
Ms. Donovan noted the recent change of the installation name from Massachusetts Military Reservation (MMR) to Joint Base Cape Cod (JBCC) and asked the team members if a team name change might also be appropriate. It was decided that a name change discussion would occur later in tonight's meeting.

Mr. Davis announced that the Air Force Civil Engineer Center (AFCEC) has been going through some reorganization and has assigned a new Remedial Program Manager (RPM) for JBCC. The new RPM is Ms. Rose Forbes. Mr. Davis added that he will still be located at JBCC and will assist Ms. Forbes, as needed. Mr. Davis explained he is now the "Lead for the Installation Support Team for the Northeast."

Agenda Item #2. Natural Resources Damages – Amendment to Textron Restoration Plan

Ms. Donovan introduced Ms. Pelto, the MassDEP Natural Resource Damages (NRD) Program Coordinator.

Ms. Pelto pointed out that the photo on the front of her presentation was from one of the projects that was funded through the Textron settlement, which was the protection of land in Mashpee for aquifer protection (Zone 2, public water supply and habitat protection rare species and other habitats).

Ms. Pelto explained that the settlement was subject to two different authorities. The first part of the settlement (\$460,000) was subject to state authority (MGL 21E) and went to the Commonwealth of MA, where it was subject to expenditure under state law. The second aspect of the settlement was subject to expenditure under federal law (CERCLA or Superfund) and that was \$500,000 to the Commonwealth and \$175,000 to the Department of Defense, and is held in the Department of the Interior account. Ms. Pelto explained that is important because the second part of the settlement is also subject to federal requirements for public involvement and restoration planning. She noted that this was the reason for her presentation at tonight's meeting.

As part of the restoration planning process, Ms. Pelto's team started consulting with the public and fellow agencies back in 2008 and 2009 to identify and evaluate alternatives for restoration. There was also a "formal request for responses for proposals for restoration." The draft Restoration Plan evaluated those proposals and proposed some recommendations that also went out for public comment. Based on the public comments, the Restoration Plan was revised and then finalized in 2010.

As part of the implementation of the approved project, the NRD program oversees and monitors the performance of the projects. One of the projects has approached the trustee council and the Commonwealth with some proposed revisions to their project. Ms. Pelto explained that is the purpose of the draft amendment to the Restoration Plan and public comments are being solicited now.

Ms. Pelto reviewed the approved projects and noted that with the funding subject to state law, two land acquisition projects were funded with the purpose of protecting the Zone 2 water supplies (one in Mashpee and the other in Sandwich). Ms. Pelto explained that for Restoration Planning requirement, two projects were selected that looked regionally at water quality both in terms of groundwater and surface water. Ms. Pelto noted that \$400,000 went to the Town of Sandwich for Phases I and II of a Comprehensive Water Resources Management Plan and \$371,800 went to the Upper Cape Regional Water Supply Cooperative for a Sustainable Management of Water Resources Plan for the Sagamore Lens. Both of those projects are still ongoing and under contract with MassDEP.

Ms. Pelto explained that during the restoration project proposal phase back in 2010, the Town of Sandwich requested funding for all four phases of their comprehensive plan. The trustees at the time

funded the first two phases: the Needs Assessment and the Alternatives Evaluation. This was approved as part of the final Restoration Plan. Ms. Pelto noted that at this point three years later, the Town of Sandwich has been “diligently implementing their project” and been able to complete the first two phases for less than the original budget (\$400,000). The Town approached MassDEP and the Trustee Council with the option of funding an additional phase of the project (Phase III – Formulate Recommended Plan) with the cost savings from the first two phases. In order to achieve that, Mass DEP proposes formally reallocating funding that remains from Phases I and II, as well as adding some unexpended funds from the original settlement. The funds were unexpended because one of the land acquisitions ended up costing less than the estimate and there was funding held in reserve for contingency purposes.

Ms. Pelto referred to the handout “Proposed Amendment to Final Restoration Plan,” which outlines the reallocation proposal. She noted that comments on the Amendment can be made until November 25th and she reviewed the contact information.

Mr. Goddard asked if the Natural Resources Trustee Council plans to have any meetings on JBCC about the four major agreements, Records of Decisions, for the plumes they were looking at. Ms. Pelto noted that the Trustee Council is in regular communication about not only the planning process but also the implementation process for the projects. She added that while the MassDEP handles all of the contracting, and two of the projects were subject to state law, they have been in ongoing consultation with the full Council to be sure that whatever is implemented will benefit the groundwater and other resources in the area. She also added that there have been some preliminary conversations about potential engagement for further activities and evaluations.

Ms. Donovan asked Ms. Pelto or Mr. Davis to explain who the members of the Trustee Council are. Mr. Davis replied by listing the following: the State, the Air Force, the Army, the Department of Veteran’s Affairs, and the Department of the Interior. Mr. Davis added that there had been some discussion about getting a contract in place for meeting facilitation purposes. However, he pointed out that the furloughs and sequestration meant a reprioritization of workload and attention was diverted. He noted that there is no dedicated staff just for natural resource damage assessment process and that this is usually added to someone’s existing workload. Mr. Davis estimates that, in the next few months, they should know more about the possibility to re-engage on the matter.

Mr. Goddard requested that the MMRCT be updated on the NRTC plans for future evaluations. Ms. Pelto and Mr. Davis agreed. Ms. Donovan noted that there is a public involvement component to the NRTC process and that no decisions would be made without the opportunity for public input.

Agenda Item #3. Land Use Controls – Part I - IRP

Mr. Karson explained that all of the groundwater plumes go through the Land Use Control Program as part of the approved remedy for each plume. The goal is to prevent access to the groundwater at each plume, until it no longer poses an unacceptable risk. It also prevents interference with remedies that are in place and limits the use of, and/or exposure to, contaminated soil in groundwater.

Mr. Karson gave examples of the land use controls: signs around landfills, well drilling prohibitions and testing requirements, and monitoring of dig safe notices to identify well drilling and digging activity near wells/systems. Mr. Karson noted the main land use control is the verification of private residential wells above or near groundwater plumes and irrigation wells that have not been decommissioned. He added that the Residential Well Verification Program was the main part of his presentation tonight.

Mr. Karson explained that the residential well verifications are a required part of the remedy for each plume and are included in the Records of Decisions (RODs). A protocol for the program was established in 2008 and modified slightly over the years as the program progressed. The protocol is currently being updated to document the lessons learned.

Mr. Karson showed a figure with a plume outline and then a buffer zone around the plume, which signifies the land use control area, which is a minimum of 500 ft. surrounding the edge of the plume. He explained that IRP established the buffer zones for each plume and created a database of properties in the area.

Mr. Karson noted that the private well verification process is now 100% complete for the IRP. He noted outreach efforts were as follows: multiple mailings, phone calls, drive-bys to verify vacant lots, door-to-door canvassing, and coordination with town agencies, realtors, attorneys, neighbors, USEPA and MassDEP. Mr. Karson showed a table that outlines the plumes, the number of parcels in the vicinity of the plumes, well tracking information regarding usage and the successful outreach date. The Residential Well Verification Program for the IRP includes 2077 parcels and 100% have been accounted for.

Mr. Karson explained that the wells identified as “active” (used for drinking water or irrigation) underwent extensive technical evaluations. All plume data is reviewed (depth, migration) and well construction information is gathered (from home owners, well drilling companies, and Boards of Health). Models are used to simulate transport simulations and determine how a plume will react over time and if there is potential for it to upwell at any time. Well sampling data is also reviewed and additional well sampling is conducted.

Mr. Karson reported that no private wells were identified as presenting an unacceptable exposure risk from the groundwater plumes associated with the IRP. He noted that they are conducting annual sampling for three drinking water wells because there is a possibility for a future interaction with area plumes. AFCEC will continue to monitor and report on nine commercial/agricultural wells. Mr. Karson showed a figure with the annual sampling locations.

Mr. Karson noted that they continue to track the wells that have been deemed inactive and, at the time of the evaluations, did not present an exposure pathway. These wells are still reviewed annually to verify the well statuses and their locations in relation to the plumes. As part of this annual effort, mailings are sent to the homeowners with wells, asking for information if the wells have been reactivated. In addition, as part of the Five Year Review, AFCEC will conduct the entire process access again (verifying property owner information and well statuses).

Mr. Karson pointed out that the local Boards of Health also receive updates on an annual basis. He noted that at this year’s briefing, he provided the boards with recent project notes for the plumes and updated residential contact information and documentation of outreach efforts.

Mr. Saucier asked if the program uses the well completion reports that are required by the State for well installation. Mr. Karson confirmed that is part of the process but noted the records were not very complete for years in the past, but IRP did try to obtain information from the well drillers and town and state offices.

Ms. Rielinger asked if properties are reevaluated as plume contours shift. Mr. Karson confirmed that this is true and that some properties are then removed from the program and others are added. Mr. Karson explained that this evaluation is done annually as part of the long-term monitoring reports that are produced for each plume and sampling of private wells may be considered or required based on the changes made to each plume’s conceptual site model.

Mr. Goddard inquired about the types of communication methods used to reach homeowners, and mentioned e-mail specifically. Mr. Karson confirmed e-mail is part of the outreach effort. Mr. Goddard then asked if an annual or semi-annual effort could be done to contact homeowners to determine if the use of a private well has changed. Mr. Karson reiterated that there is a requirement for this to be done on an annual basis. He explained that there is an initial hard copy mailing and, if the letter is returned as undeliverable, then there is a follow-up effort via e-mail, phone calls, and hand-delivery of notices, as necessary.

Mr. Goddard also asked if it would be possible, in the highest risk areas, for there to be a placard on all existing wells that would inform people of whom to call before a well was used. He also noted his concern over people using the wells for irrigation purposes, citing potential agricultural use. Mr. Karson clarified that wells located within a potential “higher risk” area are already part of the IRP Residential Well Sampling Program. Mr. Karson referred to the Remedial Program Managers (RPMs) and a recent project note that was signed, which mandates annual outreach for the non-functional wells.

Mr. DiNardo commended the cleanup programs for their extensive efforts. He also expressed frustration that more of the general public is not aware that the exposure is so extremely low. He was surprised to see that only about 10% of the private wells “were actually used for a purpose – residential water.” Mr. DiNardo said he was relieved that the private wells identified do not present an unacceptable exposure risk from the plume. He does not feel the general public is aware of this and would like there to be additional communication about the progress and the lack of exposure. Mr. Karson noted there were three media representatives at the meeting and suggested they write articles on the subject.

Mr. Karson added that the well information is sent to the homeowners after the IRP evaluation is completed. He also pointed out that the contact he has with the various homeowners is another opportunity to provide information about the cleanup program(s).

Mr. Saucier asked about abandoned wells and deed restrictions on properties. Mr. Davis clarified that, in the majority of cases, there is no threat because there are no detectable contaminant concentrations in the wells. He explained the private wells are much shallower than the plume and not deep enough to draw up contaminated water, so the institutional controls are simply precautionary. He noted that there are some wells in Ashumet Valley used for cranberry irrigation, where detections are seen.

Mr. Davis explained that the Residential Well Sampling Program was initiated because of a Cape Cod Times reporter pointing out that town regulations alone would not necessarily prevent a homeowner from using a well on their property. The RPMs decided there needed to be an outreach effort to determine the status of the wells and provide information directly to the homeowners.

Mr. Davis explained that much of the work for the residential well verification program was done by CH2MHill employees who created the database, generated the maps, loaded the mailing information and residential communication logs, and shared with the towns. He commended their efforts.

Land Use Controls – Part II - Impact Area Groundwater Study Program (IAGWSP)

Ms. Richardson introduced herself and explained that the IAGWSP is following the exact same process that the IRP uses for its Residential Well Program. She also explained that in addition to monitoring dig-safe notices daily for well constructions, she also makes sure existing infrastructure for treatment systems is not affected. As an example, Ms. Richardson noted there was significant construction activity in a neighborhood in Forestdale. She dispatched the IAGWSP construction manager to go to

the area to make sure the work was not going to impact the recently installed J-1 Range Treatment System.

Ms. Richardson noted that the IAGWSP is verifying the existence of private wells as part of the Land Use Controls for six sites: Northwest Corner, Demolition Area 1, J-1 Range (Southern), J-2 Range (Eastern), L Range, and Western Boundary. She reviewed the status of the verification process within each operable unit (OU).

To date, the IAGWSP has only identified one private well, which is used for irrigation. There are no drinking water wells currently in use. To address Ms. Rielinger's question from earlier, Ms. Richardson confirmed evaluations are done as part of the annual monitoring reports. She then pointed out that as the Demolition Area 1 plume contours were extended, so were the boundaries for residential well verification/land use controls.

Ms. Richardson explained that the IAWGSP also uses a database to track the outreach efforts. She stated that the town tax assessor information is used as part of the annual evaluation so the most up-to-date contact information is used. She further noted that the IAGWSP will also do a Five Year Review report and well information is also provided in that document.

Ms. Richardson pointed out that the recent Cleanup Update publication includes information about the Residential Well Program and is distributed throughout the community (libraries, web site, town halls, etc.).

Agenda Item #4. IRP Testing of Ponds and Harbors

Mr. Karson provided an annual update on the testing that is done on ponds, harbors, and rivers. He explained that testing is conducted annually in the spring for Snake Pond, Deep Pond, Ashumet Pond, Red Brook Harbor and Squeteague Harbor. He also noted that Johns Pond is sampled two times a year (spring and summer). He explained that testing is conducted annually in the fall at the Coonamessett River and the Backus River, prior to the cranberry harvest. Testing is done annually in the summer at the Quashnet River, where no cranberry growing is conducted.

Mr. Karson outlined the recreational ponds monitoring program. He noted that samples collected in April 2013 for ethylene dibromide (EDB) were non-detect (ND) in Snake Pond and Deep Pond. Samples collected in April 2013 for plume-related volatile organic compounds (VOCs) were ND in Ashumet Pond and Johns Pond. Samples collected in July 2013 for VOCs were ND in Deep Pond and Johns Pond.

Mr. Karson added that the IAGWSP sampling for perchlorate and explosives-related compounds were ND in Snake Pond.

Mr. Karson outlined the groundwater monitoring activity of harbors. Sampling was done at Red Brook Harbor and results were ND/below the reporting limit (BRL) for VOCs. Sampling at Squeteague Harbor found PCE at 1.1 µg/L, which is less than last year's result of 2.7 µg/L. TCE and CCl4 were BRL at one location. Surface water results were also BRL.

Mr. Karson explained that, per agreement with the cranberry stakeholders, AFCEC conducts annual testing of the Coonamessett and Backus Rivers prior to harvest. Results below MCLs and BRL indicate the fruit can be harvested. If levels are above the MCL, the fruit testing is required. Surface water results for the Coonamessett River were ND for EDB and the harvest is not affected. Surface water results for the Backus Rover shows detections both below MCLs (5 µg/L) and BRL (1 µg/L),

thus the harvest is not affected with regard to PCE/TCE. Surface water results for the Quashnet River were ND for EDB.

Agenda Item #5. Chemical Spill 10 (CS-10) In-Plume Construction Update

Ms. Forbes explained that tonight's presentation would detail the system modifications and construction update for the CS-10 plume. She reminded the team that there are three systems designed to treat the plume: Sandwich Road system, In Plume system, and the Northern Lobe extraction well. The Sandwich Road Extraction, Treatment, and ReInjection (ETR) system began operation in May 1999. A southern trench extraction well was added in 2009 and the current flow rate is 635 gpm. The In Plume Extraction, Treatment, and Infiltration (ETI) system began operation in June 1999. A new extraction was added to that system in 2011 and the current flow rate is 2,290 gpm. The Northern Lobe extraction well began operation in January 2000 and the current flow rate is 210 gpm.

The contaminants of concern (COCs) are TCE and PCE, each with a maximum contaminant level of 5 µg/L. Ms. Forbes summarized information that was provided at the April 10, 2013 MMRCT meeting regarding CS-10, including the extensive data gap investigation, plan for remedial system optimization evaluation, summary of optimization results, and the path forward for CS-10.

Ms. Forbes explained that the goal of the optimization effort was to reduce restoration timeframe and improve plume capture. Phase I looked at existing infrastructure and Phase II included an evaluation of additional infrastructure. Evaluation metrics included: Aquifer restoration timeframe, remedial system shutdown year, TCE plume mass and volume located outside model-predicted capture zone, and mass removed at system shutdown. All of these factors are taken into consideration when evaluating system optimization. Ms. Forbes explained that, in the case of CS-10, the IRP plans to make changes to the existing system, as well as adding infrastructure. The changes include adjusting extraction well screen depths and modifying flow rates.

Ms. Forbes said the expanded infrastructure will involve two new extraction wells, a mobile treatment unit (MTU) and two new reinjection wells. Figures were provided showing the new infrastructure.

One new extraction well and one new reinjection well will be installed as part of the CS-10 In Plume system because some of the contamination was determined to be deeper than expected and deeper than what the existing system could capture. To capture the deeper contamination, the IRP adjusted the well screen depth for one of the extraction wells, resulting in partial capture of the deeper contaminants. Ms. Forbes explained the new extraction well will be installed deeper to target the deeper contamination. A figure showing more detail of the location of the new extraction well and reinjection well was shown. Ms. Forbes pointed out that the new extraction well will tie-in to the existing pipeline and the water will be transferred over and treated by the CS-10 treatment system. The new extraction well will operate at 375 gpm. Two infiltration trenches and one existing reinjection well currently distribute the treated water to the aquifer. However, the new reinjection well needs to be installed to handle that increased flow rate from the new extraction well.

A new extraction well, MTU, and a new reinjection well will be installed on the eastern edge of the CS-10 plume because contamination was found outside of the previously defined CS-10 plume. Ms. Forbes stated that the IRP re-delineated the plume to capture the concentrations within that area and targeted the higher concentrations with the new extraction well. Ms. Forbes pointed out the location of the new extraction well off of General's Blvd on JBCC. A pipeline will lead from the new extraction well to the mobile treatment unit, and then the treated water will be reinjected through a reinjection well just outside the plume boundary. The flow rate of this system will be 175 gpm.

Ms. Forbes reviewed the schedule for construction and the various steps involved (well screens, pump and motor changes, new extraction wells and reinjection wells, pipeline installations and systems start-up). She also pointed out that there is a detailed summary of system infrastructure in the handout packet.

Mr. DiNardo asked why well 03EW2106 was turned off (according to figure on slide 8). Ms. Forbes replied that contamination is no longer in the area so there is no need for that well to be operational.

Agenda Item #6. Five Year Review Results/Recommendations

Mr. Davis reminded the team of an earlier presentation in which he explained the purpose of the Five Year Review. He noted that a Five Year Review evaluates three questions after a remedy is in place: Is the remedy functioning as intended? Are the exposure assumptions, toxicity, cleanup levels and remedial action objective still valid? Is there other information that could call into question the protectiveness of the remedy?

Mr. Davis stated that a Protectiveness Statement is made for each site within the Five Year Review. This may result in recommendations to ensure protectiveness in the short term or long term. Recommendations are then acted upon and revisited at subsequent review. Five Year Reviews are conducted until the site is available for unlimited use and unrestricted exposure (i.e. any waste left in place is below all risk thresholds).

Mr. Davis explained that the IRP just completed its fourth Five Year Review, which covers the period of 2007-2012. The evaluation included 9 source areas and 14 groundwater sites. A figure with these areas was shown.

Mr. Davis noted that all remedies are protective of human health and the environment. He further explained that there are four sites where the remedies are protective in the *short* term: CS-10 Detail C and F, FTA-2/LF-2, FS-10/FS-11, and SD-4. He noted that these can only be considered protective in the short term because land use controls have not been formally put into place for these source areas and the contaminants left behind would not be protective for residential use. Mr. Davis noted that all of the other sites were determined to be protective in the long-term.

For the short-term protectiveness sites, Mr. Davis stated that the contamination would either need to be removed or land use controls would need to be established. As part of the five year review, the IRP looked at each of the sites and determined what types of land use controls could be implemented formally (e.g. signage or fencing) to ensure the long term protectiveness.

He pointed out that remedies were written only for soil contamination but did not include contamination possibly migrating to the groundwater. There are MassDEP regulations for Volatile Petroleum Hydrocarbons and Extractable Petroleum Hydrocarbons in groundwater. Mr. Davis explained that the IRP has been monitoring these contaminants in the groundwater for several years but they have not previously gone back to the remedy to determine what needs to be changed to address this contamination in the groundwater. Mr. Davis pointed out two sites (Fire Training Area 2 and Petroleum Fuels Storage Area) that need to have an evaluation of the remedies. The IRP plans to prepare a focused Feasibility Study and issue a Proposed Plan and Record of Decision (ROD) Amendment. He outlined the schedule for the process and community involvement opportunities.

Mr. Davis also discussed the emerging contaminants - 1,4 dioxane and perfluorinated compounds. Monitoring is being done at several sites (Ashumet Valley, CS-4, CS-10, CS-20, CS-21, CS-23, LF-1, and SD-5) for 1,4 dioxane and is planned for the future at Ashumet Valley for perfluorinated

compounds. Perfluorinated compounds are part of firefighting foam commonly used for training at military airports. The Air Force is evaluating fire training areas across the country as part of one contract and JBCC will be part of that. Additional updates will be provided at future meeting.

Mr. Davis also noted that the chart has a “Restoration Timeframe Discrepancy” column. He explained that this is noted for sites where a ROD stated a plume would be cleaned up within x years but modeling data now indicates it will be cleaned up later than the original prediction. The Five Year Review subsequently recommends an optimization review and Feasibility Study-like evaluation for every site in that situation.

Mr. Karson noted that the Five Year Review Report was distributed to the Upper Cape libraries, the state library, and Cape Cod Community College. He added that a fact sheet will soon be circulated for agency review and a public notice will announce the availability of the Five Year Review Report in the near future.

Agenda Item #7. IAGWSP Program Update

Mr. Gregson updated the team on some significant events in the IAGWSP. He noted that the EPA issued the final Demolition Area 1 Decision Document (DD) in September. He added that they are still trying to get access to the off-base property that was outlined in the DD for a potential remediation system location.

Mr. Gregson explained that Demolition Area 1 Extraction Well #3 is now pumping clean water and the IAGWSP is working with the agencies to get approval for that well to be turned off since it is no longer needed.

Mr. Gregson also noted that EPA issued the Decision Document for the J-2 Range plumes. He explained that per the DD, the systems will remain intact and additional sampling will be done to confirm the plumes are behaving as the models predicted.

Mr. Gregson noted that there was an issue with the start-up of the J-1 Northern system. One extraction well was not pumping to capacity and the infiltration trench is having trouble taking the amount of water that was being put into it. The IAGWSP is working with the Army Corps of Engineers and its contractor to resolve the matter and get the well fully operational.

Mr. Gregson also confirmed that the construction of the Central Impact Area (CIA) treatment system at Burgoyne Road was on track and should be completed in about two months.

He announced that at the January 8th MMRCT meeting, there will be a presentation and public comment period for the Small Arms Ranges (SARs) operable unit. The final DD for this OU is scheduled for February.

Mr. Gregson listed the upcoming 2014 topics: An Investigation Report and Feasibility Study for the J-3 Range and an Investigation Report for the Training Areas. He noted that these represent the last of the IAGWSP investigations and then all sites will have DDs.

Ms. Rielinger asked if there is a good lead on the parcel for the Demo 1 off-base treatment systems. Mr. Gregson said that repeated inquiries to the property owner have been unanswered. A figure of the area was shown and Mr. Gregson pointed out the area in question. Ms. Donovan asked if there was an alternate location available and Mr. Gregson explained that the alternate location had even more real estate issues associated with it.

Agenda Item #4. Final Discussions, Adjourn

The team members agreed to postpone further discussion on a team name change until the next meeting. Ms. Donovan stated that the MMRCT will meet next on January 8, 2014, and she adjourned the meeting at 7:50 p.m.