**Tree Growth Regulator Training for Pre-Inspection**

Procedures for treated trees

Identification and requirements for new applications

**Prepared By: Davey Resource Group**

6006 Capistrano, Unit A

Atascadero, CA 93422

**Local Office**

9672 Via Excelencia Ste 205

San Diego, CA 92126

**Prepared for: SDG&E**

Vegetation Management

Department and

Contractors



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# Background

Tree Growth Regulators (TGR) are products designed to limit shoot growth in trees. TGR’s have been studied and used for over 50 years. The effectiveness and application was refined in the early 1990. TGR’s have been used throughout the United States and various parts of the world for several decades. As the importance of providing safe and reliable power in an efficient manner increases, TGR’s are being recognized as an important part of a Utility Vegetation Management Program.

Davey Resource Group and SDG&E have partnered to apply TGR’s in the SDG&E Service Territory, reducing the pruning frequency for certain trees. By applying a TGR, pruning frequencies can be reduced from annual to once every three years for many trees. This provides numerous safety, customer service, and tree health benefits. The TGR program is focused on eucalyptus trees, which comprise 21% of SDG&E’s tree inventory, of which 60%-80% are being pruned on an annual basis. With the exception of a few species, “Memo” trees, or trees that do not maintain compliance are also required to be targeted for removal or TGR application.

Additional information on Tree Growth Regulators and the notification process can be found in [DRG’s TGR Notifier Training.](https://drive.google.com/a/davey.com/file/d/0ByKKSX3tbSmmUlF5MFVKY2NvX00/view?usp=sharing)

# Inspection Procedures for Treated Trees

It is important to recognize trees that have been previously treated so that the benefits of TGR are realized by our client and their customers. TGR treated trees will have notes associated with their records, found in the Location Info page. These notes are designed to call attention to the fact that the tree has been treated. While normal inspection still must take place, there are specific procedures to follow for any potential updates. With all trees it is required to check the Location and Property Notes for property restrictions or other restrictions that are not TGR related. The information in this document relates to the TGR alert comments only.

The notes are:

* **TGR Notified -** This indicates that an attempt has been made to contact the customer for TGR authorization in a previous inspection cycle. Notification and updating this note shall be completed for the current cycle if the tree was not treated previously.
* **TGR Refused -** The customer was contacted, but refused the TGR treatment. In future inspection cycles, the customer should be approached again.
* **TGR Approved -** The customer has been contacted and TGR was authorized for the tree.
* **TGR Applied -** TGR was applied to the tree. This note also indicates a DBH category (see fig. 2). A date following the note indicates the year of application. Following the date and initials of the applicator is a number, indicating the metal TGR tag on the tree.



## TGR Tree Location Info Page Notes

Figure 1: TGR Notified in the Location Info page

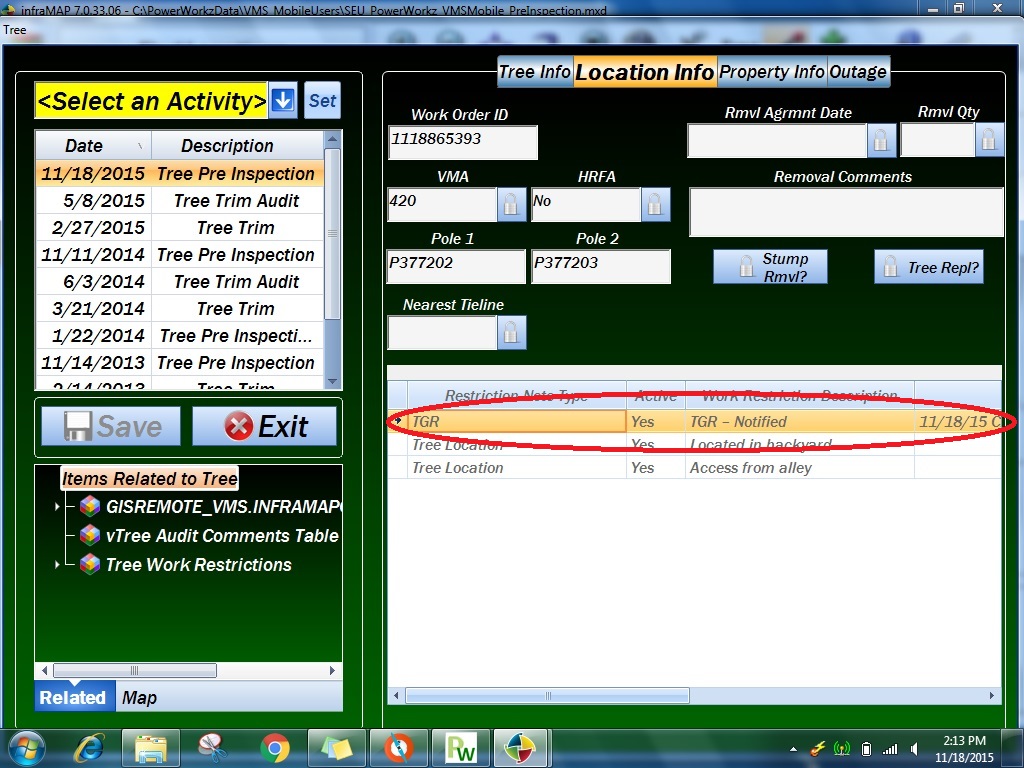
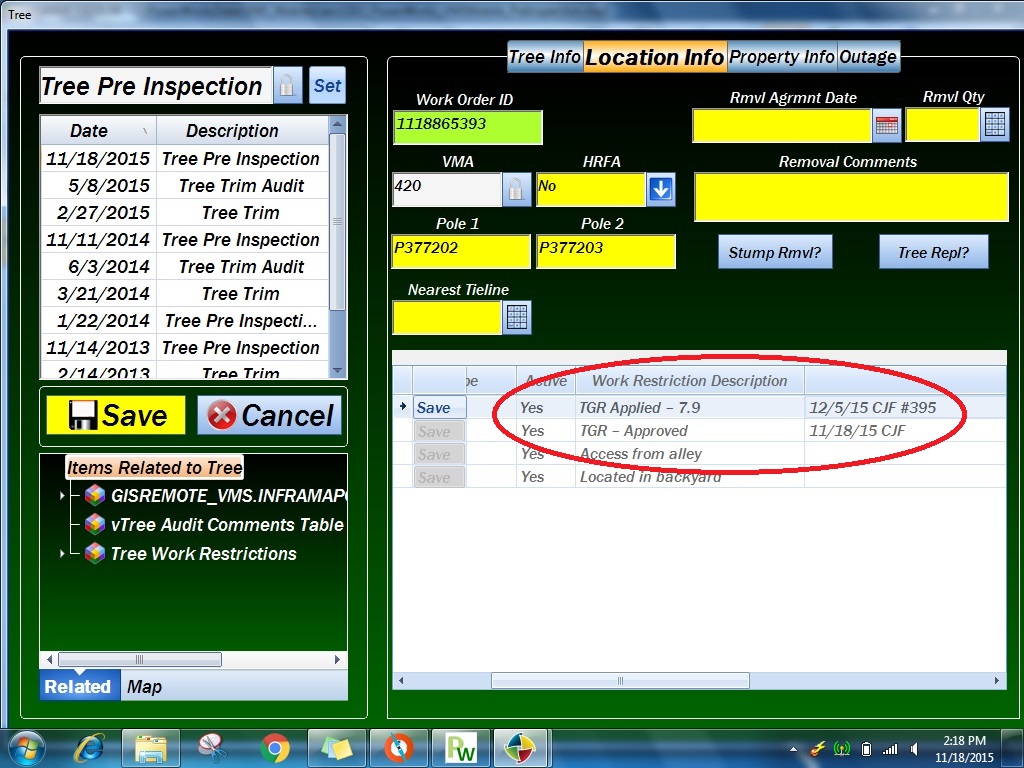


Figure 2: TGR Approved and TGR Applied in Location Info page



## Inspecting TGR treated trees in the field

Please pay attention to the Location Info comments above at all times when conducting pre-inspection. Notes should always be checked and followed regardless of the type of

comment. When you notice the TGR notes look for the following:The trees should have less growth and greater clearance that would be expected based on their last date of pruning

* Often times the leaves will be smaller and closer together.
* The trees often may be darker in color than untreated trees.

Figure 3: Eucalyptus Trees one year after treatment



Figure 4: Smaller and more compact spacing of leaves



## TGR Tree Inspection

* Evaluate growth of tree using last trim clearance against current clearance from lines. While TGR’s have an extremely high success rate, there is no 100% guarantee that the trees will not require pruning.
* Many factors may influence the tree’s response to the application - therefore it is critical that an informed evaluation of tree growth be conducted.
  + Do not assume a TGR treated tree will not require pruning
  + Make sure to evaluate tree based on the growth it is exhibiting - not what you are accustomed to seeing for the species.
  + Key points indicating effectiveness of TGR application include reduced shoot growth and close leaf stacking.
* If tree is showing reduced growth pattern from TGR treatment and you expect it to maintain compliance, update status to “PI, Clear” Do not change growth rate in the MDT.
* If tree has responded to the TGR application but may potentially be in violation before next year’s inspection, update status to “PI, Requires Prune”. These trees will be re-evaluated by the TGR Program Supervisor to assess status and flipped if needed.
* If tree is in violation, or very close to it, list for appropriate trim.
* Trees may have significant regrowth after trim but then slow dramatically indicated by closer leaf stacking near ends of shoots.
* When in doubt - update to “PI, Requires Prune”. It is very important that all trees maintain compliance for the given cycle.



# Identifying Potential TGR Candidates In The Field

On the SDG&E project the following trees are required to be pursued for removal and/or TGR treatment;

* All trees that are being pruned annually with the exception of the species below
* All memo trees with the exception of the species below. Follow TGR memo procedures outlined in the [DRG Pre-Inspection Procedure Manual](https://docs.google.com/document/d/1olz0v6RnKULnsrZrjSW9Pz8NxQN77doP9hx2oE8i4Vs/edit#heading=h.f8cmt0dq1uhl)

When you find trees that meet the criteria, make contact with the property owner to first pursue removal, then to secure TGR treatment as an option if removal is refused.

Exception Species

TGR treatments do not work on all species. Since there are more trees it works on than not, this is a list of trees ***not suitable*** for TGR treatment.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Fruit/Nut Trees | Ash | Bay | Bamboo | Coral | Cottonwood |
| Ficus | Palms | Pines | Sycamore/Plane | | Willow |

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## TGR treatment criteria

Trees must meet the following general criteria for treatment

* A privately owned tree.
* Approved species only.
* DBH 4” – 36” (if multi-trunked, measured below the union).
* Pruned in the last year (focusing on trees that are annual prunes) and will be pruned for the current cycle.
* Pruned in last two years with significant access, crew safety or efficiency impacts.
* Ideally under the lines.
* Removal is not an option or has been refused by property owner

Trees are **not** a good candidate if:

* Tree is not being pruned for the current PI cycle.
* Soil around trunk flare is inaccessible, ie, concrete, asphalt.
* Tree is in riparian area.
* Tree is to the side of lines without significant underprune.
* Fruit or nut tree.
* Tree is in close proximity to edible crops.

## Discuss program with customer:

* First offer removal of tree. If removal is refused, offer TGR.
* Describe benefits of TGR.
* Answer questions (see FAQ list included in this document)
* Provide literature (ArborLock tri-fold brochure)
* Secure TGR authorization.
* Fill out all portions of TGR Authorization Form including quantity, address, contact phone number, and tree id. Affix pre-inspector label to upper left-hand corner or write your name and phone number.
* An authorized agent (owner, property manager, etc.) must sign form. Make sure printed name and phone numbers are legible.
* Only the TGR card requires a signature. Please note an accurate total number of TGR trees on the authorization card.
* **Turn in the authorization card and all paperwork to your lead weekly.**

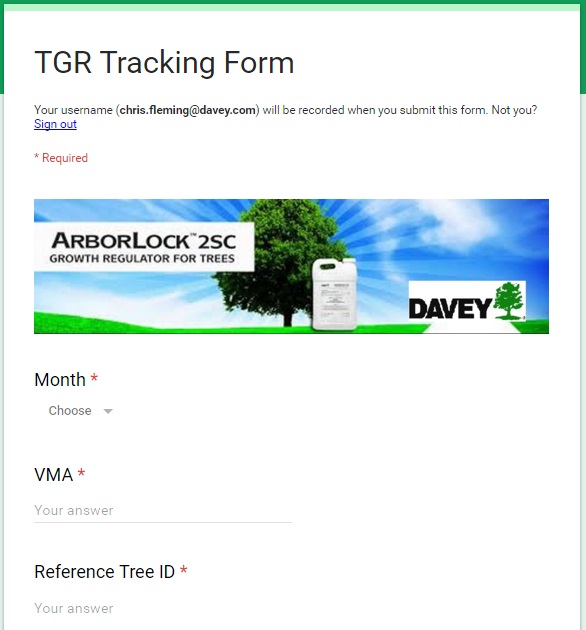
## If customer isn’t home:

* Leave door hanger with TGR information, and a TGR authorization card with relevant tree info filled out.
* Fill out TGR Tracking form with relevant information asap (see Fig. 6).
* Follow up with two telephone calls. You should have three separate contact attempts within one week of initial attempt.

## [TGR Tracking Form (Google Form)](http://goo.gl/forms/FX8GaTMe24)

* This is the main tracking form to be used unless otherwise instructed.
* Is to be filled out only after securing an authorization, removal, or refusal
* Must be filled out immediately after securing an authorization, removal, or refusal. If you do not have signal, wait until end of day and enter once you drive to a lcoation with signal.
* One entry per property
* Tree ID field is to be a reference for the property
* VMA inspection Month is the *month your VMA is supposed to be inspected in.*  That may vary for the current month (ie in a VMA early or late)
* Note the NUMBER of TGR trees approved, memo TGR approved, and removals approved.
* If property owner refuses TGR, check ‘Yes’ in the Property Refused field.

Fig. 6: TGR Tracking Form

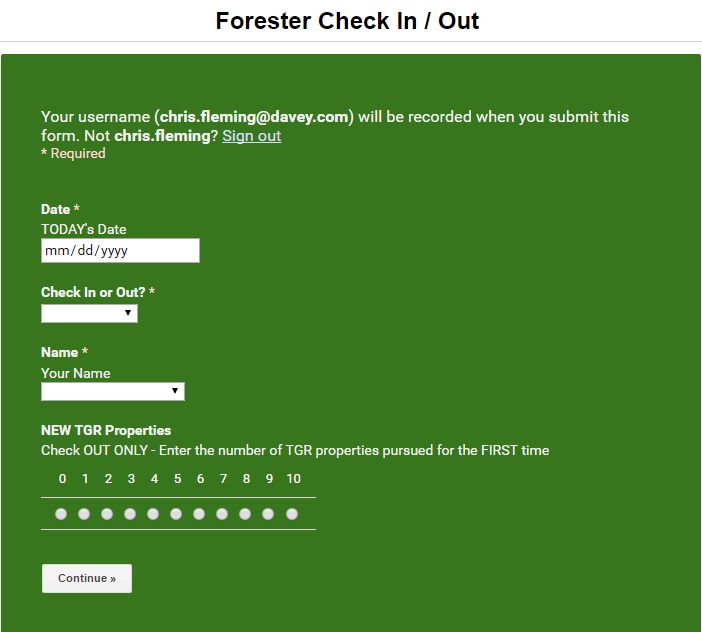


## TGR Property and Notification Tracking

With the simplified Tracking Form, tracking notification attempts is no longer required. However, you are still required to track the number of properties you attempt to contact each day. This information will be entered as part of your daily checkout (see Fig. 7). Each day, check the number of properties you attempted to contact. Only enter NEW properties, as this process counts the total number of properties you attempt to contact, not your total notification attempts.

Other than this entry, it is your responsibility to track your properties however you see fit. You are responsible for three attempts to contact owners. You may use the TGR tracking google sheet, paper form, notebook, etc. Follow-up and performance is critical, however use the method that works best for you to track notifications.

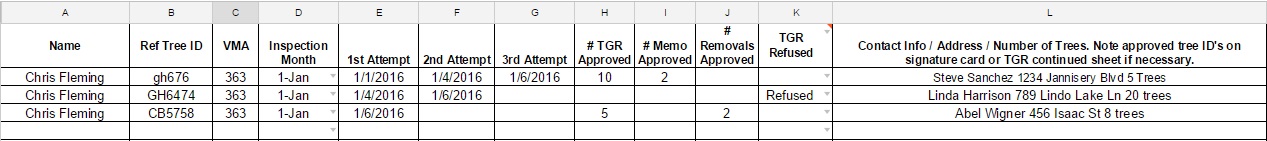
Fig 7: TGR Checkout



### TGR Tracking Sheet (Spreadsheet)

* Optional - You can use this to track owner info if you like or use paper/other methods
* May be required use for foresters who are underperforming in TGR authorization.
* Is to be filled out ASAP after notifying a property
* One line per property
* Tree ID field is to be a reference for the property
* VMA inspection Month is the *month your VMA is supposed to be inspected in.*  That may vary for the current month (ie in a VMA early or late)
* Note the date of each attempt
* Note the NUMBER of TGR trees approved, memo TGR approved, and removals approved.
* TGR refused is to be left blank. If property owner refuses - change it to “refused” Do not enter a number into this field.

Fig 8: TGR Tracking Sheet



Turn in all paperwork to your Lead unless otherwise instructed.

# Please direct questions or concerns to:

Chris Fleming

Davey Resource Group | Consulting Utility Forester

San Diego, CA

[Chris.Fleming@davey.com](mailto:chris.fleming@davey.com) | (858) 414-6927 | ISA Certified Arborist WE-10774A

# TGR Checklist

1. Identify tree for TGR program:
2. Eucalyptus species only.
3. DBH 4” – 36” (if multi-trunked, measured below the union).
4. Pruned in the last year.
5. Ideally under the lines.

Trees are not a good candidate if:

1. Soil is inaccessible, ie, concrete, asphalt.
2. Trees in riparian areas.
3. Trees to the side of lines.
4. Discuss program with customer:
5. First offer removal of tree. If removal is refused, offer TGR.
6. Describe benefits of TGR.
7. Answer questions.
8. Provide literature.
9. Secure TGR authorization.
10. Fill out all portions of Green TGR Authorization Card including quantity, address, contact phone number, and reference tree id. Only one tree id is required, but the tree quantity field must be filled. Affix pre-inspector label to upper left-hand corner or write your name and phone number.
11. An authorized agent (owner, property manager, etc.) must sign card. Make sure printed name and phone numbers are legible.
12. For each authorized tree, go to the Location Notes on your MDT, use the TGR drop down menu to select ‘TGR Authorized’, and include your initials and the date.
13. If the TGR treatment is refused, go to the Location Notes on your MDT, use the TGR drop down menu to select ‘TGR Refused’ for each tree, and include your initials and the date.
14. If customer isn’t home:
15. Leave door hanger with TGR information.
16. The ‘TGR Notified’ canned comment is not required.
17. Note the property information. You can do this anyway you like. Examples would be writing it in a notebook, using Sticky Notes on your MDT, or using your online tracking sheet. Paper copies of the tracking sheet are also available.
18. Follow up with at least two telephone calls. Follow up attempts are required, but do not need to be tracked.
19. If you inspect a tree with a prior years TGR application (indicated in comments):
20. Evaluate growth. Check trim history. If the tree is historically a fast or very fast grower, and it has had little to no growth, update to Pre-Inspect Clear.
21. If tree has significant, vigorous growth and requires prune, update Pre-Inspect Prune.
22. Turn in all authorization forms to your lead.

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# TGR FAQ Sheet

**Will use of ArborLock (Tree Growth Regulator) replace trimming?**

No. Use of TGRs reduce shoot growth which can reduce the frequency and amount of tree pruning required to maintain minimum clearance regulations required in California. The product will be applied to the tree before or after pruning by 6-8 weeks. Utilizing a TGR reduces the frequency and amount of future pruning activities.

**I have not been asked for permission to apply ArborLock (TGR) before even though I have lived on my property for years. Why am I being asked now?**

ArborLock and other TGRs have been in use by other utilities across the nation for years. SDG&E is always striving to improve our vegetation management program. Incorporating TGR as a component of our program is an example of our dedication to improving the satisfaction of our customers and maintaining required vegetation clearances in the most efficient manner.

**Why don’t you just remove the trees?**

We are happy to remove the trees vs. applying the TGR product. We can have our personnel follow up with you to prepare the necessary documentation.

**How is the product applied?**

ArborLock is applied through an injection into the soil. Our applicators will have a pressurized system mounted in a small truck, or a back-pack injector for remote locations.. A probe will be inserted approximately 6 inches into the soil and inject the product below ground level. There is no spraying or product left on the surface of the soil.

**How long does the product last?**

Reapplication is recommended every 3 years. However on some tree species, effective regulation can last for up to 8 years.

**Why aren’t my neighbors trees being treated?**

Our trained foresters take many factors into account when selecting trees for application, including species, past pruning history, and health and vigor of the tree.

**Will the product harm my dog, cat, wildlife, other animals?**

No. The product will be applied as an injection to the soil around the base of the tree. There will not be any standing product left after application. Additionally, scientific testing of the product has been shown to require application rates at several hundred times the rate it is applied to have any adverse effects on animals.

**Will the product harm my tree?**

No. The product has been safely tested and applied on trees throughout the nation with no adverse effects with proper application. Our applicators are trained professionals. In fact, ArborLock has shown to have positive health benefits. Root systems are often enhanced, and thicker leaves help to improve drought tolerance.

**Will the appearance of my tree change?**

You will notice slower growth in the canopy of the tree. Leaves may also appear darker green in color as opposed to untreated trees of the same species. As the canopy regrows, it may appear to be thicker, enhancing the tree’s appearance.

**Can I use treated tree leaves for mulch?**

Yes. Leaves from treated trees can be used as mulch or recycled with your green waste with no changes.

**Will surrounding vegetation be affected?**

The growth of grass, shrubs, flowers, and other vegetation will be slowed if the roots of these plants come in contact with the applied ArborLock. This should not occur for plants that are outside of 2ft from the base of the tree trunk.

**Has this product been tested?**

Paclobutrazol (ArborLock) has been university researched and field tested for over 30 years and has been used in the utility industry in its present formula for over 10 years. It has been proven effective and safe in all parts of the country. Testing required by the EPA shows ArborLock has minimal movement through the soil and will not contaminate groundwater supplies. The EPA has placed ArborLock in the safest group of regulated plant-application materials.

**Where can I find more information on the product?**

For more information, including research papers, please visit [www.ArborLockTGR.com](http://www.cambistat.com/)