EXECUTIVE SUMMARY: DOCUMENTS SHOWING HOW CALTRANS RESPONDED TO A TECHNICIAN CAUGHT FALSIFYING DATA

This incident involves one Caltrans technician and three structures—none of which are the Bay Bridge. On September 19, 2008 Caltrans identified a technician trying to falsify data during construction of the La Sierra Avenue Bridge in Riverside and Caltrans rejected those test results and assigned a different technician to retest the Cast-In-Drilled-Hole (CIDH) pile. Caltrans then reviewed test data for the CIDH piles on projects that the technician worked on and ultimately identified two prior falsifications—April 19, 2007 while testing a retaining wall foundation on the I-405 and March 19, 2008 while testing an overhead sign foundation on I-580.

Later the Federal Highway Administration independently reached the exact same conclusion: The Caltrans technician only falsified data on those three structure foundations, none of which are the Bay Bridge.[1]

Multiple documents demonstrate work was done to confirm the structures are sound and a separate certified engineering analysis has been conducted on the two structures in question. On March 15, 2010, Caltrans released updated gamma-gamma testing documentation requirements and multiple evaluation forms that must be used for all testing to confirm each step of the process is appropriately documented.[2]

I. First Falsification Incident: La Sierra Avenue Bridge (Near SR 91 in Riverside)

The purpose of this project was to replace an existing bridge as part of freeway widening. On September 17, 2008 the Caltrans technician conducted gamma-gamma logging to test the pile concrete density. The technician was immediately caught falsifying data by Jason Wahleithner Professional Engineer (PE) ("Wahleithner"), a Caltrans engineer.

Immediately Wahleithner rejected those falsified test results and sent a different technician to retest the pile on September 23, 2008 and a report was completed on Septemeber 24, 2008. Therefore, the falsification was identified immediately and quickly remedied. A final Caltrans certified engineering report dated September 24, 2008 also confirms: "As noted . . . Gamma-Gamma Logging detected no significant anomalies within Pile W2 at Bent 2. . . . *This Office recommends acceptance of Pile W2 at Bent 2, based on Gamma-Gamma Logging test results.*"[3]

A. Response by Caltrans to the First Falsification

On January 20, 2009 Brian Liebich PE ("Liebich") initially concluded "no other incidences of impropriety existed other than the singular event of September 19, 2008."[4] But Wahleithner questioned that conclusion and performed additional analyses and located two additional projects with falsified data attributed to the technician.

On June 11, 2009 Liebich sent a revised memorandum to Mark Willian, Chief Office of Geotechnical Support ("Willian"), identifying those two additional falsifications on Braddock Drive and I-580.[5] Liebich affirmed further investigation was being conducted:

> "At present, Caltrans is performing a design review [of I-580 Sign] to see if any concern to the traveling public could exist upon the missing data. . . .[And] the [Braddock Road Project] pile in question needs to be evaluated for potential safety concerns to the traveling public."[6]

On June 17, 2009 Liebich sent a memorandum to Willian, summarizing the three instances of data fabrication. On July 7, 2009 Liebich asked Wahleithner to collect a list of all projects in which the technician had tested for the past three years. Wahleithner provided that list on August 3, 2009 and then the list was provided to Caltrans Audits and Investigations.

II. Second Falsification Incident: Braddock Drive Retaining Wall on Interstate 405

In 2007—before the falsification was later discovered in September 2008 in Riverside—Caltrans was working on a bridge widening with retaining walls located on I-405 in Culver City. The bridge was being widened as part of a project to add lanes to the I-405. The technician in question was assigned to test the 24 inch Cast-In-Drilled-Hole (CIDH) piles and did so on April 9, 2007.

At that time—before the falsification was known—engineers within the Foundation Testing Branch reviewed geotechnical and design information to help evaluate anomalous piles' status and ensure any problem could be quickly remedied. That work led to a foundation testing report on April 10, 2007 that recommended rejecting Piles 50 and 64. The geotechnical engineer, Sam Sukiasian PE, also agreed with these conclusions, provided geotechnical capacity, and called for additional review by the structure designer:

> "We agree that Pile No's 50 and 64 should be rejected based on the test results. The structural design branch should be notified of the results of the test particularly the rejections of Pile No's 50 and 64 and provide recommendations in response to the pile rejections."[7]

Gary Hight PE, Structure Designer, ("Hight") reviewed the information and determined that Pile 50 could be accepted without repair because geotechnical capacity exceeded structural demand. Hight verbally communicated this recommendation to Roger Miramontes PE, Structure Representative ("Miramontes"), on or around April 25, 2007. Amir Hassoun PE, Structure Representative ("Hassoun"), who later replaced Roger Miramontes, also reported that Pile 50 was accepted based on the recommendation of the structure designer and concurrence of the structure representative.

The technician also tested Pile 51 on or around April 9, 2007. Because of the number of tubes the engineer was able to assess, the pile did not require further evaluation or repair even with an anomaly in one tube:

> "This anomalous zone involving one (1) inspection tube may affect 25% of the pile inspection tubes (four (4) vs. (2)) in the pile, the limited severity of the anomaly and the location within this pile, section A-A in Pile 51 is *judged not to meet a standard of concern high enough to require evaluation for repair.*" [8]

Later it was determined that the same tube (tube 2) in question, in pile 51, was in fact the tube in which the technician had falsified data. When the falsification was identified on this structure on June 1, 2009, a report on June 17, 2009 said that the pile was presently in use and would need investigation. An investigation by the engineer at that time may have determined the same conclusion that was reached prior because it was only one tube and at most affecting 25% of the pile. Again, this would not have been considered a concern high enough to require an evaluation for repair because the pile had four tubes and only needed two.

In order to validate the above conclusion, on October 25, 2011 Caltrans conducted an engineering analysis and confirmed the structure is safe and issued a certified engineering analysis that "the foundation is structurally adequate*"[9]

III. The Third Falsification Incident: I-580 Overhead Sign

In 2008—again before the technician was first caught falsifying data on September 19, 2008—Caltrans began constructing an overhead sign on I-580 in Alameda County.

On March 19, 2008 the technician was assigned to test the 60-inch CIDH pile. A foundation testing report was produced by an engineer on March 21, 2008 that detected an anomaly located 5 to 6 feet below ground surface. The anomaly was excavated and successfully repaired by the contractor using the Caltrans Pile Mitigation Procedure on August 6, 2008.

When the technician was later caught falsifying data—and the I-580 sign was identified as one of the projects tested by that technician—a Caltrans Foundation Testing Branch engineer asked the Structure Representative, who administered the construction contract, to conduct further review in June 2009:

> "[C]heck on the impact of the invalid data upon the final acceptance of the pile. This must involve a review by the Structural, Geotechnical and Corrosion, just like the original review of the detected anomalous zone. . . . we need to check for "worst case" so we have parameters for judging the impacts. . . . This is uncharted territory for us, as I suspect it is for you too. We are limited in how much we can discuss, but are willing to help in any way to the extent possible."[10]

On or around June 2, 2009 various engineers and technicians began to address this data falsification. Staff each independently evaluated the pile with those assumptions and completed multiple evaluation forms. The corrosion report was completed by Charlie Sparkman PE ("Sparkman").[11]

On October 25, 2011 the pile was evaluated structurally, geotechnically, and for corrosion for the same anomalous situation and was again found to be structurally sound. Included in this report is an email that Rob Reis PE, ("Reis") wrote to Tony Marquez PE ("Marquez") stating "Based on those water elevations, there would be no concern for corrosion."[12]

On October 25, 2011 Caltrans conducted another engineering analysis to confirm the structure is safe and issued a certified engineering analysis that "the foundation is structurally adequate."[13]

CONCLUSION

There is no evidence that the technician ever falsified data on the Bay Bridge.

- He was caught falsifying data on the La Sierra Avenue Bridge in September 2008, the test results were rejected, and a new technician retested the pile. The engineer reviewed

---

* "Structurally adequate" is an engineering term meaning that the structure is designed to meet or exceed its required capacity.

the new test result and recommended "acceptance of Pile W2 at Bent 2, based on Gamma-Gamma Logging test results."

- Caltrans identified the only other falsification incidents—the I-405 retaining wall and I-580 sign—and took action. No data was falsified on the Bay Bridge.
- The Federal Highway Administration also independently analyzed the data and identified the same three structures, none of which included the Bay Bridge.
- Additional tests, correspondence, and official certified engineering analyses also confirm the structures that had falsifications are structurally sound.
- Caltrans has released new gamma-gamma testing documentation requirements and forms that must be used for all testing to ensure every step of the process is appropriately documented.[14]

---

[1] Memorandum from Bill Forrester Jr., U.S. Department of Transportation to Vince Mammano (Nov. 17, 2011) (confirming the Federal Highway Administration analyzed the statewide test data and independently reached the same conclusion as Caltrans).

[2] Gamma-Gamma Logging Data Integrity Issue, Foundation Testing Branch (summarized on August 2011); *see also* Gamma-Gamma Logging Field Records Technician Instructions & Data and Record Sheet (Mar. 15, 2010).

[3] Foundation Testing Branch, *Gamma-Gamma Logging Acceptance Test Results*, 08-RIV-91-17.7/20.3 (Sep. 24, 2008).

[4] Memorandum from Brian Liebich to Mark Willian, *Results of Investigation of Gamma-Gamma Logging Test Data for Duane Wiles Pursuant to Data Fabrication Incident of September 19, 2008*, (Jan. 20, 2009).

[5] Memorandum from Brian Liebich to Mark Willian, *New Findings of Gamma-Gamma Logging Test Data Fabrication by Duane Wiles* (June 11, 2009).

[6] *Ibid.*

[7] Memorandum from Sam Sukiasian & Chi-Tseng Liu to Roger Miramontes, *Gamma-Gamma Logging Acceptance Test Results for Abutment 1 Right – Geotechnical Design Response*, (April 23, 2007). *See also* Pile Design Data Form signed by M. Harris & Charlie Sparkman; Pile Design Data Form signed by K.C. Lim, M. Harris; Pile Design Data Form signed by M. Harris; Pile Design Data Form signed by M. Harris and with Structural Foundations & Geotech Oversight completed.

[8] Foundation Testing Branch, *Gamma-Gamma Logging Acceptance Test Results: CIDH Piles 35A, 48 through 55 and 62 through 75*, 07-LA-405-25.9/29.4 (April 10, 2007) at page 5 (emphasis added).

[9] Memorandum from Barton Newton to James E. Davis, *Braddock Drive UC (Widen) Abutment 1 Right Retaining Wall Section 4, Br. No. 53-1258* (October 25, 2011) *describing* Memorandum from Gerrard Hight to Barton Newton, *Braddock Drive UC (Widen Abutment 1 Right Retaining Wall*, (Oct. 21, 2011).

[10] Email from Michael K. Harris to Rod Murray, *Former Project, Route 580 Sign Foundation* (June 3, 2009 9:30 AM).

[11] Email from Charlie Sparkman to Rod Murray (June 5, 2009 10:23 AM).

[12] Email from Rob Reis to Tony Marquez (Oct. 25, 2011 10:51 AM).

[13] Memorandum from Barton Newton to James E. Davis, *Route 580 Single Post Tubular Structure Foundation – Pile #19* (Oct. 25, 2011) *describing* K.C. Liu, Registered P.E. (Civil), EA-04-0A8004 Overhead Sign 19 (Oct. 21, 2011) (concluding that "based on the analysis and factor of safety listed above, the pile is structurally adequate.").

[14] Gamma-Gamma Logging Data Integrity Issue, Foundation Testing Branch (Aug. 2011); Gamma-Gamma Logging Field Records Technician Instructions & Data and Record Sheet.