FINAL: Restoration Advisory Board Meeting Minutes, Naval Research Laboratory – Chesapeake Bay Detachment, Chesapeake Beach, Maryland

MEETING DATE:	May 24, 2023
LOCATION:	Northeast Community Center, 4075 Gordon Stinnett Ave, Chesapeake Beach, MD 20732

Note: This meeting summary is based on informal notes taken at the meeting. It is not intended as a verbatim transcript. Rather, it is intended to summarize the overall discussions.

Welcome and Introductions

Ryan Mayer from Naval Facilities Engineering Systems Command (NAVFAC) – Washington introduced himself as the Department of the Navy's (Navy's) Remedial Project Manager (RPM) for Naval Research Laboratory – Chesapeake Bay Detachment (NRL-CBD). He welcomed the Restoration Advisory Board (RAB) members and the public to the sixth RAB meeting for NRL-CBD and informed the attendees that the meeting was being recorded via audio to aid in preparation of the meeting minutes. Ryan introduced Amy Brand (Jacobs), Andy Bogdanski (Jacobs), Peggy Williams (Maryland Department of the Environment [MDE]), Ira May (MDE), Curtis DeTore (MDE), Scott Lonesome (NRL), Laura Lampshire (Jacobs), and Kevin Britt (RAB Community Co-Chair).

Kevin Britt then thanked everyone for attending the meeting and stated that he would be stepping down as the RAB Community Co-Chair following the meeting. He asked those attending to please see him following the meeting if they were interested in taking on the role of RAB Community Co-Chair.

Amy then asked the RAB Members to introduce themselves. The RAB members present included Vivian Cawood, Will Hager, Robin Harris, David Harris, and Larry Jaworski. A full list of attendees is provided in **Table 1**.

Ryan then reviewed the meeting Agenda (**Attachment 1**) and the general meeting presentation and stated that there will be opportunities for questions throughout the meeting.

Virtual Meeting Logistics

Amy Brand, a community involvement specialist from Jacobs and facilitator for the meeting, reviewed the meeting logistics with the attendees, and requested that any public attendees hold their questions until the designated time at the end of the meeting. She then provided a brief summary of the meeting ground rules, reminding all to be polite, give others a chance to speak, and to please silence all cell phones.

Review and Approve the September 2022 RAB Meeting Minutes

Amy Brand stated that the Draft September 2023 meeting minutes were distributed to the RAB members via email in December 2022. No comments were received at that time and the meeting

minutes were then posted as Draft Final to the NRL-CBD public website. Amy asked the meeting attendees to raise their hands if they had any questions or comments on the September 2022 meeting minutes. No hands were raised; therefore, the minutes will be finalized and posted on the NRL-CBD website.

Amy then reiterated that the Community Co-Chair position will be open and that the RAB is looking to fill this role. This is a two-year position and the person filling this role serves as the point of contact between the community and Navy.

Base-Wide PFAS PA/SI

Ryan Mayer, the Navy RPM for NRL-CBD, reviewed the NRL-CBD per- and polyfluoroalkyl substances (PFAS) Preliminary Assessment (PA) background and objective. During the Navy's review of environmental restoration sites in 2016, Site 10 was identified as an area of concern (AOC) based on historical operations at the site. Following this review, the Navy wanted to make sure that there were no other sites that were missed and established PFAS PA guidelines for assessing potential PFAS releases. Site 10 had been moved quickly into the PFAS Site Inspection (SI) phase; however, the Navy wanted to complete a Basewide PA for consistency with Navy policy and to confirm that there were no other potential PFAS areas missed.

Amy Brand then reminded attendees of the available acronym list that was included with the handout.

Ryan then reviewed Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) process. The Basewide PFAS PA is the start of the investigation process. Site 10 started out in the SI phase and is currently in RI phase. Upon completion of the investigation phase, a Proposed Plan (PP) will be prepared and submitted for public review. The PP is often followed by a remedial design phase and remedial construction (clean-up) phase, followed by long-term management. Curtis DeTore, the Chief for MDE Federal Installation Restoration, noted that the Proposed Plan was missing from the CERCLA process diagram (**Attachment 2,** Slide 12). Ryan noted that the Proposed Plan follows the Feasibility Study (FS) and is prior to preparation of the Decision Document (DD). Greg Morris then asked Ryan when the Navy anticipates having a Record of Decision (ROD) for Site 10. Ryan replied that because this is a PFAS site and the regulations and guidance are changing, a ROD is a little ways off for this site. With the current EPA proposed regulations, there will probably be more removal actions associated with this site; however, with regard to a ROD for PFAS, it is still too early. Greg then noted that for the average community member who is following this site for the past 7 years, to say that we are not moving forward due to changing guidelines, he added that things are always changing and we need to move forward. As far as having something substantial, will the Navy begin warning the public when some action will be taken? Ira May, the Chief for MDE Federal Assessment and Remediation Division, then stated that action can be taken prior to the ROD and that there will be actions before the ROD. Larry Jaworski then added that EPA has released their PFAS roadmap with identification of an action plan for 2023. He commented that he presumes the Navy is integrating its actions with the EPA's action plan for 2023, which is geared toward accelerating work on PFAS sites. Ryan replied that the Navy is accelerating work as fast as it can, across the board. Five hundred bases with multiple sites are currently being investigated, and a number of drillers are already booked up with regard to their schedules. There are currently around six accredited PFAS labs that turn-around PFAS analyses in about one month, and investigation of these sites is not a fast process. Greg Morris then stated that when the Town of Chesapeake tested their water it did not take very long to get results and that he is interested in improved guidelines for testing, and making sure that true results are obtained. Ira said that a Maryland PFAS action plan should be coming out in December 2023.

Amy then asked all attendees to hold comments until the end of each section of the presentation, which would help manage the meeting time.

Ryan then continued the discussion regarding the PA methodology, which includes a desktop review, interviews, and site reconnaissance. Two areas were identified at NRL-CBD as potential PFAS release areas – Site 10 and the Building 50 – Former Firehouse. One of the criteria the Navy uses for identifying a potential site is whether or not there was a transfer of aqueous film-forming foam (AFFF). Many of the firehouses on Navy facilities are moving forward to a SI investigation.

Andy Bogdanski, a project manager with Jacobs, then discussed the Building 50 PFAS SI, starting with a review of the site location and description. Building 50 was constructed before the 1950s and served as a firehouse. The exact dates of use are unknown; however, operations started prior to 1984 and ended around 2008. Fire trucks were stored and serviced at Building 50, and 5-gallon buckets of AFFF were stored in the firehouse.

The SI objectives included determining the presence/absence of PFAS in multiple media (soil and surficial groundwater) and refining the conceptual site model (CSM). The sampling approach is predicated on the CSM, which includes the washing of fire trucks and the transfer and use of AFFF at and in the vicinity of Building 50. Additionally, we want to determine which way the groundwater flows. Andy then reviewed the surficial groundwater flow from the Site 10 SI, which was measured in October 2020 and generally flows to the east with some localized variation (**Attachment 2,** Slide 18). The SI approach included the collection of co-located surface and subsurface soil samples from five boring locations around Building 50 that were analyzed for 29 PFAS via EPA Method 1633 (**Attachment 2,** Slide 19). Three surficial groundwater monitoring wells were also installed, and groundwater samples were collected from these new wells along with two other existing monitoring wells and analyzed for 29 PFAS via EPA Method 1633. A round of groundwater gauging was also conducted. Andy then reviewed the SI sample locations (**Attachment 2,** Slide 20) and noted that the sample locations on the western side of Building 50 were placed to determine whether or not PFAS is migrating from Site 10. Furthermore, the two existing monitoring wells were used to provide information on groundwater migration from Site 10 as well as additional groundwater flow control. The Basewide PFAS SI report is anticipated to be submitted to the Navy in June 2023, with submittal to MDE in July 2023, and a Final in September 2023. Amy noted that the Navy can't report on the SI results right now, but asked Andy if they would be able to discuss them at the next RAB meeting, which Andy confirmed.

Questions and Comments from Restoration Advisory Board Members

Amy Brand opened the meeting to questions and comments from RAB members regarding the Basewide PFAS PA/SI presentation.

- David Harris asked the following question:
    1. What is point of using a Navy authorized testing facility if you have the results for months and don't make them public, and if I were to ask you if they (the results) exceed the standards, would you answer that question? Ryan Mayer stated that the samples did have hits for PFAS, they were not super high, but there were definitely hits. The Navy uses the EPA 70 ppt lifetime health advisory as the screening level and while that level was exceeded, the results were not as high as at Site 10. The results are not shared until the report has been reviewed by the regulators and is finalized.
- Larry Jaworski asked the following question:

1. What is the possibility of testing the waters in the Bay, and fish and crabs- has that been undertaken? Ryan stated that that type of sampling would be looked at during the investigation phase, but the Navy is not yet at the point of moving off-site and into the Bay. There are currently no regulatory standards for PFAS in fish; however, Maryland (MDE) has been proactive in testing fish on a regular basis. Peggy Williams, MDE project manager for NRL-CBD, stated that MDE has been conducting regular PFAS sampling of surface water, fish, and oysters in the waters and will sample again in Fall 2023. No sampling was scheduled for Spring 2023, but sampling will resume in Fall 2024. Ira added that on MDE's website, there is a report of the general assembly that includes the drinking water samples and fish sampling results. Amy noted that the links to MDE's website are provided at the end of the presentation handout. Ryan then continued by stating that currently, the Navy is focused on surface water sampling and is taking an interim action to construct a system to treat surface water before proceeding with sampling off-site.

- Greg Morris asked the following question:

1. How is the MDE PFAS testing funded? Ira replied that currently, most of the test funding comes from the Federal EPA. The State of Maryland funds a routine fish tissue sampling program that is conducted on an annual basis for mercury, lead, and PCBs and that program is currently covering PFAS.

Amy asked if there were any additional questions; no additional questions were received.

Ryan then revisited the previous Basewide PFAS SI slides to reiterate that right now, all military installations are conducting Basewide SIs under Department of Defense funding, and all sampling is to be conducted by end of this year. Since elevated samples were detected at Building 50, this site will be identified as a new site and going onto the RI phase.

Site 10 Interim Measures – Surface Water Treatment

Ryan Mayer then began the Site 10 Interim Removal Action for Surface Water discussion. During the Site 10 SI, soil, groundwater, surface water, and sediment were sampled and elevated levels of PFAS were detected in surface water from both the northern and southern streams. Follow-on surface water sampling was conducted and PFAS is exiting the Base from both the northern and southern streams. The Navy is currently taking an interim action to address the PFAS concentrations in these streams. Specifically, two treatment systems are being designed to address PFAS in surface water. The Basis of Design (BOD) for these treatment systems is in progress and the 60% BOD is under Navy review. Jacobs is working on the design and the Remedial Action Contractor (RAC) will build, install, and run the treatment systems for a couple years following start-up. Following the BOD, an Action Memorandum will be prepared for public comment (a 30-day public comment period); submittal is anticipated in Fall 2023. It is anticipated that the RAC will mobilize by end of the year.

Andy Bogdanski then discussed the BOD. The BOD will identify the applicable regulations, treatment goals, treatment technology, treatment process, and other relevant considerations. For the treatment systems being designed, ion exchange (IX) was identified as the preferred technology for PFAS removal. The system will also incorporate sand filters, granular activated carbon (GAC), and bag filters. Two treatment systems are being designed: one in the north stormwater pond area, which will treat 50 gallons per minute (gpm), and one in the vicinity of the WWTP, which will treat 20 gpm (**Attachment 2**, Slide 25).

Andy then reviewed the treatment process conceptual design. The supply pumps will pull from the source (either the north pond [for the northern stream treatment system] or wastewater treatment

plant [WWTP; for the southern stream treatment system]) to an influent equalization tank before being pumped to the sand filters to remove particulates/debris; it then passes to the GAC units. Surface water has more organic matter than groundwater does, and the GAC works to remove this organic content. While resin also removes organic content, it is more expensive to use; therefore, use of GAC allows for the IX to be the primary treatment for the PFAS removal. The system will also have aerators on the backend to add oxygen back in before discharging to the streams. Upon completion of the process, the system can then discharge from the treated tank or send the treated water back to the sand filters or GAC and send the backwash to a holding tank where it can then go to the influent equalization tank and proceed through the system (**Attachment 2**, Slide 26).

Andy reviewed the siting of the north pond area treatment system (**Attachment 2**, Slide 27) and the siting of the WWTP area treatment system (**Attachment 2**, Slide 28).

Questions and Comments from RAB Members

Amy Brand then opened the meeting to questions and comments from RAB members regarding the Site 10 Interim Measures – Surface Water Treatment presentation.

- Vivian Cawood asked the following question:

    1. Vivian stated that she was at the recent Locust Grove meeting and heard that the Navy had plans to sell the WWTP. Ryan replied that he had not heard this; the Navy needs this WWTP. The WWTP is a small plant and was built for a larger operation; however, there is a small contingent of people currently on Base and the treatment system being designed for 20 gpm. Amy stated that this was a great example of RAB members being a public liaison; Vivian brought up the rumor she had heard, and the Navy was able to verify the WWTP was not being sold. Vivian stated that it seemed quite far-fetched and that they did not know who the plant was being sold to and had also heard that water would be pumped from Willows. Amy asked Vivian if she can see the WWTP from her house? Vivian replied that she can't really see it from her house. Amy noted that residents of Locust Grove may see construction as the treatment system is being built. Ryan added that the Navy is modeling the treatment systems based on those currently in operation at Willow Grove in Pennsylvania. He also noted that this is the only PFAS treatment system that he knows of in Maryland. Ion exchange and GAC appear to be where the industry is going in order to remove PFAS in water. GAC units will only remove up to a certain point and then breakthrough occurs; however, IX is the industry preferred technology with regard to treating PFAS. Amy asked Ryan to describe breakthrough. Ryan replied that breakthrough is when a vessel is saturated and no longer treating the influent and PFAS concentrations greater than desired are present on the downstream end of the vessel.

- David Harris asked the following questions:

    1. What is the goal or target for PFAS upon release? Ryan replied that this is something the Navy is working with MDE to identify; there is currently not a regulatory number. Peggy added that the MDE toxicologist will work with MDE's ecological risk assessor and Water Group to determine what will be acceptable for the treatment system. Amy asked can we anticipate having this info by the next meeting in October 2023? Ryan replied yes; it will likely be listed in the Action Memorandum.

    2. What is the average flow of the northern stream in spring? Andy replied that a couple sampling events were conducted, along with a stream flow study. The treatment system is being designed

for average flow; at peak flow, the system is receiving a lot of additional flow that dilutes PFAS. Therefore, the system is being designed to target baseline PFAS at 50 gpm. Scott Lonesome also asked if stream flow monitoring was also conducted during rain events? Andy replied yes, and that the stream flow monitoring was conducted over a two-month period.

3. Why are you not doing any treatment in the stream to the south? Ryan replied that PFAS concentrations in the southern stream are nowhere near the levels detected in the northern stream. David added that PFAS levels exiting the installation are elevated in the southern stream and that the Navy is ignoring the southern stream. Ryan replied that the Navy is not ignoring it and are still doing more sampling and investigating. Amy asked was there a level that triggers action for the southern stream? Ryan replied no; there is no level. However, the northern stream PFAS concentrations are orders of magnitude higher than those in the southern stream. Additionally, the WWTP has high PFAS levels due to PFAS infiltration into the sanitary sewer lines. While the southern stream is important, it is a lower priority than the northern stream due to the PFAS concentrations.

- Larry Jaworski asked the following question:

1. Will the treatment systems be staffed or remotely monitored? Ryan replied both- they will be remotely monitored to keep an eye on them and they will be staffed in person. Who will be monitoring the system? Ryan replied that a Navy contractor will be operating the treatment systems.

- Greg Morris asked the following question:

1. With regard to the Action Memorandum, a 30-day public comment period was noted. Why is it 30 days? Ryan replied the 30-day period comes from CERCLA guidance.
2. It seems like a lot of these chemicals are not prohibited. Treatment and improvement are great, but continued use of PFAS will go on as the Navy continues to use these chemicals, correct? Ryan replied that the Navy is still conducting fire testing at the facility and looking to use more environmentally friendly formulations; however, the Navy is working to clean up historical releases. The next step is to investigate the sanitary sewer lines. Greg asked how effective these treatment systems have been? Ryan replied that the treatment systems being built are being designed after a proven system and that this is not a research and development (R&D) system. Treatment systems are expensive and one of problems is having concentrated PFAS waste after treatment that will need to be landfilled or incinerated. Many states do not want PFAS waste in their landfills. The Navy and DoD are working on treatment methods for PFAS waste. David Harris then asked if the Navy will store the PFAS waste long term until it comes up with a place to store it? Ryan replied that he had no answer, but currently, PFAS waste is containerized until transported and disposed of off-site. There is currently no guidance for disposing the spent resin from the IX.

Amy then stated that there was time for one more question.

- David Harris asked the following questions:

1. Will the Navy continue to store the PFAS treatment system waste long term until it comes up with a place to store the PFAS waste? Ryan replied that eventually, the medium will become saturated, and there will be breakthrough and resin will need to be replaced since the IX is not backwashed. David then replied that Ryan did not answer His question- Is the Navy going to be storing the PFAS waste onsite until it comes up with a proper disposal plan or is the Navy

shipping it offsite? Ryan replied that he had no answer to that. David then stated that he submitted a Freedom of Information Act (FOIA) question about what the Navy does with the water from the fire testing pad or Site 10 and was given no answer on that. Ryan replied that currently after conducting a test, they do containerize it until transported off-base for treatment. Ryan then added that there is currently no solution for waste resulting from IX treatment; but that is not stopping the Navy from removing it from the immediate environment and trying to protect human health.

Fieldwork Updates: Sites 3/4/5 and Site 9

Ryan Mayer then began the presentation on fieldwork updates for Sites 3/4/5 and Site 9. These sites are non-PFAS landfill sites and were operated sequentially from the early 1940s through 1968 (**Attachment 2**, Slide 31). They are not true landfills, but rather disposal trenches. These 25x25x20-foot excavation pits contained municipal waste, shop wastes, and non-toxic lab waste and are being investigated together.

Ryan stated that there are no buildings on Sites 4 or 5; however, there are buildings on Site 3. The sites are currently in the RI phase of investigation and little debris or waste has been identified at these sites to date. Low-level general radioactive material (GRAM) was found at Site 4, and the Navy is now screening for GRAM (low-level RAD) at the Base; however, Site 4 was the only site where GRAM was identified.

Andy then reviewed the Sites 3, 4, and 5 RI fieldwork that was conducted between January and April 2022. Fieldwork included soil sampling and test pitting; the sample analyses for the specific sites are provided in **Attachment 2**, Slide 34. The additional test pitting was conducted at Site 4 and Site 5 to delineate subsurface waste; for Site 5, additional disposal areas were identified on historical aerial photos. Andy then reviewed Site 3, Site 4, and Site 5 sample locations (**Attachment 2**, Slides 35, 36, and 37, respectively). For new disposal areas identified at Site 5, a test pit was dug in the middle of the site first, and then stepped out. A geophysical study was also conducted, and any new disposal areas (4 green squares) were not identified (**Attachment 2**, Slide 38). At Site 5, in the four potential disposal pits, four soil borings were advanced and soil samples were collected to identify potential leaching. The data evaluation and human health and ecological risk assessments are currently in progress. Submittal of the RI report to the Navy is anticipated next month, followed by submittal to the regulators by late summer 2023, with submittal of the final by the end of 2023 (**Attachment 2**, Slide 40).

Ryan then discussed Site 9, known as the photo-processing waste discharge site. Wastewater was disposed of in a drain that discharged to the ground outside the building while the photo lab was operational from the late-1950s until the early 1960s, and from the late 1960s until 1975. The Navy did not find much during the SI and was in the process of closing the site; however, MDE requested additional sampling and a Supplemental Expanded SI (ESI) was conducted. Andy then discussed the Supplemental ESI. The compound that MDE specifically commented on was hydroquinone, which is not a standard compound. Fieldwork was conducted in March 2023 and included the collection of surface soil, subsurface soil, and groundwater samples. The Supplemental ESI sample locations paired up with those from the SI so that the samples were spatially representative. The Supplemental ESI analytical results are currently undergoing data validation, and this data will be included with the existing dataset. The report is in progress and anticipated for regulatory review by the end of 2023, with the final available in early 2024. Ryan noted that one of challenges on this site has been working with a non-standard chemical (hydroquinone). It took a while to find a lab, and the Navy requires an accredited lab. Once the Navy found a lab, it was discovered that their accreditation for that chemical had expired. The

Navy then sought and received approval to use the lab (with expired accreditation), but it took some time.

Open Questions and Comments

Amy Brand opened the meeting to questions and comments from RAB members regarding the Sites 3/4/5 and Site 9 presentation.

- Larry Jaworski asked the following questions:
    1. I understand that samples from Sites 3, 4, and 5 were collected between January and April 2022, but the Navy is still not able to share results a year later? Andy replied that the preparation of the report is still in progress and that the Navy should be able to share the results at the next RAB meeting.
- Greg Morris asked the following question:
    1. Were Sites 3, 4, and 5 tested for PFAS? Andy replied no. Based on the history of use at the three landfills, there was no history of PFAS use.
- Kevin Britt asked the following questions:
    1. For Sites 3, 4, and 5, if the landfills were 20 feet deep, I would expect the contamination (paint sludge, oil, and solvents) to be deep and on the bottom, with clean fill on top. Why focus on surface soil in the RI? Andy replied that when the SI was conducted, deep discrete samples were collected few contaminants were found. There is some inert waste (brick, glass, etc.), but these are not leaching chemicals to the soil. Kevin asked how many deeper samples were collected during SI? Andy replied that he would have to go back and look, and Amy added that this can be taken as an action to follow up on. Andy added that the landfill sites are more like disposal pits intermixed with clean soil.
    2. Do you know what costs are incurred to maintain lab accreditation? Ryan replied that he did not know off hand, but the Navy maintains their own accreditation requirements for labs. Andy added that Jacobs did ask about the costs of lab accreditation and the estimate was around $50,000.
- David Harris asked the following question:
    1. It may have been during the last meeting in September 2022 when he asked, but he inquired about any new test results on the Piney Point aquifer wells for PFAS and was told that the data was being reviewed or that testing is imminent. He would like an update on the results of the Piney Point wells. Ryan stated that the Navy sampled back in 2018 and 40 of 42 wells came back non-detect; there were two wells where detections were below the 70 ppt lifetime health advisory (LHA), so the Navy did not take any action at that time. David stated that he is specifically referring to on-site monitoring wells near Site 10 that go into the Piney Point aquifer. Andy replied that there are four wells in the Piney Point, and they were sampled as part of the Site 10 SI and the data can be found in the Site 10 SI Report (the Site 10 SI Report can be found online in the NRL-CBD Administrative Record) and that no additional sampling of wells has been conducted. Ryan then thought that two rounds of groundwater sampling were conducted for the deep wells. Andy replied that the deeper wells were installed around 2017 and David asked is there a reason these have not been sampled since then? Andy replied that those wells will be sampled during the Site 10 RI. Ryan added that the Navy will follow up with David regarding the

available deep well PFAS data. Amy also stated that she would check the last RAB meeting summary regarding this issue and get back with David.

- Kevin Britt asked the following question:

  1. Why is PFAS in the deeper aquifer and is there any indication as to how it got there? Ryan replied that during the first round of PFAS sampling in the deep aquifer, the Navy did not find any detections of PFAS. When the second round of sampling was conducted, low levels of PFAS were detected, but the Navy has not done any further sampling.

- Greg Morris asked the following question:

  1. Greg began by thanking the Navy and all attendees. He then stated that there are many manufacturers in the US that use PFAS in a lot of different things. Domestically, how much did the Navy spend on PFAS sampling and studies in 2022? Ryan replied he did not know off-hand. Greg then asked how much the Navy spent on PFAS remediation? Ryan stated in the millions. He then stated that the first thing the Navy did in 2016 when the EPA came out with the PFAS LHAs was to sample the Bases and communities to assess drinking water as a removal action under CERCLA and the Navy offered bottled water to those communities where PFAS in drinking water was greater than 70 ppt. The Navy still conducts sampling today using the 70 ppt threshold. However, now that the regulators have new health advisories out, DoD has to evaluate and provide guidance before the Navy can implement them. Ryan then noted that PFAS has some very desirable properties and is present in a lot of household items and firefighting.

Future Meeting Planning and Adjournment

Amy stated that per the RAB charter, the RAB is scheduled to meet twice a year, typically on Wednesdays, and proposed the following dates for the next RAB meeting: 10/18/23, 11/1/23, or 11/8/23. The RAB agreed to meet on Wednesday 10/18. Amy noted that she will plan to reserve a room at the same Community Center.

Larry Jaworski then expressed thanks on behalf of the RAB to Kevin Britt for serving as the Community Co-chair.

Amy requested that any agenda topics for the next meeting be forwarded to Ryan, and that if anyone is interested in serving as the Community Co-chair, to please let Ryan know. For specific questions regarding the Community Co-chair role, feel free to ask Kevin. The RAB will plan to elect a new Community Co-chair at the Fall 2023 meeting, and as a reminder, a RAB is required by law to have a Community Co-chair.

Ryan thanked Kevin Britt for his work as the Community Co-Chair and all participants for attending, and concluded the RAB meeting at 7:00 p.m.

Table 1. List of Attendees
Restoration Advisory Board Meeting May 24, 2023

Name	Affiliation
Ryan Mayer	NAVFAC Washington; Co-Chair
Regina Adams	NAVFAC Washington
Kevin Britt	RAB member; Community Co-Chair
Vivian Cawood	RAB member
Will Hager	RAB member
David Harris, II	RAB member
Robin Harris	RAB member
Lawrence Jaworski	RAB member
Greg Morris	RAB member
Scott Lonesome	Navy
Curtis DeTore	MDE
Ira May	MDE
Peggy Williams	MDE
Jessica Shulman	MDE
Amy Brand	Jacobs
Andy Bogdanski	Jacobs
Laura Lampshire	Jacobs

Attachment 1
Naval Research Laboratory – Chesapeake Bay Detachment Restoration Advisory Board Meeting Agenda, May 24, 2023

Restoration Advisory Board (RAB) Meeting
Naval Research Laboratory – Chesapeake Bay Detachment

May 24, 2023, 5:00-7:00 pm
Northeast Community Center
4075 Gordon Stinnett Ave, Chesapeake Beach, MD 20732

Meeting Facilitator: Amy Brand - Jacobs

Meeting Agenda		
Time	**Topic**	**Presenter**
5:00-5:10 pm	Welcome and Introductions	Ryan Mayer and Kevin Britt
5:10-5:15 pm	Meeting Logistics: review ground rules and meeting logistics	Amy Brand
5:15-5:20 pm	Review and Approve September 2022 RAB Meeting Minutes	Amy Brand
5:20-5:35 pm	Base-wide PFAS PA/SI	Ryan Mayer and Andy Bogdanski
5:35-5:45 pm	Questions & Comments from RAB Members	RAB Members
5:45-6:00 pm	Site 10 Interim Measures – Surface Water Treatment	Ryan Mayer and Andy Bogdanski
6:00-6:10 pm	Questions & Comments from RAB Members	RAB Members
6:10-6:30 pm	Fieldwork Updates: Sites 3/4/5 and Site 9	Ryan Mayer and Andy Bogdanski
6:30-6:50 pm	Open Questions & Comments	RAB Members and Public Meeting Attendees
6:50-7:00 pm	Future Meeting Planning and Adjournment	Ryan Mayer

MDE – Maryland Department of the Environment

Attachment 2
Naval Research Laboratory – Chesapeake Bay Detachment Restoration Advisory Board Meeting Presentation, May 24, 2023

Naval Facilities Engineering Systems Command
NAVFAC Washington

Naval Research Laboratory – Chesapeake Bay Detachment Restoration Advisory Board Meeting

May 24, 2023

5:00 - 7:00 p.m.

Introductions

Community RAB Members		
Kevin Britt, Community Co-Chair	Vivian Cawood	Pat Durbin
Blenda Eckert	Tom Eckert	Mark Fisher
Michael Gilliam	Will Hager	David Harris
Robin Harris	Larry Jaworski	Brendan Lumsden
Greg Morris	Michael Rooney	Allison York
Navy Team		
Ryan Mayer **NAVFAC Remedial Project Manager** **Navy Co-Chair**	Scott Lonesome NRL-CBD	Rodney Aguirre NAVFAC
Peggy Williams Maryland Department of the Environment (MDE)	Ira May MDE	
Andy Bogdanski Jacobs	Amy Brand Jacobs	Laura Lampshire Jacobs

Agenda

- Welcome and Introductions
- Meeting Structure and Guidelines
- Review and Approve September 2022 Meeting Minutes
- Basewide PFAS Preliminary Assessment and Site Inspection
  - Questions & Comments from RAB Members
- Site 10 Interim Removal Action for Surface Water
  - Questions & Comments from RAB Members
- Fieldwork Updates: Sites 3,4,5 and Site 9
  - Questions & Comments from RAB Members and Public
- Future Meeting Planning and Adjournment

Naval Facilities Engineering Systems Command
NAVFAC Washington

Meeting Structure and Guidelines

Amy Brand - Jacobs

Mission and Charter Overview

Mission: To establish and maintain open and interactive dialogue between representatives of the Navy, the Maryland Department of the Environment (MDE), and the local community concerning the Environmental Restoration Program (ERP) activities at NRL-CBD. The RAB:

- Exists to give community access to information about the Navy's Environmental Restoration Program at NRL-CBD.
- Acts as a liaison group to disseminate information to the community and solicit the community for comments.
- Is an advisory group, not a decision-making board.
- Gives community members an opportunity to learn about the ERP; share input, ideas, and concerns; and advise decision-makers.
- Enables the project team to identify and address questions, comments and concerns from the community early and throughout the process.

Structure of an In-Person RAB Meeting

- RAB members sit at the table
- The Navy's contractor, Jacobs, will facilitate the meeting, but the Navy and Community Co-Chairs are in charge of the meeting
- RAB members may ask questions and discuss at the end of each presentation
- Public participants will hold questions until the designed time at the end of the meeting*

Review of Ground Rules

- All remarks or questions will be made in a courteous and respectful manner. Profanity, angry or violent outbursts, and other types of disrespectful or rude behavior will not be tolerated.
- RAB members will talk one at a time and wait to be recognized by a Co-Chair.
- RAB members will be patient when listening to others speak and will not interrupt.
- RAB members will avoid dominating discussion and will be cognizant of letting others speak.
- Members will limit side comments and will not engage in side conversations.
- Comments and questions will be limited to agenda topics except during periods on the agenda for open discussion.
- RAB members will turn cell phones off or to vibrate and will not check messages or otherwise use cell phones during a meeting except to look something up as related to the meeting. (If needed, RAB members will excuse themselves from the room to take urgent calls.)
- RAB members will discuss any concerns about the discussions or the meeting by one-on-one with a Co-Chair.

Naval Facilities Engineering Systems Command
NAVFAC Washington

Review and Approval of September 2022 RAB Meeting Minutes

Amy Brand - Jacobs

Previous Meeting Minutes

- The Draft September 2022 RAB meeting minutes were distributed to the RAB via email on December 6, 2022 for review and comment
  - No comments were received.
- The Draft Final September 2022 RAB meeting minutes were posted to the NRL-CBD website
- Approval to finalize?

Naval Facilities Engineering Systems Command
NAVFAC Washington

Base-wide PFAS Preliminary Assessment and Site Inspection

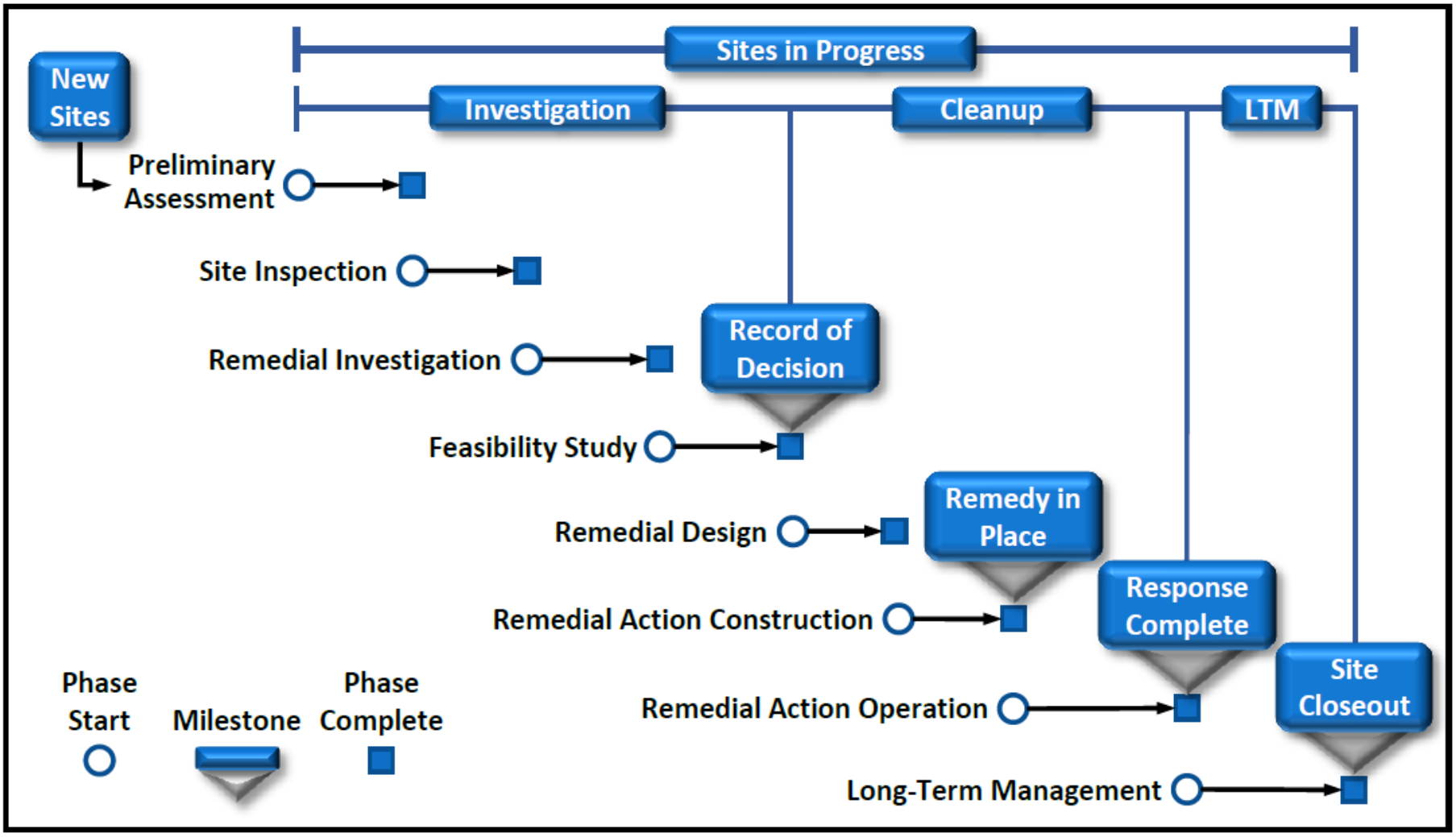
Andy Bogdanski - Jacobs

Ryan Mayer - NAVFAC Washington

Preliminary Assessment Background and Objective

- In 2016, the Navy had previously performed a review of environmental restoration sites and AOCs for potential releases of AFFF
  - Site 10 was identified during that review and has been the focus of PFAS investigations at NRL-CBD
  - Since Site 10 likely represents the primary source of PFAS at the facility, a PA wasn't identified as a need at the time
- Since then, the Navy has formalized its PFAS PA approach
  - The approach includes a consistency instruction on information sources to be reviewed and types of activities that should be assessed for potential PFAS releases
- The Navy has now decided that NRL-CBD should complete a Basewide PA for consistency with Navy policy across Navy facilities

Overview of the CERCLA Process



PA Methodology

- Desktop review
  - Navy Environmental Records
  - Internet Records
  - Navy Archives Records
  - Environmental Data Resources (EDR) Reports
  - Maps/Aerial Photographs
  - Naval Safety Center Records
- Interviews
  - Questionnaires
  - In-person Interviews
- Site Reconnaissance
  - Identify evidence of AFFF use, transfer, release, and/or disposal

PA Findings and Conclusions

- Two areas were identified as potential PFAS release areas
  - Site 10 – Fire Testing Area
    - Handling, use, and release of AFFF during fire suppressant testing
    - Site Inspection is complete and planning for the Remedial Investigation is underway.
  - Building 50 – Former Firehouse
    - Handling, use, and potential release of AFFF during fire-fighting operations, and the washing of fire trucks and fire-fighting apparatus
    - A Site Inspection was recommended.

Building 50 Location

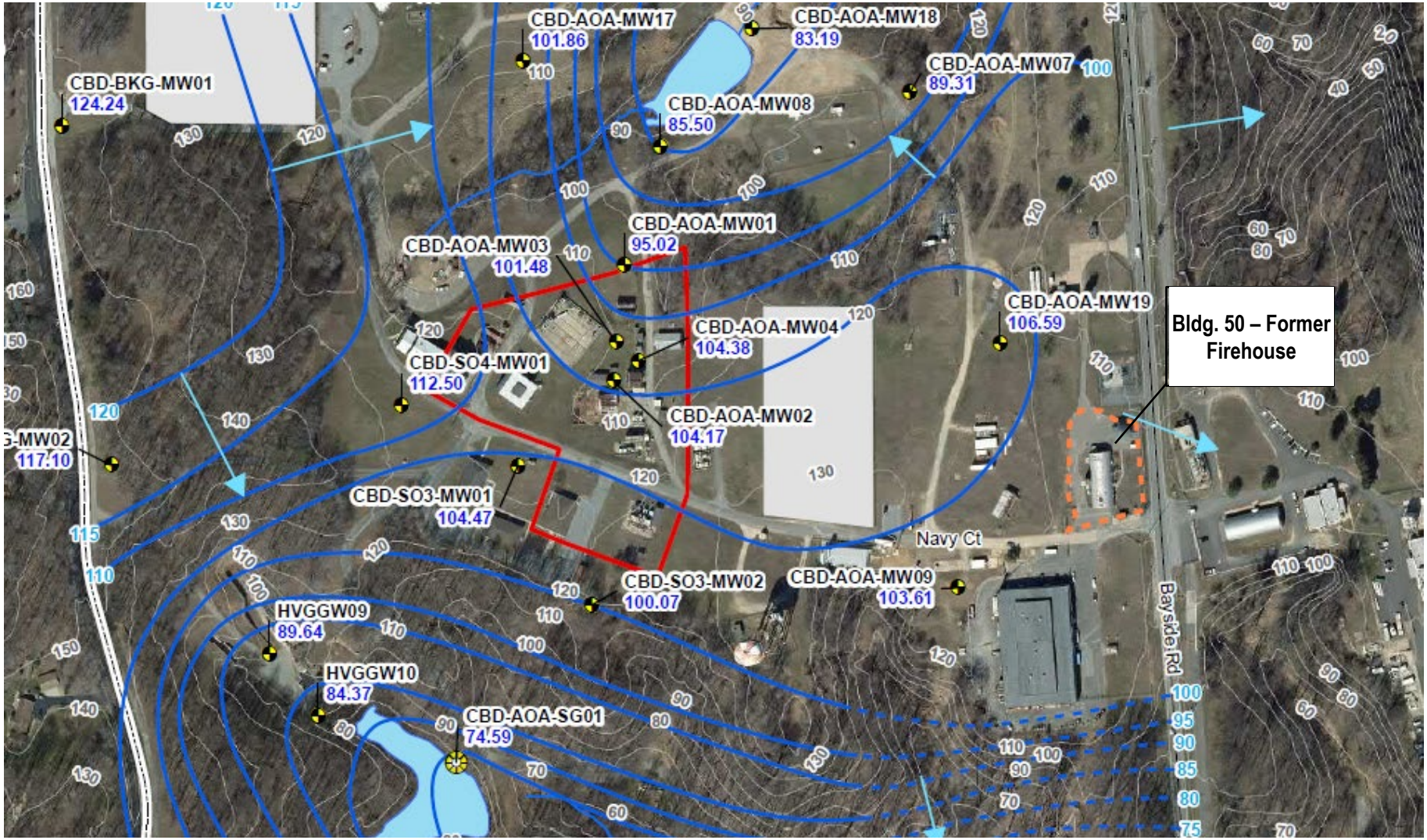
Building 50 – Former Firehouse

- The building was constructed before the 1950s based on historical aerials
- Served as the firehouse for NRL-CBD fire department
- The duration of the use of Building 50 as a firehouse is unknown; operations began before 1984 and ended sometime after 2008
- Fire trucks were stored and serviced at the firehouse during their use at NRL-CBD, including being washed both inside Building 50 and out on the asphalt parking lot near the building.
- AFFF packaged in five-gallon containers was stored by the fire department in the firehouse
- When the fire department ceased operations at NRL-CBD they removed the stored AFFF

Site Inspection Objectives

- Determine the presence/absence of PFAS in multiple media (soil and surficial groundwater)
  - The conceptual site model (CSM) is based on the cleaning and maintenance of fire trucks and the handling and transfer of AFFF that may have resulted in releases of AFFF-containing rinsate to the surrounding pavement/soils
- Refine the CSM with regard to site hydrogeology
  - Which direction is groundwater flow in the surficial aquifer

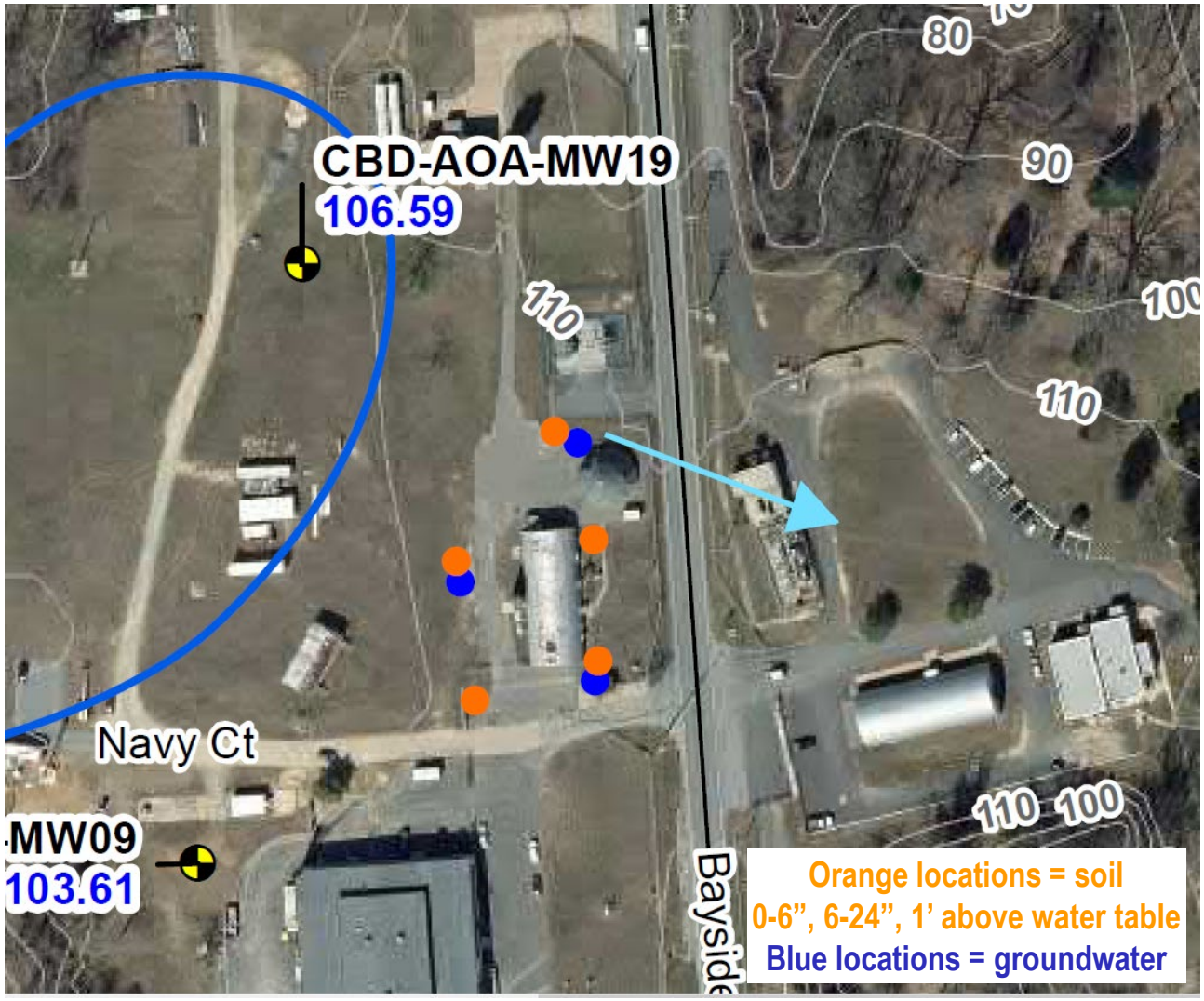
Surficial Aquifer Groundwater Flow – October 2020



Site Inspection Approach

- Collect co-located surface/subsurface soil samples from 5 boring locations around the former Firehouse
  - Maximum depth of each soil boring was estimated to be 30 ft below ground surface (bgs)
  - Surface soil collected at 0-6 inches bgs
  - Subsurface soil collected from:
    - 6-24 inches bgs
    - 1-ft directly above the water table
  - All samples analyzed using EPA Method 1633 for 29 PFAS compounds
- Install three surficial groundwater monitoring wells
  - Wells are co-located with three of the five soil borings
- Conduct one round of synoptic groundwater level gauging
- Sample groundwater from two existing and three new monitoring wells
  - All samples analyzed by EPA Method 1633 for 29 PFAS compounds

Soil Boring and Monitoring Well Locations



Questions and Comments

- Open to RAB Members for discussion of "Basewide PFAS PA/SI" presentation.
- Questions from the public should be held to the end of the meeting.

Naval Facilities Engineering Systems Command
NAVFAC Washington

Site 10 Interim Removal Action for Surface Water

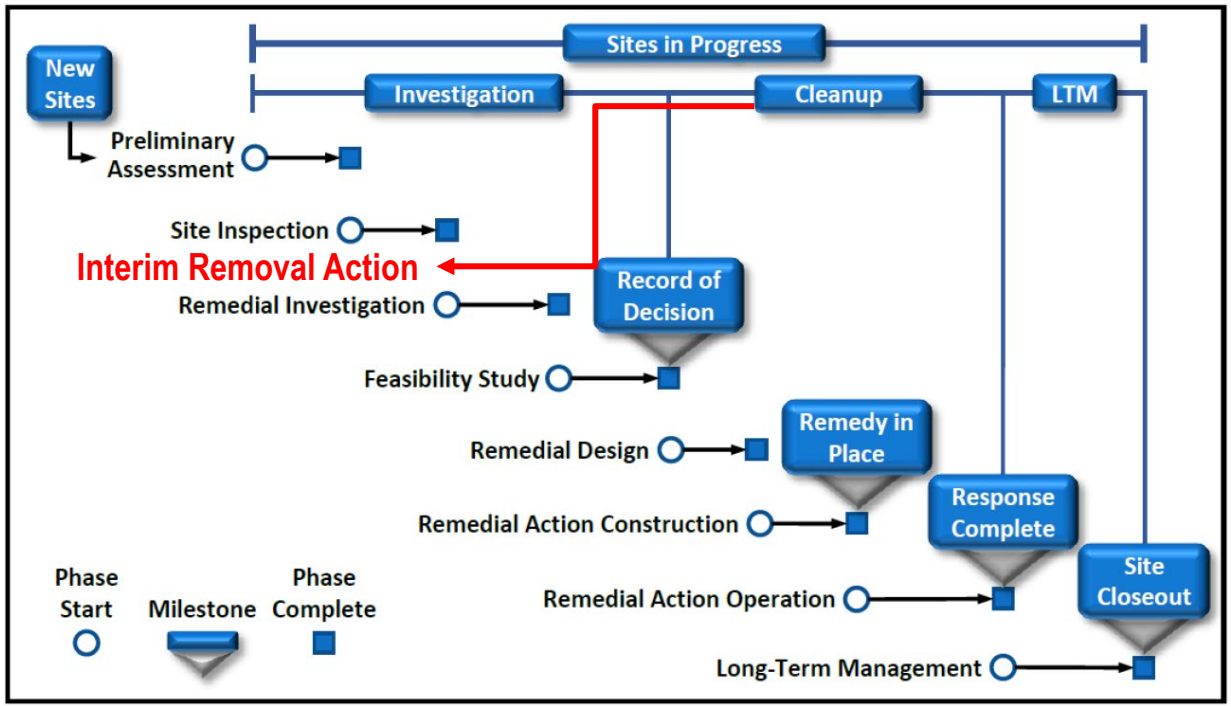
Andy Bogdanski - Jacobs

Ryan Mayer – NAVFAC Washington

Interim Removal Action Overview

- Site 10 Site Inspection sampling showed elevated PFAS concentrations in the northern stream and an order of magnitude increase in PFAS concentrations in the downgradient portion of the southern stream.
- Follow-on sampling showed that the WWTP influent and effluent contained PFAS

- Based on the PFAS concentrations and the off-Base migration through surface water, **the Navy decided to implement an Interim Removal Action to reduce PFAS concentrations in surface water.**



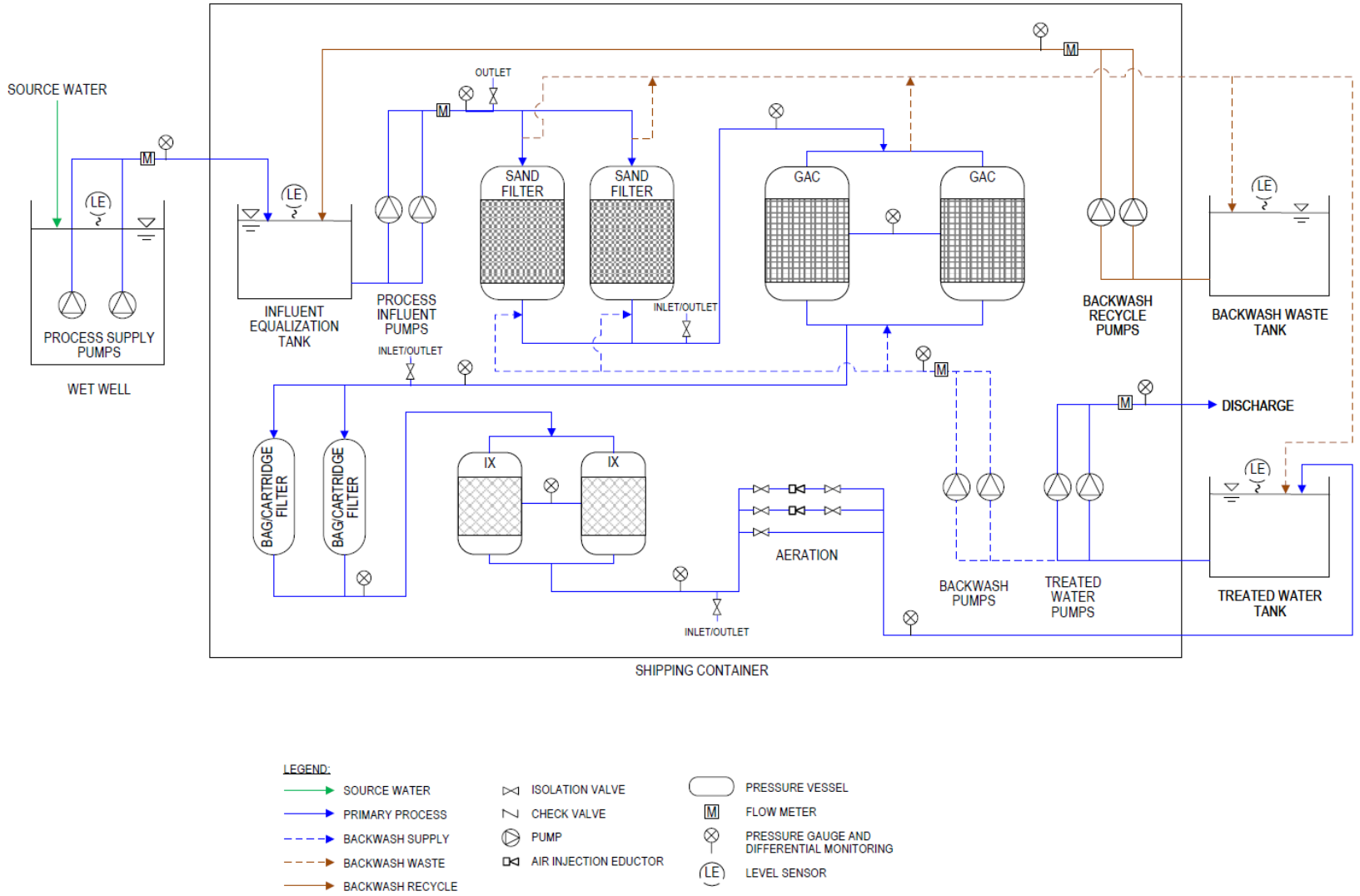
Interim Removal Action Overview

- Basis of Design
  - Basis of Design identifies the applicable regulations, treatment goals, treatment technology, treatment process, and other relevant considerations
  - Design will be iterative with 30%, 60%, and 100% designs completed to allow for revisions and adjustments during the design process
- Action Memorandum
  - Document that describes the removal action that will be implemented
  - 30-day public comment period for Action Memorandum
- Design Implementation
  - Remedial action contractor will construct and initially operate the treatment systems

Basis of Design

- Basis of Design will identify applicable regulations, treatment goals, treatment technology, treatment process, and other relevant considerations
  - Ion exchange (IX) resin identified as the preferred technology for PFAS removal. Sand filters, granular activated carbon (GAC), and bag filters will also be used for process and system performance
  - Treatment systems consist of two units:
    - One unit located at the north stormwater pond to intercept the north stream and designed to treat 50 gpm
    - Second one located at the existing WWTP to intercept flow from the WWTP and designed to treat 20 gpm
    - Each unit will be a modular treatment system located inside of a shipping container

Treatment Process Conceptual Design



North Pond Area Treatment System Siting

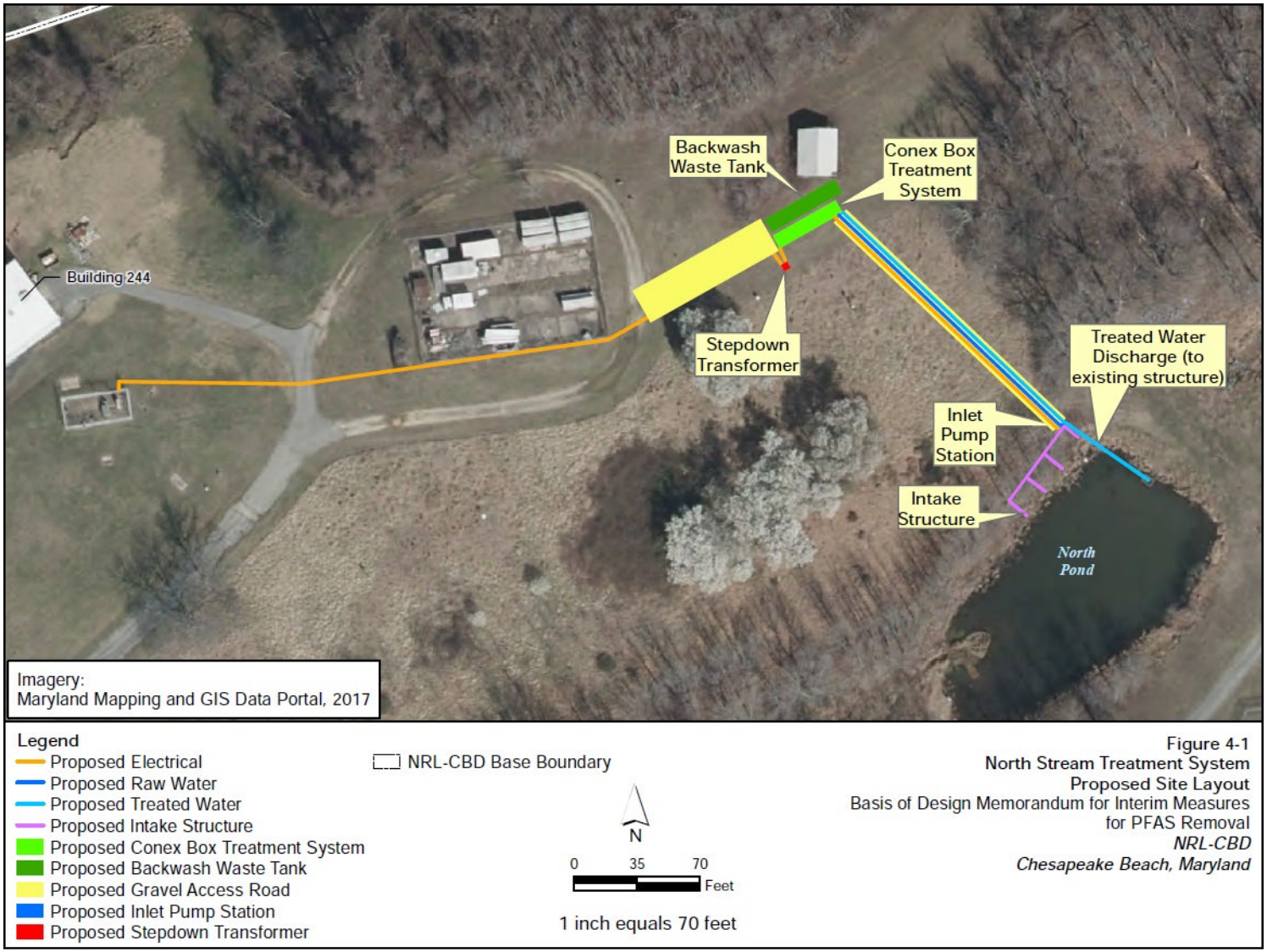


Figure 4-1
North Stream Treatment System
Proposed Site Layout
Basis of Design Memorandum for Interim Measures for PFAS Removal
NRL-CBD
Chesapeake Beach, Maryland

WWTP Area Treatment System Siting

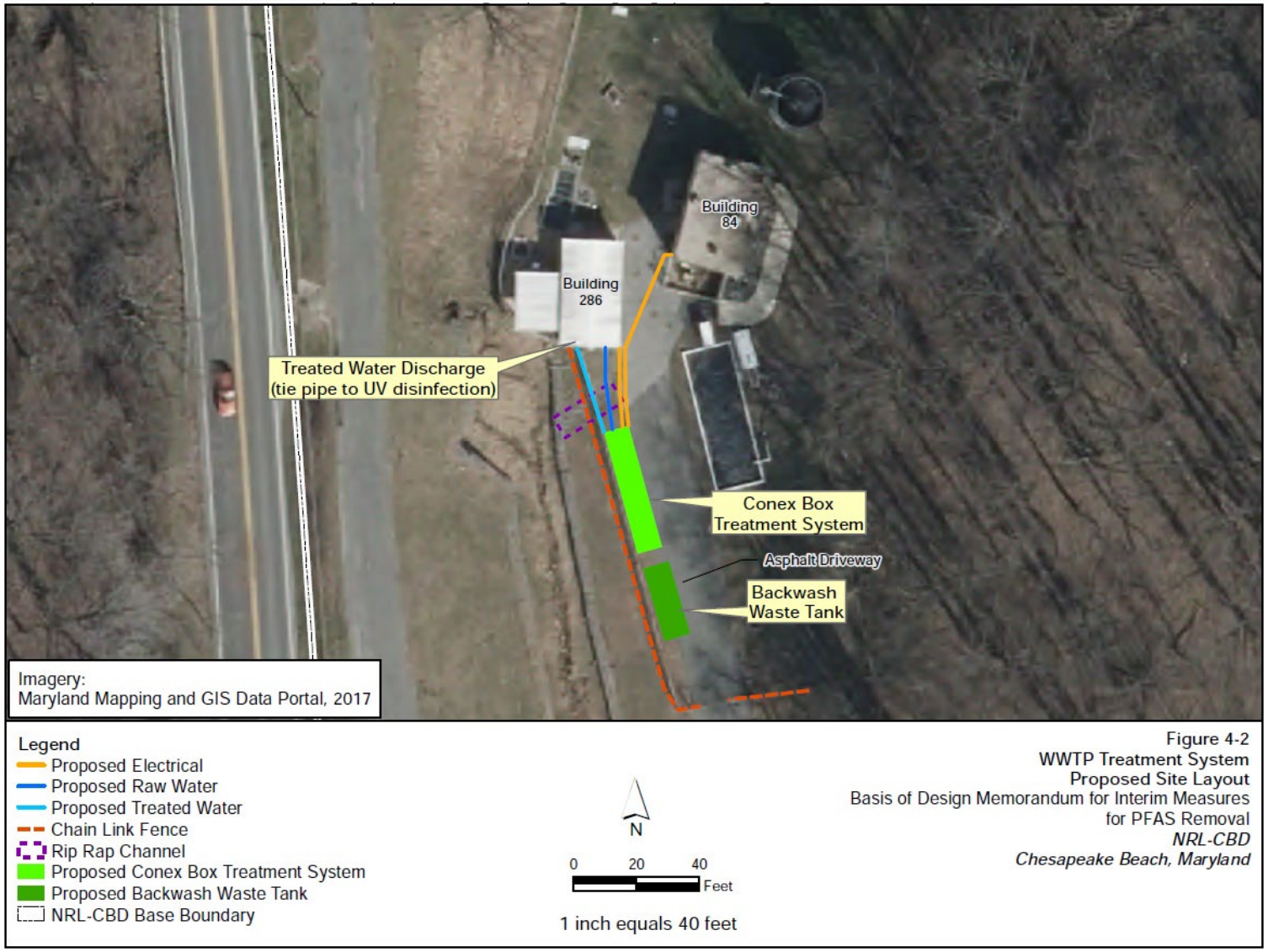


Figure 4-2
WWTP Treatment System
Proposed Site Layout
Basis of Design Memorandum for Interim Measures for PFAS Removal
NRL-CBD
Chesapeake Beach, Maryland

Questions and Comments

- Open to RAB Members for discussion of "Site 10 Interim Measures" presentation.
- Questions from the public should be held to the end of the meeting.

Fieldwork Updates: Sites 3, 4, 5 and Site 9

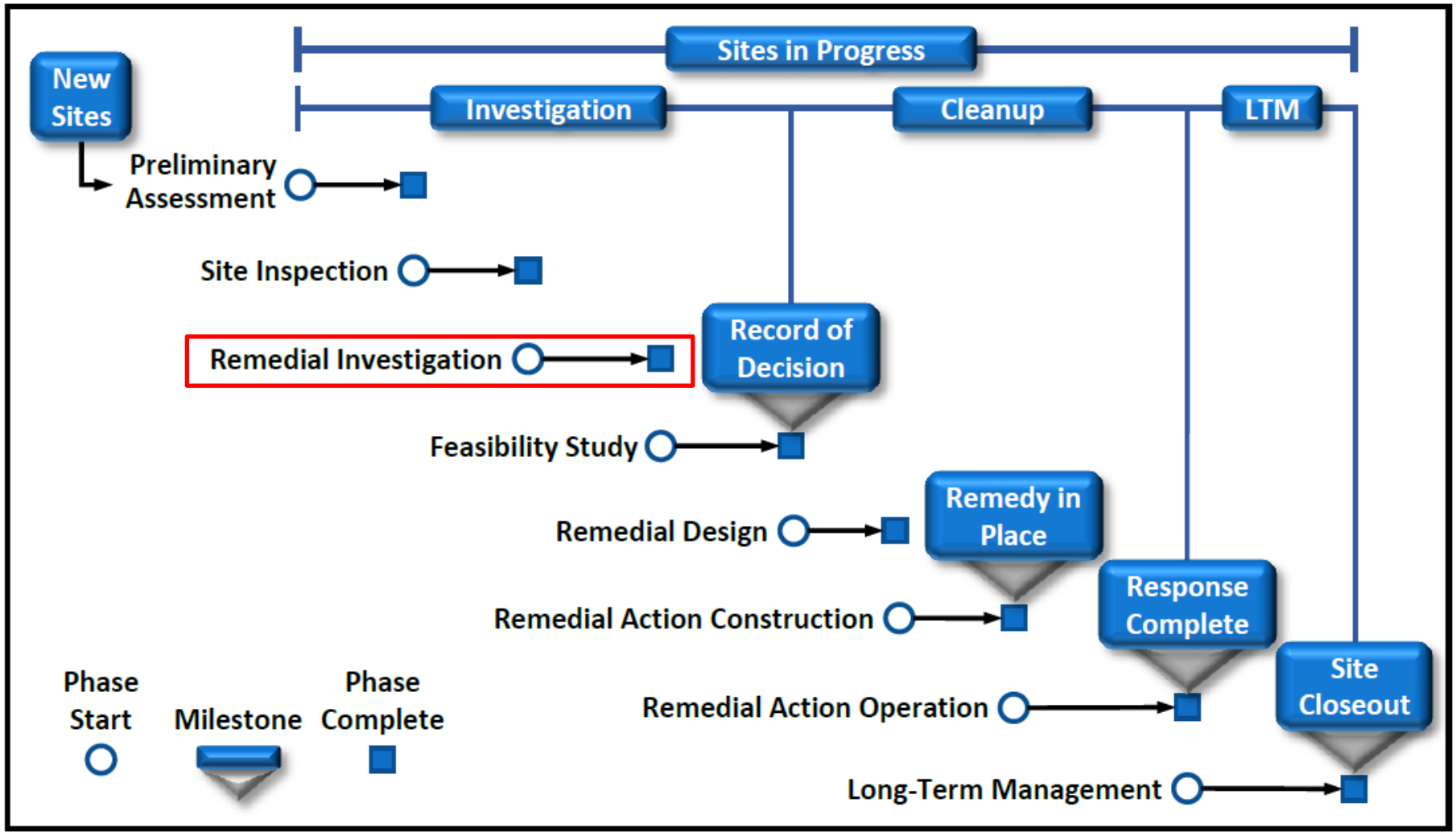
Andy Bogdanski – Jacobs

Sites 3, 4, and 5 Background

- Sites 3, 4, and 5 are known as Landfill No. 1, 2, and 3 respectively
  - Operated sequentially between 1942 and 1968
  - Each site consisted of four to six 25-foot by 25-foot by 20-foot-deep excavation pits
  - Accepted three types of waste:
    - Municipal waste such as household garbage and tree trimming refuse
    - Shop wastes such as wooden boxes, cardboard cartons, oily rags, absorbent materials, empty oil cans, lubricant cans, and paint sludges
    - Non-toxic laboratory waste such as paper towels, cardboard boxes, and small quantities of waste solvents.

Location of Sites 3, 4, and 5

Overview of the CERCLA Process

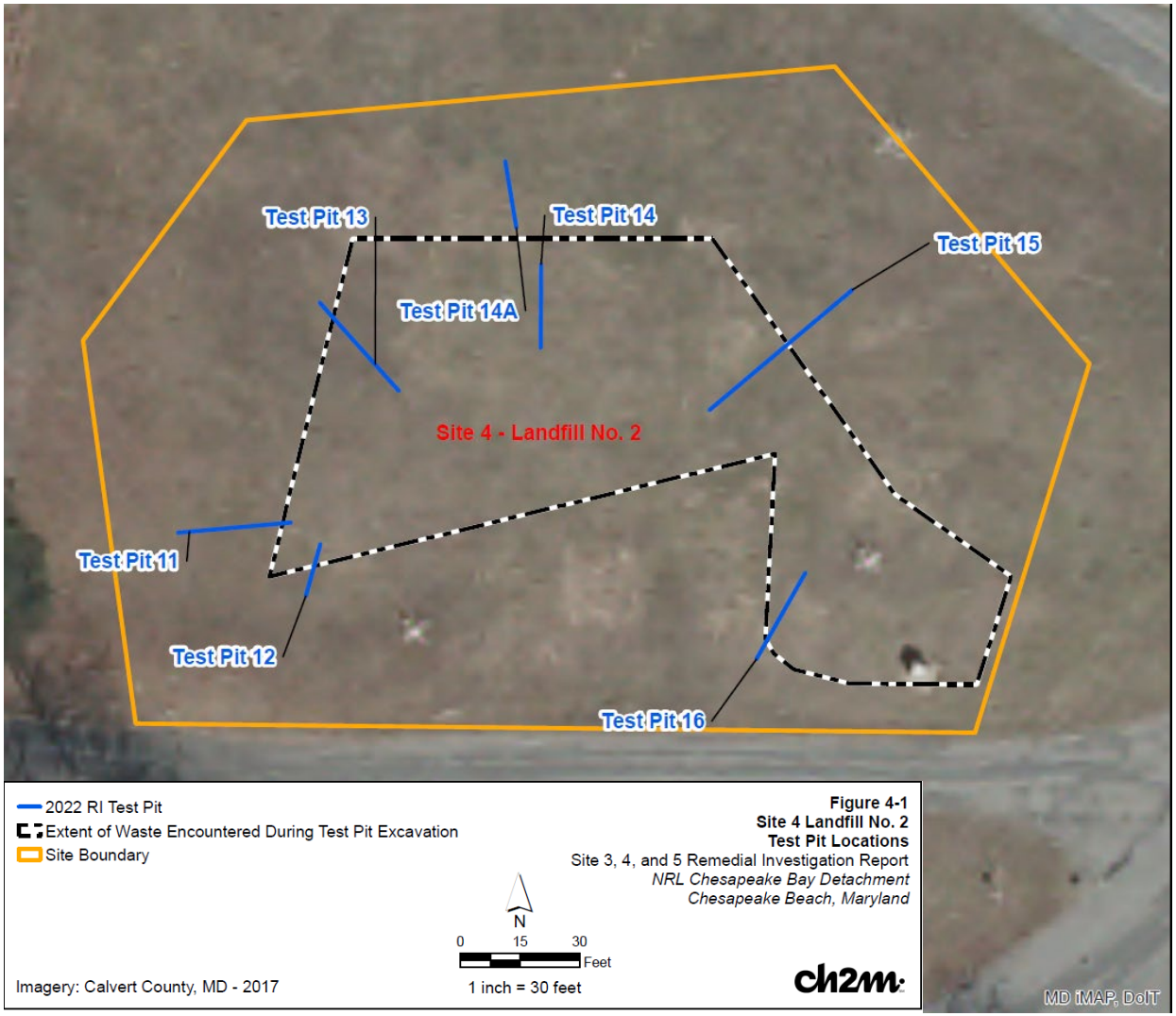


Sites 3, 4, 5 Remedial Investigation

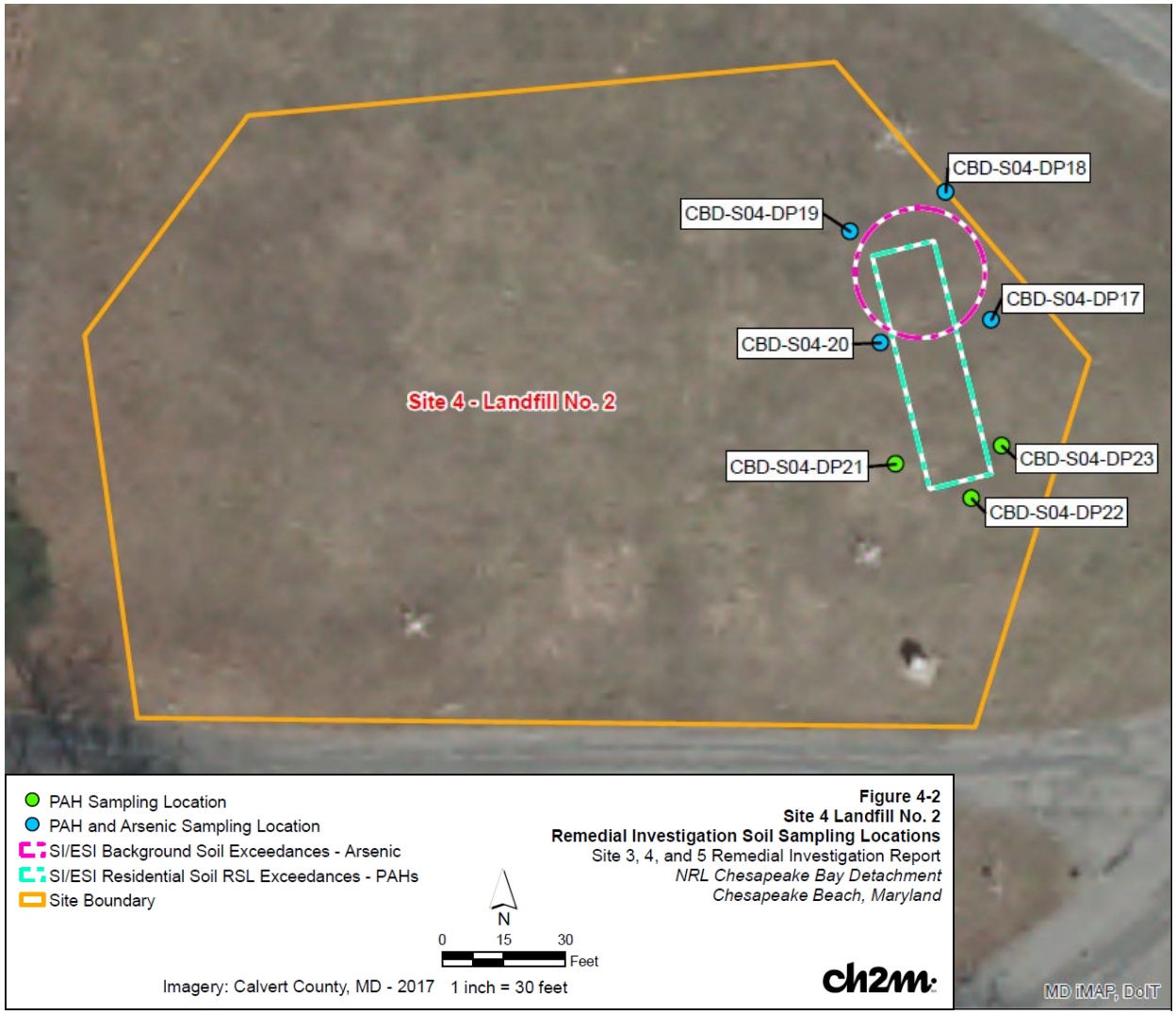
- Between January and April 2022, the Navy completed Remedial Investigations at Sites 3, 4, and 5
- Site 3 fieldwork included:
  - Surface (0-6”) and shallow subsurface (1-2’) soil sampling for PCBs and arsenic
- Site 4 fieldwork included:
  - Test pitting for subsurface waste delineation
  - Surface (0-6”) and shallow subsurface (1-2’) soil sampling for PAHs and arsenic
- Site 5 fieldwork included:
  - Test pitting for subsurface waste delineation
  - Surface (0-6”) and shallow subsurface (1-2’) soil sampling for PAHs
  - Surface (0-6”) and subsurface soil sampling for VOCs, SVOCs, PCBs, metals, and dioxins

Site 3 Sample Locations

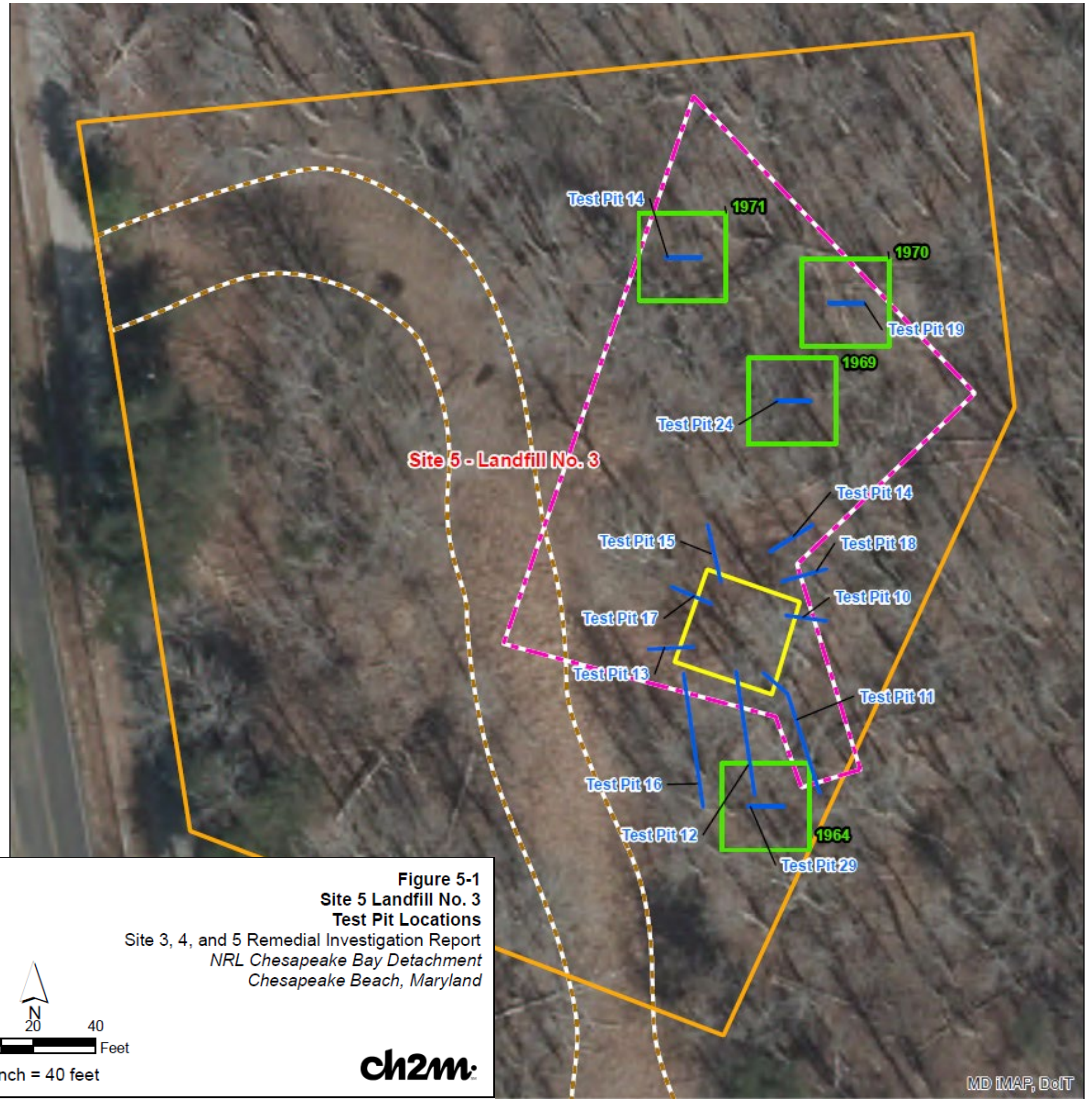
Site 4 Test Pit Locations



Site 4 Sample Locations



Site 5 Test Pit Locations



Legend
- 2022 RI Test Pit
- Potential Disposal and/or Burn Pit
- Known Disposal and/or Burn Pit
- Site Boundary
- Residential Soil RSL Exceedances - PAHs
- Old Road

Imagery: Calvert County, MD - 2017

N

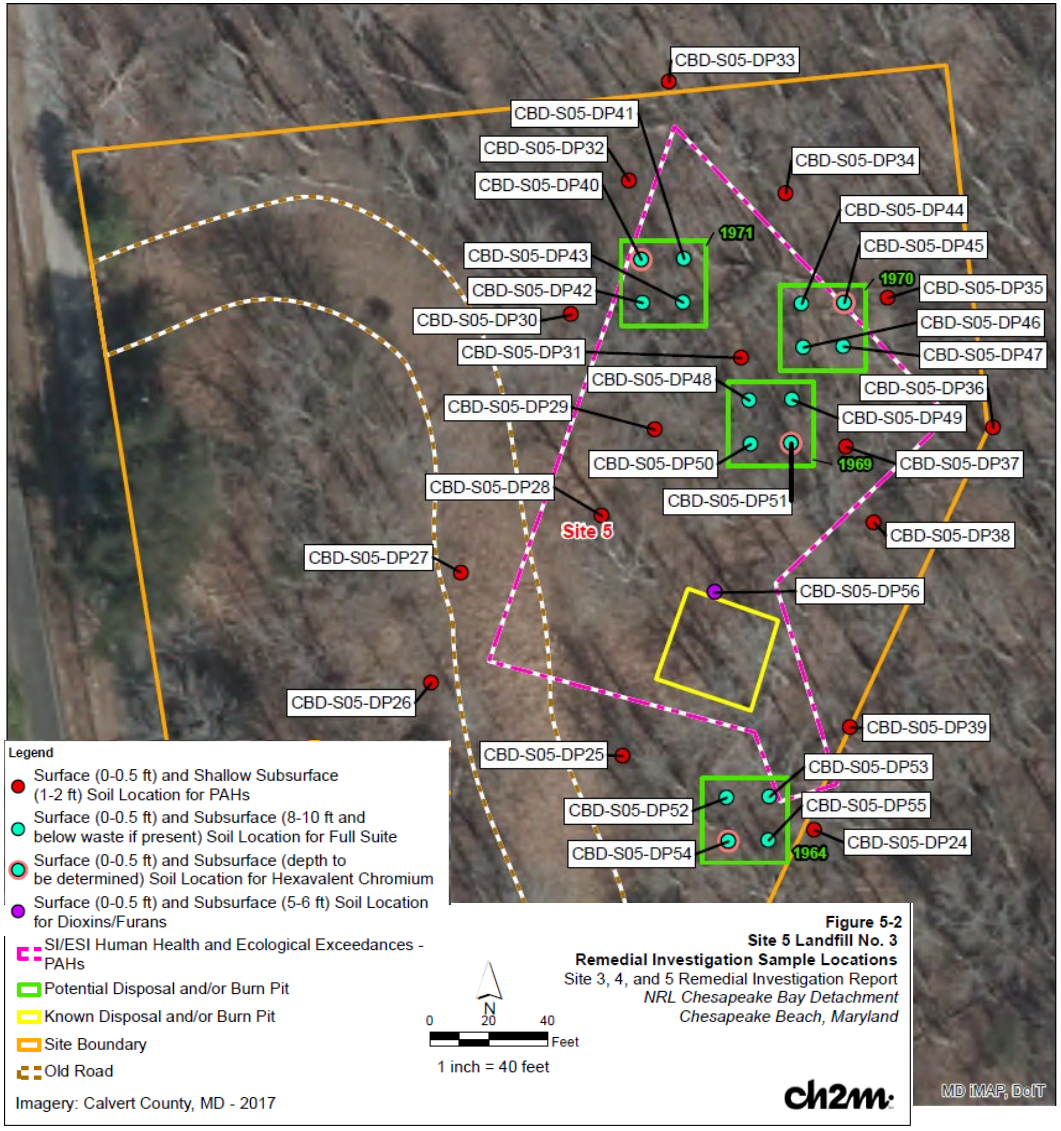
0 20 40 Feet

1 inch = 40 feet

Figure 5-1
Site 5 Landfill No. 3
Test Pit Locations
Site 3, 4, and 5 Remedial Investigation Report
NRL Chesapeake Bay Detachment
Chesapeake Beach, Maryland

ch2m:

Site 5 Sample Locations



Next Steps

- The RI field activities and the data results will be presented in the RI Report
  - The data is being evaluated to understand the nature and extent of potential contamination
  - Human health and ecological risk is being calculated based on the site data
- The report is currently underway and anticipated for regulatory review by late summer 2023 with a final report anticipated by the end of the year 2023.

Site 9 Background

- Site 9 is also known as the photo-processing waste discharge
  - Associated with a photography laboratory housed inside former Building 43
  - Wastewater was disposed through a drain that discharged to the ground outside the building
  - Photo lab was operational from the late-1950s until early-1960s and from the late-1960s until 1975

Location of Site 9

Figure 4
Site and Historical Sample Location Map
Site 9 Supplemental Expanded Site Investigation UFP-SAP
NRL Chesapeake Bay Detachment
Chesapeake Beach, Maryland

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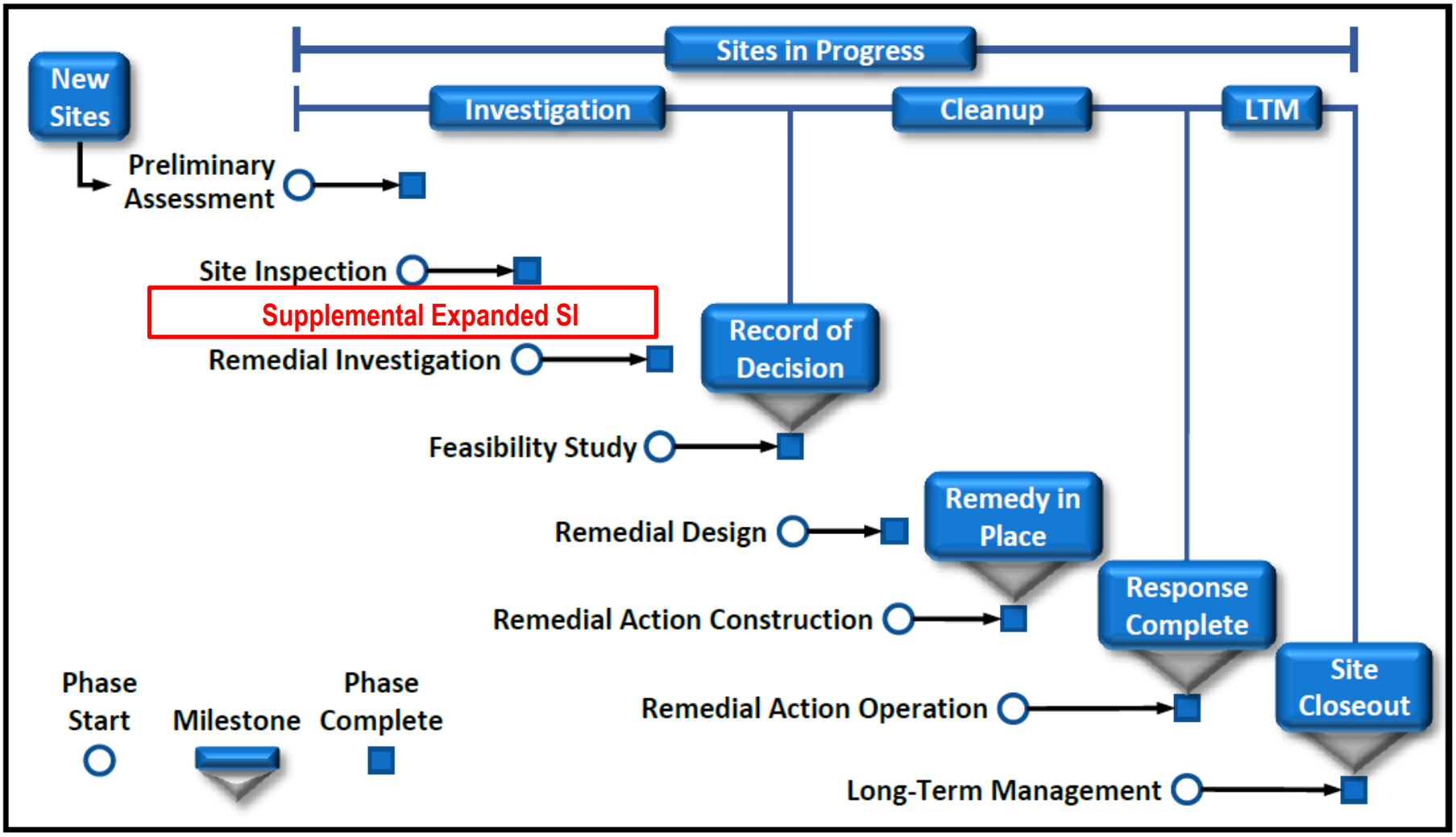
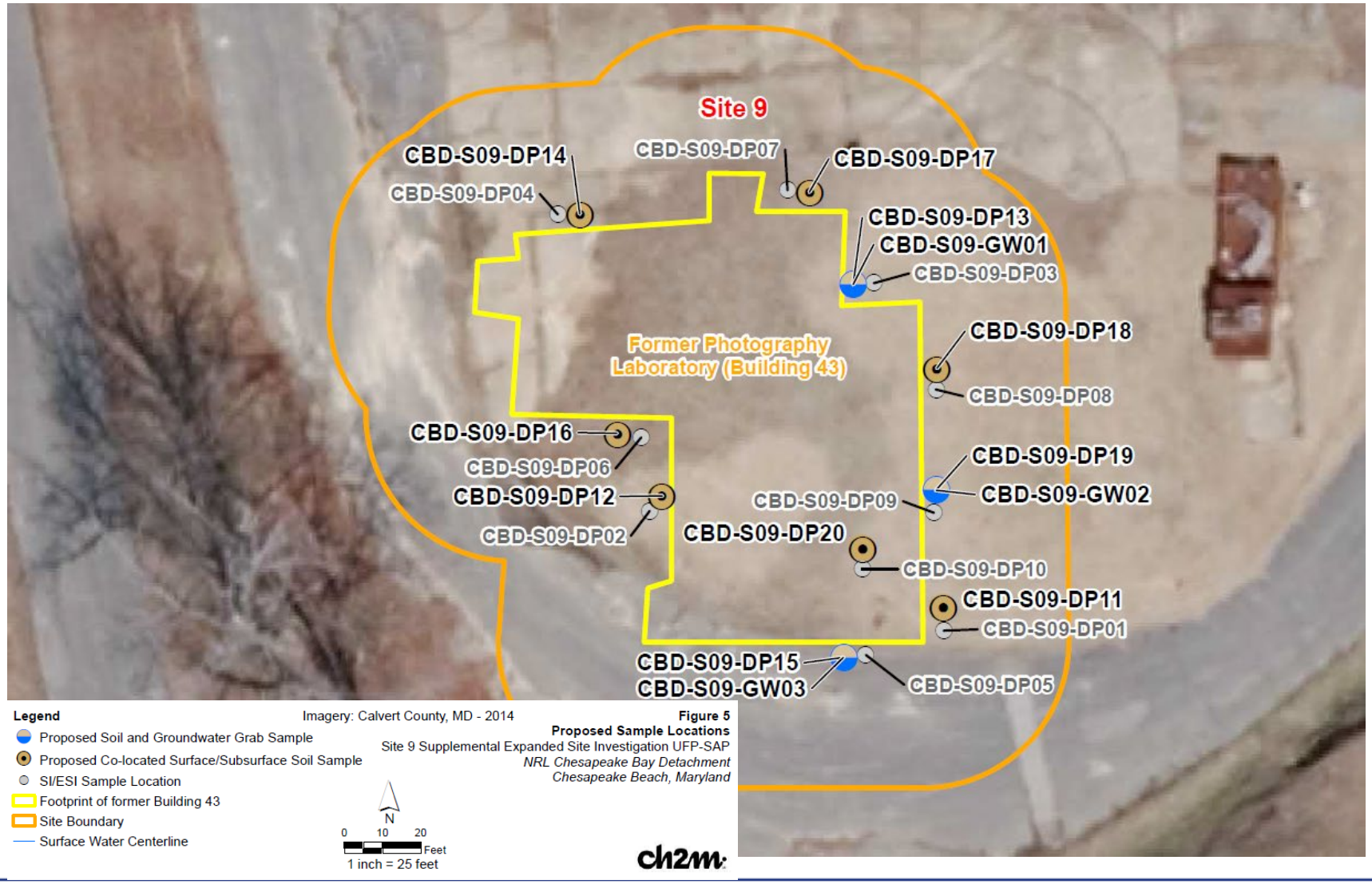
Site 9 Investigation Process



Site 9 Supplemental Expanded SI

- Fieldwork was conducted in March 2023
- Site 9 fieldwork included:
  - Surface (0-6”) and subsurface (above water table) soil sampling for hydroquinone
  - Groundwater grab sampling for hydroquinone

Site 9 Sample Locations



Next Steps

- The Supplemental ESI data is currently under-going data validation
- Once final data is available it will be included with the existing dataset
  - The data will be used to update understanding of whether a release has occurred at the site and the presence of hydroquinone
  - Human health and ecological risk screenings will be updated
- The report is currently underway and anticipated for regulatory review by end of the year 2023 with a final report anticipated in early 2024.

Questions and Comments

- Open to RAB Members for discussion of “Fieldwork Updates” presentation.
- Questions from the public should be held to the end of the meeting.

Questions and Comments

Questions from Public Participants

Future Meeting Planning

- Per the charter, plan to meet 2 times per year
  - Navy proposes the next meeting for October 2023
  - Wednesday evenings, 5:00-7:00 p.m.
- RAB agenda topics
  - If there are topics you'd like us to discuss, please communicate them to the RAB Co-Chairs:

    Navy Co-Chair – Ryan Mayer: ryan.e.mayer.civ@us.navy.mil

    Community Co-Chair – Kevin Britt: kev3125@yahoo.com

Websites for More Information

- **About RABs, including the RAB Rule Handbook:**

  http://www.denix.osd.mil/rab/home/

- **About the Navy's Environmental Restoration Program:**

  http://www.navfac.navy.mil/go/erb/

- **About the Environmental Restoration Program at NRL-CBD:**

  https://go.usa.gov/xSeKn (note: case-sensitive)

- **More about PFAS**

  https://www.navfac.navy.mil/products_and_services/ev/products_and_services/env_restoration/pfas_reading_room.html

  https://mde.maryland.gov/PublicHealth/Pages/PFAS-Landing-Page.aspx

  www.epa.gov/pfas

  https://www.atsdr.cdc.gov/pfas/index.html