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Memorandum

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Subject	**Biological Resources Assessment following May 2021 Incident**
Project Name	Russell City Energy Center
Attention	[redacted] / Calpine
From	[redacted] / Jacobs
Date	June 1, 2021
Copies to	[redacted] /Jacobs

This memorandum summarizes observations from a site visit to the Russell City Energy Center (RCEC) in Hayward, California on May 29, 2021 to assess areas potentially affected by a recent fire at the plant and the associated response activities. A photolog from the site visit is provided as an attachment to this memorandum.

I arrived at the site around 0815 and met [redacted]. I completed the site safety training and then began the assessment. I was accompanied by [redacted] during my assessment. An operator from the plant escorted us for the portion of the assessment that was outside the plant's perimeter fence.

We first inspected the stormwater basin outlet channel from outside the plant's perimeter fence. The stormwater basin outlet channel is a constructed, trapezoidal channel armored with rock (Photo 1). There was a small amount of standing water in the channel; no flow was observed. The water appeared clear with no apparent sheen, color, or odor. The stormwater channel discharges to a constructed drainage canal/ditch. The ditch is about 20-25 feet wide. The bed and banks of the drainage ditch were densely vegetated with tall, emergent wetland vegetation (Photo 2). Narrow-leaf cattail (*Typha angustifolia*) was the dominant plant species in the drainage ditch where the stormwater channel discharges to the ditch. There was perennial pepperweed (*Lepidium latifolium*) and ruderal vegetation on the banks. I did not observe staining, discoloration, solids, sheen, odor or any abnormal substances on the wetland vegetation or in the ditch (Photo 3). The vegetation was very dense in this location, which made it difficult to visually observe conditions in the ditch beyond confluence with the stormwater basin outlet channel.

We then drove north along an embankment that parallels the drainage ditch to inspect conditions in the drainage ditch downgradient of the plant's point of discharge. The entire length of the ditch was densely vegetated with tall, emergent wetland vegetation (Photo 4). Approximately 560 feet downgradient of the plant a road crosses the ditch (Photo 5). The ditch appeared to be connected, through culverts, to a constructed channel that appeared to be tidally influenced (Photo 6). Vegetation on the channel banks was indicative of brackish or salt marsh species (Photo 7). Dominant species observed included fat-hen (*Atriplex prostrata*) and California bulrush (*Schoeneoplectus californicus*) with a some pickleweed

(*Salicornia pacifica*) present (Photo 7). I did not observe staining, discoloration, solids, sheen, odor, or any abnormal substances on the wetland vegetation or in the channel. This completed my assessment of the off-site areas.

Following the off-site assessment, I inspected the stormwater basin and collection system within the plant's boundaries. There was a crew on-site conducting remediation activities such as placing boom and deploying sorbent pads. The stormwater basin was nearly full. There was a visible sheen on the surface in some locations and a purple staining/discoloration in the water and on the embankments (Photos 8-9). [redacted] said the purple substance was a gear oil. Vegetation observed on the stormwater basin and interior drainage system embankments was primarily Italian rye grass (Festuca perennis) (Photos 10 and 11). I did not observe staining, discoloration, solids, sheen, odor, or any abnormal substances in the outlet channel downstream of the outlet weir (Photo 12). I did not observe any wildlife in the stormwater basin and or collection system. I completed my assessment around 1000.

In summary, I did not observe any staining, discoloration, solids, sheen, odor or any abnormal substances outside the plant boundary. I did not observe any evidence of impacts to wetlands or habitat for sensitive species. I was not able to make any inferences regarding the quality or quantity of water discharged from the plant site during the response activities, however, I did not visually observe any acute toxicity or adverse effects in aquatic habitat. I did not observe any wildlife in areas where there was potential for exposure to sheen or gear oil.

Attachment 1

Photolog

May 29, 2021

Photo 1. Stormwater outlet channel. Facing west towards the drainage ditch.

Photo 2. Confluence of stormwater outlet channel and drainage ditch. Facing south.

Photo 3. Close-up of vegetation and substrate at confluence of stormwater outlet channel and drainage ditch. No staining, discoloration, solids, sheen, odor or any abnormal substances were observed.

Photo 4. Drainage ditch at road crossing. Facing south.

Photo 5. Culverts/tide gates at crossing from drainage ditch to tidal channel. Facing southeast.

Photo 6. Tidal channel. Facing north.

Photo 7. Close-up of vegetation on tidal channel banks. No staining, discoloration, solids, sheen, odor or any abnormal substances were observed.

Photo 8. Stormwater basin. Note discoloration of water and spill containment. Facing northeast.

Photo 9. Spill containment and active remediation in stormwater collection channel. Facing northeast.

Photo 10. Stormwater collection channel. Note staining of vegetation. Most of the vegetation in the channel is Italian rye grass (Festuca perennis). Facing north.

Photo 11. Close-up view of stormwater collection channel.

Photo 12. Stormwater basin outlet weir (left) and outlet channel (center and right). No staining, discoloration, solids, sheen, odor or any abnormal substances were observed downstream of the weir. Facing south.

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Resume of Jacobs biologist