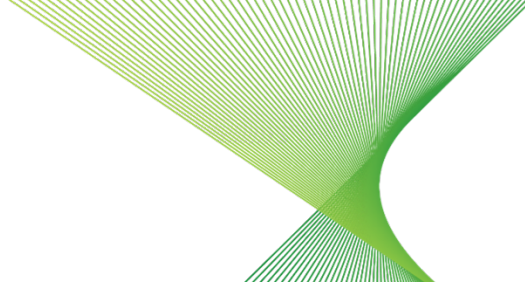


Waste Management of Timber Poles

CONTROLLED DOCUMENT



Summary					
This work instruction details the mandatory requirements for the management of redundant timber poles from both construction and maintenance activities.					
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Process owner:	Head of Health, Safety and Environment				
Author:	Brad Parker, Environment Business Partner				
EM approval:	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Reviewers:	Luke Fania, Environment Manager Megan Calvert, HSE Systems Manager David Donehue, Senior Sustainability and Environment Manager Nicole Howard, Senior Legal Counsel				
Approver:	Krista-Lee Fogarty, Head of HSE				

A printed copy of this document may not be the current version. Please refer to the Wire to verify the current version.

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1. Purpose

This work instruction relates to the management of redundant timber poles that are generated as a result of maintenance defect work or from transmission line augmentation projects. The document outlines the mandatory requirements on the appropriate handling, transport and disposal of redundant timber poles. Appendix A summarises the key decision steps in the process.

2. Scope

This work instruction covers the following key area:

- Safety Requirements;
- Waste classification;
- Removal and handling;
- Transport;
- Storage;
- Disposal Options; and
- Records and documentation.

3. Definitions

Term	Definition
CEMP	Construction Environmental Management Plan
Gifting	The process whereby redundant timber poles are provided free of charge to property owners for reuse on their properties (e.g. for fence posting).
NATA	National Association of Testing Authorities
OEH	Office of Environment & Heritage

4. Safety Requirements

Irrespective of whether redundant timber poles are to be recycled through a third party company, gifted to a local landholder or disposed to landfill, the safety of personnel involved in the handling and management of poles on site is of primary importance. The delivery, handling and storage of poles shall be undertaken in accordance with the following:

Workers who are involved in the delivery and storage of poles on site must ensure:

- Planning for work identifies and documents the delivery area and final lay down position of all poles to limit the onsite movements – A register of pole delivery should be used to record all relevant information.

- The plant used is fit for purpose to navigate the terrain within the limitations of the plant and the load (pole). This includes the transport, movement and plant to perform the final lift. This should be assessed as part of the worksite risk assessment required as part of the mobile plant procedure.
- Poles are left in a secure manner and placed on the approved bearers and chocks as per the attached documents
- Where required appropriate methods to segregate from public and livestock are used.

Approved method of chocking and securing poles on site:

Poles must be placed on bearers and chocked using approved design drawing. Refer to the drawing in Appendix B.

Each project/maintenance team will need to source the F17 hardwood for the bearers, treated pine for the wedges and hardware as part of normal project/job establishment and planning process. The manufacture of the chocks will be the responsibility of the respective teams to deliver. At this stage, the components and materials will be sourced and purchased locally.

Where this method cannot be utilised, an alternate approved engineering method for the prevention of uncontrolled movements of poles shall be sought

Bearing Plate

For soils having a minimum sphere-bearing value (SBV) of 150kPa (assumed 200kPa for 2-way bending) a single 200Wx75Tx1200L bearing plate each end can support a 7.2T pole. The plate needs to have a stress rating of F17 or higher. If the pole is 1200 diameter then a 1600 long bearer is required.

The chocks should have wedging characteristics and prevent rolling, a chock of 32 degrees (5H:8L) cut out of a min 150H x 75W Ironwood sleeper as shown on the accompanying sketch drawing 17S027-SK1. The bracing angle can be a 90x90x5EA x 35 wide fixed with 2 #14 x 50mm wood screws to the chock and 2 #14 x 50mm wood screws to the bearer. If there is a likelihood of the toes meeting and wedge action compromised, then the chocks can be offset on the bearing plate.

Pole weight on soils having a SBV of 150kPa, a single bearing plate and set of chocks each end is adequate for poles weighing up to 7.2T. For pole weights of more than 7.2T (up to 12T) then two bearing plates and 2 sets of chocks are required each end. For poor bearing soils having SBV of say 50kPa then a single bearing plate and set of chocks each end is adequate for a 3.6T pole. For a 7.2T pole, two plates and one set of chocks each end are required. For a 12T pole, 3 bearing plates and 2 sets of chocks each end are required. We recommend the plates be stacked 2 high to account for settlement.

Allowable slope along pole

The poles bear on the bearing plate and the chocks are wedged in place so movement is resisted by friction of the pole/bearer and wedge/bearer.

For single plates and chocks each end and a 7T pole the slope should not exceed 3 degrees (5%), allowable slope at right angles to the pole. The angle bracket and two #14 wood screws can resist a lateral load of 2kN. For a 7T pole the allowable slope is 3 degree (5%). The 12T pole has at least 2 sets of bearers and chocks so maximum 3 degrees still applies. Turning should not affect this slope limitation.

Slopes exceeding the maximum

This relates to slopes at right angles to the pole.

We recommend that the soils under the footprint of the bearers should be levelled to 0 to -3 degrees 5%, to receive the bearer.

The bearers can be stacked to 3 high maximum to allow clearance of the pole.

Note: 5% is 50mm fall for every 1 metre of distance between the bearers. The use of a string level and ruler or laser level can assist with this calculation.

Warning - Ironwood Classic Sleepers. CHH advise that they do not have a stress rating and cannot be used for this purpose. Bearers currently in use, that do not meet the minimum standard of hardwood F17, shall be replaced as soon as practicable

5. Waste Classification

Electricity Poles are generally classified as General Solid Waste (GSW) provided they are High Temperature Creosote (HTC), Pigment Emulsified Creosote (PEC), Copper Chrome Arsenate (CCA), or Natural Round Poles, and have not been treated with other substances which may exceed EPA limits and change this classification, such as lead paint or organochlorides.

Pole butts shall be classified and disposed of as GSW provided they meet the conditions of the EPA General Immobilisation Approval (<http://www.epa.nsw.gov.au/wasteregulation/list-gen-immob-approvals.htm>), however they shall be subject to targeted or representative sampling to confirm classification. For specific sampling requirements for timber poles refer to Appendix C. For an example of the form letter to be sent to a laboratory requesting analysis of pole shaving samples refer to Appendix D.

6. Removal and Handling

When a pole is being removed and/or replaced the following or their equivalent shall be carried out:

- Remove the whole pole intact (including the butt, if possible) using approved lifting/jacking methods. Brush any loose soil material from the pole butt into the hole. Poles may be cut into appropriate lengths based on project specific transport, disposal or safety requirements.
- Where there is a continuing risk of exposure to staff or the public or where there is a risk that contaminants may escape or leach from the contaminated sections of the pole during transport/storage, wrap the pole butt in geofabric or similar material.
- Once the pole has been removed the empty pole hole can be backfilled with the excavated contaminated soil ensuring that it is placed at the bottom of the hole. Ensure that clean fill is used for the top layer, to a minimum depth of 1 metre and mound the fill higher than the surrounding area.

7. Transport

Where the poles are to be reused by Transgrid and are to be transported back to a Transgrid Depot for storage, then the Transgrid vehicles and drivers are required to be appropriately licenced for that purpose.

For disposal of the redundant timber poles as GSW at a Licenced Landfill, the following process shall be followed:

- Vehicles shall be appropriately licenced to transport the material and the butt of the pole shall be appropriately wrapped to ensure that there is no loss of contaminated material during transport.
- The waste facility shall be contacted prior to transport and written confirmation received they will accept the waste load. Any specific requirements from the waste facility shall also be met.
- Complete an External Goods Receipt.

8. Storage

Poles or butts can only be stored temporarily pending collection and disposal as per the requirements below. In all circumstances poles shall be stored in accordance with the Section 4.

Where there is a risk to the environment e.g. poles are not covered during transport, or they are stored in an unsecured or uncontained location for more than a week, measures to ensure that contaminants do not escape or leach from the contaminated sections of the pole must be put in place. For example, wrapping the contaminated section of the pole in geofabric material.

- They shall be stored away from public access; and
- Stored well away from drains and watercourses, and other sensitive areas.

9. Disposal Options

In keeping with the waste hierarchy in the Waste Management procedure, the reuse or recycling of poles is the preferred option for redundant poles. If the reuse of poles is an option, the poles shall be delivered back to the depot and stored in the designated pole storage area.

If pursuing the recycling option, check current contract arrangements. Refer to Appendix E for current requirements for recycling. The recycler is to take the whole pole (including pole butt) if possible. Also review the Protocols for Recycling Redundant Utility Poles and Bridge Timbers (<https://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/business-government-recycling/what-can-business-recycle/timber-waste>).

The gifting of poles to landholders is also a valid recycling option (as long as the requirements of Section 4 can be met). Where landholders have expressed an interest in claiming the poles, only the pole tops are to be gifted. To address the legal liability issues surrounding the gifting of poles, the landholder must sign the waiver letter, acknowledging the acceptance of the risks and the reuse requirements associated with the poles. A copy of the waiver letter must be retained for record keeping (refer to Appendix F for the form letter used for this purpose).

With respect to all the disposal options described above, pole butts shall not be gifted or recycled and shall be disposed of as GSW to a waste facility licenced to accept them. In regional areas of NSW, there will be limitations on what facilities will be licensed to accept this waste. Landfills are required to have their

containment cells lined with an impermeable barrier and with a leachate monitoring system in place before they can accept General Solid Waste.

For the disposal of redundant poles as waste if unsuitable for reuse or recycling (e.g. termite infested, severely damaged or burnt), it shall be cut into manageable lengths and disposed of at a facility licenced to accept this type of waste (General Solid Waste). The facility must have a containment cells lined with an impermeable barrier and with a leachate monitoring system in place (see the requirements in the General Immobilisation Approval).

If pole butts are to be left in the ground, on the basis that removal or disposal is difficult or costly, then the poles shall be cut off at a minimum of 300mm below ground level and properly covered by soil. The landholder shall also be notified of this decision.

10. Records and Documentation

All waste movements shall be registered using Transgrid's corporate reporting system CAMMS. This system provides a standardised process to ensure all legislative requirements are met when managing waste material as well as providing greater oversight of Transgrid's waste streams. Waste can be registered in CAMMS either as a single disposal event, a periodic upload (i.e. monthly waste disposal).

All documentation associated with the movement of waste is to be uploaded into CAMMS. This includes, but not limited to, the following:

- Copies of the External Goods Receipt and completed Waste Data Form shall be retained for audit purposes by the Works Leader Mains or the relevant Site Manager Construction.
- The original signed Environmental Moderate Risk Checklist (for maintenance related pole disposal/recycling/reuse); or CEMP for construction project related pole disposal/recycling/reuse.
- A copy of the signed letter from the Landholder for any poles that are gifted.
- Any correspondence from a Waste Disposal Facility
- Any NATA laboratory results (if obtained).

If you have any issues or concerns with recording these records in CAMMS, please speak with your Environment Business Partner.

11. Monitoring and review

This work instruction will be reviewed every three years in accordance with the requirements of the Document and Records Management procedure.

HSE to include Legal as a reviewer of the 'Waste Management of Timber Poles' Work Instruction so that the letter is included in the minimum three year review cycle.

12. Change history

Revision no	Approved by	Amendment
0	Michael Gatt, EM, Works Delivery	Nil – first issue
1	Krista-Lee Fogarty, Head of HSE	<ul style="list-style-type: none"> Section 12 - Inclusion of reference to form 'Notice to Landholders – Gifting of timber poles' Minor typographic errors fixed.
2	Krista-Lee Fogarty, Head of HSE	<ul style="list-style-type: none"> Inclusion of requirements to track waste in CAMMS Section 11 – Inclusion of requirement for Legal to be involved in the review of the work instruction. Appendix F – Notice to Landholder – Gifting of Poles updated Work instruction updated to new template

13. References

- Protection of the Environment Operations Act 1997
- NSW EPA Waste Classification Guidelines
- Protocols for recycling redundant utility poles and bridge timbers in New South Wales
- General immobilisation Approval for Copper Chrome Arsenate (CCA) treated timber waste
- General Immobilisation Approval for Creosote Treated Timber Waste
- Notice to Landholders – Gifting of timber poles form (D2021/00951)

14. Attachments

Appendix A – Flow Chart for decision making steps in pole disposal/recycling/reuse

Appendix B – Typical Pole Chocking Details

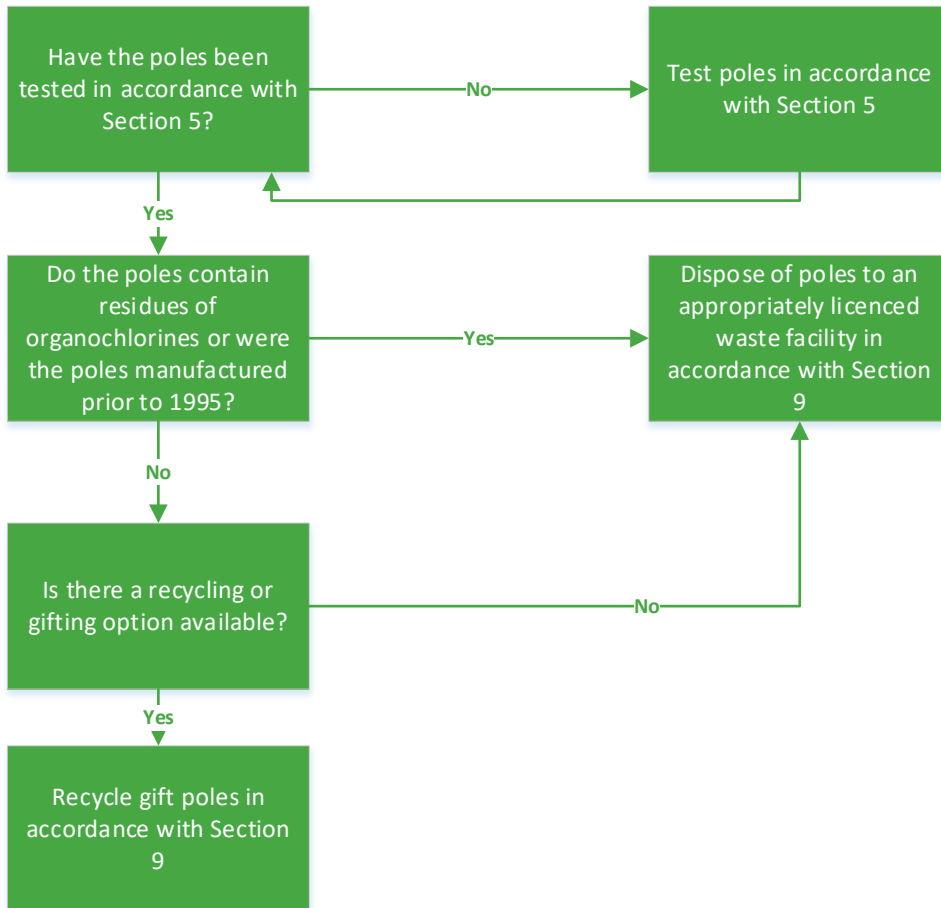
Appendix C – Sampling Requirements

Appendix D – Example form of letter to be sent to laboratory

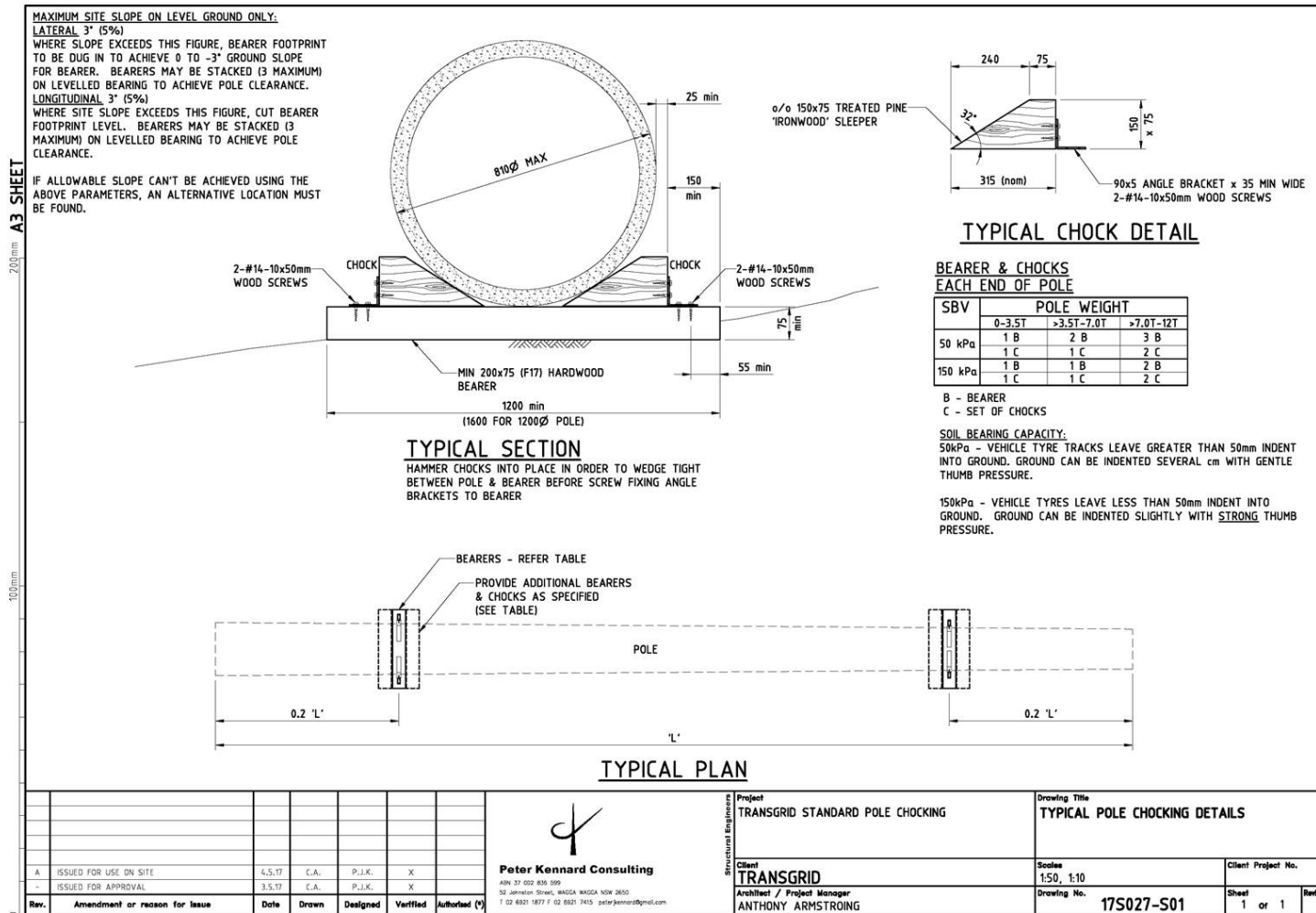
Appendix E – Requirements if recycling

Appendix F – Notice to Landholder – Gifting of Timber Poles

Appendix A - Flow Chart for decision making steps in pole disposal/recycling/reuse



Appendix B Typical Pole Chocking Details



(* Unless there is an authorised signature of *, this drawing is not authorised for issue. / Copyright: This drawing remains the property of Peter Kennard Consulting. It may only be used for the purpose for which it was commissioned & in accordance with the terms of engagement for that commission. Unauthorised use of this drawing is prohibited.



Appendix C - Sampling requirements

Targeted testing and analysis of timber poles destined for recycling/reuse/disposal shall be done as follows:

- Representative samples eg. approx. 10% of the population depending on number of poles, variation in landscape or knowledge/records of past treatment. Samples from the contaminated sections of the pole (i.e. butt). If historic records indicate that a section of line has been treated differently to other sections, then representative samples shall also be taken of poles in this area.
 - Variation from the above, must be done in consultation with the Environment Manager.
- Collecting of the samples. The preferred option is to obtain a sample using a drill (eg 16mm to a depth of 75 mm into the contaminated portion of the pole butt). A less desirable option is to take a sample using a hand held planer. Samples can be placed into a zip lock plastic bag.
- Each sample is required to be in the order of 50 g in size. This roughly equates to a 250 ml laboratory glass sampling jar “stuffed full” with shavings. All samples need to be clearly labelled, indicating the date of sampling, the transmission line, the unique pole identifier that the sample was taken from and the person who took the sample.
- Send the samples to a NATA certified laboratory for analysis for a suite of potential contaminants, as listed in the General Approval for Immobilisation. If detailed maintenance/chemical application records are available, some refinement to the analysis scope could apply as other contaminants may be present.

Results are required to be compared and classified by an appropriately qualified person. Contact your Environmental Business Partner for assistance.

Appendix D - Example form of letter to be sent to laboratory



ABN 70 250 995 390

Yass

Perry Street
PO Box 139 Yass
NSW 2502 Australia
T (02) 6226 9666
F (02) 6226 9603

Samples received
Envirolab
12 Ashley Street
Chatswood, NSW, 2067

Dear Envirolab

Wood Pole Samples

Please find attached three (3) samples taken from redundant timber poles from a high voltage transmission line for sampling.

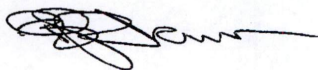
- 970 NR1 **1**
- 970 PI2 **2**
- 970 PI3 **3**

Testing required includes TCLP tests for Creosols, BaPs, and Phenol, as per the attached "General approval of the Immobilisation of Contaminants in Waste".

We will also require testing for Organochlorines including Chlordane, DDT, Dieldrin.

Please do not hesitate to contact me if you wish to discuss or require more information.

Yours faithfully



Brad Parker
Environmental Officer
TransGrid
PO Box 139 Yass NSW 2582
M. 0429 865 338, W. 02 62269610
brad.parker@transgrid.com.au



Envirolab Service
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No:

Date Received: **16/11/2016**
Time Received: **3:20**
Received by: **R. 20**
Temp: Cool/Ambient
Cooling: Ice/CePack
Security: Intact/Broken/None

Appendix E - Requirements if Recycling

Check to see if there is a current period order for recycling poles. Recycling through a licensed recycler can be undertaken in line with current procurement requirements. Where timber recycling is an option, contact the recycler to confirm any specific requirements.

Pole Removal

- It is encouraged that the salvaged timber pole should be removed from the ground intact with the butt attached, to make the recycling of the redundant pole more viable for the contractor. If the pole butt has to be removed, the minimum length of the cut portion of the pole containing the contaminated butt is 3 m (or 100mm higher than the level at which chemical treatment is suspected). Any length less than 3 metres cannot be processed by the contractor.
- The recycling contractors vehicle for transporting contaminated poles is required to have a waste licence.

Preparation for Recycling (Check with recycler for exact requirements)

The following material shall be removed from the pole prior to recycling and appropriately disposed:

- Cross arm steel supports;
- Termite infested or severely degraded poles;
- Pole nails;
- Excessive bolts, insulators, etc; and
- Burnt CCA poles.

Transport

Complete a Transgrid Goods Receipt as this requires the contractor's driver to sign and acknowledge the pick-up.

Document Actions

- Goods Receipt - White copy to the contractors driver on pick-up.
- Goods Receipt - Canary copy to the project or regional pole disposal file.
- Goods Receipt - All other copies stay in the Goods Receipt book.
- The recycling contractor is required to utilise a licensed waste transport company to dispose of any contaminated material produced and requiring disposal as part of the recycling process. Transgrid requires a copy of these documents.

Once all required documents has been received, the recycled poles must be recorded into CAMMS with all relevant documentation attached to the record.

Appendix F - Waiver Letter – Gifting of Timber Poles – Refer to WIRE for latest version



Notice to Landholder - Gifting of Timber Poles

TransGrid agrees to provide you, at your request, with [X number] of poles, free of charge. The timber poles were removed from service on the [line number] transmission line. Similar poles have been sampled and tested for potential contaminants, and found to include:

(Delete which is not relevant)

Creosote Poles - pigment emulsified creosote (PEC), m, o, p Cresol, C₁₀-C₃₆ petroleum hydrocarbons, polycyclic aromatic hydrocarbons (PAHs), phenyls,

Copper Chrome Arsenate (CCA) poles - Arsenic, Chromium,(VI) C₁₀-C₃₆ petroleum hydrocarbons

As per the EPA "General Approval of Immobilisation of Contaminants in Waste" these contaminants are impregnated and absorbed into the woody tissue of the treated wood, and are safe to use, providing you take common sense precautions and follow the handling guidelines below:

- Only use treated wood that is clean, dry and free of surface residues.
- Avoid inhaling wood dust and wear a filter mask while undertaking any operation where wood dust is generated.
- Protect the eyes while using power tools or undertaking any work where small particles may be ejected.
- Wear gloves when handling the material and wash hands after work and before contact with mouth or eyes.
- Brush or wash sawdust off skin or clothes.
- Keep the work area clean. Do not allow wood dust to accumulate. Wherever possible, recover sawdust, shavings and off -cuts for proper disposal.
- Wash work clothing and safety equipment contaminated with wood dust before reuse.
- Do not burn in open fires, stoves, fireplaces, or any confined space.

The use of the poles must be limited to activities which limit any further exposure. Do not use the poles for: children's play equipment;

- garden furniture;
- picnic tables;
- external seating;
- domestic decking boards;
- handrails;
- firewood.

Please also refer to the NSW OEH "Protocols for recycling redundant utility poles and bridge timbers in New South Wales" including Appendix G Sale of Recycled Timber (attached).



Notwithstanding these points on handling, Transgrid does not accept responsibility for your use of the gifted poles after you take control of the gifted poles. You are also responsible for using safe handling methods when moving, storing, cutting or otherwise dealing with the timber poles. Any injury to you or others resulting from the use or misuse of the timber poles is entirely your responsibility.

I, _____, of _____ on
(date) _____ understand and accept liability for the proper use of the poles I have taken possession of,
being (no.) _____ timber poles from the transmission line _____. I will abide by the guidelines
outlined in this Notice.

Signed: _____ Date: _____

TransGrid Representative Sign: _____ Date: _____

Print Name: _____