

February 6, 2024

Mr. David Alvarez  
Engle Martin & Associates  
500 W Cypress Creek Rd.  
Suite 600  
Fort Lauderdale, FL 33301  
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Engle Martin File Number: **1000434596**  
Insured: TRICO / City of Port St. Lucie  
Subject: Letter of Findings  
*Envista File No: MAT-163839-Z3N7*

Dear Mr. Alvarez

On Monday, January 22, 2024, Envista Forensics (Envista) inspected the #12 well site for the City of Port St. Lucie. The well #12 was located adjacent to the easternmost entry to the Northport K-8 school property at 102 NW Floresta Drive, in Port St. Lucie, Florida.

The City of Port St. Lucie contracted with Aquifer Maintenance Performance Systems, Inc. (AMPS) to perform well rehabilitation and maintenance Services at the site. Reportedly, the well had been out of service since sometime in October 2023 when the contractor, AMPS, got a drill pipe stuck inside the well.

## PURPOSE

Engle Martin & Associates (Engle Martin) retained Envista Forensics (Envista) to conduct an inspection of the well site and review related documentation. Specifically, Envista was retained to inspect the subject well to determine the cause of damage and the recommended repairs.

## DOCUMENTS REVIEWED

In the course of this investigation, Envista reviewed the following provided documents related to the loss:

- Well #12 replacement diagrams filename entitled, "1-8 psi 12\_20240108100023.pdf." DISCUSSION
- Well #12 photographs filename entitled, "1-17 psi 12 well pics\_20240117103358.pdf."
- State of Florida Permit Application to Construct, Repair, Modify, or Abandon a Well.

- Aquifer Maintenance & Performance Systems, Inc Well #12 Bid #0329202321, dated April 3, 2023 in the amount of \$98,666.00.
- Insurance Policy Abstract of Coverage breakdown filename entitled, "Abstract of Coverage 434596.pdf."
- Agreement Between the City of Port St. Lucie, Florida and Aquifer Maintenance and Performance Systems, Inc for Well Rehabilitation and Maintenance Services signed July 22, 2022,
- AMPS contract filename entitled, "AMPS Contract 20220103.pdf."
- City of Port St. Lucie Utility Systems Department Warehouse Special Request Form dated 4/6/2023.
- Well #12 numbered plan of services entitled "Port Saint Lucie 12 plan.docs."
- Relation Insurance Services letter dated January 9, 2024.
- Well #12 relief hole diagram filename entitled, "Annual drill rig PSL 2023.pdf."
- Filename entitled "Xerox Scan\_01082024103430.pdf."

## OBSERVATION

The #12 well head was located within the concrete masonry unit building at the site. Inspection of the well head was found with select above ground piping and valving removed and rigging installed over the well with a drill pipe left in place that extended approximately 2-feet above the well head opening (Photograph 1).



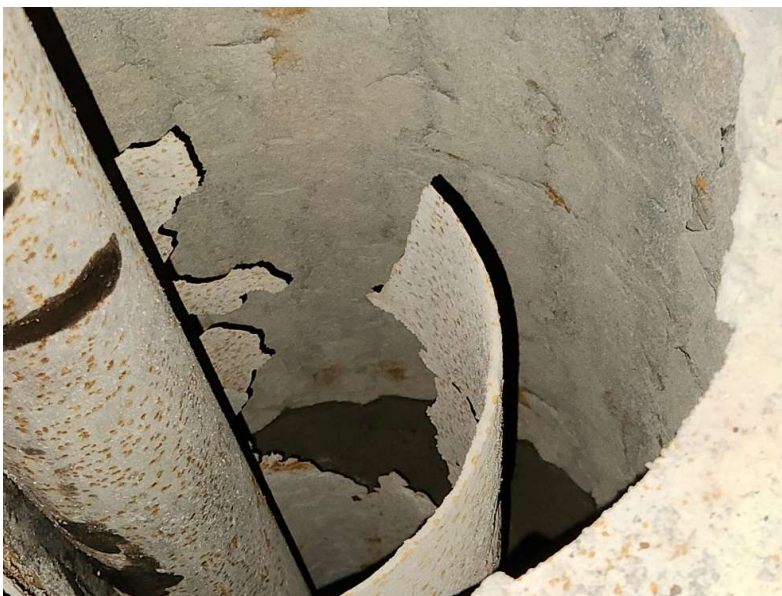
*Photograph 1 – Well #12 with drill pipe extended above rigging plate*

The drill pipe observed from the top of the well #12 was found to be located off center from the inner 8-inch inner steel casing (Photograph 2)



*Photograph 2 – Drill pipe off center of inner steel casing*

The inner 8-inch steel casing visible at the top of the well was found to be corroded with missing casing material (Photograph 3).



*Photograph 3 - Damaged inner 8-inch well casing*

## DISCUSSION

The inspection of the section of the well #12 casing visible at the top of the well head was found to be corrosion damage with missing casing material. Well #12 was reportedly constructed in the year 1970 and the degradation to the inner steel casing was the purpose for its removal and replacement.

The review of the provided documents included the proposal of services for AMPS to complete the rehabilitation services for the well, which included but not limited to the removal and replacement of the degraded inner casing through the final disinfection of the subject well. The review of the provided well diagram and permit application indicated a stainless steel wire screen wrap was installed when the well was constructed and set at about the 70-foot to 80-foot depth and extended to the approximately 100-ft mark near the bottom of the well.

The subject well head had been out of service since the rehabilitation services had commenced in August 2023. During the rehabilitation services performed by AMPS, a drilling pipe became stuck in the stainless steel wire mesh screen of the inner well liner. Reportedly, several attempts were made by AMPS to remove the lodged drill pipe which to date have been unsuccessful.

Following Envista's site inspection on January 22, 2024, an addended proposal was provided by AMPS. The updated proposal services include drilling a 1.75-inch relief hole between the annular spacing of the inner 8-inch casing and the outer 16-inch casing to permit the 8-inch inner pipe to "move more freely," and allow the inner casing to be hydraulically removed.

## CONCLUSIONS

After conducting a review of the provided documents and inspection of the subject well #12 site located at 102 NW Floresta Drive, In Port St. Lucie, Florida, it is Envista's professional opinion that:

- The damage to the well #12 inner casing resulting in the drill pipe stuck in the inner 8-inch well casing was due to poor workmanship by the City of Port St. Lucie, Florida vendor Aquifer Maintenance Performance Systems, Inc.
- This occurred during the rehabilitation of the well that included the removal and replacement of the inner casing that had degraded due to corrosion.
- The revised proposal to drill an approximate 1.75-inch relief hole between the inner and outer casings and to permit the removal of the inner casing for replacement per the original contract agreement shall be performed for the amount of the original Aquifer Maintenance Performance Systems, Inc. contract price.

## CLOSURE

Photographs taken during our work, which are not included in this report, are retained in our files and are available to you upon request.

This report is for the exclusive use of our client and is not intended for any other purpose. Our report is based on information made available to us at this time. Should additional information become



available, we reserve the right to determine the impact, if any, of the new information on our opinions and conclusions and to revise our opinions and conclusions if necessary and warranted by the discovery of additional information.

Thank you for allowing us to provide this service. If you have any questions or need additional assistance, please call.

Sincerely,

Envista Forensics



J. Robert Burgin, P.E.  
Senior Project Engineer



Technical Review by:



Robert Honaker, P.E.  
Principal Engineer

J. Robert Burgin, State of Florida,  
Professional Engineer, License  
No. 62011

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