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August 9, 2019

VIA E-MAIL ONLY
James.Smith@nrc.gov and Lorraine.Baer@nrc.gov

Petition Review Board
c/o James Smith and Lorraine Baer
Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852

Re: Greenaction 10 C.F.R. §2.206 Petition: TtEC's Response to Petitioner's Supplemental Filing No. 4 and Factual Clarifications Concerning Statements Made by Petitioner at June 25, 2019 Public Meeting

Dear Petition Review Board:

Tetra Tech EC, Inc. ("TtEC") respectfully submits the following information in response to the Petition to Revoke TtEC's Materials License No. 29-31396-01 ("Petition"), Supplemental Filing No. 4 ("Supplement No. 4"), filed by Greenaction for Health and Environmental Justice ("Petitioner" or "Greenaction") pursuant to 10 C.F.R. §2.206. TtEC also responds to certain statements made by Petitioner during the NRC Petition Review Board's most recent public meeting, held on June 25, 2019 ("June 25 Public Meeting").

It is abundantly clear that Petitioner has no "significant new information" that was not considered during the NRC's prior investigation, and thus, the Petition fails to meet the requirements of 10 C.F.R. §2.206 and Management Directive 8.11.[1] Petitioner's allegedly "new" claims in Supplement No. 4 are merely a rehashing of previous allegations that were already investigated by the NRC. Further, as stated by Petitioner's counsel during the June 25 Public Meeting, the 10 C.F.R. §2.206 process is not the correct forum for litigating Petitioner's spurious and overblown allegations of fraud. Thus, the Board should stand by its initial recommendation to "reject the Petition based on the failure of the Petition to present new significant information."[2]

[1] NRC Management Directive 8.11, Section III.C.1.(b)(ii).
[2] *See* Correspondence from James Smith to Preston Hopson (February 25, 2019).

I. PETITIONER'S ALLEGED "NEW" CLAIMS HAVE ALREADY BEEN INVESTIGATED BY THE NRC.

Petitioner has alleged the following so-called "supplemental facts" in support of its Petition:

- that Parcel D-1, which was remediated by another Navy contractor, is "radiologically impacted" because soil from that contractor's work was scanned at a TtEC RSY pad overseen by Jane Taylor;[3]
- that "high levels" of radioactivity were discovered at Parcel D-1 and "suppressed" by TtEC;[4]
- that another contractor used TtEC's onsite laboratory and the results may be of "questionable reliability";[5]
- that Parcel A, a Parcel that TtEC was not responsible for remediating, is "radiologically impacted" because former sewer systems were allegedly not investigated;[6]
- that TtEC management was involved in unspecified fraud;[7]
- that TtEC's initial investigation report is "false" because draft statistical reports found other potential data irregularities;[8] and
- that unnamed witnesses, who refuse to come forward publicly or disclose their names to the NRC, have knowledge of unspecified fraud.[9]

The majority of these allegations were also discussed by Greenaction's representatives at the June 25 Public Meeting. As evidence to support these allegations, Petitioner has attached to its Supplement No. 4 a Memorandum of Understanding between TtEC and other contractors at Hunters Point, a second declaration from Elbert (Bert) Bowers, a declaration from Kevin

[3] Greenaction's 10 C.F.R. §2.206 Petition to Revoke TtEC's Materials License No. 29-31396-01, Supplemental Filing No. 4; Supplemental Prayer for Relief ("Supp. No. 4") at 2-4.
[4] Supp. No. 4 at 4-5.
[5] Supp. No. 4 at 5-6.
[6] Supp. No. 4 at 6.
[7] Supp. No. 4 at 7-8.
[8] Supp. No. 4 at 9-10.
[9] Supp. No. 4 at 10-11.

McLaughlin, the plea agreements of Justin Hubbard and Stephen Rolfe, photographs purportedly depicting sampling taking place at Parcel D-1, a declaration from Steven Castleman, the United States Department of Justice's (DOJ) Complaint in Intervention against TtEC, and press releases.[10]

A. Petitioner has not Presented any "Significant New Information" Regarding TtEC's Allegedly Deficient Scanning at RSY-2.

Petitioner is correct that TtEC provided onsite laboratory services and limited scanning services to other contractors at Hunters Point. However, that fact does not demonstrate that TtEC committed any wrongdoing, nor does it constitute "significant new information" warranting further inquiry as required by NRC Management Directive 8.11.[11]

All of Petitioner's allegations regarding TtEC's provision of scanning and laboratory services at Hunters Point may be traced back to the same allegations made in Petitioner's original filing regarding Jane Taylor. In fact, Petitioner cites to the original Petition in support of these allegations, stating "[a]s demonstrated in Greenaction's Petition, RSY-2 operations were managed by an unqualified supervisor [Jane Taylor] who systematically and intentionally directed the fraudulent scanning of soil so as to be cleared for free release."[12] The Petition Review Board ("PRB") has already reviewed these allegations and correctly determined that they were previously investigated, and they remain unsubstantiated.[13] As explained in TtEC's prior communications with the PRB, and as is well known by the NRC, the NRC thoroughly investigated allegations concerning Jane Taylor (made by the same individuals who filed declarations in support of the Petition), and was unable to substantiate them.[14] Thus, this is not "new" information warranting further inquiry.

[10] Although the Petitioner has referenced an Exhibit 12 (*see* Supp. No. 4 at 7, fn. 21), TtEC is in receipt of only 9 exhibits, and there is no Exhibit 10 or 11 referenced in Petitioner's Supplement No. 4.
[11] NRC Management Directive 8.11, Section III.C.1.(b)(ii).
[12] Supp. No. 4 at 3:4-6, fn.7 (citing Greenaction's original Petition at 26).
[13] Supp. No. 4 at 2:1-4.
[14] *See* TtEC's Response to 10 C.F.R. §2.206 Petition to Revoke Materials License No. 29-31396-01 at 13:3-5, 18:17-20:3, fn. 67 and Exhibit 3.

B. There is No Credible Evidence of Any Issues with TtEC's Laboratory Results.

Petitioner further alleges that its original Petition "demonstrates that lab data were altered by [TtEC] employees" and that another contractor's "data may be of questionable reliability just as [TtEC's] was found to be." However, Petitioner has not demonstrated that any of TtEC's lab data was altered, nor has any other investigation found any issues with TtEC's lab data. While Petitioner relies on DOJ's Complaint in Intervention to support this allegation, there are no factual allegations in that Complaint relating to TtEC's laboratory services, nor are there any such allegations in DOJ's First Amended Complaint.[15] The contract referenced by Petitioner[16] was for TtEC to provide "Basewide Radiological Support" for the Navy at Hunters Point. That contract included numerous additional responsibilities beyond onsite laboratory services, including, among other things, operation of radiological screening yards, maintenance of radiological work area controls, site access coordination, project management, project infrastructure procurement and storage, site cleanup, logistical support, preparation and maintenance of planning documents, additional radiological screening, and waste material management. DOJ has not specified what, if any, allegedly false or fraudulent claims are associated with this contract.[17] There is simply nothing to support these baseless allegations.

C. Parcel D-1 was Not Remediated by TtEC and Discovery of a Radioactive Commodity on Parcel D-1 During Background Sampling was Reported to the Navy.

As noted by TtEC during the June 25 Public Meeting, TtEC did not contract with the Navy to conduct remediation at Parcel D-1. Radiological remediation at Parcel D-1 was conducted by another contractor, as acknowledged by Petitioner.[18] TtEC is not familiar with the Navy's

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[15] *See* Supp. No. 4, Exhibit 8; United States' First Amended Complaint in Intervention Against Tetra Tech EC, Inc. *United States of America, ex rel. Arthur R. Jahr, III, et al., Anthony Smith, & Donald K. Wadsworth et al., v. Tetra Tech EC, Inc.*, U.S.D.C. N.D. Cal. Case No. 3:13-cv-03835-JD.

[16] Supp. No. 4 at 5-6, fn. 18.

[17] *See* Supp. No. 4, Exhibit 8; United States' First Amended Complaint in Intervention Against Tetra Tech EC, Inc. *United States of America, ex rel. Arthur R. Jahr, III, et al., Anthony Smith, & Donald K. Wadsworth et al., v. Tetra Tech EC, Inc.*, U.S.D.C. N.D. Cal. Case No. 3:13-cv-03835-JD.

[18] *See, e.g.,* Supp. No. 4, Exhibit 1 at 1 ("Shaw is performing radiologically oriented work under Contract Number N62473-08-D-0822 Contract Task Order (CTO) 0005 Time-Critical Removal Action (TCRA) for the PCB Hot Spot Area and Contract Number N62473-08-D-0822 CTO 0006 Parcel D-1 Radiological Remediation and Support ("Shaw's Contracts")").

characterization of Parcel D-1 or what remediation was completed, since it was handled by another contractor.

Petitioner claims, in support of its Petition for revocation of TtEC's license, that Parcel D-1 is contaminated. Petitioner claims that the Navy was not told about TtEC's alleged discovery of contamination at Parcel D-1, based on the alleged testimony of an unnamed witness (set forth in a declaration submitted by Petitioner's counsel) that the unnamed witness "heard" that the Navy would not want to know about discovered "contamination" so TtEC allegedly "suppressed" the "contamination."[19] In addition, Bowers, in a second declaration, sets forth some basic facts regarding TtEC's background sampling at Parcel D-1, and the discovery upon which Petitioner bases its claims. Bowers states that he does "not recall receiving subsequent results of any such lab analysis."[20] Bower's lack of recollection does not support a credible allegation, and in fact, TtEC did share this discovery with the Navy.

The true facts are as follows: During TtEC's work on another parcel, TtEC was requested to take background samples at Parcel D-1. TtEC's scanning and sampling in a small area, where background samples were being collected, showed elevated radiological readings which led to the discovery of a "commodity," a radiologically impacted device, that was removed.

The discovery and removal of the commodity was reported to the Navy. Both Matthew Slack at Navy RASO and Hamide Kayaci at Navy BRAC PMO confirmed their knowledge of TtEC's discovery of the device at Parcel D-1.[21] Thus, the discovery was reported, and the sampling results were not used to develop background levels. TtEC was not involved in any remediation work in Parcel D-1, and thus, TtEC cannot be held responsible for the characterization or remediation that occurred in that area after the device was found and removed.

Here again, Petitioner has simply fabricated allegations of wrongdoing at Parcel D-1 based solely on conjecture and a phantom witness. The evidence demonstrates that Petitioner is not credible and its unfounded allegations do not justify further investigation.

[19] Supp. No. 4 at 4:20-5:10.
[20] Supp. No. 4, Exhibit 2 at ¶ 3.
[21] *See* Email from Matthew Slack, Navy RASO, to Bill Dougherty (Nov. 20, 2013); Email from Hamide Kayaci, BRAC PMO to Shanti Montgomery (June 3, 2014), attached as Exhibit 1.

D. TtEC did not Contract to Perform Remediation Work at Parcel A.

Petitioner has alleged that samples taken from the sanitary sewer system on Parcel A in 2004 showed elevated radium levels[22] and TtEC "failed to follow up on this survey result."[23] First, this is not a "new" allegation—these are the same allegations regarding alleged sampling in Parcel A sewers that were included in Petitioner's Reply to TtEC's Response to the Petition.[24] These allegations were before the PRB prior to it making the preliminary determination that the Petitioner had not provided significant new information. These revived allegations do not warrant any further consideration.

As the PRB is aware, TtEC never contracted with the Navy to perform remediation work in any sewers located on Parcel A. And, as TtEC has previously explained, it was not responsible for remediation or reporting at Parcel A.[25]

Further, in 2004, New World Technology (NWT) was responsible for the majority of the radiological work at Hunters Point, not TtEC. It was NWT's NRC radiological license that was in use during that period.[26] The sampling results provided by Petitioner in its "Reply to TtEC's Response to 10 C.F.R. §2.206 Petition to Revoke Materials License No. 29-31396-01," are dated January 2004, are clearly labeled "NWT Field Report," and show that Bowers performed the sampling.[27]

[22] Presumably, Petitioner meant to allege elevated radium-226, since radium-227 is not a radionuclide of concern at Hunters Point.
[23] Supp. No. 4 at 6:4-11.
[24] *See* Greenaction for Health and Environmental Justice's Reply to TtEC's Response to 10 C.F.R. §2.206 Petition to Revoke Materials License No. 29-31396-01 at 4:4-5:17 and Exhibit 2.
[25] *See* TtEC Letter to Petition Review Board (Nov. 19, 2018) at 7.
[26] *See* TtEC's Response to 10 C.F.R. §2.206 Petition to Revoke Materials License No. 29-31396-01 at 4:10-5:3.
[27] Greenaction for Health and Environmental Justice's Reply to TtEC's Response to 10 C.F.R. §2.206 Petition to Revoke Materials License No. 29-31396-01, at Exhibit 2.

At that time, Bowers was working for NWT.[28] Bowers was NWT's Radiation Safety Officer Representative (RSOR).[29] In that position, Bowers had an open line of communication with both the Navy and the NRC concerning potential radiation safety concerns or alleged violations at Hunters Point. If Bowers had concerns about any ostensibly elevated radiological readings, he had the obligation and means to report those concerns directly to the Navy, or to the NRC. Yet, there is no evidence that Bowers ever raised any concern about these results until now—15 years later.

Moreover, the results show radium levels that are consistent with the high variability of native soils and fill materials found at and near Hunters Point.[30] Specifically, the results submitted by Bowers show radium-226 net activity levels of 2.9653 and 3.1165 pCi/g[31]; Colma/Merced Formation—soils present at Hunters Point and throughout the San Francisco Bay region—demonstrate results for radium-226 as high as 3.5650 pCi/g.[32] In fact, Bowers' allegations also contradict his own reporting concerning these results, which state, "[t]wo manholes located in an area of Parcel A of HPS feature[] concrete and brick surfaces similar to those present at the sanitary sewer manholes and were selected as the reference (background radiation) area for

[28] Greenaction for Health and Environmental Justice's 10 C.F.R. §2.206 Petition to Revoke TtEC's Materials License No. 29-31396-01, Exhibit A – Declaration of Elbert Bowers at 3, ¶ 4; New World Technology is a trade name of New World Environmental. *See* TtEC's Response to 10 C.F.R. §2.206 Petition to Revoke Materials License No. 29-31396-01 at 4:10-12.
[29] Greenaction for Health and Environmental Justice's 10 C.F.R. §2.206 Petition to Revoke TtEC's Materials License No. 29-31396-01, Exhibit A – Declaration of Elbert Bowers at 3, ¶ 4.
[30] *Compare* Greenaction for Health and Environmental Justice's Reply to TtEC's Response to 10 C.F.R. §2.206 Petition to Revoke Materials License No. 29-31396-01, Exhibit 2 *to* Recommendation for Disposal or Reuse of Building 518 Backfill Sand from Marianne Binkin and Erik Abkemeier, TtEC, to Chris Yantos, Navy (Dec. 2012), an excerpt of which is attached as Exhibit 2, at 9.
[31] Greenaction for Health and Environmental Justice's Reply to TtEC's Response to 10 C.F.R. §2.206 Petition to Revoke Materials License No. 29-31396-01, at Exhibit 2.
[32] Recommendation for Disposal or Reuse of Building 518 Backfill Sand from Marianne Binkin and Erik Abkemeier, TtEC, to Chris Yantos, Navy (Dec. 2012), an excerpt of which is attached as Exhibit 2, at 9.

the associated survey units. Specifically, the manholes are located inside a **non-impacted portion of HPS**."[33] Bowers' allegations are not credible and as such, do not warrant further inquiry by the PRB.

E. Petitioner has not Presented any "Significant New" Information that TtEC Management was Involved in any Alleged Fraud.

As discussed in TtEC's Response to Greenaction's Petition, no TtEC managers have ever been criminally charged with wrongdoing.[34] The statements allegedly made to Stephen Rolfe by various TtEC employees cannot be interpreted as directions to commit criminal acts.[35] To date, these vague allegations of "pressure" and alleged statements made by purported managers have not been attributed to any specific TtEC employee. There is no substance to these repetitive allegations of manager involvement, and nothing to warrant further inquiry.

F. Petitioner has not Demonstrated that any Aspect of TtEC's 2014 Anomalous Samples Report was False or Misleading.

Petitioner claims without factual support that TtEC's *Anomalous Samples Report* has "repeatedly been exposed as false…."[36] Yet, Petitioner has not pointed to any evidence showing that any portion of TtEC's investigation report was false or misleading. Rather, Petitioner relies on the leaked draft data review reports prepared by the Navy's consultants, which unscientifically identified "potential data manipulation or falsification" in certain Parcels where TtEC performed remediation work, to allege that TtEC somehow falsified the results of its investigation. The NRC is fully aware of the existence of these leaked draft reports, which are based solely on arbitrary statistical tests, and TtEC has previously explained why the findings of these reports—"potential data manipulation or falsification"—are not based on sound science.[37] Petitioner has not presented any further evidence or specific allegations in support of its claims concerning TtEC's *Anomalous Samples Report*.

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[33] Survey Plan and Survey Results Sewer Plug Installation, Prepared for TtEC by Daryl Delong and Contributors Bert Bowers and Paul Wall of New World Technology, an excerpt of which is attached as Exhibit 3, at 6 (emphasis added).
[34] TtEC's Response to 10 C.F.R. §2.206 Petition to Revoke Materials License No. 29-31396-01 at 8:16-9:1.
[35] *See* Supp. No. 4 at 8-9; Supp. No. 4, Exhibit 5, *Plea Agreement of Stephen Rolfe*, at 4:4-8.
[36] Supp. No. 4 at 9:9-13.
[37] TtEC's Response to 10 C.F.R. §2.206 Petition to Revoke Materials License No. 29-31396-01 at 27:3 to 29:16.

G. The NRC Should Ignore Petitioner's Specious Claims Regarding Unidentified Witnesses to Unspecified Fraud.

In a last-ditch attempt to present "new" allegations, Petitioner claims that "numerous" witnesses are available who would testify about unspecified fraud at Hunters Point.[38] This is not "significant new information" but, at best, conjecture, and, at worst, a total fabrication. In either case, these allegations do not present credible information worthy of further inquiry.

II. THE 10 C.F.R. § 2.206 PETITION PROCESS IS INAPPROPRIATE FOR LITIGATING PETITIONER'S ALLEGED FRAUD CLAIMS.

Petitioner admitted during the June 25 Public Meeting that alleged "fraud" is outside the enforcement and petition process associated with 10 C.F.R. § 2.206. As Mr. Castleman correctly stated, the kind of fraud alleged here is not contemplated by either 10 C.F.R. §2.206 or Management Directive 8.11.[39] As the PRB well knows, a number of individuals who submitted declarations in support of the Petition are also litigants in a False Claims Act matter.[40] Those individuals, who are represented by the same counsel as in this proceeding—Mr. Anton—filed those claims against TtEC on behalf of the allegedly aggrieved party, the U.S. Navy. Those fraud allegations are currently being litigated in that forum. As Petitioner recognized,[41] the NRC is not the appropriate agency to litigate alleged fraud matters, nor is the § 2.206 petition process the appropriate mechanism for pursuing those alleged claims.

In rejecting the Petition, the NRC will not be acting "arbitrarily and capriciously" as Petitioner claims.[42] The NRC is granted substantial discretion in responding to 10 C.F.R.§ 2.206 petitions, and in making enforcement decisions.[43] Likewise, license revocation and initiation of revocation

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[38] Supp. No. 4 at 10:12-11:6.
[39] *See* June 25 Public Meeting Transcript at p. 13-14.
[40] Namely Elbert (Bert) Bowers, Anthony Smith, Susan Andrews, Archie Jackson, Arthur Jahr, and Robert McLean. *See United States ex rel. Arthur R. Jahr, et al. v. Tetra Tech EC, Inc., et al.,* U.S.D.C. N.D. Cal. Case No. 3:13-cv-03835-JD; *United States ex rel. Anthony Smith v. Tetra Tech EC, Inc., et al., U.S.D.C. N.D. Cal. Case No. 3:16-cv-01106-JD; United States ex rel. Donald K. Wadsworth and Robert McLean v. Tetra Tech EC, Inc., et al.,* U.S.D.C. N.D. Cal. Case No. 3:16-cv-01107-JD.
[41] June 25 Public Meeting Transcript at p. 13-14.
[42] Supp. No. 4 at 1:17-20.
[43] *See, e.g.*, *Lorion v. U.S. Nuclear Regulatory Com'n* (D.C. Cir. 1986) 785 F.2d 1038, 1039; *see also* 42 U.S.C. § 2201(b) (the NRC may "make such studies and investigations, [and] obtain such information… as the Commission may deem necessary or proper….")

proceedings is permissive and at the NRC's discretion.[44] Petitioner's due process rights are not violated by the NRC's rejection of a petition for license revocation proceedings.[45]

In conclusion, Petitioner is unable to set forth credible facts regarding any issues at Hunters Point that have not already been investigated by the NRC. Instead, Petitioner has lashed out at the NRC, accusing the Commission of incompetence—and worse.[46] Contrary to Petitioner's allegations, the NRC conducted a thorough investigation into the alleged safety concerns and other allegations made by Petitioner and declarants. TtEC has fully cooperated with the NRC, including participating in numerous interviews with NRC investigators, and providing significant information to the NRC throughout its investigation. The NRC uncovered certain, limited wrongdoing that was addressed in an enforcement action.

The PRB has now spent numerous additional hours reviewing Petitioner's repetitive submissions and supplements. Petitioner has been given multiple opportunities to directly address the Board. Yet, in all this time, the only credible allegations Petitioner has made against TtEC relate to soil sample fraud committed by Justin Hubbard and Stephen Rolfe. Those allegations were previously investigated by the NRC and were addressed in an enforcement action. The NRC has no obligation to further investigate and doing so would be a further waste of the NRC's resources. TtEC respectfully requests that the NRC not allow itself to be bullied into further, unwarranted, and duplicative investigations.

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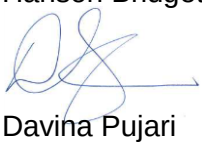
[44] *See* 42 U.S.C. 2236(a) ("[a]ny license ***may*** be revoked…") (emphasis added); *see also Rockford League of Women Voters v. U.S. Nuclear Regulatory Com'n* 679 F.2d 1218, 1222 (7th Cir. 1982) ("42 U.S.C. § 2236(a), permits but does not direct the NRC to revoke a license or permit, and the implementing regulations are likewise permissive rather than mandatory.").
[45] *Porter County Chapter of Izaak Walton League of America, Inc. v. Nuclear Regulatory Commission*, 606 F.2d 1363 (D.C. Cir. 1979) (rejected on other grounds by, *Gallagher & Ascher Co. v. Simon*, 687 F.2d 1067, 66 A.L.R. Fed. 264 (7th Cir. 1982)).
[46] *See, e.g.*, Supp. No. 4 at 1:14-16 (discussing "NRC's woefully deficient investigation").

Should there be any additional information that TtEC can provide to the PRB to finally put this Petition to rest, please do not hesitate to contact us.

Very truly yours,

Hanson Bridgett LLP



Davina Pujari

cc: Steven Castleman (scastleman@ggu.edu)
David Anton (davidantonlaw@gmail.com)

Encl.

EXHIBIT 1

From: Montgomery, Shanti <Shanti.Montgomery@tetratech.com>
Sent: Monday, October 20, 2014 9:44 AM
To: Kayaci, Hamide G CTR NAVFACHQ, BRAC PMO (hamide.kayaci.ctr@navy.mil)
Subject: FW: Removed commadity in D-1?

Hi Hamide,

Yes the pink dot identifies where the commodity was identified and recovered (Coordinates: E = 6022498.8003 N = 2089423.9852).

At that time, TtEC and the RASO were trying to identify a representative "surface area background" for use in Parcel E. The soil sample results from the two areas between Buildings 523, 525, and 526 were rejected as a reference area once the device was found and/or due to unacceptably low gamma spectroscopy results. The current background reference area is based solely on the "D-1 Location".

Please let me know if you have additional questions, etc.

Thanks!

Shanti

-----Original Message-----
From: Montgomery, Shanti
Sent: Friday, October 17, 2014 3:42 PM
To: Crabtree, Allen
Subject: FW: Removed commadity in D-1?

Please provide coordinates for the location.

Thanks!

-----Original Message-----
From: Kayaci, Hamide G CTR NAVFAC HQ, BRAC PMO [mailto:hamide.kayaci.ctr@navy.mil]
Sent: Friday, October 17, 2014 2:14 PM
To: Montgomery, Shanti
Subject: FW: Removed commadity in D-1?

Pink dot in the attached is where the commodity was found, right? Have you removed it? Do you have coordinates for it? Background was then calculated based on systematic samples 1 and 2 among buildings 525, 526 and 523 and also the dotted-lined box to the southeast of this building cluster marked "D1 LOCATION"?
Thanks,

Hamide Kayaci
PM, BRAC PMO
Contracted Support to NAVY BRAC PMO
1455 Frazee Road, Suite 900
San Diego, CA 92108
P. 619-532-0968

-----Original Message-----
From: Montgomery, Shanti [mailto:Shanti.Montgomery@tetratech.com]
Sent: Tuesday, June 03, 2014 2:52 PM
To: Kayaci, Hamide G CTR NAVFAC HQ, BRAC PMO; Slack, Matthew L CIV SEA 04 04N
Cc: Dougherty, Bill
Subject: RE: Removed commadity in D-1?

Hi Hamide,

Please see attached. We will also give Matt a hardcopy as he is on site.

Shanti

Shanti Montgomery | Project Manager
Direct: 415.216.2772 | Main: 415.671.1990 | Fax: 415.671.1995 | Cell: 360.320.8519
shanti.montgomery@tetratech.com

Tetra Tech EC, Inc. | Hunter's Point Shipyard
200 Fisher Avenue | San Francisco, CA 94124 | https://protect-us.mimecast.com/s/j0uuCR6MZOcnzDxGH9dxrl?domain=tetratech.com

-----Original Message-----
From: Kayaci, Hamide G CTR NAVFAC HQ, BRAC PMO [mailto:hamide.kayaci.ctr@navy.mil]
Sent: Tuesday, June 03, 2014 2:18 PM
To: Montgomery, Shanti
Cc: Dougherty, Bill
Subject: Removed commadity in D-1?

Hi Shanti,
Matt would like to know the location of the commodity that TTEC removed in D-1 or maybe E in the vicinity of berths 22, 29 and bldgs. 525 and 526 ? Because, Gilbane removed two of them near berth 22 and west of bldgs. 525 and 526 and the in same conversation it was mentioned that you guys removed one too.
Thanks,

Hamide Kayaci
PM, BRAC PMO
Contracted Support to NAVY BRAC PMO
1455 Frazee Road, Suite 900
San Diego, CA 92108
P. 619-532-0968

-----Original Message-----
From: Slack, Matthew L CIV SEA 04 04N [mailto:matthew.slack@navy.mil]
Sent: Wednesday, November 20, 2013 10:07 AM
To: Dougherty, Bill
Cc: Yantos, Christopher N CTR NAVFACHQ, BRAC PMO
Subject: Question

Bill,
I recall that a TtEC removed a device over in D-1 some years ago. Do you know where that was and do you have any record of this? Thanks.

Matthew L Slack Jr.
Environmental Program Manager
NAVSEADET RASO
160 Main Rd
Yorktown VA 23691

w 757-887-4212
c 202-821-6115 (when on travel)

EXHIBIT 2

RECOMMENDATION FOR DISPOSAL OR REUSE OF BUILDING 518 BACKFILL SAND

Date: December 2012

Prepared by: Marianne Binkin, PG 7853, Tetra Tech EC, Inc.

Erik Abkemeier, CHP, PE, CSP, CHMM, Tetra Tech EC, Inc.

Distribution: **Navy**
Chis Yantos (Remedial Project Manager, Naval Facilities Engineering Command Southwest)

Contract: N62473-D-10-0809

CTO No. 0007

This letter has been prepared to support a request for disposal or reuse of backfill sand discovered at the Former Building 518 Site, Hunters Point Naval Shipyard (HPNS).

The following attachments accompany this letter:

- Attachment 1 – Building 518 Excavation Photographs
- Attachment 2 – Petrographic Analysis of Building 518 Sand
- Attachment 3 – Metals Results

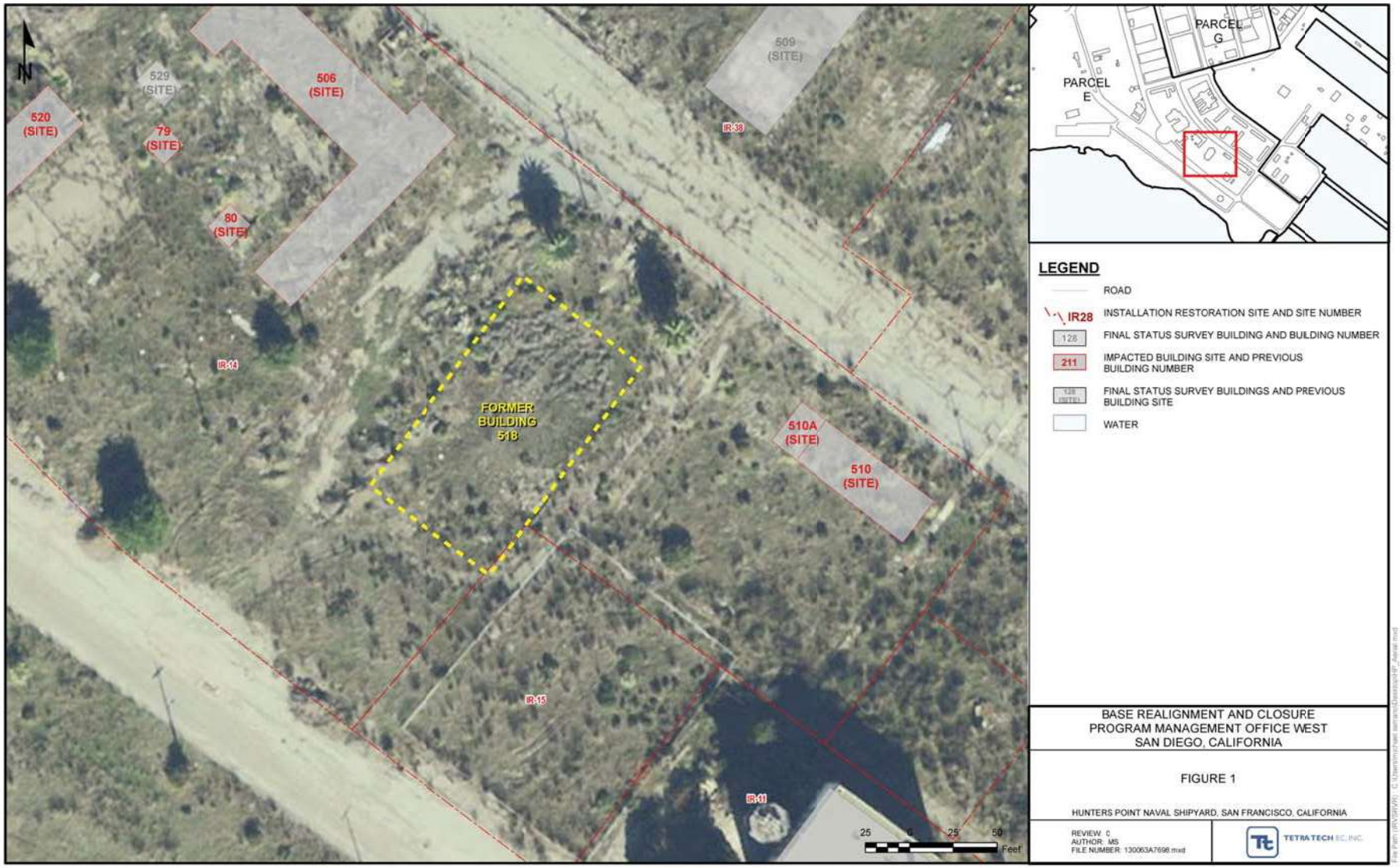
INTRODUCTION

While the gamma radiation surveys by vehicle towed array were being conducted for the Former Building 500 Series Area Task-specific Plan, a large area between the Former Building 506 Site and the Former Buildings 510/510A Site at HPNS exhibited gamma readings exceeding mean plus three sigma (Figure 1).

Subsequent investigation of historical records indicated that the area was the previous location of Building 518, the base movie theatre. The Historical Radiological Assessment (NAVSEA 2004) indicated that Building 518 was not radiologically impacted. The movie theatre was demolished at an unknown date during the 1980s; however, two large palm trees that flanked the entrance remain and provide a visual reference for the location of the building. For reference, these trees are visible both in Photograph 1 below and on Figure 1.

Excavation of the area unearthed the foundation of the movie theatre, which was filled with reddish yellow sand that was clearly distinguishable from adjacent soils in the area (Photograph 1). This yellowish to reddish brown sand (referred to in the following sections as "Building 518 sand") was removed and placed in the Radiological Screening Yard for surveying and gamma spectroscopy analysis. Photographs of the Building 518 excavation are provided in Attachment 1.

Photograph 1. Yellowish to reddish brown Building 518 sand exposed in excavation in center of photo. Trench in foreground shows typical grayish-black Franciscan Formation-derived soils.


N
529 (SITE)
506 (SITE)
509 (SITE)
520 (SITE)
79 (SITE)
80 (SITE)
IR-38
IR-14
FORMER BUILDING 518
510A (SITE)
510 (SITE)
IR-15
IR-11
25 0 25 50 Feet
PARCEL G
PARCEL E
LEGEND
ROAD
IR28 INSTALLATION RESTORATION SITE AND SITE NUMBER
128 FINAL STATUS SURVEY BUILDING AND BUILDING NUMBER
211 IMPACTED BUILDING SITE AND PREVIOUS BUILDING NUMBER
FINAL STATUS SURVEY BUILDINGS AND PREVIOUS BUILDING SITE
WATER
BASE REALIGNMENT AND CLOSURE
PROGRAM MANAGEMENT OFFICE WEST
SAN DIEGO, CALIFORNIA
FIGURE 1
HUNTERS POINT NAVAL SHIPYARD, SAN FRANCISCO, CALIFORNIA
REVIEW: C
AUTHOR: MS
FILE NUMBER: 130063A7698.mxd
TETRA TECH EC, INC.

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Once the sand had been removed to the Radiological Screening Yard, the remaining Building 518 foundation was surveyed for fixed and loose alpha and beta contamination. No measurements on any surface exceeded the Atomic Energy Commission (AEC) Regulatory Guide 1.86 values used for release of materials as radiologically free of contamination.

BUILDING 518 SAND

The general geology of HPNS includes Franciscan Formation and Young Bay Sediment, which range in color from light gray to black. The Franciscan Formation is a mélange of serpentinite, basaltic volcanic rocks, chert, shale, and greywacke (typically greenish gray color). The Young Bay Sediment is generally characterized by dark gray micaceous fine sands and silts with occasional shells.

The sand excavated at Building 518 is yellowish to reddish brown well-rounded, well-sorted sand with numerous lithic fragments and magnetite. It is visually different from the surrounding "native" soils previously observed at excavations across HPNS and would appear to be backfill from an off-site source, as there are no yellowish to reddish brown sand-bearing formations, such as the Merced or the Colma Formations, historically mapped in the general area of HPNS (Bonilla 1998).

To narrow down a potential source for the Building 518 sand and to determine if the sand contained any man-made materials (such as paint chips or metal fragments) not apparent under a hand lens, samples were sent to Oregon State University for petrographic analysis and heavy minerals separation.

PETROGRAPHIC ANALYSIS RESULTS SUMMARY

The petrographic analysis consisted of thin section grain identification and point count, heavy mineral separation, and X-ray diffraction analysis. The report is included as Attachment 2.

The most common mineral observed in thin section was quartz, making up 90 percent of the samples. Many of the quartz grains contained a reddish coating (iron oxide staining – likely hematite) and evidence of exposure to a low-grade metamorphic environment (undulatory extincition). Also high in occurrence were quartz lithics, composed of microcrystalline quartz (chert), and more rarely, granitic fragments. Plagioclase feldspars (calcium-sodium aluminum silicates), iron-rich clinopyroxene (augite to hedenbergite), volcanic lithics, magnetite, zircon, and sphene (titanite) were observed as well. No paint chips, metal fragments, or any other man-made materials were observed in the thin sections. The heavy mineral separation and X-ray diffraction analysis confirmed the presence of the magnetite, hematite, zircon, sphene, and hedenbergite.

Based on the mineral assemblages and percentages, the Building 518 sand appears to have been derived from a combination of quartz-plagioclase-rich granites and mafic volcanics. The

presence of abundant chert fragments, a rock-type prevalent in the Franciscan, suggests a locally derived source for the backfill. While the Oregon State University report suggests that the heavy minerals may have been concentrated in a fluvial environment, it is equally as likely that they may have been concentrated in a beach environment.

BUILDING 518 ANALYTICAL SAMPLING

Samples from the Building 518 sand were analyzed at the on-site laboratory. One sample was sent off-site to the Curtis and Tompkins laboratory for total metals analysis by U.S. Environmental Protection Agency Method 6010.

Analytical results from 18 samples of the Building 518 sand indicate radium-226 (Ra-226) concentrations greater than the Action Memorandum (DON 2006) release criterion, in the range of 1.5 to 2.1 picocuries per gram (pCi/g). Additionally, actinium-228 (Ac-228) values of 1.7 to 1.9 pCi/g were noted, indicating similar concentrations of thorium-232 (Th-232) due to secular equilibrium. Elevated cesium-137 (Cs-137) was nonexistent. A representative sample of initial gamma spectroscopy results is provided in Table 1.

Table 1 – Representative Initial Gamma Spectroscopy Results

Sample ID	Ac-228 (pCi/g)	Cs-137 (pCi/g)	Bi-214 (pCi/g)	Pb-214 (pCi/g)	Ra-226 (pCi/g)
04-PE-E0650-01	1.867	-0.007859	1.04	1.215	1.59
04-PE-E0650-02	1.607	0.005781	1.084	1.106	1.349
04-PE-E0650-03	1.813	-0.005616	1.141	1.241	1.464
04-PE-E0650-04	1.682	0.001885	1.121	1.268	1.459
04-PE-E0650-05	1.087	0.009273	1.103	1.249	0.8937
04-PE-E0650-06	1.456	0.003499	1.013	0.9944	1.474
04-PE-E0650-07	1.359	0.003709	1.07	1.143	1.029
04-PE-E0650-08	1.922	0.001091	1.15	1.317	1.118
04-PE-E0650-09	1.375	-0.0004102	0.9871	1.059	1.869
04-PE-E0650-10	1.679	0.001719	1.131	1.152	1.25
04-PE-E0650-10DUP	1.795	-0.00564	1.179	1.198	1.24
04-PE-E0650-11	1.744	0.001428	1.068	1.268	1.341
04-PE-E0650-12	1.511	-0.007082	1.08	1.222	1.623
04-PE-E0650-13	1.66	0.01006	1.104	1.181	1.496
04-PE-E0650-14	1.575	0.00849	1.147	1.215	1.364
04-PE-E0650-15	1.514	0	1.081	1.146	1.048
04-PE-E0650-16	1.519	-0.0001819	1.073	1.081	1.927
04-PE-E0650-17	1.729	-0.002983	1.132	1.258	0.9491
04-PE-E0650-18	1.572	-0.0004073	1.171	1.201	1.452
	Above the Th-232 release criterion of 1.69 pCi/g				
	Above the sewer release criteria				

Seven soil samples including a duplicate were analyzed for Ra-226 after being sealed for 21 days to allow for in-growth and analysis by the bismuth-214 (Bi-214) 609.31 kiloelectron volt gamma energy peak. Additionally, these samples were analyzed for isotopic plutonium and isotopic uranium. Results are contained in Table 2. Analysis of the results indicates that uranium-238 (U-238) is in secular equilibrium with Ra-226, when taking into account the statistical uncertainties of the analytical methods, indicating that the Ra-226 in the soil samples is naturally occurring. Furthermore, isotopic plutonium results indicate no manmade contamination from plutonium.

Table 2 – Plutonium and Uranium Results for Sand Material

Sample ID	Pu-238 (pCi/g)	Pu-239/240 (pCi/g)	U-233/234 (pCi/g)	U-235/236 (pCi/g)	U-238 (pCi/g)	Ra-226 (pCi/g)
04-PE-E0640-05	-0.0291	0.0127	0.888	0.00999	0.821	1.367
04-PE-E0640-05DUP	0.0327	-0.0059	1.22	0.0636	1.1	1.367
04-PE-E0640-20	0.0151	-0.017	0.801	0.0977	0.779	1.416
04-PE-E0647-16	0.0353	-0.00744	0.82	0.0383	0.797	1.187
04-PE-E0648-03	0.0343	0.000612	0.857	0.0602	0.892	1.232
04-PE-E0649-02	-0.00574	0.00639	1.37	0.0739	1.6	1.565
04-PE-E0650-16	-0.0053	-0.00398	0.797	0.044	0.748	1.176
04-PE-E0651-16	0.00647	-0.00388	0.918	0.0909	0.835	0.9524

The highest concentrations of metals were reported for aluminum (8,900 milligrams per kilogram [mg/kg]), calcium (11,000 mg/kg), iron (39,000 mg/kg), and magnesium (11,000 mg/kg), which are consistent with minerals identified in the petrographic analysis. Lead was reported at 16 mg/kg. A complete listing of metal results is included as Attachment 3.

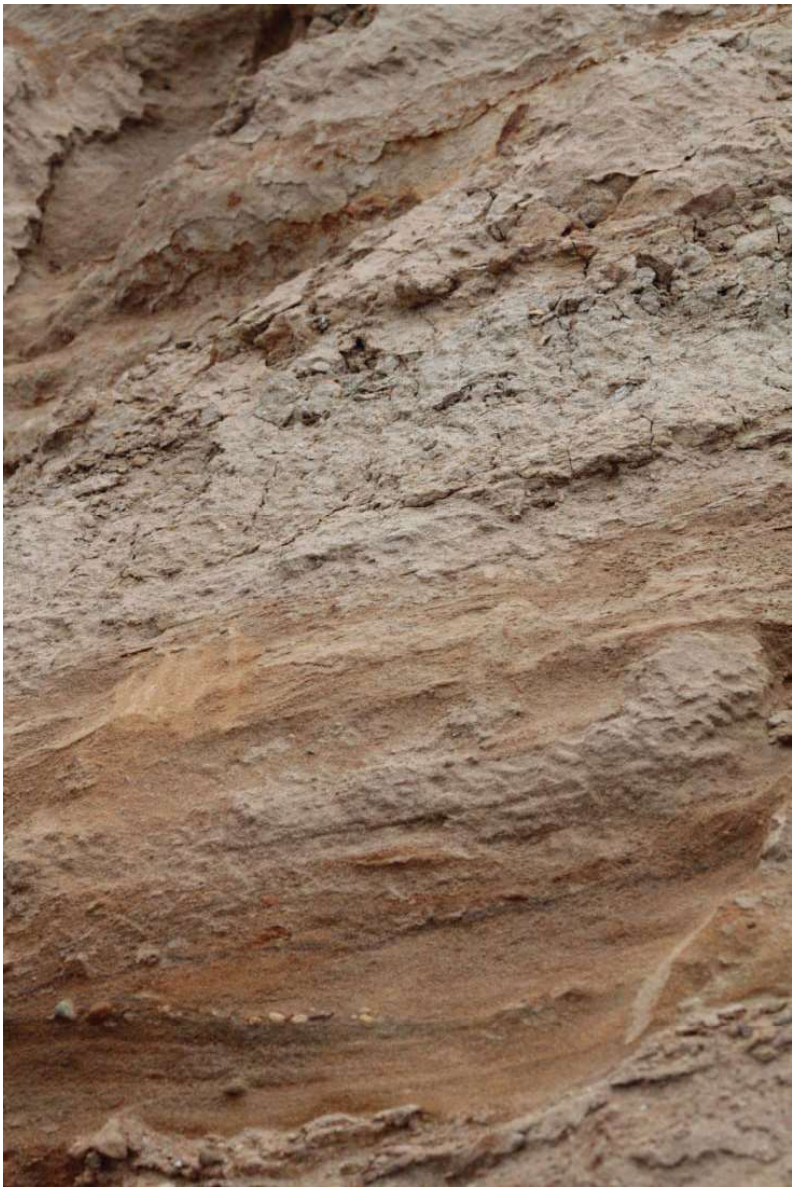
COMPARISON TO SUSPECTED PARENT FORMATION

Based on the unique color of the sand, the results of the petrographic analyses, and the assumption that the sand had been imported from a local source to use as backfill, the most likely source formation was narrowed down to the Colma Formation.

The Pleistocene Colma formation overlies either the Franciscan or the Merced Formation depending on location (Schlocker 1974). Outcrops have been mapped at Angel Island, Baker Beach, and various locations throughout the city (between the Presidio and Russian and Nob Hills), and along the western coast of the city. It is not mapped at HPNS. The Colma is easily visible in seacliffs south of Ocean Beach where thicknesses have been measured up to 10 meters (Yi 2005). Holocene dune sands, which have been previously interpreted as the upper member of the Colma, overlie the formation at these locations.

The Colma Formation, shown in Photograph 2, is generally comprised of poorly consolidated yellowish or reddish brown sands with occasional occurrences of oxidized sand with heavy

mineral laminations (Schlocker 1974). The environment of deposition for the Colma is wide-ranging – interpreted as various beach environments (Caskey et al. 2005). Because the environment of deposition is wide ranging and the underlying formation differs (either Franciscan or Merced Formation), the actual composition of the Colma is variable, containing everything from reworked Franciscan Formation, Sierran detritus carried by an ancient river that drained through San Francisco Bay during times of low sea level, and reworked Merced Formation.



Photograph 2. Colma Formation

BACKGROUND CONCENTRATIONS FOR THE COLMA FORMATION

There are no published data on background concentrations for the Colma Formation. To evaluate whether there was a similarity between concentrations found in the Building 518 sand and in the most likely parent formation, a series of sand samples was collected along the beach access trail at Fort Funston where both the Colma and Merced Formations have been mapped previously (Caskey et al 2005). Samples were collected from six locations starting at the top of the Colma Formation progressing into the Merced Formation, with the sixth sample collected from the beach at the base of the cliffs. The six samples were each analyzed by gamma spectroscopy including Ra-226 and its progeny, Bi-214 and lead-214, and Ac-228, assumed to be in secular equilibrium with Th-232. Results are listed in Table 3.

Table 3 – Colma/Merced Formation Gamma Spectroscopy Results

Sample ID	Bi-214 (pCi/g)	Pb-214 (pCi/g)	Ra-226 (pCi/g)	Ac-228 (pCi/g)
04A-FUNST-001	1.1650	1.3190	1.9030	1.6420
04A-FUNST-002	0.4455	0.5622	0.1968	1.0710
04A-FUNST-003	1.0840	1.1290	1.3340	1.4760
04A-FUNST-004	0.8673	1.0850	1.3840	1.3820
04A-FUNST-005	0.9753	1.1400	0.8795	1.5050
04A-FUNST-006	2.5340	2.6730	3.5650	3.8910

Greater than the Ra-226 building release criterion of 1.633 pCi/g
Greater than the Th-232 release criterion of 1.69 pCi/g

The results, particularly for the third and fourth samples in the 1.3 to 1.5 pCi/g range, correlated well with the elevated Ra-226 and Ac-228 concentrations identified in the sand removed from the Building 518 foundation.

CONCLUSION

The color of the sand, its composition, and the assumption that a local source was used to provide backfill indicate that the likely parent material for the Building 518 sand was the Colma Formation. The presence of zircon (0.5 to 1 percent by weight) in samples of the Building 518 sand would result in elevated U-238 and Th-232 naturally occurring radioactive material (NORM). Samples collected from Colma and Merced Formations had a similar range of radionuclide concentrations of Ra-226 and Th-232 as reported on the samples from the Building 518 sand. It is likely that backfill material sourced from the Colma Formation was used to fill in gaps remaining after Building 518 was demolished.

Because Building 518 was not considered radiologically impacted in the HRA, a survey of the foundation did not indicate any levels above AEC Regulatory Guide 1.86 values, and no man-made materials were observed in samples of the backfill, it is not likely that radionuclide

Cs-137, plutonium-239, and uranium-235 would have been expected in the analytical results, while Ra-226 and Th-232 would not have been anticipated.

RECOMMENDATION

Dispose of the sand as non-LLRW NORM material, or reuse the material as a base material for surface land capping of areas at HPNS. In the event that any loads alarm the portal monitor prior to shipment off-site, dispose of those particular loads as LLRW.

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Yi, C. 2005. Depositional and Deformational History of the Uppermost Merced and Colma Formations, Southwest San Franscisco. San Francisco State University Master's Thesis. 137pp.

EXHIBIT 3

Survey Plan and Survey Results

Sewer Plug Installation

Hunters Point Shipyard
San Francisco, CA

Prepared For

TETRA TECH FW, INC.

1230 Columbia Street, Suite 500
San Diego, CA 92101

Prepared By
Project Manager: Daryl DeLong

Contributors

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Paul Wall

New World Technology
448 Commerce Way,
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May 6, 2004

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Glossary of Acronyms, Abbreviations and Symbols

µR/hr	microroentgens per hour
ALARA	as low as reasonably achievable
ASTM	American Society of Testing and Materials
cm	centimeter
cm^2	square centimeters
Cs	Cesium
dpm	disintegrations per minute
DCGL	Derived Concentration Guideline Level
HPGE	High Purity Germanium
HPS	Hunters Point Shipyard
keV	kiloelectron volt
m/s	meters per second
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
MCA	Multi Channel Analyzer
MDC	minimum detectable concentration
MDCR	minimum detectable count rate
MeV	megaelectron volt
mrem	millirem
NaI	sodium iodide
NIST	National Institute of Standards and Technology
NPL	National Priorities List
NRDL	Naval Radiological Defense Laboratory
NUREG	Nuclear Regulatory Commission Guide
NWT	New World Technology
ORISE	Oak ridge Institute for Science and Education
pCi/g	picocurie per gram
PPE	Personnel Protective Equipment
Pu	Plutonium
Ra	Radium
Sr	Strontium
TtFW	Tetra-tech FW
TEDE	total effective dose equivalent
U	Uranium

1.0 EXECUTIVE SUMMARY

Groundwater entering the sanitary sewer at Hunters Point Shipyard (HPS) through breaks in portions of the sewer lines needed to be plugged to minimize waste water being introduced to the Building 819 pumping station. The Navy directed Tetra Tech FW, Inc (TtFW) to install plugs in selected sewer lines (Figure 1) to isolate unused portions of the system, thereby reducing the total volume of wastewater pumped offsite for treatment. Radioactive material may have been present inside portions of the HPS sewer system as a result of past activities at the base. Therefore, radiological surveys that sufficiently characterized the radiological status of the portions of the sewers, where the plugs were installed, were conducted before the plugs were installed. Data from the surveys were used to assess Personal Protective Equipment (PPE) required for the workers who installed the plugs and to verify that personnel and equipment exiting the work area did not become radiologically contaminated while surveying or installing the sewer plugs. The work also allowed for the characterization and/or removal of any radioactive sources and/or material that would interfere with work to be performed in the sewers.

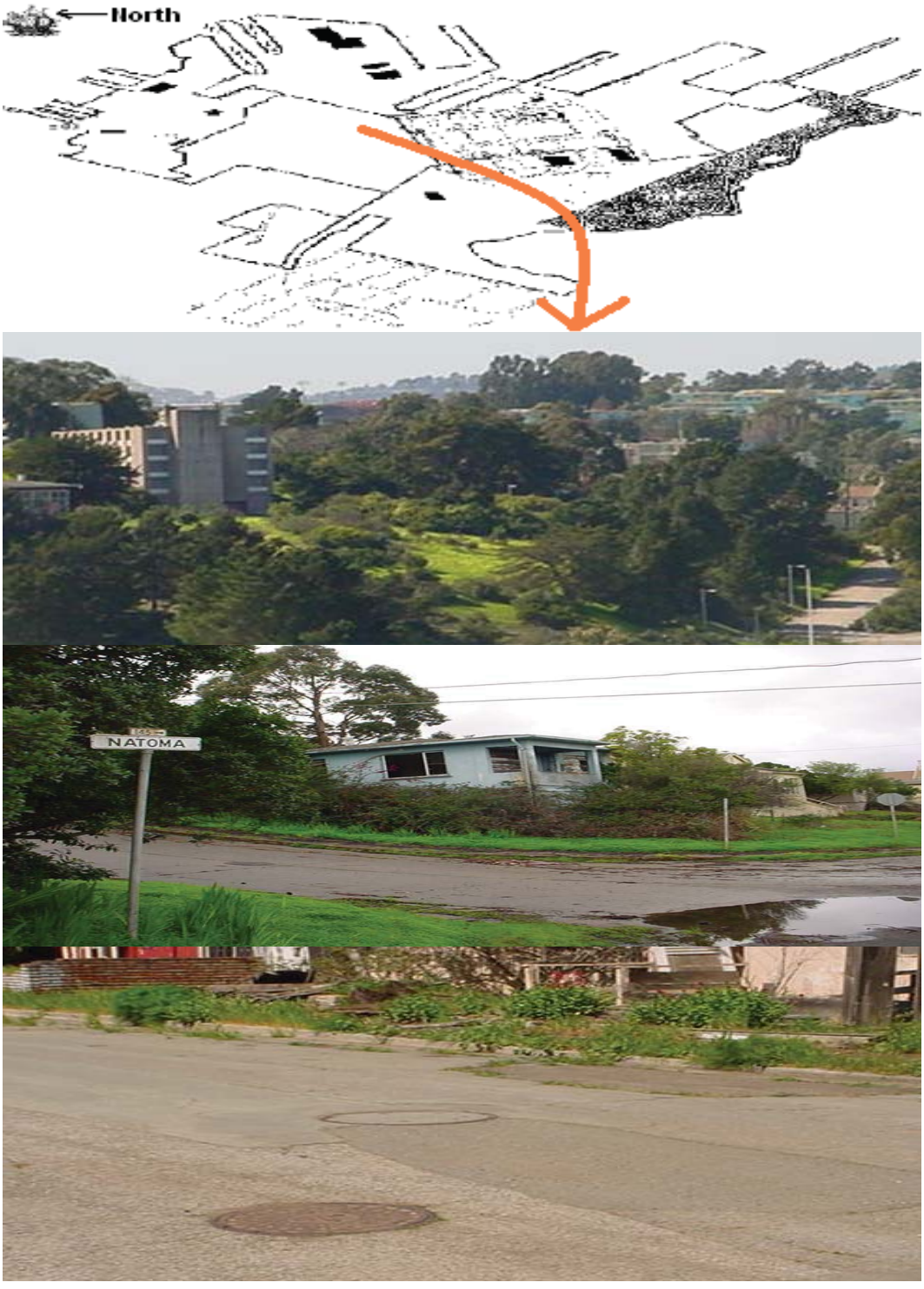
Nine manholes, Situated in various Parcels along the HPS, a National Priorities List (NPL) Site in San Francisco, California, were originally scheduled to have sewer plugs installed. Eight of those manholes were surveyed and sampled for radiological activity. One additional manhole, located at Building 819, was also surveyed and sampled. Eleven sewer plugs were installed within those nine manholes.

All work was performed under an approved work plan.

4.4 Reference Areas (Background Radiation)

Two manholes located in an area of Parcel A of HPS features concrete and brick surfaces similar to those present at the sanitary sewer manholes and were selected as the reference (background radiation) area for the associated survey units. Specifically, the manholes are located inside a non-impacted portion of HPS. Figure 2 outlines the Parcel A reference area supplemented with an enlargement displaying approximate points where surveillance activities were performed. (Reference area descriptions and data are presented in Appendix D).

Figure 2. Reference Area – Approximate Manhole Location: Parcel-A



APPENDIX D

REFERENCE AREA MEASUREMENTS

RADIOLOGICAL SURVEY REPORT

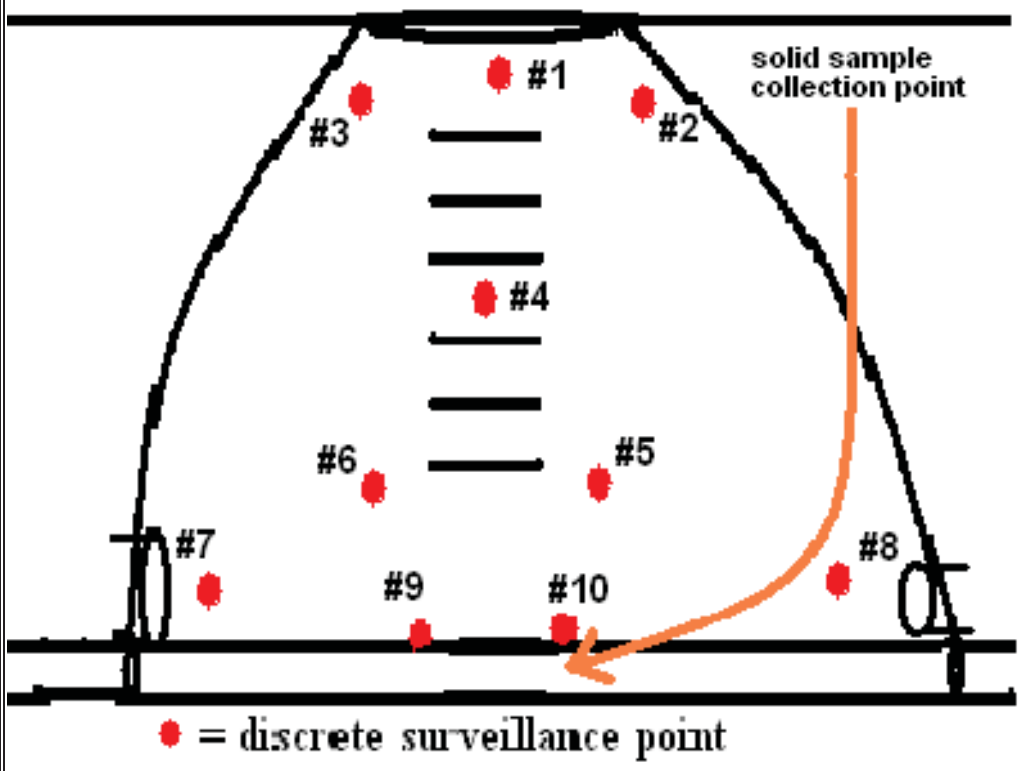
NWTS #:Par A M/H Bkg Brick 012804 Page 1 of 1

DATE:	January 28, 2004	INSTRUMENTATION USED				
TIME:	0800 hours	MODEL	S/N	EFF.%	BKRD	CAL. DUE DATE
SURVEYOR:	Bert Bowers	Ludlum: 19	101733	N/A	5-10 µR/hr	October 1, 2004
LOCATION:	Manhole, Par A (brick)	Ludlum: 2350-1	82955	N/A	10,514 CPM	August 21, 2004
REVIEWED BY:	Daryl DeLong	Ludlum: 2360	178154	α 12%	2 CPM	October 13, 2004
				β 6%	255CPM	

µR dose rates = µR/hr; α, β & γ survey results = CPM

PURPOSE OF SURVEY:
Establish background reference area/levels (from non-impacted M/H location) similar to M/H's to be accessed for pneumatic plug installation (i/s sanitary sewer system).

Parcel A Manhole: Brick Lined



Remarks: Composite sample collected from w/i manhole trench

Survey Results

#	α	β	γ	µR
1	2	317	15996	5
2	4	349	15549	5
3	4	325	16502	7
4	3	419	16022	6
5	4	348	15858	6
6	2	365	15758	6
7	2	300	16384	6
8	0	378	16304	7
9	1	335	15635	5
10	2	334	18530	10
n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a

RADIOLOGICAL SURVEY REPORT

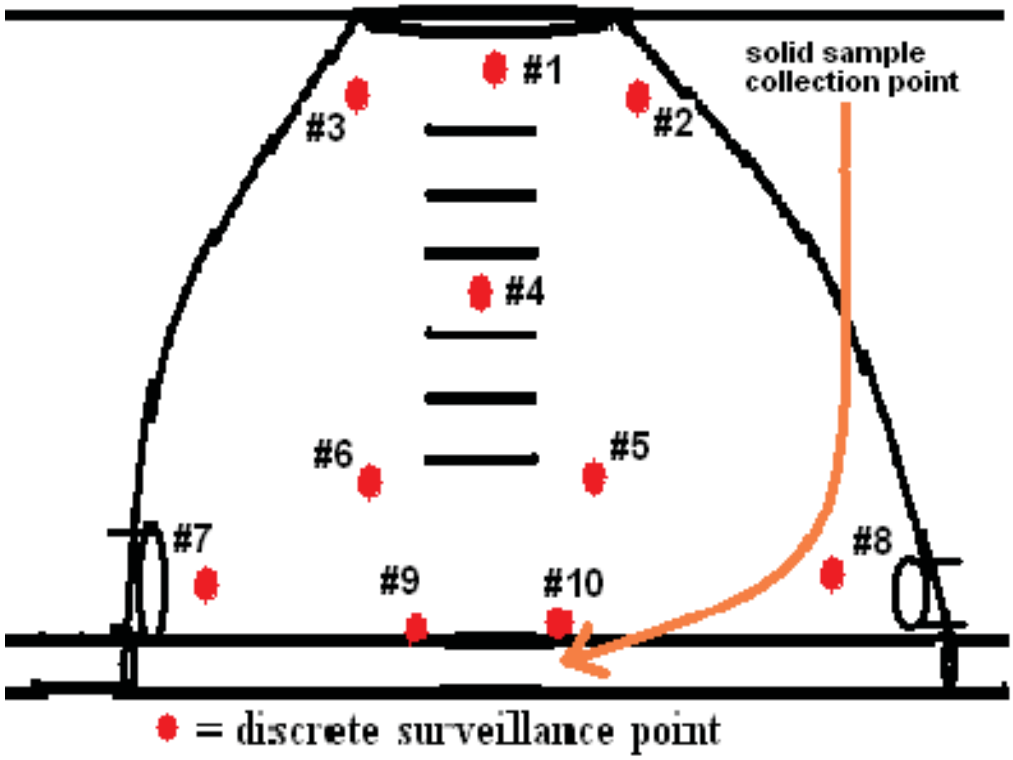
NWTS #: Par A M/H Bkg Concrete 012804 Page __1_ of __1_

DATE:	January 28, 2004	INSTRUMENTATION USED				
TIME:	0800 hours	MODEL	S/N	EFF.%	BKRD	CAL. DUE DATE
SURVEYOR:	Bert Bowers	Ludlum: 19	101733	N/A	5-8 µR/hr	October 1, 2004
LOCATION:	Manhole, Par A (concrete)	Ludlum: 2350-1	82955	N/A	10,514 CPM	August 21, 2004
REVIEWED BY:	Daryl DeLong	Ludlum: 2360	178154	α 12% β 6%	2 CPM 255CPM	October 13, 2004

µR dose rates = µR/hr; α, β & γ survey results = CPM

PURPOSE OF SURVEY:
Establish background reference area/levels (from non-impacted M/H location) similar to M/H's to be accessed for pneumatic plug installation (i/s sanitary sewer system).

Survey Results



#	α	β	γ	µR
1	2	269	9867	5
2	1	270	10302	7
3	3	258	10124	6
4	3	276	10194	8
5	7	277	10706	6
6	3	243	10096	6
7	0	219	10300	7
8	0	232	10523	6
9	2	249	10064	6
10	0	258	12965	8
n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a
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n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a
n/a	n/a	n/a	n/a	n/a

Remarks: Composite sample collected from w/i manhole trench