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**Subject:** RE: Follow up from recent site visit  
**Date:** Wednesday, September 4, 2019 6:17:03 PM  
**Attachments:** [IMG\\_2934.JPG](#)  
[IMG\\_2887.JPG](#)  
[IMG\\_2888.JPG](#)  
[IMG\\_2922.JPG](#)  
[ARK IFC typical zinc location diagram.jpg](#)

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Ms. Smolker,

Thanks as always for your note and your participation in this investigation. I apologize for any confusion related to my recent site inspection activities – and agree that it IS somewhat confusing because my inspection activities deviated from my initial plan for the Clay Plains Swamp area. While not attempting to submit my final report piece meal, I do feel it is appropriate to address your concerns in some detail now rather than later – because I believe the zinc ribbon installation issue has been effectively resolved in this area and if you or others disagree, I’d like to know the points of disagreement so I can look into them further before I submit my final report.

Concerning the installation of the zinc ribbon in the Clay Plains Swamp:

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Per the ARK Engineering drawings issued for construction as of 5/16/2016, DWG No. 12144-203 Rev C, section 18 of the Zinc ribbon should be installed from Station 1641+60 to 1656+70, which begins at the north end of the Clay Plains Swamp and ends around the middle of that swamp.

IMG 2887 taken at 10:56 am on 8/27/2019 shows a zinc ribbon SSD which is geo-coded between stations 1641 and 1642 (i.e. around station 1641+60). IMG 2888 shows the removed cover of that same SSD 3 or 4 feet from the pipeline probe bar, towards the VELCO transmission line. Someone is standing in the way and obscuring the exact location of the SSD in that photo, but it was close to the removed cover as shown in other photos. We removed the cover on that SSD and disconnected the zinc ribbon from the pipeline in order to eliminate interference on the line locator and to enable tracing of the zinc ribbon itself. Meanwhile, the corrosion technician went to the other SSD location (farther south in the Clay Plains Swamp) to disconnect it. He returned more than an hour later and informed us that due to heavy vegetation growth he had been unable to locate the southern SSD to disconnect it.

As during my previous inspections, the zinc ribbon, even when connected at only one end to the pipeline, interfered with the electronic line locator, leading to both inaccurate location and depth indications. Thus, we used an alternative method to locate the pipeline and determine its depth in the Clay Plains Swamp. We used VGS’s GPS equipment to locate the welds on the pipeline (per the

original survey data), and then probed the pipeline to determine its location and depth. This actually provided more accurate data than our original plan – although it required much more work. We did this along the entire length of the Clay Plains Swamp, spacing the readings farther apart in areas with good pipeline depths of cover in the south.

We also used the survey data and GPS system to locate the southern SSD – which was only 4 feet from where the corrosion technician had gone. He was sooooo close! Vegetation was uniformly heavy and 6’ high through the length of the swamp, as shown in IMG 2992 (among many others), and the SSD (being short and green) was obscured from his view. The southern SSD is shown in IMG 2934, taken at 3:33 pm, which is geo-coded between station 1656 and 1657 (i.e. around station 1656+70), and the pipeline probe rod a couple of feet away.

In summary, I believe I located both ends of that zinc ribbon in the locations that they were intended to be installed during my inspections, as documented in my site photographs, which are geo-coded as to their location. The fact that the zinc ribbon interfered with the line locator with only one SSD disconnected is evidence that it was intact between the 2 SSDs, because it only takes one connection to cause the interference along the entire length of an intact zinc ribbon. Note that in my final site visit on Wednesday we disconnected the zinc ribbon between stations 888+00 and 892+75 (Section #8 on the ARK plans) at both the upstream and downstream SSDs and were able to locate both the pipeline and the zinc ribbon independently with the electronic line locator. If either end of the zinc had still been connected to an SSD, that would not have been possible.

Concerning the relative location of the zinc ribbon to the pipeline:

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The ARK Engineering drawing package, DWG No 12144-200 Rev C (screenshot attached) depicts the general installation requirements for the zinc ribbon relative to the pipeline and an electrical transmission tower. Installation Note 1 says “HORIZONTAL DISTANCE FROM PIPELINE TO ZINC RIBBON CAN VARY BETWEEN 1' AND 25' FOR SAME TRENCH INSTALLATION.” Note 2 says “ZINC RIBBON CAN BE INSTALLED BETWEEN 12:00 O'CLOCK AND 3:00 O'CLOCK AT A MINIMUM OF 1' SEPARATION FROM THE PIPELINE.”

These are large installation tolerances, with the basic requirement that the zinc be at least 1 foot away from the pipeline but no more than 25 feet from the pipeline, and in the upper quadrant between the pipeline and the electrical transmission power lines. It doesn't need to be buried as deep as the pipeline (and in fact should not be installed lower than the pipeline). It simply needs to be located between the pipeline and the power lines. It could be buried only 1 foot deep and 3 feet away to comply with the specifications – which would be a relatively simple task in this swampy mud shortly after pipeline burial. The zinc ribbon in the Clay Plains Swamp appeared to meet those requirements at both ends, and I have no reason to doubt that it meets those same requirements in between.

Concerning the deposition testimony:

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Per Mr. Bubolz' deposition of 12/19/2017, page 74, he admits that he doesn't have a record of the installation of the zinc ribbon in the Clay Plains Swamp, but also states “We actually had another

crew that went in afterwards to install the zinc ribbon” and goes on the state that Dave Prokosch with Michels was in charge of the zinc ribbon installation crew. I don’t see any indication that Michels was not responsible for the zinc ribbon installation, nor that Mr. Bubolz thought they had not installed it. He simply admitted that he didn’t have a record of the zinc ribbon installation in that location.

Per the 2016 Trenching, Lowering, Backfilling QA Checklists, inspector Tom Modeen indicated that the site cleanup for this area was completed on October 4<sup>th</sup>, which is 2 weeks after the pipeline was installed. The zinc ribbon could easily have been installed during that 2 week time period.

Conclusion:

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While I agree that there appears to be a lack of records concerning the zinc ribbon installation in the Clay Plains Swamp, I believe that the evidence is overwhelming that it was actually installed at the location called for in the plans, is connected at both ends, and is intact in between.

Note that it took us about 4 1/2 hours to go about 1,510 feet in the swamp between the 2 SSDs (including a lunch break and taking lots of readings, etc.). It was very slow going – especially in the northern section of the swamp.

The quality of the attached images isn’t good because I down-sized them to facilitate e-mail. The originals are > 5MB each. They and all other site inspection photos and videos are copied on USB drives that are in the mail to Mr. Dumont, Ms. Bouffard, and Mr. Porter.

Best regards,

Bill

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**Subject:** Follow up from recent site visit

[EXTERNAL]

Greetings Mr Byrd,

I am writing to you to follow up on discussion which occurred in connection with the last site visit.

As you know from the memorandum Attorney Dumont submitted to the Commission and then the memorandum he submitted to you, we have searched the record and found no indication that the zinc ribbon actually was installed in the wetlands area of New Haven. The evidence we have, including the deposition, strongly suggests it was not installed. The Michels Company's duties did not include zinc ribbon installation. Michels covered the pipeline in the wetlands area immediately after laying it in the ground, according to the testimony. There is no record of, and there was no opportunity for, a third party to install the zinc ribbon. We also have learned that the zinc ribbon must be installed within a specified narrow range of distances from the pipe surface, and that lead wires must also be installed within a certain range of from where they connect to the pipe, in order for the mitigation to occur. Exacting care during installation is required.

There remains some confusion over how the issue of zinc ribbon in the swamp was handled during your site visit.

Initially you indicated that it would be disconnected at both ends to avoid interference with depth measures taken by line locator, and then it would be reconnected and readings would be taken to ensure operations were satisfactory.

I mentioned at the Monday morning meeting that we had seen no records whatsoever of zinc installation in that area (and others), even though the ARK engineering AC mitigation design specified that as one of several areas at "high risk" for interference/corrosion, directly within the VELCO ROW.

You responded indicating that “there might not have been a place in the inspection forms to mark that the ribbon had been installed.”

When the site visit occurred, we were told that the zinc was disconnected at the north end, but Mr Bachand could not locate the southern SSD terminal to disconnect it. Thus the planned steps for confirming that the zinc ribbon was in fact installed and was in fact properly functioning was not possible.

As we understand, the line locator was apparently rendered useless as a result and the probe was used instead.

What we remain unclear about is whether there was a clear reading from the line locator of both pipeline *and* zinc ribbon in the trench, whether you found any evidence that the zinc ribbon in fact was installed and was installed at the correct separation distance, and whether the readings from the SSD demonstrated that the zinc ribbon was in place and was operating as designed.

Thanks for your attention.