
**Science Advisory Council
to the
Environmental Management Commission
Building 1805, West Inner Road
September 29, 2022
6:00 p.m.
Meeting Minutes**

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Phil Gschwend

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Attendees:

MAJ Alex McDonough
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Handouts Distributed at Meeting:

1. Joint Community Advisory Council and Science Advisory Council Draft Meeting Minutes, October 8, 2020
2. Science Advisory Council Draft Meeting Minutes, June 16, 2022
3. Environmental Management Commission Environmental Officer Update, September 2022
4. Camp Edwards Update 2022
5. Operations, Maintenance and Monitoring Plan, 29 September 2022
6. Climate Resilience at Camp Edwards

Agenda Item #1. Welcome

Science Advisory Council (SAC) Chair Paul Cavanagh welcomed everyone to the SAC meeting.

Agenda Item #2: Review of SAC Minutes and Approval

- Mr. Cavanagh made a motion to accept the October 8, 2020, meeting minutes, and Mr. Gschwend seconded the motion. All were in favor of the minutes as written.
- For the June 16, 2022, minutes, Mr. Cavanagh stated that his phone number needs to be updated and a typo on page 4 needs to be changed to “clam shrimp.”
- Mr. Cavanagh made a motion to accept the June 16, 2022, minutes; Ms. Lewis seconded the motion. All were in favor of the minutes as written with corrections.

Mr. Gschwend asked what method was used to measure PFAS in well water; was non-target PFAS also measured? Mr. Pinaud will provide that information to Mr. Gschwend. (Action)

Agenda Item #3: Environmental Officer Update – Leonard Pinaud, EMC Environmental Officer

Mr. Pinaud, Environmental Management Commission (EMC) Environmental Officer (EO), summarized the activities related to the Upper Cape Water Supply Reserve (the Reserve).

- Activities discussed have taken place since June 2022.
- The Tango Range Design and Operations Maintenance and Monitoring Plan were approved in September 2022. The approval letter was distributed to SAC members.
- Mr. Pinaud is working with Natural Resources and Training Lands Manager, Mr. McCumber, and others on a Prescribed Fire Standard Operation Procedures (SOP) for ignition and suppression of prescribed burns at Camp Edwards. They have been working on it for the past few years; a draft is up for review at fire agencies that assist with prescribed fire and wildland fire.
- An Unexploded Ordnance Response SOP for Camp Edwards has been developed. The SOP formalizes current procedures and is pending signature.
- The Approved Munitions List has been updated. The list is updated as items used for training change or ammunition designation numbers change.
- The Environmental Management Commission now has its own page on the Executive Office of Energy and Environmental Affairs website. Mr. Pinaud asked the SAC to visit the page and provide feedback if they think something needs to be changed or added.
- The Environmental Protection Agency (EPA) Sole Source Aquifer review status and information is available on the US Environmental Protection Agency website:
<https://www3.epa.gov/region1/eco/drinkwater/capecod.html>

SAC members discussed the information and asked questions.

Is there a synopsis of the PFAS story? As Impact Area Groundwater Study Program (IAGWSP) drills new sampling wells, will they analyze the solvents they find while drilling?

1. The EMC is working with the IAGWSP for the PFAS issue in Camp Edwards' northern training area; that information was presented at the last SAC meeting by Shawn Cody. In Mr. Pinaud's EMC role, he is following what IAGWSP is doing. In Mr. Pinaud's Massachusetts Department of Environmental Protection (MassDEP) role, MassDEP is involved as is EPA in working with IAGWSP to ensure they are looking at the correct groundwater wells and identifying the source. Mr. Pinaud can make specific information available to Mr. Gschwend (Action). The Joint Base Cape Cod Cleanup Team meetings have focused briefings on this topic.
2. IAGWSP will be drilling many wells off Gibbs Road, which is close to Water Supply Well #2.

Please provide expanded information on the Camp Edwards trespassing; is this encroachment, motor vehicles, a noticeable increase?

- A Massachusetts Army National Guard (MAARNG) range officer reported an expanded entry in the vicinity of Upper Cape Regional Technical School. An old trail had been widened and improved. The MAARNG contacted the school and ensured the EMC was notified of a potential violation of the Environmental Performance Standards (EPSs). The MAARNG reached out to the school and is working with them to secure the area. It is not really an issue from the MAARNG's perspective; the MAARNG forwarded the potential violation as it opened up a travel lane into the installation.

Agenda Item #4: Camp Edwards Update – Mr. Matthew Porter, Camp Edwards Base Operations Manager, MAARNG; Mr. Alex McDonough, Deputy Base Operations Manager, MAARNG

Mr. McDonough provided a Camp Edwards update to the SAC.

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- Staff updates: Mr. McDonough is now the Deputy Base Operations Manager. The position is a Title 5 federal technician, which is a civilian position; the position change will help build continuity on base. COL John Bagaglio is the new Camp Edwards commander.
 - Training updates: The training event Operation Viking was planned by the 412 Civil Affairs Battalion; 450-500 soldiers were trained and utilized the US Coast Guard Airfield and the Northern Training Area, where they completed civil affairs tasks. Patriot Crucible was held for the fourth year; engineers and the firefighting detachment were the main participants preparing for multi-domain operations. The firefighters executed many of their pre-deployment tasks such as cutting up cars during search and extraction missions. In five weeks, 1,000 soldiers were trained for collective training tasks.
 - Annual training: the MAARNG's Aviation Battalion is preparing to deploy; Camp Edwards supported their annual training along with a chemical company that is deploying. There were six additional units from company to battalion to brigade size units that were trained during the summer.
 - Range update: the small arms range monitoring sampling contract was awarded. The Tango Range Operations, Maintenance and Monitoring Plan (OMMP) has been approved and the MAARNG is working on developing a backstop upgrade for Lima Range. Originally, netting was utilized on Lima Range to keep the training rounds within the range footprint. The netting gets knocked down in high winds; a solution is installing concrete backstops to stop the training rounds from going beyond the range footprint.

SAC members discussed the presentation and asked questions.

What was used by the firefighter detachment for their firefighting training? Were the vehicles decontaminated?

- The detachment used water, not Aqueous Fire Fighting Foam (AFFF) during their training. The Army firefighting trucks likely never had foam in them; Army firefighters do not do crash rescue.

Can a mass balance be done on Lima Range?

- 40mm practice grenades are used on Lima Range, not rifles. The MAARNG is required to pick up the zinc bodies left during training.

What happens to the pavement after the unit is finished?

- The pavement project was on Greenway Road, which was degraded. They repaved the road to ensure it would not keep falling apart. Two weeks of work was done in three days. There are only four of those units in the country, one of which is in the MAARNG.

Agenda Item #5: Operations, Maintenance and Monitoring Plan Update – Mr. Alex McDonough, Deputy Base Operations Manager, MAARNG; Mr. Michael Ciaranca, Deputy Director, MANG E&RC

Mr. Ciaranca gave a presentation on OMMP Update:

- The OMMPs are required by Environmental Performance Standard 19, originally developed with the regulatory community through the Small Arms Range Working Group consisting of US EPA, MassDEP, the EMC, and the IAGWSP. The OMMP requires that the MAARNG capture, contain, manage, monitor, and report. Reporting is in the Annual State of the Reservation Report. An OMMP identifies operations and management of the ranges and Best Management Practices (BMPs) for Small Arms Ranges (SARs) at Camp Edwards and it is established so the MAARNG can meet current and future training requirements.
- The MAARNG employs maximum feasible use of Pollution Prevention (P2) and BMPs to avoid any contamination with groundwater in the Upper Cape Water Supply Reserve, which is also designated as a MassDEP Water Supply Zone 2.

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- An OMMP is a living document; user changes, regulatory changes and BMP changes may take place at the request of the users, regulatory bodies, and the MAARNG command structure.
 - A Conceptual Site Model and image of Tango Range were displayed. Copper projectiles are now used on Tango Range. Firing line sample areas are important as the ammunition primer still contains antimony and lead styphnate within the primers. When lead- and antimony-free primers are available to the MAARNG, Mr. Ciaranca will inform the SAC. Lead- and antimony-free primers are available in civilian production but are not yet in the Army supply chain.
 - The MAARNG is updating its OMMPs and will be asking the SAC for input on a number of topics including environmental monitoring, capture and containment, well placement, well screen depths, lysimeter placement and effectiveness, soil sampling locations, action levels and pH adjustments. Many of the topics may be addressed during forthcoming SAC Ad Hoc Committee meetings.
 - The MAARNG would like to discuss filtered versus unfiltered sampling. The question for SAC members is, should unfiltered porewater and groundwater samples be collected and analyzed to determine the contribution of colloids to any transport of potential contaminants of concern.

SAC members and the MAARNG discussed allowing vegetation on the berms versus stabilizing them without vegetation. Mr. Gschwend said that vegetation may put acid into the soil when decaying and it may be better off to stabilize the berms without vegetation. Mr. Ciaranca said the MAARNG has not seen any chemistry that shows that there should be any further action on that but that could be discussed. In earthen berm capture, bullet pockets form and the area the projectile is impacting has very little to any vegetative matter in it. What is stabilizing the berm is native grasses that are growing in the surrounding area at the back of the berm. There is not a lot of vegetative matter in contact with the projectiles fired.

The SAC and MAARNG discussed Nitroglycerine and nitrate sampling. Mr. Ciaranca said that it was determined by the IAGWSP, US EPA, and the U.S. Army Engineer Research and Development Center's (ERDC) Cold Regions Research and Engineering Laboratory (CRREL) that nitroglycerine biodegraded, the "bugs" eat the nitroglycerine, and that which is not eaten is bound in the nitrocellulose fibers. It sits there; it's not available for "bugs" or transport. That is why the MAARNG no longer samples for nitroglycerine since 2009. The MAARNG samples for nitrates, having added a series of substances that the SAC Ad Hoc Committee said may make metals mobile in soil. Mr. Gschwend said that with nitroglycerine being biodegraded, nitrate would be one of the end products, or eutrophication.

The SAC and MAARNG discussed filtered versus unfiltered samples. Mr. LeBlanc said that historically, lead was the issue, that there were random detections, and that created a furor about lead moving--that is the driver for this question. Mr. Ciaranca said there was one lead detection at 24 parts per billion; a grab sample was taken because it was so dry. Mr. LeBlanc said that was what drove the critique: don't start taking action looking for lead remediation when it is just muck in the bottom of the well.

Mr. Gschwend said when you sample, you are sending "stuff" down the walls of the well and in the bottom of the well and stirring stuff up that wasn't necessarily moving in the groundwater. People want to "filter" that so that they correct their lousy sampling methods. He said the MAARNG can sample with low flow sampling. Mr. Ciaranca said the MAARNG does low flow sampling. Mr. Gschwend said very low flow and you're careful not to stir up the well; then, in general, whatever comes up, is, he thinks, potentially mostly dissolved; there could be some colloids. He said if you analyze that, it's an upper limit for what you have, and if that upper limit is below what you care about, you're okay. If you get a detection, it doesn't necessarily mean you have a problem; you take filtered and unfiltered samples. Mr. Ciaranca said that is what has been done in the past, if there is a detection, the MAARNG resampled with both filtered and unfiltered samples.

Mr. Ciaranca asked for opinions or advice: should the MAARNG do both filtered and unfiltered samples, or just one? Mr. Gschwend replied that he thinks the MAARNG should always do unfiltered samples; it's the upper limit. If you have no problem with the concentrations unfiltered, then you're okay.

Mr. Ciaranca said that it sounds like the answer to his question is that the MAARNG should collect unfiltered samples, low flow. Mr. Gschwend said that is a safer way to go and is the worst-case scenario.

Mr. LeBlanc asked if there are dedicated pumps and said that one qualifier he will add is when there are groundwater conditions like we have currently sometimes you can't measure water levels very well because of the tubing in the well. It's good in that it doesn't stir up the well every time by raising and lowering a new pump, but you can't measure water levels as well. However, if you know the well has barely any water in it, you can almost have a criterion that says when the well's almost dry, be aware. Mr. Ciaranca said you could collect two samples and filter one and not the other.

Mr. LeBlanc asked if the samples are acidified after they are collected? Mr. Ciaranca said he can't answer directly, but the samples are prepared for lab analysis and shipped immediately; he assumes they would be. Mr. LeBlanc said if the samples are acidified, it is not a big expense to collect the unfiltered sample, put the filter on, collect the filtered sample, and store it. The second sample can be analyzed if needed. Mr. Ciaranca said the samplers could easily do that.

Mr. LeBlanc asked if the MAARNG is doing a full suite of analysis or if metals are being targeted. Mr. Ciaranca said the MAARNG is sampling for metals and those things that may make metals mobile; they are not sampling for VOCs, PHAs or SVOCs.

Agenda Item #6: Climate Resilience at Camp Edwards – Mr. Jake McCumber, Natural Resources and Training Lands Manager, MAARNG

Mr. McCumber gave a presentation on climate resilience at Camp Edwards. Climate resilience is planning, preparedness, and science-driven policy and action. It requires detailed understanding of ongoing changes and predictions, root causes, scales of impact and affected resources, and complexity of situation and concurrent challenges, such as biodiversity. Resilience is the ability of this system to persist and recover from the threats already ongoing and those that are forecast. Resilience is an important context for focus for future discussions. He discussed major natural threats; the concurrent crises of climate change vulnerabilities and the biodiversity crisis; planning solutions and key objectives including maximizing diversity, providing healthy natural communities that are a regional or local conservation priority, increasing or stable populations of site or regional priority species, decreasing fire hazard, and maximizing carbon storage while meeting other key objectives through best management practices, land-level planning and long-term ecosystem health.

SAC members discussed the presentation and asked questions.

As temperatures shift, is the MAARNG looking at species of greatest conservation concern in relation to their ability to withstand climate change, and do we worry about these species if in the future they won't be here because they can't tolerate the shift in temperature or climate?

- It is good to continue tracking those species and continuing to manage the habitat; it is important to track their loss and be monitoring for new species coming in. Species of greatest conservation need are a good way to report some of those results across different elements of ecosystems. Overall, the MAARNG is looking at how the system is supporting the breadth of species and ideally will be containing a level of biodiversity and will be able to explain why certain species are lost.

Is it in the Department of Defense's (DoD's) interest to maintain these ecosystems?

- Disturbance-based systems support soldier training extremely well; it's the MAARNG's mission to steward the landscape. In DoD's interest, if every rare species population was to be restored, there would be no need to regulate DoD for them. It is in DoD's interest to manage this ecosystem and other rare habitat. The MAARNG's focus is to maintain those and work with partners to provide for climate migration and adaptation that it knows is going to happen. It is in DoD's interest to manage habitats for conservation because that is how training sites remain for all the generations of soldiers. Even if the habitat does change, MAARNG will manage it and the

key is that it is resilient to climate change; managing allows for climate migration and adaption. Resilience is the key focus.

Is there a DoD initiative with funding associated that is pushing the MAARNG's initiative?

- The MAARNG is required to address climate change in its Integrated Natural Resources Management Plan. The MAARNG is working with the Woodwell Climate Center on a long-term climate resilience plan that will do a lot of the integration. There is no special funding associated with it. Climate change and climate resilience fits in with initiatives the program is already a part of. DoD drives it at a national level, but the MAARNG drives it here; resilience comes down to sustainability.

The read ahead stated that North Atlantic Coastal Pine Barrens are globally rare and disturbance dependent. Would that habitat not be here if there wasn't a lot of disturbance? What would the habitat become without disturbance?

- Without fire or other disturbance, it would start to convert to White Pine/Red Maple. With that shading there would be rare species loss; blueberries would be lost along with the good moths, Whip-poor-wills, and things of that nature.

Agenda Item #7: Public Comment – Mr. Paul Cavanagh, SAC Chair

There was no public comment.

Agenda Item #8. Adjourn

The meeting adjourned at 7:52 p.m.

**Science Advisory Council Action Items:
September 29, 2022**

Action Items:

1. Mr. Pinaud will provide the method used to measure PFAS in well water and whether non-target PFAS was measured to Mr. Gschwend.
2. Mr. Pinaud will make specific information about PFAS available to Mr. Gschwend.