

RESPONSE TO COMMENTS

**MIRACLE MILE REMEDIAL INVESTIGATION REPORT
WATER QUALITY ASSURANCE REVOLVING FUND SITE
TUCSON, ARIZONA**



**ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY
400 West Congress, Suite 433
Tucson Arizona 85701
Southern Regional Office**

March 6, 2013

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APPENDIX

- A Written Comments Received

The Arizona Department of Environmental Quality (ADEQ) is presenting this Responsiveness Summary to comments received from various parties on the ADEQ Approved *Draft Remedial Investigation of the Miracle Mile Water Quality Assurance Revolving Fund Site, Tucson, Arizona*, dated March 9, 2007 (RI Report). The Draft RI Report was made available for public review and comment between March 30, 2007 and May 23, 2007. ADEQ received written comments from the following: (1) the City of Tucson Water Department, (2) the City of Tucson Environmental Services, (3) the Miracle Mile Community Advisory Board, (4) the Flowing Wells Irrigation District and (5) Abrams Airborne Manufacturing, Inc. ADEQ has prepared this Responsiveness Summary for all comments received regarding the Draft RI Report. No other comments were received during the comment period.

COMMENTS FROM THE CITY OF TUCSON WATER DEPARTMENT

Comments regarding the Draft RI Report were received in a letter from City of Tucson Water Department to ADEQ, dated May 23, 2007.

Comment 1: Page 8-9 – Conclusions

The conclusions presented here suggesting that the Sweetwater Recharge Facilities has "pushed" PCE and Freon from the Silverbell WQARF site into the Miracle Mile WQARF site are not supported by information presented in this report. Water level maps presented in Appendix A coupled with Figures 43, 44 and 45 suggest more strongly that another source may be the cause of the PCE and Freon. Figures 43, 44 and 45 also suggest that a pulse of PCE and Freon in the regional aquifer may have passed through the Miracle Mile WQARF site originating up-gradient of the site. In addition, as shown on Figure 9, there is an onsite source of PCE that was detected in the soil vapor investigations.

Response 1: The determination of the source of tetrachloroethene (PCE) and Freon contamination in wells IRA-5 and IRA-1 was based not only on the presence of a known source in the general area of the Site (i.e. the Silverbell Landfill WQARF Site), but also on the lack of any significant PCE levels detected in the perched zone of the Miracle Mile WQARF Site. As is noted in the RI Report, the trichloroethene (TCE) and chromium contamination in the regional groundwater can likely be attributed to the significantly higher levels of TCE and chromium found in the perched zone. If the PCE and Freon contamination were also due to sources within the Miracle Mile WQARF Site plume boundaries, higher levels of PCE and Freon within the perched groundwater would be expected as well. This is not the case, therefore, an alternative source for the PCE and Freon was considered. However, the text of the RI Report has been revised to state that the PCE and Freon contamination is likely caused by another source upgradient of the Miracle Mile WQARF Site.

Comment 2: Page 8-9 – Conclusions

The "regular cycles of recharging and removing water from the regional aquifer" is a poor description of how the Sweetwater Recharge Facilities is operated. Recharge is nearly constant throughout the year and "recovery" operations rise and fall to meet demand through the year. Water levels in the vicinity of the Sweetwater Recharge Facilities due [sic] fluctuate; however, cyclical mounding effects are not seen in monitoring wells beyond approximately 1000 feet from the facilities boundary. This suggests that gradients lateral to the Silverbell WQARF site and the Sweetwater Recharge Facilities are unaffected. The regional groundwater flow pattern and Flowing Wells pumpage (as shown by figures in Appendix A) dominate plume migration beneath the Miracle Mile WQARF site.

Response 2: References to the Sweetwater Recharge Facilities have been removed from the RI Report. Groundwater well elevation monitoring efforts between both Miracle Mile and Silverbell Landfill WQARF Sites are being coordinated and shown in one potentiometric map to allow for evaluation of regional groundwater flow in the vicinity of the two sites. ADEQ has not yet made a determination regarding potential impact of the Silverbell Landfill WQARF Site on the Miracle Mile WQARF Site.

Comment 3: Section 10 - Summary/Recommendations

This section should include investigations into potential up-gradient sources. Comparisons of EC, HCO_3^- , pH, Eh, $\text{NH}_4^+/\text{NO}_3^-$, and $\text{S}_2^-/\text{SO}_4^{2-}$ should be performed for groundwater samples from all potential sources and groundwater in the PCE impacted areas of the Miracle Mile WQARF site. Maps of water levels on a more regional level should be used, not just from monitor wells within the Miracle Mile WQARF site.

In general, it would be a more accurate statement that the sources of PCE and Freon have not been fully characterized. It is not accurate to state that the Sweetwater Recharge Facilities have driven PCE and Freon into the Miracle Mile WQARF Site. This is simply not supported by the data contained in this report. Additional investigation should be directed at determining (or eliminating) potential sources of these constituents of concern.

Response 3: Please see Response 2. References to the Sweetwater Recharge Facility driving PCE and Freon contamination into the Miracle Mile WQARF Site were presented in the Draft RI Report only as a possible partial explanation for the growing PCE and Freon contamination observed along the western portion of the Miracle Mile WQARF Site. ADEQ agrees that additional investigation is needed to determine the source(s) of this PCE.

COMMENTS FROM CITY OF TUCSON ENVIRONMENTAL SERVICES

Comments regarding the Draft RI Report were received in a letter from City of Tucson Environmental Services to ADEQ, dated May 23, 2007.

General Comment

According to the RI, “exact source(s) of contamination within the Miracle Mile WQARF Site have not been identified”. We believe this data gap to be a significant one, and we urge that additional efforts be directed to identify the source(s) of contamination to the regional and perched aquifer. The City of Tucson will gladly cooperate with ADEQ to achieve this end.

Response: Since issuance of the Draft RI Report in 2007, ADEQ has performed additional evaluation of the Miracle Mile WQARF Site data and history and has determined the following: The chromium contamination in the regional aquifer is likely sourced primarily from or near the 3660 N. Romero Road parcel and the TCE contamination in the regional aquifer is likely sourced from or near parcels near Romero Road between Prince and Roger Roads, including the 3660 N. Romero Road, 3749-3761 N. Romero Road, and 3735 N. Romero Road parcels.”

Additional information regarding contaminant sources will be gathered during the Feasibility Study (FS) process to fill any data gaps identified in the RI Report. ADEQ also appreciates the opportunity to work with the City of Tucson

COMMENT FROM THE MIRACLE MILE COMMUNITY ADVISORY BOARD

Comments regarding the Draft RI Report were received in a letter from the members of the Miracle Mile WQARF Site Community Advisory Board to ADEQ, dated May 4, 2007.

General Comment

As a group, the members of the Miracle Mile Community Advisory Board (CAB) are in agreement that they want the affected area(s) cleaned, both soil and water, to an acceptable level as governed by applicable environmental laws.

Response: ADEQ appreciates the support and effort that the CAB gives to the WQARF process at this site, and we appreciate that the CAB wants affected soils and groundwater cleaned to applicable levels. During the Feasibility Study, ADEQ will evaluate various remedial strategies and methods for achieving the Remedial Objectives (ROs) set forth in the Final RO Report (Appendix C to the Final RI Report).

COMMENTS FROM FLOWING WELLS IRRIGATION DISTRICT

Comments regarding the Draft RI report were received in a letter from Flowing Wells Irrigation District to ADEQ, dated May 21, 2007.

Comment 1: Page 2-2

The 3rd paragraph states that the District is a “privately owned water provider”. The District is not a private water provider but is a municipal water provider with all rights and privileges as listed in Title 48 (Irrigation Districts) of Arizona Revised Statutes.

Response 1: The text has been revised accordingly.

Comment 2: Page 10-2

The 2nd paragraph states that the District would “cease pumping of wells FWID-66 and FWID-75”. The District only agrees by contract with ADEQ to cease pumping of FWID-66 well site.

Response 2: The text has been revised accordingly.

COMMENTS FROM ABRAMS AIRBORNE MANUFACTURING, INC.

Comments regarding the Draft RI Report were prepared by Brown and Caldwell on behalf of Abrams Airborne Manufacturing, Inc. (Abrams) in a memorandum forwarded by Abrams to ADEQ dated May 23, 2007. Abrams and its consultant, Brown and Caldwell, submitted significant comments regarding the migration of contaminants from nearby and adjacent properties onto the soil and groundwater at or beneath the Abrams property. These comments included references to past discussions between Abrams and ADEQ, assessments and comments specific to the information provided in the Draft RI Report, as well as recommendations for future and continuing investigations of properties that are located adjacent to and nearby the Abrams property. Based on information presented in the Final RI Report, ADEQ indicates an area within the Site which is probably the major source of the chromium contamination in the regional aquifer and three areas within the Site that are the likely sources of the TCE contamination in the regional aquifer. Additional information regarding contaminant sources will be gathered during the Feasibility Study process to fill any data gaps identified in the Final RI Report. Abrams' generalized comments were reviewed by both ADEQ and URS and will be taken into consideration during planning of future work at the Miracle Mile WQARF Site.

The RI Report is a technical document that details results of investigations that have taken place across the WQARF site. PCE is not a chemical of concern (COC) at the Miracle Mile WQARF site. It is, however, a chemical of potential concern (COPC). Comments and information regarding possible responsible parties north and south of the Abrams property have been forwarded to ADEQ's Legal Support Unit.

APPENDIX A

WRITTEN COMMENTS RECEIVED



May 23, 2007

Ms. Tina Le Page
Arizona Department of Environmental Quality
Southern Regional Office
400 W Congress Ste 433
Tucson, AZ 85701

CITY OF
TUCSON

TUCSON WATER
DEPARTMENT

Dear Ms. Le Page:

This letter contains responses to URS's Draft Remedial Investigation of the Miracle Mile WQARF Site Tucson, Arizona based on Tucson Water's Staff review.

Page 8-9 – Conclusions

The conclusions presented here suggesting that the Sweetwater Recharge Facilities has "pushed" PCE and Freon from the Silverbell WQARF site into the Miracle Mile WQARF site are not supported by information presented in this report. Water level maps presented in Appendix A coupled with Figures 43, 44 and 45 suggest more strongly that another source may be the cause of the PCE and Freon. Figures 43, 44 and 45 also suggest that a pulse of PCE and Freon in the regional aquifer may have passed through the Miracle Mile WQARF site originating up-gradient of the site. In addition, as shown on Figure 9, there is an onsite source of PCE that was detected in the soil vapor investigations.

Page 8-9 - Conclusions

The "regular cycles of recharging and removing water from the regional aquifer" is a poor description of how the Sweetwater Recharge Facilities is operated. Recharge is nearly constant throughout the year and "recovery" operations rise and fall to meet demand through the year. Water levels in the vicinity of the Sweetwater Recharge Facilities due fluctuate; however, cyclical mounding effects are not seen in monitoring wells beyond approximately 1000 feet from the facilities boundary. This suggests that gradients lateral to the Silverbell WQARF site and the Sweetwater Recharge Facilities are unaffected. The regional groundwater flow pattern and Flowing Wells pumpage (as shown by figures in Appendix A) dominate plume migration beneath the Miracle Mile WQARF site.

Section 10 - Summary/Recommendations

This section should include investigations into potential up-gradient sources (i.e. UofA Landfill). Comparisons of EC, HCO_3^- , pH, Eh, $\text{NH}_4^+/\text{NO}_3^-$, and $\text{S}_2^-/\text{SO}_4^{2-}$ should be performed for groundwater samples from all potential sources and groundwater in the PCE impacted areas of the Miracle Mile WQARF site. Maps of

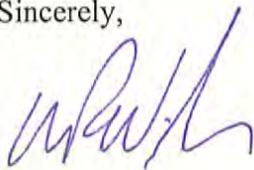


water levels on a more regional level should be used, not just from monitor wells within the Miracle Mile WQARF site.

In general, it would be a more accurate statement that the sources of PCE and Freon have not been fully characterized. It is not accurate to state that the Sweetwater Recharge Facilities have driven PCE and Freon into the Miracle Mile WQARF Site. This is simply not supported by the data contained in this report. Additional investigation should be directed at determining (or eliminating) potential sources of these constituents of concern.

Thank you for your attention to these comments. If you should have any further questions, please contact me at (520) 791-5080 x1414.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Wally R Wilson', written in a cursive style.

Wally R Wilson
Lead Hydrologist

WW:TT P:\R\SRF\Correspondence\2007\URS_RI_Response_052307.doc

Cc:
Ralph Marra, John Kmiec, Tim Thomure and Joe Huerstel, Dan Stanton of Tucson Water;
Alison Jones and Jeff Drumm of Environmental Services
Sherri Zendri of ADEQ



CITY OF
TUCSON
ENVIRONMENTAL
SERVICES

May 23, 2007

Ms. Tina LePage
Project Manager
Arizona Department of Environmental Quality
400 W. Congress
Suite 433
Tucson, AZ 85701

Re: Miracle Mile Water Quality Assurance Revolving Fund Registry Site
Draft Remedial Investigation Report

Dear Ms. LePage:

The City of Tucson-Environmental Services has reviewed the *Draft Remedial Investigation (RI) Report, Miracle Mile WQARF Site* dated March 9, 2007, and we appreciate this opportunity to provide comments. Because the site falls within the City limits, we have taken an active interest in this site, and over the years we have been active participants in the Citizens' Advisory Board (CAB) meetings. The RI is the culmination of many years of work, and we appreciate the diligent effort that this RI represents.

According to the RI, "exact source(s) of contamination within the Miracle Mile WQARF Site have not been identified". We believe this data gap to be a significant one, and we urge that additional efforts be directed to identifying the source(s) of contamination to the regional and perched aquifers. The City of Tucson will gladly cooperate with ADEQ to achieve this end.

Thank you for the opportunity to comment on the RI. Please call Alison Jones at 837-7312 if you have any questions.

Very truly yours,

Andrew H. Quigley
Director

AHQ/AJ/dl

cc: Karen Masbruch, City of Tucson, City Manager's Office
David Modeer, City of Tucson, Tucson Water
Blake Ashley, City of Tucson, City Attorney's Office
Nancy Petersen, City of Tucson, Environmental Services
Alison Jones, City of Tucson, Environmental Services
Miracle Mile Project File

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**The Miracle Mile Community Advisory Board
for the State of Arizona
Miracle Mile Water Quality Assurance Revolving Fund (WQARF) Site
Tucson, Arizona**

May 4, 2007



Tina Le Page
Project Manager
Arizona Department of Environmental Quality
400 W. Congress, Suite 433
Tucson, AZ 85701

Dear Ms. Le Page:

The following is a comment to the draft Remedial Investigation (RI) report for the Miracle Mile Water Quality Assurance Revolving Fund (WQARF) site, Tucson, Arizona:

As a group, the members of the Miracle Mile Community Advisory Board (CAB) are in agreement that they want to see the affected area(s) cleaned, both soil and water, to an acceptable level as governed by applicable environmental laws.

At this time, one particular method to accomplish this effort has not been determined.

Sincerely,

The Members of the Miracle Mile CAB

cc: Miracle Mile CAB
William Ellett, Superfund Programs Unit Manager, Southern Regional Office

Enclosure: Miracle Mile CAB Membership List

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY (ADEQ)
MIRACLE MILE COMMUNITY ADVISORY BOARD
CONTACT LIST

May 4, 2007
(**=Co-Chairs)

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ADEQ STAFF

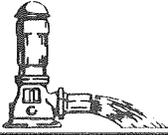
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lepage.tina@azdeq.gov

Eileen Palese
*Community Involvement
Coordinator*
(520) 628-6712
palese.eileen@azdeq.gov

Southern Regional Office

400 W. Congress #433
Tucson, AZ 85701
Office: (520) 628-6733
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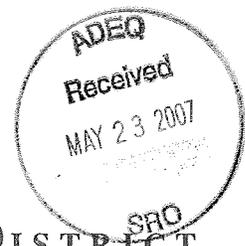
ADEQ Web site
<http://azdeq.gov>



FLOWING WELLS IRRIGATION DISTRICT

3901 North Fairview Avenue

Tucson, Arizona 85705-2699



May 21, 2007

Via Certified Mail
7099 3220 0006 0958 4976

Tina LePage, Project Manager
Arizona Department of Environmental Quality
400 West Congress, Suite 433
Tucson, Arizona 85701

Re: Draft Remedial Investigation (RI) Report for the Miracle Mile Water Quality Assurance Revolving Fund (WQARF) Site and to Solicit and Consider Remedial Objectives for the Miracle Mile WQARF Site

Dear Tina,

The following are comments from Flowing Wells Irrigation District concerning the draft RI report:

- Page 2-2 - The 3rd paragraph states that the District is a "privately owned water provider". The District is not a private water provider but is a municipal water provider with all rights and privileges as listed in Title 48 (Irrigation Districts) of Arizona Revised Statutes.
- Page 10-2 - The 2nd paragraph states that the District would "cease pumping of wells FWID-66 and FWID-75". The District only agreed by contract with ADEQ to cease pumping of FWID-66 well site.

Thank you for the opportunity to comment and if you have any questions please call.

Yours truly,

David Crockett, Superintendent

(Letters/ADEQ-WQARF RI Comments_LePage_21May07)

(520) 887-4192

fwid@qwest.net

Fax: 293-6532



ABRAMS AIRBORNE MANUFACTURING, INC.

3735 N. ROMERO RD.

TUCSON, ARIZONA 85705

Office #: (520) 887-1727
FAX #: (520) 293-8807

May 23, 2007

HAND-DELIVERY

Ms. Tina Le Page, Project Manager
Arizona Department of Environmental Quality
400 W. Congress, Suite 433
Tucson, Arizona 85701

Re: Comments of Abrams Airborne Manufacturing, Inc. (Abrams) on URS draft remedial investigation (RI) report on Miracle Mile WQARF Registry Site, dated March 9, 2007

Dear Ms. Le Page:

In response to ADEQ's public notice, dated March 30, 2007 (appended hereto at Attachment "A"), Abrams is submitting its written comments on the above-referenced draft RI, which comments include a letter, dated May 23, 2007, to me from Edward D. Ricci, Brown and Caldwell (appended hereto as Attachment "B") and all enclosures to and documents referenced in the May 23, 2007 Brown and Caldwell letter, as well as all documents submitted to ADEQ by Abrams and Brown and Caldwell from 1988 to the present-all of which are incorporated by reference as part of this submittal.

If you have any questions regarding this letter or any prior written submittals to ADEQ pertaining to the Miracle Mile WQARF Registry Site, please contact me at (520) 887-1727.

Sincerely,

A handwritten signature in black ink, appearing to read "Gary L. Abrams", written over a horizontal line.

Gary L. Abrams, President

Enclosures: Attachments "A" & "B"

cc: James D. Vieregg, Esq.-Abrams Airborne Manufacturing, Inc.

Edward D. Ricci-Brown and Caldwell



Meeting Notice

PUBLIC NOTICE FOR A 55-DAY PUBLIC COMMENT PERIOD and PUBLIC MEETING

Arizona Department of Environmental Quality (ADEQ)
 Notice of Release of the Draft Remedial Investigation (RI) Report for the
 Miracle Mile Water Quality Assurance Revolving Fund (WQARF) Registry Site and
 Public Meeting to Solicit Remedial Objectives for the Miracle Mile WQARF Site

PLEASE TAKE NOTICE the State of Arizona, ex rel., Stephen A. Owens, Director, Arizona Department of Environmental Quality (ADEQ) has determined to release the draft remedial investigation (RI) report for the **Miracle Mile WQARF Registry Site** in Tucson, Pima County, Arizona.

An RI report is prepared to identify the nature and extent of contaminated soil and waters of the state and the sources thereof; identify current and potential impacts to public health, welfare and the environment; identify present and reasonably foreseeable uses of land and waters of the state; and obtain and evaluate any other information necessary for identification and comparison of alternative remedial actions.

The Miracle Mile WQARF Site is located in west Tucson, and is bounded approximately by Wetmore Road to the north, Flowing Wells Road to the east, Prince Road to the south, and La Cholla Boulevard to the west. Groundwater at the site is contaminated with trichloroethene (TCE) and chromium occurring over regulatory limits.

A copy of the draft RI will be available for review beginning Friday, March 30, 2007, at the following locations:

● **ADEQ Southern Regional Office**, Suite 433, 400 W. Congress, Tucson, AZ. Call 520-628-6715 or 1-888-271-9302 to arrange an appointment, 8:30 a.m. to 4:30 p.m., Monday–Friday. You can also request a copy of the report on a CD by calling 520-628-6715.

● **ADEQ Central Office**, 1110 W. Washington Street, Phoenix, AZ. Please call the ADEQ Records Center at 602-771-4380 or 800-234-5677 [press 1/option 2] for an appointment, 8:30 a.m. to 4:30 p.m., Monday–Friday.

● **Main Library**, 101 N. Stone Avenue, Tucson, 3rd floor Reference Desk/Public Comment Documents. Call 791-4393 for hours.

● **City Council Office**: Karin Uhlich, Ward 3, 1510 E. Grant Road, Tucson, AZ 85719. Phone: (520) 791-4711, from 8:30 a.m. to 4:30 p.m., Monday–Friday.

✍ **PARTIES WISHING TO MAKE COMMENTS** regarding the draft RI report for this site may make such comments in writing by mail to ADEQ, Attention: Tina Le Page, Project Manager, 400 W. Congress, Suite 433, Tucson, AZ 85701.

An **OPEN HOUSE AND PUBLIC MEETING** will be held on Wednesday, **May 16, 2007**, 6:00 to 7:30 p.m., at the State of Arizona Regional Office Complex, 400 West Congress, North Building, Conference Room 158, Tucson, Arizona, to solicit Remedial Objectives for the Miracle Mile WQARF Site. All interested parties will be given an opportunity at the meeting to comment on both the draft RI and to propose Remedial Objectives for the site.

Comments received on both the draft RI report and on the Remedial Objectives will be compiled in a Responsiveness Summary to be included in the final RI report.

DEADLINE FOR COMMENTS: Written comments on the draft RI report and proposed Remedial Objectives must be postmarked to ADEQ by **Wednesday, May 23, 2007**.

Dated this 30th day of March, 2007
 Stephen A. Owens, Director
 Arizona Department of Environmental Quality

For more information about the Miracle Mile WQARF Site Contact:
 Tina Le Page, ADEQ Project Manager: 520-628-6663, or
 Eileen Palese, Community Involvement Coordinator: 520-628-6712
 Web Site Information at: www.azdeq.gov

201 East Washington Street
Suite 500
Phoenix, AZ 85004
Tel: (602) 567-4000
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ATTACHMENT "B"

May 23, 2007

Mr. Gary L. Abrams
President
Abrams Airborne Manufacturing, Inc.
3735 North Romero Road
Tucson, AZ 85705

15-132318.001

Subject: Abrams Airborne Manufacturing, Inc. Response to the URS Draft Remedial Investigation Report at the Miracle Mile WQARF Registry Site, Dated March 9, 2007.

Dear Mr. Abrams:

The Arizona Department of Environmental Quality (ADEQ) has issued the Draft Remedial Investigation Report of the Miracle Mile WQARF Registry Site, Tucson, Arizona, dated March 9, 2007, as prepared by URS ("Draft RI"). In this letter, Brown and Caldwell (BC) responds to the Draft RI on behalf of Abrams Airborne Manufacturing, Inc. ("Abrams").

INTRODUCTION

This response ("Response") to the Draft RI has been prepared by Edward D. Ricci of BC. Mr. Ricci has 27 years of professional experience in environmental services, largely dealing with CERCLA, State Superfund and RCRA issues nationwide and in Arizona. His resume of experience is added as Attachment 1 to this Response. BC has served as environmental consultants to Abrams since 1995 - with respect to the Miracle Mile WQARF Registry Site.

There has been an extensive amount of information prepared and presented by Abrams and BC on behalf of Abrams to ADEQ regarding properties within the Miracle Mile WQARF area, including R.E. Darling ("REDAR"), Spring Joint Specialists Company ("Spring Joint"), Desert Refrigeration & Automotive Service ("Desert Auto"), Exchange Place Business Park ("Exchange Place") and other identified or possible sources of contamination surrounding the Abrams property. For example, there is a property south of the southwest corner of Prince Road and Romero Road and approximately 1500 feet south of Abrams where a plating shop performed aspects of chrome plating in a lot on bare ground in the late 1970's and early 1980's. Mr. Gary Abrams had discussed this with ADEQ officials Tom Curry, Jeff Kulon, and Matt Doolen at various times.

BC does not include as attachments to this Response all Abrams and/or BC documents previously submitted to ADEQ, starting in 1988, but such documents will be referenced in the Response by document identification and date of submittal to ADEQ, and are herein incorporated by reference. However, we

Mr. Gary L. Abrams
Abrams Airborne Manufacturing, Inc.
May 23, 2007

strongly encourage that URS and ADEQ read and digest in its entirety the document entitled "Supplemental Comments On The Arizona Department Of Environmental Quality Expanded Site Investigation Of The Miracle Mile WQARF Registry Site And The Abrams Airborne Manufacturing, Inc. Facility" ("Supplement #1"), dated October 5, 2004, and previously submitted to ADEQ. This document includes extremely relevant information associated with BC's review of the Draft RI including aerial photographs, witness affidavits, precipitation records, and elevation contours demonstrating chemical disposal and runoff of pollutants at the REDAR, Desert Auto, Spring Joint, and Exchange Place business facilities.

One section of Supplement #1 is reproduced in this Response in its entirety. This is the October 5, 2004 letter from Mr. Ed Ricci, BC to Abrams, which summarizes BC's review of photographic and other evidence related to the ADEQ RI of the Miracle Mile site. This is provided as Attachment 2. We suggest that it would be instructive for URS and ADEQ to review this letter and the associated table and map of suggested boring locations proposed by BC as a comprehensive evaluation of properties neighboring Abrams. The observations made by BC and associated with each suggested boring are particularly instructive, as these observations summarize a body of evidentiary information related to the release of chemicals and wastes at or from these surrounding properties.

In this Response to the Draft RI, BC sequentially addresses key points, comment, conclusions, and recommendations in the Draft RI. We will designate our own comments below by the related section number in the Draft RI.

1.0 Draft RI- Introduction

It is noted in the RI that the contaminants of concern include "TCE, PCE, 1,1-DCE, cis 1,2-DCE, and chromium". It should be noted that Abrams has never used PCE in its operation. This is documented in numerous reports and communications, including Abrams' 1988 response to the ADEQ WQARF questionnaire, the 1990 Preliminary Assessment report prepared by Layali Azar - Schuster for ADEQ, and the Site Inspection and Records Search of Abrams Airborne, Tucson, 1/10/90, by Tom Curry of ADEQ.

It is recognized by URS that "Hazardous substances released to the soil from surface spills eventually leached contaminants to the underlying aquifer." We would like to expand this observation by specifically addressing the release of contaminants directly to the ground surface by properties neighboring the Abrams property. A full account of these observations may be found in Supplement #1. Abrams details an extensive aerial photographic record of surrounding properties and notes the following:

- A solvent storage shack with poles and clothesline used to hang and clean parts on the REDAR property (immediately north of Abrams) in the immediate area of perched well IRA-19. This well shows concentrations of TCE and other VOCs in groundwater that are an order of magnitude higher than any other observed VOC concentrations in the RI study. The photographic evidence supported by witness testimony shows staining and runoff from the REDAR property to the Abrams property.

Mr. Gary L. Abrams
Abrams Airborne Manufacturing, Inc.
May 23, 2007

- Evidenced direct release of TCE to the ground surface at REDAR (according to the testimony of Joseph Henderson). This observed release was in fact in the area of perched well IRA-16 on the REDAR property, which shows the second highest TCE and second highest total VOC concentrations in perched groundwater of the WQARF study area.
- Existence of two dry wells on the REDAR property. These conduits into the vadose zone and to perched water are described in Supplement #1.
- Disposal of unknown pollutants directly through the Abrams-REDAR fence line, and the draining of such pollutants directly to the soil surface at Abrams. Upon inspection by the Pima Department of Environmental Quality ("PDEQ"), stained soil on both properties was observed and a Cease and Desist Order filed against REDAR.
- Expansive soil discoloration at the Desert Auto facility, immediately south/southeast of Abrams. According to witness testimony documented in the Supplement #1, Abrams officials have observed and documented Desert Auto employees hosing contaminants from Desert Auto onto the Abrams property. Additionally, runoff from Desert Auto flowed directly onto the Abrams property. Elevated PCE passive soil gas concentrations are in fact documented by URS in the Draft RI in this area at Desert Auto. PCE has never been used by Abrams. Before its use by Desert Auto, this property was also used for stripping of paint from aircraft and the painting of aircraft.
- Direct disposal of waste materials and unknown liquids into drainage pathways on the Exchange Place property, immediately south/southwest of the Abrams property. According to the findings of two different engineering firms presented in Supplement #1, surface gradient changes made to the Exchange Place had resulted in the diversion and discharge of storm water runoff onto the Abrams property. Chemicals disposed on the Exchange Place ground surface would therefore flow to the Abrams property.
- Significant chrome plating operations with evidenced on-site disposal of chrome wastes at the Spring Joint property. URS has conducted a study of the Spring Joint property, which is included in the Draft RI. Such disposal of wastes at Spring Joint is validated by the URS findings.

A preponderance of information has been presented on neighboring properties' use and handling of chemicals and wastes. It should be noted that to our knowledge no Abrams employee- past or present- has expressed any knowledge of any release of any chemical inside of or outside of the Abrams building.

1.2 Draft RI- Scope of the Remedial Investigation

It is noted in the Draft RI that "Concerns existed that the perched groundwater zone might provide a continuing source of VOC contamination to the regional aquifer, particularly in locations that could act as a potential conduit for downward contaminant migration from the perched groundwater zone to the regional aquifer, such as the former industrial well (referred to as the Fairfax well) located on the REDAR property." Relatively high concentrations of chromium have been observed at REDAR. The Fairfax well has historically shown chromium

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concentrations ranging from 0.25 mg/l to 0.52 mg/l. Immediately downgradient of REDAR at regional monitor well IRA-2, chromium concentrations as high as 0.22 mg/l have been observed, with REDAR being the likely source of such chromium in groundwater. In addition, as noted by URS in section 2.0 of the Draft RI, "Prior to May 2001, monitor well IRA-2, consistently contained the highest TCE concentrations of all the IRA monitor wells." The relative VOC concentrations in IRA-2 have been generally consistent since this period, but the highest concentrations since that period have been observed in the more recently installed perched groundwater wells IRA-19, IRA-16, and IRA-17, on the REDAR property.

3.6 Draft RI- Surface Water Hydrology

As documented in Supplement #1, existing land elevations as well as historical site and road grading have resulted in the following historical runoff and overland flow patterns affecting Abrams.

- From the adjacent REDAR property to the north side of the Abrams building, resulting in the ponding of water and any contaminants along the north side of the Abrams building.
- From the adjacent REDAR property along the east side of the Abrams building, resulting in the ultimate flow of water and any contaminants into the Abrams parking lot along the south side of the Abrams buildings.
- From the Exchange Place facility and onto Abrams property along the Exchange Place/Abrams property boundary.

4.2 Draft RI- Abrams Site Investigation- 1989

URS notes the results of a soil gas survey on the Abrams site in 1989, indicating that "the area with the highest concentrations of TCE in soil gas (at Abrams) was the southern portion of the property." This observation was consistent with soil-gas results from the recent RI work, and indicates either the off-site migration of contaminants as discussed in section 1.0 above and/or off-gassing from the perched water zone. The 1989 report "concluded that the TCE concentrations observed along the southern property line were the result of surface water causing migration of contaminants from the property (Desert Auto or Exchange Place) to the south. Abrams had never stored or used solvents in the southern area of their property. This has historically been a parking lot. Also, the existence of PCE in the recent soil-gas studies shows an off-site source, since Abrams has never used PCE.

4.7 Draft RI- IRA-6 and IRA-7- March 1995

URS documents the installation of wells IRA-6 and IRA-7 in the regional aquifer, which are respectively downgradient and upgradient with respect to the Abrams property. No substantive increases in constituent concentrations occur between these two wells, showing that Abrams has not contributed to any contamination in the regional aquifer.

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7.3.2 DRAFT RI- Interpretation of Passive Soil-Gas Results

As observed in the Draft RI, "areas of elevated VOCs in soil-gas can be indicative of potential point source areas". Five "hot spot" zones were identified in the RI. Two of these are north of the REDAR property. Three of these occurred on REDAR property, corresponding with considerably elevated concentrations of VOCs in perched groundwater, as well as evidentiary information of solvent and waste releases. These findings are supported by the detailed information presented by Abrams in Supplement #1. The "Northern R.E.Darling property hotspot" corresponds with the area of spillage documented by the Henderson affidavit provided in the Supplement #1. The Southern R. E. Darling property hotspot corresponds with observations of staining in the aerial photographic review presented in Supplement #1, and the "Southeastern corner of the R.E.Darling property/Northeastern corner of Abrams Airborne" corresponds to the location of the REDAR solvent storage shack near perched well IRA-19, which has been much documented and discussed by Abrams in Supplement #1. Both of the latter hotspot areas are located adjacent to the Abrams property. Another lower but still elevated zone of soil-gas contamination occurs near the southeastern corner of the Abrams property. There are no processing or painting facilities in the Abrams building located near this area. The Abrams building is occupied by office space in this section of the building and this location has served as a parking lot entry. However, this land area had been subject to historical surface water runoff from REDAR and specifically from the solvent storage shack area on the REDAR property that is shown and discussed in Supplement #1. It should also be noted that PCE was observed in these same hotspot areas although at considerably lower concentrations compared to TCE. Abrams has never used PCE.

7.3.3 Draft RI- Active Soil-Gas Results

It is shown in the Draft RI that Boring No. 10 in the very southeastern corner of the REDAR property had relatively higher concentrations than any other soil-gas boring. TCE concentrations showed a clear vertical trend increasing from 12 ppbv at 10 feet bgs to 200,000 ppbv at 80 feet bgs. This observation correlates to the significantly higher TCE and other contaminants concentrations observed in perched groundwater in this area near well IRA-19. It is of utmost concern to Abrams officials that such an inordinately high level of contamination has been historically observed adjacent to the Abrams property, resulting in contaminant migration to the Abrams property. This soil-gas observation is fully supported by evidentiary information presented in Supplement #1, showing a REDAR release of contaminants in this area.

7.3.4 Draft RI- Interpretation of Active Soil-Gas Results

The very high concentrations of TCE in Boring 10 which is located proximate to the solvent storage shack on the Darling property further shows the impact from this source area on the REDAR property, which has contaminated soil and groundwater in the area. As previously discussed in this Response, and as previously documented in aerial photography and witness testimony in Supplement #1, overland runoff from the REDAR property has directly and adversely impacted the Abrams property.

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7.3.5 Draft RI- Soil Sample Results

Soil sample results for VOCs at REDAR, based on six soil borings at the site, generally correlated with the active soil gas results showing, among other contaminated locations, the source area at the solvent storage shack near the northeast corner of the Abrams property and a source area at the approximate centerpoint of REDAR in the central corridor west of the hangar buildings.

As described in the Draft RI, "soil matrix samples collected at 5-foot intervals during the installation of the four perched aquifer monitor wells (IRA- 27, IRA-28, IRA-29, IRA-30) were to serve as background samples for comparison with soil samples collected from the temporary borings located along the Abrams northern property line." The four 5-foot interval soil results in these borings for total chromium were non-detectable, 6.3 mg/kg, 7.3 mg/kg, and 8.6 mg/kg, establishing a background profile, at least based on these four samples.

Over 150 different soil samples from the Abrams property were analyzed for inorganic analytes including chromium which has been targeted by ADEQ as one of the contaminants of concern detected in the regional aquifer. Only one of these samples, AAM-S-1 with a total chromium concentration of 150 mg/kg, was substantially higher than the background samples. Abrams officials have no explanation for any elevated chromium concentrations in this area as no release has ever been observed or reported by Abrams employees. This sample was collected near the ground surface, at the wastewater treatment area, which is insufficient in itself to indicate any vertical migration to water. The next highest chromium concentration was found in another near-surface soil sample location outside the plating shop area of the Abrams building - 56 mg/kg at AAM-S-6. It should be noted that boring S-14 is the closest soil vertical boring to sample S-1. At 5-feet below ground surface in boring S-14, chromium was found at 6.1 mg/kg or at background concentrations. There was no detectable chromium found at sample intervals of 10-feet, 15-feet, 20-feet, 25- feet, 30-feet, 35-feet, or 40-feet showing no vertical migration of any chromium observed near the ground surface.

The highest chromium concentration in Abrams soils below five feet is 15 mg/kg in boring S-16. This is arguably a background concentration and chromium concentrations above this 40-foot sample interval ranged from mostly non-detected to 6 mg/kg.

URS makes the statement in the Draft RI, "This data suggests that operations at the AAM facility may have resulted in releases of these inorganic analytes (including arsenic, barium, chromium, lead, zinc, and hexavalent chromium) to the soils beneath the plating/painting rooms and in the vicinity of the wastewater treatment area, and that these releases to soil may have impacted both the perched and regional groundwater aquifers."

BC responds to this URS suggestion with the following six observations:

1. Neither this statement by URS nor the evidentiary information discussed herein draws a conclusive link between the observation of surface soil constituents at Abrams and the perched or regional groundwater contamination.

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2. No information from past or present employees has shown that a release has ever occurred at the Abrams property.
3. The observed chromium concentrations at Abrams **are well below** the residential Arizona Soil Remediation Level (SRL), the Arizona Groundwater Protection Level (GPL), and the EPA Preliminary Remedial Goal (PRG) at the time of the study.
4. Regional groundwater shows no substantive increase in inorganic or organic constituents between up gradient and down gradient well locations from the Abrams property. **This shows that Abrams is not contributing to groundwater contamination.**
5. The north perimeter of the Abrams property and buildings as well as the southern portion of the property have been subject to consistent runoff from REDAR and the Exchange Place.
6. Keeping in mind that the perched zone might also reflect a static gradient during different time periods, URS has established a gradient in the perched water zone as north to north-northwest, based on wells IRA-16, IRA-17, IRA-21, IRA-22, and wells IRA-27, IRA-29, and IRA-30. There is no substantial difference in chromium concentrations in the perched zone around the Abrams property, with the exception of possible future influence from significantly higher chromium concentrations at the Spring Joint and REDAR sites. We expect that the upgradient chromium concentrations entering the Abrams property area may have had its source at the Spring Joint site as well as possibly from Desert Auto or Exchange Place, or the other chromium plating location discussed to the immediate south. As discussed by URS, it is also possible that the perched zone between Spring Joint and Abrams is discontinuous. Nevertheless, the regional groundwater is in fact continuous between Abrams and its neighbors to the north.

Relatively high concentrations of chromium in groundwater, exceeding the MCL, have been detected at REDAR in the Fairfax well (250 to 520 ug/l) and immediately downgradient of REDAR in regional well IRA-2 (up to 97 ug/l). Relatively high chromium concentrations also occur in perched wells IRA- 16, IRA-17, IRA- 21, and IRA-22 near the Fairfax well. As URS notes, "the Fairfax well at REDAR presented a concern that the perched water zone could provide a continuing source of contamination to the regional aquifer." These concerns are substantiated by the sampling and analysis data. REDAR, with Spring Joint, is evidenced as a source of chromium to groundwater, in addition to VOCs. Chromium wastes shown in waste manifest records from REDAR are documented in Supplement #1. However, to our knowledge, ADEQ has not conducted a soil sampling program at REDAR targeting inorganic contaminants including chromium.

URS indicates that selected inorganic analytes were "detected in perched groundwater collected from monitor wells IRA-22, IRA-27, and IRA-30 at similar levels, to inorganic analytes found in soils." **We are unclear on how URS makes this correlation about "similar levels" between soils and groundwater.** Focusing on the inorganic contaminant of concern, chromium, we have established that no concentrations substantially above background concentrations have been observed at depth in soils at Abrams. We do not observe the linkage between soil concentrations

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of chromium, and observed chromium contamination in the perched zone beneath the Abrams property.

Also, chromium concentrations found in wells IRA- 22, IRA- 27, and IRA- 30 located on the Abrams property are considerably lower than those concentrations observed in perched wells on the REDAR property. Well IRA- 22 is located south of the Fairfax well and may likely be influenced by contamination in this area. Well IRA- 30 is located immediately north of Desert Auto on the Abrams property, and it is also possibly influenced by chromium contamination at Spring Joint. Chromium has not been found in perched zone samples at well IRA-27 on the Abrams property in the last three sampling rounds (including analyses for dissolved chromium) dating back to April, 2005.

According to the Revised Soil Remediation Rule, effective May 5, 2007, there is no longer a soil clean-up level assigned to total chromium. Rather, levels for chromium are now distinguished for chromium 3 and chromium 6, or hexavalent chromium. The newly established non-residential SRL for hexavalent chromium is 65 mg/kg. Hexavalent chromium was only detected in 2 samples tested at Abrams. Both concentrations were 0.69 mg/kg, **which are two orders of magnitude lower than the newly set level, and near the analytical detection limit.**

Both the location of high chromium contamination in soil and groundwater at Spring Joint, and the high VOC contamination in soil and groundwater with chromium groundwater contamination at REDAR complicates the overall technical evaluation of the Abrams property, since the Abrams property is located between these two aforementioned sites. It is, in fact, interesting to us that observed levels of groundwater contamination at the Abrams property are not higher based on the influence from these surrounding properties. Nevertheless, there is no general increase in groundwater contamination in regional and perched groundwater when comparing up gradient and downgradient wells from Abrams.

Additionally, although contamination and chemical releases have been evidenced at the two properties south of Abrams as previously discussed - the Exchange Place and Desert Auto - no studies of these sites by ADEQ have been performed to our knowledge with the exception of soil gas studies around Desert Auto.

7.3.6 Draft RI- Interpretation of Soil Sample Results - Spring Joint

URS indicates that this site is a potential on-going source of chromium contamination. Concentrations of chromium in soil are higher at Spring Joint than in any other Miracle Mile location.

7.4.1 Draft RI- Contaminants in Perched Groundwater

There is no indication of any release of TCE or any other solvents by Abrams to the environment. As previously discussed and documented in various submittals to ADEQ, TCE in groundwater beneath the Abrams property has been influenced by highly contaminated groundwater caused by chemical releases at or from REDAR, as well as potential sources south of the Abrams property. As shown in aerial photography and supported by witness testimony in

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Supplement #1, overland runoff from REDAR at the solvent storage shack flowed onto the Abrams property to the south, and flowed according to elevation contours to the west in front of the Abrams building. The ultimate impact to soils and groundwater in this area can be surmised from the Draft RI and results reported therein.

TCE was observed in two perched wells on the Spring Joint property.

PCE has never been used by Abrams. The occurrence of PCE in well IRA-29 indicates the influence from a source upgradient from Abrams. The location of the well shows that the source could be the Exchange Place complex, as previously described to ADEQ in Supplement #1. PCE is also observed in groundwater on the REDAR property.

The occurrence of MTBE in well IRA-30 near Desert Auto further validates this area as a potential source of contamination immediately up gradient from Abrams.

Chromium has been observed above the MCL and AWQS in the perched aquifer in well IRA-16- on the REDAR property.

As discussed by URS, it should be noted that hexavalent chromium was not detected in any of the perched groundwater wells, with the exception of the two perched groundwater wells on the Spring Joint facility. As noted by URS, "the perching zone in the area of the Spring Joint facility continues to be a potential source of chromium to the regional aquifer."

The presence of elevated nitrate concentrations on the REDAR property from an "industrial and/or septic system source," as noted by URS, additionally points to a potential source of contamination in addition to the already documented direct disposal of waste at REDAR.

7.4.2 Draft RI- Contaminants in Regional Aquifer

No release of contamination has been recorded or observed at Abrams. Because there is no evidence that links Abrams to perched groundwater contamination, regional groundwater contamination from Abrams does not appear to be possible. As previously discussed, regional groundwater upgradient and downgradient from Abrams generally shows the same concentrations for contaminants of concern indicating no contribution whatsoever from Abrams to groundwater. The two IRA monitor wells in regional groundwater containing concentrations above the MCL and AWQS of 0.10 mg/l for chromium are wells IRA-9 and IRA-11-210- north of the REDAR property. Chromium has been observed above the MCL and AWQS in the perched aquifer in well IRA-16- on the REDAR property, near the Fairfax well. Also, in addition to REDAR and as noted by URS, "the perching zone in the area of the Spring Joint facility continues to be a potential source of chromium to the regional aquifer."

7.5 Draft RI- Summary Of The Extent Of Contamination

The contour of elevated chromium concentrations in regional groundwater (Draft RI- Figure 27) clearly shows that the elevated chromium concentrations contour has its origin on the REDAR property. In addition, URS notes that regional well IRA-31 has elevated chromium

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concentrations and is adjacent to Spring Joint. This well reflects regional groundwater contamination from releases at Spring Joint. The two source areas for chromium are indicated to be on the REDAR property and at the Spring Joint property.

Similar to the contour of elevated chromium contamination shown in the Draft RI, the TCE MCL contour shows the same profile as for chromium, with its highest concentration originating on the REDAR property and extending to the north through the REDAR property in the direction of groundwater flow. As noted by URS, "the horizontal extent of elevated chromium levels in the regional aquifer is similar to that of the TCE plume, but does not extend as far to the east as the TCE plume."

As previously discussed in this Response, the highest concentrations of TCE in perched groundwater are observed in the solvent storage shack area of REDAR (near well IRA-19) and in the approximate center of the REDAR property in noted areas of chemical storage, TCE release, and dry well locations (near wells IRA-16 and IRA-17). Other wells in the perched zone including those additional wells surrounding the Abrams property may reflect advection, dispersion and diffusion from these identified source areas. Unlike REDAR and Spring Joint, no release has been identified on the Abrams property and no discernible source area exists.

Finally, as also previously discussed in this Response, chromium contamination in the perched zone is most prevalent in the area of wells IRA-16, IRA-17, and IRA-21- near the center of the REDAR property. Like for TCE and other chlorinated solvents, chromium is subject to dispersion, diffusion, and advection, in the perched zone from source areas.

No release has ever been observed on the Abrams property. There is no substantive evidence linking soil concentrations of any contaminant of concern on the Abrams property to perched groundwater contamination beneath the Abrams property. Surrounding properties have either identified source areas and releases (REDAR, Spring Joint), or have not been sufficiently investigated to evaluate soil and groundwater conditions (Exchange Place, Desert Auto).

9.0 Draft RI-Risk Evaluation

URS recognizes that "the probability of exposure through ingestion or inhalation of VOCs from the perched aquifer is low", even when considering the extremely high levels of solvent contamination observed in well IRA-19 on the REDAR property. Because Abrams has not contributed to groundwater contamination related to the contaminants of concern, we do not deem the risk evaluation discussion to be applicable, with the exception that the Abrams property has been impacted from off-site sources.

10.0 Draft RI- Summary of Findings and Recommendations

CONCLUSIONS

BC has reviewed the Draft RI of the Miracle Mile WQARF Site, Tucson, Arizona, performed by URS for the ADEQ, dated March 9, 2007. We recognize that the ADEQ suggests that chlorinated solvent or VOC contamination occurring in soils beneath the Abrams facility is

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generally restricted to concentrations observed as an artifact of the contamination observed in perched groundwater. Therefore, we conclude that Abrams has not caused or contributed to VOC contamination to the perched or regional aquifer. Any chromium concentrations found in soils at Abrams are either at background levels or are well below any regulatory clean-up level. Also, as it relates to the potential impact of Abrams on metals contamination observed in perched or regional ground water, we find no direct correlation between metal concentrations observed in groundwater and any metal concentrations observed in soils during the RI study. When comparing upgradient and downgradient concentrations of VOCs or metals during the historical sampling period, there is no evidence of substantially elevated groundwater constituent concentrations when comparing upgradient and downgradient groundwater samples, in either the perched or the regional aquifers. This fact is complicated by the extremely high concentrations of VOCs and heavy metals, respectively, observed at the REDAR property and at the Spring Joint property, and the historical runoff that has occurred onto the Abrams property from REDAR, and the Exchange Place. Further, in various employee discussions and testimony, we have found no observations of any historical releases occurring at Abrams, which might cause groundwater contamination, but there is a propensity of evidentiary information that shows releases from REDAR, the Exchange Place, and Desert Auto. It is our conclusion that Abrams is not a source of perched or regional aquifer contamination.

RECOMMENDATIONS

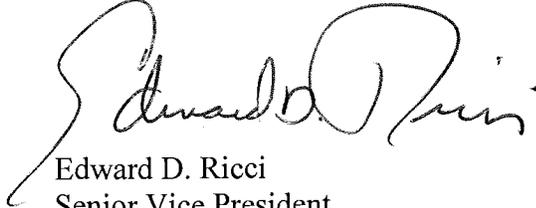
We have reviewed the recommendations presented by URS in the Draft RI. In Supplement #1, BC suggested a thorough sampling and analysis plan to evaluate neighboring facilities shown by Abrams to release contaminants to the ground surface. These recommendations are provided in entirety as Attachment 2 to this Response. The subject facilities addressed in these recommendations include REDAR, Spring Joint, the Exchange Place, and Desert Auto. We believe that the present and future studies addressing the Spring Joint site are suitable and will solidify the understanding of the Spring Joint impact on the subsurface. In general, we believe that the scope of work completed on the REDAR site, especially soil borings, is insufficient in comparison to the evidentiary information showing REDAR as a major contaminant source in the area. We quite simply do not understand why a vertical soil sampling program has not been conducted at REDAR to target inorganics including chromium. Nevertheless, the information presented by URS in the Draft RI report clearly shows that REDAR is a major source of both chlorinated solvents including TCE and chromium to the subsurface, impacting both the perched and regional aquifers. As previously discussed in this Response, there is insufficient information in the Draft RI report to evaluate the impact of The Exchange Place and Desert Auto, although soil-gas shows VOC contamination associated with Desert Auto. Also, it appears that other potential sources of contamination in the area like the reported historical chrome plating operation at the southwest corner of Prince and Romero Roads may exist and should be considered in future work. We also suggest that BC's previous sampling and analysis recommendations, included as Attachment 2, are duly reviewed by URS and ADEQ in planning future work in the area.

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We look forward to the ADEQ and URS review and consideration of our Response.

Sincerely,

Brown and Caldwell

A handwritten signature in black ink, appearing to read "Edward D. Ricci". The signature is fluid and cursive, with a large initial "E" and "R".

Edward D. Ricci
Senior Vice President
Environmental Services

EDR/lsm
Attachments

cc: Mr. Jim Viereg, Abrams Airborne Manufacturing, Inc.

ATTACHMENT 1

EDWARD D. RICCI RESUME

Experience Summary

Ed Ricci has 25 years of experience in managing and directing resources to resolve environmental contamination issues. His career has been focused on the implementation and quality assurance of site permitting, investigation, and remediation projects including federal and state Superfund work; the investigation, remediation, and closure of hazardous waste sites; Aquifer Protection Permit (APP) and National Pollutant Discharge Elimination System (NPDES) permitting issues; regulatory compliance projects; and underground storage tank programs.

He oversees the company's Environmental Service business and directs the company's national client program.

Assignment

Principal

Education

M.S., Water Resources, Iowa State University, 1982

B.S., Forestry and Wildlife, Virginia Tech, 1980

Registration

REM, National Registry of Environmental Professionals No. 5588

REA, California No. 01690

Experience

25 years

Joined Firm

1994

Program Management

Brown and Caldwell's National Client Program

Director. Responsible for the organization and execution of Brown and Caldwell's national client program. The essence of the program is the advocacy, commitment, and responsiveness of the Client Service Managers assigned to and selected by each client, with the deployment of appropriate resources from Brown and Caldwell's deep technical and geographical pool. One of Ed's major roles is to assure execution for individual clients and the ultimate value provided by Brown and Caldwell's service.

Brown and Caldwell's Environmental Services Business

National Practice Leader. Oversees and directs Brown and Caldwell's nationwide Environmental Services program. This includes developing the communication and leadership of Brown and Caldwell's nationwide Environmental Service Leadership Team, the formation of Brown and Caldwell's service line "Communities of Practice" (Remediation, Compliance and Permitting, Solid Waste, Industrial Water Quality, Mining), and the implementation of overall company strategy to serve our clients' current and changing needs.

Principal-In-Charge on Various Projects

Serves as principal-in-charge of the sites and projects portfolio for several national clients. In this capacity, Ed is responsible for quality assurance, client satisfaction, and overall execution and financial performance for these client accounts. The ultimate focus is to provide the best overall client value. Ed serves as PIC for several clients. In addition to his principal-in-charge responsibilities, Ed serves in assisting our CSMs in various other client engagements and oversight roles.

Remedial Investigation/Feasibility Studies (RI/FS)

Remedial Investigation, West Van Buren, State Superfund Area, Arizona

Project Manager. Managed the site investigation of the property and preparation of remedial action plan for an industrial entity that was a potentially responsible party (PRP) in the West Van Buren Superfund area. Provided extensive litigation support for the client. Served as a member of the steering committee formulating a Good Faith Offer for the study of the 25-square mile superfund area.

Remedial Investigation, West Central Phoenix, State Superfund Area, Arizona

Project Executive. Prepared detailed records documenting historical uses of the subject property and surrounding properties. Prepared a site investigatory program for the subject site and for adjacent facilities and a plan for the development of information on individual PRPs in the study area.

Remedial Investigation/Feasibility Study, Tucson Airport, Arizona

Consultant. Provided peer review of continuing consulting work being conducted in the RI/FS of the vadose zone and groundwater resources. Evaluated complex hydrogeology and hydraulic connection between aquifers.

Remedial Investigation/Feasibility Study, Stone Southwest Federal Superfund Site, Arizona

Quality Assurance Officer. Conducted RI/FS work in the field, office, and laboratory. Also, conducted periodic audits to ensure continued project performance. Managed the comprehensive Quality Control/Quality Assurance (QC/QA) laboratory program.

Remedial Investigation, Motorola 52nd Street, Arizona

Manager. Managed the sampling and analysis program for the Motorola 52nd Street National Priorities List (NPL) site. This work included a comprehensive existing well evaluation program, data base completion, data analysis and interpretation, and direction of a 2-year quarterly sampling program with over 100 sample points.

Remedial Investigation, City of Phoenix 19th Avenue Landfill, Arizona

Prepared and implemented the sampling and analysis program for the 19th Avenue Landfill. Work included an analysis of the relationship between a rising and falling water table, leachate generation, and water quality concentrations of constituents of interest.

Regulatory Compliance**Aquifer Protection Permitting (APP), Discharge Ponds, Confidential Client**

Project Manager. Permitted a pond receiving hydrocarbon discharge via overflow from an oil/water separator. The permit was successfully organized via demonstration of Best Available Demonstrated Control Technology (BADCT) for the facility.

National Pollutant Discharge Elimination System (NPDES) Permitting, SPCC Roosevelt Lake, Torno America

In accordance with an existing NPDES permit, prepared a compliance plan and formatted the monitoring report for the grey water discharge from tunneling at the site of the new bridge at Lake Roosevelt. Prepared a Spill Control and Counter Measures Plan for the storage, handling, and distribution of petroleum hydrocarbons on the barge that was used as the fueling point for construction apparatuses.

Resource Conservation and Recovery Act (RCRA) Permitting, Arizona Hazardous Waste Management Facility

Project Manager. Managed the hydrologic characterization and RCRA Part B permitting for the site of the proposed Arizona Hazardous Waste Management Facility. Installed and sampled wells according to strict protocol. The permit information was developed in accordance with the Environmental Protection Agency's (EPAs) Technical Enforcement Guidance Document.

Urban Stormwater Runoff, Phoenix and Tucson, Arizona

Prepared a comprehensive analysis of the regulatory, quality, and quantity aspects of stormwater runoff in the Phoenix and Tucson metropolitan areas for the Salt River Project.

Aquifer Protection Permitting, Stone Container, Snowflake, Arizona

Responsible for the hydrogeologic characterization and aquifer protection permitting at Stone Container's Snowflake facility. Evaluated constituents of interest in relation to naturally-occurring ions that were present from subsurface salt dissolution.

Regulatory Compliance Audit Program, Arizona Municipality

Project Executive. Prepared scope of work for the comprehensive compliance audit of some ten facilities for an Arizona municipality. The work included pre-audit questionnaires,

privatization of facilities, detailed site audits, and a comprehensive report including recommendations for corrective action.

UST/Petroleum Hydrocarbons

UST Investigation/Remediation, Mobil Oil, Arizona and California

Project Manager. Responsible for the site characterization and remediation or closure of over 50 Mobil Oil gasoline station sites in Arizona and California. Site closure projects ranged from single site investigation to complex remedial programs.

Underground Storage Tank (UST) Investigation, Texaco

Project Executive. Responsible for defining the lateral and vertical extent of contamination, pneumatic testing of the vadose zone, and planning and design of a vapor extraction system.

UST Program, Arizona Department of Environmental Quality (ADEQ), Arizona

Project Executive. Responsible for UST investigation/remediation program under the Arizona State Contract for UST Investigation/Remediation services. Evaluated four sites.

Risk Assessment, Confidential Client

Completed a successful risk assessment validating the existence of low level residuals of benzene in subsurface soils at a great cost savings to the client.

Remediation

Petroleum Hydrocarbons, Bunker Oil Investigation and Remediation, Depot Marketplace, Prescott, Arizona

Project Executive. Managed the characterization and excavation of a site formerly operated as a railroad depot, which had been affected by bunker oil and petroleum hydrocarbon contamination. Evaluated remedial options that included solidification, capping, alternative use in asphalt sub-base, bioremediation, and incineration.

Confidential Arizona State Superfund Client

Prepared a Remedial Action Plan for the vapor extraction of subsurface soils affected by chlorinated solvent compounds. The design plans included lateral and vertical components of the system, as well as cleanup beneath an existing building.

Pesticide Contamination, Confidential Client, Arizona

Project Manager. Managed the evaluation and cleanup of a site affected by the "midnight dumping" of chlorinated pesticides, most prevalently toxaphene. Coordinated with the regulatory agencies to characterize waste into hazardous and non-hazardous components, as well as completing an excavation/treatment program prior to hazardous and non-hazardous landfill disposal. Logistics regarding land ban requirements were critical in the decision-making process.

Gasoline/Diesel/Chlorinated Solvents, Mobil Oil

Project Manager. Conducted soil vapor extraction and groundwater pump-and-treat systems at a gasoline station site in a state superfund area. The site was complex due to the dual remedial concerns of chlorinated solvents contamination from an upgradient source, and petroleum hydrocarbon contribution from the gasoline station site. Remedial systems were designed to accommodate both contaminant groups.

Petroleum Hydrocarbons, Arizona State University, Tempe, Arizona

Project Executive. Responsible for the evaluation and successful remediation of two sites affected by diesel oil contamination. Remediation consisted of a careful definition of the extent of contamination, followed by excavation and landfilling.

Mining

Aquifer Protection Permitting, Superior Mining Division, Superior, Arizona Project Executive. Responsible for oversight of preliminary hydrogeologic and geochemical characterization of an underground copper mine in support of APP and closure plan investigation.

Aquifer Protection Permitting, Florence Project, Florence, Arizona Project Executive. Responsible for oversight of all aspects of Aquifer Protection and underground injection control (UIC) permitting for a proposed in-situ copper mine in Central Arizona.

Cyprus Mine Closure Plan, Arizona

Completed a hydrogeological investigation and preliminary closure plan for the Cyprus Johnson Camp Mine property. The plan was submitted to ADEQ and conditionally approved. Plan implementation was subject to economic decisions by Cyprus.

Groundwater Geochemical Analysis, Confidential Client

Completed a detailed geochemical analysis of existing water quality data to evaluate whether a discharge had occurred from various potentially discharging facilities. Completed ion balances, trilinear plots, and isotopic analyses.

Phelps Dodge, Confidential Site

Project Executive. Responsible for the hydrogeologic investigation and aquifer protection permitting of a mine site. The work focused on the description of the complex hydrogeology and faulting patterns, the background water quality of the site and its relation to existing fault blocks, and a unique point of compliance concept.

Confidential Client, Regulatory Compliance

Completed a regulatory compliance report on the status of potentially discharging facilities at the site and implications for planned permitting work at the facility.

Environmental Site Assessments

Phases I and II Site Assessment Program, Norwest Bank

Project Executive. Responsible for the comprehensive Phase I environmental site assessment program for Norwest Bank.

Phases I and II Site Assessment, City of Phoenix, Arizona

Project Executive and Quality Assurance Officer. Responsible for environmental assessment work conducted for the City of Phoenix in their continuing road-building program.

Phase I Program, City of Scottsdale, Arizona

Project Manager. Responsible for the comprehensive evaluation of 140 properties for the City of Scottsdale including an airport, two maintenance facilities, a landfill, and a golf course. Property within the designated federal superfund area was carefully evaluated and characterized. Data for all properties was arranged and presented in a formalized matrix reporting system.

Phases I and II Site Assessment, Valley National Bank, Arizona

Project Manager. Conducted numerous Phase I and II studies including industrial, commercial, and agricultural sites.

Memberships

Arizona-Nevada Academy of Science

Environmental and Natural Resources Section of the State Bar of Arizona

Environmental Law Committee of Maricopa County Bar Association

Arizona Association of Industries
Society for Mining, Metallurgy, and Exploration

ATTACHMENT 2

EXTRACT FROM SUPPLEMENT #1

**October 4, 2004, Letter from Ed Ricci to
Abrams Summarizing Brown and Caldwell's Review of
Photographic and Other Evidence Related to the
ADEQ RI of the Miracle Mile Site**

Suite 500, 201 East Washington Street
Phoenix, Arizona 85004

Tel: (602) 567-4000
Fax: (602) 567-4001

October 5, 2004



Mr. Gary Abrams
President
Abrams Airborne Manufacturing, Inc.
3735 N. Romero Road
Tucson, Arizona 85705

Mr. James Viereg
Director of Government Relations
Abrams Airborne Manufacturing, Inc.
3735 N. Romero Road
Tucson, Arizona 85705

15-24260.002

Subject: Brown and Caldwell Review of Photographic and Other Evidence
Related to the Arizona Department of Environmental Quality Remedial
Investigation of Abrams and the Miracle Mile Site

Dear Messrs Abrams and Viereg:

You have requested that I review your October 5, 2004 letter to Matt Doolen at the Arizona Department of Environmental Quality (ADEQ) and evaluate the information in that letter within the context of my previous knowledge and experience of the Abrams facility and my knowledge and experience with the transport and migration of pollutants in soil and groundwater generally. You have also requested that I provide Abrams with my professional determination of whether transport and/or migration of hazardous substances could occur from facilities located near Abrams to soil and groundwater at or beneath the Abrams property and how the source of that transport or migration might be assessed if it did occur. It is my understanding that this letter is to be incorporated as an attachment to your October 5, 2004 letter to Matt Doolen.

Overland migration of pollutants largely occurs via adsorption to soil particles that are transported by stormwater. In addition, transport and migration of pollutants are greatly affected by permeability and gradient of the land surface, as well as by the affinity of different soil types in the receiving water locations to absorb and retain different types of pollutants. Transport and migration is also affected by other factors, such as the physical properties of pollutants (e.g., solubility, boiling temperatures, specific gravity, and vapor density).

Precipitation events directly contribute to vertical and lateral transport and migration of pollutants on the ground surface and in soils below the ground surface. Lateral flow and ponding of storm water runoff causes an increased hydraulic head on the ground surface and a corresponding vertical downward "wicking" potential for

Mr. Matthew Doolen, R.G. Project manager/Hydrogeologist
October 5, 2004
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solubilized pollutants into soils. This increased potential can result in vertical movement of pollutants into soil, as well as potential dislodgement of non-aqueous phase liquids from the interstitial spaces of soil particles. "In situ" migration of pollutants as a result of dissolution directly or indirectly into water causes both vertical and lateral migration of those pollutants.

Based on my previous knowledge and experience of the Abrams facility and my review of your October 5, 2004 letter to Matt Doolen at ADEQ, I am certain that the Abrams property has received large quantities of storm water runoff from adjacent facilities. I am also certain that there has been direct disposal of hazardous substances, including the contaminants of concern at the Miracle Mile site, onto the ground surface at those adjacent facilities. Those hazardous substances have potentially been transported or otherwise migrated from facilities adjacent to Abrams to soil and groundwater at or beneath Abrams' property.

Heavy metals and chlorinated solvents, such as chromium and trichloroethene (TCE) have an affinity for adsorption to silts, clays, and organic complexes. This affinity greatly facilitates the lateral transport of these substances during rainfall events. That is to say, not only can these substances be dissolved into storm water itself, but they can also be present in any soils, other organic chemical complexes, and even organic matter (such as vegetative and other debris) into which they have adsorbed and which has been eroded or otherwise transported by stormwater.

The climatological data included in your October 5, 2004 letter to Matt Doolen shows that the period of time from 1970 to 1985 was marked by some of the highest precipitation levels in Tucson since those records were initiated in 1867, including the significant flooding that occurred in 1983. You have told ADEQ, on numerous occasions, that you have witnessed significant amounts of eroded soil and other debris transported during precipitation events to Abrams from adjacent facilities. It is possible that pollutants present on or in soils at facilities adjacent to Abrams may have been transported to the Abrams property by these precipitation events.

It is important to note that precipitation events can also cause vertical downward migration of pollutants below the ground surface. As discussed above, water present on the ground surface in effect "pushes" into the soil below (dependent of course on the many variables mentioned herein), carrying with it pollutants that have been dissolved or are otherwise entrained in that water. This is very likely to occur in the event that water is effectively static, or "ponded." The information in your letter to Matt Doolen and my own personal observation of surface conditions at your facility (and other, adjacent facilities) make clear that this type of ponding has occurred at various locations of the Abrams property. These locations include the Abrams' parking lot before it was paved and the northern property boundary between Abrams and R.E. Darling, along the Abrams' main building. Ponding in these locations occurred on numerous occasions historically, and over a period of many years. This time period coincides with the disposal of pollutants onto the soil by

facilities adjacent to Abrams of which you have photographic and testimonial evidence. The concept of standing water causing hydraulic transfer of pollutants into soils is also applicable to your historical observation of heavy and persistent irrigation of the grounds and associated flora at the R.E. Darling (REDAR) facility adjacent to Abrams.

Pollutants that have been adsorbed into soils below the ground surface are subject to a much more complex set of variable factors that can influence their further migration vertically and laterally. Inorganic pollutants exhibit different migratory behavior than organic pollutants. Sometimes inorganic pollutants can be complexed into organic pollutants, resulting in yet different migratory behavior. Some of the factors influencing the migration of pollutants in soil include:

- Concentration of pollutant/s and/or relative saturation of the soil with water;
- Groundwater movement;
- The physical properties of pollutants;
- Soil conditions and type (such as silt, sand, clay, cobbles, etc.);
- Gravity; and
- The existence of artificial conduits (such as utility lines, wells, and dry wells, among others).

All of the above factors can work in concert with or in opposition to each other to facilitate or retard the migration of pollutants vertically and laterally in soils. Conditions at the Miracle Mile site (Site), in particular the area that includes Abrams and other facilities that are nearby and adjacent, are complicated by the existence historically of direct conduits to the regional aquifer (such as the abandoned Fairfax well) and a poorly defined local "perched" zone (or zones). The long operational history of the area also complicates its evaluation due to the extensive conduit matrix that is created by numerous utilities that interconnect facilities under the ground surface, providing a migratory pathway for pollutants to move from one facility to another independent of perched or regional groundwater flow. Abrams also has its own conduit matrix of underground utilities that could contribute to the potential migration of pollutants from one location to another at the Abrams property. It is possible for pollutants that have been transported to Abrams by surface or subsurface lateral migration from nearby and adjacent facilities to further migrate via these conduits to other locations at the Abrams' property.

Abrams is at a lower surface gradient than adjacent facilities known to have disposed of pollutants to the soil, and has received stormwater runoff that may have contained those pollutants. This runoff ponded on the Abrams' property on numerous occasions and provided opportunity for pollutants to migrate vertically into soils at such property. Once they had migrated below the ground surface, those pollutants

Mr. Matthew Doolen, R.G. Project manager/Hydrogeologist
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had further potential to migrate to other locations at Abrams via conduits created by underground utility lines.

Similarly, pollutants previously adsorbed into subsurface soils at facilities nearby and adjacent to Abrams are capable of migration through such soils to soils underneath Abrams' property via utility corridors and other factors described above.

These complex factors makes determination of "sources" of the contaminants of concern at the Site a very difficult task if ADEQ relies solely on the detection and concentration of hazardous substances at individual facilities at the Site. Detection of hazardous substances in soils or groundwater at or underneath Abrams therefore does not therefore necessitate a conclusion that Abrams is a "source" of Site contaminants.

An affirmative method that should be utilized as part of ADEQ's Remedial Investigation of the Site is to perform sampling and analysis of soils and groundwater at or near locations of known pollutant disposal to the soil or ground surface. Based on my review of your letter to Mr. Doolen, and my own knowledge and experience of the Abrams facility, hazardous substance disposal has never occurred at Abrams. However, I am certain such disposal has occurred at facilities adjacent to, and at a higher surface elevation than Abrams. This certainty is based in part on the voluminous evidence that disposal of pollutants has occurred repeatedly at REDAR (to the North and "uphill" from Abrams).

Appendix A of your letter to Matt Doolen contains a reference key for site and building features discussed in that letter. That reference key also includes the location of a series of soil borings that I recommend ADEQ perform at the REDAR and Desert Automotive facilities at or near known locations of pollutant disposal, as well as at or near areas of soil discoloration or chemical storage based on photographic evidence. These locations are designated as B1 through B25 in the reference key. My recommendation is that each boring be completed to a depth of sixty (60) feet, with sample collection at ten (10) foot intervals. I further recommend that these samples be analyzed for heavy metals including hexavalent chromium and volatile organic compounds (VOC's).

The following tables summarize these recommended borings in numerical order and include observations and other data I have used as a basis for recommending each boring or set of borings:

TABLE 1

<u>BORINGS:</u>	<u>LOCATION:</u>	<u>OBSERVATIONS:</u>
B1, B2, B3, B4	West and South of S1	<ol style="list-style-type: none"><li data-bbox="1122 510 1419 674">1. Usage and disposal of TCE was observed in this area, as described in Gary Abrams' affidavit.<li data-bbox="1122 720 1419 982">2. The City of Tucson surface elevation contour map dated July 23, 1984 shows overland flow is generally southward from S1 toward Abrams.<li data-bbox="1122 1029 1419 1121">3. High TCE levels have been detected in IRA-19.<li data-bbox="1122 1167 1419 1709">4. Cooper photos depict drum storage and ground surface discoloration on these dates: 3-18-1969, 1-7-1971, 12-21-1973, 11-8-1974, 9-7-1976, 9-8-1978, 5-12-1980, 3-13-1983, 5-6-1983. Aerial Surveys' Photos 1 and 2 depict flow of an unknown substance from S1 southward toward Abrams.

TABLE 2

<u>BORINGS:</u>	<u>LOCATION:</u>	<u>OBSERVATIONS:</u>
B5, B6, B7, B8, B9, B10	North-South corridor between H1/H2 and D1/D2/D3	<ol style="list-style-type: none"><li data-bbox="1105 464 1425 632">1. This a known area of a TCE release as described in Joseph Henderson's Affidavit.<li data-bbox="1105 674 1425 1188">2. Dry wells existed here historically (They are identified in ADEQ's 11-15-1989 Preliminary Assessment of REDAR) and would have acted as conduits. These dry wells are designated "DW" on the reference key contained in your Oct. 5, 2004 letter to Matt Doolen.<li data-bbox="1105 1230 1425 1566">3. The abandoned Fairfax well, located in this corridor, acted as a conduit to the regional aquifer and historically has shown elevated concentrations of both TCE and chromium.<li data-bbox="1105 1608 1425 1879">4. This is an area where elevated concentrations of TCE were detected in ADEQ's February and April 2001 passive soil gas survey. Boring #7,

TABLE 2 (Continued)

<u>BORINGS:</u>	<u>LOCATION:</u>	<u>OBSERVATIONS:</u>
B5, B6, B7, B8, B9, B10	North-South corridor between H1/H2 and D1/D2/D3	<p>located in this corridor, in ADEQ's report "Vertical Profiling – Soil Boring Installation Report," dated May 30, 2003, had TCE concentrations of 130 ug/kg at a depth of 60 feet.</p> <p>5. Drums of unknown chemicals are depicted stored outside of containment, on the ground surface, in Cooper photos dated: 12-21-1973, 9-8-1978, 3-13-1983, 5-6-1983, 6-3-1985 and also in Aerial Surveys' Photos 1 and 2, dated 1-3-1984.</p> <p>6. Staining of the ground surface, possibly from release of unknown pollutants, is visible in Cooper photos dated: 9-7-1976, 5-12-1980, 3-13-1983, 5-6-1983, 8-8-1988, 8-10-1983, 12-1-1994, 12-3-1998, 12-4-2000, and Sept. 2003 and is also visible in Aerial Surveys' Photos 1 and 2, dated 1-3-1984.</p>

TABLE 3

<u>BORINGS:</u>	<u>LOCATION:</u>	<u>OBSERVATIONS:</u>
B11, B12, B13, B14	South of D1, and in an area that extends north and west of D1	<ol style="list-style-type: none"><li data-bbox="1117 472 1440 871">1. The April 1993 "hose incident" discussed in Gary Abrams' affidavit (and which occurred in this area – the REDAR hazardous waste storage area) is indicative that other releases in this area have probably occurred.<li data-bbox="1117 913 1440 1270">2. The January 2002 "pipe incident" documented by David Lickteig, and also discussed in Gary Abrams' affidavit, is indicative that releases in this area probably have occurred multiple times over many years.<li data-bbox="1117 1291 1440 1816">3. A large area of black soil discoloration north of the REDAR hazardous waste storage area is visible in Cooper photos dated: 5-12-1980, 3-13-1983, 5-6-1983 and 6-3-1985. The 6-3-1985 photo shows a large pile of gravel next to this black area– and the black area is no longer

TABLE 3 (Continued)

<u>BORINGS:</u>	<u>LOCATION:</u>	<u>OBSERVATIONS:</u>
B11, B12, B13, B14	South of D1, and in an area that extends north and west of D1	<p>visible in the Cooper photo dated 8-8-1988. The black stain shown in these photos to have entered the small wash west of D1.</p> <p>4. Runoff of an unknown fluid from D1 southward toward the Abrams-REDAR property line is visible in Cooper photos dated: 9-8-1978, 5-6-1983, 6-3-1985, 8-10-1993, 12-1-1994, 12-3-1998, and 12-4-2000. Gary Abrams' affidavit indicates these releases historically would flow across the property line and pond against Abrams' wastewater treatment system area.</p>

TABLE 4

<u>BORINGS:</u>	<u>LOCATION:</u>	<u>OBSERVATIONS:</u>
B15, B16, B17, B18	East-West corridor between D1 and D2	<ol style="list-style-type: none"><li data-bbox="1110 464 1429 701">1. This corridor is "downhill" from the areas of release and other factors described in the recommendations for Borings B5 through B10.<li data-bbox="1110 737 1429 1255">2. As depicted in Cooper photos dated: 3-13-1983, 5-6-1983, 6-3-1985, 8-8-1988 and 8-10-1993, surface discoloration and staining extends from H1 westward between D1 and D2, and enters the small wash, commingling with the unidentified black substance related to recommended Borings B11 through B14.<li data-bbox="1110 1325 1429 1528">3. Runoff from D1 and D2 into this corridor is visible in Cooper photos dated 5-12-1980 and Sept. 2003.

TABLE 5

<u>BORINGS:</u>	<u>LOCATION:</u>	<u>OBSERVATION:</u>
B19	West of D2	<p>This area has been used by REDAR for storage of unidentified objects for several years as depicted in Cooper photos dated: 1-7-1971, 4-8-1972, 12-21-1973, 11-8-1974, 9-7-1976, 9-8-1978, 5-12-1980, 3-13-1983, 5-6-1983, 6-3-1985, 8-8-1988, 8-10-1993, 12-1-1994, 12-3-1994, 12-3-1998, and 12-4-2000. Drums of unknown content are visible being stored on the ground surface with no containment in the Cooper photo dated 3-13-1983 and Aerial Surveys Photo 2.</p>

TABLE 6

<u>BORINGS:</u>	<u>LOCATION:</u>	<u>OBSERVATIONS:</u>
B20, B21, B22, B23, B24	Around and between D3, D4, and D5, including the area between D3/D4 and H2	<p>Runoff of unknown liquids is visible in this area in Cooper photos dated: 5-6-1983, 6-3-1985, 8-8-1988, 8-10-1993, 12-3-1998, 12-4-2000 and Sept. 2003. Also depicted in the 12-3-1998 and 8-10-1993 Cooper photos is soil discoloration that enters the wash west of D4.</p>

TABLE 7

<u>BORINGS:</u>	<u>LOCATION:</u>	<u>OBSERVATIONS:</u>
B25	Back (west) lot of Desert Auto	<ol style="list-style-type: none"><li data-bbox="1117 464 1437 842">1. Per Gary Abrams' affidavit, disposal of pollutants has been common, frequent and with no regard for its impact to soils or groundwater at this location or the migration of pollutants to other properties such as Abrams.<li data-bbox="1117 877 1437 1283">2. Previous sampling performed by EEC indicated that pollutants discharged at this location were likely transported to soil at Abrams. There should be differentiation of pollutants from Desert Auto and pollutants from REDAR.<li data-bbox="1117 1318 1437 1766">3. Before use as an automotive repair facility, this property was used for painting and stripping of aircraft, as depicted in Cooper photographs dated 3-18-1969 and 1-7-1971. The chemical composition of those paints and paint strippers is unknown.

TABLE 7 (Continued)

<u>BORINGS:</u>	<u>LOCATION:</u>	<u>OBSERVATIONS:</u>
B25	Back (west) lot of Desert Auto	<p>4. Extensive soil and ground surface discoloration is visible in this area in Cooper photographs dated: 1-7-1971, 4-8-1972, 11-8-1974, 9-7-1976, 9-8-1978, 5-12-1980, 3-13-1983, 5-6-1983, 6-3-1985, 8-8-1988, and 8-10-1993.</p> <p>5. There was an apparent attempt to conceal soil discoloration at this location by removing soil, as described in Gary Abrams' affidavit and the covering of this location with carpet remnants, also described in Gary Abrams' affidavit. These carpet remnants are visible in Cooper photographs dated 12-4-2000 and Sept. 2003. These carpets pieces are still present as of this writing.</p>

Mr. Matthew Doolen, R.G. Project manager/Hydrogeologist
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Hazardous wastes generated at REDAR have historically included TCE, TCA, PCE, MEK, methanol, toluene, xylene, isopropyl alcohol, dibutyl phthalate, dioctyl phthalate, dibenzyl ether, butyl oleate, jet fuel and solidified waste rubber. The number of known disposal events that have occurred at REDAR, (such as the April 1993 "hose incident" which resulted in documented phthalate contamination of soil at Abrams) indicate a pattern of disposal of pollutants to the soil at REDAR and a lack of regard for the impact such disposal might have on soils and groundwater. An example of this lack of regard is demonstrated by the ambivalence of REDAR employee Mr. George Mendians when questioned by Pima County Department of Environmental Quality employees on April 21, 1993 about why he was pumping pollutants directly onto Abrams' property and Mr. Mendians responded: "It would have ended up over there anyway..."

In summary, it is my professional determination that pollutants released at facilities nearby and adjacent to Abrams have potentially migrated to Abrams' property and impacted soils or groundwater at and below that property. Your October 5, 2004 letter to Matt Doolen conclusively demonstrates to ADEQ that this disposal has occurred on numerous occasions at facilities nearby and adjacent to Abrams, but has not occurred at Abrams.

ADEQ may also be able to differentiate "sources" by the concurrent detection of contaminants of concern and other chemicals known to be unique to adjacent facilities. For example, the presence of dioctyl phthalate with or near TCE or chromium would be a strong indicator that the TCE or chromium originated at REDAR, since dioctyl phthalate is a compound whose usage is unique to REDAR and whose disposal onto soil by REDAR has been documented during the April 1993 "hose incident." Such evidence is present in the groundwater quality results from IRA-19.

ADEQ has not provided sufficient analytical data or other information, of which I am aware, that warrants the conclusion that Abrams is a source of Site contamination. Even if hazardous substances are detected at or beneath Abrams' property, I do not believe that such substances were released at Abrams, but rather that they were transported or migrated to Abrams from a nearby or adjacent facility.

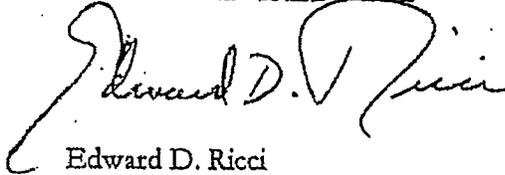
ADEQ has enough data and other information to warrant establishment of facilities nearby and adjacent to Abrams as the "source/s" of the contaminants of concern at the Site. The sampling plan I have recommended in this letter and the historical photographs and other information contained in your October 5, 2004 letter to Matt Doolen will be helpful to ADEQ in delineating these sources.

Mr. Matthew Doolen, R.G. Project manager/Hydrogeologist
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As always, please feel free to contact me with any questions you may have regarding this letter or any other matter related the ADEQ Remedial Investigation of the Site.

Very truly yours,

BROWN AND CALDWELL

A handwritten signature in cursive script, appearing to read "Edward D. Ricci". The signature is written in black ink and is positioned above the printed name and title.

Edward D. Ricci
Senior Vice President

EDR

cc: David Lickteig

KEY

DA Desert Auto
EP Exchange Place

D1-D5 Darling Manufacturing
Buildings

H1-H2 Darling Manufacturing
Buildings (Historical Hangers)

DW Dry Well (from ADEQ 1989
Preliminary Assesment Report,
REDAR)

S1 Darling Chemical 'Shack'

