

EXHIBIT E

Tom Myers, Ph.D.
Hydrologic Consultant



January 5, 2017

Christina M. Caro
Adams Broadwell Joseph & Cardozo
601 Gateway Blvd., Suite 1000
South San Francisco, CA 94080

Re: Suncrest Dynamic Reactive Power Support Project, Draft Environmental Impact Report

Dear Ms. Caro:

I have reviewed the hydrogeologic aspects of the proposed Suncrest Dynamic Reactive Power Support Project, which would be the construction of a dynamic reactive device and about a one-mile-long transmission line near Alpine CA in San Diego County. Specifically, I reviewed the Draft Environmental Impact Report (DEIR) prepared for the project. My review included drainage and groundwater supply issues.

My experience includes a Ph.D. and M.S. in Hydrology/Hydrogeology from the University of Nevada, Reno, and a B.S. in Civil Engineering from the University of Colorado. I have approximately 20 years of experience consulting and researching hydrogeology, including groundwater modeling, and fluvial morphology. Much of my graduate research concerned riparian systems, including fluvial morphology and the impacts of flooding on stream channels. My curriculum vitae is attached to this letter.

Construction would occur in the Bell Bluff Truck Route, which is within the Lightner Mitigation Site (DEIR, Figure 2-5), which had been established to “compensate for impacts to water of the U.S. and water of the state during construction of the Suncrest Substation/Sunrise Powerlink,” and which is scheduled to be transferred from SDG&E to the U.S. Forest Service for conservation in perpetuity. (DEIR, p 2-9).

Blasting Deposits

Construction would include blasting for both the Static VAR compensator (SVC) and the transmission line, which would be mostly buried. The SVC would require excavation up to 15 feet below ground surface (DEIR, Table 2-1), with a need for blasting in areas of shallow bedrock. The DEIR does not describe the full depth to bedrock at all locations within the Project site. The total amount of blasting that will be required to excavate the area needed for

the SVC is therefore not known and not described in the DEIR. (DEIR, p 2-19). The transmission line would also require excavation. The DEIR estimates that blasting would be required for about 530 feet of the trench (DEIR, p 2-20). The DEIR describes the blasting as “low-energy, localized rock blasting, which is also referred to as micro-blasting” (Id.). The intent is to fracture rock so that it can be excavated.

Blasting would deposit the pollutants nitrogen and nitrates into the fractured rock material. The nitrogen and nitrates would then be available for leaching into the groundwater, which may cause significant groundwater pollution problems. Unmitigated nitrogen and nitrates deposited by project blasting would cause potentially significant impacts on the Lower Sweetwater River, which is on the Clean Water Act Section 303d impaired water bodies list (DEIR Table 12-1). Water bodies listed on the Section 303d list are waters that are too polluted or otherwise degraded to meet State or Federal water quality standards. Increased percolation of these pollutants into groundwater through the explosive-fractured bedrock would increase the nitrogen loading in groundwater and to the River where the groundwater discharges. This will in turn increase the River’s total nitrogen concentration. Excess nitrogen is one of the principal causes of the River’s 303d listing. The project’s blasting deposits are therefore likely to increase the existing nitrogen pollution in the River, resulting in increased violations of water quality standards.

There is no discussion of this potentially significant impact in the DEIR, and no plan to mitigate the groundwater pollution that may be caused by the Project’s blasting activities. The DEIR should be revised to analyze the potential for nitrogen pollution leaching from explosive fractured debris. The DEIR should analyze the potential for nitrogen pollution reaching groundwater and propose both a way to monitor the potential and to mitigate its potential occurrence to less than significant levels. Effective monitoring would include installation of a shallow groundwater monitoring well on the most likely pathways for shallow groundwater flow to reach the river. Effective mitigation would include a commitment to remove the overburden nearest the blasting holes from the site so that meteoric water cannot leach through it.

The DEIR fails to describe this potentially significant impact. The DEIR should be revised to disclose and analyze the effects of percolation through explosive-fractured rock that would discharge to the Sweetwater River and increase the total nitrogen load in the Lower Sweetwater River.

Construction Water Supply

The project would use about 2,600,000 gallons (8 af) of water spread over 196 workdays (DEIR, p 2-24). There are two potential sources. One would be a water services agreement with Padre

Dam MWD which is located about 19 miles away and would require three truck loads per day (Id.). The second is a neighbor's storage tanks (DEIR p 2-24, -25), but the DEIR does not describe a well or how those tanks are filled. Chapter 12 states there would be no groundwater used, but identifies the neighbor's source as "ponds" that are filled by runoff or from a contract with the Sweetwater Authority (DEIR p 12-22, -23). Presumably, adding this use to the neighbor's ponds would decrease the amount of time the ponds are full, thereby decreasing the average water level in the ponds. The DEIR fails to describe the existing uses of the neighbor's ponds, the current water balance, and what impact project water use would have on those uses. The DEIR similarly fails to describe the impact a lower water volume in the pond would have on the local hydrogeology. Thus, the DEIR contains no analysis of the potential impacts of using these ponds, and its conclusion that the Project would have a less than significant impact on water supply resulting from use of the ponds is entirely unsupported because the DEIR provides insufficient information about either the water balance or the hydrogeology of the ponds.

The DEIR should be revised to disclose and analyze the impacts of using water from the neighbor's ponds, including the potential for decreased recharge which could support either deep groundwater or local wetlands if the recharge circulates only to shallow aquifers. If these impacts are found to be significant, the DEIR must incorporate feasible mitigation measures to reduce those impacts to less than significant levels. Mitigation would include plans to keep the water level in the lakes higher by either quickly replacing it or by using the water only when there is significant potential inflow.

Drainages

The DEIR inappropriately dismisses the potential for the project to reduce groundwater recharge into nearby drainages. The project would be located in the Upper Sweetwater River Hydrologic Area of the Sweetwater River Hydrologic Unit of the San Diego Basin (DEIR, Figure 12-1). The project site is in a saddle and on the ridgeline between two river basins (DEIR p 12-9, Figure 12-2). The project will pave over approximately 2.6 acres. This new impervious area would decrease existing recharge (DEIR, p 12-23). The DEIR minimizes the significance of this impact by claiming there are no groundwater basins in the project area and by suggesting that "due to its relatively high position in the watershed, limited catchment areas contributing (sic) runoff" (Id.). However, this statement is unsupported, because substantial evidence as described below demonstrates that the fractured bedrock and topography of the project site enables groundwater recharge to occur at this location.

The topographic maps and photographs of the project site indicate that small drainages contribute runoff to the proposed project site, but the DEIR does not analyze this runoff or

provide an estimate of drainage area (p 12-9). Also, locations high in the watershed could have more fractured bedrock which allows water percolating through the soil layer to reach groundwater in the bedrock. The DEIR notes that the underlying granite at the project site is “appreciably decomposed, ranging from completely weathered to highly weathered” (DEIR, p 9-4). The proposed project site is relatively flat and runoff would slow as it crosses the area so that there is a high potential for precipitation and runoff to percolate to the fractured bedrock. Recharge that occurs there would go deep and support groundwater close to the river. Recharge would flow through bedrock pathways and discharge into the base of alluvial aquifers near the rivers. The DEIR claims groundwater in the bedrock is limited, but also notes that depth to water ranged from 44 to 60 feet at least at the Suncrest Substation. This groundwater clearly receives recharge from somewhere, but the DEIR inappropriately dismisses this potential recharge, and as a result, fails to disclose that the project may have a potentially significant impact on local groundwater resources.

Even if it does not enter bedrock, shallow pathways are likely sources of seasonal water transmission to downstream GW basins.

The DEIR also anticipates “that most precipitation falling on or near the site would be transported via shallow subsurface flow or via overland sheetflow to drainages down gradient” (DEIR p 12-23). Continuing, the DEIR states “the addition of impervious surface in this area may not have a dramatic effect on groundwater recharge and would not be expected to cause any undesirable results” (Id.). These statements contradict each other, rendering the DEIR’s analysis inaccurate. Impervious surface would prevent “shallow subsurface flow” from starting and could speed up sheet flow in such a way that runoff occurs more quickly. It would increase runoff volume, as the DEIR suggests, but the increased runoff velocity would then prevent the runoff from infiltrating and becoming recharge near the site or becoming shallow flow and supporting groundwater further down gradient. The DEIR fails to acknowledge this effect.

By contrast, the impervious area created by the project would drain to a detention basin which “would capture runoff and then release it slowly via shallow, overland flow” (DEIR, p 2-23). This would disrupt drainage patterns and cause runoff to flow through different pathways, thereby altering the recharge distribution in the area from distributed to linear focused on channels and from higher in the mountains to nearer the rivers. This alteration may cause a significant impact on recharge by changing the timing of baseflow discharge to the rivers.

The DEIR fails to analyze properly the potential impacts to recharge near the site that will be caused by the project. The DEIR should be revised to consider the potential changes in recharge and the effect that would have on baseflow in the streams that would receive the groundwater discharge. The DEIR must also propose monitoring and mitigation for the effects

of changing recharge. Monitoring should include a monitoring well down gradient of the site and flow monitoring in the potential receiving waters. Mitigation should include the use of pervious pavement (preferred, except under hazardous waste storage areas) or for the runoff to be retained in a stormwater pond to percolate.

Potential Contamination from Transformer Oil

Spills or leaks on the newly-developed paved area could contaminate runoff from the project site, which could in turn contaminate down gradient aquifers if not contained (DEIR, p 12-24, -25). Each transformer would need 10,000 to 13,000 gallons of oil. The project would have “transformer oil containment basins” to contain the oil volume and 25-year 24-hour storm event (DEIR, p 2-15). This contaminated runoff would then be released from the stormwater ponds and contaminate down gradient aquifers or the Sweetwater River.

The DEIR does not consider the fate of contaminants spilled on the site. The DEIR should present a plan to prevent the release of water from detention basins until the quality of that water can be verified to not violate permits in the stormwater discharge permit.

Potential Jurisdictional Waters

A wetlands delineation completed for the Sunrise Powerlink (SDFG 2009) identified a wetland in the proposed SVC site, but a delineation done for this DEIR did not delineate wetlands (DEIR, p 12-12). The 2009 delineation did not dig test pits because of concern for “high potential for archaeological sites to be located throughout the Project ROW” (SDFG 2009, p 8). However, they used other indicators such as “[a]lternative observational criteria were used to complete the hydric soils component of the data sheets and are described in the soils section below” (Id.). A primary factor causing a wetland is that of soil saturation of sufficient duration to cause anaerobic conditions sufficient to exert a controlling influence on the plant species. Obligative wetland plants essentially require wetland conditions whereas upland plants cannot survive in saturated soils. For the Arid West region, the Corps considers saturation for 14 consecutive days annually to be sufficient (SDFG 2009, p 9). There can be many indicators but SDFG used the standard methods used for wetlands in the West¹ (SDFG 2009, p 8).

Surveyors dug pits for the 2015 delineation, but did not find hydric soils (DEIR, p 12-12) which apparently leads to the findings in the DEIR that the project would not affect wetlands. However, the DEIR also notes that drainage patterns may have changed, which could have led to a change in the delineation. Hydric soils profiles may not be present especially in ephemeral

¹ U.S. Army Corps of Engineers Wetlands Delineation Manual (“USACE Manual”, Environmental Laboratory 1987). Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (“Arid West Regional Supplement”, USACE 2008)

washes “due to the alluvial nature of many of the wetland areas in the Project Survey Area” (SDFG 2009, p 10). Development of the Sunrise Link could have led to an “atypical situation”, in which wetland indicators are not apparent due to human activity (SDFG 2009, p 13). SDFG used other relevant factors, such as dominant species, to assess whether areas within and around the proposed project site are a wetland. Based on this analysis, SDFG determined that there is substantial evidence that these areas are wetlands and did not rely solely on showing there were hydric soils (SDFG 2016). The DEIR may not rely solely on a perceived absence of hydric soils to claim the project area is not a wetland. The DEIR contains additional evidence supporting a conclusion that the project site and adjacent areas may include wetlands and/or may have potentially significant impacts on other jurisdictional waters. The DEIR should be revised to conduct a similar analysis, including completing a comprehensive survey of relevant wetland-dependent species.

The transmission line crosses two jurisdictional waters (CDFW jurisdiction) (DEIR, Figure 7-2). Appendix F notes that the project overlaps Riverine wetlands rated as R4SBA², which probably applies to the two CDFW jurisdictional waters. The topography of the site (DEIR, Figure 12-2) suggests the area could occasionally be saturated due to runoff reaching the area. The area is part of the Peninsular Mountain Range between the arid desert of the Imperial Valley to the east and the dry South Coast Basin to the west toward the ocean (SDFG 2009, p 16, 17). The area is significantly wetter than the surrounding areas and “due to the wetter climate and more watershed vegetative cover there is more potential for dry-season flow” (SDFG 2009, p 17). The site is relatively flat and water flowing onto the site from the ridge south of the project area could easily pond or provide runoff in ephemeral washes for a substantial time period.

These factors demonstrate that the project site is likely to contain wetland areas. The DEIR should be revised to include a water balance analysis for the area to determine the potential for soils being saturated sufficiently to be considered a wetland. This would consider precipitation onto the site, runoff reaching the site, evapotranspiration, and runoff from the site. The DEIR should also be revised to provide a more complete survey of wetland conditions in the project area.

Impacts to Lightner Wetland Mitigation Site

In addition to failing to consider whether the area would affect wetlands, the DEIR fails to discuss impacts to the Lightner Mitigation Site, set aside as mitigation for the Sunrise Powerlink, which surround the project site. The Lightner Mitigation Site is intended to provide the “permanent protection of ecologically important wetlands or other aquatic resources” (SDFG

² R is Riverine, 4 is intermittent, SB is streambed, A is temporary flooded, meaning surface water is present for brief periods during the growing season.

2011, p 8) which may “include protection of upland areas adjacent to wetlands as necessary to ensure protection or enhancement of the aquatic ecosystem”. The mitigation site was also to include activities “that heighten, intensify, or improve one or more wetland functions” (Id.) or to restore historic functions and characteristics to a former or degraded wetland (SDFG 2011, p 9). The Lightner Mitigation Site, which surrounds the Suncrest Facilities, “supports a mixture of ephemeral and intermittent streams and along with riparian and wetland habitat (Id.). Figure 3 in SDFG (2011) shows the mitigation site contains a variety of wetland and aquatic resources including substantial riparian habitat just downstream of the two ephemeral drainages discussed above. The plan intends to permanently protect resources that have been under threat of development which would destroy or adversely modify the resources on the site (SDFG 2011, p 13). The Lightner site was selected based on it being a “large, intact watershed area containing ephemeral and intermittent streams along with wetland supporting emergent vegetation.”

The DEIR does not consider the effects of the proposed project, including the SVC and transmission line, on the factors for which the Lightner Mitigation Site was preserved. Neither the biologic nor hydrogeology chapter mentioned the Lightner Site (DEIR, chapters 7 and 12), nor considered impacts to it. The increased impervious area and graded drainages that will be constructed for the project would decrease both shallow groundwater flow and overland sheet flow, which are both necessary for ecosystems in the area.

The DEIR should be revised to disclose impacts to the Lightner Mitigation Site. The proposed project design should also be revised to avoid impacts to the Lightner Mitigation Site, because the impacts caused by the project violate the purposes that the Site was established to effect in the first place.

Conclusion

In my opinion, the DEIR has not adequately considered the potentially significant impacts the project would have on nearby hydrology, including contamination due to blasting, the use of water in the neighbor’s ponds, changes to recharge due to additional impervious area and grading, and impacts to wetlands or waters of the U.S. This letter provides details of these impacts. The DEIR should be revised to include a more detailed wetlands survey as described above, and to adequately analyze and mitigate all impacts discussed in this letter.

Sincerely,

A handwritten signature in black ink that reads "Thomas J. Myers". The signature is written in a cursive style with a large initial 'T'.

Tom Myers Ph.D.

Hydrologic Consultant

References

San Diego Gas and Electric (SDGE) (2011) Final Habitat Mitigation and Monitoring Plan, Lightner Mitigation Site, Sunrise Powerlink. San Diego, CA, May 6, 2011, available at http://www.cpuc.ca.gov/environment/info/aspensunrise/otherdocs/HMMP_Final_Lightner_May_2011.pdf.

San Diego Gas and Electric (SDGE) (2009) Volume 1 of 3: Revised and Updated, Preliminary Jurisdictional Determination Report and Appendices B, C, D, and E, Sunrise Powerlink, San Diego and Imperial Counties. San Diego CA, July 8, 2009, available at http://www.cpuc.ca.gov/environment/info/aspensunrise/otherdocs/Revised-Updated%20Prelim%20JD%20Report_072309.pdf.

Tom Myers, Ph.D.

Consultant, Hydrology and Water Resources



Curriculum Vitae

Objective: To provide diverse research and consulting services to nonprofit, government, legal and industry clients focusing on hydrogeology specializing in mine dewatering, contaminant transport, natural gas development, groundwater modeling, NEPA analysis, federal and state regulatory review, and fluvial morphology.

Education

Years	Degree	University
1992-96	Ph.D. Hydrology/Hydrogeology	University of Nevada, Reno Dissertation: Stochastic Structure of Rangeland Streams
1990-92		University of Arizona, Tucson AZ Classes in pursuit of Ph.D. in Hydrology.
1988-90	M.S. Hydrology/Hydrogeology	University of Nevada, Reno Thesis: Stream Morphology, Stability and Habitat in Northern Nevada
1981-83		University of Colorado, Denver, CO Graduate level water resources engineering classes.
1977-81	B.S., Civil Engineering	University of Colorado, Boulder, CO

Professional Experience

Years	Position	Duties
1993-Pr.	Hydrologic Consultant	Completion of hydrogeology studies and testimony focusing on mine dewatering, groundwater modeling, natural gas development, contaminant transport, NEPA review, and water rights for nonprofit groups and government agencies.
1999-2004	Great Basin Mine Watch, Exec Director	Responsible for reviewing and commenting on mining projects with a focus on groundwater and surface water resources, preparing appeals and litigation, organizational development and personnel management.
1992-1997	Univ of NV, Reno, Res. Assoc.	Research on riparian area and watershed management including stream morphology, aquatic habitat, cattle grazing and low-flow and flood hydrology.
1990-1992	U of AZ, Res. and Teach. Assistant	Research on rainfall/runoff processes and climate models. Taught lab sections for sophomore level "Principles of Hydrology". Received 1992 Outstanding Graduate Teaching Assistant Award in the College of Engineering
1988-1990	U of NV, Reno Res. Asst	Research on aquatic habitat, stream morphology and livestock management.
1983-1988	US Bureau of Reclamation Hydraulic Eng.	Performed hydrology planning studies on topics including floodplains, water supply, flood control, salt balance, irrigation efficiencies, sediment transport, rainfall-runoff modeling and groundwater balances.

Peer-Reviewed Publications

- Myers, T., 2016. A modeling approach to citing mine facilities in northern Minnesota USA. *J Hydrology* 533: 277-290. Doi: 10.1016/j.jhydrol.2015.12.020
- Myers, T., 2013. Remediation scenarios for selenium contamination, Blackfoot Watershed, southeast Idaho, USA. *Hydrogeology J.* DOI 10.1007/s10040-013-0953-8
- Myers, T., 2013. Reservoir loss rates from Lake Powell and their impact on management of the Colorado River. *Journal of the American Water Resources Association.* DOI: 10.1111/jawr.12081.
- Myers, T., 2012. Potential contaminant pathways from hydraulically fractured shale to aquifers. *Ground Water* 50(6): 872-882. doi: 10.1111/j.1745-6584.2012.00933.x
- Myers, T., 2009. Groundwater management and coal-bed methane development in the Powder River Basin of Montana. *J Hydrology* 368:178-193.
- Myers, T.J. and S. Swanson, 1997. Variation of pool properties with stream type and ungulate damage in central Nevada, USA. *Journal of Hydrology* 201-62-81
- Myers, T.J. and S. Swanson, 1997. Precision of channel width and pool area measurements. *Journal of the American Water Resources Association* 33:647-659.
- Myers, T.J. and S. Swanson, 1997. Stochastic modeling of pool-to-pool structure in small Nevada rangeland streams. *Water Resources Research* 33(4):877-889.
- Myers, T.J. and S. Swanson, 1997. Stochastic modeling of transect-to-transect properties of Great Basin rangeland streams. *Water Resources Research* 33(4):853-864.
- Myers, T.J. and S. Swanson, 1996. Long-term aquatic habitat restoration: Mahogany Creek, NV as a case study. *Water Resources Bulletin* 32:241-252
- Myers, T.J. and S. Swanson, 1996. Temporal and geomorphic variations of stream stability and morphology: Mahogany Creek, NV. *Water Resources Bulletin* 32:253-265.
- Myers, T.J. and S. Swanson, 1996. Stream morphologic impact of and recovery from major flooding in north-central Nevada. *Physical Geography* 17:431-445.
- Myers, T.J. and S. Swanson, 1995. Impact of deferred rotation grazing on stream characteristics in Central Nevada: A case study. *North American Journal of Fisheries Management* 15:428-439.
- Myers, T.J. and S. Swanson, 1992. Variation of stream stability with stream type and livestock bank damage in northern Nevada. *Water Resources Bulletin* 28:743-754.
- Myers, T.J. and S. Swanson, 1992. Aquatic habitat condition index, stream type, and livestock bank damage in northern Nevada. *Water Resources Bulletin* 27:667-677.
- Zonge, K.L., S. Swanson, and T. Myers, 1996. Drought year changes in streambank profiles on incised streams in the Sierra Nevada Mountains. *Geomorphology* 15:47-56.

Representative Projects

Expert Witnessing

- Myers, T., 2016. Expert Report/Testimony: In Re State Land Office Agriculture Lease No. GT-0447, Brininstool XL Ranch, LLC v. Devon Energy Production Company, Contest No. 15-006. Santa Fe, NM
- Myers, T., 2014. Expert Report/Deposition: In the Matter of California Department of Parks and Recreation v. Newmont Mining Corporation, et al. Prepared for the California Department of Justice, February 2014
- Myers, T., 2012. Expert Report/ Testimony at Aquifer Protection Permit Appeal Hearing, Rosemont Mine. Phoenix AZ, August and September, 2012.
- Myers, T., 2011. Deposition: Northeast Natural Energy, LLC and Enroute Properties, LLC v. The City of Morgantown, WV, Civil Action No. 11-C-411, Circuit County of Monongalia County, WV.
- Myers, T. 2011 and earlier. Expert Reports (some listed below) and Testimony. Water Rights Protest Hearings before the Nevada State Engineer, Southern Nevada Water Authority Applications for (1) Spring Valley, (2) Cave, Dry Lake, Delamar Valley, (3) Three Lakes/Tikapoo Valley.
- Myers, T. 2006. Expert Report/Deposition. Cole et al. v J.M. Huber Corp, and William DeLapp. U.S. Federal District Court Case No. 06-CV-0142J.
- Myers, T., 2005. Nevada State Environmental Commission Appeal Hearing, Water Pollution Control Permit Renewal NEV0087001, Big Springs Mine. Prepared for Great Basin Mine Watch, Reno NV.
- Myers, T. 2004. Nevada State Environmental Commission Appeal Hearing, Water Pollution Control Permit, Lone Tree Mine, Gold Quarry Mine. Prepared for Great Basin Mine Watch, Reno NV.

Reports, Reviews and Activities

- Myers, T. 2016. Effect of Open-Pit Mine Dewatering and Cessation on Semi-Arid River Flows. Prepared for the Progressive Leadership Alliance of Nevada.
- Myers, T. 2016. International Technology Exchange, Mongolia. Working with Mongolian and Russian NGOs regarding Mining and Energy Development.
- Myers, T. 2016. Technical Memorandum: Completeness Review of the Mine Operating Permit Application, Black Butte Copper Project, Meagher County MT. Prepared for Montana Chapter, Trout Unlimited.
- Myers, T. 2016. Technical Memorandum. Response to the US Fish and Wildlife Service Hydrologic Reasoning in its Response to the Center for Biological Diversity's Notice of Intent to Sue to Reopen Consultation on Various Memorandums of Agreement Regarding the Muddy River Springs. Prepared for the Center for Biological Diversity, September 10, 2016.
- Myers, T., 2016. Technical Memorandum, Review of the Draft Environmental Impact Statement, Copper Flat, Sierra County, NM. Prepared for Ladder Ranch, Inc. and New Mexico Environmental Law Center

- Myers, T., 2016. Technical Memorandum, Review of the Draft Supplemental Environmental Impact Statement for the Donlin Gold Project. Prepared for the Northern Alaska Environmental Center.
- Myers, T., 2016. Technical Memorandum, Review of the Draft Supplemental Environmental Impact Statement for the Rock Creek Project, Sanders County, MT. Prepared for the Rock Creek Alliance.
- Myers, T. 2016. Technical Memorandum, Twin Metals Mine and the Peter Mitchell Pit, Simulation of the Development of the Peter Mitchell Pit and Its Effects on the Proposed Twin Metals Tailings Impoundment. Prepared for Northeastern Minnesotans for Wilderness.
- Myers, T., 2015. Conceptual Flow and Transport Model, Uranium Plume near the Homestake Millsite, Milan, NM. Prepared for Bluewater Valley Downstream Alliance. Marcy 16, 2015.
- Myers, T., 2015. Hydrogeology of the Humboldt River Basin, Impacts of Open-pit Mine Dewatering and Pit Lake Formation. Prepared for the Progressive Leadership Alliance of Nevada and Great Basin Resource Watch, Revised June 2015.
- Myers, T., 2015. Letter Report: Comments on the Draft Supplemental Environmental Impact Review for the Panoche Valley Solar Project. Prepared for Adams Broadwell Joseph and Cardozo, San Francisco CA
- Myers, T., 2015. Technical Memorandum: Review of the Final Environmental Impact Statement, NorthMet Mining Project and Land Exchange. Prepared for Minnesota Center for Environmental Advocacy.
- Myers, T., 2015. Technical Memorandum – Review of Assessment of the Potential Impacts of Hydraulic Fracturing for Oil and Gas on Drinking Water Resources. Prepared for Delaware Riverkeeper Network. August 24, 2015.
- Myers, T., 2015. Technical Memorandum – Review of Finger Lakes LPG Storage, LLC, Proposed LPG Storage Facility. Prepared for Earthjustice, New York. January 13, 2015
- Myers, T., 2015. Technical Memorandum – Review of Pennsylvania Governor’s Executive Order Concerning Hydraulic Fracturing in Pennsylvania State Parks and Forest. Prepared for Delaware River Keeper, January 9, 2015.
- Myers, T., 2015. Technical Memorandum – Review of Water Supply Assessment, Village at Squaw Valley. Prepared for Sierra Watch, July 13, 2015.
- Myers, T., 2014. Groundwater Flow and Transport Modeling, NorthMet Mine and Plant Site. Prepared for the Minnesota Center for Environmental Advocacy.
- Myers, T., 2014. Letter Report: Comments on the Environmental Assessment for the Proposed Photovoltaic Array Proposed for Ft Irwin CA. Prepared for Adams Broadwell Joseph and Cardozo, San Francisco CA, October 13, 2014
- Myers, T., 2014. Review of the Water Quality Modeling, NorthMet Mine and Plant Site, Minnesota. Prepared for Minnesota Center for Environmental Advocacy.
- Myers, T. 2014. Technical Memorandum: Review of Performance Standards, Center for Sustainable Shale Development. Prepared for Delaware River Keeper. May 8, 2014.

- Myers, T. 2014. Technical Memorandum: Review of the Hydrogeologic Aspects of the Draft Environmental Impact Statement, Haile Gold Mine, Lancaster County, South Carolina. Prepared for Southern Environmental Law Center, May 8 2014.
- Myers, T., 2014. Technical Memorandum: Review of the Supplemental Draft Environmental Impact Statement, NorthMet Mining Project and Land Exchange. Prepared for Minnesota Center for Environmental Advocacy. March 10, 2014
- Myers, T. 2014. Technical Memorandum: Twin Metals and the Boundary Waters Canoe Area Wilderness, Risk Assessment for Underground Metals Mining. Prepared for Northeastern Minnesotans for Wilderness. August 8 2014
- Myers, T. 2012-3. Participation in EPA Potential Impacts of Hydraulic Fracturing on Drinking Water Resources Study. US Environmental Protection Agency, Washington DC.
- Myers, T., 2013. DRAFT: Chapter 5.1: Water Quality. Initiative for Responsible Mining.
- Myers, T., 2013. DRAFT: Chapter 5.2: Water Quantity. Initiative for Responsible Mining.
- Myers, T., 2013. Technical Memorandum: Comments on Encana Oil and Gas Inc.'s Application for the Madison Aquifer to be Exempt Wyoming Oil and Gas Conservation Commission Docket No. 3-2013. Prepared for Natural Resources Defense Council, Powder River Basin Council. June 12, 2013.
- Myers, T. 2013. Technical Memorandum: Impact Analysis: Wishbone Hill Water Right Application. Prepared for Trustees for Alaska
- Myers, T, 2013. Technical Memorandum: Review of Montanore Mine Dewatering Instream Flow Methodology. Prepared for Save our Cabinets, Earthworks. March 26, 2013
- Myers, T. 2012. Technical Memorandum: Chuitna Coal Mine Project, Review of Arcadis DRAFT Hydrogeologic Conceptual Site Model Update and Associated Documents. Prepared for Cook Inletkeeper. May 11, 2012.
- Myers, T., 2012. Technical Memorandum, Review of DRAFT: Investigation of Ground Water Contamination near Pavillion Wyoming Prepared by the Environmental Protection Agency, Ada OK. April 19, 2012.
- Myers, T., 2012. Participation in: Keystone Center Independent Science Panel, Pebble Mine. Anchorage AK, October 1-5, 2012.
- Myers, T., 2012. Technical Memorandum, Review and Analysis, Revised Draft, Supplemental Generic Environmental Impact Statement on the Oil, Gas and Solution Mining Regulatory Program, Well Permit Issuance for Horizontal Drilling and High-Volume Hydraulic Fracturing to Develop the Marcellus Shale and Other Low-Permeability Gas Reservoirs. Prepared for Natural Resources Defense Council.
- Myers, T., 2012. Technical Memorandum, Review of the Special Use Permit PP2011-035-Camilletti 21-10, Groundwater Monitoring Requirements. Prepared for Routt County Board of Commissioners and the Routt County Planning Department. June 19, 2012.
- Myers, T., 2012. Drawdown at U.S. Forest Service Selected Monitoring Points, Myers Rosemont Groundwater Model Report. Prepared for Pima County, AZ. March 22, 2012.

- Myers, T. 2011. Baseflow Conditions in the Chuitna River and Watersheds 2002, 2003, and 2004 and the Suitability of the Area for Surface Coal Mining. January 14, 2011.
- Myers, T., 2011. Hydrogeology of Cave, Dry Lake and Delamar Valleys, Impacts of pumping underground water right applications #53987 through 53092. Presented to the Office of the Nevada State Engineer On behalf of Great Basin Water Network.
- Myers, T., 2011. Hydrogeology of Spring Valley and Surrounding Areas, Part A: Conceptual Flow Model. Presented to the Nevada State Engineer on behalf of Great Basin Water Network and the Confederated Tribes of the Goshute Reservation.
- Myers, T., 2011. Hydrogeology of Spring Valley and Surrounding Areas, Part B: Groundwater Model of Snake Valley and Surrounding Area. Presented to the Nevada State Engineer on behalf of Great Basin Water Network and the Confederated Tribes of the Goshute Reservation.
- Myers, T., 2011. Hydrogeology of Spring Valley and Surrounding Areas, PART C: IMPACTS OF PUMPING UNDERGROUND WATER RIGHT APPLICATIONS #54003 THROUGH 54021. Presented to the Nevada State Engineer on behalf of Great Basin Water Network and the Confederated Tribes of the Goshute Reservation.
- Myers, T., 2011. Rebuttal Report: Part 2, Review of Groundwater Model Submitted by Southern Nevada Authority and Comparison with the Myers Model. Presented to the Nevada State Engineer on behalf of Great Basin Water Network and the Confederated Tribes of the Goshute Reservation.
- Myers, T. 2011. Rebuttal Report: Part 3, Prediction of Impacts Caused by Southern Nevada Water Authority Pumping Groundwater From Distributed Pumping Options for Spring Valley, Cave Valley, Dry Lake Valley, and Delamar Valley. Presented to the Nevada State Engineer on behalf of Great Basin Water Network and the Confederated Tribes of the Goshute Reservation.
- Myers, T., 2011. Baseflow Selenium Transport from Phosphate Mines in the Blackfoot River Watershed Through the Wells Formation to the Blackfoot River, Prepared for the Greater Yellowstone Coalition.
- Myers, T., 2011. Blackfoot River Watershed, Groundwater Selenium Loading and Remediation. Prepared for the Greater Yellowstone Coalition.
- Myers, T., 2011. Technical Memorandum Review of the Proposed Montanore Mine Supplemental Draft Environmental Impact Statement and Supporting Groundwater Models
- Myers, T., 2010. Planning the Colorado River in a Changing Climate, Colorado River Simulation System (CRSS) Reservoir Loss Rates in Lakes Powell and Mead and their Use in CRSS. Prepared for Glen Canyon Institute.
- Myers, T., 2010. Technical Memorandum, Updated Groundwater Modeling Report, Proposed Rosemont Open Pit Mining Project. Prepared for Pima County and Pima County Regional Flood Control District
- Myers, T., 2009. Monitoring Groundwater Quality Near Unconventional Methane Gas Development Projects, A Primer for Residents Concerned about Their Water. Prepared for Natural Resources Defense Council. New York, New York.

- Myers, T., 2009. Technical Memorandum, Review and Analysis of the Hydrology and Groundwater and Contaminant Transport Modeling of the Draft Environmental Impact Statement Blackfoot Bridge Mine, July 2009. Prepared for Greater Yellowstone Coalition, Idaho Falls, Idaho.
- Myers, T., 2008. Hydrogeology of the Carbonate Aquifer System, Nevada and Utah With Emphasize on Regional Springs and Impacts of Water Rights Development. Prepared for: Defenders of Wildlife, Washington, D.C. June 1, 2008.
- Myers, T., 2008. Hydrogeology of the Muddy River Springs Area, Impacts of Water Rights Development. Prepared for: Defenders of Wildlife, Washington, D.C. May 1, 2008
- Myers, T., 2008. Hydrogeology of the Santa Rita Rosemont Project Site, Numerical Groundwater Modeling of the Conceptual Flow Model and Effects of the Construction of the Proposed Open Pit, April 2008. Prepared for: Pima County Regional Flood Control District, Tucson AZ.
- Myers, T., 2008. Technical Memorandum, Review, Record of Decision, Environmental Impact Statement Smoky Canyon Mine, Panels F&G, U.S. Department of the Interior, Bureau of Land Management. Prepared for Natural Resources Defense Council, San Francisco, CA and Greater Yellowstone Coalition, Idaho Falls, ID. Reno NV.
- Myers, T., 2007. Groundwater Flow and Contaminant Transport at the Smoky Canyon Mine, Proposed Panels F and G. Prepared for Natural Resources Defense Council, San Francisco, CA and Greater Yellowstone Coalition, Idaho Falls, ID. Reno NV. December 11, 2007.
- Myers, T., 2007. Hydrogeology, Groundwater Flow and Contaminant Transport at the Smoky Canyon Mine, Documentation of a Groundwater Flow and Contaminant Transport Model. Prepared for Natural Resources Defense Council, San Francisco, CA and Greater Yellowstone Coalition, Idaho Falls, ID. Reno NV, December 7, 2007.
- Myers, T., 2007. Review of Hydrogeology and Water Resources for the Final Environmental Impact Statement, Smoky Canyon Mine, Panels F and G and Supporting Documents. Prepared for Natural Resources Defense Council, San Francisco, CA and Greater Yellowstone Coalition, Idaho Falls, ID. Reno, NV. December 12, 2007.
- Myers, T., 2007. Hydrogeology of the Powder River Basin of Southeast Montana Development of a Three-Dimensional Groundwater Flow Model. Prepared for Northern Plains Resource Council. February 12 2007.
- Myers, T., 2007. Hydrogeology of the Santa Rita Rosemont Project Site, Conceptual Flow Model and Water Balance, Prepared for: Pima County Flood Control District, Tucson AZ
- Myers, T., 2006. Review of Mine Dewatering on the Carlin Trend, Predictions and Reality. Prepared for Great Basin Mine Watch, Reno, NV
- Myers, T., 2006. Hydrogeology of Spring Valley and Effects of Groundwater Development Proposed by the Southern Nevada Water Authority, White Pine and Lincoln County, Nevada. Prepared for Western Environmental Law Center for Water Rights Protest Hearing.
- Myers, T., 2006. Potential Effects of Coal Bed Methane Development on Water Levels, Wells and Springs of the Pinnacle Gas Resource, Dietz Project In the Powder River Basin of Southeast Montana. Affidavit prepared for Northern Plains Resource Council, April 4 2006.

- Myers, T., 2006. Review of Hydrogeology and Water Resources for the Draft Environmental Impact Statement, Smoky Canyon Mine, Panels F and G, Technical Report 2006-01-Smoky Canyon. Prepared for Natural Resources Defense Council.
- Myers, T., 2006. Review of Nestle Waters North America Inc. Water Bottling Project Draft Environmental Impact Report / Environmental Assessment. Prepared for McCloud Watershed Council, McCloud CA.
- Myers, T., 2005. Hydrology Report Regarding Potential Effects of Southern Nevada Water Authority's Proposed Change in the Point of Diversion of Water Rights from Tikapoo Valley South and Three Lakes Valley North to Three Lakes Valley South. Prepared for Western Environmental Law Center for Water Rights Protest Hearing
- Myers, T., 2005. Review of Draft Supplemental Environmental Impact Statement, Ruby Hill Mine Expansion: East Archimedes Project NV063-EIS04-34, Technical Report 2005-05-GBMW. Prepared for Great Basin Mine Watch.
- Myers, T., 2005. Hydrogeology of the Powder River Basin of Southeast Montana, Development of a Three-Dimensional Groundwater Flow Model. Prepared for Northern Plains Resource Council, Billings, MT in support of pending litigation.
- Myers, T., 2005. Potential Effects of Coal Bed Methane Development on Water Levels, Wells and Springs In the Powder River Basin of Southeast Montana. Prepared for Northern Plains Resource Council, Billings, MT.
- Myers, T., 2004. An Assessment of Contaminant Transport, Sunset Hills Subdivision and the Anaconda Yerington Copper Mine, Technical Report 2004-01-GBMW. Prepared for Great Basin Mine Watch.
- Myers, T., 2004. Technical Memorandum: Pipeline Infiltration Project Groundwater Contamination. Prepared for Great Basin Mine Watch.
- Myers, T., 2004. Technical Report Seepage From Waste Rock Dump to Surface Water The Jerritt Canyon Mine, Technical Report 2004-03-GBMW. Prepared for Great Basin Mine Watch.
- Myers, T., 2001. An Assessment of Diversions and Water Rights: Smith and Mason Valleys, NV. Prepared for the Bureau of Land Management, Carson City, NV.
- Myers, T., 2001. Hydrogeology of the Basin Fill Aquifer in Mason Valley, Nevada: Effects of Water Rights Transfers. Prepared for the Bureau of Land Management, Carson City, NV.
- Myers, T., 2001. Hydrology and Water Balance, Smith Valley, NV: Impacts of Water Rights Transfers. Prepared for the Bureau of Land Management, Carson City, NV
- Myers, T., 2000. Alternative Modeling of the Gold Quarry Mine, Documentation of the Model, Comparison of Mitigation Scenarios, and Analysis of Assumptions. Prepared for Great Basin Mine Watch. Center for Science in Public Participation, Bozeman MT.
- Myers, T., 2000. Environmental and Economic Impacts of Mining in Eureka County. Prepared for the Dept. Of Applied Statistics and Economics, University of Nevada, Reno.
- Myers, T., 1999. Water Balance of Lake Powell, An Assessment of Groundwater Seepage and Evaporation. Prepared for the Glen Canyon Institute, Salt Lake City, UT.

Myers, T., 1998. Hydrogeology of the Humboldt River: Impacts of Open-pit Mine Dewatering and Pit Lake Formation. Prepared for Great Basin Mine Watch, Reno, NV.

Selected Abstracts, Magazine and Proceedings Articles

- Myers, T., 2014. Reservoir Loss Rates, Lakes Mead and Powell and Fill Mead First. INVITED PRESENTATION at 2014 Future of the Colorado Plateau Forum – Drought and the Colorado River. <http://musnaz.org/educational-programs/public-programs/future-of-the-colorado-plateau-forums/>
- Myers, T., 2013. Three-dimensional Groundwater and Contaminant Flow around Marcellus Gas Development. INVITED PRESENTATION at 2013 Associated Engineering Geologists Conference, Seattle WA.
- Myers, T., 2012. Mine Dewatering: Humboldt River Update. INVITED PRESENTATION at 2012 Nevada Water Resources Association Annual Conference.
- Myers, T., 2012. Reservoir loss rates from Lake Powell, and long-term management of the Colorado River system. 2012 Nevada Water Resources Association Annual Conference
- Myers, T., 2011. Reservoir loss rates from Lake Powell, and long-term management of the Colorado River system. 2011 Fall Conference, American Geophysical Union.
- Myers, T., 2006. Modeling Coal Bed Methane Well Pumpage with a MODFLOW DRAIN Boundary. In MODFLOW and More 2006 Managing Ground Water Systems, Proceedings. International Groundwater Modeling Center, Golden CO. May 21-24, 2006.
- Myers, T., 2006. Proceed Carefully: Much Remains Unknown, *Southwest Hydrology* 5(3), May/June 2006, pages 14-16.
- Myers, T., 2004. Monitoring Well Screening and the Determination of Groundwater Degradation, Annual Meeting of the Nevada Water Resources Association, Mesquite, NV. February 27-28, 2004.
- Myers, T., 2001. Impacts of the conceptual model of mine dewatering pumpage on predicted fluxes and drawdown. In MODFLOW 2001 and Other Modeling Odysseys, Proceedings, Volume 1. September 11-14, 2001. International Ground Water Modeling Center, Golden, Colorado.
- Myers, T., 1997. Groundwater management implications of open-pit mine dewatering in northern Nevada. In Kendall, D.R. (ed.), *Conjunctive Use of Water Resources: Aquifer Storage and Recovery*. AWRA Symposium, Long Beach California. October 19-23, 1997
- Myers, T., 1997. Groundwater management implications of open-pit mine dewatering in northern Nevada. In *Life in a Closed Basin*, Nevada Water Resources Association, October 8-10, 1997, Elko, NV.
- Myers, T., 1997. Uncertainties in the hydrologic modeling of pit lake refill. American Chemical Society Annual Meeting, Las Vegas, NV, Sept. 8-12, 1997.
- Myers, T., 1997. Use of groundwater modeling and geographic information systems in water marketing. In Warwick, J.J. (ed.), *Water Resources Education, Training, and Practice: Opportunities for the Next Century*. AWRA Symposium, Keystone, Colo. June 29-July 3, 1997.

Myers, T., 1995. Decreased surface water flows due to alluvial pumping in the Walker River valley. Annual Meeting of the Nevada Water Resources Association, Reno, NV, March 14-15, 1995.

Special Coursework

Years	Course	Sponsor
2011	Hydraulic Fracturing of the Marcellus Shale	National Groundwater Association
2008	Fractured Rock Analysis	MidWest Geoscience
2005	Groundwater Sampling Field Course	Nielson Environmental Field School
2004	Environmental Forensics	National Groundwater Association
2004 and -5	Groundwater and Environmental Law	National Groundwater Association

ATTACHMENT