identified and managed, so that all activities are undertaken in a safe manner.

Noise – the Cordon family have concerns about the construction and operation noise affecting them at their residence approx 1.8km from the proposed facility. The noise assessment completed indicated that potential noise impacts of the project during construction and operation are expected to be minimal and would comply with design goals at nearby sensitive receivers.

Visual amenity and residential areas - the Cordon family have concerns that the statement "*the nearest residential areas are located over 2 km from the site*" in the Visual section of the Executive Summary of the EA is incorrect and in fact closer than 2km. When measured from the centre of the proposed AWT facility, as the crow flies, the nearest residence is in Engadine and approximately 2km away.

SUBMISSION 7: Australian Nuclear Science and Technology Organisation (ANSTO), 13 November 2009

ANSTO raised concerns regarding the lease extension for the proposed site. They also raised concerns regarding traffic, air quality and safety in relation to the opal reactor.

Response:
WSN are currently in negotiation with ANSTO regarding the lease and identifying alternative locations for the AWT facility. The outcome of these discussions may negate some of their concerns.

Traffic – ANSTO are concerned the AWT facility would intensify existing traffic flows along New Illawarra Road and Heathcote Road.

WSN completed a Traffic Impact Assessment (refer to Chapter 11 and Appendix C of the EA) which indicated that the additional traffic entering all intersections as a result of the project is considered to be low in comparison to the background traffic levels. The traffic impact assessment concluded that the project would not result in any notable changes in external intersection operating characteristics.

Air Quality – ANSTO believe there is an air quality issue with the existing Waste Management Centre affecting ANSTO and local residents and that the facility could potentially lead to further degradation in air quality. ANSTO expect that an approval would be conditional on active management of air quality issues (both existing and future).

WSN presume ANSTO is referring to the odour which has been experienced offsite on occasions. Refer to WSN's response to Submission 5 (above).

Safety – ANSTO advise they have not yet assessed the impact of the proposed facility on the operations of the Opal Reactor. WSN await ANSTO's assessment of the impact of the proposed AWT on safe the operation of the Opal Reactor.

SUBMISSION 8: NSW Office of Water, 26 November 2009

The NSW Office of Water indicated that the additional monitoring bore proposed as part of the development would require a new licence under the Water Act 1912.

Response:
WSN have noted this requirement.

Conclusion:

WSN appreciates the opportunity to respond to these submissions. Should you require further information or want to discuss these issues, please do not hesitate to contact me on 9934 7057.

Yours sincerely

Charles Munro
General Manager, Strategic Projects
WSN Environmental Solutions

ABN 93 524 709 106 WSN Environmental Solutions is the trading name of the Waste Recycling and Processing Corporation.

APPENDIX A – SITE OPTIONS

Seven (7) alternative sites were identified as potential sites for the proposed AWT (and consideration for future AWTs). The previous land use and availability of basic infrastructure are described in the table below for each site identified. **Figure 1** shows the location of these sites.

Site	Land Owner	Land Area (Ha)	Topography	Current/Previous Land Use	Environmental Issues	Remediation Required	Comments
Site 1	ANSTO	11	Highly disturbed, partially cleared land, relatively flat.	PCYC Minibike club	Insignificant Flora & Fauna	No	Requires relocation of PCYC and lease extension with ANSTO. Close proximity to services and access. Correctly zoned. Good size.
Site 2	ANSTO	1.5	Partially cleared area. Flat	Nil	Insignificant Flora & Fauna	No	Close proximity to services. Would require lease adjustment with ANSTO and negotiation re future use with SSC
Site 3	ANSTO	1.64	Bushland. Slightly undulating. Small Catchment Dam.	Nil	Flora & Fauna	No	Site too small by itself. Dam would have to be covered or relocated
Site 4	ANSTO	7.93	Flat – Existing Facility in operation.	Small Vehicle Drop-Off & Recycling Area	Insignificant Flora & Fauna	Yes	Will require significant relocation of the existing facilities. Site under control of Cleary Bros until 2011.
Site 5	WSN	27.06	Partially cleared area Slight slope.	Gun club (Sydney International Clay Target Association)	Significant Flora & Fauna	Yes	Lease arrangement with current land-user precludes use of land. Major relocation exercise.
Site 6	WSN	8.90	Partially cleared area Slight slope.	Nil	Flora & Fauna & impact on creek	No	Not near infrastructure. Land reverts to SSC ownership in the future. Would require a separate lease from ANSTO. Access issues off Heathcote Road.
Site 7	ANSTO	4.64	Partially cleared area Slight slope.	Nil	Insignificant Flora & Fauna	No	Not near infrastructure. Would require a separate lease from ANSTO. Access issues off Heathcote Road.

Figure 1. Site options for the proposed AWT facility Lucas Heights Waste and Recycling Centre

SITE SELECTION

Each site was scored between 1 and 10, where a high score implies that site best meets the respective criterion. The site that had the highest score is the preferred location for the proposed facility.

Criterion	Site 1	Site 2	Site 3	Site 4	Site 5	Site 6	Site 7
Area	8	3	1	5	9	6	4
Accessibility	9	8	9	9	5	5	5
Proximity to services	9	9	9	9	3	3	3
Minimum Costs	9	9	8	6	1	3	5
Future Developments Works	9	9	8	7	8	8	8
Loss of Opportunity	9	9	9	1	1	3	2
Environmental Impact	8	8	1	8	4	3	5
OH&S Issues	8	8	8	8	8	8	8
IR issues	8	8	8	8	8	8	8
Visual Impact/Screening	7	7	7	8	6	6	6
Proximity to Residents	8	8	8	9	9	9	9
Impact on Collection Contracts	9	1	9	7	4	6	6
Impact on Cleary Bros	9	9	7	1	6	6	6
Totals	**110**	**96**	**92**	86	72	74	75
Preference Order	**1**	**2**	**3**	4	7	6	5