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Subject: Maintenance Monitoring Report #9, prepared by Gerhard Bombe - Sierra Conservation Center Effluent Disposal Project; Vernal Pools, Visual Aesthetics, Oak Tree, and Wetland/Riparian Mitigation Activities

Dear Mr. O'Brien:

Chambers Group was retained by the California Department of General Services (DGS) to oversee environmental mitigation and compliance requirements for the Sierra Conservation Center Effluent Disposal Project (Project). As part of the Project, maintenance reports are to be issued after plant installation or the commencement of operations per the following schedule: monthly during Year 1, quarterly during Years 2 and 3, and semi-annually for Years 4 and 5. The maintenance reports will be addressed for four sites along the Project, including:

Vernal Pool Complex: Located between Sims Road and CA-49, north of CA-120, as well as those found adjacent to the east side of CA-49. This area is within the 300+ acre sprayfields installed as part of the Project. Maintenance monitoring shall involve qualitative assessments that the dozens of pools previously mapped onsite are or are not being negatively impacted by sprayfield activities. If negative impacts are noted, remedial measures will be suggested in these reports.

Visual Aesthetics Mitigation Site: Situated linearly along Six Bit Gulch and the fence line parallel to the west side of the Sierra Pacific railroad tracks, between CA-49 and the Gardella Reservoir damface, on Jack Gardella's active pasture/sprayfield property. Maintenance monitoring shall involve qualitative assessments that the 30 planted cottonwood trees are or are not growing well. If negative results are noted, remedial measures will be suggested in these reports.

Oak Tree Mitigation Site: Located within an approximate 18-acre fenced area on Jack Gardella's land next to Chinese Camp, just east of the CA-120 and CA-49 intersection on the north end of Chinese Camp. Maintenance monitoring shall involve qualitative assessments that the 1250 planted oak trees are or are not growing well. If negative results are noted, remedial measures will be suggested in these reports.

Wetland/Riparian Restoration Site: Three restoration plots (A, B, and C) are found along Shotgun Creek and between the northern retention basins of the SCC facility. This site is located on State-owned land on the other side of the large foothill to the north of the SCC facility. Maintenance monitoring shall involve qualitative assessments that transplanted cuttings and container shrubs, tules, and trees are or are not growing well. If negative results are noted, remedial measures will be suggested in these reports.

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Vernal Pool Complex: Sprayfield installation has been completed. The vernal pools selected for the Five-Year Annual Monitoring and Reporting effort have all been documented for their baseline, or "As-Built", conditions. Recent rainfall was not sufficient to result in pooling, but has caused the grasses to germinate. None of the pools observed contained any water. The vernal pool complex remains unaffected by sprayfield operations. No remedial measures are necessary at this time.

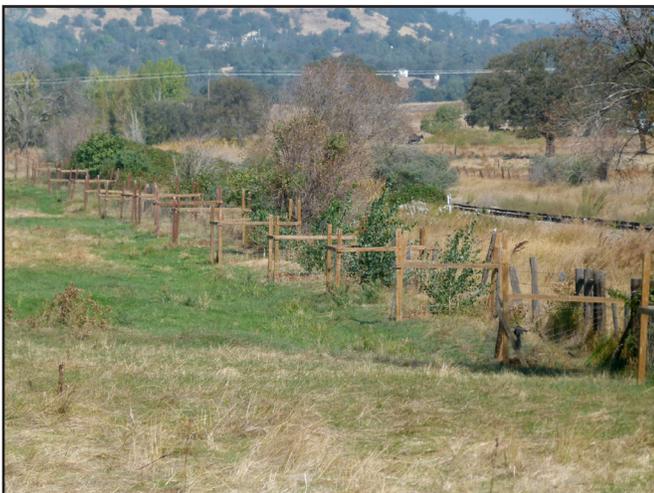


Vernal pool #6 overview. Even after recent rains, pool is still dry.



Vernal pool #12 overview. Pool is still dry. Sprayfield is in operation in the background.

Visual Aesthetics Mitigation Site: The cottonwood trees are actively growing, although nine trees have been lost to drought and apparent animal predation. All saplings are being included in the CCC's bi-weekly watering schedule. The lost Cottonwood saplings have been replaced in the fall plant material replacement cycle. All trees have been mulched, to reduce weed competition and conserve moisture. The cages are holding up well to cattle intrusion. No other remedial measures are necessary at this time.



Cottonwood planting overview.



Specimen cottonwood reaching over six feet in height.



Newly planted replacement Cottonwood. All trees were mulched, as part of the replacement planting.



View of well established cottonwood, reaching a height of six feet.

Oak Tree Mitigation Site: Tree mortality has increased due to greater gopher activity, to necessitate replacement planting. Gophers are the main agent responsible for the death of the trees. A close inspection, by scratching the bark and looking for the green cambium, checking for new growth, and gently tugging on the tree trunk, revealed 604 live trees. As this number is below the required 795 survival rate, 400 new oaks were planted from the 19th through the 21st of October by the CCC. All new plantings included a protective wire mesh basket, to keep gophers from attacking the tree root systems. Trees are still being browsed by deer, and insects have also taken a toll on the leaves - all without any apparent ill effects.



400 new Blue Oaks, in D-40 pots were replanted this month.



A fresh gopher attack, as evidenced by this recently created mound, quickly results in the death of the tree. The trees die so fast that the leaves are still on the tree.

Failed trees have been replaced in this fall's plant material replacement cycle. Photographs of that process are shown below. No other remedial measures are necessary at this time.



The new trees were planted in the existing cages by (A) loosening the existing wire cage, raking away the mulch from the planting area, removing the dead tree, digging a new planting hole and placing the spoils in a bucket (to backfill the hole), (B) then wrapping the root ball in a precut chickenwire cage, with the bottom end folded over itself and closed, (C) placing the tree with the chickwire cage in the planting hole, then backfilling the hole with the clean soil from the bucket, (D) tamping the backfill firmly against the rootball, to ensure good soil to root contact, and in the end, thoroughly irrigating the newly planted tree, as well as all the other trees in the cage.



Newly planted and well irrigated oak.



A cage where all four previously planted oak trees survived gopher predation.



When pulling on the trunk of trees, a gopher cut root system will let the tree come out of the ground with no resistance. If even a slight resistance is felt, that could be indicative that the tree still has some active roots left, and that it may re-grow, as is evident here.



Surviving oak tree.

Wetland/Riparian Restoration Site: Upland container plants and riparian cuttings, continue to show excellent new growth. Unfortunately, several cattle were observed in Plot A, and caused some damage, before they could be driven out, back into the pasture. The barbed wire fence will be reinforced to prevent any recurrence of cattle intrusion. The upland plants were checked for moisture and were watered and will continue to be watered at two week intervals until the start of the rainy season. Remnant, emerging star thistle, Bermuda, cocklebur and kikuja grass, as well as many other exotic, invasive weeds were sprayed again with RoundUp herbicide. Previous herbicide applications were very effective against the yellow star thistle, in particular, and other undesirable vegetation, in general. Herbicide applications will continue as necessary.



CCC crew member irrigating an oak tree.



Excellent new growth on Sycamore (foreground), cottonwood (almost 15' high) and Sandbar willow.



Looking north at Plot C. The red willow stand has developed into 4 feet high saplings.



Plot C shows good growth of willow and tules.



Effective kill of cocklebur in Plot C.



However, despite regular monthly herbicide applications, certain weeds, such as cocklebur persist throughout the wetland sites.



Effective kill of yellow star thistle...which still persists, but is effectively sprayed with herbicide on a monthly basis.





Toyon is growing well now.



Coffeeberry is flourishing.



Tules have spread downstream of the Plot B fence.



Ongoing browsing on this oak.



The elderberries throughout the site have shown extraordinary growth, flowering and already producing berries.



Cattle related damage to trees and shrubs will stunt their growth, but will not kill them.



A few well established willow cuttings in Plot C have also been damaged, but by deer, rubbing the fuzz off their antlers.



The sandbar willows have also established themselves very well, and are spreading, pushing up new growth from their surface roots.

An on-grade, rotor head, battery operated, automatic irrigation system, along with additional upland container plants, is being planned for installation in the month of November. No additional remedial measures are required at this time.