

# TAB C

Original Taku Gardens 15-6  
Investigation Completed 21 April  
2006

# REPORT OF PROCEEDINGS BY INVESTIGATING OFFICER/BOARD OF OFFICERS

For use of this form, see AR 15-6; the proponent agency is OTJAG.

IF MORE SPACE IS REQUIRED IN FILLING OUT ANY PORTION OF THIS FORM, ATTACH ADDITIONAL SHEETS

## SECTION I - APPOINTMENT

Appointed by Mr. Stanley Sokoloski, Director, Installation Management Agency, Pacific Region Office,  
 Fort Shafter, Hawaii 96858-5100  
*(Appointing authority)*

on October 7, 2005 *(Date)* *(Attach inclosure 1: Letter of appointment or summary of oral appointment data.) (See para 3-15, AR 15-6.)*

## SECTION II - SESSIONS

The *(investigation) (board)* commenced at Fort Shafter, Hawaii at 0800 hours  
*(Place) (Time)*  
 on 20 Oct 2005 *(Date)* *(If a formal board met for more than one session, check here ☐. Indicate in an inclosure the time each session began and ended, the place, persons present and absent, and explanation of absences, if any.) The following persons (members, respondents, counsel) were present: (After each name, indicate capacity, e.g., President, Recorder, Member, Legal Advisor.)*

The following persons *(members, respondents, counsel)* were absent: *(Include brief explanation of each absence.) (See paras 5-2 and 5-8a, AR 15-6.)*

The *(investigating officer) (board)* finished gathering/hearing evidence at 1630 hours on 5 Jan 2006  
*(Time) (Date)*  
 and completed findings and recommendations at 1630 hours on 31 Mar 2006  
*(Time) (Date)*

## SECTION III - CHECKLIST FOR PROCEEDINGS

A. COMPLETE IN ALL CASES		YES	NO <sup>1/</sup>	NA <sup>2/</sup>
1. Inclosures <i>(para 3-15, AR 15-6)</i>				
Are the following inclosed and numbered consecutively with Roman numerals: <i>(Attached in order listed)</i>				
a. The letter of appointment or a summary of oral appointment data?		X		
b. Copy of notice to respondent, if any? <i>(See item 2, below)</i>				X
c. Other correspondence with respondent or counsel, if any?				X
d. All other written communications to or from the appointing authority?				X
e. Privacy Act Statements <i>(Certificate, if statement provided orally)?</i>				X
f. Explanation by the investigating officer or board of any unusual delays, difficulties, irregularities, or other problems encountered <i>(e.g., absence of material witnesses)?</i>		X		
g. Information as to sessions of a formal board not included on page 1 of this report?				X
h. Any other significant papers <i>(other than evidence)</i> relating to administrative aspects of the investigation or board?		X		

FOOTNOTES: <sup>1/</sup> Explain all negative answers on an attached sheet.

<sup>2/</sup> Use of the N/A column constitutes a positive representation that the circumstances described in the question did not occur in this investigation or board.

Exhibits (para 3-16, AR 15-6)		YES	NO	N/A
a.	Are all items offered (whether or not received) or considered as evidence individually numbered or lettered as exhibits and attached to this report?	X		
b.	Is an index of all exhibits offered to or considered by investigating officer or board attached before the first exhibit?			X
c.	Has the testimony/statement of each witness been recorded verbatim or been reduced to written form and attached as an exhibit?	X		
d.	Are copies, descriptions, or depictions (if substituted for real or documentary evidence) properly authenticated and is the location of the original evidence indicated?	X		
e.	Are descriptions or diagrams included of locations visited by the investigating officer or board (para 3-6b, AR 15-6)?			X
f.	Is each written stipulation attached as an exhibit and is each oral stipulation either reduced to writing and made an exhibit or recorded in a verbatim record?			X
g.	Is official notice of any matter taken over the objection of a respondent or counsel, is a statement of the matter of which official notice was taken attached as an exhibit (para 3-16d, AR 15-6)?			X
3.	Was a quorum present when the board voted on findings and recommendations (paras 4-1 and 5-2b, AR 15-6)?			X
<b>B. COMPLETE ONLY FOR FORMAL BOARD PROCEEDINGS (Chapter 5, AR 15-6)</b>				
4.	At the initial session, did the recorder read, or determine that all participants had read, the letter of appointment (para 5-3b, AR 15-6)?			
5.	Was a quorum present at every session of the board (para 5-2b, AR 15-6)?			
6.	Was each absence of any member properly excused (para 5-2a, AR 15-6)?			
7.	Were members, witnesses, reporter, and interpreter sworn, if required (para 3-1, AR 15-6)?			
8.	If any members who voted on findings or recommendations were not present when the board received some evidence, does the inclosure describe how they familiarized themselves with that evidence (para 5-2d, AR 15-6)?			
<b>C. COMPLETE ONLY IF RESPONDENT WAS DESIGNATED (Section II, Chapter 5, AR 15-6)</b>				
9.	Notice to respondents (para 5-3, AR 15-6):			
a.	Is the method and date of delivery to the respondent indicated on each letter of notification?			
b.	Was the date of delivery at least five working days prior to the first session of the board?			
c.	Does each letter of notification indicate -			
(1)	the date, hour, and place of the first session of the board concerning that respondent?			
(2)	the matter to be investigated, including specific allegations against the respondent, if any?			
(3)	the respondent's rights with regard to counsel?			
(4)	the name and address of each witness expected to be called by the recorder?			
(5)	the respondent's rights to be present, present evidence, and call witnesses?			
d.	Was the respondent provided a copy of all unclassified documents in the case file?			
e.	If there were relevant classified materials, were the respondent and his counsel given access and an opportunity to examine them?			
If any respondent was designated after the proceedings began (or otherwise was absent during part of the proceedings):				
f.	Was he properly notified (para 5-5, AR 15-6)?			
g.	Was record of proceedings and evidence received in his absence made available for examination by him and his counsel (para 5-4c, AR 15-6)?			
10.	Counsel (para 5-6, AR 15-6):			
a.	Was each respondent represented by counsel?			
Name and business address of counsel:				
(If counsel is a lawyer, check here <input type="checkbox"/> )				
b.	Was respondent's counsel present at all open sessions of the board relating to that respondent?			
c.	If military counsel was requested but not made available, is a copy (or, if oral, a summary) of the request and the action taken on it included in the report (para 5-6b, AR 15-6)?			
11.	If the respondent challenged the legal advisor or any voting member for lack of impartiality (para 5-7, AR 15-6):			
a.	Was the challenge properly denied and by the appropriate officer?			
b.	Did each member successfully challenged cease to participate in the proceedings?			
12.	Was the respondent given an opportunity to (para 5-8a, AR 15-6):			
a.	Be present with his counsel at all open sessions of the board which deal with any matter which concerns that respondent?			
b.	Examine and object to the introduction of real and documentary evidence, including written statements?			
c.	Object to the testimony of witnesses and cross-examine witnesses other than his own?			
d.	Call witnesses and otherwise introduce evidence?			
e.	Testify as a witness?			
f.	Make or have his counsel make a final statement or argument (para 5-9, AR 15-6)?			
13.	If requested, did the recorder assist the respondent in obtaining evidence in possession of the Government and in arranging for the presence of witnesses (para 5-8b, AR 15-6)?			
14.	Are all of the respondent's requests and objections which were denied indicated in the report of proceedings or in an inclosure or exhibit to it (para 5-11, AR 15-6)?			

FOOTNOTES: 1 Explain all negative answers on an attached sheet.  
2 Use of the N/A column constitutes a positive representation that the circumstances described in the question did not occur in this investigation or board.

SECTION IV - FINDINGS (para 3-10, AR 15-6)

The (investigating officer) (board), having carefully considered the evidence, finds:

See Findings Binder 1, Tab labeled "Findings of Fact"

SECTION V - RECOMMENDATIONS (para 3-11, AR 15-6)

In view of the above findings, the (investigating officer) (board) recommends:

Not Applicable

SECTION VI - AUTHENTICATION (para 3-17, AR 15-6)

THIS REPORT OF PROCEEDINGS IS COMPLETE AND ACCURATE. (If any voting member or the recorder fails to sign here or in Section VII below, indicate the reason in the space where his signature should appear.)

(Recorder)

(Investigating Officer) (President)

(Member)

(Member)

(Member)

(Member)

SECTION VII - MINORITY REPORT (para 3-13, AR 15-6)

To the extent indicated in Inclosure \_\_\_\_\_, the undersigned do(es) not concur in the findings and recommendations of the board. (In the inclosure, identify by number each finding and/or recommendation in which the dissenting member(s) do(es) not concur. State the reasons for disagreement. Additional/substitute findings and/or recommendations may be included in the inclosure.)

(Member)

(Member)

SECTION VIII - ACTION BY APPOINTING AUTHORITY (para 2-3, AR 15-6)

The findings and recommendations of the (investigating officer) (board) are (approved) (disapproved) (approved with following exceptions/substitutions). (If the appointing authority returns the proceedings to the investigating officer or board for further proceedings or corrective action, attach that correspondence (or a summary, if oral) as a numbered inclosure.)

**Findings of fact.** The following findings are submitted. They are grouped according to the main issues specified in the appointing order.

**Whether appropriate and sufficient inquiry was made by the Army and/or its contractors into any potential contamination at Taku Gardens prior to the selection of this 54-acre site for the construction of Army Family Housing (128 units).**

**Initial site characterization: FTW 251**

1. Initial site characterization of FTW 251 (Reference 1, map) took place 10/29/03-10/30/03 with five borings (Reference 2, Field notes: Dearborn). Sampling was conducted by contractor [REDACTED]. Lab testing of boring samples was conducted by contractor [REDACTED] under contract with [REDACTED]. Testing results printed 11/10/03 did not indicate contamination at or above allowable levels [REDACTED].

**Initial site characterization: FTW 283**

2. Initial site characterization of FTW 283 (Reference 4, maps) took place 11/14/03-11/16/03 with three borings, but no samples for HTRW (Hazardous, Toxic and Radioactive Waste) analysis were collected at this time. Field testing and visual sample observation did not indicate contamination. Additional boring took place 12/9/03-12/14/03 with 24 samples taken (Reference 5, Chemical Data Report, FTW-283, App A extract). Lab testing of boring samples was conducted by contractor [REDACTED].  
[REDACTED] Samples were analyzed 12/19/03-01/01/04. Results from sample location AP-8934 (Reference 4, map) indicated presence of 1.4 mg/kg of Polychlorinated Biphenyls (PCB) 1260 (Aroclor 1260; see glossary). Cleanup threshold for PCB-1260 (indeed for all PCBs) is 1 mg/kg (References 5, 6) in accordance with Alaska Department of Environmental Conservation (ADEC) limits. U.S. Army Corps of Engineers (USACE), Alaska District, published its findings of sampling at FTW-283 (Reference 9) January, 2004 (Signed 02/02/04) recommending further testing of soils in vicinity of boring site AP-9834.

**Follow-up site characterization: FTW 283**

3. Follow-up investigation of the area ensued February, 2004 (Reference 7, Chemical Data Report, FTW-283). Follow-up sampling centered around boring sample site AP-8934 (Reference 4, map) and was conducted in 02/17/04-02/18/04 (Reference 7, para 4.4). Methodology used is referred to as the "step-out" method and is recognized as the appropriate methodology (although no specific reference guidance exists) for follow-up investigations after discovery of contaminants. Generally, "step-out" sampling consists of samples taken in concentric circles equidistant from each other. Twelve boring samples were taken at variety of depths (Reference 8, Chemical Data Report, FTW-283, App A extract). Lab



testing of boring samples was conducted by contractor [REDACTED] 03/11/04-03/16/04. PCBs were detected in below-reportable levels in surface samples at site AP-8934 (References 7, 8). No PCBs were detected in other samples (References 7, 8). USACE, Alaska District published the above sampling results 04/06/04 (Reference 7).

4. Documented quality control problems exist [REDACTED] that cast doubt on PCB finding(s) (Reference 6).

#### DD Form 1391

5. Site environmental categorization not included in submission of DD Form 1391, last updated 17APR03, paragraph 15b. (Reference 14) as required in AR 415-15 and DA PAM 415-15 (Reference 10).
6. IAW AR 415-15, F-2 Environmental Considerations, paragraph e. *Site Categorization*, FTW283 would be Category III - "The site is known to be contaminated or there is a strong suspicion contamination will be encountered during construction" (Reference 10) given discovery of PCB found on-site during site characterization.
7. IMA PARO (or any other higher HQ MACOM) did not certify site categorization IAW AR 415-15, F-2.d. (Reference 10).

#### Environmental Assessment

8. Environmental Assessment (EA), Construct Replacement Family Housing and Revitalize Family Housing Neighborhoods Fort Wainwright, Alaska, 2004-2010 published by USAG-AK JUN04 (Reference 15). EA addresses numerous proposed housing projects including Chilkoot, Taku Gardens and Gertsch Heights. (Reference 15, para 2.1).
9. EA does not discuss Taku Gardens in para 3.9.2., Environmental Health and Safety Risks for Children, Environmental Consequences (Reference 15, page 43).
10. EA only describes Taku Gardens as a prior white metal dump in para. 3.10.2, Hazardous Waste/Materials, Environmental Consequences (Reference 15, page 45).
11. EA specifically states, "There are no known hazardous waste sites on the remaining proposed project sites." (Reference 15, para 3.10.2).
12. EA does not contain reference to discovery of PCB during site categorization at site FTW-283 (Reference 15).
13. EA does not contain reference to historic research of previous site occupation or aerial photographic evidence as described USACE's CDR (Revised), published APR04 (Reference 7, page i, Executive Summary paragraph (not enumerated) 3).
14. EA specifically states, "If contamination is discovered during preconstruction or construction, appropriate soil remediation would be implemented." (Reference 15, para 3.10.2 Environmental Consequences, Proposed Action).
15. EA recommends fencing construction area vicinity housing construction at Siku Basin due to its close proximity to Tanana Middle School (Reference 15, para 3.9.2 Environmental Consequences, Proposed Action). No such consideration is

given to Taku Gardens construction despite its close proximity to housing and a playground (Reference 77).

#### Historic Site Usage/Research

16. Federal Facilities Agreement (FFA), 18NOV91 between U.S. Army, AK and Environmental Protection Agency, Region 10 (Reference 12, page 20392) U.S. Army agrees to perform site evaluations to determine whether potential contamination exists. Site evaluation will include at a minimum interviewing past employees with historic knowledge of area. Evaluation will also include inspection of all available aerial photographs.
17. USACE Geophysical site investigation (Reference 13, para 2.2 Site History and Known Contamination, JUL04) includes reference to aerial photograph of FTW 251/283 circa 1953 depicting troop encampment on site. This information is not reflected in the EA.
18. USACE Chemical Data Report, Foundation Study HTRW FTW251 (Reference 19, Executive Summary, paragraph 3 (not enumerated)), page 8, includes reference to aerial photography circa 1956 (Reference 29, photo) suggest a materials storage or waste disposal activity in the area around AP-8960. This information is not reflected in the EA.
19. Aerial photographs circa 1957 apparently depicting possible transformer and/or communication(s) facilities vicinity FTW 251/283 [REDACTED] not discovered until after discovery of contamination on or about JUL05.
20. [REDACTED]

#### Pre-Construction Preparations

21. Geophysical Site Investigation, Family Housing Replacement, Taku Sites (FTW251&FTW283) Final Submittal JUL04 (Reference 13, Executive Summary, page i) states, "However, as part of construction activities, some effort should be made to isolate the PCB soils and prevent them from being spread in an uncontrolled fashion. It is recommended that the PCB soils be either removed from areas of the site planned for residential construction, or be used at the site in such a way that future risk of exposure is minimized."
22. Geotechnical Findings Report, Family Housing Replacement -- Taku Gardens Site (FTW283) (Reference 86) preliminary finding reports, "...low levels of PCBs." being found in one of the sample borings. Report also includes aerial photograph of site depicting site occupation circa 1956 (Reference 86).
23. BCOE Review (Bidability, Constructability, Operability and Environmental) (Reference 83), which normally incorporates the geotechnical investigation (Reference 74), took place before the completion of the geotechnical investigation. This effectively prevented the project designers from including PCB precautions in the contract language.



24. "Specific recommendations of geotechnical report were not specifically incorporated into the construction contract through contract specifications." (Reference 20, questionnaire #7).
25. Contract Statement of Work, Replacement Housing, W912DW-04-C-0019, Section 02112, Field Screening of Soils for POL Contamination, Part 1 General, paragraph 1.2.2, Available Data (Reference 16), references Chemical Data Report, APR04 (which indicated identification of PCB found at site FTW283).
26. Contract Statement of Work, Replacement Housing, W912DW-04-C-0019, Section 02112, Field Screening of Soils for POL Contamination, Part 3 Execution, paragraph 3.2.2 Indication of Soil Contamination sub-paragraphs a. & b. directs contractor to use 20 ppm as the trigger for field screening (Reference 16, Section 02112, page 3 of 7). Focus of entire section is POL-related. No mention of PCBs.
27. Contract Statement of Work, Replacement Housing, W912DW-04-C-0019, is POL (Petroleum, Oil and Lubricants) focused and does not specifically address presence of PCBs on-site nor does it delineate specific field screening for detecting possible presence of PCBs (Reference 16).
28. Contract Statement of Work (Reference 16) paragraph 3.3.2 requires contractor to, "...exercise a high degree of control over field screening in conjunction with construction..."
29. Contract Statement of Work (Reference 16) paragraph 3.2.2 directs containment cells being placed within the construction site if at all possible until receipt of lab analysis.
30. Contract, Statement of Work (Reference 85) paragraph 4.1.1 Chemical Data Report, specifically states, "...as well as PCB's and other low-level multi-component chemical contamination." as having been found on-site in some borings.
31. [REDACTED]
32. [REDACTED] indicates, "From all indications on how the project moved forward the concern was related to how to handle petroleum contamination without taking pesticides or PCB's into consideration." [REDACTED]
33. Following personnel's status vis a vis having seen/read USACE Geophysical site investigation, final submittal (JUL04) (Reference 13) which indicated presence of PCB contamination found during site characterization for FTW283 :
  - a. [REDACTED]
  - b. [REDACTED]
  - c. [REDACTED]
  - d. [REDACTED]

- e. [REDACTED] st
- f. [REDACTED]
- g. [REDACTED]

### Conclusions

1. It appears that USACE geotech and geophys site assessments were sufficient, but critical information (e.g. presence of PCBs) was not communicated *effectively* to key decision-makers [REDACTED] and on-site personnel [REDACTED] who later would play significant roles in the handling of discovered contamination.
2. Since the DD Form 1391 did not contain reference to presence of contaminants nor was it staffed with IMA PARO, key decision-makers were left unaware of potential site hazards. Exclusion of PCBs from the EA is also a critical misstep. It appears that either the EA was prepared a bit too soon and too hastily, or the site investigation took place too late. Either way, PCBs should have been included in the EA.
3. The contract and [REDACTED] contained some reference to PCBs, but was largely POL-centric. Key references to PCBs found during site investigation were not spelled-out in the contract, but instead left as a reference for the reader to look-up (citation made to the geophys/tech and chemical data reports). Given the enormous volume of documentation associated with this project (or any construction project) the likelihood of this being overlooked was high. Key potential site hazards must be addressed in an abbreviated summary presented to all personnel involved with the project.
4. Given the known presence of contamination on-site as found during site investigation, specific protocols should have been established to deal with further discovery of possible contamination during construction to include soil testing menus that would *always* look for PCBs.

Whether appropriate, sufficient, and timely decisions were made and actions pursued by the Army and the construction contractor when the potential contamination was first discovered in late June, 2005, in order to characterize the contamination, delineate the effected area(s), and contain the potential contamination

### Discovery of contamination

1. 23JUN04 (Thursday) at 1424 hours, initial excavation of site B52 (FTW283) was undertaken [REDACTED]

2. 23JUN04 (Thursday) at 1442 hours a field sample (FS-1052) was taken at B52 two feet below ground (Reference 31, questionnaire 22).
3. 23JUN04 (Thursday) at 1530 hours excavation in the NW corner of B52 released a solvent-like odor (Reference 31, questionnaire 22).
4. Soil from northwest corner of B52 was screened (Reference 31, questionnaire 22) by contractor's field sampler [REDACTED] IAW contractual SOW (Reference 21) with a Photo-Ionization Detector (PID). PID detected 50-60 ppm (Reference 31, questionnaire 22).
5. Construction at B52 was halted (Reference 31, questionnaire 22). [REDACTED]  
[REDACTED] was informed 23JUN05 (Thursday) at sometime prior to 1600 hours [REDACTED]
6. [REDACTED] informed [REDACTED] discovery of apparent contamination late afternoon 28JUN05 (Tuesday).
7. Contract [REDACTED] (Reference 16) Section 02112 Part 1 General paragraph 1.2.4 Compliance requires, "...any instances where compliance would exceed the scope of work or specific requirements of the contract...shall be brought to the immediate attention of the Contracting Officer for resolution."
8. [REDACTED] and other USACE (specifics unverifiable) representatives 29JUN05 (Wednesday) approximately 1130 hours.

#### Removal action or continued site characterization

9. Contract [REDACTED] (Reference 16) Section 02112 Part 3 Execution, paragraph 3.2.2 subparagraph b. directs contamination found to be in the range of 20ppm to 99ppm, "...will need to be stored in an ADEC approved temporary soil containment cell and tested through an approved lab."
10. [REDACTED] of contractual [REDACTED] requirement to segregate and store contamination in containment cell.
11. Soil was never placed in containment cell(s) (Reference 46, 51, 52 photos)
12. Excavation at B52 was halted on 23JUN05 (and remained in abeyance throughout timeline of this investigation). However, excavation/trenching for a sewer and/or glycol line begins/continues vicinity B52 as of 8JUL05 1524 hours [REDACTED] contractor [REDACTED]; notes from field screener) and work/site preparation continues unabated in close proximity.
13. Samples of potentially contaminated soil taken by contractor [REDACTED] 30JUN05 [REDACTED] 9 soil samples were taken (Reference 36, questionnaire 33c. & Reference 37).
14. [REDACTED] directs contractor to emplace poly sheeting over excavated soil from B52 [REDACTED] based upon possible contamination having been found site B53; specific date of directive unknown although same timeframe as 30JUN05 sampling.
15. Initial tests performed on soil samples taken 30JUN05 include: TCLP (Toxicity Characteristic Leaching Procedure), and PAH (Polynuclear Aromatic

Hydrocarbons), and BTEX (Toluene, ethylbenzene, and xylenes), and PCBs (Reference 33, questionnaire 31 and Reference 37).

16. Not all samples underwent the same testing regime. Three of nine soil samples were tested for PCB (Reference 36, questionnaire 33 and Reference 37) based upon judgement of on-site personnel including contractor field screener, [REDACTED]
17. [REDACTED] cites budgetary constraints (end of fiscal quarter and running out of money) as partially determining what testing would be performed on samples [REDACTED]
18. Samples were sent under "RUSH" specification, work order 1053524 with a "Results Due" requirement date of 7JUL05 (Reference 37).
19. Initial testing of sampling from 30JUN05 conducted by contractor SGS (Reference 36, questionnaire 34 and Reference 37).
20. Preliminary test results completed by [REDACTED] on 11JUL05 with final results released 12JUL05 (Reference 37; Reference 36, questionnaire 38).
21. Final results of sampling taken 30JUN05 released 12JUL05 indicate presence of trichlorophenol and possible PCBs in one sample (a sample that was not directed to be tested for PCBs, but anomalies observed during testing at the lab led contractor [REDACTED] to note that the sample reacted in a manner indicative of having PCBs present) [REDACTED]
22. 13JUL05 email from [REDACTED] informs FRA DPW Environmental of test results/contamination at B52.
23. FT Richardson environmental office person(nel) was/were first informed of discovery of potential contamination at B52 13JUL05 (Wednesday) (Reference 34, questionnaire 24).
24. 13JUL05 email from [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]
25. 13JUL05 email from [REDACTED]  
[REDACTED] returns from leave that day [REDACTED]
26. 13JUL05 email from [REDACTED] concurs with 20JUL05 meeting date and also suggest possible course of action for dealing with contamination [REDACTED] Email also discusses project growing out of scope of contract and mentions POL-centric contract not preparing contractor for a real investigation of possible contamination.
27. 20JUL05 [REDACTED] returns from leave [REDACTED]
28. 20JUL05 meeting/conference-call held to discuss issue and determine what to do relative to contamination found at B52 (References 39 & 40). Focus is primarily on trichlorophenol and not PCBs. Attendees included: DPW Environmental (FWA and FRA); USACE [REDACTED] and contractor [REDACTED]  
[REDACTED]
29. 20JUL05 meeting determined further testing of 9 samples taken 30JUN05 should take place, specifically looking for PCBs, Volatiles and Semi-Volatiles (VOCs and SVOCs) (Reference 40). Meeting also determined to take additional samples



from vicinity B52. No decision to further characterize the general surrounding area vicinity B52 through stepped-out sampling.

30. New sampling of B52 began 22JUL05 by contractor [REDACTED] with five samples collected from the locations previously sampled 30JUN05. Four samples were collected from stockpiled soil and one sample was collected from the bottom of the excavation at B52 (References 63 and 50, questionnaire 30).
31. As of 22JUL05, stockpiles vicinity site B52 were comprised of two groups: one approximately 25 feet in length; the second approximately 50 feet in length; both covered in poly-sheeting (Reference 84). Excavated soil was not, "...stored in an ADEC approved temporary soil containment cell and tested through an approved lab;" (References 42 and 16) IAW contractor [REDACTED]
32. As of 24JUL04 photo(s) of stockpile(s) and excavation site vicinity B52 not covered nor is access restricted (Reference 55, questionnaire 67; Reference 39, questionnaire 50).
33. Preliminary testing data from samples collected 22JUL05 were received via email 29JUL05 (Friday) from contractor [REDACTED] noting the extremely high percent of Aroclor 1260 (PCB).
34. 1AUG05 (Monday) [REDACTED] directs contractor to place warning tape around the perimeter of excavation and stockpile, vicinity B52 [REDACTED]
35. Final testing data results from samples collected 22JUL05 forwarded from [REDACTED] 2AUG05 (Tuesday) [REDACTED]
36. Test results of samples taken 22JUL05 released 2AUG05 (Reference 43) indicate four samples contain PCBs at levels greater than the "action" level of 1ppm. (References 5, 7, 84)
37. On-site walk-through conducted 3AUG05 [REDACTED] direct the walk-through. Discussion focused on ADEC concerns being properly met.
38. [REDACTED] directs contractor to erect orange fencing vicinity B52 [REDACTED] 4AUG05.
39. Photos released via email 5AUG05 (specific date taken unknown) of site vicinity B52 and associated stockpiles (Reference 46) depict partial poly-sheet covering of stockpiles and warning tape posted around excavation.
40. Photo taken o/a 5AUG05 (date stamp by camera on digital image) of site vicinity B52 and associated stockpiles (Reference 51) depict orange fencing (so-called "snow fence" around excavation and stockpiles and poly sheeting covering at least one stockpile.
41. 5AUG05 [REDACTED] proposes to [REDACTED] using EPA Self-Implementing regulations for PCB Remediation, similar to a project he'd undertaken previously [REDACTED]
42. 5AUG05 [REDACTED] proposes an expanded sampling/boring plan [REDACTED] to attempt to characterize contamination at the site.

43. 8AUG05 teleconference [REDACTED] indicate consideration being given to possible (prior) migration of contamination by equipment [REDACTED] used in the original excavation of B52. Further discussion regarding removal of soil in containers suggested [REDACTED] cost of removal/cleanup and potential source of funding, use of test kits, and notification of ADEC and EPA [REDACTED]. Participants included [REDACTED].
44. EPA [REDACTED] reference discovery of PCB contamination at site B52. [REDACTED] already was coordinating with ADEC and EPA from the perspective of using EPA Self-Implementing regulations for PCB Remediation [REDACTED] at site B52.
45. [REDACTED] informed 10AUG05 by [REDACTED] reference historic (previous) use of site [REDACTED] and indication site contamination may be larger than currently characterized by others. [REDACTED] had previously been informed by [REDACTED] (date unknown) regarding contamination at site B52.
46. Photo taken o/a 10AUG05 (date stamp by camera on digital image) of site vicinity B52 and associated stockpiles (Reference 52) depict orange fencing around excavation and stockpiles. No apparent change from photo date-stamped 5AUG05 (Reference 51).
47. ADEC enters Taku Gardens into Contaminated Sites Database 11AUG05, file number 108.38.085 (Reference 59).
48. IMA PARO environmental personnel [REDACTED] informed of reference contamination on 12AUG05 [REDACTED].
49. Sampling from northeast corner of excavation at site B52, 6" below bottom of excavation taken 22JUL5 with results completed 15AUG05, returns with above clean-up level dioxin/furan contamination (Reference 64). Toxicity equivalency factor of contaminant is 7,000 times the EPA clean-up level.
50. [REDACTED] presents (via email) 18AUG05 a draft sampling plan [REDACTED] to be conducted by contractor [REDACTED]. This appears to be the first effort at step-out sampling to further characterize the area around B52.
51. 22AUG05 [REDACTED] submits their Area 52 sampling plan [REDACTED]. Plan includes addition of gated/locked chain-link fence around B52. Sampling plan includes 47 planned samples, including four boring sample sites 50 feet outside of B52. The remaining samples were to be taken from excavation site and stockpiles
52. [REDACTED]
53. Garrison Taku Gardens meeting conducted 23AUG05 (Reference 67, Reference 69, questionnaire 89), approximately 1515 hours included [REDACTED] via [REDACTED]



teleconference). [REDACTED] requested the meeting to determine the Command's direction on Taku Gardens. Decisions included: Not to expand fencing unless samples indicated a need; Expedite sampling in the B52 area with results back prior to 29AUG05 (the key date if construction were to not be delayed until Spring 06); Not to continue construction in any area that contained contamination

54. ADEC/EPA/USACE/FRA Environmental Taku Gardens teleconference conducted approximately 1300, 23AUG05, arranged [REDACTED]  
[REDACTED] Purpose of the teleconference was to develop recommendations on how to proceed with focus on worker protection, prevention of spreading contamination, and not disrupting construction (Reference 70, questionnaire 91; Reference 71). Final recommendations included: Close down construction on 6 housing sites beyond just site B52. Recommendation based primarily on historic site photos.

### Conclusions

1. Who is in charge? Lines of responsibility, accountability and authority are muddled leading to dissipated effort-levels and paralysis of analysis. All of the important decisions (what to test samples for; where/how/what to ID as an exclusion zone fence) are consensus/committee-type decisions. This resulted in skirting of tough decisions/choices (e.g. halting construction until more robust characterization testing takes place; who would pay for remediation/removal) and delays.
2. Sense of urgency. There seems to be little sense of urgency to deal with the contamination. Days and weeks go by without key personnel pulling-in their supervisors/leaders to assist with decision-making.
3. If the presence of PCBs and nature of historic occupation (aerial photos) had been known to key USACE, Garrison, and contractor personnel, the discovery may have triggered a more purposeful, rapid, coordinated and aggressive effort to identify, delineate, and contain the contamination.
4. Administration of the contract appears lax (not read, followed or enforced); contract was not read or followed, but contract was voluminous and ambiguous with respect to this contingency. Key personnel hadn't reviewed or seen portions of the contract.
5. Responsibility for decision-making with regards to contamination response needed to be fixed in advance or at least faster and more clearly. Numerous proposed courses of action were developed by various personnel, but no one served as the ultimate decision-maker until COL Boltz and [REDACTED] intervened.
6. Response to the contamination was hampered by communication and line of supervision issues. Significant line of supervision, coordination and communication challenges between FRA Environmental and FWA Environmental personnel became very clear when reviewing email communication, written responses to questions, and during the personal interviews conducted. Time/distance factors also seemed to play a negative role with regards to developing a rapid/coordinated response.

7. There appears to have been some desensitization of key personnel with regard to discovery of contamination on-site at Taku Gardens. While not addressed as part of this investigation, numerous other contaminants, white metal, etc., were discovered at FTW251/283 during construction. This, coupled with FWA itself being a National Priorities List site, may have led to a certain callousness at the discovery of yet another site of contamination... [REDACTED] stated as much during my interview with him.

Whether appropriate, sufficient, and timely decisions were made and actions pursued by the government to safeguard the health/safety of project employees/contractors, installation personnel, the community, as well as to protect the natural environment from this contamination.

#### Fencing/Prevention of spreading contamination

1. U.S. Army Alaska Institutional Controls Standing Operating Procedure (Reference 72), Section 2. Purpose, states, "...typical controls are: Installation and maintenance of signs or fences to restrict access to an area; Patrols and enforcement of access restrictions by Military Police;"
2. 1AUG05 [REDACTED] directs contractor to place warning tape around the perimeter of excavation and stockpile, vicinity B52 [REDACTED] This is 19 days after lab confirmation of contamination.
3. [REDACTED] directs contractor to erect orange fencing vicinity B52 [REDACTED] 4AUG05. This is 22 days after lab confirmation of contamination.
4. Photos released via email 5AUG05 (specific date taken unknown) of site vicinity B52 and associated stockpiles (Reference 46) depict partial poly-sheet covering of stockpiles and warning tape posted around excavation.
5. Photo taken o/a 5AUG05 (date stamp by camera on digital image) of site vicinity B52 and associated stockpiles (Reference 51) depict orange fencing (so-called "snow fence") around excavation and poly sheeting covering stockpiles. 23 days after discovery of contamination.
6. Air sampling suggested by [REDACTED] 18AUG05 [REDACTED] but not implemented until after construction shut-down. Watering down of site (to prevent particulates from becoming airborne) not implemented until shut-down of construction.
7. Soil samples from nearby playground tested at above clean-up levels, as did 2-3 pieces of construction rolling stock (Reference 77) until they were decontaminated indicating migration of contamination.

*Investigating Officer's observation: Decontamination process routinely used (Reference 7, section 3.5) for boring equipment during pre-construction sampling. Same process should be used during on-site discovery of suspect soil when identified by field screener.*

8. Vehicles reported entering exclusion area o/a 28AUG05 (Sunday). "Flagging" (safety tape) reported as inadequate (Reference 76).
9. Contractor(s) and others ignoring fencing around stockpiles vicinity B52 as of 30AUG05. Portions of stockpiles with contaminants partially removed (Reference 73).
10. Expanded exclusion area fencing not yet installed as of 20SEP05 (Reference 72).

#### Occupational Health and Safety

11. U.S. Army Alaska Institutional Controls Standing Operating Procedure (Reference 72), Section 4. Responsibilities, states, "Public Works shall also:
  - (1) Establish, maintain and routinely update complete records of all known or suspected sites, restoration actions and Institutional Control;
  - (2) Ensure that all affected tenants and contractor organizations are informed of:
    - (a) known soil...contamination in their area of operation;
12. [REDACTED] directs [REDACTED] 5JUL05 employees to ensure they have respirators (IAW SOW, Safety and Health Program, [REDACTED] during sampling.
13. 17AUG05 [REDACTED] recommends to [REDACTED] and [REDACTED] to conduct air sampling, establishment of a chain-link fence around buildings 50-55 until sampling, being developed by [REDACTED] is complete [REDACTED]. Neither is accomplished for some weeks.
14. Preliminary sampling results first discussed with the contractor [REDACTED] 26AUG05 [REDACTED].
15. Contractor [REDACTED] formally requests sampling results from government 31AUG05 [REDACTED] indicating not having been fully informed, "6. We have a Certified Industrial Hygienist to determine the action required for the protection of employees' health. The CIH requires a copy of the Government test results identifying the contaminants before he can make a recommendation."
16. Personnel visiting the construction site as of 30AUG05 not being tracked (Reference 73) IAW ADEC/EPA guidance.
17. Health screening for government/contractor personnel began early SEP06 (Reference 79 and Reference 80), but without a baseline on record, it is impossible to determine level of exposure.

#### Protecting/Communicating with the Community

18. Federal Facilities Agreement (FPA), 18NOV91 between U.S. Army, AK and Environmental Protection Agency, Region 10 (Reference 12, page 20379-20380) directs the Army to ensure, "...any monitoring reasonably required to assure that such actions protect the public health and welfare and the environment..."
19. No specific precautions were enacted in recognition of the close proximity of the discovered contamination to housing and a playground (Reference 77).
20. Contract [REDACTED] (Reference 16) Section 02112 Part 3 Execution, paragraph 3.2.2 subparagraph b. directs contamination found to be in the range of 20ppm to

99ppm, "...will need to be stored in an ADEC approved temporary soil containment cell and tested through an approved lab."

21. [REDACTED] was not aware [REDACTED] of contractual [REDACTED] requirement to segregate and store contamination in containment cell.
22. Soil was never placed in containment cell(s) (Reference 46, 51, 52 photos)
23. [REDACTED] directs contractor to emplace poly sheeting over excavated soil from B52 [REDACTED] based upon possible contamination having been found site B52; specific date of directive unknown although same timeframe as 30JUN05 sampling.
24. FWA Town Hall meeting 6SEP06 included a presentation (Reference 81) that states during Site Selection and Pre-Construction testing, "Area testing was conducted and results showed no contamination". Sampling did find contamination (Reference 9).
25. FWA Town Hall meeting 6SEP06 included a presentation (Reference 81) that states, "Testing Plan initiated throughout the site" (Reference 81) after contamination was found but prior to the Stop Work Order. Broader area testing did not actually occur throughout the site until after issuance of a Stop Work Order.

### Conclusions

1. Special effort should have been made to secure the construction site, or at least areas of suspected contamination, given the close proximity of housing and a playground. Extensive guidance exists regarding this, but none of it was adhered to or followed. Construction sites and equipment are children magnets and this should have been recognized during the planning stages of construction. The EA failed to specify this sort of restriction as it did for Siku Basin.
2. Protection of the contaminated site (regardless of whether we're just addressing site B52 or the later expanded exclusion zone) appears to have been inadequate throughout all of July and most of August. This seems to be the result of lack of fixed responsibility, accountability and authority.
3. There seemed to be quite a bit of "distance leadership"...as reflected by personnel assuring EPA and others that the site was secured without personally witnessing the security steps taken (or not) (e.g. fencing). It is apparent now that most of those assurances were inaccurate.
4. Contaminated soils were not properly covered, safeguarded, or monitored which resulted in spreading of contamination via vehicles, wind and probably foottraffic. Had the contract recommendation to containerize suspected contaminated soil been followed, potential spreading of contamination may have been significantly reduced.
5. Communication to the local community/residents was inaccurate and late. Contamination was found on-site during pre-construction soil testing and that should have been told to the local residents during the September Town Hall meeting.