MINUTES
Data Integrity Work Group (DIWG)
Virtual Meeting
Tuesday, February 22, 2022
1:00-4:00 PM
Meeting materials:
https://www.chesapeakebay.net/what/event/data_integrity_workgroup_february_2022_meeting
This meeting was recorded for internal use to assure the accuracy of meeting notes.

ACTIONS

- ✓ Mike Mallonee will send an email asking for more beta testers for the DUET updates. Mike Mallonee will send a template to show what changes will happen in DUET.
- ✓ Mike Mallonee will inventory CEDR data before the March Nontidal Network Workgroup meeting, and that will be a topic on that meeting's agenda.
- ✓ Suzanne Doughten (ODU) will send Mike Mallonee the new number for December ammonia for the tributary split samples after re-running the samples.
- ✓ It was resolved that Horn Point Laboratory can receive a smaller volume of water.
- ✓ Chesapeake Monitoring Cooperative will support Salisbury University to become a Tier 3 laboratory.

1:00-1:10 Introductions & Announcements **All**

***STAR Activities related to DIWG** Sullivan

Breck Sullivan (USGS) presented on STAR activities related to data integrity activities. One way the DIWG could consider incorporating topics for other outcomes is that one of the major monitoring needs for the wetlands and black duck outcomes is the need for improvements to the data tracking system. The DIWG could consider adding an updated agenda item to hear from Olivia Devereux on data management for wetlands and black ducks.

1:10-1:20 Monitoring and Laboratory Analysis Updates **All**

Cindy Johnson gave the monitoring and lab updates for Virginia Department of Environmental Quality (VA DEQ). Two field teams started two weeks late each because of Covid-19. Then they had a catastrophic engine failure and they're still trying to replace that. They have substituted runs with a different boat but it's not as sturdy in rough weather. They also lost some field people out of two regional offices and they're in the process of recruiting new hires for those positions. Because of that, they haven't been able to coordinate their monitoring where all regions go out on the same day to sample in an upstream fashion, but they're still trying to get them in as best they can. The lab hasn't had issues.

Betty Neikirk gave the monitoring and lab updates for Virginia Institute of Marine Science (VIMS). VIMS has been successful in completing everything since Covid-19 began. They have been able to get all of their data flows and continuous monitoring stations done without a hitch.

Suzanne Doughten gave the update for Old Dominion University (ODU). ODU is back to sampling as normal now. In January they only got two days due to weather, however.

Cynthia Stevenson gave the update for Maryland Department of Health (MDH). Their lab is running at full steam ahead and they haven't had any delays at all keeping up with the samples.

Kristen Heyer gave the update for Maryland Department of Natural Resources (MD DNR). January was rough for them because they had some Covid-19 issues and a lot of weather issues but they managed to get everything done. February went much better. They are still short staffed but in the process of recruiting and hiring people for this season. Hopefully they will be staffed enough that they don't have issues when April comes along with added continuous monitoring (con-mon) and data bar.

Jamie Shallenberger gave the update for the Susquehanna River Basin Commission (SRBC). They didn't have Covid-19 issues but they did have ice issues especially in NY and upper PA. They had a lot of high flow sample events. They're at 100% capacity for the 26 stations between NY, PA and MD that they monitor.

Tammy Zimmerman gave the update for USGS. For the 15 stations they monitor, they had no Covid-19 issues. They are still in maximum telework although that is not impacting field work. They are starting phased reentry back into the office, with the first phase back next week, then 50% capacity, then 75% capacity by April, and 100% capacity back in May.

Doug Moyer gave the update for Virginia USGS. They are mostly on schedule. The technicians are at 100% capacity. They're a little behind on storms but they do have storms on the books at all sites, they're just hoping to get a few more.

Mark Nardi (USGS) commented that USGS as a whole is returning to work. The MD-DC-DE center is keeping up and not having Covid issues with sampling and processing.

Pam Higgins gave the update from the Pennsylvania Department of Environmental Protection (PA DEP) lab – they've been back full steam for quite a while now. They do have some issues with staffing due to the hiring freeze in the state of PA. They're working tirelessly to fill in backlog from people who moved on. The majority of the staff that do a lot of the water quality testing have held strong, so they've been able to move full steam. They have had occasional supply chain issues. They work around as necessary and are doing their best to move forward with testing.

Doug Chambers gave the update for West Virginia USGS. They're on track with sampling for both routine and monthly samples.

Jay Armstrong gave the update for Division of Consolidated Laboratory Services (DCLS). They have continued on and been at full operation throughout the crisis.

1:20- 1:50 Updates on PSC monitoring Program Review **Tango & Sullivan**

Enhancement of Nontidal and Tidal Monitoring programs -
Response to PSC request for monitoring review.

*2022 Monitoring Grant Update Tango
*SAV Monitoring Tango

Peter Tango (USGS) and Breck Sullivan gave an update on the monitoring review. Part of this review has been reflecting on relatively level funding to programs for years which is stressing programs. Existing networks are essential to critical monitoring provided, and there is expanding interest in needs expressed over years.

Peter asked some questions of DIWG members. He didn't ask for an immediate answer but to consider these questions.

1) Do we have the capacity to manage the additional data from the newly proposed stations? If not, what is needed?
2) How can the DIWG help integrate new methods for use by non-traditional partners?
3) What are the burdens to that auditing cycle due to the increase in water quality indicators and added community science groups?
4) What other new technologies should we explore for analyses?

1:50 – 2:30 FIA system demonstration **Scott Schroeder**

Scott Schroeder, the National Sales Manager for FIALab, gave a presentation on FIALab Instruments flow injection tools. J. Ruzicka who founded FIALab was the inventor of flow injection techniques. Scott went in to FIALab to bring them into the environmental field as well as go through some of the improvements they might have such as making the instruments smaller, having back up and redundancy, a full array spectrometer which moved away from filters, having control of the pump, method improvements and provide reduction in the cost of operation. The instruments are small and you can stack them to get multiple channels. You can break them apart allowing flexibility. Every channel is a standalone unit with its own light source and full array spectrometer. All your wavelengths are simultaneously determined and the whole run is saved. You can extend cartridge on the pump up to 8 cassettes per unit and this is totally controlled by the software. The fluorometric ammonia and TKN method is approved; it gets away from phenate based ammonia and uses less re-agents. They use gas diffusion with a simple design; lift a lever for the gas diffusion membrane. This is good for TKN. They found that the FIA methods use less reagent and generates less waste. They make their own flow cells. The lab on valve design is a big change from typical flow injection units because you can see through the valve and the reagents come to the valve head. You can see change range by changing the sample loop.

Scott then gave a demonstration of the instruments.

Cynthia Stevenson requested that the methods be sent to her.

2:30 – 2:45 Citizen Monitoring Updates **Liz Chudoba**

Liz Chudoba, the project manager for the Chesapeake Monitoring Cooperative, gave the update for the citizen monitoring. Monitoring has continued. They did lose a few monitoring months in 2020 from April to June 2020 on the chemical monitoring side. Since then, they've built back up the programs. Benthic monitoring program is a little behind as there was very little data collected in 2020, but they picked up a bit in 2021 and they're getting full steam ahead. To adapt they shifted trainings to virtual trainings, live webinars, static training videos, small one on one in person demonstrations. They couple the trainings with a quiz to make sure people are following instructions correctly. Volunteerism has been increasing and more people are looking to get involved with monitoring.

Liz provided an update on data they have available in the Chesapeake data explorer. There is data from 110 organizations. 4 are tier 3, the rest are tier 2 and 1. For tier 3 groups – the Nanticoke Watershed Alliance had their Quality Assurance Project Plan (QAPP) updated in 2020 and only one station will change for this upcoming season. Blue Water Baltimore's 2021 QAPP was just approved, with no updates for 2022. Arundel Rivers Federation's QAPP was approved for 2021 but they will be making significant changes in 2022 so will probably have to go through another QAPP review process. MDE Shellfish has a 2019 QAPP. For Arundel Rivers they presented on the last workgroup call to talk about some of the updates they're making, to reducing some of the depth profile samples they're taking to go to .5m or 1m increments instead of .25.

Liz asked the group what Tier 3 groups they want to prioritize. Anne Arundel Community College has a draft application focusing on lab monitoring but including some field, and they just started working with Severn River Association on drafting a QAPP. Liz showed a map showing the sites that the community science groups monitor. Blue sites are current Tier 3 groups. Four groups could get to Tier 3 over next 2-3 years. Liz requested input on prioritizing these groups is. Up at top with yellow is Elkin Northeast River Association. A few tidal sites, taking surface samples. To get to Tier 3 they'd need equipment upgrades, depth profile samples and more. That would be a heavy lift, but there's not a lot of data in that area so might be a priority. In the middle the red is the Severn River Association. This is an easy lift; they're already doing depth at 41 sites so they'd just need to get a QAPP drafted. Could get it done by end of this year and next year do field audit for them to be Tier 3 by 2023. Black dots are Blackwater National Wildlife Refuge, and orange is Wicomico Land Trust. It would take a significant investment to get their programs up to speed. Black Water does probe monitoring once a month on the bottom and surface and nutrients and they send this to Horn Point Laboratory. Wicomico has a creek watchers' program that's oddly run - the volunteers only take temperature and Secchi depth out in the field and collect a sample and Salisbury lab runs others. There was a question about using a probe to measure chlorophyll a - this is the one group doing that. They are interested in starting a new dissolved oxygen (DO) depth profile. Take a subset of their sites and have access to a boat and YSI probe. As they're setting up the program, want to think through if that's a Tier 3 priority. Would also be cool to work with Salisbury University program and see if we can set them up as a Tier 3 lab because they work with students, which gives students an opportunity to learn those techniques.

They're also updating the Chesapeake Monitoring Cooperative (CMC) QAPPS which were written in 2017. One of the things Liz is including in the new one is clarification on calibration. They didn't have acceptable ranges for all equipment they were using and want to run this past the group as they're doing the QAPP, especially conductivity and DO. The decision around conductivity is whether doing a one-point calibration is all that's realistic with the standards and working with these volunteer-based groups - choosing a one point within the typical range they'd see in the field. Does this sound reasonable for the quality for the data they're looking for? Also does anyone have recommendations on conductivity standards? The standards seem finicky or go bad or don't give accurate results.

For DO probes it's pretty straightforward to do 100% saturation, but a challenge they run into is different groups use different equipment and some equipment needs barometric adjustments. It would be helpful if someone can work with the CMC on what that looks like because manufacturers are not clear on when that's needed and how to make sure that barometric pressure is accurately related.

Jay Armstrong asked, what range of standard are you using for conductivity?

Liz said 14 or 13 for nontidal areas. For tidal areas more like brackish 10,000. Jay said at the range you're using usually you see stability issues with much lower standards because of absorption of carbon dioxide and other contaminants from the air. Are you using single use standards or standard that comes from a cubitainer that doesn't allow contamination?

Liz commented that single use ones are more stable. But it doesn't always provide enough liquid for a multi probe sond. If groups are using a multiprobe sond they try to get a larger bottle of solution so they can actually put it into the beaker to get enough solutions. Those are more finicky. Jay said he'll send Liz the product they use at DCLS.

Cindy asked, are your groups re-using their conductivity solution? Liz said, no they're not supposed to. They sometimes re-use it for the post-sample check but if that's out of range they use fresh solution to do it again. Cindy asked, are you rinsing with water? Liz said that we typically recommend they rinse with the conductivity solution like with pH. Cindy said that can cause instability with conductivity solution. Liz asked if it is ok update to rinse with the standard for conductivity. Kristen said that's MD DNR does; they rinse probes 3 times with the standard they're getting ready to use. They make their standard in-house but they go through them quickly so there's no issue with sitting around. Liz said yes, that's an issue that they're sitting around not being used which is making them unstable. Jay Armstrong said look into pH standards go to certificate analysis lower end conductivity standards on the shelf.

Breck Sullivan responded to the request for feedback on groups considered for Tier 3. Breck went to Salisbury University and knows of the work and studies they do, and is actually considering reaching out to them to help support the Eastern Shore tributary summary which includes water quality trends and tries to help explain it. Breck is looking to incorporate some of the work they've done more locally. If that group becomes Tier 3, it would help the tidal summary. Students would be also likely be interested in opportunities.

2:45- 3:15 Coordinated Split Sample Program

- August & November 2021 Mainstem Results **Mallonee**

Mike Mallonee gave the coordinated split sample presentations.

Jay Armstrong commented on the phosphate slide for the DCLS result. They looked back at this one and it was what they got. It was consistent through all the quality control, blanks, everything on those runs looked to be no issues. However, it is below their reporting limit.

- September & December 2021 Tributary Results **Mallonee**

Mike didn't hear anything from DHMH on the high value for DOC, but he looked back and all 4 values were up in that range. Cynthia Stevenson from MDH commented on the ammonia results and said they went back and reviewed the data and did start the corrective action. There was an issue with the instrument that did not affect the quality control samples. The instrument has been out of service due to a network incident. All the subsequent analyses were performed on another instrument. So there was a short window of time with the faulty instrument. They'll be in touch about the corrective actions.

Suzanne Doughten from ODU commented on the ammonia results as well. For the negative value in December, they had negative values on the Bay too and did a lot of trouble shooting. They had

contaminated sodium potassium tartrate. This happened 13 years ago as well. They went back to their corrective actions. They ran it without that and they were positive. They kept those values to see what it looked like, and they re-ran samples November and December samples. They got permission when it happened 12, 13 years ago to run it without that and the buffer if they didn't get precipitate because the buffer is just to stop precipitation from the salt and it doesn't do anything with the color formation. Heather reran it and it was a low number but positive without the contaminant. When it happened before, it was really contaminated and it was obvious that it was contaminated. This time it was only somewhat contaminated, the peaks were negative. Mike said to just send him the new number. Suzanne said they'll re-run it and do that.

Durga Ghosh (USGS) asked Cynthia (Cindy) Stevenson how they ascertained there was an issue. Cindy said that all the Quality Assurance samples were good. When they saw the presentation, it came as a shock to them. The instrument is offline for a different reason. Durga asked if anyone had seen this before. Suzanne said when they had the problem she just described in the ammonia, RPC worked too because it's much higher values than the samples, though not sure about the DOC being high. They've had it where the quality control (QC) in the curve works but the spikes don't work or something that shows there's some matrix interference. Cindy Stevenson said no, for them said the spikes were good, the blanks were good, the external QC samples were good, so they have to do some more research to figure it out. Jay Armstrong commented that referring to what Suzanne was talking about for the December round for ammonia when you look at low values like that, you're in the area of your lowest standard. When you get down to that range, he's seen things like when you get a depleted value because the intercept from the curve is being subtracted in the mathematical equation and if that intercept is bigger than your value, you'll get a negative result. That doesn't happen often though. Jerry Frank said that's correct, they have to make sure their intercepts are not too low.

3:15-3:30 DUET updates **Mallonee**

Mike Mallonee reported that they are making significant progress on Data Upload and Evaluation Tool (DUET). They are soliciting some data testers. They'll set the data testers up in an environment that they can upload, reload, and play with existing files they have now. They're looking for volunteers and will follow up with an email for tidal and nontidal. They want the volunteers to let them know what they like and don't like. This is still in the development stage and they're willing to make updates and changes as users see fit. DUET has a lot of staging tables. They're streamlining it through so stuff goes straight through to Chesapeake Environmental Data Repository (CEDR) so there is not semi duplicate tables. They asked how much of an effort it would be on the submitters' end if we asked to have some of the column headings in the import file changed. They're leaning more toward is use of the technology they use in CEDR. DUET uses agency and source, CEDR uses data provider and data collector. If they change those data columns for monitoring location as opposed to station, what effect would that have, what burden it would put on the data providers?

Suzanne commented that she thinks they'd have to see what exactly you're talking about and have a few months lead in. Mike responded even though they're updating they don't want to burden the data providers. He will mock-up a template to give people an idea of how many changes there would be. Cindy Johnson said to put her down as a volunteer for beta testing.

Kristen Heyer had a question about the mainstem split. They've been collecting samples for the mainstem split for Horn Point and sometimes Anne Arundel County who runs samples for Arundel Rivers

Federation has participated some as well. Horn Point is not currently running the whole suite of nutrients. They only want water to do a chlorophyll split. Split samples are completed – from the big carboy split out in order, everyone gets bottle 1, 2, 3 in a certain order. They were asking if it's ok if they receive a lesser volume/smaller bottle. It shouldn't really matter. The order would be the same, just smaller volume going into the bottle but Kristen didn't want to change anything before talking to the group. They're fine getting a whole gallon of water but they don't really need it. It's easier giving them a smaller bottle since it's less to collect.

Mike Mallonee asked if Meg has indicated that's all they want to do moving forward since all they've provided is chlorophyll and TSS? Kristen responded yes. They've been having some changes in the lab and haven't been running other nutrient parameters. Mike added they lost Erica, Meg's assistant. Kristen said they don't want to take a spot in the split sampling if there is someone else who needs to come in and receive an entire gallon sample.

Durga wanted to know if other groups are interested in getting samples more so now that there may be other citizen monitoring groups involved, and that's something she wants to see them participating in. Can some water be spared for them? Kristen responded they've been giving samples to DE DNREC because they also do tidal sampling and they had asked if they could participate in that as well as the tributary sampling. Right now, they have 6 or 7 and they're getting close to where they won't be able to accept any more participants because of the size of the carboy of water they're able to collect. If they get a lesser volume, they may be able to add one more lab but that's it. Mike said that the mainstem now has 5 full time participants, CBL, DCLS, ODU, VIMS, and DE DNREC. The others that he sometimes gets data from are HDL and Anne Arundel community college. Jay asked if there is a reason each lab gets four aliquots? Kristen replied that she didn't know why they do 3 for tributaries and 4 for the mainstem. For tributaries, they run a split sample on the first bottle. She asked Jerry if CBL runs a replicate on one of the 4 samples as well. Jerry said yes, they do a dupe of one and a spike of the other. They often use two of them and try to run them on different days - 2 on one day and 2 on another.

Suzanne Doughten said it was originally set up by Elgin Perry and they were supposed to do something statistically between the B1, B2 vs B3, B4 but don't think it's ever been done. That's why there's 4. Jay said looking at that if you want to bring other people into it would it makes sense to cut down on number of aliquots that go to each laboratory. That would be logistically difficult for distributing all the samples though. Jerry said that would be asking a lot of the field crew – that program is already maxxed out. Kristen said right now they still drive after sampling and meet ODU folks and grab Virginia samples. Everything else comes back to their office in Annapolis. They don't have capacity to drive anywhere else but if people wanted to come pick something up in Annapolis they could. Horn Point and Delaware and Anne Arundel come to the office in Annapolis in the evening. Mike asked, is there another lab that has expressed interest in doing the mainstem splits? Kristen said it was just Dave from Delaware. Other than that, she hasn't had any inquiries. She thought that Horn Point was running chlorophyll samples for creek watchers and that's why they ended up in the split mix. Mike agreed. Kristen said that all the nutrient samples are now going to Jerry, and Jerry confirmed that's correct. For the blind audit it's not a lot of extra effort to include extra participants because they're making those samples in the lab. With the split sample, because of the labor involved, they maybe need to have a criterion like unless you're doing 5-6 of the parameters, it's not worth being involved. Different from blind audit which they can scale it up or down.

Kristen said that sounds reasonable. Suzanne said that Durga could say she wants these people to participate. Kristen said, going back to Horn Point and chlorophyll – is the Bay program interested in knowing about this? The original interest was in Nanticoke Creek Watchers becoming Tier 3 for chlorophyll. Do we need to even continue to provide samples to Horn Point? Jerry asked what do you mean they're doing chlorophyll different? Kristen replied that they're using chlorophyll probes. Jerry said maybe participation in the blind audit is enough.

Durga clarified that at the Bay program they're clear about wanting all providers to be part of the split samples. If Horn Point had been collecting and providing data then they want them participating. They could not accommodate other groups because it was logistically difficult. Durga was wondering if there is a need to reconsider the 4 and 3 samples they've been using for mainstem and tributaries respectively. There are many groups that don't participate in the USGS reference samples and it boils down to them participating in blind audits and split samples and if they took that away that wouldn't be advisable. Durga said she feels strongly that they should have everyone participating in it.

Kristen asked if there is an issue with one lab receiving a lesser volume as long as it's still in the same order or does it need to remain a one-gallon sample going to everyone. Jerry Frank said that CBL is fine with whatever adjustments they have to make. Suzanne commented that other labs are already changing it by splitting that sample into a lot of different portions. It was resolved that the lab can receive a lesser volume.

Doug Moyer said going back to DUET and nontidal data, there's an effort needed to revamp or revisit the data they have that are entered in through DUET. Recently VA USGS working with the PA USGS revamped their side of how they're handling and building the Nontidal Network database and the input files for load and trend analysis. This caused us to re-evaluate and look at every data point. For the most part they're in good shape but there are still some issues. One concern is lack of historical data and how far back it goes, and availability through the EPA database CEDR which DUET feeds the data into. Can they do a complete data pool that encompasses all historical data and run it through DUET so they have consistency in data? They want to make sure the data they're using pre 2012, 2010 matches completely what the jurisdictions have for those sites. The first issue is getting all historical data run through that process for each of the NTN stations. Once they have that in, some of the issues they're seeing that could be caught through DUET that are making it through to the analyst – in other words there are some odd results make it through to DUET. Is that an option? Once CEDR is updated, have a smaller group of lab and providers help make sure that there is the best data possible for loads and trends. Something for Peter and Breck as they talk to the PSC ensuring the integrity of the network from a nontidal perspective is support for that database management, the work that Mike Mallonee is doing. Our team and the PA water science center, Tammy Zimmerman and James Colgin on the work they're doing to ensure they're using the best data for each constituent in the record. Support would go a long way to help revamp the data handling side of the load and trend analysis.

Peter said that was duly noted and they can talk about those items. Some might be taken care of by prioritizing particular years scope of work on a particular project and others might need new support and might need to estimate what that may cost to put into budget. Doug said he didn't know what the magnitude of the workload is to have a data delivery from each of the providers that encompasses 1985-present and asked for input on that.

Mike responded that he found an old data inventory file of all the NTN stations. He's been trying to update that for you. Prior to those 2012 when the NTN was officially formed, there is historical data for most of the MD and VA stations under different projects. Mike will continue working on that data inventory. Mike has in past years approached by some of the data providers like SRBC - Kevin McGonigal was someone there was going to work up historical data to get it into the DUET format for submission but never did. It could be depending on what each data providers' own database is. Would have to ping each one individually to see what the effort would be.

Peter Tango said maybe there's one parameter or set that's easier to work with so should talk about ways to slice and dice that if it's not so simple.

Cindy Johnson asked what kind of time frame would it be for states to dig that information up? She said that for their data, anything before the year 2000 will take a lot of work. They're in the digital database but it's not just a matter of pulling it out of the database and shipping it to DUET. There is QAQC. After 2000, they loaded data from DUET and found that some of the parameters didn't load properly, and they have to chase down the metadata.

Doug responded that the timeframe would be 18 months-2 years. They are just about to finish the analysis of NTN loads and trends from 2020. The clock is running for when they run through 2022 which will be in the 2024 time frame. The goal is to ensure the historical data they have and they're using, originally provided to Mike Langlin, has some oddities in there and they want to make sure their data is consistent with the raw data housed by the data providers. So if they can have these data fresh every year so any changes get translated through, or always guaranteed to have data that resides within owners' database is preferable. They've taken it as far as they can and don't have information to cancel out data points or interrogate further. So going through this process – it would be ideal if you go through QA and you can say everything you have is justified, and then have one last check at DUET. Then what they we receive are complete and final as much as possible and they have a few checks they run as well. Right now, there is a fair amount of room for improvement.

Cindy asked for clarification, you want us to do a data pull of all the data back to 1985 every year for every site we have?

Doug responded, every year right now each provider for whatever data collected at the NTN stations is provided to Mike in a particular format for upload through the DUET process. Does that process have to be done year by year? Or if we identify an NTN station can we say whatever data exists back to 1985, or time frames we're dealing with for each site (some long term sites go back to 1985), can we get those data pooled in a single pool for all those years, or is it better to do one year at a time?

Mike said he has no problem with what Doug suggested and it's easy enough for him to a query of CEDR by station or by provider for all the data they have historically for a station. CEDR is their one and only water quality database. Anything the states provide to Mike to upload to DUET go through the QA process and get uploaded into CEDR. Doug said they're using some long-term stations that didn't have those data entered in through DUET. The process started in the 2010-2012 range, so anything existed prior to that was not included in the DUET process and storage in CEDR. Mike prior to 2012 they had DUQAT. So it did go through QA/QC protocols before going into CEDR. Doug responded that he is looking for a way to be consistent to make sure for any data they're running, they've gone through the DUET process because they're using data that the states provided to Mike Langlin several years ago and

that's a file that Mike had and they're losing some confidence in the integrity of that file. So he is looking for something more formalized with the QA consistent with the recent data. Doug added that he didn't know whether the historical database is reproducible and that concerns him.

Mike said that before the March NTN Workgroup call he will inventory CEDR for everything they have for the NTN stations and then the first step is to compare that. He knows that Mike Langlin had additional data. The modelers went to Mike directly to get as much data as possible for the model. DUET has the same checks as DUQAT with some additional checks, but nothing that would affect the integrity of the data from what was submitted to DUQAT as opposed to DUET. There shouldn't be a quality change.

Doug asked if those files have the same parameters code, station nomenclature, etc., that are now in process? Mike answer that he believes so. Nothing that he's done since he's been here (2008 on) has changed.

Doug re-emphasized the goal is to get all the data in the same place and going through the same QA, and said there may be more than he realized but not quite as complete as what he's requesting. Mike replied that is correct and until he completes the data inventory, he won't know what Doug has that Mike doesn't. The inventory will be the priority and then they'll go from there, figuring out what they need to obtain and how to get it into DUET and CEDR and be consistent across both databases, and lessen any burden on the data providers.

3:30-3:50 Blind Audits — Frank

Jerry Frank gave the blind audit update. The last round of samples went out at the beginning of the month. Remember that Jerry needs results by the first of April. Spring samples will go out early April – during the first two weeks. Jerry reminded everyone to please remember to send their coolers back – there are return labels in there. Jerry also added to say to please send back the packing material as well because it's re-used. Jerry will be switching to a more robust and heavily insulated pack for the chlorophylls for the next round and is hoping to get feedback on that and if they stay more frozen in this pack.

3:50 Topics for Next DI Meeting — All

The next main Bay cruise is May 16th-17th-18th. Next meeting will be on May 31st (a Tuesday) because Monday, May 30th is Memorial Day.

Cindy Johnson closed the meeting by thanking the presenters and participants.

Attendance:

Amy Goldfischer (CRC), Scott Schroeder (FIALabs), Najma Khokhar (MDE), Jerry Frank (CBL), Suzanne Doughten (ODU), Cindy Johnson (VA DEQ), Ellyn Campbell (SRBC), Keri Maull (DNREC), Taylor Hughes (PA DEP), Carol Cain (MD DNR), Jamie Shallenberger (SRBC), Tyler Shenk (SRBC), Carl Friedrichs (VIMS), Heather Wright (ODU), Elizabeth Ward (ODU), Lexis Carter (ODU), Jaclyn Mantell (UMCES), Jay Armstrong (DCLS), Tracee Cain, Tammy Zimmerman (PA USGS), Breck Sullivan (USGS), Cody Madison (BWB), Doug Moyer (USGS), Kevin Minga (ODU), Kristen Heyer (MD DNR), Mike Mallonee (ICPRB at CBPO), Chris Mason (USGS), Durga Ghosh (USGS CPBO), Mark Nardi (USGS), Peter Tango (USGS), Doug Chambers (USGS), Kim Blodnikar (CBL), Renee Karrh (MD DNR), Pamela Higgins (PA DEP), Cynthia Stevenson (MDH), Lara Phillips (MDH), Liz Chudoba

(CMC), Alexander Gunnerson (CRC), Gary Sunday, Alexandra Fries (UMCES), Dawn Hintz, Kelly Krock (EPA), Betty Neikirk (VIM)