

**ROCKY FLATS CITIZENS ADVISORY BOARD
COMMUNITY WORKSHOP ON SURFACE WATER
MEETING NOTES**

May 30, 2002

5 to 8 p.m.

Rocky Flats Environmental Technology Site, Golden

STAKEHOLDERS PRESENT: Joe Downey, Shirley Garcia, Victor Holm, Bill Kossack, Tom Marshall, Mary Mattson, Leroy Moore, Nancy Peters, and Earl Sorrels (RFCAB members); Jerry Henderson, Ken Korkia, Patricia Rice, and Deb Thompson (RFCAB staff); Louise Janson (Westminster resident); John Ciolek (AlphaTRAC); Hallie Mahan (City of Broomfield); Sam Dixon (City of Westminster); Tim Rehder (EPA); Steve Gunderson and Karen Holliway (CDPHE), Mark Sattelberg (USFWS)

SITE REPRESENTATIVES PARTICIPATING: Rick DiSalvo, Anna Martinez, John Rampe, and John Stover (DOE-RFFO); Bill Badger, Leslie Dunstan, Bob Nininger, Dave Shelton, and George Squibb (Kaiser-Hill)

DESCRIPTION: At its May 2, 2002 meeting, the Rocky Flats Citizens Advisory Board agreed to sponsor a workshop on issues related to surface water quality regulatory issues. The purpose of the workshop was to help stakeholders understand the site's process for surface water sampling and analysis, and proposed changes to water quality evaluation methodologies.

SITE TOUR: The workshop began with a site tour to show participants a surface-water monitoring station (GS 8) and some of the detention ponds that protect downstream water quality. Traveling by bus around the North Perimeter Road, participants saw Buildings 371 and 771, the remnants of the old protected area, the Solar Ponds Groundwater Plume Treatment System, and a herd of mule deer grazing just outside the industrial area.

The bus then struck out into the buffer zone along the divide between North and South Walnut Creeks, where there were excellent views of the A and B-Series ponds. John Rampe (DOE-RFFO) pointed out the East Trenches Groundwater Plume Treatment System and, to the rear, the Sewage Treatment Plant, which discharges directly to Pond B-3 along South Walnut Creek. The next pond in series, B-4, is a flow-through system. Finally, Pond B-5, the terminal pond, prevents water and waterborne contamination from running freely offsite. Two other terminal ponds are located along North Walnut Creek and Woman Creek, respectively.

The group assembled at the outlet works of Pond B-5. On this day, a steady stream of water was running through the channel as B-5 happened to be undergoing a batch-release. This must be done periodically at all of the terminal ponds, but most frequently at B-5 due to the volume of water received from the water treatment plant. In most cases, the terminal ponds are sampled prior to release to ensure water leaving the site will be of acceptable quality. However, the turnaround time on laboratory results is a matter of weeks, and once a year or so, heavy precipitation causes B-5 to reach capacity and necessitates a quick release from the pond in order to protect the integrity of the dam.

Atop the outlet works sits automated sampler, GS-8, one of 52 located throughout the site. It comes equipped with an automated flow meter and a probe that takes real-time measurements of parameters such as temperature and turbidity. Data are transmitted via telemetry to enable site managers to monitor the status of flow rates and so forth. Most germane to the purpose of the workshop was the system for collecting laboratory samples, which consists of an intake line, a computerized sample controller, and a collection carboy. Into the 20-liter collection carboy goes multiple 0.2-liter grab samples. The frequency with which individual samples are taken is tied to volume of water passing through the outlet works. The flow meter keeps track of the amount of discharge since the last sample was taken, and once a certain discharge threshold has been reached, it activates the taking of another sample. Therefore, the sample carboy sent to the laboratory and tested for various contaminants (notably plutonium and americium) is known as a "flow-paced composite." Instead being a 20-liter snapshot in time, each composite sample is representative of water quality throughout the entire flow period. In times of heavy flow, the composite sample may be collected in a matter of hours, or during low discharge, it may represent many days of flow. Regardless of the time interval required for sample collection, each carboy full of composite sample represents about five million gallons of water that has flowed through the outlet works at GS-8.

PRESENTATIONS: The group then headed back to Building 60 to learn about sample handling and analysis, encountering a pair of coyotes along the South Walnut Creek drainage. At Building 60, participants heard educational presentations and then discussed what was learned. Leslie Dunstan, who works on water programs for Safe Sites of Colorado (a Kaiser-Hill subcontractor), gave the first presentation about water sampling and analysis procedures.

Samples are retrieved and delivered with a sampling request based on the location that was sampled and the types of samples that were prepared. Samples are bottled and labeled with a list of the contaminants of concern. Since actinides sometimes collect on the outside of the container as it sits, the sample is mixed using a stir bar and mixing table. A determination will then be made about the length of time the sample will be preserved, based on the type of analysis that is required. Samples are shipped to a lab designated by the Analytical Services Division (ASD) of Kaiser-Hill. ASD determines the most appropriate lab to work on a given sample. Samples are usually shipped weekly, unless there is some need to have samples prepared quickly. Kaiser-Hill selects the labs based on DOE requirements. Selected labs are audited prior to receiving samples and are audited again during the contract period.

The labs analyze samples based on contractual requirements and site-specific needs. The type of analysis performed depends on what is being analyzed and the Statements of Work the lab contractually agreed to do. In some cases, labs may request additional samples in order to meet site-specific requirements. For radionuclide analysis, routine turnaround time for most analysis is 28 days. Shorter turnaround times may be requested. However, that is not done often because of the need to concentrate samples and count activity levels for a certain length of time in order to more accurately detect activity.

When Kaiser-Hill receives the data, it is reviewed and compared to applicable action levels or standards and typical historical measurements. All data packages are either verified or validated by a third party. About 75% of data packages are randomly verified, and about 25% are randomly validated. Verification means the data is checked for accuracy, while a validation checks the accuracy of both the data and the results. All RFCA data resulting in reportable levels when compared to action levels and standards are validated, if those samples were not randomly chosen for validation. Only a small percentage of data (less than 10%) are rejected based on either verification or validation.

Next, George Squibb, also with Safe Sites of Colorado, talked about evaluation of data for the Points of Evaluation (POEs) and Points of Compliance (POCs). The site's water quality is evaluated by comparing 30-day volume-weighted averages to standards and action levels. Evaluation is performed semi-monthly. Values are calculated using daily time steps. Each calculated value represents the previous 30 days for which there was both a flow and a corresponding measurement. The 30-day average takes into account the stream discharge volume and corresponding analysis for each day in a 30-day "window." Thus, the number represents all the water flow over all the days counted.

When there is an exceedence or analysis shows activity above standards or action levels, the site performs a source evaluation. This is done at both POEs and POCs. An exceedence in both areas can subject the contractor to fines. However, there are more legal and regulatory requirements at a Point of Compliance. Higher activity levels are usually found at POEs (upstream near the industrial area) and very little activity at POCs or below the ponds.

The site is now proposing to change to a 365 calendar-day volume-weighted average for measuring water quality onsite. Water leaving the site would still be evaluated using the 30-day average. With the 365-day average, values would be calculated on the last day of each month. The evaluation process is similar to what is done with the 30-day method, the only difference being the amount of time taken into account. The site believes this would provide a more realistic picture of activity levels, because evaluating on a 365-day average would reveal more long-term, chronic activity levels. They believe the 30-day averaging method only helps to point out short-term, acute activity levels. Using a method designed to detect short-term problems, according to the site, makes it more difficult to gauge long-term problems.

John Rampe with DOE-RFFO gave the final presentation about surface water compliance at the site. Compliance structures are part of the Rocky Flats Cleanup Agreement (RFCA). RFCA's Action Level Framework contains water quality standards and establishes POCs and upstream monitoring points (POEs). The RFCA Integrated Monitoring Plan describes POCs and POEs in detail, defines the location of POEs, delineated sampling locations, and includes a process for sampling and analysis. The POCs are located at terminal pond outfalls and where the creeks cross Indiana Street. An exceedence at any of these locations triggers notification, source evaluation, and mitigation. Penalties can be imposed both for the exceedence, and for DOE's failure to take required actions. The POEs are located above the terminal ponds in North Walnut Creek, South Walnut Creek, and the South Interceptor Ditch, as well as at the sewage treatment plant outfall. When there is an exceedence at these locations, penalties cannot be imposed for the exceedence itself, but can be imposed for a failure to take action.

The site's proposed changes to measuring compliance at end-state are found in the Surface Water Technical Memorandum (Tech Memo), which is still being drafted. Under the proposed changes, POCs would be retained where they are now, but the method of determining compliance would be altered. Compliance at the terminal ponds would be calculated using the 365-day average. This lessens the effect of single sample values, but DOE believes this change is more consistent with the chronic, conservative nature of the standards. Specific monitoring points that would evaluate remedy effectiveness would be established to replace POEs.

DISCUSSION SESSION: Finally, participants spent some time discussing issues. Following is a summary of those conversations.

- The site is proposing to average its data from surface water sampling onsite over a period of a year as opposed to using 30-day averaging, as it is presently doing. A Board member said the public would look at the proposed annual averaging as a deception. He said that if you juxtaposed the two averages, people would not look at the yearly averaging but at the

monthly averaging. A representative of a federal environmental agency at the workshop said the change in averaging is not an attempt to deceive the public. He said the proposal is straightforward. He also said the 30-day averaging would still be in effect where the water goes offsite, where it crosses Indiana Street. Another regulator added the Department of Energy has agreed to keep the standard of .15 pCi/g for radioactive contaminants. The standard of .15 pCi/g is conservative for the site, he said, because it is based on the drinking water standard – consuming two liters of water per day over 30 years. The excess cancer risk from such an exposure is limited by the standard to be one in a million or 10^{-6} . He said the annual averaging would be protective of human health and the environment.

- Another Board member asked why the site is going to yearly averaging if 30-day averages are not causing problems. A DOE/RFFO representative said it is possible a single-sample spike, showing contamination higher than the standard of .15 pCi/g, will occur. But in past sampling, the spikes are exceptions, do not happen often, and do not show a general trend of contamination by radioactive elements in surface water. He said the new method would give the site more of a “comfort zone” with respect to the standard, that spikes in the data would not put them out of compliance with regulations and subject them to potential fines. A state regulator said that after closure the regulators would be evaluating the effectiveness of onsite remedies and making sure that there is no movement of contaminants off the site.
- One RFCAB member said fines are far too small to be effective. He said the site could end up with pollution in the sediments of the ponds. He said everyone involved should be seeking ways to be more vigilant, not less vigilant. The state regulator said his office would be inspecting the site to make sure contaminants were not flowing through the retention ponds. He said they would look to be more vigilant after site closure.
- Another Board member asked where the 30-day averaging was mandated in the regulations. The state regulator said the state’s Water Quality Control Commission has a 30-day averaging for the chronic contaminants list, but that there is no strict compliance method for plutonium. Also the Water Quality Control Commission will be notified of the change in averaging. A DOE/RFFO representative said that the site and the regulators are working out what contaminants will be monitored onsite.
- Another Board member said it is unclear what a spike means and how many spikes do you need to trigger a reaction from regulators. A state regulator said that details of that had not been worked out yet.
- Another Board member asked if it is possible that when monitoring data becomes available, that the site put an asterisk or red mark beside every spike in the data. A site representative said there have been a few spikes higher than the .15 pCi/g standard.
- An RFCAB member asked if the DOE could make the raw data available on the web. However, a DOE-RFFO representative said it is not on the web because of 9/11. The data can be obtained by asking for it from site representatives.
- A city representative said the site will change after closure and will be subject to different stresses, such as prairie dogs digging tunnels, etc. She said that the site, regulators, and the community need to look at “things” more closely. A state regulator said it was important to have a “robust” stewardship program.