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MEMORANDUM

TO: Dan Galpern, Western Environmental Law Center
FROM: Elliott W. Lips, P.G., Principal Engineering Geologist
DATE: October 5, 2010
RE: Observations of Poned Water near Evaporation Pond E at NV Energy's Reid Gardner Station

On October 4, 2010 I was present on the mesa above the evaporation ponds approximately 2000 feet southeast of the southern corner of Ponds E and G. The time of my visit was between approximately 7:45 and 8:15 am. At this time I observed and photographed¹ the following:

1. Pond E contained a significant amount of water – the freeboard appeared to be about 5 feet. Water was being discharged into Pond E from at least three discrete locations. Pond G was completely dry.
2. I observed several ponds of standing water on the Muddy River flood plain south and east of Pond E.
3. The area of the flood plain covered by these ponds was approximately 400 feet by 450 feet. This estimate is based on comparing my field observations and photographs to scaled drawings of the pond area, which are on a photographic base map, and from measurements made on Google Earth.
4. Examination of satellite imagery (USDA Farm Service Agency, GeoEye, U.S. Geological Survey Map Data) taken in 2010 reveal that the ponds I observed on October 4th are not permanent features of the flood plain.
5. The ponds appeared to be hydraulically connected to each other and extended east of Pond G on the flood plain towards the Muddy River itself; however, due to vegetation and my vantage point, I could not determine whether or not these ponds are discharging directly into the Muddy River.
6. The eastern edge of the ponds was linear and appeared to be controlled by a man-made berm. There were no other areas of ponding water observed on the flood plain further east of the berm.

¹ I can provide you with electronic copies of the photographs on October 6th.



7. Based on my observations, I believe that the source of water for these ponds could have either been from: 1) Pond E, or 2) the arroyo coming off the mesa southeast of Pond G.
8. My observations of the confluence of the arroyo and the Muddy River flood plain (aided by 8x binoculars) revealed that there was no surface water present, or indication of recent flow at the mouth of the arroyo. In addition, examination of nearby arroyos indicated that there had not been recent surface-water runoff in the area.
9. Because the flood plain slopes gently to the east, coincident with the gradient of the Muddy River, the ponds of standing water would be immediately down slope of Pond E. Because no other potential sources of water were observed, it is reasonable to conclude that the source of the ponded water on the flood plain was likely Pond E.
10. While observing the ponds and taking photographs, I observed three landings on the ponds by avian wildlife. One bird I identified as a snowy egret; I was not able to identify two smaller brown and white birds.
11. Pond E is supposed to be constructed with a double-liner system and is required under NVE's discharge permit to not leak to waters of the state.
12. Based on my observations, and conclusions that the most likely source of water for the ponds is related to Pond E, I believe that NDEP should immediately conduct an investigation of this area, review monitoring of leakage from Pond E, collect and analyze samples of water from these ponds and take appropriate measures to assess whether these ponds are the result of an unauthorized discharge to waters of the state.