



Public Utilities Department
Administration

March 8, 2010

Mr. Wayne Praskins
EPA Project Manager, US EPA (SFD-7-3)
U.S. Environmental Protection Agency, Region 9
75 Hawthorne Street
San Francisco, CA 94105

Subject: RI/FS Study Report, B.F. Goodrich Superfund Site, Rialto, CA

Dear Mr. Praskins,

The City of Riverside, through its Public Utilities Department (RPU), has reviewed the Remedial Investigation/Feasibility Study Report (RI/FS) for the B.F. Goodrich Superfund Site prepared by CH2M Hill, dated January 25, 2010 and submits the following comments.

Riverside applauds the EPA's designation of the BF Goodrich site as a Superfund site, and is encouraged by EPA's efforts to begin addressing the contamination. Riverside strongly encourages the EPA to focus on characterizing the southerly edges of the contamination plume and providing safeguards to prevent further migration of the plume. Although the San Jacinto and the Rialto-Colton faults appear to restrict groundwater flow into and out of the basin, there is no barrier on the Southeastern portion of the basins (USGS, 1997). The lack of barrier has allowed the contamination to travel into the Riverside basin, thereby impacting Riverside's wells.

A comprehensive remedy for the BF Goodrich site must include provisions for characterization of the plume and prevention of further migration of the plume.

1. Riverside Water System

The City of Riverside began domestic water operation in 1913, and now provides water service to over 280,000 customers, including almost all residents in the City except for a small number of residents that live in the higher elevations of the City.

The City is wholly dependent upon groundwater resources. The City extracts groundwater from the Bunker Hill and Riverside North and South Basins. Approximately 60% of the water is pumped from the Bunker Hill Basin and 40% is pumped from the Riverside Basin.

The City pumps from a total of 14 wells in the Riverside North and South Basins. Attached hereto is a map showing the location of the wells in relation to the B.F. Goodrich site. Within the Riverside South Basin, seven wells are located in the

North Orange Well Field and water is conveyed to the distribution system through the 60-inch North Orange transmission pipeline. In the Riverside North Basin, four wells pump to the new John W. North Treatment Plant and three wells pump directly into the 60-inch Gage Pipeline.

The North Treatment Plant was constructed to bring new water supplies online and eliminate the City's reliance on imported Colorado River and State Project water. The North Treatment Plant cost approximately \$25.7 million, with approximately 50% of Proposition 50 grant funds from the State of California (authorized by ballot initiative in November 2002 to construct water-related infrastructure that reduces Southern California's consumption of imported water from the Colorado River), with the remaining portion funded by the City. The North Treatment Plant began commercial operations on September 4, 2008, allowing Riverside to become water independent except for emergency conditions, with fiscal year 2009 having no demand on either Colorado River water or the State Project water.

2. City of Riverside v. Black & Decker (U.S), Inc., et al., LACSC Case No. BC 410878

On March 31, 2009, the City filed the above-referenced lawsuit against various parties, including Emhart Industries, Inc., Goodrich Corporation, and Pyro Spectaculars, Inc., to protect its drinking water supplies against perchlorate contamination. The City had detected perchlorate in several of its wells in the Riverside Basin, in levels that exceeded state guidelines. To date, and at the request of B.F. Goodrich, the City has been granted several extensions of time by the court to serve its complaint and begin undertaking discovery. The reasons for such continuances are to allow the defendants and the State of California's Regional Water Quality Control Board, Santa Ana Region, to engage in settlement negotiations. (Attached is a copy of the complaint.)

3. Effect of B.F. Goodrich site on Riverside's Water Resources

Since September of 2008, Riverside has been sampling abandoned wells located northerly of its active wells. The RI/FS is specific to a relatively limited geographic area in the Rialto-Colton Basin, addressing perchlorate and volatile organic compound (VOC) groundwater contamination in a portion of the site that includes the 160-acre area and an area extending approximately 1.5 miles downgradient (southeast) from the 160-acre site. The 160-acre site is approximately 9 miles upgradient of the RPU Flume Tract wells (Figure 1). The RI/FS study proposes a treat/capture zone 1.5 miles downgradient of the site, but does not address the regional aquifer and that portion of the plume that has already migrated to the southeast beyond the proposed capture zone. Figure 1 shows a summary of perchlorate sampling and analysis completed by RPU. The nearest upgradient well from the Flume Tract which has recently detected perchlorate is the Patterson Well, approximately 2 miles upgradient of the Flume Tract wells and approximately 7 miles downgradient of the 160-acre site (9.4 ug/L, 8/8/09). Based on this observation, a portion of the perchlorate plume extending approximately 5.5 miles downgradient of the proposed capture zone is not being addressed.

The RI/FS report cites groundwater flow velocities calculated by GeoLogic of 2 to 4 feet per day in the Intermediate Aquifer and 1 foot per day in the Regional Aquifer near the Rialto 03 Well. Figures 2 through 4 show potential plume migration velocities of 2, 5, and 8 feet/day, respectively. Using a velocity of 5 feet/day, perchlorate may be detected in the Flume Tract Wells as soon as 2014. These numbers are only estimates in the

absence of any reliable pump test data in the area. RPU recommends redirecting a portion of the EPA resources to conduct a controlled pump test in the vicinity of the Rialto-Colton Basin downgradient of the Patterson Well in order to more accurately calculate potential travel time of the perchlorate plume. As the plume approaches the Santa Ana River channel, velocities in the recent channel deposits may be considerably higher.

The portion of the Rialto-Colton and North Riverside groundwater basins displayed in Figures 2 through 4 is a critical groundwater supply component for numerous agencies in addition to RPU. Domestic water supply wells in the area include RPU Flume Tract Wells 2, 3, 4, and 6; City of Colton Wells 23, 30, and 31; and Meeks and Daley Wells 36 and (new) Well 36. The combined pumping capacity of production wells in the area immediately downgradient of the nearest detected perchlorate (in the Patterson Well) is approximately 25 million gallons per day (mgd). The RPU Flume Wells alone produce and deliver 10 mgd to the J.W. North Treatment Plant.

RPU continues to sample and analyze selected wells shown in Figure 1 and perchlorate analyses compiled to date indicate that the perchlorate levels are consistent and have in fact elevated over time in the Patterson Well, ranging from 7.0 ug/L in 2008 to 9.4 ug/L in 2009. The RI/FS report addresses the point source of the contamination, but the larger regional implications downgradient of the capture zone need to be addressed in a proactive manner. In order to predict the velocity of the plume and projected detection in production wells in the area, additional pump tests are required in order to calculate aquifer parameters specific to this region of the basin. RPU will assist in this effort as required in order to comprehensively address this issue.

If you require additional information, please feel free to contact me at (951) 826-5780, or Mr. Max Rasouli, at (951) 826-5574.

Sincerely,
Riverside Public Utilities


For Kevin S. Milligan, P.E.
Utilities Assistant General Manager – Water

Cc: David Wright, Public Utilities General Manager
Susan Wilson, Deputy City Attorney
Max Rasouli, Water Resources Manager

**FIGURE 1
RIALTO-COLTON
PERCHLORATE
PLUME**



- Riverside Well
 - Colton Well
 - West Valley Water District
 - Other Well
 - GW Elev. Contour Jan. 2008*
 - Fault*
- Perchlorate Isoconcentration***
- Concentration in µg/L**
- 1
 - 10
 - 100
 - ?? Inferred
- Data Source DPRA*



Map Developed By:
Riverside Public Utilities
Water Resources
February 2010

Purged - N.D. (4/17/09)
Purged - N.D. (3/6/09)
Purged - N.D. (2/4/09)
Purged - N.D. (1/23/09)
Purged - N.D. (12/16/08)
Purged - N.D. (11/29/08)
Purged - N.D. (9/9/08)

Purged - 5.1 µg/L (4/22/09)
Purged - 5.5 µg/L (3/12/09)
Purged - 4.6 µg/L (2/10/09)
Purged - 4.8 µg/L (1/15/09)
Purged - 4.6 µg/L (1/7/09)
Purged - 4.7 µg/L (12/9/08)
Purged - 5.0 µg/L (11/18/08)
Purged - 6.5 µg/L (10/7/08)
Purged - 5.2 µg/L (9/10/08)

Purged - 4.1 µg/L (12/18/08)

Purged - 5.6 µg/L (9/15/09)
Purged - 5.6 µg/L (4/30/09)
Purged - 6.3 µg/L (12/18/08)

Purged - N.D. (9 Samples in 2009)
Purged - N.D. (4 Samples in 2008)

Bailer @ 50' - 5.3 µg/L (10/2/08)
Bailer @ 100' - 5.5 µg/L (10/2/08)
Bailer @ 50' - 4.6 µg/L (9/9/08)
Bailer @ 100' - 5.3 µg/L (9/9/08)

Purged - N.D. (6/3/09)
Purged - N.D. (2/25/09)
Purged - N.D. (10/8/08)
Purged - N.D. (8/28/08)

Purged - N.D. (6/3/09)
Purged - N.D. (2/25/09)
Purged - N.D. (10/8/08)
Purged - N.D. (8/28/08)

Low Flow @ 250' - 8.8 µg/L (11/10/09)
Low Flow @ 250' - 9.4 µg/L (8/8/09)
Low Flow @ 250' - 8.8 µg/L (4/1/09)
Bailer @ 190' - 7.2 µg/L (10/2/08)
Bailer @ 250' - 7.0 µg/L (10/2/08)
Bailer @ 190' - 7.6 µg/L (9/9/08)
Bailer @ 250' - 7.2 µg/L (9/9/08)

CAESAR CHAVEZ #2
Low Flow @ 610' - N.D. (11/10/2009)
Low Flow @ 610' - N.D. (8/16/09)
Low Flow @ 610' - N.D. (4/1/09)
Bailer @ 160' - N.D. (10/9/08)
Bailer @ 280' - N.D. (10/9/08)
Bailer @ 160' - N.D. (9/10/08)
Bailer @ 260' - N.D. (9/10/08)
CAESAR CHAVEZ #4
Low Flow @ 280' - N.D. (11/10/08)
Low Flow @ 280' - N.D. (8/18/09)
CAESAR CHAVEZ #1
Low Flow @ 930' - N.D. (4/1/09)

Bailer @ 80' - N.D. (10/02/08)
Bailer @ 200' - N.D. (10/02/08)
Bailer @ 80' - N.D. (09/03/08)
Bailer @ 200' - N.D. (09/03/08)

Purged - N.D. (12/18/08)
Purged - N.D. (10/3/08)

Purged - N.D. (8 Samples in 2009)
Purged - N.D. (4 Samples in 2008)

Purged - N.D. (8 Samples in 2009)
Purged - N.D. (5 Samples in 2008)

Purged - N.D. (6 Samples in 2009)
Purged - N.D. (5 Samples in 2008)





