

What Do We Know and What Do We Need To Know?

Subject: The Baylands Contamination and Remediation
Emphasis OU-2

BBCAG Mission Statement:

The purpose of the Brisbane Baylands Community Advisory Group (BCCAG) is to provide an open forum and community based input from the communities of Brisbane, Daly City and San Francisco and to advise the agencies charged with the remediation actions on three contiguous sites commonly referred to as the Brisbane Baylands.

What do we need to know to accomplish our goal?

We know that OU-2(the southern Railyard) plus Industrial Way is contaminate with Arsenated Lead, Bunker C Oil, VOCs and Nickel.

Toxin	Possible Remediation
Arsenated Lead	cap in place
Bunker C Oil	cap in place
VOCs	removal by excavation to hazardous waste landfill
Nickel	removal to haz. waste landfill

Since both the Arsenated Lead and the Bunker C Oil may be remediated by using a cap in place, we must consider what the risk to human and environmental health is for that method.

Understanding the risk requires understanding the following:

- A. Effectiveness of the cap
- B.
 1. The range of the depth of shallow groundwater
And deep groundwater
 2. The path and direction of the groundwater
- C. Range of Depth of the contaminants
- D. Path of surface water runoff or flowing water in ditches and creeks
- E. Are there better alternative types of remediation
- F. *What the land use will be*

The impact of removal of the VOCs or Nickel from beginning to end must be considered to understand the risks it poses.

Our recommendations to regulators including our comments on the Draft EIR (if not already included in the Draft EIR) should include the following

1. A recommendation that the cap be made of the ideal soil and clay type particle size to contain the arsenated lead and the Bunker C Oil and that the cap be two to three times thicker than recommended. We could ask if there is any reason why the extra thickness would be detrimental.
2. A detailed study of shallow groundwater should be made that would include all of OU-2 recording the depth at the top and bottom of groundwater every 25-50 feet. The width of the flow should also be measured as should its direction. The material it is flowing through should be identified. A three dimensional diagram should show where the contamination is located with relation to the groundwater.
3. The same study should be done for the deep groundwater.
4. The range of the depth of the contaminants across the area of contamination should be studied and determined. The three dimensional diagram mentioned above should be prepared.
5. There should be a detailed diagram showing the extent (width) of flowing surface storm water and water that flows in permanent and seasonal ditches and creeks.

Please note that one reason that cap in place is considered an appropriate form of remediation is because it is alleged that the contaminants, arsenated lead and Bunker C Oil will not come into contact with either surface water or groundwater. If it does come into contact with either one, it flows toward the Bay, as the Bunker C Oil was doing before the installation of the interim remediation of the North Ditch.

6. If there are alternate forms of remediation that would result in overall less impact on the environment and less risk to human health than a proposed method then the alternate method should be considered and chosen if it is equally effective remediating the toxin. An example would be the possible use of bioremediation on the Bunker C Oil. We need to know the details of using this alternative e.g. how long would it take to remediate the amount of cubic yards of Bunker C Oil contaminated soil.
7. The monitoring of the soil and ground and surface water for arsenated lead, Bunker C Oil and Nickel should continue for 20-30 years, maybe more. The Mitigation Monitoring and Reporting Plan should require that the RWQCB and the overseer of the MMRP receive the reports twice a year.

8. Since the source of the VOCs is unknown, no matter what type of remediation is used, there should be a set of monitoring wells that are located in the direction or directions that the shallow and deep groundwater are flowing. The wells should be tested twice a year and the reports should be sent to the RWQCB and the overseer of the MMRP.
9. Soil vapor **can** create a risk to human or environmental health **and** it should be studied and remediated.
10. There should be a review to determine all of the toxic chemicals that have been tested for and a determination if that it is sufficient.
11. In each case of remediation, there should be at least three different methods that are considered.
12. Where arsenated lead is the contaminant being capped there should be consideration given as to whether there are bio accumulators for arsenic present.
13. (The clean-up should be to residential level and beyond *removed*)
Housing is not recommended because of unknowns related to contamination. Human health must be protected.
14. There should be a geotechnical analysis of the impact of day to day wear and tear, sea level rise and earthquakes of various magnitudes on all fill areas including the areas filled after the 1906 quake.
15. All fill areas should be evaluated for the risk of liquefaction
16. There should be a geo technical peer review of all geo-technical work
17. Where contamination exists and there are monitoring wells in the direction of the groundwater flow, there should be sensors upland to detect what new contaminants may be flowing onto the site.
18. The aquitards thickness and slope should be investigated and reported.
Is it a constant slope?
19. *The impacts of sea level rise and 100 year and greater storm flooding must be thoroughly investigated.*