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Bonneau Dickson, P.E.

Consulting Sanitary Engineer

BONNEAU DICKSON, PE

WATER PROJECT EXPERIENCE

Evaluation Of Plumbing In A Single Residence Occupancy (SRO) Hotel, San Francisco, CA. Evaluated the plumbing systems in a five story SRO hotel where there had been multiple leaks over several years.

Water Damage From Water Main Break, Bay Area, CA. Provided technical advice on the operation and maintenance of the public water system in a case where a water main burst and caused extensive damage to a private residence.

Commercial Property Owner Versus Water Company. Provided expert witness services to a commercial property owner whose building had been severely damaged because it took the water company hours to turn off the flow of water after a fire hydrant was knocked down.

Private Hilltop Residence, Lafayette, CA. Designed water pumping systems for a large hilltop residence. One system provided potable water to the house and the sprinkler system. The other water system provided a fire flow of 600 GPM to a fire hydrant at the house and a 10,000 gallon storage tank. Provided technical input and guidance in getting the systems permitted.

Telecommunications Company v. Water District. Provided technical analysis and advice in a case where a telecommunications company bored into a water main while doing horizontal directional drilling. The high rate of flow from the punctured water line damaged the roadway. Issues in the case involved whether the water main had been correctly marked by the water district personnel, the length of time that passed before the water district personnel could shut off the flow of water due to inoperative or concealed valves, the standard of care for exercising valves in the water system, and the reasonableness of the repairs that were done to the roadway.

Rural Water Supplies, Northern California. Designed and assisted in the operation of several small water systems in Northern California.

Water System Contamination In A City In Utah. Served as an expert witness in a case where a municipal water system was contaminated by a cross connection to an untreated irrigation water system. The untreated irrigated water system had been supplied with potable water for several years until the untreated irrigation water system became available. The connections between the two systems were removed but one interconnection was overlooked. This allowed the untreated irrigation water to contaminate the potable water system.

Zone 4 Water Storage Tank, City Of Brisbane, CA. Lead design engineer on a project in which a 500,000 gallon water storage tank was constructed on a ridge at the highest part of the City of Brisbane. An intermediary water pump station was evaluated and determined to have adequate capacity to serve with the new tank. Construction documents were delivered just 43 days after the design work was started.

San Bruno, CA Sweeney Ridge Waterline Evaluation. Evaluated the alternatives for dealing with a waterline that may be failing. The waterline delivers water to and from a ground level reservoir on Sweeney Ridge and is the only source of water for fire fighting in one zone of the City. The line has sprung a leak each year for the past three years. Determined that all three leaks were in one area. Recommended that corrosion investigation be done of the pipe in the area where the failures occurred, before a decision to replace the entire pipeline is made.

City of Stockton. Prepared an evaluation of an elevated steel water tank that had been found to be corroded. As a part of the evaluation, a determination was made that there is lead based paint on the exterior and interior of the tank. Methods were proposed for abating the lead based paint. The team that was assembled for this project included a structural engineer, a corrosion engineer, a lead based paint consultant, and an underwater video inspection contractor. Confined space entry and fall protection were major issues in the execution of the work.

Leakage of Lining System at Water Treatment Plant Storage Basins, Imperial County, CA. Expert witness on excessive leakage from lined storage ponds at a water treatment plant.

Castlewood Subdivision and Country Club. Worked on the design of two potable water pump stations for this development near Pleasanton, CA. Control of the system is by radio, based on tank levels.

City of Tracy. Feasibility study of converting mined-out gravel pits into raw water storage reservoirs. The pits are conveniently located near the City's water treatment plant. The availability of storage would allow the City to use inexpensive surplus winter water rather than expensive year-round water.

Reclaimed Water System, Soledad, CA. Evaluated the recommended storage basin and pump station for reclaimed water. Determined that the existing plant water pump station could be used and that a storage basin was unnecessary. The savings to the City was about \$350,000. Designed the connection of the new reclaimed water system to the existing plant water system.

Mobile Home Park Contamination, North Bay. Technical expert on a case north of San Francisco Bay where the residents sued the owner alleging that the water supply was contaminated and that they had been exposed to sewage.

Water System Contamination in Mobile Home Park. As an expert witness, evaluated alleged coliform contamination of the water supply to a mobile home park. The issues in the case involved the sampling techniques, the significance of the coliform laboratory analyses, the adequacy of the supply of water from the water well, and the operation of the chlorine disinfection system.

Coliform Contamination from a Sewer. Provided advice on the significance of coliform organisms found in soil above a sewer in a law suit involving three homeowners. The downstream homeowner attributed the coliforms to leakage of sewage from the upstream lots but sampling found that the coliform concentrations were lower in the soil near the sewer than on the surface of the plaintiff's lot. The most likely source of the coliforms at the surface was the plaintiff's dogs.

Water System and/or Leach Field Leakage, San Mateo County. Prepared a report for an attorney representing an insurance company on a situation where a house owner in San Mateo County alleged that a high groundwater level and the presence of coliform organisms in the groundwater were caused by leaks in the water system and/or a failure of the septic tank/leach field system on the uphill residential lot.

Contaminated Water Supply, Sonoma County. Provided technical expertise on a case in which a tenant in a mobile home on an agricultural property sued due to a contaminated water supply and an overflowing septic tank/leach field system. Determined that the property owner's house was being served with the same water supply that was claimed to be contaminated, that no health official had seen the septic tank overflow, and that the surface discharge was from a kitchen sink that the tenant had plumbed to flow onto a nearby field.

Contamination from a Leach Field. Served as technical expert in a case in which a property owner claimed that his pond was contaminated by the failure of a leach field on the next property uphill. Represented the installer of the leach field. Determined that the leach field piping had been broken by large trucks that had operated on top of it.

City of Salinas. Designed a water well for irrigation of a new City golf course. Collected regulatory and hydrogeological information, and designed the casing, gravel pack, and areas of perforation. Observed the construction of the well and pump testing. Selected the pumping equipment.

Monterey Peninsula College. Prepared a report on the feasibility of drilling a well to supply irrigation water for the athletic fields so the potable water previously used for irrigation could be used as an offset for a new Library Technology Building. Due to the shortage of water in the Monterey area the Monterey Peninsula Water Management District requires such offsets for all new construction. Identified and determined the requirements of all relevant agencies, as well as the technical requirements for the well.

Gavilan College Water Supply Evaluation. Prepared a report evaluating the water supply of Gavilan College, Gilroy, CA. The college is served by a 50 year old well and one storage tank on a nearby hill. There is an emergency connection to the City of Gilroy distribution system. The college wanted to consider the reliability of the existing system and the feasibility of using city water as the normal supply. It was found that the use of city water would triple the cost of potable water and of sewerage service, since the cost of sewerage service would be based on the amount of potable water used even though most of the water was used for irrigation. Recommended that the college keep the well supply and drill a second well if reliability was deemed to be inadequate.

Placer County. Conducted an investigation of the technical feasibility of transporting alum sludge from a water treatment plant through a long gravity sewer, pump station, force main and siphon to a wastewater treatment plant. Focus was on practical problems likely to be caused by the alum sludge, especially in the sewer system and in the anaerobic digesters and sludge dewatering press. Prepared a revenue plan type of cost analysis to determine a fair monthly user charge and a connection fee for the water treatment plant.

Permit Application for Mobile Home Park, Placer County, CA. Provided technical advice and an engineer's report for permitting the wastewater system in a mobile home park. Estimated the flow, evaluated the sewer system and pumping station, and analyzed the treatment performance of the wastewater lagoon. Provided a water balance for the disposal system. Evaluated the potential for contamination of the well by percolating treated effluent.

Well Drilling Program Evaluation, Belize. Conducted an evaluation of a well drilling program in Belize for USAID. Determined that the program was far behind schedule but that USAID was only paying for work that was done and that progress was being made, albeit slowly. Recommended that the program be continued and that the schedule be revised.

Potable Water Supply Program Evaluation, Ruanda, International Institute for the Environment and Development, Washington, DC. Mr. Dickson evaluated whether a potable water supply program should be added to an existing natural resources management project in the Ruhengeri District. A gravity water supply system serving a large part of the Prefecture had fallen into disrepair and the population was walking up to 10 kilometers to carry water from schistosomiasis infested lakes. The project evaluated various simple, small scale technologies that could be used to provide drinking water, including rainwater catchment systems. Mr. Dickson recommended that a potable water program not be included in the natural resources management project because: (a) a water supply program would require an active field operating staff while the staff of the existing project was oriented to managerial and academic activities; and (b) other agencies which already had operating field staffs were available to address potable water needs. The project work was carried out in French.

Diablo Creek Golf Course Irrigation Well, City of Concord. Provided technical advice and design input to the City staff on the construction of a new irrigation well to serve the golf course at the Concord Naval Weapons Station. Provided design details, helped draft specifications, provided technical review during construction. The existing well was left in place as a backup source of water.

Somalia Drought Relief Assessment Team, WASH Project, Arlington, Virginia. Mr. Dickson was the sanitary engineer on a team that was fielded to assess the extent of drought relief needed in Somalia. He participated in discussions with representatives of the Government of Somalia and with international donor agencies in Mogadishu, then spent a week touring remote parts of the Somalia to witness the extent and intensity of the drought. Mr. Dickson's recommendations in the final report of the team were that a well drilling program was not an appropriate part of a relief effort because it would take too long to implement and because both the local and the foreign range management experts were convinced that well drilling would lead to further overstocking of the range.

Telecommunications Company v. Water District. Provided technical analysis and advice in a case where a telecommunications company bored into a water main while doing horizontal directional drilling. The high rate of flow from the punctured water line damaged the roadway. Issues in the case involved whether the water main had been correctly marked by the water district personnel, the length of time that passed before the water district personnel could shut off the flow of water due to inoperative or concealed valves, the standard of care for exercising valves in the water system, and the reasonableness of the repairs that were done to the roadway.

Water System Operator, United States Marine Corps. As an engineer officer in the United States Marine Corps, operated diatomaceous earth water filtration equipment to supply potable water to the Marines while they were in the field. Also studied, rehabilitated and advised on the operation of the water system on French Frigate Shoal (an artificially created island half way between Honolulu and Midway Island).

Viet Nam. Working for Metcalf & Eddy, studied, designed, advised and assisted in the operation of several water treatment plants. Designed repairs to an old French military water treatment plant at the Da Nang airbase and designed a new coagulation unit for this water treatment plant. Advised on the operation and improvement of the water treatment plant at the Phu Bai airbase. Obtained information from the hydrological unit of the Vietnamese government that indicated that an on-going drought was a very rare occurrence. This made it unnecessary to develop a new source of water. Designed a well for the U.S. Naval Hospital at China Beach, assisted in putting it in operation, and then assisted with continuing operations.

Failed New Water Treatment Plant, Northwestern State. Served as expert witness for a defendant consulting engineer in a case where a new water treatment plant failed to operate as intended due to unexpected amounts of sediment reaching the plant from a shallow river intake. It was known to the city and the consulting engineer that some sediment entered the intake but the magnitude of the problem was unknown.

Treatment Plant Claim. Served as an expert witness in a case where a sequencing batch reactor treatment plant, which included gravity sand filters, serving an upscale subdivision failed to meet the requirements of the discharge permit. Determined that the filters were designed for average flow but that the sequencing batch reactor discharged intermittently, thus the actual discharge rate was much higher than the average discharge rate. The owner received a proposal for a very expensive completely new plant of a different design. Identified the cause of the failure and recommended corrective measures which would enable the existing facility to meet the discharge requirements at a fraction of the cost of the proposed completely new plant.

Placer County, CA Sewer Maintenance District No. 1 Plant Expansion. To meet stricter discharge standards for a wastewater treatment plant, designed what was essentially a potable water treatment plant to further treat the water. The new facilities included four gravity sand filters. The new facilities were laid out to allow the addition of two additional filters in the future. In a subsequent project, added the fifth and sixth sand filter.

Rinconada Water Treatment Plant, Santa Clara County, CA. Was part of the design team that designed this completely new 80 MGD water treatment plant. The plant included six 16.7 MGD gravity sand filters.

Da Nang Air Force Base, Viet Nam. Designed the improvements that were necessary to put an old French-built water filtration plant back into operation. The graded sand that was required for the filters was obtained by manually screening and sieving local sand deposits.

Failed Treatment Facility, Michigan. Served as an expert witness in a case where the treatment system for a trailer washout facility failed to perform as intended. Preliminary impression is that inadequate preliminary treatment facilities allowed an excessive solids loading to reach the filtration facilities, which resulted in clogging of the filters.