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Final Clean Up of Former Gas Station Almost Complete

By Cathy Tyson



Location of former gas station on Orinda Way Photo
Cathy Tyson

The vacant half-acre fenced parcel directly across from the Orinda Library is finally in contract with an undisclosed buyer after languishing for 15 years. Real estate broker Henry Gannett says the current owner, who purchased the property in 1998, is thinking long term-but there's been some friction with the city of Orinda about design issues submitted by the potential buyer. "Any time a developer wants an economically viable project that requires governmental planning approval, especially in small towns like Orinda, there must be give and take. Orinda wants to zone retail buyers and then lets a real estate company take 2,000 square feet of first floor in Theatre Square. In the best locations retail is hard, this site may stay vacant for years as has Phair's, rather than compromise."

While it's unclear at the moment if the property negotiations will be fruitful, the history of the parcel has been messy.

The lot at 25 Orinda Way has been a number of gas stations over the years; the most recent owner was BP, under the Arco brand; prior to that it was a Mobil gas station and before that it was transferred to TOSCO Marketing Company which is now Conoco Phillips. Unfortunately the

former gas station had leaking underground storage tanks - the remains of the leak have been under scrutiny for the last quarter century. BP accepted responsibility for the clean-up.

The gas station closed for good in 1998, 10 years after a leak was discovered in June of 1988. It was estimated that several hundred gallons of gasoline were released initially, along with a second release of approximately 260 gallons in 1994. A monitoring program started in November of 1990 and continued until 2011. Over the years a total of 13 monitoring wells were installed starting in 1991 to check on contamination levels. Some wells showed substantially more contamination than others - the well with continuously the highest levels of pollutants is MW-5, located directly downhill from the location of the storage tanks. Markings make it easy to locate in the adjacent Vintage Office Building parking lot.

What's surprising is the amount of petroleum related chemicals that lingered in the ground, despite diligent efforts to remove pollutants. In the first quarter of 2011, 2,400 ug/L (micrograms per liter) of gasoline range organics (GRO) were measured in MW-5; a second reading was taken in July 2011 with even higher results, 4,500 ug/L. A more concrete way to understand these numbers is 1 ug/L is equal to 1 part per billion, roughly the equivalent of one drop in an Olympic sized pool. Therefore the July 2011 measurement of 4,500 parts per billion is not insignificant, but still quite diluted.

When the underground storage tanks were removed in 1998, truckload after truckload - a total of 5,400 tons - of soil was excavated from the site by TOSCO. At that time the soil was tested and samples indicated the majority of hydrocarbons were removed.

The following year three groundwater extraction wells were installed to estimate hydraulic conductivity. Still the site wasn't clean - benzene levels were recorded as 10,000 ug/L in March and 14,000 ug/L in April of that year. After a pilot test, over 400,000 gallons of water was extracted between 2002 and 2007. Benzene is a natural component of crude oil, it's colorless and highly flammable. Benzene increases the risk of cancer and other serious illnesses. "It is generally considered that the only absolutely safe concentration for benzene is zero," said the American Petroleum Institute in 1948; it's classified by the Department of Health and Human Services as a human carcinogen.

The vast majority of the other wells bored in the adjacent Vintage parking lot had virtually no detectable amounts of GRO as of 2011-only well MW-1 had barely measureable amounts.

The California Code of Regulations governs underground storage tank issues, but it gives local agencies the authority to oversee investigation and cleanup of the leak site. In this case the San Francisco Regional Water Quality Control Board is in charge. The conclusion of adequate clean up measures, when appropriate measureable steps are completed, is a "No further action" letter issued by the Water Board. At this time that letter has not been issued for the former BP station, but staff is reviewing what could be the final clean up report.

After years had passed since soil removal and water extraction efforts, initial high levels of pollutants had declined, but were still over acceptable levels according to the RWQCB. A letter from September, 2011 described the situation: "Such contamination poses a future risk to human health, groundwater quality and the environment, and active cleanup is necessary to close the case and allow for safe redevelopment of the site." That letter, from Bruce Wolde, executive director of the California Regional Water Quality Control Board, approved of BP's request to use

Arcadis, a third party environmental remediation firm to address the clean up issue via in-situ chemical oxidation.

For readers scratching their heads wondering what exactly that is - here's a definition directly from Arcadis: "In situ chemical oxidation (ISCO) involves an oxidant to the subsurface to facilitate the chemical oxidation of target organic compounds to carbon dioxide and water or to less toxic and/or more biodegradable intermediates."

By March 2012 the ISCO had been completed with favorable results "The data observed post injection indicates that ISCO has, at this point, been an effective remedial technology in decreasing COPC [constituents of potential concern] concentrations at the site. However, further site data still needs to be collected," said Hollis Phillips, project manager and principal geologist for Arcadis.

On May 31 Arcadis, having completed a field study measuring and documenting results, submitted a report to the RWQCB that requested site closure because the current conditions on the site meet all the criteria to do so. "Based on the assessment of data presented in this CSM [conceptual site model] and Closure Report, the residual concentrations of COPCs in site environmental media are unlikely to pose adverse effects to human health and the environment," stated the report.

What about the creek? Drinking water for Orinda comes from EBMUD. Shallow groundwater at the site is currently not used as a potable source and is not expected to be used as a drinking water source in the future. There are no known wells within half a mile of the site.

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