APPENDIX 7
STATEMENTS OF HERITAGE IMPACT: NON INDIGENOUS HERITAGE

Statement of heritage impact for Survey Unit 53, Historical Site 1 (SU53/HS1): Blue Anchor Tank and pipeline

Date: 18th March 2008

Reference: *SU53/HS1*. Item is not currently listed on any of the statutory registers.

This statement forms part of the Environmental Assessment for the proposed Silverton Wind Farm Stage 1 project area. The proposed impact area is situated in the Barrier Ranges and is located north of Silverton.

The Stage 1 proposal will involve the construction, operation and eventual decommissioning of a wind farm with capacity of up to 400MW (all stages would be 1000MW). The Stage 1 proposal includes the following components:

- Up to 150 wind turbines;
- Electrical connections between wind turbines using a combination of underground cable and overhead power lines;
- An onsite substation and control room;
- 25 km transmission 220kV power line linking the wind farm to the Transgrid sub station at Broken Hill;
- Access roads around the site, and upgrades of the Silverton and Daydream Mine roads, for installation and maintenance of wind turbines.

Additional temporary construction infrastructure will be required during the construction and decommissioning phases such as concrete batching plant, storage of construction machinery, equipment and materials, site offices.

Address and property description:
Belmont Station, access off Silverton Road
For further details refer to Site Gazetteer in Appendix 4.

Prepared by:
New South Wales Archaeology Pty Limited
PO Box 2135 Central Tilba NSW 2546
Ph/fax 02 44737947 mob. 0427074901
julie@nswarchaeology.com.au

For:
Silverton Wind Farm Developments
Level 11, 75 Miller St
North Sydney
NSW 2060

Why is the new development required to be adjacent to a heritage item?
Given the extent of human activities and the concomitant extensive physical evidence of those activities across the Barrier Ranges and, given that wind farms are by nature built on a large scale, it is unavoidable that some elements of the Silverton Wind Farm infrastructure will be located adjacent to heritage items. Furthermore, given that the wind turbines need to be located on relatively narrow ridge crests, the options for locating infrastructure are very limited. This means that it is impossible to keep all elements of the wind farm away from heritage items. Nonetheless, this does not negate the fact that impacts to heritage items can be minimised and/or mitigated against (see below).

Discussion of how the proposal respects or enhances the heritage significance of the item; which aspects of the proposal could detrimentally impact on heritage significance; measures taken to mitigate impacts and where appropriate, reasons why other sympathetic solutions have been considered and discounted:

As discussed in the body of this report (Section 13), it is recommended that the Blue Anchor Tank and pipeline be conserved and be the subject of a detailed recording prior to construction of the wind farm. Specifically, it is recommended that all physical impacts within 10m of the tank and pipeline be avoided. This would act to ensure that an appropriate curtilage is established. Given that the item in question is assessed to be significant due to its role in local history (criterion a) and the nature of its construction (criterion c), its heritage significance is best protected through ensuring that the surviving physical remains are preserved, which is what would be achieved through avoidance of direct impacts. This would also ensure that impacts to potential archaeological deposits would be avoided as no additional areas of potential have been identified outside the curtilage of the site.

Specific impacts in the area where this heritage item is located might entail installation of wind turbines, unsealed roads and electrical connections between wind turbines using a combination of underground cable and overhead power lines. Impacts would as a rule be kept at least 10m from the recorded heritage item however, the access road may need to pass over the buried pipeline; this would not result in direct physical impacts as the pipeline would be below the zone of any associated ground disturbance at this locale.

Issues surrounding visual impacts have been addressed in Section 13 of the accompanying report, where it is noted that the heritage significance of this item does not lie in aesthetic values and so the changes in visual character of the surrounding landscape are not directly applicable to heritage impacts. It should however be noted that a broader consideration of heritage impacts to the landscape of the Barrier Ranges and mitigation in the form of a comprehensive research project are also dealt with in Section 13.

The proposed development would avoid direct impacts to the Blue Anchor Tank and pipeline, a heritage item that fits within a general theme of the history of resource exploitation in western New South Wales (harnessing water and ensuring reliable water supply to a mining settlement). Since the proposed development also fits within this theme there is an argument that it is largely compatible with the heritage and is complementary to the existing history of the local area.

Overall the impacts to the Blue Anchor Tank and pipeline would be minimal, i.e. there would be no direct physical impacts and it would not materially affect the historic or technical significance of the item. This would be ensured through an in the field identification of the heritage item to the proponent and their contractors along with advice on implementation of practical mitigation strategies (i.e. how to avoid the item); further mitigation of impacts would take the form of a detailed recording of the heritage item.

With regard to the heritage item's place in a broader landscape that has heritage value it should be noted that recommendations have been made for a comprehensive research project on the Aboriginal and Non Indigenous history and heritage of the area. Primary objectives of such a study would be to fill in the gaps in the existing history of mining for the region and compilation of a more complete record of heritage items in the Barrier Ranges. This would in turn aid in conservation of heritage values across the landscape, which would serve as a considerable mitigation of any impacts to that landscape. Indeed, a study of this nature would provide a broader historical context and potentially new levels of meaning and interpretation for all identified heritage items.

Attachments:

Dibden, J. 2008 *Silverton Wind Farm NSW: Indigenous and Non Indigenous Heritage Assessment, Volume 1*. Report to nghenvironmental on behalf of Silverton Wind Farm Developments.

References:

Hope, J. H. 2006 *The Unincorporated Area of New South Wales A Heritage Study*. A Report for the Department of Natural Resources and the Heritage Office of NSW 2006.

Statement of heritage impact for Survey Unit 62, Historical Site 1 (SU62/HS1): Building platform

Date: 18th March 2008

Reference: *SU62/HS1*. Item is not currently listed on any of the statutory registers.

This statement forms part of the Environmental Assessment for the proposed Silverton Wind Farm Stage 1 project area. The proposed impact area is situated in the Barrier Ranges and is located north of Silverton.

The Stage 1 proposal will involve the construction, operation and eventual decommissioning of a wind farm with capacity of up to 400MW (all stages would be 1000MW). The Stage 1 proposal includes the following components:

- Up to 150 wind turbines;
- Electrical connections between wind turbines using a combination of underground cable and overhead power lines;
- An onsite substation and control room;
- 25 km transmission 220kV power line linking the wind farm to the Transgrid sub station at Broken Hill;
- Access roads around the site, and upgrades of the Silverton and Daydream Mine roads, for installation and maintenance of wind turbines.

Additional temporary construction infrastructure will be required during the construction and decommissioning phases such as concrete batching plant, storage of construction machinery, equipment and materials, site offices.

Address and property description:
Belmont Station, access off Silverton Road
For further details refer to Site Gazetteer in Appendix 4.

Prepared by:
New South Wales Archaeology Pty Limited
PO Box 2135 Central Tilba NSW 2546
Ph/fax 02 44737947 mob. 0427074901
julie@nswarchaeology.com.au

For:
Silverton Wind Farm Developments
Level 11, 75 Miller St
North Sydney
NSW 2060

Why is the new development required to be adjacent to a heritage item?
Given the extent of human activities and the concomitant extensive physical evidence of those activities across the Barrier Ranges and, given that wind farms are by nature built on a large scale, it is unavoidable that some elements of the Silverton Wind Farm infrastructure will be located adjacent to heritage items. Furthermore, given that the wind turbines need to be located on relatively narrow ridge crests, the options for locating infrastructure are very limited. This means that it is impossible to keep all elements of the wind farm away from heritage items. Nonetheless, this does not negate the fact that impacts to heritage items can be minimised and/or mitigated against (see below).

Discussion of how the proposal respects or enhances the heritage significance of the item; which aspects of the proposal could detrimentally impact on heritage significance; measures taken to mitigate impacts and where appropriate, reasons why other sympathetic solutions have been considered and discounted:

As discussed in the body of this report (Section 13), it is recommended that heritage item SU62/HS1 (building platform with potential archaeological deposit) be avoided or be the subject of salvage excavation with appropriate archival recording and artefact analysis. Specifically, it is recommended that all impacts within 20m of this recording be avoided, which would act to ensure that an appropriate curtilage is established. Given that the item in question is assessed to be significant due to its role in local history (criterion a), its research potential (criterion e) and, to a lesser extent its importance to the local community as part of the pastoral/transport heritage of the region (criterion d), its heritage significance is best protected through ensuring that the surviving physical remains are preserved. This is what would be achieved through avoidance of direct impacts.

Specific impacts in the area where this heritage item is located might entail installation of an onsite substation and control room, unsealed roads and electrical connections using a combination of underground cable and overhead power lines. Given the nature of the landform in which SU62/HS1 is located it is likely that there will be sufficient space available to allow installation of necessary infrastructure without directly impacting the heritage item.

Issues surrounding visual impacts have been addressed in Section 13 of the accompanying report, where it is noted that the heritage significance of this item does not lie in aesthetic values and so the changes in visual character of the surrounding landscape are not directly applicable to heritage impacts. It should however be noted that a broader consideration of heritage impacts to the landscape of the Barrier Ranges and mitigation in the form of a comprehensive research project are also dealt with in Section 13.

In the event that all construction works are kept at least 20m from SU62/HS1 there would be minimal heritage impacts, i.e. there would be no direct physical impacts and it would not materially affect the historic significance, research potential or potential social significance of the item. This would be ensured through an in the field identification of the heritage item to the proponent and their contractors along with advice on implementation of practical mitigation strategies (i.e. how to avoid the item).

In the event that avoidance of impacts proves unfeasible, the heritage impacts to SU62/HS1 would be high; the proposed development would in that case result in partial or complete destruction of the heritage item. If this were the case then mitigation would take the form of salvage excavation and archival recording of the item prior to commencement of construction works. In this way the research potential of the heritage item would be respected through appropriate levels of archaeological analysis and accompanying historical research that would add to the knowledge base for the history and heritage of the local area, thus mitigating impacts to historic and social significance and research potential through contribution of information to the broader history and heritage of the local area.

With regard to the heritage item's place in a broader landscape that has heritage value it should be noted that recommendations have been made for a comprehensive research project on the Aboriginal and Non Indigenous history and heritage of the area. Primary objectives of such a study would be to fill in the gaps in the existing history of mining for the region and compilation of a more complete record of heritage items in the Barrier Ranges. This would in turn aid in conservation of heritage values across the landscape, which would serve as a considerable mitigation of any impacts to that landscape. Indeed, a study of this nature would provide a broader historical context and potentially new levels of meaning and interpretation for all identified heritage items.

Attachments:

Dibden, J. 2008 *Silverton Wind Farm NSW: Indigenous and Non Indigenous Heritage Assessment, Volume 1*. Report to nghenvironmental on behalf of Silverton Wind Farm Developments.

Statement of heritage impact for Survey Unit 90, Historical Site 1 (SU90/HS1): Mine workings

Date: 18th March 2008

Reference: *SU90/HS1*. Item is not currently listed on any of the statutory registers.

This statement forms part of the Environmental Assessment for the proposed Silverton Wind Farm Stage 1 project area. The proposed impact area is situated in the Barrier Ranges and is located north of Silverton.

The Stage 1 proposal will involve the construction, operation and eventual decommissioning of a wind farm with capacity of up to 400MW (all stages would be 1000MW). The Stage 1 proposal includes the following components:

- Up to 150 wind turbines;
- Electrical connections between wind turbines using a combination of underground cable and overhead power lines;
- An onsite substation and control room;
- 25 km transmission 220kV power line linking the wind farm to the Transgrid sub station at Broken Hill;
- Access roads around the site, and upgrades of the Silverton and Daydream Mine roads, for installation and maintenance of wind turbines.

Additional temporary construction infrastructure will be required during the construction and decommissioning phases such as concrete batching plant, storage of construction machinery, equipment and materials, site offices.

Address and property description:
Nine Mile Station, access off Day Dream Mine Road
For further details refer to Site Gazetteer in Appendix 4.

Prepared by:
New South Wales Archaeology Pty Limited
PO Box 2135 Central Tilba NSW 2546
Ph/fax 02 44737947 mob. 0427074901
julie@nswarchaeology.com.au

For:
Silverton Wind Farm Developments
Level 11, 75 Miller St
North Sydney
NSW 2060

Why is the new development required to be adjacent to a heritage item?
Given the extent of human activities and the concomitant extensive physical evidence of those activities across the Barrier Ranges and, given that wind farms are by nature built on a large scale, it is unavoidable that some elements of the Silverton Wind Farm infrastructure will be located adjacent to heritage items. Furthermore, given that the wind turbines need to be located on relatively narrow ridge crests, the options for locating infrastructure are very limited. This means that it is impossible to keep all elements of the wind farm away from heritage items. Nonetheless, this does not negate the fact that impacts to heritage items can be minimised and/or mitigated against (see below).

Discussion of how the proposal respects or enhances the heritage significance of the item; which aspects of the proposal could detrimentally impact on heritage significance; measures taken to mitigate impacts and where appropriate, reasons why other sympathetic solutions have been considered and discounted:

As discussed in the body of this report (Section 13), it is recommended that heritage item SU90/HS1 (mine workings) be avoided or be the subject of archival recording and artefact analysis. Specifically, it is recommended that all impacts to the mine workings be avoided, which would act to ensure that an appropriate curtilage is established. Given that the item in question is assessed to be significant due to its role in local history (criterion a), its research potential (criterion e) and, to a lesser extent its importance to the local community as part of the mining heritage of the region (criterion d), its heritage significance is best protected through ensuring that the surviving physical remains are preserved. This is what would be achieved through avoidance of direct impacts.

Specific impacts in the area where this heritage item is located might entail installation of wind turbines, unsealed roads and electrical connections between wind turbines using a combination of underground cable and overhead power lines.

Issues surrounding visual impacts have been addressed in Section 13 of the accompanying report, where it is noted that the heritage significance of this item does not lie in aesthetic values and so the changes in visual character of the surrounding landscape are not directly applicable to heritage impacts. It should however be noted that a broader consideration of heritage impacts to the landscape of the Barrier Ranges and mitigation in the form of a comprehensive research project are also dealt with in Section 13.

In the event that all construction works avoid SU90/HS1 there would be minimal heritage impacts, i.e. there would be no direct physical impacts and it would not materially affect the historic significance, research potential or potential social significance of the item. This would be ensured through an in the field identification of the heritage item to the proponent and their contractors along with advice on implementation of practical mitigation strategies (i.e. how to avoid the item). Furthermore, it is worth noting that this heritage item and the proposed development fit within a theme of landuse centred on exploitation of natural resources. It can thus be argued that the proposed development is largely compatible with the heritage and is complementary to the existing history of the local area.

In the event that avoidance of impacts proves unfeasible, the heritage impacts to SU90/HS1 would be high; the proposed development would in that case result in partial or complete destruction of the heritage item. If this were the case then mitigation would take the form of archival recording of the item and artefact analysis (where appropriate) prior to commencement of construction works. In this way the research potential of the heritage item would be respected through appropriate levels of archaeological analysis and accompanying historical research that would add to the knowledge base for the history and heritage of the local area, thus mitigating impacts to historic and social significance and research potential through contribution of information to the broader history and heritage of the local area.

With regard to the heritage item's place in a broader landscape that has heritage value it should be noted that recommendations have been made for a comprehensive research project on the Aboriginal and Non Indigenous history and heritage of the area. Primary objectives of such a study would be to fill in the gaps in the existing history of mining for the region and compilation of a more complete record of heritage items in the Barrier Ranges. This would in turn aid in conservation of heritage values across the landscape, which would serve as a considerable mitigation of any impacts to that landscape. Indeed, a study of this nature would provide a broader historical context and potentially new levels of meaning and interpretation for all identified heritage items.

Attachments:

Dibden, J. 2008 *Silverton Wind Farm NSW: Indigenous and Non Indigenous Heritage Assessment*. Report to nghenvironmental on behalf of Silverton Wind Farm Developments.

Statement of heritage impact for Survey Unit 90, Historical Site 2 (SU90/HS2): Building platform and costeans

Date: 18th March 2008

Reference: *SU90/HS2*. Item is not currently listed on any of the statutory registers.

This statement forms part of the Environmental Assessment for the proposed Silverton Wind Farm Stage 1 project area. The proposed impact area is situated in the Barrier Ranges and is located north of Silverton.

The Stage 1 proposal will involve the construction, operation and eventual decommissioning of a wind farm with capacity of up to 400MW (all stages would be 1000MW). The Stage 1 proposal includes the following components:

- Up to 150 wind turbines;
- Electrical connections between wind turbines using a combination of underground cable and overhead power lines;
- An onsite substation and control room;
- 25 km transmission 220kV power line linking the wind farm to the Transgrid sub station at Broken Hill;
- Access roads around the site, and upgrades of the Silverton and Daydream Mine roads, for installation and maintenance of wind turbines.

Additional temporary construction infrastructure will be required during the construction and decommissioning phases such as concrete batching plant, storage of construction machinery, equipment and materials, site offices.

Address and property description:
Nine Mile Station, access off Day Dream Mine Road
For further details refer to Site Gazetteer in Appendix 4.

Prepared by:
New South Wales Archaeology Pty Limited
PO Box 2135 Central Tilba NSW 2546
Ph/fax 02 44737947 mob. 0427074901
julie@nswarchaeology.com.au

For:
Silverton Wind Farm Developments
Level 11, 75 Miller St
North Sydney
NSW 2060

Why is the new development required to be adjacent to a heritage item?
Given the extent of human activities and the concomitant extensive physical evidence of those activities across the Barrier Ranges and, given that wind farms are by nature built on a large scale, it is unavoidable that some elements of the Silverton Wind Farm infrastructure will be located adjacent to heritage items. Furthermore, given that the wind turbines need to be located on relatively narrow ridge crests, the options for locating infrastructure are very limited. This means that it is impossible to keep all elements of the wind farm away from heritage items. Nonetheless, this does not negate the fact that impacts to heritage items can be minimised and/or mitigated against (see below).

Discussion of how the proposal respects or enhances the heritage significance of the item; which aspects of the proposal could detrimentally impact on heritage significance; measures taken to mitigate impacts and where appropriate, reasons why other sympathetic solutions have been considered and discounted:

As discussed in the body of this report (Section 13), it is recommended that heritage item SU90/HS2 (building platform with potential archaeological deposit and costeans) be avoided or be the subject of salvage excavation with appropriate archival recording and artefact analysis. Specifically, it is recommended that all impacts within 40m of this recording be avoided, which would act to ensure that an appropriate curtilage is established. Given that the item in question is assessed to be significant due to its role in local history (criterion a), its research potential (criterion e) and, to a lesser extent its importance to the local community as part of the mining heritage of the region (criterion d), its heritage significance is best protected through ensuring that the surviving physical remains are preserved. This is what would be achieved through avoidance of direct impacts.

Specific impacts in the area where this heritage item is located might entail installation of wind turbines, unsealed roads and electrical connections between wind turbines using a combination of underground cable and overhead power lines.

Issues surrounding visual impacts have been addressed in Section 13 of the accompanying report, where it is noted that the heritage significance of this item does not lie in aesthetic values and so the changes in visual character of the surrounding landscape are not directly applicable to heritage impacts. It should however be noted that a broader consideration of heritage impacts to the landscape of the Barrier Ranges and mitigation in the form of a comprehensive research project are also dealt with in Section 13.

In the event that all construction works are kept at least 40m from SU90/HS2 there would be minimal heritage impacts, i.e. there would be no direct physical impacts and it would not materially affect the historic significance, research potential or potential social significance of the item. This would be ensured through an in the field identification of the heritage item to the proponent and their contractors along with advice on implementation of practical mitigation strategies (i.e. how to avoid the item). Furthermore, it is worth noting that this heritage item and the proposed development fit within a theme of landuse centred on exploitation of natural resources. It can thus be argued that the proposed development is largely compatible with the heritage and is complementary to the existing history of the local area.

In the event that avoidance of impacts proves unfeasible, the heritage impacts to SU90/HS2 would be high; the proposed development would in that case result in partial or complete destruction of the heritage item. If this were the case then mitigation would take the form of salvage excavation and archival recording of the item prior to commencement of construction works. In this way the research potential of the heritage item would be respected through appropriate levels of archaeological analysis and accompanying historical research that would add to the knowledge base for the history and heritage of the local area, thus mitigating impacts to historic and social significance and research potential through contribution of information to the broader history and heritage of the local area.

With regard to the heritage item's place in a broader landscape that has heritage value it should be noted that recommendations have been made for a comprehensive research project on the Aboriginal and Non Indigenous history and heritage of the area. Primary objectives of such a study would be to fill in the gaps in the existing history of mining for the region and compilation of a more complete record of heritage items in the Barrier Ranges. This would in turn aid in conservation of heritage values across the landscape, which would serve as a considerable mitigation of any impacts to that landscape. Indeed, a study of this nature would provide a broader historical context and potentially new levels of meaning and interpretation for all identified heritage items.

Attachments:

Dibden, J. 2008 *Silverton Wind Farm NSW: Indigenous and Non Indigenous Heritage Assessment*. Report to nghenvironmental on behalf of Silverton Wind Farm Developments.

Statement of heritage impact for Survey Unit 90, Historical Site 3 (SU90/HS3): Forge

Date: 18th March 2008

Reference: *SU90/HS3*. Item is not currently listed on any of the statutory registers.

This statement forms part of the Environmental Assessment for the proposed Silverton Wind Farm Stage 1 project area. The proposed impact area is situated in the Barrier Ranges and is located north of Silverton.

The Stage 1 proposal will involve the construction, operation and eventual decommissioning of a wind farm with capacity of up to 400MW (all stages would be 1000MW). The Stage 1 proposal includes the following components:

- Up to 150 wind turbines;
- Electrical connections between wind turbines using a combination of underground cable and overhead power lines;
- An onsite substation and control room;
- 25 km transmission 220kV power line linking the wind farm to the Transgrid sub station at Broken Hill;
- Access roads around the site, and upgrades of the Silverton and Daydream Mine roads, for installation and maintenance of wind turbines.

Additional temporary construction infrastructure will be required during the construction and decommissioning phases such as concrete batching plant, storage of construction machinery, equipment and materials, site offices.

Address and property description:
Nine Mile Station, access off Day Dream Mine Road
For further details refer to Site Gazetteer in Appendix 4.

Prepared by:
New South Wales Archaeology Pty Limited
PO Box 2135 Central Tilba NSW 2546
Ph/fax 02 44737947 mob. 0427074901
julie@nswarchaeology.com.au

For:
Silverton Wind Farm Developments
Level 11, 75 Miller St
North Sydney
NSW 2060

Why is the new development required to be adjacent to a heritage item?
Given the extent of human activities and the concomitant extensive physical evidence of those activities across the Barrier Ranges and, given that wind farms are by nature built on a large scale, it is unavoidable that some elements of the Silverton Wind Farm infrastructure will be located adjacent to heritage items. Furthermore, given that the wind turbines need to be located on relatively narrow ridge tops, the options for locating infrastructure are very limited. This means that it is impossible to keep all elements of the wind farm away from heritage items. Nonetheless, this does not negate the fact that impacts to heritage items can be minimised and/or mitigated against (see below).

Discussion of how the proposal respects or enhances the heritage significance of the item; which aspects of the proposal could detrimentally impact on heritage significance; measures taken to mitigate impacts and where appropriate, reasons why other sympathetic solutions have been considered and discounted:

As discussed in the body of this report (Section 13), it is recommended that heritage item SU90/HS3 (forge with potential archaeological deposit) be avoided or be the subject of salvage excavation with appropriate archival recording and artefact analysis. Specifically, it is recommended that all impacts within 20m of this recording be avoided, which would act to ensure that an appropriate curtilage is established. Given that the item in question is assessed to be significant due to its role in local history (criterion a), its research potential (criterion e) and, to a lesser extent its importance to the local community as part of the mining heritage of the region (criterion d), its heritage significance is best protected through ensuring that the surviving physical remains are preserved. This is what would be achieved through avoidance of direct impacts.

Specific impacts in the area where this heritage item is located might entail installation of wind turbines, unsealed roads and electrical connections between wind turbines using a combination of underground cable and overhead power lines.

Issues surrounding visual impacts have been addressed in Section 13 of the accompanying report, where it is noted that the heritage significance of this item does not lie in aesthetic values and so the changes in visual character of the surrounding landscape are not directly applicable to heritage impacts. It should however be noted that a broader consideration of heritage impacts to the landscape of the Barrier Ranges and mitigation in the form of a comprehensive research project are also dealt with in Section 13.

In the event that all construction works are kept at least 20m from SU90/HS3 there would be minimal heritage impacts, i.e. there would be no direct physical impacts and it would not materially affect the historic significance, research potential or potential social significance of the item. This would be ensured through an in the field identification of the heritage item to the proponent and their contractors along with advice on implementation of practical mitigation strategies (i.e. how to avoid the item). Furthermore, it is worth noting that this heritage item and the proposed development fit within a theme of landuse centred on exploitation of natural resources. It can thus be argued that the proposed development is largely compatible with the heritage and is complementary to the existing history of the local area.

In the event that avoidance of impacts proves unfeasible, the heritage impacts to SU90/HS3 would be high; the proposed development would in that case result in partial or complete destruction of the heritage item. If this were the case then mitigation would take the form of salvage excavation and archival recording of the item prior to commencement of construction works. In this way the research potential of the heritage item would be respected through appropriate levels of archaeological analysis and accompanying historical research that would add to the knowledge base for the history and heritage of the local area, thus mitigating impacts to historic and social significance and research potential through contribution of information to the broader history and heritage of the local area.

With regard to the heritage item's place in a broader landscape that has heritage value it should be noted that recommendations have been made for a comprehensive research project on the Aboriginal and Non Indigenous history and heritage of the area. Primary objectives of such a study would be to fill in the gaps in the existing history of mining for the region and compilation of a more complete record of heritage items in the Barrier Ranges. This would in turn aid in conservation of heritage values across the landscape, which would serve as a considerable mitigation of any impacts to that landscape. Indeed, a study of this nature would provide a broader historical context and potentially new levels of meaning and interpretation for all identified heritage items.

Attachments:

Dibden, J. 2008 *Silverton Wind Farm NSW: Indigenous and Non Indigenous Heritage Assessment*. Report to nghenvironmental on behalf of Silverton Wind Farm Developments.

Statement of heritage impact for Survey Unit 90, Historical Site 4 (SU90/HS4): Building platform and hearths

Date: 18th March 2008

Reference: *SU90/HS4.* Item is not currently listed on any of the statutory registers.

This statement forms part of the Environmental Assessment for the proposed Silverton Wind Farm Stage 1 project area. The proposed impact area is situated in the Barrier Ranges and is located north of Silverton.

The Stage 1 proposal will involve the construction, operation and eventual decommissioning of a wind farm with capacity of up to 400MW (all stages would be 1000MW). The Stage 1 proposal includes the following components:

- Up to 150 wind turbines;
- Electrical connections between wind turbines using a combination of underground cable and overhead power lines;
- An onsite substation and control room;
- 25 km transmission 220kV power line linking the wind farm to the Transgrid sub station at Broken Hill;
- Access roads around the site, and upgrades of the Silverton and Daydream Mine roads, for installation and maintenance of wind turbines.

Additional temporary construction infrastructure will be required during the construction and decommissioning phases such as concrete batching plant, storage of construction machinery, equipment and materials, site offices.

Address and property description:
Nine Mile Station, access off Day Dream Mine Road
For further details refer to Site Gazetteer in Appendix 4.

Prepared by:
New South Wales Archaeology Pty Limited
PO Box 2135 Central Tilba NSW 2546
Ph/fax 02 44737947 mob. 0427074901
julie@nswarchaeology.com.au

For:
Silverton Wind Farm Developments
Level 11, 75 Miller St
North Sydney
NSW 2060

Why is the new development required to be adjacent to a heritage item?
Given the extent of human activities and the concomitant extensive physical evidence of those activities across the Barrier Ranges and, given that wind farms are by nature built on a large scale, it is unavoidable that some elements of the Silverton Wind Farm infrastructure will be located adjacent to heritage items. Furthermore, given that the wind turbines need to be located on relatively narrow ridge crest, the options for locating infrastructure are very limited. This means that it is impossible to keep all elements of the wind farm away from heritage items. Nonetheless, this does not negate the fact that impacts to heritage items can be minimised and/or mitigated against (see below).

Discussion of how the proposal respects or enhances the heritage significance of the item; which aspects of the proposal could detrimentally impact on heritage significance; measures taken to mitigate impacts and where appropriate, reasons why other sympathetic solutions have been considered and discounted:

As discussed in the body of this report (Section 13), it is recommended that heritage item SU90/HS4 (building platform and hearths; potential archaeological deposit) be avoided or be the subject of salvage excavation with appropriate archival recording and artefact analysis. Specifically, it is recommended that all impacts within 20m of this recording be avoided, which would act to ensure that an appropriate curtilage is established. Given that the item in question is assessed to be significant due to its role in local history (criterion a), its research potential (criterion e) and, to a lesser extent its importance to the local community as part of the mining heritage of the region (criterion d), its heritage significance is best protected through ensuring that the surviving physical remains are preserved. This is what would be achieved through avoidance of direct impacts.

Specific impacts in the area where this heritage item is located might entail installation of wind turbines, unsealed roads and electrical connections between wind turbines using a combination of underground cable and overhead power lines.

Issues surrounding visual impacts have been addressed in Section 13 of the accompanying report, where it is noted that the heritage significance of this item does not lie in aesthetic values and so the changes in visual character of the surrounding landscape are not directly applicable to heritage impacts. It should however be noted that a broader consideration of heritage impacts to the landscape of the Barrier Ranges and mitigation in the form of a comprehensive research project are also dealt with in Section 13.

In the event that all construction works are kept at least 20m from SU90/HS4 there would be minimal heritage impacts, i.e. there would be no direct physical impacts and it would not materially affect the historic significance, research potential or potential social significance of the item. This would be ensured through an in the field identification of the heritage item to the proponent and their contractors along with advice on implementation of practical mitigation strategies (i.e. how to avoid the item). Furthermore, it is worth noting that this heritage item and the proposed development fit within a theme of landuse centred on exploitation of natural resources. It can thus be argued that the proposed development is largely compatible with the heritage and is complementary to the existing history of the local area.

In the event that avoidance of impacts proves unfeasible, the heritage impacts to SU90/HS4 would be high; the proposed development would in that case result in partial or complete destruction of the heritage item. If this were the case then mitigation would take the form of salvage excavation and archival recording of the item prior to commencement of construction works. In this way the research potential of the heritage item would be respected through appropriate levels of archaeological analysis and accompanying historical research that would add to the knowledge base for the history and heritage of the local area, thus mitigating impacts to historic and social significance and research potential through contribution of information to the broader history and heritage of the local area.

With regard to the heritage item's place in a broader landscape that has heritage value it should be noted that recommendations have been made for a comprehensive research project on the Aboriginal and Non Indigenous history and heritage of the area. Primary objectives of such a study would be to fill in the gaps in the existing history of mining for the region and compilation of a more complete record of heritage items in the Barrier Ranges. This would in turn aid in conservation of heritage values across the landscape, which would serve as a considerable mitigation of any impacts to that landscape. Indeed, a study of this nature would provide a broader historical context and potentially new levels of meaning and interpretation for all identified heritage items.

Attachments:

Dibden, J.2008 *Silverton Wind Farm NSW: Indigenous and Non Indigenous Heritage Assessment*. Report to nghenvironmental on behalf of Silverton Wind Farm Developments.

Statement of heritage impact for Survey Unit 92, Historical Site 1 (SU92/HS1): Mine workings

Date: 18th March 2008

Reference: *SU92/HS*1. Item is not currently listed on any of the statutory registers.

This statement forms part of the Environmental Assessment for the proposed Silverton Wind Farm Stage 1 project area. The proposed impact area is situated in the Barrier Ranges and is located north of Silverton.

The Stage 1 proposal will involve the construction, operation and eventual decommissioning of a wind farm with capacity of up to 400MW (all stages would be 1000MW). The Stage 1 proposal includes the following components:

- Up to 150 wind turbines;
- Electrical connections between wind turbines using a combination of underground cable and overhead power lines;
- An onsite substation and control room;
- 25 km transmission 220kV power line linking the wind farm to the Transgrid sub station at Broken Hill;
- Access roads around the site, and upgrades of the Silverton and Daydream Mine roads, for installation and maintenance of wind turbines.

Additional temporary construction infrastructure will be required during the construction and decommissioning phases such as concrete batching plant, storage of construction machinery, equipment and materials, site offices.

Address and property description:
Nine Mile Station, access off Day Dream Mine Road
For further details refer to Site Gazetteer in Appendix 4.

Prepared by:
New South Wales Archaeology Pty Limited
PO Box 2135 Central Tilba NSW 2546
Ph/fax 02 44737947 mob. 0427074901
julie@nswarchaeology.com.au

For:
Silverton Wind Farm Developments
Level 11, 75 Miller St
North Sydney
NSW 2060

Why is the new development required to be adjacent to a heritage item?
Given the extent of human activities and the concomitant extensive physical evidence of those activities across the Barrier Ranges and, given that wind farms are by nature built on a large scale, it is unavoidable that some elements of the Silverton Wind Farm infrastructure will be located adjacent to heritage items. Furthermore, given that the wind turbines need to be located on relatively narrow ridge tops, the options for locating infrastructure are very limited. This means that it is impossible to keep all elements of the wind farm away from heritage items. Nonetheless, this does not negate the fact that impacts to heritage items can be minimised and/or mitigated against (see below).

Discussion of how the proposal respects or enhances the heritage significance of the item; which aspects of the proposal could detrimentally impact on heritage significance; measures taken to mitigate impacts and where appropriate, reasons why other sympathetic solutions have been considered and discounted:

As discussed in the body of this report (Section 13), it is recommended that heritage item SU92/HS1 (mine workings) be avoided or be the subject of archival recording and artefact analysis. Specifically, it is recommended that all impacts to the nine workings be avoided, which would act to ensure that an appropriate curtilage is established. Given that the item in question is assessed to be significant due to its role in local history (criterion a), its research potential (criterion e) and, to a lesser extent its importance to the local community as part of the mining heritage of the region (criterion d), its heritage significance is best protected through ensuring that the surviving physical remains are preserved. This is what would be achieved through avoidance of direct impacts.

Specific impacts in the area where this heritage item is located might entail installation of wind turbines, unsealed roads and electrical connections between wind turbines using a combination of underground cable and overhead power lines.

Issues surrounding visual impacts have also been addressed in Section 13 of the accompanying report, where it is noted that the heritage significance of this item does not lie in aesthetic values and so the changes in visual character of the surrounding landscape are not directly applicable to heritage impacts. It should however be noted that a broader consideration of heritage impacts to the landscape of the Barrier Ranges and mitigation in the form of a comprehensive research project are also dealt with in Section 13.

In the event that all construction works avoid SU92/HS1 there would be minimal heritage impacts, i.e. there would be no direct physical impacts and it would not materially affect the historic significance, research potential or potential social significance of the item. This would be ensured through an in the field identification of the heritage item to the proponent and their contractors along with advice on implementation of practical mitigation strategies (i.e. how to avoid the item). Furthermore, it is worth noting that this heritage item and the proposed development fit within a theme of landuse centred on exploitation of natural resources. It can thus be argued that the proposed development is largely compatible with the heritage and is complementary to the existing history of the local area.

In the event that avoidance of impacts proves unfeasible, the heritage impacts to SU92/HS1 would be high; the proposed development would in that case result in partial or complete destruction of the heritage item. If this were the case then mitigation would take the form of archival recording of the item and artefact analysis (where appropriate) prior to commencement of construction works. In this way the research potential of the heritage item would be respected through appropriate levels of archaeological analysis and accompanying historical research that would add to the knowledge base for the history and heritage of the local area, thus mitigating impacts to historic and social significance and research potential through contribution of information to the broader history and heritage of the local area.

With regard to the heritage item's place in a broader landscape that has heritage value it should be noted that recommendations have been made for a comprehensive research project on the Aboriginal and Non Indigenous history and heritage of the area. Primary objectives of such a study would be to fill in the gaps in the existing history of mining for the region and compilation of a more complete record of heritage items in the Barrier Ranges. This would in turn aid in conservation of heritage values across the landscape, which would serve as a considerable mitigation of any impacts to that landscape. Indeed, a study of this nature would provide a broader historical context and potentially new levels of meaning and interpretation for all identified heritage items.

Attachments:

Dibden, J. 2008 *Silverton Wind Farm NSW: Indigenous and Non Indigenous Heritage Assessment*. Report to nghenvironmental on behalf of Silverton Wind Farm Developments.

Statement of heritage impact for Survey Unit 93, Historical Site 1 (SU93/HS1): Road

Date: 18th March 2008

Reference: *SU93/HS1*. Item is not currently listed on any of the statutory registers.

This statement forms part of the Environmental Assessment for the proposed Silverton Wind Farm Stage 1 project area. The proposed impact area is situated in the Barrier Ranges and is located north of Silverton.

The Stage 1 proposal will involve the construction, operation and eventual decommissioning of a wind farm with capacity of up to 400MW (all stages would be 1000MW). The Stage 1 proposal includes the following components:

- Up to 150 wind turbines;
- Electrical connections between wind turbines using a combination of underground cable and overhead power lines;
- An onsite substation and control room;
- 25 km transmission 220kV power line linking the wind farm to the Transgrid sub station at Broken Hill;
- Access roads around the site, and upgrades of the Silverton and Daydream Mine roads, for installation and maintenance of wind turbines.

Additional temporary construction infrastructure will be required during the construction and decommissioning phases such as concrete batching plant, storage of construction machinery, equipment and materials, site offices.

Address and property description:
Nine Mile Station, access off Day Dream Mine Road
For further details refer to Site Gazetteer in Appendix 4.

Prepared by:
New South Wales Archaeology Pty Limited
PO Box 2135 Central Tilba NSW 2546
Ph/fax 02 44737947 mob. 0427074901
julie@nswarchaeology.com.au

For:
Silverton Wind Farm Developments
Level 11, 75 Miller St
North Sydney
NSW 2060

Why is the new development required to be adjacent to a heritage item?
Given the extent of human activities and the concomitant extensive physical evidence of those activities across the Barrier Ranges and, given that wind farms are by nature built on a large scale, it is unavoidable that some elements of the Silverton Wind Farm infrastructure will be located adjacent to heritage items. Furthermore, given that the wind turbines need to be located on relatively narrow ridge crest, the options for locating infrastructure are very limited. This means that it is impossible to keep all elements of the wind farm away from heritage items. Nonetheless, this does not negate the fact that impacts to heritage items can be minimised and/or mitigated against (see below).

Discussion of how the proposal respects or enhances the heritage significance of the item; which aspects of the proposal could detrimentally impact on heritage significance; measures taken to mitigate impacts and where appropriate, reasons why other sympathetic solutions have been considered and discounted:

As discussed in the body of this report (Section 13), it is recommended that heritage item SU93/HS1 (road) be avoided if feasible. Specifically, it is recommended that all impacts within 20m of this recording be avoided, which would act to ensure that an appropriate curtilage is established. Given that the item in question is assessed to be significant due to its role in local history (criterion a), its research potential as a component of the Iron Duke complex (criterion e) and, to a lesser extent its importance to the local community as part of the mining/transport heritage of the region (criterion d), its heritage significance is best protected through ensuring that the surviving physical remains are preserved. This is what would be achieved through avoidance of direct impacts.

Specific impacts in the area where this heritage item is located might entail installation of wind turbines, unsealed roads and electrical connections between wind turbines using a combination of underground cable and overhead power lines.

Issues surrounding visual impacts have been addressed in Section 13 of the accompanying report, where it is noted that the heritage significance of this item does not lie in aesthetic values and so the changes in visual character of the surrounding landscape are not directly applicable to heritage impacts. It should however be noted that a broader consideration of heritage impacts to the landscape of the Barrier Ranges and mitigation in the form of a comprehensive research project are also dealt with in Section 13.

In the event that all construction works are kept off SU93/HS1 there would be minimal heritage impacts, i.e. there would be no direct physical impacts and it would not materially affect the historic significance, research potential or potential social significance of the item. This would be ensured through an in the field identification of the heritage item to the proponent and their contractors along with advice on implementation of practical mitigation strategies (i.e. how to avoid the item). Furthermore, it is worth noting that this heritage item and the proposed development fit within a theme of landuse centred on exploitation of natural resources. It can thus be argued that the proposed development is largely compatible with the heritage and is complementary to the existing history of the local area.

In the event that impacts are avoided south of 526700e 6480500n as part of management of the heritage significance of SU94/HS1 then the southern two thirds of this item (where it extends into SU94) would be conserved, which would serve as a form of mitigation against any impacts to the northern portion of this item.

In the event that avoidance of impacts proves unfeasible, the heritage impacts to SU93/HS1 would be high; the proposed development would in that case result in partial or complete destruction of the heritage item, although it should be noted that there is a high probability that the resultant impacts would involve upgrading of the existing road so there would be continuity in item use that would effectively conserve the road alignment if not elements of the existing road cutting. Given the nature of the heritage item and the fact that its assessed significance is largely due to its association with adjacent items, mitigation in the event of direct impacts is not considered to be warranted. The only site specific mitigation that might be considered is archival recording, which is not considered to be necessary for a basic road cutting that is clearly visible as a linear feature on available aerial images (Google Earth 2008) and which was photographed during fieldwork for the Stage 1 development proposal.

Google Earth image with alignment of heritage item SU93/HS1 highlighted along its extent from SU90 in the north across SU94 in the southeast (Google Earth 2008).

With regard to the heritage item's place in a broader landscape that has heritage value it should be noted that recommendations have been made for a comprehensive research project on the Aboriginal and Non Indigenous history and heritage of the area. Primary objectives of such a study would be to fill in the gaps in the existing history of mining for the region and compilation of a more complete record of heritage items in the Barrier Ranges. This would in turn aid in conservation of heritage values across the landscape, which would serve as a considerable mitigation of any impacts to that landscape. Indeed, a study of this nature would provide a broader historical context and potentially new levels of meaning and interpretation for all identified heritage items.

Attachments:

Dibden, J. 2008 *Silverton Wind Farm NSW: Indigenous and Non Indigenous Heritage Assessment*. Report to nghenvironmental on behalf of Silverton Wind Farm Developments.

References:
Google Earth 2008 version 4.2

Statement of heritage impact for Survey Unit 94, Historical Site 1 (SU94/HS1): Forge

Date: 18th March 2008

Reference: *SU94/HS1*. Item is not currently listed on any of the statutory registers.

This statement forms part of the Environmental Assessment for the proposed Silverton Wind Farm Stage 1 project area. The proposed impact area is situated in the Barrier Ranges and is located north of Silverton.

The Stage 1 proposal will involve the construction, operation and eventual decommissioning of a wind farm with capacity of up to 400MW (all stages would be 1000MW). The Stage 1 proposal includes the following components:

- Up to 150 wind turbines;
- Electrical connections between wind turbines using a combination of underground cable and overhead power lines;
- An onsite substation and control room;
- 25 km transmission 220kV power line linking the wind farm to the Transgrid sub station at Broken Hill;
- Access roads around the site, and upgrades of the Silverton and Daydream Mine roads, for installation and maintenance of wind turbines.

Additional temporary construction infrastructure will be required during the construction and decommissioning phases such as concrete batching plant, storage of construction machinery, equipment and materials, site offices.

Address and property description:
Nine Mile Station, access off Day Dream Mine Road
For further details refer to Site Gazetteer in Appendix 4.

Prepared by:
New South Wales Archaeology Pty Limited
PO Box 2135 Central Tilba NSW 2546
Ph/fax 02 44737947 mob. 0427074901
julie@nswarchaeology.com.au

For:
Silverton Wind Farm Developments
Level 11, 75 Miller St
North Sydney
NSW 2060

Why is the new development required to be adjacent to a heritage item?
Given the extent of human activities and the concomitant extensive physical evidence of those activities across the Barrier Ranges and, given that wind farms are by nature built on a large scale, it is unavoidable that some elements of the Silverton Wind Farm infrastructure will be located adjacent to heritage items. Furthermore, given that the wind turbines need to be located on relatively narrow ridge tops, the options for locating infrastructure are very limited. This means that it is impossible to keep all elements of the wind farm away from heritage items. Nonetheless, this does not negate the fact that impacts to heritage items can be minimised and/or mitigated against (see below).

Discussion of how the proposal respects or enhances the heritage significance of the item; which aspects of the proposal could detrimentally impact on heritage significance; measures taken to mitigate impacts and where appropriate, reasons why other sympathetic solutions have been considered and discounted:

As discussed in the body of this report (Section 13), it is recommended that heritage item SU94/HS1 (forge with potential archaeological deposit) be avoided or be the subject of salvage excavation with appropriate archival recording and artefact analysis. Specifically, it is recommended that all impacts within 20m of this recording be avoided, or preferably that all impacts be avoided on the ridge crest southeast of 526700e 6480500n so as to conserve SU94/HS1, SU94/HS2 and a portion of the associated road (SU93/HS1). Either of these options would act to ensure that an appropriate curtilage is established. Given that the item in question is assessed to be significant due to its role in local history (criterion a), its research potential (criterion e) and, to a lesser extent its importance to the local community as part of the mining heritage of the region (criterion d) and potential rarity (criterion f), its heritage significance is best protected through ensuring that the surviving physical remains are preserved. This is what would be achieved through avoidance of direct impacts.

Specific impacts in the area where this heritage item is located might entail installation of wind turbines, unsealed roads and electrical connections between wind turbines using a combination of underground cable and overhead power lines.

Issues surrounding visual impacts have been addressed in Section 13 of the accompanying report, where it is noted that the heritage significance of this item does not lie in aesthetic values and so the changes in visual character of the surrounding landscape are not directly applicable to heritage impacts. It should however be noted that a broader consideration of heritage impacts to the landscape of the Barrier Ranges and mitigation in the form of a comprehensive research project are also dealt with in Section 13.

In the event that all construction works are kept at least 20m from SU94/HS1 there would be minimal heritage impacts, i.e. there would be no direct physical impacts and it would not materially affect the historic significance, research potential, rarity or potential social significance of the item. This would be ensured through an in the field identification of the heritage item to the proponent and their contractors along with advice on implementation of practical mitigation strategies (i.e. how to avoid the item). Furthermore, it is worth noting that this heritage item and the proposed development fit within a theme of landuse centred on exploitation of natural resources. It can thus be argued that the proposed development is largely compatible with the heritage and is complementary to the existing history of the local area.

In the event that all impacts on the ridge crest south of 526700e 6480500n are avoided not only would the heritage value of SU94/HS1 be conserved but also that of associated feature SU94/HS2. In addition this option would serve to protect a large section of SU93/HS1. This option would be preferable because it would act to conserve a portion of a larger site complex and evidence of links between heritage items.

In the event that avoidance of impacts proves unfeasible, the heritage impacts to SU94/HS1 would be high; the proposed development would in that case result in partial or complete destruction of the heritage item. If this were the case then mitigation would take the form of salvage excavation and archival recording of the item prior to commencement of construction works. In this way the research potential of the heritage item would be respected through appropriate levels of archaeological analysis and accompanying historical research that would add to the knowledge base for the history and heritage of the local area, thus mitigating impacts to historic and social significance and research potential through contribution of information to the broader history and heritage of the local area.

With regard to the heritage item's place in a broader landscape that has heritage value it should be noted that recommendations have been made for a comprehensive research project on the Aboriginal and Non Indigenous history and heritage of the area. Primary objectives of such a study would be to fill in the gaps in the existing history of mining for the region and compilation of a more complete record of heritage items in the Barrier Ranges. This would in turn aid in conservation of heritage values across the landscape, which would serve as a considerable mitigation of any impacts to that landscape. Indeed, a study of this nature would provide a broader historical context and potentially new levels of meaning and interpretation for all identified heritage items.

Attachments:

Dibden, J. 2008 *Silverton Wind Farm NSW: Indigenous and Non Indigenous Heritage Assessment*. Report to nghenvironmental on behalf of Silverton Wind Farm Developments.

Statement of heritage impact for Survey Unit 94, Historical Site 2 (SU94/HS2): Building platform

Date: 18th March 2008

Reference: *SU94/HS2*. Item is not currently listed on any of the statutory registers.

This statement forms part of the Environmental Assessment for the proposed Silverton Wind Farm Stage 1 project area. The proposed impact area is situated in the Barrier Ranges and is located north of Silverton.

The Stage 1 proposal will involve the construction, operation and eventual decommissioning of a wind farm with capacity of up to 400MW (all stages would be 1000MW). The Stage 1 proposal includes the following components:

- Up to 150 wind turbines;
- Electrical connections between wind turbines using a combination of underground cable and overhead power lines;
- An onsite substation and control room;
- 25 km transmission 220kV power line linking the wind farm to the Transgrid sub station at Broken Hill;
- Access roads around the site, and upgrades of the Silverton and Daydream Mine roads, for installation and maintenance of wind turbines.

Additional temporary construction infrastructure will be required during the construction and decommissioning phases such as concrete batching plant, storage of construction machinery, equipment and materials, site offices.

Address and property description:
Nine Mile Station, access off Day Dream Mine Road
For further details refer to Site Gazetteer in Appendix 4.

Prepared by:
New South Wales Archaeology Pty Limited
PO Box 2135 Central Tilba NSW 2546
Ph/fax 02 44737947 mob. 0427074901
julie@nswarchaeology.com.au

For:
Silverton Wind Farm Developments
Level 11, 75 Miller St
North Sydney
NSW 2060

Why is the new development required to be adjacent to a heritage item?
Given the extent of human activities and the concomitant extensive physical evidence of those activities across the Barrier Ranges and, given that wind farms are by nature built on a large scale, it is unavoidable that some elements of the Silverton Wind Farm infrastructure will be located adjacent to heritage items. Furthermore, given that the wind turbines need to be located on relatively narrow ridge tops, the options for locating infrastructure are very limited. This means that it is impossible to keep all elements of the wind farm away from heritage items. Nonetheless, this does not negate the fact that impacts to heritage items can be minimised and/or mitigated against (see below).

Discussion of how the proposal respects or enhances the heritage significance of the item; which aspects of the proposal could detrimentally impact on heritage significance; measures taken to mitigate impacts and where appropriate, reasons why other sympathetic solutions have been considered and discounted:

As discussed in the body of this report (Section 13), it is recommended that heritage item SU94/HS2 (building platform with potential archaeological deposit) be avoided or be the subject of salvage excavation with appropriate archival recording and artefact analysis. Specifically, it is recommended that all impacts within 30m of this recording be avoided, which would act to ensure that an appropriate curtilage is established. Given that the item in question is assessed to be significant due to its role in local history (criterion a), its research potential (criterion e) and, to a lesser extent its importance to the local community as part of the mining heritage of the region (criterion d), its heritage significance is best protected through ensuring that the surviving physical remains are preserved. This is what would be achieved through avoidance of direct impacts.

Specific impacts in the area where this heritage item is located might entail installation of wind turbines, unsealed roads and electrical connections between wind turbines using a combination of underground cable and overhead power lines.

Issues surrounding visual impacts have been addressed in Section 13 of the accompanying report, where it is noted that the heritage significance of this item does not lie in aesthetic values and so the changes in visual character of the surrounding landscape are not directly applicable to heritage impacts. It should however be noted that a broader consideration of heritage impacts to the landscape of the Barrier Ranges and mitigation in the form of a comprehensive research project are also dealt with in Section 13.

In the event that all construction works are kept at least 30m from SU62/HS1 there would be minimal heritage impacts, i.e. there would be no direct physical impacts and it would not materially affect the historic significance, research potential or potential social significance of the item. This would be ensured through an in the field identification of the heritage item to the proponent and their contractors along with advice on implementation of practical mitigation strategies (i.e. how to avoid the item). Furthermore, it is worth noting that this heritage item and the proposed development fit within a theme of landuse centred on exploitation of natural resources. It can thus be argued that the proposed development is largely compatible with the heritage and is complementary to the existing history of the local area.

In the event that all impacts on the ridge crest south of 526700e 6480500n are avoided not only would the heritage value of SU94/HS1 and SU94/HS2; this option would also serve to protect a large section of SU93/HS1. This option would be preferable because it would act to conserve a portion of a larger site complex and evidence of links between that complex and neighbouring heritage items.

In the event that avoidance of impacts proves unfeasible, the heritage impacts to SU62/HS1 would be high; the proposed development would in that case result in partial or complete destruction of the heritage item. If this were the case then mitigation would take the form of salvage excavation and archival recording of the item prior to commencement of construction works. In this way the research potential of the heritage item would be respected through appropriate levels of archaeological analysis and accompanying historical research that would add to the knowledge base for the history and heritage of the local area, thus mitigating impacts to historic and social significance and research potential through contribution of information to the broader history and heritage of the local area.

With regard to the heritage item's place in a broader landscape that has heritage value it should be noted that recommendations have been made for a comprehensive research project on the Aboriginal and Non Indigenous history and heritage of the area. Primary objectives of such a study would be to fill in the gaps in the existing history of mining for the region and compilation of a more complete record of heritage items in the Barrier Ranges. This would in turn aid in conservation of heritage values across the landscape, which would serve as a considerable mitigation of any impacts to that landscape. Indeed, a study of this nature would provide a broader historical context and potentially new levels of meaning and interpretation for all identified heritage items.

Attachments:

Dibden, J. 2008 *Silverton Wind Farm NSW: Indigenous and Non Indigenous Heritage Assessment*. Report to nghenvironmental on behalf of Silverton Wind Farm Developments.

Statement of heritage impact for Survey Unit 191, Historical Site 1 (SU191/HS1): Building platform

Date: 18th March 2008

Reference: *SU191/HS1*. Item is not currently listed on any of the statutory registers.

This statement forms part of the Environmental Assessment for the proposed Silverton Wind Farm Stage 1 project area. The proposed impact area is situated in the Barrier Ranges and is located north of Silverton.

The Stage 1 proposal will involve the construction, operation and eventual decommissioning of a wind farm with capacity of up to 400MW (all stages would be 1000MW). The Stage 1 proposal includes the following components:

- Up to 150 wind turbines;
- Electrical connections between wind turbines using a combination of underground cable and overhead power lines;
- An onsite substation and control room;
- 25 km transmission 220kV power line linking the wind farm to the Transgrid sub station at Broken Hill;
- Access roads around the site, and upgrades of the Silverton and Daydream Mine roads, for installation and maintenance of wind turbines.

Additional temporary construction infrastructure will be required during the construction and decommissioning phases such as concrete batching plant, storage of construction machinery, equipment and materials, site offices.

Address and property description:
Belmont Station, access off Silverton Road
For further details refer to Site Gazetteer in Appendix 4.

Prepared by:
New South Wales Archaeology Pty Limited
PO Box 2135 Central Tilba NSW 2546
Ph/fax 02 44737947 mob. 0427074901
julie@nswarchaeology.com.au

For:
Silverton Wind Farm Developments
Level 11, 75 Miller St
North Sydney
NSW 2060

Why is the new development required to be adjacent to a heritage item?
Given the extent of human activities and the concomitant extensive physical evidence of those activities across the Barrier Ranges and, given that wind farms are by nature built on a large scale, it is unavoidable that some elements of the Silverton Wind Farm infrastructure will be located adjacent to heritage items. Furthermore, given that the wind turbines need to be located on relatively narrow ridge tops, the options for locating infrastructure are very limited. This means that it is impossible to keep all elements of the wind farm away from heritage items. Nonetheless, this does not negate the fact that impacts to heritage items can be minimised and/or mitigated against (see below).

Discussion of how the proposal respects or enhances the heritage significance of the item; which aspects of the proposal could detrimentally impact on heritage significance; measures taken to mitigate impacts and where appropriate, reasons why other sympathetic solutions have been considered and discounted:

As discussed in the body of this report (Section 13), it is recommended that heritage item SU191/HS1 (building platform with potential archaeological deposit) be avoided or be the subject of salvage excavation with appropriate archival recording and artefact analysis. Specifically, it is recommended that all impacts within 20m of this recording be avoided, which would act to ensure that an appropriate curtilage is established. Given that the item in question is assessed to be significant due to its role in local history (criterion a), its research potential (criterion e) and, to a lesser extent its importance to the local community as part of the mining/pastoral heritage of the region (criterion d), its heritage significance is best protected through ensuring that the surviving physical remains are preserved. This is what would be achieved through avoidance of direct impacts.

Specific impacts in the area where this heritage item is located might entail installation of wind turbines, unsealed roads and electrical connections between wind turbines using a combination of underground cable and overhead power lines.

Issues surrounding visual impacts have been addressed in Section 13 of the accompanying report, where it is noted that the heritage significance of this item does not lie in aesthetic values and so the changes in visual character of the surrounding landscape are not directly applicable to heritage impacts. It should however be noted that a broader consideration of heritage impacts to the landscape of the Barrier Ranges and mitigation in the form of a comprehensive research project are also dealt with in Section 13.

In the event that all construction works are kept at least 20m from SU191/HS1 there would be minimal heritage impacts, i.e. there would be no direct physical impacts and it would not materially affect the historic significance, research potential or potential social significance of the item. This would be ensured through an in the field identification of the heritage item to the proponent and their contractors along with advice on implementation of practical mitigation strategies (i.e. how to avoid the item). Furthermore, it is worth noting that this heritage item and the proposed development fit within a theme of landuse centred on exploitation of natural resources. It can thus be argued that the proposed development is largely compatible with the heritage and is complementary to the existing history of the local area.

In the event that avoidance of impacts proves unfeasible, the heritage impacts to SU191/HS1 would be high; the proposed development would in that case result in partial or complete destruction of the heritage item. If this were the case then mitigation would take the form of salvage excavation and archival recording of the item prior to commencement of construction works. In this way the research potential of the heritage item would be respected through appropriate levels of archaeological analysis and accompanying historical research that would add to the knowledge base for the history and heritage of the local area, thus mitigating impacts to historic and social significance and research potential through contribution of information to the broader history and heritage of the local area.

With regard to the heritage item's place in a broader landscape that has heritage value it should be noted that recommendations have been made for a comprehensive research project on the Aboriginal and Non Indigenous history and heritage of the area. Primary objectives of such a study would be to fill in the gaps in the existing history of mining for the region and compilation of a more complete record of heritage items in the Barrier Ranges. This would in turn aid in conservation of heritage values across the landscape, which would serve as a considerable mitigation of any impacts to that landscape. Indeed, a study of this nature would provide a broader historical context and potentially new levels of meaning and interpretation for all identified heritage items.

Attachments:

Dibden, J. 2008 *Silverton Wind Farm NSW: Indigenous and Non Indigenous Heritage Assessment*. Report to nghenvironmental on behalf of Silverton Wind Farm Developments.

Statement of heritage impact for Survey Unit 191, Historical Site 2 (SU191/HS2): Building platform

Date: 18th March 2008

Reference: *SU191/HS2*. Item is not currently listed on any of the statutory registers.

This statement forms part of the Environmental Assessment for the proposed Silverton Wind Farm Stage 1 project area. The proposed impact area is situated in the Barrier Ranges and is located north of Silverton.

The Stage 1 proposal will involve the construction, operation and eventual decommissioning of a wind farm with capacity of up to 400MW (all stages would be 1000MW). The Stage 1 proposal includes the following components:

- Up to 150 wind turbines;
- Electrical connections between wind turbines using a combination of underground cable and overhead power lines;
- An onsite substation and control room;
- 25 km transmission 220kV power line linking the wind farm to the Transgrid sub station at Broken Hill;
- Access roads around the site, and upgrades of the Silverton and Daydream Mine roads, for installation and maintenance of wind turbines.

Additional temporary construction infrastructure will be required during the construction and decommissioning phases such as concrete batching plant, storage of construction machinery, equipment and materials, site offices.

Address and property description:
Belmont Station, access off Silverton Road
For further details refer to Site Gazetteer in Appendix 4.

Prepared by:
New South Wales Archaeology Pty Limited
PO Box 2135 Central Tilba NSW 2546
Ph/fax 02 44737947 mob. 0427074901
julie@nswarchaeology.com.au

For:
Silverton Wind Farm Developments
Level 11, 75 Miller St
North Sydney
NSW 2060

Why is the new development required to be adjacent to a heritage item?
Given the extent of human activities and the concomitant extensive physical evidence of those activities across the Barrier Ranges and, given that wind farms are by nature built on a large scale, it is unavoidable that some elements of the Silverton Wind Farm infrastructure will be located adjacent to heritage items. Furthermore, given that the wind turbines need to be located on relatively narrow ridge tops, the options for locating infrastructure are very limited. This means that it is impossible to keep all elements of the wind farm away from heritage items. Nonetheless, this does not negate the fact that impacts to heritage items can be minimised and/or mitigated against (see below).

Discussion of how the proposal respects or enhances the heritage significance of the item; which aspects of the proposal could detrimentally impact on heritage significance; measures taken to mitigate impacts and where appropriate, reasons why other sympathetic solutions have been considered and discounted:

As discussed in the body of this report (Section 13), it is recommended that heritage item SU191/HS2 (building platform with potential archaeological deposit) be avoided or be the subject of salvage excavation with appropriate archival recording and artefact analysis. Specifically, it is recommended that all impacts within 20m of this recording be avoided, which would act to ensure that an appropriate curtilage is established. Given that the item in question is assessed to be significant due to its role in local history (criterion a), its research potential (criterion e) and, to a lesser extent its importance to the local community as part of the pastoral/mining heritage of the region (criterion d), its heritage significance is best protected through ensuring that the surviving physical remains are preserved. This is what would be achieved through avoidance of direct impacts.

Specific impacts in the area where this heritage item is located might entail installation of wind turbines, unsealed roads and electrical connections between wind turbines using a combination of underground cable and overhead power lines.

Issues surrounding visual impacts have been addressed in Section 13 of the accompanying report, where it is noted that the heritage significance of this item does not lie in aesthetic values and so the changes in visual character of the surrounding landscape are not directly applicable to heritage impacts. It should however be noted that a broader consideration of heritage impacts to the landscape of the Barrier Ranges and mitigation in the form of a comprehensive research project are also dealt with in Section 13.

In the event that all construction works are kept at least 20m from SU191/HS2 there would be minimal heritage impacts, i.e. there would be no direct physical impacts and it would not materially affect the historic significance, research potential or potential social significance of the item. This would be ensured through an in the field identification of the heritage item to the proponent and their contractors along with advice on implementation of practical mitigation strategies (i.e. how to avoid the item). Furthermore, it is worth noting that this heritage item and the proposed development fit within a theme of landuse centred on exploitation of natural resources. It can thus be argued that the proposed development is largely compatible with the heritage and is complementary to the existing history of the local area.

In the event that avoidance of impacts proves unfeasible, the heritage impacts to SU191/HS2 would be high; the proposed development would in that case result in partial or complete destruction of the heritage item. If this were the case then mitigation would take the form of salvage excavation and archival recording of the item prior to commencement of construction works. In this way the research potential of the heritage item would be respected through appropriate levels of archaeological analysis and accompanying historical research that would add to the knowledge base for the history and heritage of the local area, thus mitigating impacts to historic and social significance and research potential through contribution of information to the broader history and heritage of the local area.

With regard to the heritage item's place in a broader landscape that has heritage value it should be noted that recommendations have been made for a comprehensive research project on the Aboriginal and Non Indigenous history and heritage of the area. Primary objectives of such a study would be to fill in the gaps in the existing history of mining for the region and compilation of a more complete record of heritage items in the Barrier Ranges. This would in turn aid in conservation of heritage values across the landscape, which would serve as a considerable mitigation of any impacts to that landscape. Indeed, a study of this nature would provide a broader historical context and potentially new levels of meaning and interpretation for all identified heritage items.

Attachments:

Dibden, J. 2008 *Silverton Wind Farm NSW: Indigenous and Non Indigenous Heritage Assessment*. Report to nghenvironmental on behalf of Silverton Wind Farm Developments.

Statement of heritage impact for Lake's Grave

Date: 18th March 2008

Reference: *Lake's Grave*. Item is not currently listed on any of the statutory registers.

This statement forms part of the Environmental Assessment for the proposed Silverton Wind Farm Stage 1 project area. The proposed impact area is situated in the Barrier Ranges and is located north of Silverton.

The Stage 1 proposal will involve the construction, operation and eventual decommissioning of a wind farm with capacity of up to 400MW (all stages would be 1000MW). The Stage 1 proposal includes the following components:

- Up to 150 wind turbines;
- Electrical connections between wind turbines using a combination of underground cable and overhead power lines;
- An onsite substation and control room;
- 25 km transmission 220kV power line linking the wind farm to the Transgrid sub station at Broken Hill;
- Access roads around the site, and upgrades of the Silverton and Daydream Mine roads, for installation and maintenance of wind turbines.

Additional temporary construction infrastructure will be required during the construction and decommissioning phases such as concrete batching plant, storage of construction machinery, equipment and materials, site offices.

Address and property description:
Nine Mile Station, access off Day Dream Mine Road
For further details refer to Site Gazetteer in Appendix 4.

Prepared by:
New South Wales Archaeology Pty Limited
PO Box 2135 Central Tilba NSW 2546
Ph/fax 02 44737947 mob. 0427074901
julie@nswarchaeology.com.au

For:
Silverton Wind Farm Developments
Level 11, 75 Miller St
North Sydney
NSW 2060

Why is the new development required to be adjacent to a heritage item?
Given the extent of human activities and the concomitant extensive physical evidence of those activities across the Barrier Ranges and, given that wind farms are by nature built on a large scale, it is unavoidable that some elements of the Silverton Wind Farm infrastructure will be located adjacent to heritage items. This means that it is impossible to keep all elements of the wind farm away from heritage items. Nonetheless, this does not negate the fact that impacts to heritage items can be minimised and/or mitigated against (see below).

Discussion of how the proposal respects or enhances the heritage significance of the item; which aspects of the proposal could detrimentally impact on heritage significance; measures taken to mitigate impacts and where appropriate, reasons why other sympathetic solutions have been considered and discounted:

As discussed in the body of this report (Section 13), it is recommended that Lake's Grave be conserved. Specifically, it is recommended that all impacts within 10m of this recording be avoided, which would act to ensure that an appropriate curtilage is established. Given that the item in question is assessed to be significant due to its role in local history (criterion a), strong association with an individual of local importance (criterion b) its research potential (criterion e) and, to a lesser extent its rarity (criterion f) and importance to the local community as part of the pastoral/pioneer heritage of the region (criterion d), its heritage significance is best protected through ensuring that the surviving physical remains are preserved. This is what would be achieved through avoidance of direct impacts.

This heritage item is located outside areas of proposed impacts for Stage 1 and as such it is likely that the proposed development could go ahead without directly impacting this heritage item and any associated archaeological deposits.

Issues surrounding visual impacts have been addressed in Section 13 of the accompanying report, where it is noted that the heritage significance of this item does not lie in aesthetic values and so the changes in visual character of the surrounding landscape are not directly applicable to heritage impacts. It should however be noted that a broader consideration of heritage impacts to the landscape of the Barrier Ranges and mitigation in the form of a comprehensive research project are also dealt with in Section 13.

In the event that all construction works are kept at least 10m from Lake's Grave there would be minimal heritage impacts, i.e. there would be no direct physical impacts and it would not materially affect the historic significance, research potential, rarity or potential social significance of the item. This would be ensured through an in the field identification of the heritage item to the proponent and their contractors along with advice on implementation of practical mitigation strategies (i.e. how to avoid the item).

With regard to the heritage item's place in a broader landscape that has heritage value it should be noted that recommendations have been made for a comprehensive research project on the Aboriginal and Non Indigenous history and heritage of the area. Primary objectives of such a study would be to fill in the gaps in the existing history of mining for the region and compilation of a more complete record of heritage items in the Barrier Ranges. This would in turn aid in conservation of heritage values across the landscape, which would serve as a considerable mitigation of any impacts to that landscape. Indeed, a study of this nature would provide a broader historical context and potentially new levels of meaning and interpretation for all identified heritage items.

Attachments:

Dibden, J. 2008 *Silverton Wind Farm NSW: Indigenous and Non Indigenous Heritage Assessment*. Report to nghenvironmental on behalf of Silverton Wind Farm Developments.

References:

The Barrier Silver and Tin Fields in 1888; being a series of letters written by a special correspondent of "The South Australian Register", "Adelaide Observer", and "Evening Journal", and reprinted from those papers. Adelaide, W. K. Thomas & Co., 1888

Statement of heritage impact for Stone Ruins

Date: 18th March 2008

Reference: *Stone Ruins*. Item is not currently listed on any of the statutory registers.

This statement forms part of the Environmental Assessment for the proposed Silverton Wind Farm Stage 1 project area. The proposed impact area is situated in the Barrier Ranges and is located north of Silverton.

The Stage 1 proposal will involve the construction, operation and eventual decommissioning of a wind farm with capacity of up to 400MW (all stages would be 1000MW). The Stage 1 proposal includes the following components:

- Up to 150 wind turbines;
- Electrical connections between wind turbines using a combination of underground cable and overhead power lines;
- An onsite substation and control room;
- 25 km transmission 220kV power line linking the wind farm to the Transgrid sub station at Broken Hill;
- Access roads around the site, and upgrades of the Silverton and Daydream Mine roads, for installation and maintenance of wind turbines.

Additional temporary construction infrastructure will be required during the construction and decommissioning phases such as concrete batching plant, storage of construction machinery, equipment and materials, site offices.

Address and property description:
Nine Mile Station, access off Day Dream Mine Road
For further details refer to Site Gazetteer in Appendix 4.

Prepared by:
New South Wales Archaeology Pty Limited
PO Box 2135 Central Tilba NSW 2546
Ph/fax 02 44737947 mob. 0427074901
julie@nswarchaeology.com.au

For:
Silverton Wind Farm Developments
Level 11, 75 Miller St
North Sydney
NSW 2060

Why is the new development required to be adjacent to a heritage item?
Given the extent of human activities and the concomitant extensive physical evidence of those activities across the Barrier Ranges and, given that wind farms are by nature built on a large scale, it is unavoidable that some elements of the Silverton Wind Farm infrastructure will be located adjacent to heritage items. This means that it is impossible to keep all elements of the wind farm away from heritage items. Nonetheless, this does not negate the fact that impacts to heritage items can be minimised and/or mitigated against (see below).

Discussion of how the proposal respects or enhances the heritage significance of the item; which aspects of the proposal could detrimentally impact on heritage significance; measures taken to mitigate impacts and where appropriate, reasons why other sympathetic solutions have been considered and discounted:

As discussed in the body of this report (Section 13), it is recommended that the Stone Ruins heritage item be avoided or be the subject of salvage excavation with appropriate archival recording and artefact analysis. Specifically, it is recommended that all impacts within 50m of this recording be avoided, which would act to ensure that an appropriate curtilage is established for all potential archaeological deposits associated with the ruins. Given that the item in question is assessed to be significant due to its role in local history (criterion a), its research potential (criterion e) and, to a lesser extent its importance to the local community as part of the pastoral/transport heritage of the region (criterion d), its heritage significance is best protected through ensuring that the surviving physical remains are preserved. This is what would be achieved through avoidance of direct impacts.

This heritage item is located outside areas of proposed impacts for Stage 1 and as such it is likely that the proposed development could go ahead without directly impacting the archaeological deposits in and around this item.

Issues surrounding visual impacts have been addressed in Section 13 of the accompanying report, where it is noted that the heritage significance of this item does not lie in aesthetic values and so the changes in visual character of the surrounding landscape are not directly applicable to heritage impacts. It should however be noted that a broader consideration of heritage impacts to the landscape of the Barrier Ranges and mitigation in the form of a comprehensive research project are also dealt with in Section 13.

In the event that all construction works are kept at least 50m from the Stone Ruins there would be minimal heritage impacts, i.e. there would be no direct physical impacts and it would not materially affect the historic significance, research potential or potential social significance of the item. This would be ensured through an in the field identification of the heritage item to the proponent and their contractors along with advice on implementation of practical mitigation strategies (i.e. how to avoid the item). It should also be noted that this item is not located in an area of proposed impacts and as such it is very unlikely that impacts will take place in the vicinity of this recording.

In the unlikely event that avoidance of impacts proves unfeasible, the heritage impacts to the Stone Ruins would be high; the proposed development would in that case result in partial or complete destruction of the heritage item. If this were the case then mitigation would take the form of salvage excavation and archival recording of the item prior to commencement of construction works. In this way the research potential of the heritage item would be respected through appropriate levels of archaeological analysis and accompanying historical research that would add to the knowledge base for the history and heritage of the local area, thus mitigating impacts to historic and social significance and research potential through contribution of information to the broader history and heritage of the local area.

With regard to the heritage item's place in a broader landscape that has heritage value it should be noted that recommendations have been made for a comprehensive research project on the Aboriginal and Non Indigenous history and heritage of the area. Primary objectives of such a study would be to fill in the gaps in the existing history of mining for the region and compilation of a more complete record of heritage items in the Barrier Ranges. This would in turn aid in conservation of heritage values across the landscape, which would serve as a considerable mitigation of any impacts to that landscape. Indeed, a study of this nature would provide a broader historical context and potentially new levels of meaning and interpretation for all identified heritage items.

Attachments:

Dibden, J.2008 *Silverton Wind Farm NSW: Indigenous and Non Indigenous Heritage Assessment*. Report to nghenvironmental on behalf of Silverton Wind Farm Developments.

Statement of heritage impact for Zinc sintering works, Corruga

Date: 18th March 2008

Reference: *Zinc sintering works*. Item is not currently listed on any of the statutory registers.

This statement forms part of the Environmental Assessment for the proposed Silverton Wind Farm Stage 1 project area. The proposed impact area is situated in the Barrier Ranges and is located north of Silverton.

The Stage 1 proposal will involve the construction, operation and eventual decommissioning of a wind farm with capacity of up to 400MW (all stages would be 1000MW). The Stage 1 proposal includes the following components:

- Up to 150 wind turbines;
- Electrical connections between wind turbines using a combination of underground cable and overhead power lines;
- An onsite substation and control room;
- 25 km transmission 220kV power line linking the wind farm to the Transgrid sub station at Broken Hill;
- Access roads around the site, and upgrades of the Silverton and Daydream Mine roads, for installation and maintenance of wind turbines.

Additional temporary construction infrastructure will be required during the construction and decommissioning phases such as concrete batching plant, storage of construction machinery, equipment and materials, site offices.

Address and property description:
Limestone Station, just north of Silverton Tramway at Corruga.
Shown on Broken Hill 1:100,000 map by a quarry symbol.
For further details refer to Site Gazetteer in Appendix 4.

Prepared by:
New South Wales Archaeology Pty Limited
PO Box 2135 Central Tilba NSW 2546
Ph/fax 02 44737947 mob. 0427074901
julie@nswarchaeology.com.au

For:
Silverton Wind Farm Developments
Level 11, 75 Miller St
North Sydney
NSW 2060

Why is the new development required to be adjacent to a heritage item?
Given the extent of human activities and the concomitant extensive physical evidence of those activities across the Barrier Ranges and, given that wind farms are by nature built on a large scale, it is unavoidable that some elements of the Silverton Wind Farm infrastructure will be located adjacent to heritage items. This means that it is impossible to keep all elements of the wind farm away from heritage items. Nonetheless, this does not negate the fact that impacts to heritage items can be minimised and/or mitigated against (see below).

Discussion of how the proposal respects or enhances the heritage significance of the item; which aspects of the proposal could detrimentally impact on heritage significance; measures taken to mitigate impacts and where appropriate, reasons why other sympathetic solutions have been considered and discounted:

As discussed in the body of this report (Section 13), it is recommended that the Zinc sintering works at Corruga be avoided or be the subject of salvage excavation with appropriate archival recording and artefact analysis. Specifically, it is recommended that the visual impacts minimised route for the overhead transmission line be adopted in order to ensure that impacts to the site are avoided. This would mean that no impacts would take place within the 300m x 800m curtilage described by Hope (2006). Given that the item in question is assessed to be significant due to its role in local history (criterion a), the unusual use of pre-industrial technological processes (criterion c), its research potential (criterion e), rarity at local and potentially state levels (criterion f) and corresponding representativeness of zinc sintering works (criterion g) its heritage significance is best protected through ensuring that the surviving physical remains are preserved. This is what would be achieved through avoidance of direct impacts.

Specific impacts in the area where this heritage item is located might entail installation of 220kV overhead power line linking the wind farm to the Transgrid sub station at Broken Hill. It should be noted that there are two options for the route of this transmission line, one of which is a *visual impacts minimised* option that also avoids this heritage item.

Issues surrounding visual impacts have been addressed in Section 13 of the accompanying report, where it is noted that the heritage significance of this item does not lie in aesthetic values and so the changes in visual character of the surrounding landscape are not directly applicable to heritage impacts. It should however be noted that a broader consideration of heritage impacts to the landscape of the Barrier Ranges and mitigation in the form of a comprehensive research project are also dealt with in Section 13.

In the event that the *visual impacts minimised* route is adopted all construction works would be approximately 1km to the east of the sintering works which would ensure that there would be minimal heritage impacts, i.e. there would be no direct physical impacts within the curtilage of the site. As such there would be no material affect on the historic significance, technological significance, rarity, representativeness or research potential of the item.

In the event that the *initial* route is adopted for the transmission line it would, given the extent of the heritage items curtilage, essentially be impossible to avoid direct impacts to the sintering works. The heritage impacts would be accordingly high; the proposed development would in that case result in destruction of elements of the heritage item. If this were the case then mitigation would be necessary in the form of salvage excavation and archival recording of the item prior to commencement of construction works. In this way the research potential of the heritage item would be respected through appropriate levels of archaeological analysis and accompanying historical research that would add to the knowledge base for the history and heritage of mining and the zinc sintering process, thus mitigating impacts to historic and social technological significance and research potential through contribution of information to the broader history and heritage of the local area.

With regard to the heritage item's place in a broader landscape that has heritage value it should be noted that recommendations have been made for a comprehensive research project on the Aboriginal and Non Indigenous history and heritage of the area. Primary objectives of such a study would be to fill in the gaps in the existing history of mining for the region and compilation of a more complete record of heritage items in the Barrier Ranges. This would in turn aid in conservation of heritage values across the landscape, which would serve as a considerable mitigation of any impacts to that landscape. Indeed, a study of this nature would provide a broader historical context and potentially new levels of meaning and interpretation for all identified heritage items.

Attachments:

Dibden, J. 2008 *Silverton Wind Farm NSW: Indigenous and Non Indigenous Heritage Assessment*. Report to nghenvironmental on behalf of Silverton Wind Farm Developments.

References:

Hope, J. H. 2006 *The Unincorporated Area of New South Wales A Heritage Study*. A Report for the Department of Natural Resources and the Heritage Office of NSW 2006.

Statement of heritage impact for Silverton Tramway

Date: 18th March 2008

Reference: *Silverton Tramway*. Item is not currently listed on any of the statutory registers.

This statement forms part of the Environmental Assessment for the proposed Silverton Wind Farm Stage 1 project area. The proposed impact area is situated in the Barrier Ranges and is located north of Silverton.

The Stage 1 proposal will involve the construction, operation and eventual decommissioning of a wind farm with capacity of up to 400MW (all stages would be 1000MW). The Stage 1 proposal includes the following components:

- Up to 150 wind turbines;
- Electrical connections between wind turbines using a combination of underground cable and overhead power lines;
- An onsite substation and control room;
- 25 km transmission 220kV power line linking the wind farm to the Transgrid sub station at Broken Hill;
- Access roads around the site, and upgrades of the Silverton and Daydream Mine roads, for installation and maintenance of wind turbines.

Additional temporary construction infrastructure will be required during the construction and decommissioning phases such as concrete batching plant, storage of construction machinery, equipment and materials, site offices.

Address and property description:
Extends westwards from Broken Hill running roughly parallel and to the south of the Silverton Road
For further details refer to Site Gazetteer in Appendix 4.

Prepared by:
New South Wales Archaeology Pty Limited
PO Box 2135 Central Tilba NSW 2546
Ph/fax 02 44737947 mob. 0427074901
julie@nswarchaeology.com.au

For:
Silverton Wind Farm Developments
Level 11, 75 Miller St
North Sydney
NSW 2060

Why is the new development required to be adjacent to a heritage item?
Given the extent of human activities and the concomitant extensive physical evidence of those activities across the Barrier Ranges and, given that wind farms are by nature built on a large scale, it is unavoidable that some elements of the Silverton Wind Farm infrastructure will be located adjacent to heritage items. This means that it is impossible to keep all elements of the wind farm away from heritage items. Nonetheless, this does not negate the fact that impacts to heritage items can be minimised and/or mitigated against (see below).

Discussion of how the proposal respects or enhances the heritage significance of the item; which aspects of the proposal could detrimentally impact on heritage significance; measures taken to mitigate impacts and where appropriate, reasons why other sympathetic solutions have been considered and discounted:

As discussed in the body of this report (Section 13), it is recommended that the Silverton Tramway be conserved. Specifically, it is recommended that all impacts within 30m of the Silverton Tramway permanent way be avoided, which would act to ensure that an appropriate curtilage is established. Given that the item in question is assessed to have heritage significance due to its direct association with the Silverton Tramway Company (criterion b), the role it has played in the development of Broken Hill (criterion a), its uniqueness as a private railway linking two states (criterion f) and, as an item that is well preserved and associated with a wide array of other heritage items with research potential (criterion e), its heritage significance is best protected through ensuring that the surviving physical remains are preserved. This is what would be achieved through avoidance of direct impacts.

Specific impacts in the area where this heritage item is located would entail installation of 220kV overhead power line linking the wind farm to the Transgrid sub station at Broken Hill. It should be noted that there are two options for the route of this transmission line, one of which is a *visual impacts minimised* option that would also

avoid the associated zinc sintering works. Given the nature of the Silverton Tramway (effectively a long relatively narrow corridor) and the nature of proposed impacts (installation of overhead power line masts) it should be possible to install the necessary infrastructure without directly impacting the heritage item.

In the event that the *initial* route rather than the *visual impacts minimised* route was adopted for the transmission line there would be high heritage impacts to the zinc sintering works and rail siding, which are closely associated with the Silverton Tramway. This would then result in negative impacts to the overall heritage of the tramway, as it would effectively mean destruction of elements of the historical and geographical context of the Silverton Tramway. This would impact the research potential of the heritage item and could thus be mitigated through the recommended salvage excavation and archival recording at the sintering works. It would not however materially affect historic significance, historic associations, rarity, or representativeness of the Silverton Tramway.

Issues surrounding visual impacts have been addressed in Section 13 of the accompanying report, where it is noted that the heritage significance of this item does not lie in aesthetic values and so the changes in visual character of the surrounding landscape are not directly applicable to heritage impacts. It should however be noted that a broader consideration of heritage impacts to the landscape of the Barrier Ranges and mitigation in the form of a comprehensive research project are also dealt with in Section 13.

Given that all construction works are to be kept at least 30m from the Silverton Tramway permanent way there would be minimal heritage impacts, i.e. there would be no direct physical impacts and it would not materially affect the historic significance, historic associations, rarity or research potential of the item. This would be ensured through an in the field identification of the heritage item to the proponent and their contractors along with advice on implementation of practical mitigation strategies (i.e. how to avoid the item). So while the tramway is assessed to be of state, and potentially national significance, the heritage impacts associated with the proposed development are minor and even in terms of visual aspects would only impact a very small section of a feature that extends around 50km. Furthermore the impacts would not be in an area where the public commonly view the tramway.

With regard to the heritage item's place in a broader landscape that has heritage value it should be noted that recommendations have been made for a comprehensive research project on the Aboriginal and Non Indigenous history and heritage of the area. Primary objectives of such a study would be to fill in the gaps in the existing history of mining for the region and compilation of a more complete record of heritage items in the Barrier Ranges. This would in turn aid in conservation of heritage values across the landscape, which would serve as a considerable mitigation of any impacts to that landscape. Indeed, a study of this nature would provide a broader historical context and potentially new levels of meaning and interpretation for all identified heritage items.

Attachments:

Dibden, J. 2008 *Silverton Wind Farm NSW: Indigenous and Non Indigenous Heritage Assessment*. Report to nghenvironmental on behalf of Silverton Wind Farm Developments.

References:

Hope, J. H. 2006 *The Unincorporated Area of New South Wales A Heritage Study*. A Report for the Department of Natural Resources and the Heritage Office of NSW 2006.

The Barrier Silver and Tin Fields in 1888; being a series of letters written by a special correspondent of "The South Australian Register", "Adelaide Observer", and "Evening Journal", and reprinted from those papers. Adelaide, W. K. Thomas & Co., 1888