By Mike Harrington

Manzanar wastewater facility, circa 1944. Photo courtesy of County of Inyo, Eastern California Museum.

Manzanar

Modern Utilities Tried to Help Ease the Pain of Relocation

Editor's Note: In rememberance of the recent 50th anniversary of the bombing of Pearl Harbor, this article looks at the state-the-art facilities of the Manzanar War Relocation Center used for the relocation of Japanese American citizens and aliens.

Life outside the barbed wire at Manzanar. Photo courtesy of earthsun@qnet.com.

Two months after the bombing of Pearl Harbor (December 7, 1941), President Franklin D. Roosevelt signed Executive Order number 9066, calling for the relocation of Japanese American citizens and aliens. The order authorized the secretary of war to exclude citizens and aliens of Japanese descent from the West Coast as a security measure against sabotage and espionage. This order empowered the round-up of 70,000 U.S. citizens of Japanese descent and 42,000 resident aliens.

Restored water garden. © 2000 Mike Harrington.

The systematic gathering of persons of Japanese ancestry and forcibly moving these people to relocation facilities (often referred to as concentration camps) was an enormous task. Japanese-American families were given little warning about mandatory relocation, forced to take only what they could carry, padlocked their homes and businesses and transferred hundreds of miles to often harsh, forbidding and unfamiliar locations, all in the name of national security.

The relocation began with an intensive site selection and building process. Ten such camps were built in remote areas throughout the far west.

The Manzanar War Relocation Center located near Independence, Calif., was considered one of the best. Located in the picturesque Owens Valley, this area is extremely arid and near desert-like. The Manzanar area was originally an agricultural village with Native American heritage and thriving fruit orchards. Completed in 1942, Manzanar had a population of nearly 10,000 people until its last residents left in late 1945.

The compound was rectangular in shape occupying some 550 acres. The camp boasted some 800 buildings with numerous amenities including, a "free" newspaper, hospital, cemetery, common agricultural use areas with ornamental ponds, warehouses, administration buildings, airport, recreational auditorium, manufacturing facilities, a modern water and wastewater treatment facility and barracks-style living quarters.

Sadly, the compound was enclosed by barbed wire fencing, secured by 24-hour manned guard towers and accessed only through a main sentry post.

The living quarters measured 20′ × 100′ with four separate apartments. Each apartment housed families with up to eight persons. Separate male and female latrine areas were provided.

Drinking Water

Manzanar's arid location made the task of providing clear, clean potable water difficult. A reservoir impounding area was built diverting the majority of the camp's

Collection system manhole. © 2000 Mike Harrington.

drinking water from nearby Sheperd Creek. The system consisted of a concrete dam with a settling basin where water was collected and carried via an open cement-lined flume to a storage reservoir. The reservoir had a capacity of 540,000 gallons and was built with Calico diverter gates connecting to a 14-inch welded steel supply line directed to a 90,000 gallon steel storage tank. Water was chlorinated with an "HTH Chlorinator Machine."

The distribution system consisted of 5,170 feet of 12-inch main of welded steel pipe, 6,340 feet of 10-inch, 8,822 feet of 8-inch and 29,745 feet of 6-inch cast-iron pipe before entering the service lines. At its time of completion in July 1942, the water system had a capacity of almost 1.5 mgd.

Service lines consisted of pipe sizes ranging from ¾-inch to 2½-inch galvanized iron pipe delivering drinking water on either side of the barracks outside the living quarters via above ground faucets.

Fire protection was provided by 84 traditional hydrants. The barracks were built in clusters with a fire-break between each cluster. The hospital was afforded additional protection with the installation of 500 sprinkler heads. A volunteer fire department manned by the residents was provided along with backup from neighboring towns of Independence and Big Pine.

While surface water today faces numerous requirements for treatment prior to entering the distribution system, Manzanar's water treatment consisted merely of sand traps and a settling basin. Potable water was simply chlorinated before entering the distribution system. Some small wells were drilled but they were used mainly to sustain the Japanese culture of ornamental/domestic gardens and fish ponds.

Wastewater

Wastewater was collected within the camp through 2,500 feet of 18″, 1,100 feet of 15″ and 26,502 feet of 8″ vitrified clay pipe using traditional manhole structures. It was gravity fed under present-day Route 395 to a modern site-built concrete treatment facility. Design capacity was 1.25 mgd. The plant consisted of a grit chamber, scum and distribution box, primary clarifer, anerobic digester, chlorine contact chamber and sludge drying beds. The clarifer unit was constructed in concrete 60 feet in diameter and 9 feet deep.

The digester was a unique two-stage type, 40 feet in diameter with about 22 feet overall solids depth. Depth in the upper compartment was about 12 feet and 10 feet in the lower unit. A horizontal concrete tray separated the lower and upper compartments that were operated in series. Intensive mixing was provided in the upper compartment followed by quiescent settling into the lower compartment.

Disinfection was accomplished through two 200-pound-per-day chlorine

Barracks at Manzanar, circa 1943. Photo courtesy of County of Inyo, Eastern California Museum.

Manzanar clarifier, circa 1976. Photo courtesy of County of Inyo, Eastern California Museum.

Manzanar digester, circa 1976. Photo courtesy of County of Inyo, Eastern California Museum.

Historical Perspective

gas feed units having both manual and automatic feed control.

With primary wastewater treatment, along with post chlorination, the Manzanar treatment works was considered to be the most modern in the state of California at the time. According to reports, final treated effluent was near drinking water quality before discharge.

When the camp closed in late 1945, nearly all the buildings were sold as surplus, but the water/wastewater treatment, distribution and collection systems were abandoned. For several years after the closing, municipalities like Big Pine, Independence and Laws used the high quality cast-iron pipe, valves and fittings to replace and rebuild their existing systems.

Today

Manzanar now is part of the Manzanar National Historic Site, established to preserve, comprehend, interpret and appreciate the modern human history of internment on U.S. soil. The site is available for visit. One can walk the dusty camp streets, locate remnants of the rock gardens, ponds, building foundations and water distribution and collection systems.

Ultimately, the isolation and hardship of camp life was an enduring ordeal. Manzanar remains a monument to modern American history. A commemorative plaque at the entrance to Manzanar reads: "May the injustices and humiliation suffered here as a result of hysteria, racism and economic exploitation never emerge again."

About the Author:
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Legal Stream

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- Whenever possible, agreements should be in writing and signed by all parties through representatives having authority to sign.
- The agreements should contain accurately all of the terms and conditions intended by the parties.
- The agreements should contain an "integration clause."
- At least the more complex agreements should be crafted or reviewed by counsel.

Otherwise, a contract simply may be a ticket to a courthouse.

These recent decisions may reflect a growing judicial distaste for the potential burdens of multiple enforcement actions for the same alleged violations. They also should serve as a caution to utilities to attempt to structure settlements, variances and consent orders with one agency so as to be preclusive as to the other. The *res judicata* path in environmental litigation can wander through many obstacles.

Technology Focus

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