

SDMS # 98558



U.S. Environmental Protection Agency,  
Region 9 and the National Guard Bureau and  
the Arizona Dept. of Environmental Quality  
and the Arizona Dept. of Water Resources

## Federal Facility Agreement

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 9  
AND THE  
NATIONAL GUARD BUREAU  
AND THE  
ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY  
AND THE  
ARIZONA DEPARTMENT OF WATER RESOURCES

IN THE MATTER OF:

The National Guard Bureau

Arizona Air National  
Guard Base

Federal Facility  
Agreement Pursuant To  
CERCLA Section 120

Administrative  
Docket Number: 1994-18

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1 Based on the information available to the Parties on the effective date of this  
2 FEDERAL FACILITY AGREEMENT ("FFA"), and without trial or adjudication of any  
3 issues of fact or law, the Parties agree as follows:  
4

## 5 1. JURISDICTION 6

7 1.1 The United States Environmental Protection Agency ("EPA") and the  
8 National Guard Bureau ("NGB") enter into this Agreement pursuant to CERCLA  
9 section 120(e)(2), 42 U.S.C. § 9620(e)(2); Executive Order 12580; the National  
10 Environmental Policy Act, 42 U.S.C. Section 4321; and the Defense Environmental  
11 Restoration Program (DERP), 10 U.S.C. Section 2701 et. seq.  
12

13 1.2 The State of Arizona (the "State") enters into this Agreement pursuant to  
14 CERCLA sections 120(f) and 121, 42 U.S.C. §§ 9620(f) and 9621, and the Arizona  
15 Revised Statutes sections 49-202, paragraphs A and B, and 45-105, and in  
16 accordance with the DSMOA, as defined below.  
17

## 18 2. PARTIES 19

20 2.1 The Parties to this Agreement are EPA, NGB and the State. The terms of  
21 the Agreement shall apply to and be binding upon EPA, NGB and the State.  
22

23 2.2 This Agreement shall be enforceable against all of the Parties to this  
24 Agreement. This Section shall not be construed as an agreement to indemnify any  
25 person. NGB shall notify its agents, members, employees, response action  
26 contractors for the Site, and all subsequent owners, operators, and lessees of the Site,  
27 of the existence of this Agreement.  
28

29 2.3 Each Party shall be responsible for ensuring that its contractors comply  
30 with the terms and conditions of this Agreement. Failure of a Party to provide proper  
31 direction to its contractors and any resultant noncompliance with this Agreement by a  
32 contractor shall not be considered a Force Majeure event or other good cause for  
33 extensions under Section 9 (Extensions), unless the Parties so agree or unless  
34 established pursuant to Section 12 (Dispute Resolution). NGB will notify EPA and the  
35 State of the identity and assigned tasks of each of its contractors performing work un-  
36 der this Agreement upon their selection.  
37

38 2.4 The Department of Environmental Quality ("DEQ") and the Department of  
39 Water Resources ("DWR"), as agencies of the State of Arizona, shall speak with one  
40 voice between them in all decisions of the Parties which may be taken to dispute  
41 resolution under this Agreement, including but not limited to decisions under Sections  
42 7.8, 7.10, 8, 9, 11.2, 30 and 36. It shall be the responsibility of the State agencies to  
43 determine who shall present the one position on behalf of the State.  
44

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### 3. DEFINITIONS

3.1 Except as noted below or otherwise explicitly stated, the definitions provided in CERCLA, CERCLA case law, and the NCP shall control the meaning of terms used in this Agreement.

(a) "Agreement" shall refer to this document and shall include all Appendices to this document to the extent they are consistent with the original Agreement as executed or modified. All such Appendices shall be made an integral and enforceable part of this document. Copies of Appendices shall be available as part of the administrative record, as provided in Subsection 26.3.

(b) "ARARs" shall mean federal and State of Arizona applicable or relevant and appropriate requirements, standards, criteria, or limitations, identified pursuant to section 121 of CERCLA, 42 U.S.C. § 9621.

(c) "CERCLA" shall mean the Comprehensive Environmental Response, Compensation and Liability Act, Public Law 96-510, 42 U.S.C. §§ 9601 et seq., as amended by the Superfund Amendments and Reauthorization Act of 1986, Public Law 99-499 ("SARA"), and any other amendments.

(d) "Days" shall mean calendar days, unless business days are specified. Any submittal that under the terms of this Agreement would be due on Saturday, Sunday or a federal or State of Arizona holiday shall be due on the following business day.

(e) "DEQ" shall mean the Arizona Department of Environmental Quality, its successors and assigns and its duly authorized representatives.

(f) "DSMOA" shall mean the Department of Defense/State of Arizona Memorandum of Agreement executed on March 13, 1991 by DEQ and the Department of Defense, or any agreement that by its terms replaces such March 13, 1991 Memorandum of Agreement.

(g) "DWR" shall mean the Arizona Department of Water Resources, its successors and assigns and its duly authorized representatives.

(h) "EPA" shall mean the United States Environmental Protection Agency, its employees and duly authorized representatives.

(i) "Feasibility Study" or "FS" means a study conducted pursuant to CERCLA and the NCP which fully develops, screens and evaluates in detail remedial action alternatives to prevent, mitigate, or abate the migration or the release of hazardous substances, pollutants, or contaminants at and from the Site.

1 (j) "Federal Facility" shall mean the 162nd Tactical Fighter Group, Arizona Air  
2 National Guard Base located in Tucson, Arizona and contained within the  
3 Tucson International Airport Area Superfund Site. Such Superfund Site is  
4 described in the National Priorities List Docket and its boundaries are set forth  
5 in the map attached as Attachment B hereto.  
6

7 (k) "Meeting," in regard to Project Managers, shall mean an in-person  
8 discussion at a single location or a conference telephone call of all Project  
9 Managers. A conference call will suffice for an in-person meeting at the  
10 concurrence of the Project Managers.  
11

12 (l) "Natural Resources Trustee(s)" or "Federal or State Natural Resources  
13 Trustee(s)" shall have the same meaning and authority as provided in CERCLA  
14 and the NCP.  
15

16 (m) "Natural Resources Trustee(s) Notification and Coordination" shall have the  
17 meaning provided in CERCLA and the NCP.  
18

19 (n) "National Contingency Plan" or "NCP" shall refer to the regulations  
20 contained in 40 CFR 300.1 et seq. and any subsequent amendments.  
21

22 (o) "NGB" shall mean the United States Department of the Army and the Air  
23 Force, National Guard Bureau, its employees, members, agents, and authorized  
24 representatives. "NGB" shall also include the Department of Defense, to the  
25 extent necessary to effectuate the terms of the this Agreement, including but  
26 not limited to, appropriations and Congressional reporting requirements.  
27

28 (p) "Operation and maintenance" shall mean activities required to maintain the  
29 effectiveness of response actions.  
30

31 (q) "Project Manager" or "RPM" shall have the meaning and authority provided  
32 in the NCP and shall have the duties and authorities set forth in Section 18  
33 (Project Managers) below.  
34

35 (r) "Remedy" or "Remedial Action" or "RA" shall have the same meaning as  
36 provided in section 101(24) of CERCLA, 42 U.S.C. § 9601(24), and the NCP,  
37 and may consist of Operable Units.  
38

39 (s) "Remedial Design" or "RD" shall have the same meaning as provided in the  
40 NCP.  
41

42 (t) "Remedial Investigation" or "RI" means that investigation conducted  
43 pursuant to CERCLA and the NCP. The RI serves as a mechanism for  
44 collecting data for site and waste characterization and conducting treatability

1 studies as necessary to evaluate performance and cost of the treatment  
2 technologies. The data gathered during the RI will also be used to conduct a  
3 baseline risk assessment, perform a feasibility study, and support design of a  
4 selected remedy.

5  
6 (u) "Remove" or "Removal" shall have the same meaning as provided in  
7 section 101(23) of CERCLA, 42 U.S.C. § 9601(23) and the NCP.

8  
9 (v) "ROD" shall mean the Record of Decision issued by EPA in August 1988  
10 for the Tucson International Airport Area Superfund Site, which Record of  
11 Decision selected the groundwater remedy for the Site. The ROD is attached  
12 hereto as Appendix A. By entering into this Agreement, the parties adopt the  
13 ROD as setting forth binding requirements for the Site. There will be a  
14 separate ROD selecting a soils remedy for the Site prepared as indicated in  
15 Appendix B.

16  
17 (w) "Site" shall include the Federal Facility and the "facility" as defined in  
18 CERCLA, including any area off the Federal Facility to or under which a release  
19 of hazardous substances has migrated, or threatens to migrate, from a source  
20 on or at the Federal Facility. For the purposes of obtaining permits, the terms  
21 "on-site" and "off-site" shall have the same meaning as provided in the NCP.

22  
23 (x) "State" shall mean both DEQ and DWR unless otherwise specified.

24  
25 (y) "State of Arizona" shall mean the Arizona state government in its entirety  
26 unless otherwise specified.

#### 27 28 4. PURPOSES

29  
30 4.1 The general purposes of this Agreement are to:

31  
32 (a) Ensure that the environmental impacts on the soils at the Federal Facility  
33 associated with past and present human activities at the Site are investigated,  
34 and that remedial action (which, to the extent it concerns groundwater, shall be  
35 consistent with the ROD) is taken to protect the public health, welfare and the  
36 environment;

37  
38 (b) Establish a procedural framework and schedule for developing,  
39 implementing and monitoring appropriate response actions at the Site in  
40 accordance with CERCLA, the NCP, Superfund guidance and policy and  
41 applicable State of Arizona law;

42  
43 (c) Facilitate cooperation, exchange of information and participation of the  
44 Parties in such action; and



1 (d) Ensure the adequate assessment of potential injury to natural resources,  
2 the prompt notification, cooperation and coordination with the Federal and State  
3 Natural Resources Trustees necessary to guarantee the implementation of  
4 response actions achieving appropriate cleanup levels.  
5

6 4.2 Specifically, the purposes of this Agreement are to:  
7

8 (a) Implement the selected remedial action in accordance with CERCLA and  
9 applicable State of Arizona law;  
10

11 (b) Provide for State involvement in the initiation, development, selection and  
12 enforcement of response actions to be undertaken at the Federal Facility,  
13 including the review of all applicable data as it becomes available and the  
14 development of studies, reports, and response plans; and to identify and  
15 integrate State ARARs into the remedial action process at the Site;  
16

17 (c) Coordinate response actions at the Site with the mission and support  
18 activities at the Federal Facility;  
19

20 (d) Expedite the cleanup process to the extent consistent with protection of  
21 human health and the environment;  
22

23 (e) Provide for State support services as required under the DSMOA;  
24

25 (f) Provide for operation and maintenance of the selected remedial action  
26 implemented pursuant to this Agreement;  
27

28 (g) Establish requirements for the performance of a Remedial Investigation to  
29 determine appropriately the nature and extent of the threat to the public health  
30 or welfare or the environment caused by the release and threatened release of  
31 hazardous substances, pollutants, or contaminants in soils at the Site and to  
32 establish requirements for the performance of a Feasibility Study for the Site to  
33 identify, evaluate, and select alternatives for the appropriate remedial action(s)  
34 to prevent, mitigate, or abate the release or threatened release of hazardous  
35 substances, pollutants, or contaminants in Site soils in accordance with  
36 CERCLA and applicable State law; and  
37

38 (h) Identify the nature, objective, and schedule of response actions to be taken  
39 at the Site. Response actions at the Site shall attain that degree of cleanup of  
40 hazardous substances, pollutants or contaminants mandated by CERCLA and  
41 applicable State law.  
42  
43

1           4.3 Scope of Agreement: The corrective action requirements of RCRA, §  
2 3004(u)(v), 42 U.S.C. § 6924(u)(v), for a RCRA permit and RCRA § 3008(h), 42  
3 U.S.C. § 9608(h), for an interim status facility as the same may be applied to the NGB  
4 at this Federal Facility are not integrated into this Agreement, and the NGB shall  
5 remain subject to all applicable State and federal environmental requirements  
6 independent of this Agreement, including the State of Arizona Hazardous Water  
7 Management Act, A.R.S. § 49-921 et seq. and rules promulgated thereto. This  
8 Agreement shall not be interpreted to preempt State regulation under the Arizona  
9 Hazardous Waste Management Act.

10  
11           The Federal Facility has represented to the State and EPA that it is not  
12 conducting any treatment, storage or disposal activities which are regulated under the  
13 provisions of RCRA as of the effective date of this Agreement.

14  
15           Notwithstanding the foregoing, upon unanimous agreement of the Parties, any  
16 State or federal corrective action requirement may be incorporated as appropriate to  
17 the Agreement.

## 18 19 5. DETERMINATIONS

20  
21           5.1 The Tucson International Airport Area Superfund Site was placed on the  
22 National Priorities List by the EPA on September 8, 1983, 48 Federal Register at page  
23 40658.

24  
25           5.2 The Federal Facility is a facility under the jurisdiction, custody, or control of  
26 the United States Department of Defense within the meaning of Executive Order  
27 12580, 52 Federal Register 2923, 29 January 1987. NGB is authorized to act on be-  
28 half of the Secretary of Defense for all functions delegated by the President through  
29 E.O. 12580 which are relevant to this Agreement.

30  
31           5.3 The Federal Facility is a federal facility under the jurisdiction of the  
32 Secretary of Defense within the meaning of CERCLA section 120, 42 U.S.C. § 9620,  
33 Superfund Amendments and Reauthorization Act of 1986 (SARA) § 211, 10 U.S.C. §  
34 2701 et seq., and subject to DERP.

35  
36           5.4 The authority of the NGB to exercise the delegated removal authority of the  
37 President pursuant to CERCLA section 104, 42 U.S.C. § 9604, is not altered by this  
38 Agreement.

39  
40           5.5 The actions to be taken pursuant to this Agreement are reasonable and  
41 necessary to protect the public health, welfare, or the environment.

42  
43           5.6 There are areas within the boundaries of the federal facility where  
44 hazardous substances have been deposited, stored, placed, or otherwise come to be

1 located in accordance with CERCLA sections 101(9) and (14), 42 U.S.C. §§ 9601(9)  
2 and (14).  
3

4 5.7 There have been releases of hazardous substances, pollutants or  
5 contaminants at or from the Federal Facility into the environment within the meaning  
6 of CERCLA sections 101(22), 104, 106 and 107, 42 U.S.C. §§ 9601(22), 9604, 9606  
7 and 9607.  
8

9 5.8 With respect to these releases, NGB is an owner and/or operator and/or  
10 generator subject to the provisions of CERCLA section 107, 42 U.S.C. § 9607, and  
11 within the meaning of Arizona Revised Statutes section 49-283.  
12

13 5.9 The Department of Defense and the State of Arizona have entered into the  
14 DSMOA. The Federal Facility is a listed installation in that Agreement.  
15

16 5.10 Attachment B to this Agreement is a map showing areas of suspected  
17 contamination and the extent of contamination, based on information available at the  
18 time of signing of this Agreement.  
19

## 20 6. WORK TO BE PERFORMED 21

22 6.1 The Parties agree to perform the tasks, obligations and responsibilities  
23 undertaken pursuant to this Agreement in accordance with CERCLA and CERCLA  
24 guidance and policy; the NCP; Executive Order 12580; applicable State of Arizona  
25 laws and regulations; and all terms and conditions of this Agreement including  
26 documents prepared and incorporated in accordance with Section 7 (Consultation) and  
27 Appendix B.  
28

29 6.2 NGB agrees to undertake, seek adequate funding for, fully implement and  
30 report on the following tasks, with participation of EPA and the State as set forth in  
31 this Agreement:  
32

33 (a) Federal and State Natural Resource Trustee Notification and Coordination;  
34

35 (b) Implementation of the remedy selected in the ROD;  
36

37 (c) Remedial Investigation ("RI") and Feasibility Study ("FS") of soils  
38 contamination at the Site;  
39

40 (d) Selection in a ROD and implementation of a remedial action for soils at the  
41 Site; and  
42

43 (e) Operation and maintenance of response actions at the Site.  
44

1           **6.3 The Parties agree to:**

2  
3           **(a) Make their best efforts to expedite the initiation of the remedial action**  
4           **covered by this FFA;**

5  
6           **(b) Carry out all activities under this Agreement so as to protect the public**  
7           **health, welfare and the environment.**

8  
9           **6.4 Upon request, EPA and the State agree to provide the NGB with guidance**  
10          **or reasonable assistance in obtaining guidance relevant to the implementation of this**  
11          **Agreement.**

12  
13          **6.5 Beginning with the month following the effective date of this Agreement,**  
14          **and monthly thereafter, the NGB shall submit monthly progress reports (letter reports)**  
15          **on activities conducted pursuant to this Agreement. The reports shall be submitted**  
16          **within fifteen (15) calendar days of the end of the month, and shall describe: (1)**  
17          **specific actions taken by or on behalf of the NGB during the previous calendar month;**  
18          **(2) actions expected to be undertaken during the current calendar month; (3) any**  
19          **requirements under this Agreement that were not completed; and (4) any problems or**  
20          **anticipated problems in complying with this Agreement.**

21  
22          **7. CONSULTATION: Review and Comment Process for Draft and Final Documents**

23  
24          **7.1 Applicability: The provisions of this Section establish the procedures that**  
25          **shall be used by the Parties to provide each other with appropriate technical support,**  
26          **notice, review, comment, and response to comments regarding the RI/FS and RD/RA**  
27          **documents, specified herein as either primary or secondary documents. NGB will**  
28          **normally be responsible for issuing primary and secondary documents to EPA and the**  
29          **State. As of the effective date of this Agreement, all draft, draft final and final primary**  
30          **and secondary documents identified herein shall be prepared, distributed and subject**  
31          **to dispute in accordance with Subsections 7.2 through 7.10 below. The designation of**  
32          **a document as "draft" or "final" is solely for purposes of consultation with EPA and the**  
33          **State in accordance with this Section. Such designation does not affect the obligation**  
34          **of the Parties to issue documents, which may be referred to herein as "final", to the**  
35          **public for review and comment as appropriate and as required by law.**

36  
37          **7.2 General Process for RI/FS and RD/RA documents:**

38  
39          **(a) Primary documents include those reports that are major, discrete portions**  
40          **of RI/FS and RD/RA activities. Primary documents are initially issued by the**  
41          **NGB in draft subject to review and comment by EPA and the State. Following**  
42          **receipt of comments on a particular draft primary document, the NGB will**  
43          **respond to the comments received and issue a draft final primary document**  
44          **subject to dispute resolution. The draft final primary document will become the**

1 final primary document either thirty (30) days after the issuance of a draft final  
2 document if dispute resolution is not invoked or as modified by decision of the  
3 dispute resolution process.

4  
5 (b) Secondary documents include those reports that are discrete portions of  
6 the primary documents and are typically in- put or feeder documents.  
7 Secondary documents are issued by the NGB in draft subject to review and  
8 comment by EPA and the State. Although the NGB will respond to comments  
9 received, the draft secondary documents may be finalized in the context of the  
10 corresponding primary documents. A secondary document may be disputed at  
11 the time the corresponding draft final primary document is issued.

### 12 7.3 Primary Documents:

13  
14  
15 (a) NGB shall complete and transmit drafts of the primary documents identified  
16 in Appendix B to EPA and the State for review and comment in accordance  
17 with the provisions of this Section.

18  
19 (b) Only draft final primary documents shall be subject to dispute resolution.  
20 NGB shall complete and transmit draft primary documents in accordance with  
21 the timetable and deadlines established in Section 8 (Deadlines) and Appendix  
22 B of this Agreement.

23  
24 (c) Primary documents may include target dates for subtasks established as  
25 provided in Subsections 7.4(b) and 18.3. The purpose of target dates is to  
26 assist in meeting deadlines, but target dates do not become enforceable by  
27 their inclusion in the primary documents and are not subject to Section 8  
28 (Deadlines), Section 9 (Extensions) or Section 13 (Enforceability).

### 29 7.4 Secondary Documents:

30  
31  
32 (a) NGB shall complete and transmit drafts of the secondary documents  
33 identified in Appendix B to EPA and the State for review and comment.

34  
35 (b) Although EPA and the State may comment on the drafts for the secondary  
36 documents, such documents shall not be subject to dispute resolution except as  
37 provided by Subsection 7.2 hereof. Target dates for the completion and  
38 transmission of draft secondary documents may be established by the Project  
39 Managers. The Project Managers also may agree upon additional secondary  
40 documents that are within the scope of the listed primary documents.

41  
42 7.5 Meetings of the Project Managers. (See also Subsection 18.3). The  
43 Project Managers shall meet in person approximately every ninety (90) days, except  
44 as otherwise agreed by the Parties, to review and discuss the progress of work being

1 performed at the Site, including progress on the primary and secondary documents.  
2 However, progress meetings may be held more frequently as needed upon request  
3 by any Project Manager. Prior to preparing any draft document specified in  
4 Subsections 7.3 and 7.4 above, the Project Managers shall meet in an effort to reach  
5 a common understanding with respect to the contents of the draft document.  
6

## 7 7.6 ARARs

8  
9 (a) All response actions taken at the Site with respect to groundwater shall be  
10 performed in a manner consistent with the ARARs identified in the ROD.  
11

12 (b) With respect to soils, potential ARARs shall be identified as follows:  
13

14 (1) The State will contact in writing those State and local governmental  
15 agencies that are potential sources of ARARs in a timely manner as set  
16 forth in NCP § 300.515(d).  
17

18 (2) Prior to the issuance of a draft primary or secondary document  
19 regarding soils for which ARAR determinations are appropriate, the  
20 Project Managers shall meet to identify and propose all potential  
21 pertinent ARARs, including any permitting requirements that may be a  
22 source of ARARs. At that time and within the time period described in  
23 NCP § 300.515(h)(2), the State shall submit the proposed ARARs  
24 obtained pursuant to paragraph 7.6(a) to the NGB, along with a list of  
25 agencies that failed to respond to the State's solicitation of ARARs and  
26 copies of the solicitations and any related correspondence.  
27

28 (3) NGB will contact the agencies that failed to respond and again solicit  
29 their input.  
30

31 (4) NGB will prepare draft ARAR determinations in accordance with  
32 CERCLA section 121(d)(2), 42 U.S.C. § 9621(d)(2), the NCP and  
33 pertinent guidance issued by EPA.  
34

35 (5) In identifying potential ARARs, the Parties recognize that actual  
36 ARARs can be identified only on a site-specific basis and that ARARs  
37 depend on the specific hazardous substances, pollutants and  
38 contaminants at a site, the particular actions associated with a proposed  
39 remedy and the characteristics of a site. The Parties recognize that  
40 ARAR identification is necessarily an iterative process and that potential  
41 ARARs must be identified and discussed among the Parties as early as  
42 possible, and must be reexamined throughout the RI/FS process until a  
43 ROD with respect to soils is issued.  
44

1 7.7 Review and Comment on Draft Documents:

2  
3 (a) NGB shall complete and transmit each draft primary document to EPA and  
4 the State on or before the corresponding deadline established for the issuance  
5 of the document. NGB shall complete and transmit the draft secondary  
6 documents in accordance with the target dates established for the issuance of  
7 such documents.  
8

9 (b) Unless the Parties agree to another time period, all draft documents shall  
10 be subject to a forty-five (45) day period for review and comment. Review of  
11 any document by EPA and the State may concern all aspects of it (including  
12 completeness) and should include, but is not limited to, technical evaluation of  
13 any aspect to the document, and consistency with CERCLA, the NCP,  
14 applicable State of Arizona law, and any pertinent guidance or policy issued by  
15 EPA and the State. At the request of any Project Manager, and to expedite the  
16 review process, the NGB shall make an oral presentation of the document to  
17 the Parties at the next scheduled meeting of the Project Managers following  
18 transmittal of the draft document or within fourteen (14) days following the  
19 request, whichever is sooner. Comments by EPA and the State shall be  
20 provided with adequate specificity so that the NGB may respond to the  
21 comment and, if appropriate, make changes to the draft document. Comments  
22 shall refer to any pertinent sources of authority or references upon which the  
23 comments are based and, upon request of the NGB, EPA or the State, as  
24 appropriate, shall provide a copy of the cited authority or reference. EPA and  
25 the State may extend the forty-five (45) day comment period for an additional  
26 fifteen (15) days by written notice to the NGB prior to the end of the forty-five  
27 (45) day period. On or before the close of the comment period, EPA and the  
28 State shall transmit their written comments to the NGB. In appropriate  
29 circumstances, this time period may be further extended in accordance with  
30 Section 9 (Extensions).  
31

32 (c) Representatives of the NGB shall make themselves readily available to  
33 EPA and the State during the comment period for purposes of informally  
34 responding to questions and comments on draft documents. Oral comments  
35 made during such discussions need not be the subject of a written response by  
36 the NGB on the close of the comment period.  
37

38 (d) In commenting on a draft document which may be affected by an ARAR  
39 determination, EPA or State shall include a reasoned statement of whether it  
40 objects to any portion of the document based on the ARAR determination. To  
41 the extent that EPA or the State does object, it shall explain the basis for its  
42 objection in detail and shall identify any ARARs which it believes were not  
43 properly addressed.  
44

1 (e) Following the close of the comment period for a draft document, the NGB  
2 shall give full consideration to all written comments provided on the draft  
3 document. Within fifteen (15) days following the close of the comment period  
4 on a draft secondary document or draft primary document the Parties shall hold  
5 a meeting to discuss and resolve all comments received. On a draft secondary  
6 document the NGB shall, within forty-five (45) days of the close of the comment  
7 period, transmit to EPA and the State its written response to the comments  
8 received. On a draft primary document the NGB shall, within forty-five (45)  
9 days of the close of the comment period, transmit to EPA and the State a draft  
10 final primary document, which shall include the NGB's response to all written  
11 comments received within the comment period. While the resulting draft final  
12 document shall be the responsibility of the NGB, it shall be the product of  
13 consensus to the maximum extent possible.

14  
15 (f) NGB may extend the forty-five (45) day period for either responding to  
16 comments on a draft document or for issuing the draft final primary document  
17 for an additional fifteen (15) days by providing written notice to EPA and the  
18 State at least ten (10) days before the end of such 45-day period. In  
19 appropriate circumstances, this time period may be further extended in  
20 accordance with Section 9 (Extensions).

#### 21 22 7.8 Availability of Dispute Resolution for Draft Final Primary Documents:

23  
24 (a) Dispute resolution shall be available to the Parties for draft final primary  
25 documents as set forth in Section 12 (Dispute Resolution).

26  
27 (b) When dispute resolution is invoked on a draft final primary document, work  
28 may be stopped in accordance with the procedures set forth in Subsection 12.9  
29 regarding dispute resolution.

30  
31 7.9 Finalization of Documents: The draft final primary document shall serve  
32 as the final primary document if no party invokes dispute resolution regarding the  
33 document or, if invoked, at completion of the dispute resolution process should the  
34 NGB's position be sustained. If the NGB's determination is not sustained in the  
35 dispute resolution process, NGB shall prepare, within not more than forty-five (45)  
36 days, a revision of the draft final document which conforms to the results of dispute  
37 resolution. In appropriate circumstances, the time period for this revision period may  
38 be extended in accordance with Section 9 (Extensions).

39  
40 7.10 Subsequent Modification of Final Documents: Following finalization of  
41 any primary document other than the Community Relations Plan pursuant to  
42 Subsection 7.9 above, any Party may seek to modify the document including seeking  
43 additional field work, pilot studies, computer modeling or other supporting technical  
44 work, only as provided in subparagraphs (a) and (b) below.



1 (a) Any Party may seek to modify a document after finalization if it determines,  
2 based on new information (i.e., information that becomes available, or  
3 conditions that become known, after the document was finalized) that the  
4 requested modification is necessary. Any party may seek such a modification  
5 by submitting a concise written request to the Project Managers of the other  
6 Parties. The request shall specify the nature of the requested modification and  
7 how the request is based on new information.

8  
9 (b) In the event that a consensus is not reached by the Project Managers on  
10 the need for a modification, any Party may invoke dispute resolution to  
11 determine if such modification shall be conducted. Modification of a document  
12 shall be required only upon a showing that:

13  
14 (1) The requested modification is based on significant new information;  
15 and

16  
17 (2) The requested modification could be of significant assistance in  
18 protecting human health and the environment.

19  
20 (c) Nothing in this Section shall alter EPA's or the State's ability to request the  
21 performance of additional work which was not contemplated by this Agreement.  
22 NGB's obligation to perform such work under this Agreement must be  
23 established by either a modification of a document or by amendments to this  
24 Agreement.

## 25 26 8. DEADLINES

27  
28 8.1 All deadlines agreed upon before the effective date of this Agreement shall  
29 be identified in Appendix B to this Agreement. To the extent that deadlines have  
30 already been mutually agreed upon by the Parties prior to the execution of this Agree-  
31 ment, they will satisfy the requirements of this Section and remain in effect, shall be  
32 published in accordance with Subsection 8.2, and shall be incorporated into the  
33 appropriate work plans.

34  
35 8.2 Within forty-five (45) days of the effective date of this Agreement, the NGB  
36 shall propose deadlines for completion of the remaining draft primary documents  
37 identified in Appendix B of this Agreement. Within fifteen (15) days of receipt, EPA  
38 and the State shall review and provide comments to the NGB regarding the proposed  
39 deadlines. Within fifteen (15) days following receipt of the comments the NGB shall,  
40 as appropriate, make revisions and reissue the proposal. The Parties shall meet as  
41 necessary to discuss and finalize the proposed deadlines. All deadlines so agreed  
42 upon shall be incorporated into the appropriate work plans. If the Parties fail to agree  
43 within thirty (30) days on the proposed deadlines, the matter shall immediately be

submitted for dispute resolution pursuant to Section 12 (Dispute Resolution). The final deadlines established pursuant to this Subsection shall be published by EPA.

8.3 The deadlines set forth in this Section or to be established as set forth in this Section may be extended pursuant to Section 9 (Extensions).

## 9. EXTENSIONS

9.1 Timetables, deadlines and schedules shall be extended if an extension is requested in a timely manner and good cause exists for the extension. A request is timely if it is received at least seven (7) days in advance of the date to be extended, except that extensions requested for the reasons given in Subsections 9.2(a) or (b) are timely if requested in advance of the date to be extended and within 24 hours after the requesting Party becomes aware of the reason. Any request for extension by a Party shall be submitted to the other Parties in writing and shall specify:

(a) The timetable, deadline or schedule that is sought to be extended;

(b) The length of the extension sought;

(c) The good cause(s) for the extension; and

(d) The extent to which any related timetable and deadline or schedule would be affected if the extension were granted.

9.2 Good cause exists for an extension when sought in regard to:

(a) An event of Force Majeure as defined in Section 10 (Force Majeure) of this Agreement;

(b) A delay caused by another Party's failure to meet any requirement of this Agreement;

(c) A delay caused by the good faith invocation of dispute resolution or the initiation of judicial action;

(d) A delay caused, or which is likely to be caused, by the grant of an extension in regard to another timetable, deadline or schedule;

(e) Any work stoppage within the scope of Section 11 (Emergencies and Removals); or

(f) Any other event or series of events that the Parties agree constitutes good cause.

1 9.3 Absent agreement of the Parties with respect to the existence of good  
2 cause, a Party may seek and obtain a determination through the dispute resolution  
3 process that good cause exists.  
4

5 9.4 Within seven (7) days of receipt of a request for an extension of a  
6 timetable, deadline or schedule, each receiving Party shall advise the requesting Party  
7 orally of the receiving Party's position on the request. Such oral notice shall be  
8 confirmed in writing within fourteen (14) days of the oral notice. Any failure by a  
9 receiving Party to respond orally within seven (7) days of receipt of an extension  
10 request shall be deemed to constitute concurrence with the extension request if such  
11 request was timely. If a receiving Party does not concur in the requested extension, it  
12 shall include in its statement of nonconcurrence an explanation of the basis for its  
13 position.  
14

15 9.5 If there is consensus among the Parties that the requested extension is  
16 warranted, NGB shall extend the affected timetable and deadline or schedule  
17 accordingly. If there is no consensus among the Parties as to whether all or part of  
18 the requested extension is warranted, the timetable and deadline or schedule shall not  
19 be extended except in accordance with a determination resulting from the dispute  
20 resolution process.  
21

22 9.6 Within seven (7) days of receipt of the written statement of non-  
23 concurrence with the requested extension, the requesting Party may invoke dispute  
24 resolution.  
25

26 9.7 A timely and good faith request by NGB for an extension shall toll any  
27 assessment of stipulated penalties or application for judicial enforcement of the  
28 affected timetable and deadline or schedule until a decision is reached on whether the  
29 requested extension will be approved. If dispute resolution is invoked and the  
30 requested extension is denied, stipulated penalties may be assessed and may accrue  
31 from the date of the original timetable, deadline or schedule. Following the grant of an  
32 extension, an assessment of stipulated penalties or an application for judicial  
33 enforcement may be sought only to compel compliance with the timetable and  
34 deadline or schedule as most recently extended.  
35

## 36 10. FORCE MAJEURE 37

38 10.1 A Force Majeure shall mean any event arising from causes beyond the  
39 control of a Party that causes a delay in or prevents the performance of any obligation  
40 under this Agreement, including, but not limited to, acts of God; fire; war; insurrection;  
41 civil disturbance; explosion; unanticipated breakage or accident to machinery,  
42 equipment or lines of pipe despite reasonably diligent maintenance; adverse weather  
43 conditions that could not be reasonably anticipated; unusual delay in transportation;  
44

1 restraint by court order or order of public authority; inability to obtain, at reasonable  
2 cost and after exercise of reasonable diligence, any necessary authorizations,  
3 approvals, permits, or licenses due to action or inaction of any governmental agency  
4 or authority other than NGB; delays caused by compliance with applicable statutes or  
5 regulations governing contracting, procurement or acquisition procedures, despite the  
6 exercise of reasonable diligence; and insufficient availability of appropriated funds  
7 which have been diligently sought. In order for Force Majeure based on insufficient  
8 funding to apply to NGB, NGB shall have made timely request for such funds as part  
9 of the budgetary process as set forth in Section 15 (Funding). A Force Majeure shall  
10 also include any strike or other labor dispute, whether or not within the control of the  
11 Parties affected thereby. Force Majeure shall not include increased costs or expenses  
12 of Response Actions, whether or not anticipated at the time such Response Actions  
13 were initiated.

## 14 15 11. EMERGENCIES AND REMOVALS

16  
17 11.1 Discovery and Notification: If any Party discovers or becomes aware of  
18 an emergency or other situation that may present an endangerment to public health,  
19 welfare or the environment at or near the Site, which is related to or may affect the  
20 work performed under this Agreement, that Party shall immediately orally notify all  
21 other Parties within twelve (12) hours, followed by written notification within seven (7)  
22 days. NGB shall also take immediate action to notify the appropriate State of Arizona  
23 and local agencies and affected members of the public.

24  
25 11.2 Work Stoppage: In the event any Party determines that activities  
26 conducted pursuant to this Agreement will cause or otherwise be threatened by a  
27 situation described in Subsection 11.1, the Party may propose the termination of such  
28 activities. If the Parties mutually agree, the activities shall be stopped for such period  
29 of time as required to abate the danger. In the absence of mutual agreement, the  
30 activities shall be stopped in accordance with the proposal, and the matter shall be  
31 immediately referred to the EPA Hazardous Waste Management Division Director for a  
32 work stoppage determination in accordance with Section 12.10.

### 33 34 11.3 Removal Actions:

35  
36 (a) The provisions of this Section shall apply to all removal actions as defined  
37 in CERCLA section 101(23), 42 U.S.C. § 9601(23), including all modifications  
38 to, or extensions of, any ongoing removal actions, and all new removal actions  
39 proposed or commenced following the effective date of this Agreement.

40  
41 (b) Any removal actions conducted at the Site shall be conducted in a manner  
42 consistent with this Agreement, CERCLA, the NCP and Executive Order 12580.  
43

1 (c) Nothing in this Agreement shall alter the NGB's authority with respect to  
2 removal actions conducted pursuant to section 104 of CERCLA, 42 U.S.C. §  
3 9604.

4  
5 (d) Nothing in this Agreement shall alter any authority EPA and the State may  
6 have with respect to removal actions conducted at the Site.

7  
8 (e) All reviews conducted by EPA and the State pursuant to 10 U.S.C. §  
9 2705(b)(2) will be expedited so as not to unduly jeopardize fiscal resources of  
10 NGB for funding the removal actions.

11  
12 (f) If a Party determines that there may be an endangerment to the public  
13 health or welfare or the environment because of an actual or threatened release  
14 of a hazardous substance, pollutant or contaminant at or from the Site,  
15 including but not limited to discovery of contamination of a drinking water well  
16 at concentrations that exceed any State or federal drinking water action level  
17 or standards, the Party may request that the NGB take such response actions  
18 as may be necessary to abate such danger or threat and to protect the public  
19 health or welfare or the environment. Such actions might include provision of  
20 alternative drinking water supplies or other response actions listed in CERCLA  
21 section 101(23) or (24), 42 U.S.C. § 9601(23) or (24), or such other relief as  
22 the public interest may require.

23  
24 **11.4 Notice and Opportunity to Comment:**

25  
26 (a) NGB shall provide the other Parties with timely notice and opportunity to  
27 review and comment upon any proposed removal action for the Site, in  
28 accordance with 10 U.S.C. § 2705(a) and (b). NGB agrees to provide the  
29 information described below pursuant to such obligation.

30  
31 (b) For emergency response actions, NGB shall provide EPA and the State  
32 with notice in accordance with Subsection 11.1. Except in the case of extreme  
33 emergencies, such oral notification shall include adequate information  
34 concerning the Site background, threat to the public health and welfare or the  
35 environment (including the need for response), proposed actions and costs  
36 (including a comparison of possible alternatives, means of transportation of any  
37 hazardous substances off-site, and proposed manner of disposal), expected  
38 change in the situation should no action be taken or should action be delayed  
39 (including associated environmental impacts), any important policy issues, and  
40 On-Scene Coordinator recommendations. Within forty-five (45) days of  
41 completion of the emergency action, NGB will furnish EPA and the State with  
42 an Action Memorandum addressing the information provided in the oral  
43 notification, and any other information required pursuant to CERCLA and the  
44 NCP, and in accordance with pertinent EPA guidance, for such actions.

(c) For other removal actions, NGB will provide EPA and the State with any information required by CERCLA, the NCP, and in accordance with pertinent EPA guidance, such as the Action Memorandum, the Engineering Evaluation/Cost Analysis (in the case of non-time-critical removals) and, to the extent it is not otherwise included, all information required to be provided in accordance with paragraph (b) of this Subsection. Such information shall be furnished at least thirty (30) days before the date of first publication of public notice of the proposed plan in accordance with section 117 of CERCLA, 42 U.S.C. § 9617.

(d) All activities related to ongoing removal actions shall be reported by the NGB in the progress reports as described in Section 18 (Project Managers).

11.5 Any dispute among the Parties as to whether a proposed nonemergency response action is: (a) properly considered a removal action, as defined by CERCLA section 101(23), 42 U.S.C. § 9601(23) or (b) consistent with the final remedial action, shall be resolved pursuant to Section 12 (Dispute Resolution). Such dispute may be brought directly to the Dispute Resolution Committee (DRC) or the Senior Executive Committee (SEC) at any Party's request.

11.6 The Parties shall first seek to resolve any dispute as to whether the NGB will take a response action requested by any other Party under Subsection 11.3(f) through the dispute resolution process contained in Section 12 (Dispute Resolution), but that process shall be modified for disputes on this specific subject matter in accordance with Subsection 12.12. EPA and the State reserve any and all rights each may have with regard to whether the NGB will take a removal action requested by any Party pursuant to Subsection 11.3(f) once the dispute resolution process specified in Subsection 12.12 is exhausted, and notwithstanding Section 31 (Covenant Not To Sue and Reservation of Rights).

## 12. DISPUTE RESOLUTION

12.1 Except as specifically set forth elsewhere in this Agreement, if a dispute arises under this Agreement, the procedures of this Section shall apply. EPA, NGB, and collectively the Parties representing the State as a single unit, may invoke this dispute resolution procedure. The Parties to this Agreement shall make reasonable efforts to informally resolve disputes at the Project Manager or immediate supervisor level. If resolution cannot be achieved informally, the procedures of this Section shall be implemented to resolve a dispute.

12.2 Within thirty (30) days after: (a) the issuance of a draft final primary document pursuant to Section 7 (Consultation), or (b) any action which leads to or

1 generates a dispute, the disputing Party shall submit to the Dispute Resolution  
2 Committee ("DRC") a written statement of dispute setting forth the nature of the  
3 dispute, the work affected by the dispute, the disputing Party's position with respect to  
4 the dispute and the technical, legal or factual information the disputing Party is relying  
5 upon to support its position.  
6

7 12.3 Prior to any Party's issuance of a written statement of a dispute, the  
8 disputing Party shall engage the other Party in informal dispute resolution among the  
9 Project Managers and/or their immediate supervisors. During this informal dispute  
10 resolution period the Parties shall meet as many times as are necessary to discuss  
11 and attempt resolution of the dispute.  
12

13 12.4 The DRC will serve as a forum for resolution of disputes for which  
14 agreement has not been reached through informal dispute resolution. The Parties  
15 shall each designate one individual and an alternate to serve on the DRC. The  
16 individuals designated to serve on the DRC shall be employed at the policy level  
17 Senior Executive Service ("SES") or equivalent or be delegated the authority to  
18 participate on the DRC for the purposes of dispute resolution under this Agreement.  
19 The EPA representative on the DRC is the Deputy Director for Superfund Hazardous  
20 Waste Management Division, EPA Region 9. NGB's designated member is the Chief,  
21 Environmental Division, Directorate of Engineering Services. The DEQ representative  
22 is the Assistant Director, Office of Waste Programs. The DWR representative is the  
23 Chief, Water Quality Division. Written notice of any delegation of authority from a  
24 Party's designated representative on the DRC shall be provided to all other Parties  
25 pursuant to the procedures of Section 21 (Notification).  
26

27 12.5 Following elevation of a dispute to the DRC, the DRC shall have  
28 twenty-one (21) days to unanimously resolve the dispute and issue a written decision.  
29 If the DRC is unable to unanimously resolve the dispute within this twenty-one (21)  
30 day period, the written statement of dispute shall be forwarded to the Senior Executive  
31 Committee ("SEC") for resolution within seven (7) days after the close of the  
32 twenty-one (21) day resolution period.  
33

34 12.6 The SEC will serve as the forum for resolution of disputes for which  
35 agreement has not been reached by the DRC. The EPA representative on the SEC is  
36 the Regional Administrator of EPA Region 9. NGB's representative on the SEC is the  
37 Deputy Assistant Secretary of the Air Force for Environmental, Safety, and  
38 Occupational Health. The DEQ representative on the SEC is the DEQ Director. The  
39 DWR representative on the SEC is the DWR Director. The SEC members shall, as  
40 appropriate, confer, meet and exert their best efforts to resolve the dispute and issue  
41 a written decision. If unanimous resolution of the dispute is not reached within  
42 twenty-one (21) days, EPA's Regional Administrator shall issue a written position on  
43 the dispute. NGB or the State may, within fourteen (14) days of the Regional  
44 Administrator's issuance of EPA's position, issue a written notice elevating the dispute

1 to the Administrator of EPA for resolution in accordance with all applicable laws and  
2 procedures. In the event NGB or the State elects not to elevate the dispute to the  
3 Administrator within the designated fourteen (14) day escalation period, NGB and the  
4 State shall be deemed to have agreed with the Regional Administrator's written  
5 position with respect to the dispute.  
6

7 12.7 Upon escalation of a dispute to the Administrator of EPA pursuant to  
8 Subsection 12.6 above, the Administrator will review and resolve the dispute within  
9 twenty-one (21) days. Upon request, and prior to resolving the dispute, the EPA Ad-  
10 ministrator shall meet and confer with NGB's SEC representatives and the State's  
11 SEC representatives to discuss the issue(s) under dispute. Upon resolution, the Ad-  
12 ministrator shall provide NGB and the State with a written final decision setting forth  
13 resolution of the dispute. The duties of the Administrator set forth in this Section shall  
14 not be delegated.  
15

16 12.8 Whenever this Section requires unanimity for dispute resolution, DEQ and  
17 DWR, as agencies of the State of Arizona, shall speak with one voice between them  
18 regardless of whether the State has more than one representative at the particular  
19 stage of dispute resolution. It shall be the responsibility of the State to determine who  
20 shall present the one position on behalf of the State. The one position set forth by the  
21 State at the DRC level shall be binding upon both DEQ and DWR in all further  
22 proceedings involving the dispute.  
23

24 12.9 The pendency of any dispute under this Section shall not affect any  
25 Party's responsibility for timely performance of the work required by this Agreement,  
26 except that the time period for completion of work affected by such dispute shall be  
27 extended for a period of time usually not to exceed the actual time taken to resolve  
28 any good faith dispute in accordance with the procedures specified herein. All  
29 elements of the work required by this Agreement which are not affected by the dispute  
30 shall continue and be completed in accordance with the applicable timetable and  
31 deadline or schedule.  
32

33 12.10 When dispute resolution is in progress, work affected by the dispute will  
34 immediately be discontinued if the Hazardous Waste Management Division Director for  
35 EPA Region 9 requests, in writing, that work related to the dispute be stopped  
36 because, in EPA's opinion, such work is inadequate or defective, and such inadequacy  
37 or defect is likely to yield an adverse effect on human health or the environment, or is  
38 likely to have a substantial adverse effect on the remedy selection or implementation  
39 process. The State may request the Director of the EPA Hazardous Waste  
40 Management Division to order work stopped for the reasons set out above. To the  
41 extent possible, the Party seeking a work stoppage shall consult with the other Parties  
42 prior to initiating a work stoppage request. After work stoppage, if a Party believes  
43 that the work stoppage is inappropriate or may have potential significant adverse  
44 impacts, the Party may meet with the other Parties to discuss the work stoppage.



1 a final decision with respect to the work stoppage. The final written decision of the  
2 EPA Hazardous Waste Management Division Director may immediately be subject to  
3 formal dispute resolution. Such dispute may be brought directly to either the DRC or  
4 the SEC, at the discretion of the Party requesting dispute resolution.

5  
6 12.11 Within twenty-one (21) days of resolution of a dispute pursuant to the  
7 procedures specified in this Section, NGB shall incorporate the resolution and final  
8 determination into the appropriate plan, schedule or procedures and proceed to  
9 implement this Agreement according to the amended plan, schedule or procedures.

10  
11 12.12 The following modified dispute resolution procedure shall apply only to  
12 disputes arising under Subsection 11.6, concerning a decision by NGB not to  
13 undertake a response action as requested under Subsection 11.3(f). This provision  
14 shall apply to such disputes in lieu of the procedures specified in Subsections 12.5,  
15 12.6 and 12.7.

16  
17 (a) For purposes of this modified dispute resolution procedure, the  
18 representatives on the DRC and SEC shall remain the same as in Subsections  
19 12.4 and 12.6.

20  
21 (b) After submission of a Subsection 11.6 matter to dispute, as described in  
22 Subsection 12.2, the DRC shall handle the dispute under the procedure  
23 described in Subsection 12.5, except that the DRC shall have ten (10) days  
24 rather than twenty-one (21) days to unanimously resolve the dispute, and shall  
25 forward an unresolved dispute to the SEC within four (4) days rather than  
26 seven (7) days.

27  
28 (c) If agreement is not reached by the DRC, the SEC members shall, as  
29 appropriate, confer, meet and exert their best efforts to resolve the dispute and  
30 issue a written decision. If unanimous resolution of the dispute is not reached  
31 in seven (7) days, NGB's SEC member shall issue a written position on the  
32 dispute. EPA or the State may, within four (4) business days of the receipt of  
33 NGB's SEC member's position, transmit a written notice elevating the dispute  
34 to the Deputy Under Secretary of Defense (Environmental Security) currently  
35 designated DUSD(ES), for resolution in accordance with all applicable laws and  
36 procedures. In the event EPA or the State elects not to elevate the dispute to  
37 DUSD(ES) within the designated four (4) business day elevation period, EPA and  
38 the State shall be deemed to have agreed with NGB's SEC member's written  
39 position with respect to the dispute.

40  
41 (d) Upon escalation of a dispute to DUSD(ES) pursuant to Subsection 12.12(c)  
42 above, DUSD(ES) will review and seek to resolve the dispute in a manner  
43 acceptable to all Parties within seven (7) days. Upon request, and prior to  
44 issuing a recommended resolution, DUSD(ES) shall meet and confer with the  
45 EPA Administrator's Representative and the DEQ Director and the DWR  
46 Director or their representatives to discuss the issue under dispute. DUSD(ES)

1 shall provide EPA and the State with a proposed resolution of the dispute. In  
2 the event EPA or the State do not concur with the DUSD(ES) proposed  
3 resolution of the dispute, EPA and the State retain any right each possesses  
4 with regard to the issue raised in the dispute under Subsection 11.6. Such  
5 nonconcurrence will be transmitted in writing to DUSD(ES) within seven (7)  
6 days of receipt of his/her issuance of the proposed resolution. Failure to  
7 transmit such nonconcurrence will be presumed to signify concurrence.  
8

9 12.13 Subject to the terms of Subsections 11.6, 12.12 and 31, resolution of a  
10 dispute pursuant to this Section of the Agreement constitutes a final resolution of any  
11 dispute arising under this Agreement. The Parties shall abide by all terms and  
12 conditions of any final resolution of dispute obtained pursuant to this Section of this  
13 Agreement.  
14

### 15 13. ENFORCEABILITY

#### 16 13.1 The Parties agree that:

17  
18 (a) Upon the effective date of this Agreement, any standard, regulation,  
19 condition, requirement or order which has become effective under CERCLA and  
20 is incorporated into this Agreement is enforceable by any person pursuant to  
21 CERCLA section 310, 42 U.S.C. § 9659, and any violation of such standard,  
22 regulation, condition, requirement or order will be subject to civil penalties under  
23 CERCLA sections 310(c) and 109, 42 U.S.C. §§ 9659(c) and 9609;  
24

25  
26 (b) All terms and conditions of this Agreement which relate to remedial actions,  
27 including corresponding timetables, deadlines or schedules, and all work  
28 associated with remedial actions, shall be enforceable by any person pursuant  
29 to CERCLA section 310(c), 42 U.S.C. § 9659(c), and any violation of such  
30 terms or conditions will be subject to civil penalties under CERCLA sections  
31 310(c) and 109, 42 U.S.C. §§ 9659(c) and 9609; and  
32

33 (c) Any final resolution of a dispute pursuant to Section 12 (Dispute Resolution)  
34 of this Agreement which establishes a term, condition, timetable, deadline or  
35 schedule shall be enforceable by any person pursuant to CERCLA section  
36 310(c), 42 U.S.C. § 9659(c), and any violation of such term, condition,  
37 timetable, deadline or schedule will be subject to civil penalties under CERCLA  
38 sections 310(c) and 109, 42 U.S.C. §§ 9659(c) and 9609.  
39

40 13.2 Nothing in this Agreement shall be construed as authorizing any person to  
41 seek judicial review of any action or work where review is barred by any provision of  
42 CERCLA including CERCLA section 113(h), 42 U.S.C. § 9613(h).

1 13.2 Nothing in this Agreement shall be construed as authorizing any person to  
2 seek judicial review of any action or work where review is barred by any provision of  
3 CERCLA including CERCLA section 113(h), 42 U.S.C. § 9613(h).  
4

5 13.3 Nothing in this Agreement shall be construed as a restriction or waiver of  
6 any rights the EPA or the State may have under CERCLA, including but not limited to  
7 any rights under sections 113 and 310, 42 U.S.C. §§ 9613 and 9659. NGB does not  
8 waive any rights it may have under CERCLA sections 120 and 121, 42 U.S.C. §§  
9 9620 and 9621, SARA § 211, Executive Order 12580, and DERP, 10 U.S.C. § 2701  
10 et. seq.  
11

12 13.4 The Parties agree to exhaust their rights under Section 12 (Dispute  
13 Resolution) prior to exercising any rights to judicial review that they may have.  
14

15 13.5 The Parties agree that all Parties shall have the right to enforce the terms  
16 of this Agreement.  
17

#### 18 14. STIPULATED PENALTIES 19

20 14.1 In the event that NGB fails to submit a primary document listed in  
21 Appendix B to EPA and the State pursuant to the appropriate timetable or deadline in  
22 accordance with the requirements of this Agreement, or fails to comply with a term or  
23 condition of this Agreement, EPA may assess a stipulated penalty against NGB. The  
24 State may also recommend to EPA that a stipulated penalty be assessed. A  
25 stipulated penalty may be assessed in an amount not to exceed \$5,000 for the first  
26 week (or part thereof), and \$10,000 for each additional week (or part thereof) for which  
27 a failure set forth in this Subsection occurs.  
28

29 14.2 Upon determining that NGB has failed in a manner set forth in Subsection  
30 14.1, EPA shall so notify NGB in writing. If the failure in question is not already  
31 subject to dispute resolution at the time such notice is received, NGB shall have  
32 fifteen (15) days after receipt of the notice to invoke dispute resolution on the question  
33 of whether the failure did in fact occur. NGB shall not be liable for the stipulated  
34 penalty assessed by EPA if the failure is determined, through the dispute resolution  
35 process, not to have occurred. No assessment of a stipulated penalty shall be final  
36 until the conclusion of dispute resolution procedures related to the assessment of the  
37 stipulated penalty.  
38

39 14.3 The annual reports required by CERCLA section 120(e)(5), 42 U.S.C. §  
40 9620(e)(5), shall include, with respect to each final assessment of a stipulated penalty  
41 against NGB under this Agreement, each of the following:  
42

- 43 (a) The federal facility responsible for the failure;  
44

1 (b) A statement of the facts and circumstances giving rise to the failure;  
2

3 (c) A statement of any administrative or other corrective action taken at the  
4 relevant federal facility, or a statement of why such measures were determined  
5 to be inappropriate;  
6

7 (d) A statement of any additional action taken by or at the federal facility to  
8 prevent recurrence of the same type of failure; and  
9

10 (e) The total dollar amount of the stipulated penalty assessed for the particular  
11 failure.  
12

13 14.4 Stipulated penalties assessed pursuant to this Section shall be payable to  
14 the Hazardous Substances Response Trust Fund only in the manner and to the extent  
15 expressly provided for in acts authorizing funds for, and appropriations to, the  
16 Department of Defense ("DOD"). EPA and the State, to the extent allowed by law,  
17 agree to divide equally any stipulated penalties paid in respect of the Federal Facility  
18 with fifty percent (50%) allocated to EPA and fifty percent (50%) allocated to the State.  
19 Stipulated penalties paid to the State shall be in addition to the amounts due to the  
20 State under the DSMOA or the provisions of Section 34 (State Support Services) and  
21 in no way shall affect the total allowable to the State for support services.  
22

23 14.5 In no event shall this Section give rise to a stipulated penalty in excess of  
24 the amount set forth in CERCLA section 109, 42 U.S.C. § 9609.  
25

26 14.6 This Section shall not affect NGB's ability to obtain an extension of a  
27 timetable, deadline or schedule pursuant to Section 9 (Extensions).  
28

29 14.7 Nothing in this Agreement shall be construed to render any member,  
30 agent, authorized representative or employee of NGB personally liable for the payment  
31 of any stipulated penalty assessed pursuant to this Section.  
32

## 33 15. FUNDING 34

35 15.1 It is the expectation of the Parties to this Agreement that all obligations of  
36 NGB arising under this Agreement will be fully funded. NGB agrees to seek sufficient  
37 funding through the DOD budgetary process to fulfill its obligations under this  
38 Agreement.  
39

40 15.2 In accordance with CERCLA section 120(e)(5)(B), 42 U.S.C. §  
41 9620(e)(5)(B), NGB shall include, in its submission to the Department of Defense  
42 annual report to Congress, the specific cost estimates and budgetary proposals  
43 associated with the implementation of this Agreement.  
44

1           15.3 Any requirement for the payment or obligation of funds, including  
2 stipulated penalties, by NGB established by the terms of this Agreement shall be  
3 subject to the availability of appropriated funds, and no provision herein shall be inter-  
4 preted to require obligation or payment of funds in violation of the Anti-Deficiency Act,  
5 31 U.S.C. § 1341. In cases where payment or obligation of funds would constitute a  
6 violation of the Anti-Deficiency Act, the dates established requiring the payment or  
7 obligation of such funds shall be appropriately adjusted.  
8

9           15.4 If appropriated funds are not available to fulfill NGB's obligations under  
10 this Agreement, EPA and the State reserve the right to initiate an action against any  
11 other person, or to take any response action, which would be appropriate absent this  
12 Agreement.  
13

14           15.5 Funds authorized by and appropriated annually by Congress under the  
15 "Environmental Restoration, Defense" appropriation in the Department of Defense  
16 Appropriation Act and allocated by the Deputy Assistant Secretary of Defense for  
17 Environment to Air Force will be the source of funds for activities required by this  
18 Agreement consistent with section 211 of CERCLA, 10 U.S.C. § 160. However,  
19 should the Environmental Restoration, Defense appropriation be inadequate in any  
20 year to meet the total NGB CERCLA implementation requirements, the DOD shall  
21 employ and NGB shall follow a DOD prioritization process which allocates that year's  
22 appropriations in a manner which maximizes the protection of human health and the  
23 environment. A standard DOD prioritization model shall be developed and utilized  
24 with the assistance of EPA and the State.  
25

## 26       16. EXEMPTIONS 27

28           16.1 The obligation of NGB to comply with the provisions of this Agreement  
29 may be relieved to the extent provided in:  
30

31           (a) A Presidential order of exemption issued pursuant to the provisions of  
32 CERCLA section 120(j)(1), 42 U.S.C. § 9620(j)(1); or  
33

34           (b) The order of an appropriate court.  
35

36           16.2 The State reserves any statutory right it may have to challenge any  
37 Presidential Order relieving NGB of its obligations to comply with this Agreement.  
38

## 39       17. STATUTORY COMPLIANCE/PERMITS 40

41           17.1 The Parties recognize that the requirement to obtain permits for response  
42 actions undertaken pursuant to this Agreement shall be as provided for in CERCLA  
43 and the NCP. The Parties recognize that ongoing activities outside the scope of this  
44 Agreement at the Federal Facility may require the issuance of permits under federal

1 and State of Arizona laws. This Agreement does not affect the requirements, if any,  
2 to obtain such permits. However, if a permit is issued to the Federal Facility for  
3 ongoing hazardous waste management activities at the Site, the issuing party shall  
4 reference and incorporate in a permit condition any appropriate provision, including  
5 appropriate schedules (and the provision for extension of such schedules), of this  
6 Agreement into such permit. Any judicial review of any permit condition which  
7 references this Agreement shall be reviewed under the applicable State or federal  
8 laws under which the permit was issued.

## 9 10 18. PROJECT MANAGERS

11  
12 18.1 On or before the effective date of this Agreement, EPA, the State and  
13 NGB shall each designate a Project Manager and an alternate (each hereinafter  
14 referred to as Project Manager), for the purpose of overseeing the implementation of  
15 this Agreement. The Project Managers shall be responsible on a daily basis for  
16 assuring proper implementation of the RI/FS and the RD/RA in accordance with the  
17 terms of the Agreement. In addition to the formal notice provisions set forth in Section  
18 21 (Notification), to the maximum extent possible, communications among NGB, EPA  
19 and the State on all documents, including reports, comments, and other  
20 correspondence concerning the activities performed pursuant to this Agreement, shall  
21 be directed through the Project Managers.

22  
23 18.2 NGB, EPA and the State may change their respective Project Managers.  
24 The other Parties shall be notified orally within five (5) days of the change. Written  
25 confirmation shall be sent within seven (7) days of the notification.

26  
27 18.3 The Project Managers shall meet to discuss progress as described in  
28 Subsection 7.5. Although NGB has ultimate responsibility for meeting its respective  
29 deadlines or schedules, the Project Managers shall assist in this effort by  
30 consolidating the review of primary and secondary documents whenever possible, and  
31 by scheduling progress meetings to review reports, evaluate the performance of  
32 environmental monitoring at the Site, review RD/RA progress, resolve disputes, and  
33 adjust deadlines or schedules. At least one week prior to each scheduled progress  
34 meeting, NGB will provide to the other Parties a draft agenda and summary of the  
35 status of the work subject to this Agreement. Unless the Project Managers agree  
36 otherwise, the minutes of each progress meeting, with the meeting agenda and all  
37 documents discussed during the meeting (which were not previously provided) at-  
38 tached, shall constitute a progress report, which will be sent to all Project Managers  
39 by NGB within ten (10) business days after the meeting ends. If an extended period  
40 occurs between Project Manager progress meetings, the Project Managers may agree  
41 that NGB shall prepare an interim progress report and provide it to the other Parties.  
42 The report shall include the information that would normally be discussed in a  
43 progress meeting of the Project Managers. Other meetings shall be held more  
44 frequently upon request by any Project Manager.

1 18.4 The authority of the Project Managers shall include, but is not limited to:

2  
3 (a) Taking samples and ensuring that sampling and other field work is  
4 performed in accordance with the terms of any final work plan and Quality  
5 Assurance Project Plan ("QAPP");

6  
7 (b) Observing, and taking photographs and making such other reports on the  
8 progress of the work as the Project Managers deem appropriate, subject to the  
9 limitations set forth in Section 25 (Access to Federal Facility) hereof;

10  
11 (c) Reviewing records, files and documents relevant to the work performed;

12  
13 (d) Determining the form and specific content of the Project Manager meetings  
14 and of progress reports based on such meetings;

15  
16 (e) Recommending and requesting minor field modifications to the work to be  
17 performed pursuant to a final work plan, or in techniques, procedures, or design  
18 utilized in carrying out such work plan; and

19  
20 (f) Exercising the authority vested by the NCP, section 300.120(b)(1), in NGB  
21 RPM as On Scene Coordinator and Remedial Project Manager in consultation  
22 with the EPA and State RPMs and in accordance with the procedures specified  
23 in this Agreement.

24  
25 18.5 The authority to do field modifications shall be as follows:

26  
27 (a) Field Modifications to the implementation of a field program within the  
28 scope of the Work Plan may be authorized by the NGB Project Manager and  
29 documented in writing on a Field Change Request form ("FCR"). The FCR  
30 shall be included as a part of the next progress report. No Project Manager  
31 may direct a government contractor without approval of the appropriate  
32 Government Contracting Officer.

33  
34 (b) Field Modifications to a Work Plan or Sampling and Analysis Plan may be  
35 requested by any Project Manager and shall be in writing on a FCR, signed and  
36 submitted to the other Project Managers for concurrence. The approved FCR  
37 shall be included as a part of the next progress report.

38  
39 18.6 The Project Manager for NGB shall be responsible for day-to-day field  
40 activities at the Site. NGB Project Manager or other designated agent of the Federal  
41 Facility shall be present at the Site or reasonably available to supervise work during all  
42 hours of work performed at the Site pursuant to this Agreement. For all times that  
43 NGB Project Manager is not present and such work is being performed, NGB Project  
44 Manager shall provide EPA's Project Manager with the name and telephone number of

1 the designated NGB agent or NGB contractor employee responsible for supervising  
2 the work.

3  
4 18.7 The Project Managers shall be reasonably available to consult on work  
5 performed pursuant to this Agreement and shall make themselves available to each  
6 other for the pendency of this Agreement. The absence of the EPA, the State, and/or  
7 the NGB Project Manager from the Federal Facility shall not be cause for work  
8 stoppage of activities taken under this Agreement.

9  
10 19. PERMITS

11  
12 19.1 The Parties recognize that under sections 121(d) and 121(e)(1) of  
13 CERCLA, 42 U.S.C. §§ 9621(d) and 9621(e)(1), and the NCP, portions of the  
14 response actions called for by this Agreement and conducted entirely on-site are  
15 exempted from the procedural requirement to obtain a federal, State of Arizona, or  
16 local permit but must satisfy all the applicable or relevant and appropriate federal and  
17 State standards, requirements, criteria, or limitations which would have been included  
18 in any such permit.

19  
20 19.2 This Section is not intended to relieve NGB from any and all regulatory  
21 requirements, including obtaining a permit, whenever it proposes a response action  
22 involving either the movement of hazardous substances, pollutants, or contaminants  
23 off-site, or the conduct of a response action off-site.

24  
25 19.3 NGB shall notify EPA and the State in writing of any permit required for  
26 off-site activities as soon as it becomes aware of the requirement. NGB agrees to  
27 obtain any permits necessary for the performance of any work under this Agreement.  
28 Upon request, NGB shall provide EPA and the State copies of all such permit  
29 applications and other documents related to the permit process. Copies of permits  
30 obtained in implementing this Agreement shall be appended to the appropriate  
31 submittal or progress report. Upon request by NGB Project Manager, the Project  
32 Managers of EPA and the State will assist NGB to the extent feasible in obtaining any  
33 required permit.

34  
35 20. QUALITY ASSURANCE

36  
37 20.1 In order to provide quality assurance and maintain quality control  
38 regarding all field work and sample collection performed pursuant to this Agreement,  
39 the NGB Project Manager will ensure and document that all work is performed in  
40 accordance with approved work plans, sampling plans and QAPPs. The NGB Project  
41 Manager shall maintain proper quality assurance records and documentation and shall  
42 provide a copy to the Parties upon request.  
43



1           20.2 To ensure compliance with the QAPP, NGB shall arrange for access,  
2 upon request by EPA or the State, to all laboratories performing analysis on behalf of  
3 NGB pursuant to this Agreement.  
4

## 5       21. NOTIFICATION 6

7           21.1 All Parties shall transmit primary and secondary documents, and  
8 comments thereon, and all notices required herein by next day mail, hand delivery, or  
9 facsimile. Time limitations shall commence upon receipt.  
10

11           21.2 Notice to the Parties pursuant to this Agreement shall be sent to the  
12 addresses specified by the Parties. Initially these shall be as follows:  
13

14           Rusty Harris-Bishop  
15           US EPA  
16           75 Hawthorne St. (H-7-2)  
17           San Francisco, CA 94105  
18

19           Tim Steele, Project Manager  
20           Arizona Department of Environmental Quality  
21           3033 North Central Avenue  
22           Phoenix, AZ 85012  
23

24           Russ Dyer  
25           ANGRC/CEVR  
26           3500 Fetchet Avenue  
27           Andrews AFB, DC 20331-5157  
28

29           21.3 All routine correspondence may be sent via first class mail to the above  
30 addressees.  
31

## 32       22. DATA AND DOCUMENT AVAILABILITY 33

34           22.1 Each Party shall make all requested sampling results, test results or other  
35 data or documents generated through the implementation of this Agreement available  
36 to the other Parties. All quality assured data shall be supplied within sixty (60) days of  
37 its collection. If the quality assurance procedure is not completed within sixty (60)  
38 days, data or results without quality assurance shall be submitted within the sixty (60)  
39 day period and the requested quality assured data or results shall be submitted as  
40 soon as they become available. After quality assured data has been provided, raw  
41 data will be provided within 30 days of specific request.  
42

43           22.2 The sampling Party's Project Manager shall notify the other Party's  
44 Project Managers not less than ten (10) days in advance of any sample collection. If

1 it is not possible to provide ten (10) days prior notification, the sampling Party's Project  
2 Manager shall notify the other Project Managers as soon as possible after becoming  
3 aware that samples will be collected. Each Party shall allow, to the extent practicable,  
4 split or duplicate samples to be taken by the other Parties or their authorized repre-  
5 sentatives.

## 6 7 23. RELEASE OF RECORDS

8  
9 23.1 The Parties may request of one another access to or a copy of any  
10 record or document relating to this Agreement or the Installation Restoration Program.  
11 If the Party that is the subject of the request (the originating Party) has the record or  
12 document, that Party shall provide access to or a copy of the record or document;  
13 provided, however, that no access to or copies of records or documents need be  
14 provided if they are subject to claims of attorney-client privilege, attorney work product,  
15 deliberative process, enforcement confidentiality or properly classified for national  
16 security under law or executive order, provided such claims are within the scope of  
17 information which can be withheld under the Freedom of Information Act, other  
18 statutes, or decisions of the courts of the United States or the State of Arizona.

19  
20 23.2 Records or documents identified by the originating Party as confidential  
21 pursuant to other non-disclosure provisions of the Freedom of Information Act, 5  
22 U.S.C. § 552, or pursuant to State of Arizona law, shall be released to the requesting  
23 Party, provided the requesting Party states in writing that it will not release the record  
24 or document to the public without prior approval of the originating Party or after  
25 opportunity to consult and, if necessary, contest any preliminary decision to release a  
26 document, in accordance with applicable statutes and regulations. Records or  
27 documents which are provided to the requesting Party and which are not identified as  
28 confidential may be made available to the public without further notice to the  
29 originating Party.

30  
31 23.3 The Parties will not assert one of the above exemptions, including any  
32 available under the Freedom of Information Act or Arizona Public Records Act, even if  
33 available, if no governmental interest would be jeopardized by access or release as  
34 determined solely by that Party.

35  
36 23.4 Subject to section 120(j)(2) of CERCLA, 42 U.S.C. § 9620(j)(2), any  
37 documents required to be provided by Section 7 (Consultation), and analytical data  
38 showing test results will always be releasable and no exemption shall be asserted by  
39 any Party.

40  
41 23.5 This Section does not change any requirement regarding press releases  
42 in Section 26 (Public Participation and Community Relations).  
43

1           23.6 A determination not to release a document for one of the reasons  
2 specified above shall not be subject to Section 12 (Dispute Resolution). Any Party  
3 objecting to the other Party's determination may pursue the objection through the  
4 determining Party's appeal procedures.

## 5 6       24. PRESERVATION OF RECORDS 7

8           24.1 Despite any document retention policy to the contrary, the Parties shall  
9 preserve, during the pendency of this Agreement and for a minimum of ten (10) years  
10 after its termination, all records and documents contained in the Administrative Record  
11 and any additional records and documents retained in the ordinary course of business  
12 which relate to the actions carried out pursuant to this Agreement. After this ten (10)  
13 year period, each Party shall notify the other Party at least forty-five (45) days prior to  
14 destruction of any such documents. Upon request by any Party, the requested Party  
15 shall make available such records or copies of any such records, unless withholding is  
16 authorized and determined appropriate by law.

## 17 18       25. ACCESS TO FEDERAL FACILITY 19

20           25.1 Without limitations on any authority conferred on EPA or the State by  
21 statute or regulation, EPA, or the State, or their authorized representatives, shall be  
22 allowed to enter the Federal Facility at reasonable times for purposes consistent with  
23 the provisions of the Agreement, subject to any statutory and regulatory requirements  
24 necessary to protect national security or mission essential activities. Such access  
25 shall include, but not be limited to, reviewing the progress of NGB in carrying out the  
26 terms of this Agreement; ascertaining that the work performed pursuant to this  
27 Agreement is in accordance with approved work plans, sampling plans and QAPPs;  
28 and conducting such tests as EPA, the State, or the Project Managers deem  
29 necessary.

30  
31           25.2 NGB shall honor all reasonable requests for access by the EPA or the  
32 State, conditioned upon presentation of proper credentials. NGB's Project Manager  
33 will provide briefing information, coordinate access and escort to restricted or  
34 controlled-access areas, arrange for base passes and coordinate any other access  
35 requests which arise.

36  
37           25.3 EPA and the State shall provide reasonable notice to NGB's Project  
38 Manager to request any necessary escorts. EPA and the State shall not use any  
39 camera, sound recording or other recording device at the Federal Facility without the  
40 permission of NGB's Project Manager. NGB shall not unreasonably withhold such  
41 permission.

42  
43           25.4 The access by EPA and the State granted in Subsection 25.1 of this  
44 Section, shall be subject to those regulations necessary to protect national security or

mission essential activities. Such regulation shall not be applied so as to unreasonably hinder EPA or the State from carrying out their responsibilities and authority pursuant to this Agreement. In the event that access requested by either EPA or the State is denied by NGB, NGB shall provide an explanation within 48 hours of the reason for the denial, including reference to the applicable regulations, and, upon request, a copy of such regulations. NGB shall expeditiously make alternative arrangements for accommodating the requested access. The Parties agree that this Agreement is subject to CERCLA section 120(j), 42 U.S.C. § 9620(j), regarding the issuance of Site Specific Presidential Orders as may be necessary to protect national security.

25.5 If EPA or the State requests access in order to observe a sampling event or other work being conducted pursuant to this Agreement, and access is denied or limited, NGB agrees to reschedule or postpone such sampling or work if EPA or the State so requests, until such mutually agreeable time when the requested access is allowed. NGB shall not restrict the access rights of the EPA or the State to any greater extent than NGB restricts the access rights of its contractors performing work pursuant to this Agreement.

25.6 All Parties with access to the Federal Facility pursuant to this Section shall comply with all applicable health and safety plans.

25.7 To the extent that activities required pursuant to this Agreement must be carried out on property which is not owned or controlled by NGB, NGB shall use its best efforts, including its authority, to the extent such authority is delegated to NGB, under CERCLA section 104, 42 U.S.C. § 9604, to obtain access agreements from the owners which shall provide reasonable access for NGB, EPA, and the State and their representatives. NGB may request the assistance of DEQ and EPA in obtaining such access, and upon request, DEQ and EPA will use their best efforts to obtain the required access. In the event that NGB is unable to obtain such access agreements, NGB shall promptly notify EPA and the State.

25.8 With respect to non-NGB property on which any response action is to be located, NGB shall use its best efforts to ensure that any access agreements shall provide for the continued right of entry for all Parties for the performance of such remedial activities. In addition, any access agreement shall provide that no conveyance of title, easement, or other interest in the property shall be consummated without the continued right of entry.

25.9 Nothing in this Section shall be construed to limit EPA's and the State's full rights of access as provided in section 104(e) of CERCLA, 42 U.S.C. § 9604(e), and Arizona Revised Statutes section 49-288, paragraphs J and K, except as that right may be limited by section 120(j)(2) of CERCLA, 42 U.S.C. § 9620(j)(2), Executive Order 12580, or other applicable national security regulations or federal law.

1 26. PUBLIC PARTICIPATION AND COMMUNITY RELATIONS

2  
3 26.1 The Parties agree that any plans for both remedial investigation and  
4 remedial action at the Site arising out of this Agreement shall comply with the  
5 administrative record and public participation requirements of CERCLA sections 113(k)  
6 and 117, 42 U.S.C. §§ 9613(k) and 9617, relevant community relations provisions in  
7 the NCP, EPA guidances, and, to the extent they may apply, State statutes and  
8 regulations. The State agrees to inform NGB of all State requirements which the  
9 State believes pertain to public participation. The provisions of this Section shall be  
10 carried out in a manner consistent with, and shall fulfill the intent of, Section 17.

11  
12 26.2 NGB shall develop and implement a Community Relations Plan ("CRP")  
13 addressing the environmental activities and elements of work undertaken by NGB with  
14 respect to both groundwater and soils, except as provided in Section 11 hereof.

15  
16 26.3 NGB shall establish an administrative record at a place, at or near the  
17 Federal Facility, which is freely accessible to the public, which record provides the  
18 documentation supporting the selection of each response action with respect to  
19 groundwater. NGB shall establish and maintain an administrative record at a place, at  
20 or near the Federal Facility, which is freely accessible to the public, which record  
21 provides the documentation supporting the selection of each response action with  
22 respect to soils. All administrative records shall be maintained in accordance with  
23 relevant provisions in CERCLA, the NCP, and EPA guidances. A copy of each  
24 document placed in an administrative record, not already provided, will be provided by  
25 NGB to the other Parties. The administrative records developed by NGB shall be  
26 updated and new documents supplied to the other Parties on at least a quarterly  
27 basis. An index of documents in the administrative record will accompany each  
28 update of the administrative record.

29  
30 26.4 Except in case of an emergency, each Party will notify the other Parties of  
31 any press release with reference to any of the work required by this Agreement, and  
32 of the contents thereof, at least forty-eight (48) hours prior to issuance.

33  
34 27. FIVE YEAR REVIEW

35  
36 27.1 Consistent with section 121(c) of CERCLA, 42 U.S.C. § 9621(c), and in  
37 accordance with this Agreement, if the selected remedial action results in a hazardous  
38 substance remaining at the Site, the Parties shall review the remedial action program  
39 at least every five (5) years after the initiation of the final remedial action to assure  
40 that human health and the environment are being protected by the remedial action  
41 being implemented.  
42

1           27.2 If, upon such review, any of the Parties proposes additional work or  
2 modification of work, such proposal shall be handled under Subsection 7.10 of this  
3 Agreement.  
4

## 5       28. TRANSFER OF REAL PROPERTY INTEREST 6

7           28.1 No change in the ownership of the Federal Facility shall in any way alter  
8 the responsibilities of the Parties under this Agreement. NGB shall not transfer any  
9 real property interest comprising the Federal Facility except in compliance with section  
10 120(h) of CERCLA, 42 U.S.C. § 9620(h) and 40 C.F.R. Part 373. Prior to any transfer  
11 of any portion of the land comprising the Federal Facility which includes an area within  
12 which any release of hazardous substance has come to be located, or any property  
13 which is necessary for proceeding with the remedial action, NGB shall give written  
14 notice of that condition to the recipient of the land. At least thirty (30) days prior to  
15 any transfer subject to section 120(h) of CERCLA, 42 U.S.C. § 9620(h), NGB shall  
16 notify all Parties of the transfer of any real property interest subject to this Agreement  
17 and the provisions made for any additional remedial actions, if required.  
18

## 19       29. AMENDMENT OR MODIFICATION OF AGREEMENT 20

21           29.1 This Agreement can be amended or modified solely upon written consent  
22 of all Parties. Such amendments or modifications may be proposed by any Party and  
23 shall be effective the third business day following the day the last Party to sign the  
24 amendment or modification sends its notification of signing to each other Party. The  
25 Parties may agree to a different effective date.  
26

## 27       30. TERMINATION OF THE AGREEMENT 28

29           30.1 At the completion of the Remedial Action, NGB shall prepare a Project  
30 Close-Out Report that certifies that all requirements of this Agreement have been  
31 completed. The provisions of this Agreement shall be deemed satisfied and  
32 terminated upon receipt by NGB of written notice from EPA, with concurrence of the  
33 State, that NGB has demonstrated that all the terms of this Agreement have been  
34 completed. If EPA denies or otherwise fails to grant a termination notice within ninety  
35 (90) days of receiving a written NGB request for such notice, EPA shall provide a  
36 written statement of the basis for its denial and describe NGB actions which, in the  
37 view of EPA, would be a satisfactory basis for granting a notice of completion. Such  
38 denial shall be subject to dispute resolution.  
39

40           30.2 This provision shall not affect the requirements for periodic review at  
41 maximum five (5) year intervals of the efficacy of the remedial action.  
42

### 31. COVENANT NOT TO SUE AND RESERVATION OF RIGHTS

31.1 In consideration for NGB's compliance with this Agreement, and based on the information known to the Parties or reasonably available on the effective date of this Agreement, EPA, NGB, and the State agree that compliance with this Agreement shall stand in lieu of any administrative, legal, and equitable remedies against NGB available to them regarding the releases or threatened releases of hazardous substances at the Site and which have been or will be adequately addressed by the remedial action provided for under this Agreement. The above notwithstanding, EPA and the State reserve all rights each may have with regard to the NGB's taking any removal action requested under Subsection 11.3(f) after exhaustion of the modified dispute resolution procedure set forth in Section 12 (Dispute Resolution).

31.2 Notwithstanding this Section or any other Section of this Agreement, the State shall retain any statutory right it may have to obtain judicial review of any final decision of the EPA on selection of remedial action pursuant to any authority the State may have under CERCLA, including sections 121(e)(2), 121(f), 310 and 113.

### 32. OTHER CLAIMS

32.1 Nothing in this Agreement shall constitute or be construed as a bar or release from any claim, cause of action or demand in law or equity by or against any person, firm, partnership or corporation not a signatory to this Agreement for any liability it may have arising out of or relating in any way to the generation, storage, treatment, handling, transportation, release, or disposal of any hazardous substances, hazardous waste, pollutants, or contaminants found at, taken to, or taken from the Federal Facility. Unless specifically agreed to in writing by the Parties, EPA and the State shall not be held as a party to any contract entered into by NGB to implement the requirements of this Agreement.

32.2 This agreement shall not restrict EPA and the State from taking any legal or response action for any matter not part of the subject matter of this Agreement.

### 33. RECOVERY OF EPA EXPENSES

33.1 Based on NGB's representation to EPA that the United States Air Force assumes all responsibility for response costs at the Site, EPA will seek cost recovery from the United States Air Force of EPA response costs incurred and allocated by it to the Site, through September 30, 1989, in the amount of One Hundred Seventy-Five Thousand Dollars (\$175,000). The Parties agree to amend this Agreement to cover other costs in accordance with any national resolution of the issue of cost reimbursement. Pending such resolution, EPA reserves any rights it may have with respect to cost reimbursement.

**34. STATE SUPPORT SERVICES**

**34.1 Services to be rendered and compensation for such State support services rendered in connection with this Agreement are governed by the DSMOA. In the event the DSMOA is terminated or is no longer in effect for any reason, Subsections 34.2 through 34.12 shall apply.**

**34.2 NGB agrees to request funding and reimburse the State, subject to the conditions and limitations set forth in this Section, and subject to Section 15 (Funding), for all reasonable costs it incurs in providing services in support of NGB's environmental restoration activities pursuant to this Agreement at the Site. The reasonable costs shall include but not be limited to personnel costs, which shall include employee-related expenses and indirect labor charges; travel costs and state per diem allowances; supplies and contractor costs. The indirect rate shall be either the then current federal rate or a rate negotiated yearly between NGB and DEQ.**

**34.3 Reimbursable expenses shall consist of actual expenditures required to be made and actually made by the State in providing the following assistance to NGB:**

**(a) Technical review, comments and recommendations on all documents or data required to be submitted to the State; all documents or data that the State is requested to review, and all documents or data that are provided by NGB to the State for review as a result of a request from the State made under applicable State law;**

**(b) Identification and explanation of State applicable or relevant and appropriate requirements related to response actions at the Federal Facility;**

**(c) Site visits, including travel costs, to review response actions and ensure their consistency with appropriate State requirements, or in accordance with appropriate State requirements, or in accordance with site-specific requirements established in other agreements between the State and NGB;**

**(d) Participation in cooperation with NGB in the conduct of public education and public participation activities in accordance with federal and State requirements for public involvement; and**

**(e) Participation in the review and comment functions of Technical Review Committees; and**

**(f) Support activities necessary to fulfill the requirements of this Agreement.**

**34.4 Within ninety (90) days after the end of each quarter of the federal fiscal year, the State shall submit to NGB an accounting of all State costs actually incurred**



1 during that quarter in providing services under this Section. Any costs from prior  
2 quarters not previously billed shall be clearly identified and included in total costs.  
3 Such accounting shall be accompanied by cost summaries and be supported by  
4 documentation which meets federal auditing requirements. The summaries will set  
5 forth employee-hours and other expenses by major type of support services. All costs  
6 submitted must be for work directly related to implementation of this Agreement and  
7 not inconsistent with either the National Contingency Plan (NCP) or the requirements  
8 described in OMB Circulars A-87 (Cost Principles for State and Local Governments)  
9 and A-128 (Audits for State and Local Cooperative Agreements with State and Local  
10 Governments) and Standard Forms 424 and 270. NGB has the right to audit cost  
11 reports used by the State to develop the cost summaries. Before the beginning of  
12 each fiscal year, NGB shall provide a schedule of projected tasks and the State shall  
13 supply a budget estimate for its planned activity for the next year.  
14

15 34.5 Except for any portion of the accounting in dispute pursuant to Subsection  
16 34.6 or 34.7, within sixty (60) days of receipt of the accounting provided pursuant to  
17 Subsection 34.4 above, NGB shall reimburse the State in the amount set forth in the  
18 accounting.  
19

20 34.6 In the event NGB contends that any of the costs set forth in the  
21 accounting provided pursuant to Subsection 34.4 above are not properly payable, the  
22 matter shall be resolved through a bilateral dispute resolution process set forth in  
23 Subsection 34.10 below.  
24

25 34.7 NGB shall not be responsible for reimbursing the State for any costs  
26 actually incurred in the implementation of this Agreement in excess of one percent  
27 (1%) of the NGB total lifetime project costs incurred through construction of the  
28 remedial action(s). Circumstances could arise whereby fluctuations in the NGB  
29 estimates or actual final costs through the construction of the final remedial action  
30 creates a situation where the State receives reimbursement in excess of one percent  
31 of these costs. Under these circumstances, the State remains entitled to payment for  
32 services rendered prior to the completion of a new estimate if the services are within  
33 the ceiling applicable under the previous estimate.  
34

35 (a) Funding of support services must be constrained so as to avoid  
36 unnecessary diversion of the limited Defense Environmental Restoration  
37 Account funds available for the overall cleanup, and  
38

39 (b) Support services should not be disproportionate to overall project costs and  
40 budget.  
41

42 34.8 Either NGB or the State may request, on the basis of significant upward  
43 or downward revisions in NGB's estimate of its total lifetime costs through  
44 construction, used in Subsection 34.7 above, a renegotiation of the cap. Failing an

1 agreement, either NGB or the State may initiate dispute resolution in accordance with  
2 Subsection 34.10 below.

3  
4 34.9 The State agrees to seek reimbursement for its expenses solely through  
5 the mechanisms established in this Section, and reimbursement provided under this  
6 Section shall be in settlement of any claims for State support services costs identified  
7 in Subsection 34.3 relative to NGB's environmental restoration activities at the Site  
8 under this Agreement.

9  
10 34.10 Section 12 (Dispute Resolution) notwithstanding, this Subsection shall  
11 govern any dispute between NGB and the State regarding the application of this  
12 Section or any matter controlled by this Section including, but not limited to,  
13 allowability of expenses and limits on reimbursement. While it is the intent of NGB  
14 and the State that these procedures shall govern resolution of disputes concerning  
15 State reimbursement, informal dispute resolution is encouraged.

16  
17 (a) NGB and State Project Managers shall be the initial points of contact for  
18 coordination of dispute resolution under this Subsection.

19  
20 (b) If NGB and State Project Managers are unable to resolve a dispute, the  
21 matter shall be referred to the Chief, Environmental Division, Air National Guard  
22 Readiness Center, or his designated representative, and the DEQ Assistant  
23 Director, Office of Waste Programs, as soon as practicable, but in any event  
24 within five (5) working days after the dispute is elevated by the Project  
25 Managers.

26  
27 (c) If the persons listed in paragraph 34.10(b) are unable to resolve the dispute  
28 within ten (10) working days, the matter shall be elevated to the Deputy  
29 Assistant Secretary of the Air Force for Environment, Safety, and Occupational  
30 Health, or his designated representative and the Director of DEQ.

31  
32 (d) In the event the persons listed in paragraph 34.10(c) are unable to resolve  
33 a dispute, the State retains any legal and equitable remedies it may have to  
34 recover its expenses. In addition, the State may withdraw from this Agreement  
35 by giving sixty (60) days notice to the other Parties.

36  
37 34.11 Nothing herein shall be construed to limit the ability of NGB to contract  
38 with the State for technical services that could otherwise be provided by a private  
39 contractor including, but not limited to:

40  
41 (a) Identification, investigation, and cleanup of any contamination beyond the  
42 boundaries of the Federal Facility;

43  
44 (b) Laboratory analysis; or

1 (c) Data collection for field studies.

2  
3 Such technical services shall be separately negotiated and reimbursed and  
4 shall not be includable within the negotiated "cap" identified above.

5  
6 34.12 Nothing in this Agreement shall be construed to constitute a waiver of  
7 any claims by the State for any expenses incurred prior to the effective date of this  
8 Agreement.

9  
10 **35. STATE PARTICIPATION CONTINGENCY**

11  
12 35.1 If the State fails to sign this Agreement within thirty (30) days of  
13 notification of the signature by both EPA and NGB, this Agreement will be interpreted  
14 as if the State were not a Party and any reference to the State in this Agreement will  
15 have no effect. In addition, all other provisions of this Agreement notwithstanding, if  
16 the State does not sign this Agreement within the said thirty (30) days, the NGB shall  
17 only have to comply with any State of Arizona requirements, conditions, or standards,  
18 including those specifically listed in this Agreement, which NGB would otherwise have  
19 to comply with absent this Agreement.

20  
21 35.2 In the event that the State does not sign this Agreement:

22  
23 (a) NGB agrees to transmit all primary and secondary documents to DEQ and  
24 DWR at the same time such documents are transmitted to EPA; and

25  
26 (b) EPA intends to consult with the State with respect to the above documents  
27 and during implementation of this Agreement.

28  
29 **36. EFFECTIVE DATE AND PUBLIC COMMENT**

30  
31 36.1 This Agreement is effective upon signature by all Parties. In the event  
32 either or both of DEQ and DWR fails to sign this Agreement in the time period set  
33 forth in Section 35 of this Agreement, then "effective date" shall mean thirty (30) days  
34 from the date the non-signing agency or agencies receives notice that both EPA and  
35 NGB have signed the Agreement.

36  
37 36.2 The provisions of this Section shall be carried out in a manner consistent  
38 with, and shall fulfill the intent of Section 17 (Statutory Compliance/Permits).

39  
40 36.3 Within fifteen (15) days after EPA, as the last signatory, executes this  
41 Agreement, NGB shall announce the availability of this Agreement to the public for a  
42 minimum forty-five (45) day period of review and comment, but ending no earlier than  
43 the date on which comments from EPA and the State are due under Section 8 on

1 proposed deadlines. Publication shall include publication in at least two major local  
2 newspapers of general circulation.  
3

4 36.4 Promptly upon the completion of the comment period, NGB shall transmit  
5 to the other Parties copies of all comments received within the comment period. The  
6 Parties shall review such comments and, within thirty (30) days after the close of the  
7 comment period, NGB shall prepare a written response to the public comments for  
8 review and concurrence by the other Parties. Within sixty (60) days after the close of  
9 the public comment period, the Parties shall either:

10  
11 (a) Determine that this Agreement shall remain effective in its present form; or

12  
13 (b) seek to modify the Agreement pursuant to Section 29 in response to the  
14 comments received. Absent or pending an amendment of the Agreement  
15 pursuant to Section 29, the Agreement will remain effective as originally  
16 executed.  
17

18 36.5 Any response action underway upon the effective date of this Agreement  
19 shall be subject to oversight by EPA and the State.  
20

## 21 37. APPENDICES AND ATTACHMENTS

22  
23 37.1 Appendices shall be an integral and enforceable part of this Agreement.  
24 They shall include the most current versions of:

25  
26 (a) the Scope of Work;

27  
28 (b) all final primary and secondary documents which will be created in  
29 accordance with Section 7 (Consultation);

30  
31 (c) all deadlines which will be established in accordance with Section 8  
32 (Deadlines) and which may be extended in accordance with Section 9  
33 (Extensions); and  
34

35 (d) all final primary documents and all completed secondary documents agreed  
36 upon by the Parties prior to the effective date of this Agreement.  
37

38 37.2 Appendix A hereto is the ROD. Appendix B hereto is a list of primary and  
39 secondary documents required under this Agreement. Attachment A hereto contains a  
40 description of the minimum contents of selected primary and secondary documents.  
41 Attachment B hereto is a map as described in Section 5.10. Attachment C hereto is  
42 the Final Vadose Zone Investigation Work Plan.  
43

documents. Attachment B hereto is a map as described in Section 5.10.  
Attachment C hereto is the Final Vadose Zone Investigation Work Plan.

Attachments shall be for information only and shall not be enforceable parts of this Agreement. The information in these attachments is provided to support the initial review and comment upon this Agreement, and they are only intended to reflect the conditions known at the signing of the Agreement. None of the facts related herein shall be considered admissions by, nor are they legally binding upon, any party with respect to any claims unrelated to, or persons not a Party to, this Agreement.

### 38. COUNTERPARTS

38.1 This Federal Facility Agreement may be executed and delivered in any number of counterparts, each of which when executed and delivered shall be deemed to be an original, but such counterparts shall together constitute one and the same document.

Each undersigned representative of a Party certifies that he or she is fully authorized to execute this Agreement on behalf of such Party and to legally bind such Party to this Agreement, that such Party is authorized to enter into the terms and conditions of this Agreement and that his or her signature below legally binds such Party to this Agreement.

### NATIONAL GUARD BUREAU

20 Sep 94  
DATE

  
JOHN R. D'ARAUJO, JR.  
Major General, U.S. Army  
Acting Chief, National Guard Bureau


STATE OF ARIZONA

10/10/94  
DATE

  
Edward Z. Fox, Director  
Arizona Department of Environmental Quality

1  
2 UNITED STATES ENVIRONMENTAL PROTECTION  
3 AGENCY  
4

5  
6 10/31/94  
7  
8 DATE

9  
10   
11 Felicia Marcus  
12 Regional Administrator  
13 U.S. Environmental Protection Agency  
14 Region 9  
15  
16  
17  
18

## **LIST OF APPENDICES AND ATTACHMENTS**

<b>Appendix A</b>	<b>August 1988 Record of Decision for the Tucson International Airport Area Superfund Site</b>
<b>Appendix B</b>	<b>List of Primary and Secondary Documents and Deadlines for Submission of such Documents Agreed upon Before Signing of the Agreement</b>
<b>Attachment A</b>	<b>Description of Selected Primary and Secondary Documents</b>
<b>Attachment B</b>	<b>Site Map</b>
<b>Attachment C</b>	<b>Final Vadose Zone Investigation Work Plan</b>







## **Appendix A**

### **August 1988 Record of Decision for the Tucson International Airport Area Superfund Site**

Tucson International Airport Area

R E C O R D   O F   D E C I S I O N

for

G R O U N D W A T E R   R E M E D I A T I O N

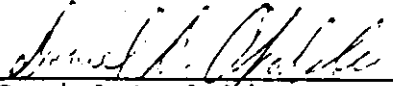
North of Los Reales Road

United States Environmental Protection Agency  
Region IX -- San Francisco, California  
August 1988

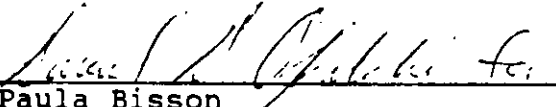
Tucson International Airport Area

RECORD OF DECISION FOR GROUNDWATER REMEDIATION  
NORTH OF LOS REALES ROAD


Concurrence -- Superfund Program

  
\_\_\_\_\_  
Daniel Opalski  
Remedial Project Manager  
State Programs Section (T-4-1)

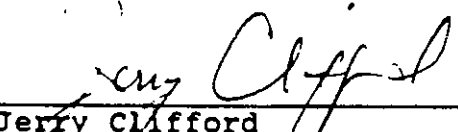
7/25/88  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
Paula Bisson  
Chief  
State Programs Section (T-4-1)

7/25/88  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
Phil Bobel  
Chief  
Superfund Remedial Branch (T-4-A)

7/26/88  
\_\_\_\_\_  
Date

  
\_\_\_\_\_  
Jerry Clifford  
Assistant Director for Superfund  
Toxics and Waste Management Division (T-4)

7/26/88  
\_\_\_\_\_  
Date

Tucson International Airport Area

RECORD OF DECISION FOR GROUNDWATER REMEDIATION  
NORTH OF LOS REALES ROAD

Concurrence -- Toxics and Waste Management Division

*Lauren K. Moolenaar*  
Jeff Zelikson  
Director  
Toxics and Waste Management Division

7.26.88  
Date

Tucson International Airport Area  
RECORD OF DECISION FOR GROUNDWATER REMEDIATION  
NORTH OF LOS REALES ROAD

Concurrence -- Air Management Division

  
\_\_\_\_\_  
12 Dave Howekamp  
Director  
Air Management Division

  
\_\_\_\_\_  
Date

Tucson International Airport Area  
RECORD OF DECISION FOR GROUNDWATER REMEDIATION  
NORTH OF LOS REALES ROAD

Concurrence -- Water Management Division

*for* Heik Takate  
Harry Seraydarian  
Director  
Water Management Division

7-27-88  
Date

Tucson International Airport Area

RECORD OF DECISION FOR GROUNDWATER REMEDIATION  
NORTH OF LOS REALES ROAD

Concurrence -- Office of Policy and Management

Nora L. M. Lee  
Nora McGee  
Assistant Regional Administrator  
Office of Policy and Management

Aug 17, 1988  
Date



Tucson International Airport Area

RECORD OF DECISION FOR GROUNDWATER REMEDIATION  
NORTH OF LOS REALES ROAD

Concurrence -- Office of Regional Counsel

Gail Cooper  
Nancy Marvel  
Regional Counsel  
Office of Regional Counsel

7/28/88  
Date

RECORD OF DECISION

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ADMINISTRATIVE RECORD INDEX

RESPONSIVENESS SUMMARY

RECORD OF DECISION

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## RECORD OF DECISION

### DECLARATION

#### SITE NAME AND LOCATION

Tucson International Airport Area  
Tucson, Arizona

#### STATEMENT OF BASIS AND PURPOSE

This decision document presents the selected groundwater remedial action for the portion of the Tucson International Airport Area Site that lies north of Los Reales Road. The remedial action has been developed in accordance with the Comprehensive Environmental Response, Liability, and Compensation Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), and, to the extent practicable, the National Contingency Plan (NCP). This decision is based upon the administrative record for this site. The attached index identifies the items which comprise the administrative record upon which the selection of the remedial action is based.

The State of Arizona concurs on the selected remedy.

#### DESCRIPTION OF THE REMEDY

This remedial action is the second to be taken at the site. As of April 1987, the United States Air Force has been extracting and treating groundwater in the southern portion of the site. The remedial action presented herein is the groundwater remedy for the areas ("Area A" and "Area B") of the site not currently addressed by the Air Force's action. This action and the Air Force action together constitute the overall groundwater remedy for the site. Further investigation of potentially contaminated soils on the site and any resulting decision on remedial action(s) for soils is anticipated at a later date.

The selected groundwater remedy for Area A includes control of groundwater contamination through segregation of the upper and lower divided aquifers and through extraction from both the upper divided aquifer and the regional undivided aquifer (all north of Los Reales Road). The treatment method will be packed column aeration. The goal is to treat extracted groundwater to an overall excess cancer risk level (for all contaminants combined) of  $10^{-6}$ , which will require treatment to a TCE concentration of approximately 1.5 parts per billion (ppb). Where airborne emissions of volatile organic compounds (VOCs) from new packed column facilities have the potential to exceed 2.4 pounds per day,


reasonably available control technology (RACT) for the reduction of air emissions will be proposed. (RACT in this case may consist of vapor phase granular activated carbon.) Treated water will be fed directly into the municipal water distribution system. If any groundwater is treated at the nearby United States Air Force facility (AFP44), however, this water may be used for groundwater recharge rather than supplied to the municipal system.

For Area B, groundwater will be extracted from the upper aquifer and treated to an overall excess cancer risk level of  $10^{-6}$ . Packed column aeration will be used unless further information indicates that another treatment strategy is more cost-effective or would be more easily implemented while still offering the same level of protection of human health and the environment and while still complying with all ARARs. The low levels of contamination in Area B indicate that no emission controls should be needed on the packed column(s).

The remedies for Area A and Area B are expected to be in operation for approximately 20 years. Over this period, at least two pore volumes of groundwater will be withdrawn from the aquifer. Groundwater monitoring will also continue.

#### DECLARATION

The selected remedy is protective of human health and the environment, attains Federal and State requirements that are applicable or relevant and appropriate to the remedial action, and is cost-effective. With respect to contamination in groundwater, the remedy satisfies the statutory preference for remedies that employ treatment that reduces toxicity, mobility or volume as a principal element and utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable. The statutory preference is not completely satisfied with respect to contamination in the air in that the selected treatment method involves transferral of contamination from water into the air. However, the remedy still reduces the overall risk to human health. As part of the remedy, groundwater monitoring at regular intervals will ensure that the remedy continues to provide adequate protection of human health and the environment.

  
Daniel W. McGovern  
Regional Administrator

  
Date

## RECORD OF DECISION

### DECISION SUMMARY

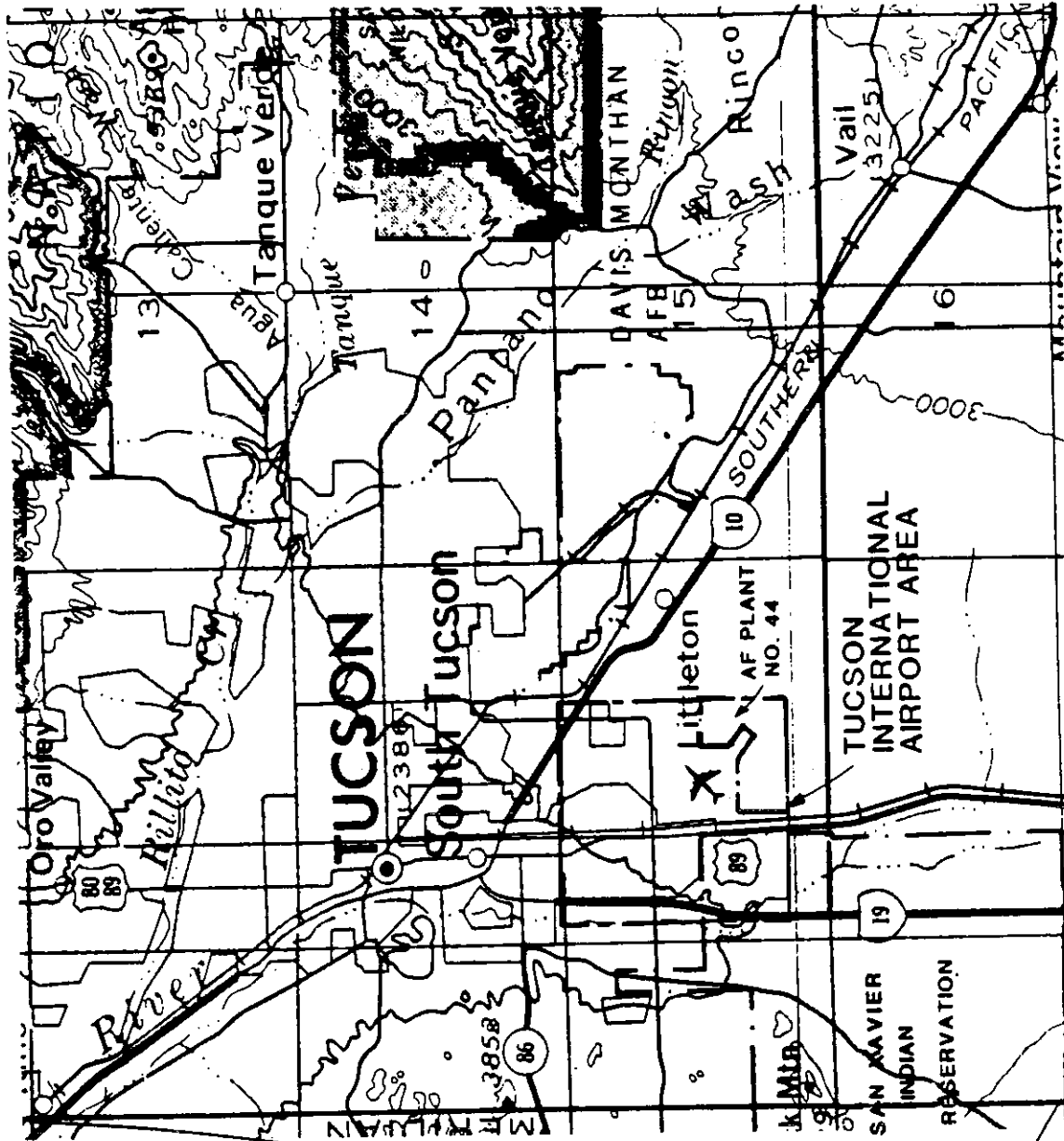
#### 1.0 SITE LOCATION AND DESCRIPTION

The Tucson International Airport Area is located in Pima County, in southeastern Arizona (Figure 1). It encompasses sections of southwest Tucson, as well as adjoining lands south of the city. The site includes industrial, commercial, residential and undeveloped areas. Specifically included are the Tucson International Airport, the United States Air Force Plant #44 (AFP44) and part of the San Xavier Indian Reservation. As shown in Figure 2, the approximate site boundaries are the Santa Cruz River on the west, Ajo Way on the north, Alvernon Way on the east, and the Hughes Access Road south of AFP44 on the south.

The Tucson International Airport Area (TAA)\* is located in the Tucson Basin, an alluvial valley bounded by rugged mountain ranges. The basin is bounded on the east and north by the Santa Rita, Empire, Rincon, Tanque Verde, Santa Catalina and Tucson Mountains and on the west by the Sierrita, Black and Tucson Mountains. The mountains on the east and north generally rise to altitudes of 6,000 to 8,000 feet; the mountains to the west reach 3,000 to 6,000 feet. The area is drained to the northwest by the Santa Cruz River and its major tributaries. The Santa Cruz stream system has formed a plain that slopes gently from an elevation of 2,900 feet in the south to approximately 2,000 feet in the northwest. The 50-mile long basin is 15 to 20 miles wide at its southern end and thins to about 4 miles wide at its outlet.

The subsurface beneath the TAA primarily consists of basin-fill deposits (gravels, sandy-gravels, sands, clays, sandy-clays, and clayey-sands). These deposits form two major aquifer zones beneath the TAA: the regional divided aquifer and the regional undivided aquifer. The regional divided aquifer consists of the unconfined "upper aquifer" and the semi-confined "lower aquifer", which are separated by clayey deposits classified as an aquitard. The aquitard pinches out to the northwest beneath the site, resulting in the regional undivided aquifer. The aquifer system is shown in a simplified representation in Figure 3. Groundwater flow beneath the site is generally to the northwest at about 350 to 710 feet per year. Hydraulic conductivity values in the area range from about 3 to 2,000 gpd/ft<sup>2</sup>. There are also limited areas where groundwater is perched upon clay deposits above the upper aquifer table.

\* In the Feasibility Study, "TAA" refers to a study area whose southern boundary is Los Reales Road. In this record of decision, however, "TAA" refers to the entire Superfund site.



APPROXIMATE SCALE IN MILES

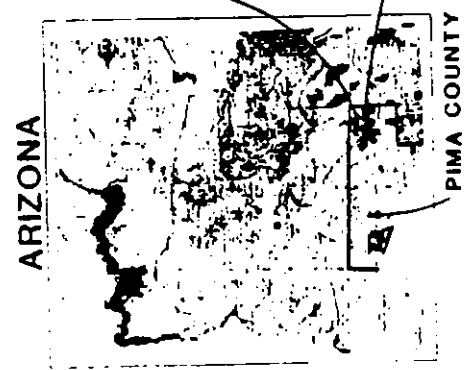
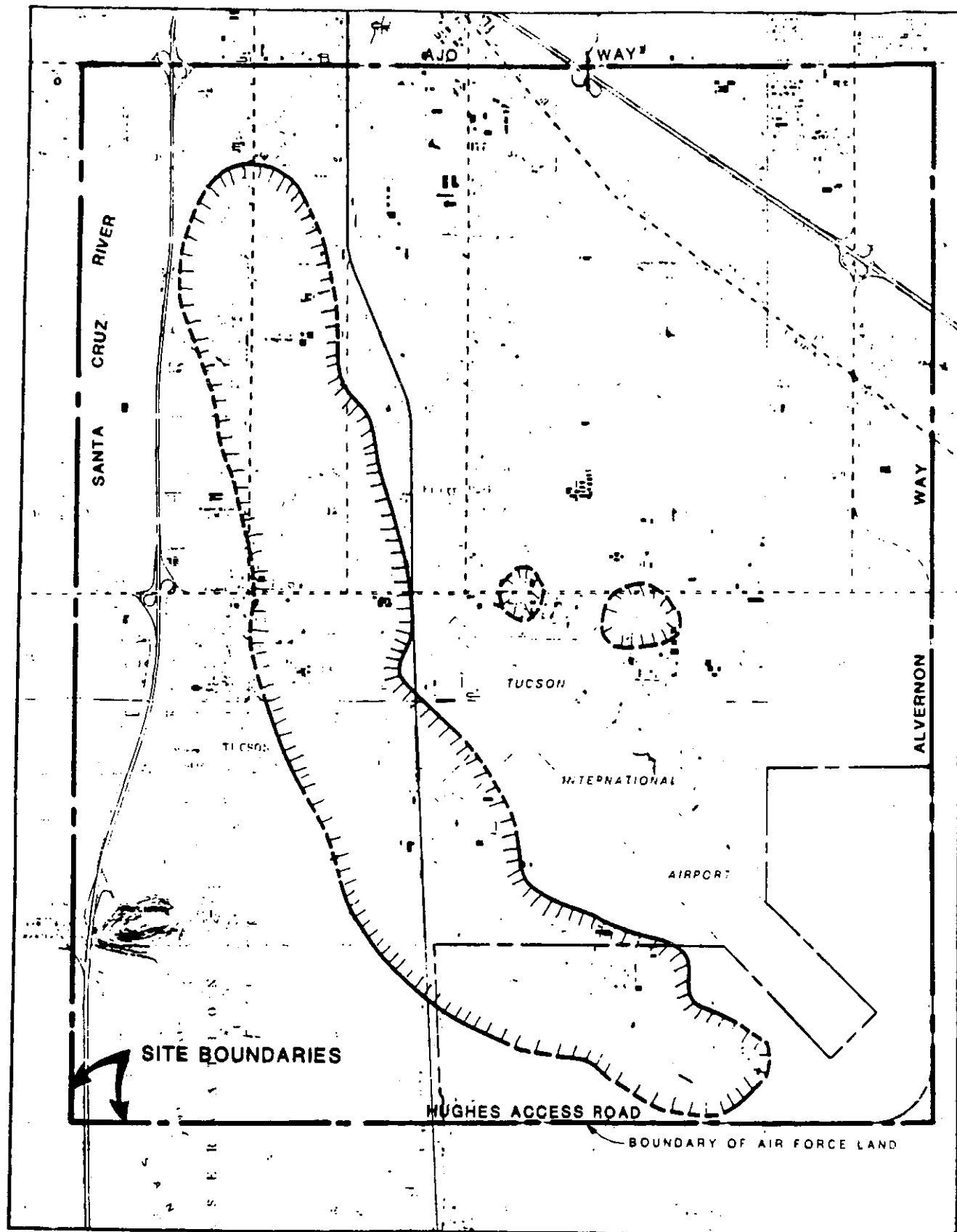


FIGURE 1  
REGIONAL LOCATION MAP  
TUCSON INTERNATIONAL AIRPORT AREA  
RECORD OF DECISION



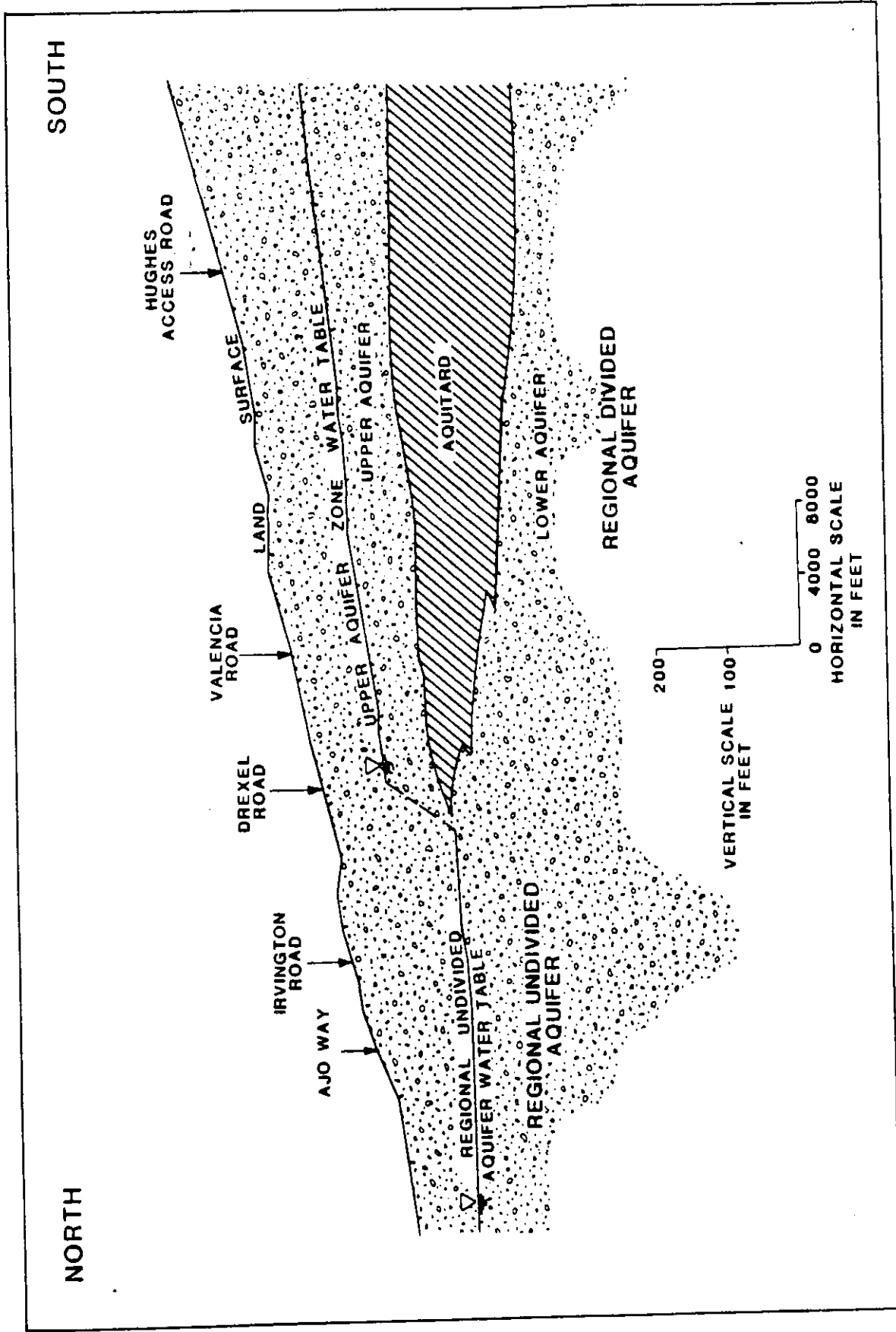
EXPLANATION:



APPROXIMATE LIMITS OF  
TCE CONTAMINATION  
DURING 1984 (DASHED  
WHERE UNKNOWN OR  
INFERRED)

**FIGURE 2**  
**TUCSON INTERNATIONAL**  
**AIRPORT AREA SITE**  
TUCSON INTERNATIONAL AIRPORT AREA  
RECORD OF DECISION





NOTE: GENERALIZED FROM ARIZONA DEPARTMENT  
OF WATER RESOURCES (1985)

FIGURE 3  
SUBSURFACE HYDROGEOLOGY  
TUCSON INTERNATIONAL AIRPORT AREA  
RECORD OF DECISION

Flowing surface water occurs only intermittently in the TAA. Most of the year, in the absence of major rainstorms, the Santa Cruz River and its major tributaries run dry. Therefore, the city of Tucson relies solely upon the aquifers of the Tucson Basin for its drinking water, resulting in the designation of the basin's groundwater system as a Sole Source Aquifer under the federal Safe Drinking Water Act. Before the discovery of contaminated groundwater in the TAA, wells within the site boundaries provided water for about 47,000 people.

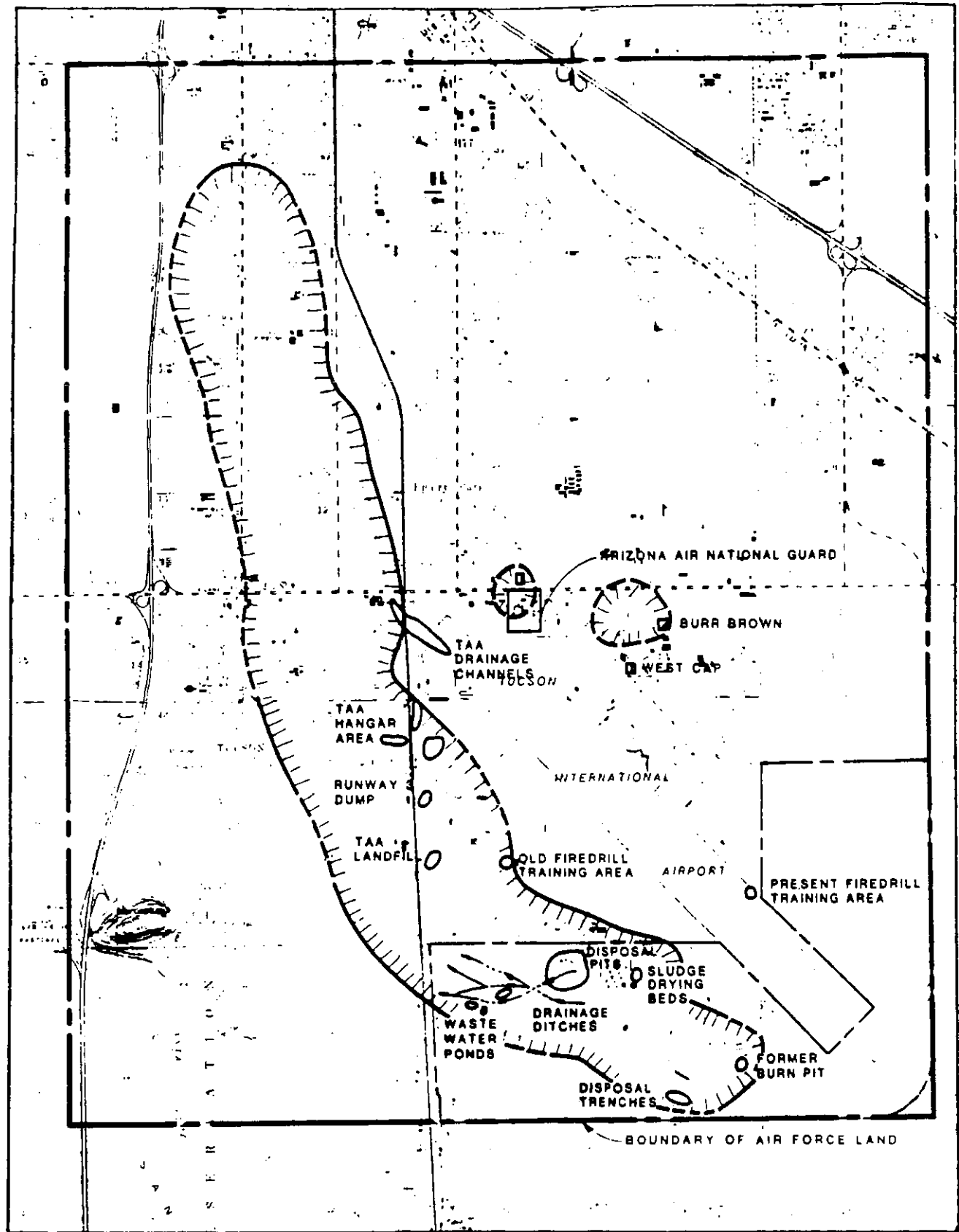
## 2.0 SITE HISTORY

Waste-related activities in the TAA are believed to have begun sometime after the start of airplane refitting operations in 1942 at the location of what is now the Tucson Aviation Center. Since then, at least 20 facilities potentially capable of releasing hazardous materials have operated in the TAA:

- Aircraft manufacturing, maintenance and reworking facilities,
- Electronics components manufacturing and assembly facilities,
- Fire drill training areas, and
- Landfills.

Waste disposal at several of the aircraft and electronics facilities consisted of surface discharge of waste liquids to soils on-site. Liquid waste run-off ponded in drainage areas, providing the driving force for contaminants to infiltrate into the underlying groundwater. At fire drill training areas, flammable wastes, including solvents and fuels, were ignited in unlined fuel pits and doused with large quantities of water. Water and uncombusted wastes were then able to migrate to the underlying saturated zone. The on-site unlined landfills received various wastes from several sources, including facility operators and tenants. Figure 4 indicates the source areas that have been identified within the TAA.

First indications of groundwater contamination in the TAA date back to at least the early 1950's. In 1952, samples from a municipal supply well adjacent to AFP44 indicated elevated levels of chromium. At about the same time, residents near what is now the Tucson Aviation Center complained of foul smelling water from private supply wells. The residents brought suit against the city of Tucson and the Grand Central Aircraft Company, the operator of an aircraft refitting facility at that time. The suit was dismissed when the city offered the residents access to the city water system.



**EXPLANATION:**

APPROXIMATE LIMITS OF  
TCE CONTAMINATION  
DURING 1984 (DASHED  
WHERE UNKNOWN OR  
INFERRED)

**FIGURE 4**  
**POTENTIAL SOURCES OF**  
**GROUNDWATER CONTAMINATION**  
**TUCSON INTERNATIONAL AIRPORT AREA**  
**RECORD OF DECISION**

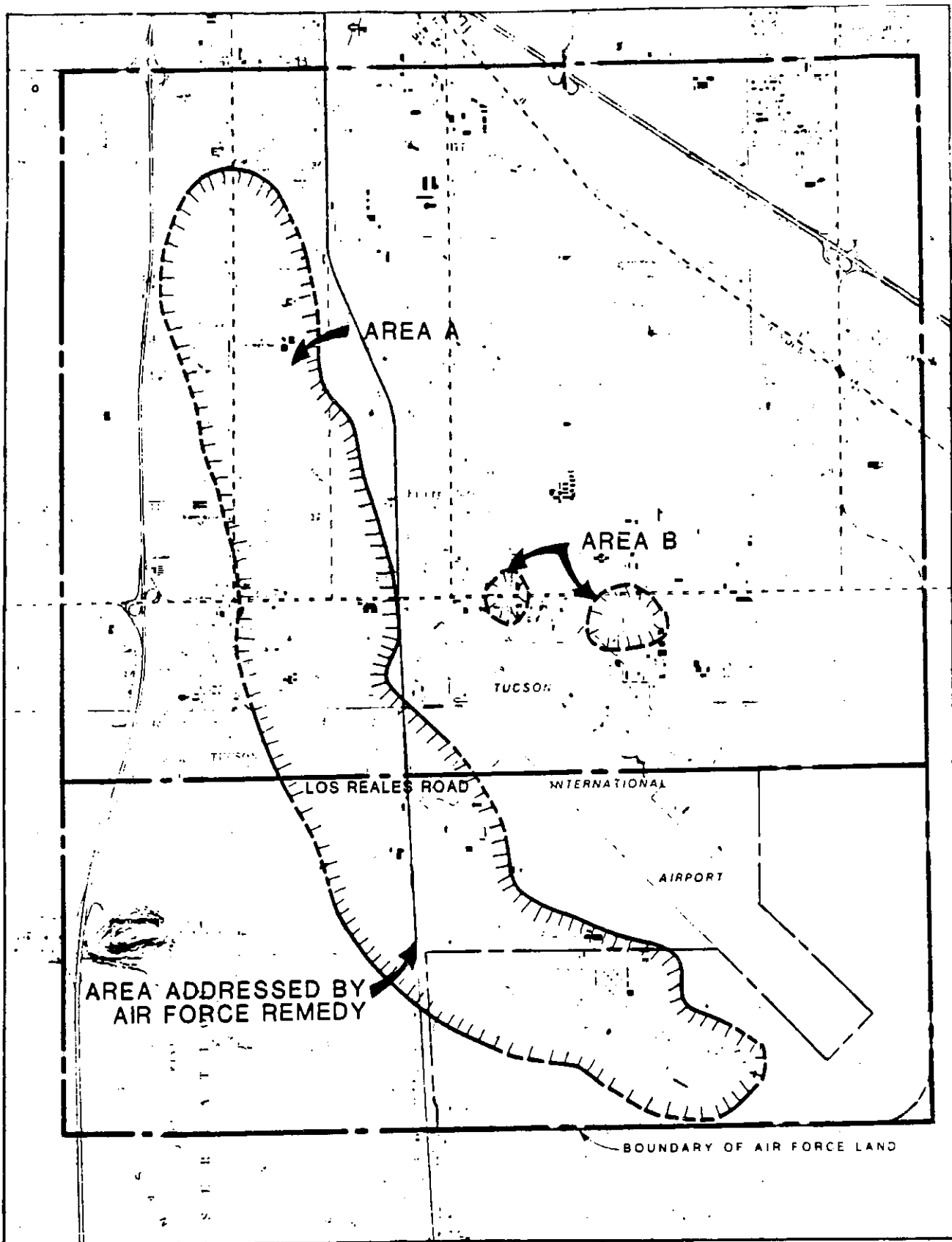
The next indication of groundwater contamination occurred around 1976, when a well at AFP44 was closed by the state because of high levels of chromium. By 1981, further sampling by the Air Force and its contractor, Hughes Aircraft Company, verified high levels of contamination beneath the facility. The sampling at AFP44 and other sampling north of the facility conducted under the direction of the United States Environmental Protection Agency (EPA) indicated the presence of volatile organic contaminants including 1,1,1-trichloroethylene (TCE), 1,1-dichloroethylene (1,1-DCE), 1,1,1-trichloroethane (TCA), chloroform, benzene and xylene. The presence of chromium, mostly in hexavalent form, was also confirmed.

The Tucson International Airport Area was listed on the "Expanded Eligibility List", a preliminary National Priorities List (NPL), on July 23, 1982. It was proposed for inclusion on the original NPL on December 30, 1982, attaining final NPL status on September 8, 1983.

The Air Force continued its investigation of the contamination at AFP44 under the Department of Defense Installation Restoration Program (IRP). Investigations north of AFP44 were carried out by EPA, with the cooperation of the state of Arizona, the city of Tucson and Pima County. As the two investigations continued, there were attempts among the parties to negotiate a Memorandum of Agreement that would formalize roles and responsibilities. These efforts, however, never resulted in a signed agreement. Therefore, the parties decided that the site would be divided -- for purposes of study -- at Los Reales Road, with the Air Force addressing contamination south of the road and EPA studying the area north of the road (Figure 5).

The Air Force Remedial Action Plan (RAP) for the area south of Los Reales Road was released in April 1986. During 1987, the Air Force began operation of its groundwater reclamation system, which extracts groundwater, treats it for removal of hexavalent chromium (ion exchange) and volatile chemicals (packed column aeration with partial control of emissions using vapor phase granular activated carbon), and injects the treated water back into the aquifer.

In 1985, under a Cooperative Agreement with EPA, the Arizona Department of Health Services (ADHS) completed the Remedial Investigation (RI) for the area north of Los Reales Road. Under a second Cooperative Agreement, the Arizona Department of Water Resources (ADWR) conducted the Feasibility Study (FS). Management and technical committees with representatives from EPA, ADWR, ADHS and Tucson Water, the municipal water purveyor, were established to coordinate, review and monitor project activities. On March 3, 1988, the draft "Feasibility Study for Ground Water Remediation in the Tucson Airport Area" was released for public review and comment.



**EXPLANATION:**



APPROXIMATE LIMITS OF  
TCE CONTAMINATION  
DURING 1984 (DASHED  
WHERE UNKNOWN OR  
INFERRED)

**FIGURE 5**  
**AREAS OF GROUNDWATER**  
**REMEDIATION WITHIN**  
**THE TUCSON INTERNATIONAL**  
**AIRPORT AREA**  
TUCSON INTERNATIONAL AIRPORT AREA  
RECORD OF DECISION

Hughes Aircraft has applied for a final RCRA operating permit for its operations at AFP44 pursuant to the Resource Conservation and Recovery Act (RCRA). Hughes has a long RCRA history, with several inspections by EPA and the state of Arizona that have identified instances of noncompliance with regulations. Alleged violations of environmental statutes at the facility are the subject of continuing investigations.

### 3.0 ENFORCEMENT

During August and September, 1987, EPA sent General Notice Letters to the nine potentially responsible parties (PRPs) listed below, officially notifying them of their potential liability for the groundwater remedy north of Los Reales Road.

- ✓ -- Hughes Aircraft Company
- ✓ -- U.S. Air Force
- ✓ -- City of Tucson
- ✓ -- Tucson Airport Authority
- ✓ -- McDonnell Douglas Corporation
- General Dynamics Corporation
- Arizona Air National Guard
- Burr-Brown Research Corporation
- West-Cap Arizona

EPA held an informational meeting for the PRPs in December 1987. EPA and the state of Arizona also presented a briefing on the Feasibility Study for technical representatives of the notified parties. The PRPs have been meeting among themselves for the past several months, although initially not all parties were attending meetings regularly. Attempts by some of the parties to develop a PRP "steering committee" have not been successful.

Special Notice Letters were mailed to the General Notice Letter recipients on July 6, 1988. The 60-day negotiations moratorium that is triggered by Special Notice Letters officially began on July 11th.

### 4.0 COMMUNITY RELATIONS

The public comment period for the FS and the proposed plan opened March 3rd and continued through April 1st. The public meeting was held March 15th at an on-site neighborhood school.

Advanced notice of the availability of the FS for public comment was mailed on February 16, 1988. Two other notices about the FS, the proposed plan fact sheet and the public meeting were mailed by March 15th. For such mailings, EPA has a list of over 600 addresses of community members.

EPA and ADWR sent a press release to local newspapers on March 1st. A newspaper advertisement was published in two local newspapers on March 3rd with information regarding the availability of the FS and the proposed plan and giving the time and place of the public meeting.

The proposed plan fact sheet was sent to the people on the site mailing list on February 25th. In addition, nearly 2000 fact sheets were mailed to community groups for distribution to their own mailing lists. One thousand fact sheets printed in Spanish were also made available at a neighborhood center near the site.

The RI, FS, proposed plan fact sheet and other relevant site information have been available at seven information repositories set up at local libraries and at the Tucson ADWR office. The administrative record, a compilation of the information upon which EPA is basing its selection of remedy, has been available since late February at ADWR's offices in Phoenix and Tucson as well as at EPA's regional office in San Francisco. The administrative record index is provided as an attachment to this Record of Decision.

ADWR and EPA completed the attached responsiveness summary. The responsiveness summary includes responses to comments submitted in writing by residents, elected officials, and the PRPs. It also addresses comments made by attendees at the March 15th public meeting.

In addition to the release activities described above, the agencies met regularly with a group of approximately 10 community members while preparing the FS. This group, called the Community Advisory Group, had representatives from several concerned community organizations. Some members were appointed by elected officials. The Community Advisory Group reviewed and commented upon several drafts of the FS. The group also heard presentations by health and environmental agency officials and were given the opportunity to discuss their concerns with these officials.

## 5.0 DECISION SCOPE

As discussed in the Site History (page 2), the Air Force has begun operation of its remedial groundwater system for the southern area of the site. The response action that is the subject of this decision document is the groundwater remedy for the northern portion of the site. Together, these two remedies constitute the overall remedial strategy for groundwater. This strategy is necessary to restore the Sole Source Aquifer of the Tucson Basin to drinking water quality.

Waste disposal practices in the TAA, at AFP44 as well as elsewhere within the site boundaries, may have resulted in residual soil contamination. Some soils may continue to contribute contamination to the underlying groundwater. Investigations of potential soil contamination throughout the Superfund site are currently planned under both CERCLA and RCRA. Any response actions for soils taken pursuant to CERCLA will be the subject of a future Record of Decision. Actions to be taken pursuant to RCRA, particularly potential actions at AFP44, will likely be incorporated in permit conditions or in administrative orders.

#### 6.0 NATURE AND EXTENT OF CONTAMINATION

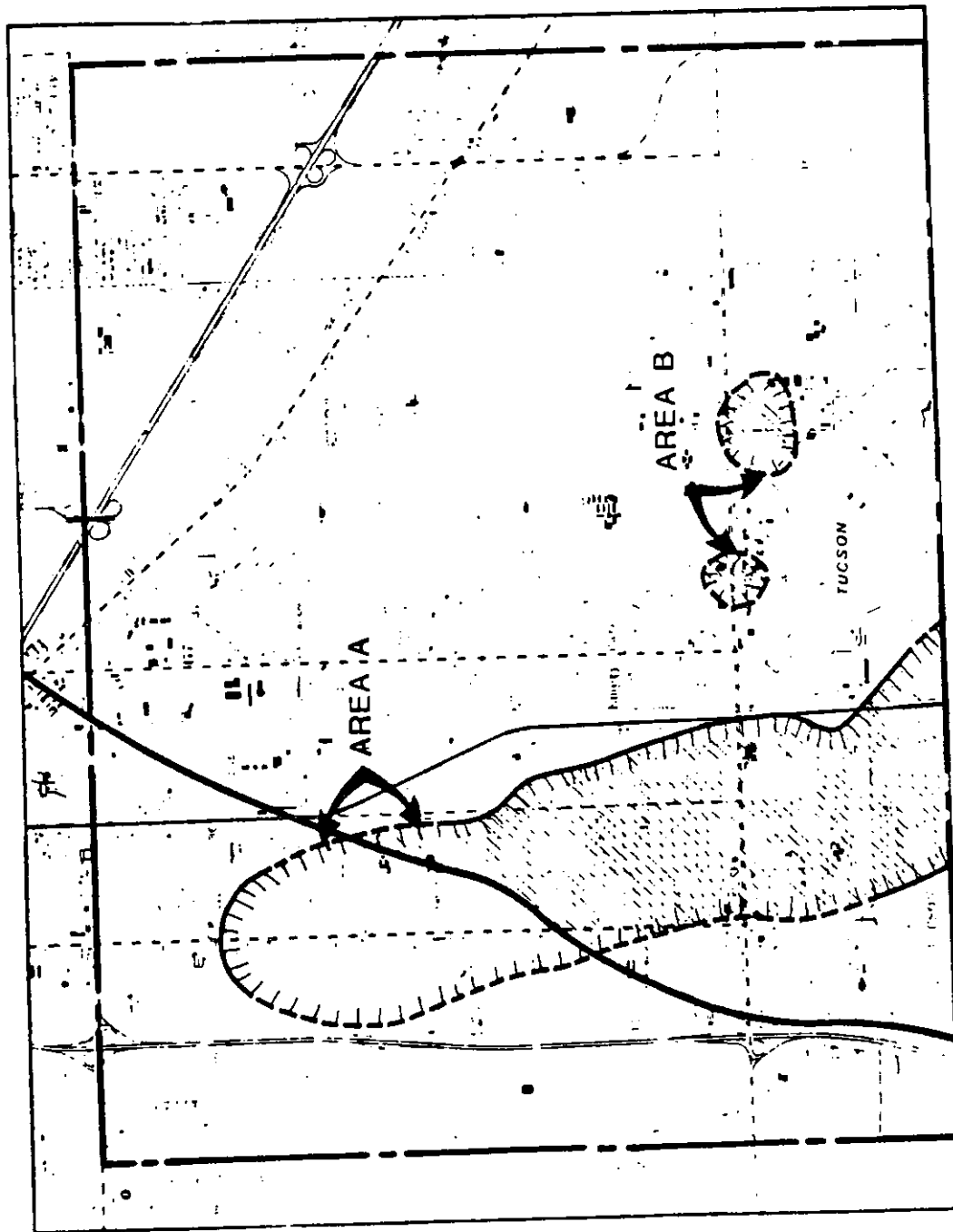
The RI found several areas of groundwater north of Los Reales Road to be contaminated with the solvent TCE, as shown on Figure 6. The main area, referred to as "Area A" starts to the west of the Tucson International Airport and continues to the northwest. Two smaller areas -- believed to be separate from the main area and referred to together as "Area B" -- lie north of the airport.

Area A extends north from Los Reales Road more than three and one-half miles to beyond Irvington Road. The area is generally about three-quarters of a mile wide. Most of the contamination in Area A is in the upper aquifer of the regional divided aquifer. However, as the main contaminant plume has migrated to the northwest, its leading edge has also spread into the regional undivided aquifer. The lower aquifer of the regional divided aquifer is not believed to be contaminated except in the immediate vicinity of wells that form vertical conduits from the upper to the lower aquifer.

The two parts of Area B are more limited in extent, probably because of lower hydraulic conductivities north of the airport. Contamination is believed to be limited to the upper aquifer in these areas.

The RI identified many groundwater contaminants in addition to TCE within the study area. The volatile contaminants of most concern include 1,1-DCE, trans-1,2-dichloroethylene (t-1,2-DCE), chloroform, benzene and xylene. Some hexavalent chromium was also found in a limited area north of Los Reales Road. (The levels of chromium found north of Los Reales Road do not exceed the Safe Drinking Water Act Maximum Contaminant Level (MCL), while the MCL is exceeded at and adjacent to AFP44.) Table 1 lists the contaminants detected in the groundwater north of Los Reales Road, the range of values detected and the number of detections.





# LEGEND

AREA OF CONTAMINATION  
IN UPPER AQUIFER OF  
REGIONAL DIVIDED  
AQUIFER

AREA OF CONTAMINATION  
IN REGIONAL UNDIVIDED  
AQUIFER

APPROXIMATE BOUNDARY  
BETWEEN REGIONAL  
DIVIDED AND UNDIVIDED  
AQUIFER

APPROXIMATE LIMITS OF  
TCE CONTAMINATION  
DURING 1984 (DASHED  
WHERE UNKNOWN OR  
INFERRED)



0 0.5 1  
SCALE IN MILES



FIGURE 6  
GROUNDWATER REMEDIATION  
AREAS ADDRESSED BY  
THE FEASIBILITY STUDY  
TUCSON INTERNATIONAL AIRPORT AREA  
RECORD OF DECISION

TABLE 1

**CONCENTRATION RANGES AND NUMBERS OF DETECTIONS  
FOR CONTAMINANTS FOUND NORTH OF LOS REALES ROAD\***

<u>Chemical</u>	<u>Concentration Range (µg/l)</u>	<u>Number of Detections</u>
trichloroethylene	0.3 - 409	435
1,1,1-trichloroethane	0.12 - 5.6	2
1,1-dichloroethylene	0.3 - 31	77
t-1,2-dichloroethylene	1.2 - 13	70
1,1-dichloroethane	0.7	1
1,2-dichloroethane	2.1 - 8	3
1,2-dichloropropane	0.4 - 0.9	2
isophrone	9	1
carbon tetrachloride	0.5 - 0.8	2
chloroform	0.53 - 54	58
chromium (VI)	10 - 40	48
bis(2-ethylhexyl) phthalate	12 - 265	4
di-n-butyl phthalate	82	1
3,3-dichlorobenzidene	5	1
2-chloroethyl vinyl ether	3 - 6	2
benzene	1.2 - 14	13
toluene	3	1
total xylenes	2.7 - 21	5
naphthalene	5	1
2-methylnaphthalene	5	1
trichlorofluoromethane	1 - 4	2
tetrachloroethylene	0.9	1
chlorobenzene	1	1

\* Concentration ranges and numbers of detections represent data collected from municipal, private and monitoring wells north of Los Reales Road from May 1981 through February 1986.

Beginning in 1981, the City of Tucson has been closing all wells that exceed the State Action Level for TCE of 5 parts per billion (ppb). As a result, no one using the municipal supply system has been exposed to water with TCE concentrations above 5 ppb since 1981. (The water served by the city has also been in compliance with all other federal and state requirements, including the MCLs and State Action Levels for chemicals other than TCE.) However, the RI also identified several private wells that were contaminated above MCLs and State Action Levels. While all known private well users have been notified of the potential risks of using their private wells, there is no reliable mechanism for determining the extent of continued private well use.

While the focus of the RI was on groundwater, limited soil data are available. Although the available data do not suggest that soil contamination is an immediate public health threat, there is not enough data at this time to conclude that there are no soil areas that are continuing sources of groundwater contamination. Further investigation will clarify the need for response actions for soils.

#### 7.0 BASELINE SITE RISKS

The no action risk baseline was calculated in the Public Health Evaluation to be approximately  $10^{-5}$ . This number represents the risk due to exposure to groundwater from the upper divided aquifer north of Los Reales Road and from the regional undivided aquifer. While the city of Tucson by law cannot serve water that exceeds MCLs, the public health evaluation hypothetically removes this institutional control and assumes ready access to the contaminated water via municipal supply wells.

While more than 20 chemical contaminants have been detected at elevated concentrations in the TAA, many of these were not carried through all calculations during the Public Health Evaluation because of (1) low frequency of detection, (2) low concentrations when detected or (3) a combination of low frequency and low concentrations.

In the Public Health Evaluation, TCE, 1,1-DCE, t-1,2-DCE, chloroform, benzene and hexavalent chromium were selected as indicator chemicals. However, t-1,2-DCE and hexavalent chromium are not considered potential carcinogens in water; therefore, they do not contribute to the baseline number stated above. In addition, because of equivocal evidence of carcinogenicity, 1,1-DCE was not considered a carcinogen for the Public Health Evaluation for this site. Therefore, TCE, chloroform and benzene are the chemicals from which the baseline carcinogenic risk was derived.

At sufficiently high exposure levels, the noncarcinogens, along with some of the carcinogens, have chronic (noncarcinogenic) health effects associated with them. However, the contaminant concentrations in the TAA are all below levels believed to have the potential to result in noncarcinogenic health effects.

The primary exposure pathway is considered ingestion of groundwater. For the indicator chemicals, dermal contact is not a demonstrated pathway of concern. Inhalation of vapors during activities such as showering would tend to increase the baseline risk from ingestion, and may, in fact, approach it in magnitude. However, the risk from this pathway is not currently quantifiable.

The risks calculated in the Public Health Evaluation also reflect the assumption that the ongoing Air Force remedial action is meeting its goals for groundwater containment and treatment. Therefore, the higher levels of contamination that have been observed south of Los Reales Road have not been incorporated into the baseline risk for the current remedial action. Instead, it is assumed that groundwater "crossing" Los Reales Road has maximum levels of contamination that are equivalent to the Air Force's treatment goals. However, based upon TCE concentrations that are generally one to two orders of magnitude higher in the southern area, the baseline risk would have approached at least  $10^{-4}$  if these higher levels had been incorporated.

#### 8.0 CHANGES TO THE PROPOSED PLAN

This decision document presents one substantive change to the preferred remedy described in the proposed plan. In addition, some uncertain aspects that were included in the proposed plan are clarified herein.

The proposed plan released on February 25, 1988 recommends extraction of groundwater from both the upper divided aquifer and the regional undivided aquifer. The remedy includes the sealing of wells that form conduits between the upper and lower aquifers. Treatment of groundwater -- to an overall risk level of  $10^{-6}$  -- would take place at a single packed column aeration facility. The municipal distribution system would receive the treated water by gravity flow.

The one significant change to the remedy summarized above is that a reasonably available control technology (RACT) will be proposed for reduction of emissions from any new packed column facility having the potential to emit in excess of 2.4 pounds per day of airborne volatile organic compounds (VOCs). In this case, RACT may consist of granular activated carbon (GAC). This change is made in order to comply with Pima County Air Quality Control Regulation 17.12.090 Sub-Paragraph E. (See the ARARs section on

page 11.) Consistency with the Pima County rule is supported by the city, county and state. Control of air emissions was also a major community concern voiced during the public comment period.

The proposed plan discusses several aspects of the remedy that may require adjustments during design. For instance, continuing discussions with the Air Force may reveal greater viability of the AFP44 reclamation system for some portion of the water from north of Los Reales Road. Any water treated at AFP44 would likely be injected back into the aquifer rather than put directly into the distribution system. In addition, partial use of AFP44 might make one or more wellhead treatment facilities a reasonable alternative. Depending upon the final configuration of the extraction system and treatment facility(ies), therefore, it may be necessary to reinject some water while putting other treated water to direct use through the municipal distribution system. Finally, as mentioned in the proposed plan, some refinement of extraction well locations and capacities is expected during design.

The remedy for Area B, as proposed, is basically a smaller scale copy of the remedy for Area A. As stated in the proposed plan, however, the Area B recommendation is considered preliminary, based upon a more limited data base. Therefore, there may be some changes in the remedial strategy for Area B as more information becomes available, providing that the changes maintain the same level of protection of human health and the environment and the same level of compliance with ARARs as does the selected remedy.

## 9.0 DESCRIPTION OF ALTERNATIVES

The project management committee for the TAA Feasibility Study developed objectives for response actions in the TAA:

- To manage migration of contaminants,
- To achieve public acceptance of the remedy,
- To protect public health and the environment,
- To attain consistency with ARARs,
- To determine the most environmentally sound, technically feasible, and cost-effective remedy, which can be implemented in a timely manner, and
- To ensure consistency with AFP44 remedial actions.

The natural conditions at the TAA, including the desert environment and the depth to the water table, limit the range of available response actions for contaminated groundwater. For instance, no surface water control options were developed in detail because of the lack of flowing surface waters. Containment options such as slurry walls and sheet piling were inappropriate because of the areal extent of contamination and the depth to groundwater (generally >120 feet).

The remedial alternatives (except the no action alternative) that were developed in detail for the Tucson International Airport Area consist of three main components: groundwater control measures, treatment of contaminated groundwater and an end use for treated water.

As shown in Table 2, the groundwater control options consist of variations of the areas from which water would be pumped. Extraction from the upper aquifer only, from the undivided aquifer only and from both the upper and undivided aquifers were considered. Options entailed extraction rates from 650 gpm to 4,200 gpm for Area A and a rate of 300 gpm for Area B. Extraction options were developed with and without reinjection.

Several treatment methods underwent detailed analysis:

- Packed column aeration,
- Packed column aeration with vapor phase granular activated carbon,
- Liquid phase granular activated carbon, and
- Treatment at AFP44.

UV/ozone oxidation was considered but was eliminated due to questionable performance in treating to the low levels required and due to a lack of cost-effectiveness when compared to other remaining treatment options. In-situ aerobic biodegradation was also dropped from consideration because of questionable implementability and because of cost estimates of up to an order of magnitude higher when compared to the technologies listed above.

Treatment at a central facility (one each for Area A and Area B) and at each wellhead were analyzed. The FS assumed that each treatment method would be sized according to the selected pumping option. Based upon TCE's chemical characteristics and upon regulatory requirements for TCE, treatment alternatives were analyzed over a range of treatment levels from attainment of MCLs down to EPA laboratory method detection limits.

In many instances, several end uses for treated water are theoretically available in the development of response actions. In this case, however, the aquifer of concern has been designated a Sole Source Aquifer under the Safe Drinking Water Act, and according to the Groundwater Management Plans for the Tucson Active Management Area, any water withdrawn from the aquifer must be put to its highest beneficial use. Therefore, the end use options were limited to direct drinking water use or reinjection for drinking water use at a later time.

TABLE 2

GROUNDWATER CONTROL ALTERNATIVES CONSIDERED  
IN THE FEASIBILITY STUDY

ALTERNATIVE*	EXTRACTION*	REINJECTION	ESTIMATED PROJECT TIME
<u>Area A</u>			
A-3	3 wells in the upper divided aquifer	NONE	20 yrs
A-4	3 wells in the upper divided aquifer & 2 wells in the undivided aquifer	NONE	20 yrs
A-5	2 wells in the undivided aquifer	NONE	20 yrs
A-6	3 wells in the upper divided aquifer	50% reinjected 4 wells in the upper divided aquifer	15 yrs
A-7	3 wells in the upper divided aquifer & 2 wells in the undivided aquifer	50% reinjected 4 wells each in the upper divided and undivided aquifers	15 yrs
<u>Area B</u>			
B-2	2 wells in the upper divided aquifer	NONE	20 yrs
B-3	2 wells in the upper divided aquifer	at least 50% reinjected -- 2 wells	15 yrs

\* Letter/number designations for alternatives are those used in the FS.

\* The number of wells actually indicates the number of locations for one or more wells -- the exact number and location will be determined in design.

Estimated costs for alternatives that were developed in detail for Area A ranged from about 1.5 to 14.2 million dollars. The range for Area B is from about 0.9 to 2.3 million dollars. Tables 3 and 4 give a summary of capital and operations and maintenance costs for the alternatives.

10.0      APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS  
            (ARARs)

The Groundwater Management Plans mentioned above are an important ARAR, limiting the potential uses of any groundwater withdrawn during remediation. The requirements of Title 45 of the Arizona Code and Environmental Quality Act are also applicable for actions in the TAA. In addition, all of the Safe Drinking Water Act MCLs are applicable at the site. Arizona has its own State Action Levels, a few of which are more stringent than the MCLs. While the State Action Levels are not promulgated and are not, therefore, ARARs, they have been taken into consideration during the development of remedial alternatives. Table 5 lists the MCLs and State Action Levels for indicator chemicals from the Public Health Evaluation.

Table 5 also lists the Maximum Contaminant Level Goals (MCLGs) for the indicator chemicals. MCLGs, which are based only upon health criteria, are not directly applicable as chemical-specific requirements because they are not enforceable standards. The MCLs are considered the chemical-specific ARARs because they are (1) the enforceable drinking water standards, (2) required to be set as close to the MCLGs as is feasible, taking into consideration the best technology, treatment techniques and other factors (including cost), and (3) protective of public health to within EPA's acceptable risk range of  $10^{-4}$  to  $10^{-7}$ .

Pima County Air Quality Control Regulation 17.12.090 Sub-Paragraph E is also an important ARAR in the TAA. The ordinance requires a proposal of reasonably available control technology (RACT) in the event that any stationary source has the potential to emit a total of 2.4 pounds per day of volatile organic compounds (VOCs).

With certain exclusions, the Arizona Environmental Quality Act (EQA) delegates air pollution control authority to the counties. Therefore, having been duly promulgated by the Pima County Board of Supervisors in accordance with the EQA, Pima County Air Quality Control Regulation 17.12.090 Sub-Paragraph E constitutes a promulgated state requirement under a state environmental law -- as set forth in §121(d) of CERCLA -- and is generally applicable.



TABLE 3

# SUMMARY OF PRESENT WORTH COSTS OF REMEDIAL ALTERNATIVES (CENTRAL FACILITIES)

	A-3	A-4	A-5	A-6	A-7	B-2	B-3
<hr/>							
Packed Column Aeration							
-----							
Capital	1.68	2.83	1.56	3.45	6.97	0.66	1.09
O & M	<u>0.71</u>	<u>1.86</u>	<u>1.42</u>	<u>1.20</u>	<u>4.18</u>	<u>0.36</u>	<u>0.62</u>
Total	\$2.39	\$4.69	\$2.98	\$4.65	\$11.15	\$1.02	\$1.71
Packed Column with GAC							
-----							
Capital	1.90	3.10	1.90	3.70	7.48	0.88	1.48
O & M	<u>1.37</u>	<u>3.34</u>	<u>3.12</u>	<u>2.27</u>	<u>6.71</u>	<u>0.50</u>	<u>0.77</u>
Total	\$3.27	\$6.44	\$5.02	\$5.97	\$14.19	\$1.38	\$2.25
Liquid Phase GAC							
-----							
Capital	2.00	3.70	2.29	3.92	8.83	0.81	1.24
O & M	<u>1.87</u>	<u>3.55</u>	<u>2.06</u>	<u>3.06</u>	<u>7.08</u>	<u>0.43</u>	<u>0.69</u>
Total	\$3.87	\$7.25	\$4.35	\$6.98	\$15.91	\$1.24	\$1.93
Treatment at AFP44							
-----							
Capital	1.57	2.44	1.30	3.47	6.43	----	----
O & M	<u>1.39</u>	<u>4.14</u>	<u>3.03</u>	<u>2.31</u>	<u>8.15</u>	----	----
Total	\$2.96	\$6.58	\$4.33	\$5.78	\$14.58	----	----

Costs are in millions. Operations and maintenance costs assume a discount rate of 10% over 20 years for A-3, A-4, A-5 and B-2. A 10% discount rate over 15 years is assumed for A-6, A-7 and B-3.

TABLE 4

**SUMMARY OF PRESENT WORTH COSTS OF REMEDIAL ALTERNATIVES  
(WELLHEAD FACILITIES)**

	A-3	A-4	A-5	B-2	B-3
<hr/>					
Packed Column Aeration -----					
Capital	1.65	2.49	1.29	0.66	1.15
O & M	<u>0.82</u>	<u>2.03</u>	<u>1.47</u>	<u>0.41</u>	<u>0.60</u>
Total	2.47	4.52	2.76	1.09	1.75
Packed Column with GAC -----					
Capital	2.48	3.61	1.76	1.12	1.58
O & M	<u>1.51</u>	<u>3.52</u>	<u>2.27</u>	<u>0.60</u>	<u>0.78</u>
Total	3.99	7.13	4.03	1.72	2.36
Liquid Phase GAC -----					
Capital	1.72	3.95	1.95	1.11	1.57
O & M	<u>1.95</u>	<u>3.72</u>	<u>1.99</u>	<u>0.61</u>	<u>0.79</u>
Total	3.67	7.67	3.94	1.72	2.36
<hr/>					

Costs are in millions. Operations and maintenance costs assume a discount rate of 10% over 20 years for A-3, A-4, A-5 and B-2. A 10% discount rate over 15 years is assumed for B-3.

TABLE 5

MCLs, MCLGs & STATE ACTION LEVELS  
FOR CONTAMINANTS IN THE TAA  
( $\mu\text{g/l}$ )

CHEMICAL	MCL OR PROPOSED MCL	MCLG OR PROPOSED MCLG	STATE ACTION LEVEL*
trichloroethylene	5	zero	5
1,1-dichloroethylene	7	7	7
chloroform	100	---	3
chromium (VI)	50	120	---
t-1,2-dichloroethylene	---	70	70
benzene	5	zero	5

\* State Action Levels are set by the Arizona Department of Health Services.

However, the EQA reserves for the state exclusive air pollution control authority with respect to facilities operated by the state or a subdivision of the state. Therefore, because the extent of state involvement in the operation of the proposed treatment system(s) has not been determined, the Pima County rule may not be applicable to all remedial actions in the TAA. But regardless of who operates any treatment facility(ies), the county rule remains relevant with respect to conditions in the TAA. In addition, because the county's rule would be applicable in the case of privately-operated facilities, it is appropriate that state-operated facilities should comply with the same requirements. In all cases, therefore, Pima County Air Quality Control Regulation 17.12.090 Sub-Paragraph E is a requirement that is applicable or relevant and appropriate.

While the city of Tucson is in an area that exceeds the level of ambient carbon monoxide allowed by the Clean Air Act (CAA), none of the contemplated remedial actions are expected to affect carbon monoxide levels. But the area is also within 4% of exceeding its CAA limit for ozone; several of the VOCs that have been found in the the groundwater (and that would become airborne during water treatment) act as ozone precursors.

None of the remedial alternatives presents any threat to natural resources or any impact upon the 100-year floodplain. No other site-specific siting requirements have been identified.

#### 11.0 SUMMARY OF ALTERNATIVES ANALYSIS

Several alternatives that were originally developed in the FS were eliminated before detailed development and analysis. Examples are alternatives that include no aquifer cleanup but call for continued groundwater monitoring and alternate water supplies as a means of protecting public health. In general, these options were eliminated because they are less protective of the environment and because they tend to be costly in comparison to alternatives that offer greater protection.

In addition to the information provided in this section, Tables 6 and 7 provide summaries of the analyses of groundwater controls and of treatment technologies, respectively.

#### **Groundwater Control Alternatives**

The groundwater control alternatives involving extraction from only the upper divided aquifer are not considered protective of human health and the environment because they would allow the leading edge of the contaminant plume to continue to migrate and potentially contaminate more wells. Extraction from only the regional undivided aquifer also is not considered fully protective of human health and the environment. This option assumes that all contamination from the upper divided aquifer can

be removed when it migrates to the undivided zone, but subsurface conditions are such that they introduce uncertainty as to the fate of contaminants. This situation supports the more aggressive strategy of pumping from both the upper and the undivided aquifers. Alternatives that include reinjection of treated water are generally eliminated because of cost increases of about 50% and because of concerns about the potential for extensive operations and maintenance requirements for reinjection wells. However, in the event that any water is treated at AFP44, reinjection or some other form of groundwater recharge may be necessary to maintain consistency with current operations at the facility.

### **Groundwater Treatment Alternatives**

All of the treatment technologies that went through detailed analysis are capable of treating the water to desired levels. In addition, all technologies are virtually equal in protection of human health.

Packed column aeration without vapor phase GAC is somewhat less able to decrease the toxicity and mobility of contaminants than are packed column aeration with vapor phase GAC and liquid phase GAC (AFP44 utilizes packed column aeration with some vapor phase controls). However, aeration without emission controls was considered slightly more reliable, with fewer operations and maintenance requirements. Aeration with emission controls is preferred by the community over aeration alone because of a perceived health risk difference between the two. But when calculated in the Public Health Evaluation, this risk difference was not significant. In addition, packed column aeration is at least 25% less in overall project cost than the other three treatment options. However, depending upon well configuration and pump rates, packed column aeration may exceed the 2.4 pounds per day level for VOCs that is referred to in the Pima County air quality regulations.

### **End Use of Treated Groundwater**

As discussed previously, the options for use of groundwater extracted from the Tucson Basin are limited by the Groundwater Management Plans. As a result, after elimination of reinjection alternatives because of high costs (with the possible exception for water treated at AFP44, as stated previously under Groundwater Control Alternatives), there is only one available option: use treated water for drinking water.

TABLE 7

## TREATMENT TECHNOLOGIES

## Analysis of Alternatives

ALTERNATIVE	PROTECTION OF HEALTH AND ENVIRONMENT		COMPLIANCE WITH ARARS	PERFORMANCE OF TECHNOLOGY	FEASIBILITY OF IMPLEMENTATION	ACCEPTANCE OF ALTERNATIVE		COST Capita + O & M Total
	Short Term	Long Term				State	Community	
Packed Column Aeration	Can treat to $10^{-6}$ . TCE and other VOCs may act as ozone precursor after being stripped from the water.		May exceed level in Pima Co. air emis- sion rule under some extraction scenarios.	Adequate	Feasible	Yes	No  Supported by most PRPs.	560,0  460,0 ----- \$ 1,020,0
Packed Column Aeration with Vapor Phase GAC	Can treat to $10^{-6}$ ; a very small risk reduc- tion compared to aera- tion alone over the 20 years of operation. Ozone precursor emis- sions also reduced.		Full Compliance	Adequate	Feasible  Disposal of spent carbon is a potential problem.	Yes  Cost share issues have not been fully dis- cussed.	Yes -- most public com- ments de- manded vapor GAC.	825,0  1,471,0 ----- \$ 2,296,0
Liquid Phase GAC	Can treat to $10^{-6}$ . Completely eliminates ozone precursor emis- sions and exposure to air toxics.		Full Compliance	Adequate	Feasible  Disposal of spent carbon is a potential problem.	No	No public comment but would be supported.	1,416,0  2,156,0 ----- \$ 3,572,0
AFP44: Aeration with some Vapor Phase GAC	Can treat to $10^{-6}$ . Secondary packed columns emit airborne VOCs.		Not yet certain.	May require additional reinjection wells.	Already in operation; co- ordination & cooperation are major con- cerns.	Yes	Public not confident in Hughes.	157,0  2,746,0 ----- \$ 2,903,0

All analyses assume the same groundwater control alternative (A-4) for each treatment option.

UV/ozone oxidation and in-situ aerobic biodegradation were also considered but did not pass through screening to detailed evaluation. Major negative factors were questionable performance and high costs.

\* Annual O&M cost for Packed Column Aeration with Vapor Phase GAC includes the minimum estimate for carbon replacement cost. The high-side estimate for carbon replacement results in 20-year O&M of \$1,939,000.

**TABLE 6**  
**GROUNDWATER CONTROLS**  
**Analysis of Alternatives**

ALTERNATIVE	PROTECTION OF HEALTH AND ENVIRONMENT		COMPLIANCE WITH ARARS	PERFORMANCE OF TECHNOLOGY	FEASIBILITY OF IMPLEMENTATION	ACCEPTANCE OF ALTERNATIVE		COST
	Short Term	Long Term				State	Community	Capital O & M Total
A-3: Pump from upper aquifer	Protective of health only in conjunction with institutional controls; does not stop migration.		Does not satisfy AZ EOA.	Adequate	Feasible	No	No public comment.	1,409,000 561,000 \$ 1,970,000
A-4: Pump from upper & undivided aquifers	Protective of health while also controlling contaminant migration.		Full Compliance	Adequate	Feasible	Yes	Yes Most PRPs support.	2,276,000 1,399,000 \$ 3,675,000
A-5: Pump from undivided aquifer	Adequately protective of health; some uncertainty about aquifer protection as plume approaches wells.		Does not completely satisfy AZ EOA.	Adequate	Feasible	No	City's preference. No public comment.	1,145,000 1,110,000 \$ 2,255,000
A-6: Pump & reinject in undivided aquifer	Offers somewhat more protection than A-5 in that remediation time should be decreased.		Does not completely satisfy AZ EOA.	Somewhat better control of plume migration with reinjection.	Reinjection wells likely to introduce complications during O&M.	No	No public comment.	3,050,000 946,000 \$ 3,996,000
A-7: Pump & reinject in upper & undivided aquifers	Offers somewhat more protection than A-4 in that remediation time should be decreased.		Full Compliance	Somewhat better control of plume migration with reinjection.	Reinjection wells likely to introduce complications during O&M.	May support in lieu of A-4.	No public comment.	6,012,000 3,356,000 \$ 9,368,000
<b>=====</b>								
B-2: Pump from upper aquifer	Protective of health; controls migration.		Full Compliance	Adequate	Feasible	Yes	No public comment.	495,000 263,000 \$ 758,000
B-3: Pump & reinject in upper aquifer	Offers somewhat more protection than B-2 in that remediation time should be decreased.		Full Compliance	Somewhat better control of plume migration with reinjection.	Reinjection wells likely to introduce complications during O&M	No	No public comment.	922,000 503,000 \$ 1,425,000

## 12.0 THE SELECTED REMEDY

The selected remedy for Area A includes control of ground-water contamination through extraction from both the upper divided aquifer and the regional undivided aquifer. Wells that form vertical conduits between the upper and lower aquifers will be sealed to limit the spread of contamination to the lower aquifer. The treatment technology will be packed column aeration. Where emissions of airborne VOCs from new packed column facilities have the potential to exceed 2.4 pounds per day, reasonably available control technology, potentially consisting of granular activated carbon, will be proposed for the reduction of emissions. Treated water will be gravity-fed directly into the municipal water distribution system. If any groundwater is treated at AFP44, this water will likely be reinjected or otherwise returned to the aquifer rather than supplied directly to the municipal system.

Extraction from both the upper and undivided aquifers is chosen because this strategy will contain the migration of contamination and will remove high levels of contamination from areas where they are currently believed to be. Packed column aeration is chosen for treatment because this method provides virtually the same public health protection as the other technologies with substantially less cost. Air emission controls will be used to comply with local air quality regulations if VOC emissions are likely to exceed 2.4 pounds per day. Direct drinking water use is chosen as the end use because of the restrictions of the Groundwater Management Plans for the Tucson Active Management Area and because of concerns about the reliability of reinjection wells. However, the option to reinject water treated at AFP44 is preserved in order to maintain consistency with current operations of the facility.

The target TCE concentration for treated water is 1.5  $\mu\text{g/l}$  (1.5 ppb), well below TCE's MCL of 5 ppb and below its  $10^{-6}$  excess cancer risk level of 3.0 ppb. Taking into account the presence of other contaminants, this treatment goal for TCE will result in an overall excess cancer risk of  $10^{-6}$ . With a design for a level of TCE that is less than its  $10^{-6}$  excess cancer risk concentration, treatment will bring the levels of other contaminants well below their respective MCLs, State Action Levels, and  $10^{-6}$  excess cancer risk concentrations. The choice of an overall  $10^{-6}$  level versus treatment to MCLs or to, for instance, the  $10^{-6}$  level for TCE was made because a measurable difference (reduction by 1/2 or more) in risk could be made for less than a 5% cost increase.

For Area B, the remedy will include extraction from the upper aquifer and treatment to an overall excess cancer risk level of  $10^{-6}$ . Packed column aeration will be used unless further information indicates that another treatment method is more cost-



effective or more easily implementable while still offering the same level of protection of human health and the environment and while still complying with all ARARs including those contained in Title 45 of the Arizona Code. The low levels of contamination in Area B indicate that no air emission controls will be needed on the packed column(s).

The remedies for Area A and Area B are expected to be in operation for approximately 20 years. Over this period, at least two pore volumes of groundwater will be withdrawn from the aquifer. Groundwater monitoring will also continue during the implementation of the remedy to verify (1) the control of contaminant migration and (2) the decrease in contaminant concentrations in the aquifer.

Costs for the selected remedies for both areas are given in detail in Table 8. These costs reflect the use of central treatment facilities and the inclusion of vapor phase GAC as the air emission control technology. (The actual choice of air emission controls is subject to approval by Pima County.) Other possible variations, such as partial treatment at AFP44 or at some wellheads, could affect the figures presented in Table 8.

### 13.0 STATUTORY DETERMINATIONS

The selected remedy is protective of human health and the environment -- as required by Section 121 of CERCLA -- in that it treats groundwater to an overall excess risk level of  $10^{-6}$ , below the MCLs for the contaminants of concern. In addition, the remedy at least attains the requirements of all ARARs, including the MCLs, the Arizona Groundwater Code, the Arizona Environmental Quality Act, and Pima County air regulations. As shown on the chart below, packed column aeration is the most cost-effective treatment technology of those developed in detail in the FS.

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#### COMPARISON OF COSTS FOR TREATMENT TECHNOLOGIES\*

Treatment Option	Dollars Per, Thousand Gallons <sup>#</sup>
Packed Column Aeration	0.05
Packed Column w/Vapor Phase GAC	0.12
AFP44	0.13
Liquid GAC	0.16

\* Costs are treatment system capital costs plus present worth O&M costs for 20 years, assuming a 10% discount rate. Conveyance costs are not included.

<sup>#</sup> Based upon 2150 gpm, 24 hrs/day for 20 years.

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TABLE 8

# DETAILED COSTS OF SELECTED REMEDIES FOR CONTAMINATED GROUNDWATER NORTH OF LOS REALES ROAD

	AREA A	AREA B
CONSTRUCTION		
-----		
Piping	819,000	65,000
Wells	385,000	85,000
Aquifer Segregation	40,000	0
Land	37,000	6,000
Concrete Foundation & Clearwell	35,000	35,000
Engineering Overhead & Profit	235,000	31,000
1. SUBTOTAL	\$1,551,000	\$222,000
PUMPING -- CAPITAL		
-----		
Well Pumps	172,000	42,000
Booster Pumps	15,000	15,000
Pump Facilities	475,000	190,000
Installation Cost	8,000	4,000
Contingencies & Shipping	52,000	21,000
2. SUBTOTAL	\$722,000	\$272,000
PUMPING -- ANNUAL O & M		
-----		
Power	112,347	13,797
Materials	10,000	4,000
Maintenance	15,600	7,800
Monitoring	26,360	9,010
SUBTOTAL	164,307	34,607
3. PRESENT WORTH (20 yrs @ 10%)	\$1,399,000	\$295,000
4. TOTAL CONSTRUCTION & PUMPING COSTS (LINES 1, 2 & 3)	\$3,672,000	\$789,000
PACKED COLUMN AERATION -- CAPITAL		
-----		
Excavation	36,000	9,600
Equipment	254,000	88,000
Electrical & Instrumentation	86,000	23,000
Piping & Valves	50,000	13,000
Contingencies	48,000	13,000
Contractor Overhead & Profit	38,000	10,000
Engineering	48,000	13,000
5. SUBTOTAL	\$560,000	\$170,000
PACKED COLUMN AERATION -- ANNUAL O & M		
-----		
Power	19,400	2,300
Labor	9,700	1,100
Maintenance Materials	18,300	2,400
Monitoring	6,600	800
SUBTOTAL	54,000	6,600
6. PRESENT WORTH (20 YRS @ 10%)	\$460,000	\$56,000
7. TOTAL PACKED COLUMN AERATION COSTS (LINES 5 & 6)	\$1,020,000	\$226,000
8. TOTAL CONSTRUCTION, PUMPING & PACKED COLUMN AERATION COSTS (LINES 4 & 7)	\$4,692,000	\$1,015,000

TABLE 8  
(CONTINUED)

	<u>AREA A</u>	<u>AREA B</u>
VAPOR PHASE GAC -- CAPITAL		
-----		
Contractor	100,000	100,000
Initial GAC	40,000	40,000
Blowers	18,000	6,000
Ductwork	10,000	3,000
Heaters	12,000	4,000
Piping	6,000	2,000
Contingencies	28,000	23,000
Contractor Overhead & Profit	22,000	18,000
Engineering	28,000	23,000
9. SUBTOTAL	\$264,000	\$219,000
VAPOR PHASE GAC -- ANNUAL O & M		
-----		
Heating	38,000	6,000
Power	47,500	7,500
Maintenance Materials	9,500	1,500
Carbon Replacement	23,580 - 78,800	800 - 2,600
SUBTOTAL	118,580 - 173,800	15,000 - 17,600
10. PRESENT WORTH	\$1,010,000 - 1,480,000	\$128,000 - 150,000
(20 YEARS @ 10%)	-----	-----
11. TOTAL VAPOR PHASE GAC COSTS,	\$1,744,000	\$369,000
HIGH ESTIMATE (LINES 9 & 10)		
=====		
12. TOTAL CONSTRUCTION, PUMPING,	\$6,436,000	\$1,384,000
PACKED COLUMN AERATION &		
VAPOR PHASE GAC COSTS		
(LINES 8 & 11)		
=====		

Costs reflect extraction well configurations A-4 and B-2, as described in detail in the FS and as summarized in Table 2 of this Record of Decision.

Packed column aeration will still be more cost-effective than the other treatment options even if it is necessary to add air emission controls to comply with ARARs. However, from the viewpoint of risk reduction, the incremental costs-to-benefits ratio that accompanies the addition of emission controls (e.g. GAC) is considerably higher than the costs-to-benefits ratio for the use of packed column aeration alone. This is because the risk from air emissions that will be reduced by emission controls is already so small that the effective change in risk is virtually zero.

The selected remedy permanently and significantly reduces the mobility and volume of hazardous substances with respect to their presence in groundwater. The migration of contamination is controlled and contaminants are removed from the groundwater.

Packed column aeration will result in at least a short term increase in the toxicity, mobility and volume of hazardous substances with respect to their presence in the air. TCE, the principal contaminant of concern, is more toxic when inhaled than when ingested. In addition, VOCs are generally more mobile when they become airborne. Finally, packed column aeration increases the volume of contamination in the air by transferring the volume of contamination that was once in the water into the air. Despite these factors, however, the proposed packed column aeration facility is estimated to add virtually no risk to the project via airborne contaminants. The absence of added risk is due largely to (1) dilution of contamination as it exits the packed column, and (2) the remoteness of the proposed facility with respect to populated areas. Furthermore, a point not taken into account in the Public Health Evaluation is that chemicals such as TCE are broken down rather rapidly by natural ultraviolet radiation, thereby reducing their volume in the air, further reducing the opportunity for human exposure. It is notable, however, that the reactivity that gives TCE a short half-life when it is exposed to ultraviolet radiation also makes it a precursor in the formation of ozone in the lower atmosphere.

Packed column aeration will increase the toxicity, mobility and volume of hazardous substances in the air to some degree even if, for compliance with ARARs, air emission controls are added. Controls such as GAC will reduce air emissions by 70 to 90 percent, but will not completely eliminate VOC releases into the air. Emissions controls will, however, simultaneously reduce the risk from air toxics and limit the release of ozone precursors.







## Appendix B

### List of Primary and Secondary Documents

This Appendix identifies the primary and secondary documents to be submitted under the terms of this Agreement, as well as deadlines for those primary documents which have been agreed upon by all Parties before or on the effective date of this Agreement. Deadlines of the remaining primary documents identified in this Appendix shall be proposed by the National Guard Bureau pursuant to Section 8, "Deadlines", of this Agreement. A description of the contents of these documents is found in Attachment A to the Federal Facilities Agreement.

#### Primary Submittals

#### Deadlines

##### **Remedial Investigation/Feasibility Study**

**Work Plan:** including SAP, QAPP and HSP for soils activities

Final attached to signed Agreement, approved upon receipt of signature page and inclusion of EPA comments

##### **Community Relations Plan**

Draft due 45 days after effective date of Agreement

**Remedial Investigation and Feasibility Study Report:** including Baseline Risk Assessment and Detailed Analysis of Alternatives for soils.

##### **Proposed Plan for Soils**

##### **Record of Decision for Soils**

**Remedial Design/Remedial Action Work Plan:** for soils, including SAP, QAPP and HSP.

**Remedial Design/Remedial Action Work Plan:** for groundwater, including SAP, QAPP and HSP.

1 **Final Design:** for soils. This shall include 100% Plans and  
2 Specifications, Project Schedule, Cost Estimate, O&M Plans,  
3 Construction QA Plans, and Construction QC Plans.  
4

5 **Final Design:** for groundwater. This shall include 100% Plans  
6 and Specifications, Project Schedule, Cost Estimate, O&M Plans,  
7 Construction QA Plans, and Construction QC Plans.  
8

9 **Data Management Plan**

10  
11 **Contingency Plan**

12  
13 **Project Closeout Report**

14  
15  
16 Secondary Submittals

17  
18 **Progress Reports**

19  
20 **Initial Screening of Alternatives for Soils**

21  
22 **Treatability Study Reports**

23  
24 **Well Closure Reports**

25  
26 **ARARs Assessment Reports**

27  
28 **Responsiveness Summary**

29  
30 **Preliminary Design:** for soils.

31  
32 **Preliminary Design:** for groundwater.

33  
34 **Prefinal Design:** for soils.

35  
36 **Prefinal Design:** for groundwater.







**Attachment A**  
**Description of Selected Primary and Secondary Documents**

I. Primary Documents:

- A. Remedial Investigation/Feasibility Study (RI/FS) Work Plan: shall present, at a minimum, the activities proposed for soils characterization necessary to select, design and implement a remedy for contaminated soils. The Work Plan shall be developed pursuant to current EPA guidance, and shall also include, at a minimum:
1. Sampling and Analysis Plan (SAP): for proposed soils and groundwater sampling activities under this work plan. The SAP shall be prepared following current EPA guidance.
  2. Quality Assurance Project Plan (QAPP): shall be prepared following current EPA guidance.
  3. Health and Safety Plan (HSP): should address proposed activities and should follow appropriate OSHA guidelines.
- B. Community Relations Plan (CRP): The CRP should describe the techniques that will be needed to achieve the objectives of the program. The CRP should closely resemble the January 1992 TAA CRP, but should reflect any concerns or information specific to the Federal Facility.
- C. Remedial Investigation/Feasibility Study (RI/FS) Report: The RI and FS processes shall be conducted in accordance with the NCP and the most current guidance (e.g., Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA, OSWER Directive 9355.3-01, October 1988). For the groundwater portion, EPA and the State have already reviewed the draft RI Report submitted by the NGB; in the RI/FS Report, NGB should address EPA and State comments submitted to date. The portion of the RI/FS on soils shall include:
1. Baseline Risk Assessment: to evaluate the potential risks and hazards to public health and the environment. The Risk Assessment process shall be conducted in accordance with the NCP and the most current EPA guidance (e.g., Risk Assessment Guidance for Superfund, Vol. I, December 1989, and Risk Assessment Guidance for Superfund, Vol. II, Environmental Evaluation Manual, March 1989).

2. Detailed screening of alternatives for soils.

D. Proposed Plan for Soils:

Site 5

1. The objective of the proposed plan is to facilitate public participation in the remedy selection process by:
  - a. Identifying the preferred alternative for a remedial action at a site and explaining the reason for the preference;
  - b. Describing other remedial options that were considered in the RI/FS reports;
  - c. Soliciting public review and comment on all the alternatives described; and
  - d. Providing information on how the public can be involved in the remedy selection process.
2. The proposed plan is a public participation document and is expected to be widely read. Therefore, the proposed plan should be written in a clear and concise manner using non-technical language. The proposed plan should be written in accordance with the NCP and the most current EPA guidance (e.g., Guidance on Preparing Superfund Decision Documents, November 1989).

E. Record of Decision (ROD) for Soils: The purpose of the ROD is to illustrate the final remedial action plan for the site. The ROD summarizes the problems posed by the conditions at the site, the alternative remedies considered for addressing those problems, and the comparative analysis of those alternatives against the nine evaluation criteria. The ROD then presents the selected remedy and provides the rationale for the selection. The ROD shall be written in accordance with the NCP and the most current EPA Guidance (e.g., Guidance on Preparing Superfund Decision Documents, November 1989). The ROD for soils will represent the final site remedy and should reference the 1988 ROD issued for groundwater at TAA.

F. Remedial Design/Remedial Action (RD/RA) Work Plan: shall present, at a minimum, the tasks necessary to design and implement the selected remedies for soils and groundwater. The Work Plan shall be developed pursuant to current EPA guidance, and shall also include, at a minimum:

1. Sampling and Analysis Plan (SAP): for soils and groundwater sampling activities during RD/RA proposed under this work plan. The SAP shall be prepared following current EPA guidance.
  2. Quality Assurance Project Plan (QAPP): shall be prepared following current EPA guidance.
  3. Health and Safety Plan (HSP): should address proposed activities and should follow appropriate OSHA guidelines.
- G. Final Designs: for soils and groundwater. The final designs are the set remedial designs and specifications which will be implemented to remediate the site. These Final Designs shall:
1. Be consistent with the technical requirements of the ROD, this Agreement, and ARARs;
  2. Be consistent with currently accepted environmental protection measure and technologies;
  3. Be consistent with standard engineering practices;
  4. Be consistent with applicable statutes, EPA policies, directives, and regulations;
  5. Report the results of field data and treatability studies, as necessary;
  6. Articulate design criteria;
  7. Estimate a project delivery schedule and construction schedule;
  8. Present complete full size engineering drawings;
  9. Present detailed construction specifications;
  10. Present a project schedule; and
  11. Shall include, at a minimum, the following plans addressing both the soil and the groundwater remedies:
    - a. Operation & Maintenance Plans;
    - b. Construction QA Plans;

c. Construction QC Plans.

H. Data Management Plan: The Data Management Plan shall describe the proposed data collection program, data storage requirements and reporting procedures for supplying performance information to EPA and the State. The Plan shall include, but not be limited to:

1. Identification of the types of data gathered for assessing the performance of the treatment units;
2. Location and media for storing the data;
3. Format for providing the data and QA/QC information to EPA and the State; and
4. Frequency of reporting the data and QA/QC information to the EPA.

I. Contingency Plan: The Contingency Plan is written to protect the local affected population in the event of an accident or emergency and shall include but not be limited to:

1. Name of person responsible in the event of an emergency incident;
2. Plan and date for meeting with local community, including local, state, and federal agencies involved in the cleanup, as well as local emergency squads and hospitals (as appropriate);
3. Air monitoring plan; and
4. Spill control and countermeasure plan.

J. Project Closeout Report: The Project Closeout Report shall be provided pursuant to Section 30 (Termination) of the FFA. As set forth in Section 30, at the completion of the Remedial Action and correction of all punch list items, the NGB shall prepare a Project Closeout Report which certifies that all items contained in this Agreement and any incorporated documents (e.g., plans and specifications) have been completed. The report includes documentation (e.g., test results) substantiating that the performance standards have been met and also includes "Record Drawings" of the project so as to provide a means to verify all changes and variations from the original plans and specifications were made to the "Record Drawings".

1 II. Secondary Documents:  
2

- 3 A. Progress Reports  
4  
5 B. Initial Screening of Alternatives for Soils  
6  
7 C. Treatability Study Reports: (only if generated)  
8  
9 D. Well Closure Reports: (as appropriate)  
10  
11 E. ARARs Assessment Reports: for soils remedy.  
12  
13 F. Responsiveness Summary: response to comments received during the  
14 public comment period on the Proposed Plan. The Responsiveness  
15 Summary shall be an appendix to the soils ROD.  
16  
17 G. Preliminary Designs: for soils and groundwater, representing 60%  
18 completion.  
19  
20 H. Prefinal Designs: for soils and groundwater, representing 95%  
21 completion.







**Attachment B**

**Facility Map, 162nd TFG, Arizona Air National Guard Base  
Tucson, Arizona**

*From August 1990 Draft Remedial Investigation Report, 162nd Tactical Fighter  
Group, Arizona Air National Guard, Tucson, Arizona.*

Page 1 of 2

## **Attachment B**

### **Facility Map, Study Areas at the 162nd TFG, Arizona Air National Guard Base, Tucson, Arizona**

From August 1990 *Draft Remedial Investigation Report, 162nd Tactical Fighter Group, Arizona Air National Guard, Tucson, Arizona.*



## **Attachment C**

### **Final Vadose Zone Investigation Work Plan**

Not Included in this Document