NOVEMBER 25, 2014

D R A F T FINAL

REMEDIAL INVESTIGATION REPORT

EAST CENTRAL PHOENIX

40TH STREET AND OSBORN ROAD

WATER QUALITY ASSURANCE REVOLVING FUND SITE

PHOENIX, ARIZONA

PREPARED FOR:
ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

HARGIS + ASSOCIATES, INC.
HYDROGEOLOGY • ENGINEERING

HARGIS + ASSOCIATES, INC.

REMEDIAL INVESTIGATION REPORT

EAST CENTRAL PHOENIX
40TH STREET AND OSBORN ROAD
WATER QUALITY ASSURANCE REVOLVING FUND SITE
PHOENIX, ARIZONA

TABLE OF CONTENTS

Section Page

ACRONYMS AND ABBREVIATIONS v
EXECUTIVE SUMMARY ES-1
1.0 INTRODUCTION 1
1.1 SITE BACKGROUND 1
1.2 SOURCE IDENTIFICATION 2
1.3 WATER QUALITY ASSURANCE REVOLVING FUND PROCESS 3
2.0 PREVIOUS INVESTIGATIONS AND EARLY RESPONSE ACTIONS 4
2.1 CHRONOLOGY OF INVESTIGATIONS 4
2.2 GENERAL SUMMARY OF MONITORING ACTIVITES 7
3.0 SITE PHYSICAL CHARACTERISTICS 8
3.1 DEMOGRAPHICS AND LAND USE 8
3.2 CLIMATE 9
3.3 TOPOGRAPHY 10
3.4 SURFACE WATER 10
3.5 REGIONAL GEOLOGY 10
3.6 REGIONAL HYDROGEOLOGY 11
3.7 LOCAL GEOLOGY AND HYDROGEOLOGY 12
3.7.1 Water Levels 12
4.0 REMEDIAL INVESTIGATION 14
4.1 GROUNDWATER ASSESSMENT 14
4.1.1 Monitor Well Installation 14
4.1.2 In-Situ Groundwater Sampling 15
4.1.3 Groundwater Level Monitoring 15
4.1.4 Monitor Well Sampling 15
4.1.5 Investigation Derived Waste 16

TABLE OF CONTENTS (continued)

Section Page

5.0 NATURE AND EXTENT OF CONTAMINATION 17
5.1 CONTAMINANTS OF CONCERN 17
5.2 PHYSICAL AND CHEMICAL PROPERTIES OF PCE 17
5.3 CONTAMINANT SOURCES 17
5.4 DISTRIBUTION AND TRENDS OF SOIL VAPOR CONTAMINATION 18
5.5 DISTRIBUTION AND TRENDS OF SOIL CONTAMINATION 18
5.6 DISTRIBUTION AND TRENDS OF GROUNDWATER CONTAMINATION 18
6.0 FATE AND TRANSPORT 20
6.1 FATE AND TRANSPORT OF TETRACHLOROETHENE IN SOILS 20
6.2 FATE AND TRANSPORT OF TETRACHLOROETHENE IN GROUNDWATER 20
6.2.1 Advection 20
6.2.2 Dispersion and Diffusion 21
6.2.3 Sorption 22
6.2.4 Biodegradation 22
7.0 RISK EVALUATION 25
7.1 ROUTES OF EXPOSURE 25
7.1.1 Groundwater 25
7.1.2 Surface Water 25
7.1.3 Air 26
7.1.4 Soil and Sediments 26
7.1.5 Biota 27
7.2 POTENTIAL RECEPTORS 27
7.2.1 Human Receptors 27
7.2.2 Ecological Receptors 28
7.3 CURRENT AND FORESEEABLE FUTURE USES OF LAND AND WATER 28
7.3.1 Land Use 28
7.3.2 Groundwater Use 28
7.3.3 Surface Water Use 29
8.0 SUMMARY AND CONCLUSIONS 30
8.1 DATA GAPS 31
8.2 REMEDIAL OBJECTIVES 32
9.0 REFERENCES 33

TABLE OF CONTENTS (continued)

TABLES

Table	
1	WELL CONSTRUCTION DATA
2	HISTORICAL GROUNDWATER ELEVATIONS
3	HISTORICAL VOLATILE ORGANIC COMPOUNDS IN SOIL VAPOR
4	HISTORICAL VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER
5	HISTORICAL VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER, IN-SITU SAMPLES
6	HISTORICAL METALS IN GROUNDWATER

FIGURES

Figure		Drawing Number
1	SITE LOCATION MAP	--
2	40TH AND OSBORN ROAD SITE MAP	--
3	LAND USE AND ZONING	--
4	CONCEPTUALIZED REGIONAL HYDROGEOLOGIC CROSS SECTION OF THE SALT RIVER VALLEY	310-1249 A
5	CROSS SECTION LOCATIONS A-A’	310-1243 A
6	WATER LEVEL ELEVATION AND TETRACHLOROETHENE IN GROUNDWATER	--

TABLE OF CONTENTS (continued)

APPENDICES

Appendix

A 2009 CITY DIRECTORY SUMMARY

B HISTORICAL ANALYTICAL RESULTS AND SOIL BORING LOCATIONS

C BORING LOGS/WELL CONSTRUCTION DIAGRAMS

D HISTORICAL WATER LEVEL CONTOUR MAP

E WATER QUALITY AND WATER LEVEL HYDROGRAPHS

F LAND AND WATER USE REPORT

ACRONYMS AND ABBREVIATIONS

A.A.C.	Arizona Administrative Code
ADEQ	Arizona Department of Environmental Quality
ADWR	Arizona Department of Water Resources
A.R.S.	Arizona Revised Statutes
AWQS	Aquifer Water Quality Standard
bgs	Below ground surface
bls	Below land surface
cis-1,2-DCE	cis-1,2-Dichloroethene
The Cleaners	The Cleaners of Phoenix, Inc.
COC	Contaminant of concern
CSM	Conceptual Site Model
ºF	Degrees Fahrenheit
DNAPL	Dense non-aqueous phase liquid
Earth Tech	Earth Technology Corporation
ECP	East Central Phoenix
EPA	U.S. Environmental Protection Agency
Esri	Environmental Systems Research Institute, Inc.
H+A	Hargis + Associates, Inc.
IDW	Investigation derived waste
HGL	HydroGeoLogic, Inc.
LAU	Lower Alluvial Unit
MAU	Middle Alluvial Unit
msl	Mean sea level
ORP	Oxidation reduction potential

ACRONYMS AND ABBREVIATIONS (continued)

OSWER	EPA Office of Solid Waste and Emergency Response
PA/SI	Preliminary Site Assessment/Site Investigation
Park Avenue	Park Avenue Cleaners
PCE	Tetrachloroethene
PDB	Passive Diffusion Bag
RCRA	Resource Conservation and Recovery Act
RI	Remedial investigation
SECOR	SECOR International, Inc.
the Site	40th Street and Osborn Road
Sonic	Rotosonic drilling methods
SRP	Salt River Project
TCE	Trichloroethene
TOC	Total organic carbon
UAU	Upper Alluvial Unit
µg/L	Micrograms per liter
UST/LUST	Underground storage tank/leaking underground storage tank
VOCs	Volatile organic compounds
WQARF	Water Quality Assurance Revolving Fund
WRCC	Western Regional Climate Center
WSRV	Western portion of the Salt River Valley

REMEDIAL INVESTIGATION REPORT

EAST CENTRAL PHOENIX
40TH STREET AND OSBORN ROAD
WATER QUALITY ASSURANCE REVOLVING FUND SITE
PHOENIX, ARIZONA

EXECUTIVE SUMMARY

This report summarizes the findings of the remedial investigation (RI) activities conducted by the Arizona Department of Environmental Quality at the 40th Street and Osborn Road site (the Site) of the East Central Phoenix (ECP) Water Quality Assurance Revolving Fund area located in Phoenix, Arizona. Hargis + Associates, Inc. prepared this draft RI Report to meet the requirements established under the Arizona Revised Statutes (A.R.S) to characterize the nature and extent of contaminants of concern in the subsurface and determine the need for appropriate cleanup actions at the Site.

The Site is located in the 3900 block of North 40th Street near the intersection of Osborn Road. The Site is one of six ECP WQARF sites. The current Site boundary is an approximate circle about 400 feet in diameter encompassing the Salt River Project (SRP) Well 17.9E-7.5N. Tetrachloroethene (PCE) is the contaminant of concern in the subsurface at the Site.

The Site is located in the western portion of the Salt River Valley. The alluvial sediments beneath the site are subdivided into three hydrologic units: the Upper, Middle, and Lower Alluvial Units (UAU, MAU, and LAU) (ADWR, 2009). The total thickness of alluvial sediments is estimated to be less than 250 feet thick in the vicinity, which lies near the edge of the alluvial basin. The MAU is believed to be absent in the vicinity of the Site. Groundwater monitor wells have been installed at seven locations in the vicinity to a maximum depth of approximately 122 feet below ground surface within the UAU. The base of the UAU and the top of the LAU were encountered at approximately 120 feet below land surface (bls) during the drilling of SRP Well 17.9E-7.5N. SRP Well 17.9E-7.5N is screened across the lower portion of the UAU and the LAU.

EXECUTIVE SUMMARY (continued)

The depth to water at the Site has ranged from approximately 21 feet below land surface (bls) in the mid 1990's to approximately 38 feet bls in 2014. The direction of groundwater flow is southwest with a gradient of approximately 0.007. Vertical gradients between the shallow and deeper zones of the UAU are generally negligible. In the vicinity of the Site, estimates of horizontal hydraulic conductivity of the UAU and the LAU range from 21 to 30 feet per day and 11 to 20 feet per day, respectively.

Investigation activities began in 1983 when analysis of groundwater from SRP Well 17.9E-7.5N detected PCE at 53 micrograms per liter (µg/L). Since 1998, concentrations of PCE have trended downward from a high of 210 µg/L to the most recent concentration of 3 µg/L. The vertical distribution of PCE along the screened section of SRP Well 17.9E-7.5N has not been investigated.

Between 2003 and 2014, fourteen groundwater monitor wells at seven locations have been installed and monitored. Historically, PCE has not been detected within the upper 25 feet to 30 feet of the water table surface. PCE has been detected in Site monitor wells starting from 42 feet below the water table surface to the bottom of screened intervals, suggesting that the PCE originates from an offsite source and has possibly migrated vertically at the source and as it moves laterally toward SRP Well 17.9E-7.5N. During the most recent sampling events, PCE was only detected in monitor well BMW-02B above the Aquifer Water Quality Standard (AWQS) of 5 µg/L. In May 2014, PCE was detected in monitor well BMW-02B at 28 µg/L and 17 µg/L at depth of 90.7 feet bls and 96.7 feet bls, respectively. The vertical extent and the downgradient areal extent of monitor well BMW-02 with regard to PCE concentrations above the AWQS have not been delineated.

The source or sources of contamination have not been defined. However, several upgradient potential sources, including dry cleaning establishments, have been identified. These potential sources are located between 0.75 to over one (1) mile from the Site.

The declining concentration trends observed in SRP Well 17.9E-7.5N are likely the result of attenuation mechanisms such as sorption, dilution, and/or dispersion. It is recommended that the Site monitor wells remain in the ECP WQARF well network to be periodically monitored to provide water level data and PCE concentrations over time, and the monitoring network be expanded to include at least one deeper well screen at BMW-2B to determine the vertical extent of the PCE plume.

REMEDIAL INVESTIGATION REPORT

EAST CENTRAL PHOENIX
40TH STREET AND OSBORN ROAD
WATER QUALITY ASSURANCE REVOLVING FUND SITE
PHOENIX, ARIZONA

1.0 INTRODUCTION

Hargis + Associates, Inc. (H+A) prepared this report to summarize the findings of remedial investigation (RI) activities conducted at the 40th Street and Osborn Road site (the Site) of the East Central Phoenix (ECP) Water Quality Assurance Revolving Fund (WQARF) area located in Phoenix, Arizona (Figure 1). This RI report was prepared on behalf of the Arizona Department of Environmental Quality (ADEQ) under the H+A ADEQ Contract No: EV09-0100AE for ECP in accordance with Arizona Revised Statutes (A.R.S.) §49-287.03 and Arizona Administrative Code (A.A.C.) R18-16-406.

The purpose of this RI is to characterize and document the nature and extent of compounds of concern (COCs) in the subsurface and provide the technical basis for a potential Feasibility Study (FS), which will evaluate appropriate cleanup actions at the Site, if necessary. Specifically, the objectives of the RI are to collect, analyze, report, and suggest additional data necessary to complete assessment of the following factors:

- Physical characteristics of the Site;
- Identification of present and reasonably foreseeable future uses of land and water at the Site;
- Nature, extent, and sources of contamination at the Site;
- Potential fate and transport of contamination at the Site; and
- Potential and actual risk of contaminants to public health, welfare, and the environment.

1.1 SITE BACKGROUND

In the early 1980's, Salt River Project (SRP) Well 17.9E-7.5N was found to be contaminated with tetrachloroethene (PCE). SRP Well 17.9E-7.5N is located in the 3900 block of North 40th Street in a residential neighborhood of Phoenix, Arizona (Figure 1).

The vicinity of SRP Well 17.9E-7.5N, now known as the 40th Street and Osborn Road Site (Site), was placed on the WQARF Registry List in May 2000, with a score of 30 out of a possible 120 (ADEQ, 2000 and 2013). The vicinity of SRP Well 17.9E-7.5N has been investigated with regard to PCE groundwater contamination.

In the A.R.S., a "'Site' means the geographical areal extent of contamination" (A.R.S. §49-281.14). For the purpose of identifying a geographic area of contamination, the Site is defined as a 400 foot diameter circle centered on SRP Well 17.9E-7.5N (ADEQ, 2014). The Site covers approximately 3 acres near the intersection of North 40th Street and Osborn Road, in the City of Phoenix, Arizona. Land use across the Site is a mix of residential and commercial properties. The source of the PCE in the groundwater is unknown (SECOR International, Inc. [SECOR], 2008a). SRP Well 17.9E-7.5N is bordered to the north and east by the Valley Community Church and to the west and south by residential properties. Approximately 130 feet north of SRP Well 17.9E-7.5N is the Baker Nursery.

SRP Well 17.9E-7.5N is an 18-inch irrigation well installed in 1965 and screened between 100 and 300 feet below land surface (bls) (ADEQ, 2000; SRP, 1992). It is located at the southwest corner of the Valley Community Church property located at 3923 East Osborn Road. Available records indicate that between 1981 and 1990, 1,943 acre-feet (633,100,000 gallons) of groundwater was extracted from the well (SRP, 1992). In approximately 1991 the well was taken out of service (ADEQ, 2000; SRP 1992); however, it remains on the list of active wells in the SRP inventory for the area.

Several phases of investigation have been conducted including soil vapor sample collection, and groundwater monitor well installation and sampling. The results of these investigations have indicated that volatile organic compounds (VOCs), primarily PCE, are present in the soil vapor and groundwater in the vicinity of the Site.

1.2 SOURCE IDENTIFICATION

The source of the dissolved-phase PCE groundwater at the Site is unknown (SECOR, 2008a). Literature reviews and record searches were performed in 1988, 2002, and 2009 to identify potential sources. A 1988 study, which covered the entire East Central Phoenix Study Area, identified Kachina Cleaners, The Cleaners of Phoenix, Inc. (The Cleaners), and Sandy's Magic Touch Cleaners as potential sources (Earth Technology Corporation [Earth Tech], 1988).

A 2002 industrial survey did not identify any potential source areas within a 1/4 mile of the Site (HydroGeoLogic, Inc. [HGL] 2002). A 2009 city directory survey was performed to identify potential sources up and crossgradient of the Site and along Indian School Road, Osborn Road, 40th Street, and 44th Street. The results of the 2009 city directory are presented in Appendix A.

1.3 WATER QUALITY ASSURANCE REVOLVING FUND PROCESS

The WQARF program was created by the Arizona Legislature under the Environmental Quality Act of 1986 to support environmental cleanup efforts in Arizona. Through the WQARF program, ADEQ identifies, assesses, and cleans up soil and groundwater that is contaminated with hazardous substances (ADEQ, 2013). Before a site is placed under the WQARF program, it is evaluated for the type of contaminant(s) present, the location of the contaminant(s), and the number of people that may be affected by the contaminant(s) and assigned a numeric score with a maximum of 120. Sites placed under the WQARF program are listed in the WQARF Registry. As part of the WQARF process the ADEQ may:

- Perform emergency responses.
- Conduct investigations including remedial investigations, feasibility studies, and risk assessment.
- Conduct long-term remedial action programs.
- Identify potential responsible parties.
- Perform outreach programs to the public including the formation of community advisory boards. (A.R.S. 49-282).

The ECP study area was placed on the WQARF Priority List in 1987, and the 40th Street and Osborn Road Site was subsequently placed on the WQARF registry in 2000 with a score of 30 out of the possible 120 (ADEQ, 2013).

2.0 PREVIOUS INVESTIGATIONS AND EARLY RESPONSE ACTIONS

2.1 CHRONOLOGY OF INVESTIGATIONS

The following chronology summarizes major events and investigative milestones for the Site:

1983: In 1983 and 1984, the Arizona Department of Health Services and the SRP conducted groundwater sampling and assessment. In July 1983, initial analysis of groundwater from SRP Well 17.9E-7.5N detected PCE at 53 micrograms per liter (µg/L). Additional samples collected in 1984 detected PCE at concentrations ranging from 26 to 90 µg/L (Earth Tech, 1988).

1984: In 1984, the Arizona Department of Health Services conducted a Preliminary Responsible Party Search for an area including the ECP study area. Approximately 190 commercial establishments were identified (Earth Tech, 1988).

1988: Earth Tech performed an assessment of the ECP study area for the nature, extent, severity, and potential sources of VOCs in the groundwater (Earth Tech, 1988). Identified potential sources were Kachina Cleaners, The Cleaners, and Sandy's Magic Touch Cleaners. The report recommended taking SRP 17.9E-7.5N off line for one year, implementing a sampling program, and monitoring water pumped to the canal system. It was also noted that the "SRP wells having the highest concentrations of PCE are deep wells (Greater than 200 feet) Graf (1985) hypothesized that the vertical gradient may increase due to the pumping of deeper SRP wells…" (Earth Tech, 1988).

2000: In May 2000, 40th Street and Osborn Road was listed on the WQARF Registry with a score of 30 out of a possible 120 (ADEQ, 2013).

2001-2002 At the request of ADEQ, HGL conducted a survey of potential sources of PCE located within a ¼-mile radius of SRP Well 17.9E-7.5N (HGL, 2002). Information sources reviewed included Phoenix city directories for the years 1935 to 2000; Resource Conservation and Recovery Act (RCRA) Site documentation; Preliminary Site Assessment/Site Investigation (PA/SI) information supplied by ADEQ; and ADEQ files regarding underground storage tanks/leaking underground storage tank (UST/LUST) facilities located within the survey boundaries.

Potential users of PCE, RCRA generators, PA/SI sites, or UST/LUST facilities were not identified within the survey boundaries.

2003 In June 2003, SECOR installed one monitor well, BMW-01, in the Osborn Road alignment between 39th Street and 40th Street and five feet to the north of an underground sewer line running parallel to Osborn Road (Figure 2) (SECOR, 2008a). Subsurface soil samples were collected at 10-foot depth intervals and field screened for organic vapors using a photoionization detector. Because none of the three soil samples collected from the vadose zone produced readings greater than 24 parts per million by volume, none of the soil samples were submitted for laboratory analysis of VOCs. The boring was completed as shallow groundwater monitor well BMW-01.

2007: In June 2007, ADEQ sent out notices per A.R.S. §49-287.03 initiating the remedial investigation for 40th Street and Osborn Road (ADEQ, 2013). In November 2007, a community Advisory Board was formed (ADEQ, 2009).

2008: In March 2008, a work plan was presented for the purpose of evaluating the vertical and lateral extent of PCE in the subsurface (SECOR, 2008a). The following tasks were completed:

- Updated the previous Industrial Survey by expanding the search radius from ¼-mile to ½-mile. This task was partially completed in January 2009 (see below) (ADEQ, 2012).
- Conducted a passive soil gas survey upgradient of the Site, along 40th Street and Osborn Road. This task was partially completed in June 2008 (see below).
- Installed two nested groundwater monitor wells (BMW-02A/B and BMW-03A/B), three upgradient and one downgradient from the Site. Collect in situ groundwater samples and analyze for VOCs. Collect soil samples and analyze for total organic carbon content (TOC). Collect one round of groundwater samples (ADEQ, 2012).
    - In April and May 2008, nested groundwater monitor wells BMW-02A/B and BMW-03A/B were installed upgradient of SRP Well 17.9E-7.5N.
        - Six (6) soil samples were collected from monitor well borings BMW-02 and BMW-03 at depths ranging from 49 to 96 feet bls and analyzed for TOC. TOC concentrations ranged from 0.5 percent to 0.8 percent.

- 13 in situ groundwater samples were collected from BMW-02 and BMW-03 and analyzed for VOCs. The results show that concentrations of PCE and trichloroethene (TCE) increase with depth.

o Seven (7) in situ groundwater samples were collected from monitor well BMW-02 from depths between 50 feet to 100 feet bls (Table 5).

  - No PCE concentrations were detected in groundwater at depths between 50 feet and 70 feet bls.
  - PCE concentrations in groundwater were detected at concentrations of 9.7 µg/L, 44 µg/L, and 110 µg/L 80, 90, and 100 feet bls, respectively (Table 5).
  - The only detection of TCE was in the 100-foot sample.

o Six in situ groundwater samples were collected from monitor well BMW-03 between 52 feet to 101 feet bls.

  - The concentration of PCE in groundwater increased from 1.8 µg/L at a depth of 67 feet bls to 69 µg/L at a depth of 101 feet bls.
  - TCE was only detected in the two deepest samples at concentrations ranging from 5.4 to 8.1 µg/L (Stantec, 2009b).

2008: On June 2008, five (5) passive soil vapor modules were installed upgradient of SRP Well 17.9E-7.5N and along the Osborn Road easement west of 40th Street (just north of the Valley Community Church of God). These five (5) modules were placed at 30-foot intervals with depths ranging from 18 inches to 32 inches. After nine (9) days, the modules were retrieved and analyzed for VOCs. PCE mass was detected in a single sample at 0.05 µg (W.L. Gore & Associates, 2008; SECOR, 2008b).

2008: Monitor well BMW-01B was drilled and installed in December 2008. In situ groundwater samples were collected during drilling at 10-foot intervals from 40 to 100 feet bls. PCE was detected at concentrations of 2.0 and 1.2 µg/L at depths of 90 and 100 feet bls, respectively (Table 5). On December 17, 2008, three discrete interval samples were collected from depths of 72.5, 84.5 and 96.5 feet. PCE was detected in these samples at concentrations ranging from 2.0 to 2.4 µg/L (Stantec, 2009c).

2009: In January 2009, a work plan addendum was presented for the installation of two groundwater monitor wells, BMW-04A and BMW-04B, and a passive soil vapor survey along 44th Street.

Monitor wells BMW-04A and BMW-04B were to be installed downgradient of SRP Well 17.9E-7.5N, near the intersection of 39th Street and Mulberry Drive. The proposed passive soil vapor modules were to be installed at 50-foot intervals along 44th Street between Indian School Road and Clarendon Avenue (Stantec, 2009a).

However, because of funding problems, groundwater monitor wells BMW-04A/B and the passive soil vapor survey were not performed (Stantec, 2012; ADEQ, 2012).

2009: In January 2009 as part of an updated Industrial Survey outline in the March 31, 2008 Work Plan, a city directory search was completed and tabulated (Appendix A) (ADEQ, 2012).

2.2 GENERAL SUMMARY OF MONITORING ACTIVITES

Groundwater monitoring has been conducted at the Site since 1983. During this timeframe SRP Well 17.9E-7.5N has been sampled approximately 25 times. PCE concentrations in SRP Well 17.9E-7.5N range from 3.0 to 210 µg/L. This well is not fitted with an access port, so water levels have not been measured, and sample collection occurs from a pump discharge pipe.

Monitor Well BMW-01 has been sampled between 2003 and 2008 by placement of passive diffusion bags (PDBs) at “Shallow” (approximately 34 feet bls) and “Deep” (approximately 58 feet bls) intervals. PCE has not been detected at monitor well BMW-01.

Site monitor wells BMW-01B, BMW-02A, BMW-02B, BMW-03A, and BMW-03B were sampled in 2008 by placement of PDBs at “Shallow” “Intermediate” and “Deep” intervals. PCE was detected at concentrations ranging from 1.3 to 67 µg/L.

Refer to Tables 1 to 5 and Appendix B for a summary of data.

3.0 SITE PHYSICAL CHARACTERISTICS

3.1 DEMOGRAPHICS AND LAND USE

The entire Site is located within the City of Phoenix (COP), in Maricopa County. The COP is comprised of 15 "urban villages"; the ECP Site is located in the center of the Camelback East Village (CEV) which covers an area of 36.3 square miles. CEV has two primary cores: 1) the 24th Street and Camelback Road core; comprised of office and retail shops, including movie theaters, major department stores, restaurants, and hotels; and 2) the 44th Street and Van Buren Street core an area of airport and regional offices along with a Chinese cultural center. The area around 44th Street and Thomas Road is considered a secondary core of the village. CEV offers a range of housing diversity and neighborhood types evenly split in the number of single family and multi-family residences, ranging from large acre lots to higher density residential developments in the more concentrated centers. A major portion of the housing stock in CEV was built between 1950 and 1970, but new construction of both single family and multi-family homes continues.

Detailed information regarding current and future uses of land or water impacted by a contaminant release from the Site is provided in the Land and Water Use Report (LWUR) presented in Appendix F. According to COP, the primary land use within the CEV is single family residential (38%) followed by parks/open space (26%), multiple family residential (12%) and commercial/industrial (12%), public/transportation (8%). Four (4%) percent of the land within the village is reportedly vacant. Current zoning districts in the Site as well as a detailed description of COP zoning designations can be found in the LWUR in Appendix F.

The ECP study area is an older established part of Phoenix that is mostly residential and commercial with several dry cleaning businesses and strip malls containing retail stores (ADEQ, 2013). General land use within 0.25 mile of the 40th Street and Osborn Road Site is presented in Figure 3. The majority of commercial zoning is along the Indian School Road commercial corridor.

Presently, the area within the Site boundary is zoned for commercial and single family residential use. Surrounding land uses include single family residential to the southwest, south, and southeast; and commercial and multi-family residential to the north and east.

Five school districts are represented in the entire CEV, three are located within the ECP WQARF Site: 1) Scottsdale Unified School District, 2) Phoenix Union School District, and 3) Creighton School District. Christ Lutheran School, Monte Vista School (Creighton School District) and the Arcadia Learning Community (specifically, Tavan Elementary School, Arcadia Neighborhood Learning Center, and Arcadia High School) are located in the vicinity of the 40th Street and Osborn Road Site (City of Phoenix, 2014 and Appendix F). The proximity of each school to the Site is presented below:

School	Approximate Distance from Site (feet)
Christ Lutheran School	2,640 feet to the north
Tavan Elementary School	4,200 feet to the east
Arcadia High School	6,300 feet to the northeast

The zoning pattern in the area has been long established and there are no foreseeable changes for the future, other than the possible redevelopment of the plant nursery to a residential use. Land uses for the Site are expected to remain predominantly residential and commercial (Appendix F).

3.2 CLIMATE

The Phoenix area climate is of a desert type with low annual rainfall and low relative humidity (Schmidli, 1996). The hottest month of the year is July where the average minimum and maximum temperatures range from 84 degrees Fahrenheit (°F) to 106°F. The coolest month of the year is December where the average minimum and maximum temperatures range from 44°F to 66°F (Western Regional Climate Center [WRCC], 2014b).

Annual precipitation averages for Phoenix range between 6.6 to 7.5 inches (WRCC, 2014a and 2014b). There are two separate rainfall seasons. The first rainfall season occurs from December through April from occasional Pacific storm systems. The second rainfall period (also known as the Arizona Monsoon) occurs from July through September when southerly winds bring moisture from the Pacific Ocean, Gulf of Mexico, and the Gulf of California (Schmidli, 1996; The Flood Control District of Maricopa County, 2014).

3.3 TOPOGRAPHY

The Site is located in a relatively flat alluvial valley at an elevation of approximately 1,190 feet mean sea level (msl). The land surface slopes gently to the southwest at a gradient of 0.005 away from the Camelback Mountains. The Camelback Mountains, located approximately 2 miles to the northeast, rise 1,250 feet above the valley surface to an elevation of 2,600 feet msl. Also approximately 2 miles to the southeast are the low lying Barnes and Papago Buttes which rise 350 feet above the valley surface up to an elevation of 1,570 feet msl.

3.4 SURFACE WATER

The nearest surface water body is the Arizona Canal, located approximately 1.2 miles to the northeast of the Site. The Site area is situated within an active flood irrigation district of SRP, which receives water from the Arizona Canal lateral canals. The water is used for residential irrigation; it discharges into the Grand Canal located approximately five (5) miles southwest of the Site. The Site is within the 100 to 500 year flood plain (ADEQ, 2000).

3.5 REGIONAL GEOLOGY

The Site is located on the western portion of the Salt River Valley (WSRV), a broad, relatively level alluvial valley in the Basin and Range physiographic province of Central Arizona. This alluvium represents a combination of deposits from the surrounding mountains and fluvial deposits from the Salt River.

The stratigraphy of the WSRV is divided into the Mountain Bedrock, Pre-Basin and Range Sediments, Lower Basin-Fill, Upper Basin-Fill, and Stream Alluvium (Anderson et al., 1990). In upward sequence, the Mountain Bedrock consists of igneous, metamorphic, and consolidated sedimentary rocks ranging from Precambrian to Cenozoic in age. The Pre-Basin and Range Sediments consist of moderately to highly consolidated continental deposits of silt, clay, gravel, and conglomerate, primarily Tertiary in age. Examples of these sediments would be the Camelshead Formation and the Tempe Beds, exposed in the Papago Park area of east Phoenix. These sediments generally exceed several thousand feet in thickness.

Above the Pre-Basin and Range Sediments lie the Lower Basin-Fill Sediments. The thickness, areal extent, and grain size of the Lower Basin-Fill Sediments are variable, but generally consist of weakly to highly consolidated gravel, sand, silt, and clay and may include interbedded evaporate deposits and volcanic rocks at selected locations. The Lower Basin-Fill Sediments typically include 2,000 to 7,000 feet of fine-grained sediments of silt and clay at the base, in the center of the basins in which these deposits are found.

The Upper Basin fill is generally composed of unconsolidated to moderately consolidated fanglomerates and alluvial deposits laid down during the last stages of the Basin and Range disturbance. This unit also grades into finer-grained facies towards the interiors of the basins, but is generally coarser than the lower unit and with less evaporites. This unit generally produces substantial amounts of groundwater compared to the lower units. Some fine-grained deposits in this unit impede the vertical migration of groundwater, such that perched or semi-perched conditions exist. The Upper Basin fill is composed mainly of silt, sand, and gravel; locally, relatively thin clay layers can be present. Within the WSRV, the unit is predominantly gravel and sand with some thick zones of cobbles near the present channels of the Salt River. Gravel and sand is also found in areas north and south of the present-day channel, where ancestral channels were located.

The upper-most geologic unit in the WSRV is the Stream Alluvium, which represents stream channel and related sediments typically up to 1,200 feet thick. This sedimentary unit was deposited after the basins were filled, and during the establishment of the present drainage system. Stream Alluvium sediments consist of floodplain, channel-fill, alluvial-fan, and playa deposits. The Stream Alluvium is generally unconsolidated, except where cemented by caliche. Grain size ranges from boulder-and cobble-size gravel in the alluvial fans to clays in local playa deposits. In general, sand and gravel are found along the stream channels (Anderson et al., 1990).

3.6 REGIONAL HYDROGEOLOGY

The Arizona Department of Water Resources (ADWR) documented the Site area hydrogeology in a document titled *A Regional Groundwater Flow Model of the Salt River Valley-Phase I Phoenix Active Management Area Hydrogeologic Framework and Basic Data Report* (ADWR, 1993). Although the hydrogeologic stratigraphy generally corresponds to the geologic units, the correlation is not exact and different unit names are used.

The alluvial sediments (Lower and Upper Basin Fill) are subdivided into three hydrologic units: the Upper, Middle, and Lower Alluvial Units (UAU, MAU, and LAU, respectively) (Figure 4). The total thickness of alluvial sediments is estimated to be less than 250 feet thick in the vicinity of the Site, which lies near the edge of the alluvial basin (ADWR, 2009).

The LAU is composed of consolidated sands and gravels. The MAU is also consolidated, but it contains a higher proportion of fine-grained material. Both the MAU and LAU represent a depositional environment within closed basin (lake bed) conditions. Although the hydraulic properties of the MAU are less favorable for water production, the MAU is the most productive unit basin-wide. It has been reported that the MAU is absent in the ECP area such that the UAU and LAU appear to have a hydraulic connection (Earth Tech, 1992 and 1995a). The UAU consists of unconsolidated sands and gravels deposited by flowing drainages, and is the most permeable unit. According to the ADWR, the UAU is typically 300 to 400 feet thick in the WSRV. Where thick saturated sections of the UAU are present, the groundwater production rates are generally very high.

In addition to the UAU, MAU and LAU, several noted geologic units have been classified, including the Pre-Basin and Range sedimentary units (Tempe Beds and Camelshead Formation) and the crystalline bedrock. Hydrologically, these units are not significant for groundwater use or production except in a few limited areas of the WSRV.

3.7 LOCAL GEOLOGY AND HYDROGEOLOGY

The hydrostratigraphic units have been defined based on a review and evaluation of data generated during groundwater assessments. The Site hydrogeology has been investigated to a maximum depth of 300 feet below ground surface (bgs) (Figure 5). Available Site boring logs are included in Appendix C. Fourteen groundwater monitor wells have been installed at seven locations to a maximum depth of approximately 122 feet bgs within the UAU (Table 1). Other than during the drilling of SRP Well 17.9E-7.5N, the base of the UAU has not been encountered during drilling activities to date. The UAU consists of predominantly fine-grained, clayey silts and silt with sand to sandy silts with trace amounts of gravel. The base of the UAU was encountered at 120 feet bls at SRP Well 17.9E-7.5N. The materials encountered between 120 and 300 feet consist of conglomerate and are part of the LAU.

3.7.1 Water Levels

Water levels in the UAU have been monitored since April 1992 (Table 2; Appendices D and E). Monitor wells installed at the Site are screened across both shallow (water table) and deeper intervals within the UAU. Water levels in co-located shallow and deeper screened monitor wells are generally nearly identical. During the period of record for the Site monitor wells, the depth to water has ranged from approximately 21 feet bls in the mid 1990's to approximately 38 feet bls in 2014. The direction of groundwater flow is southwest with a gradient of 0.007. Vertical gradients between the shallow and deeper zones of the UAU monitored at the Site are generally negligible.

4.0 REMEDIAL INVESTIGATION

RI activities conducted at the 40th Street and Osborn Road Site included groundwater assessment and installation of groundwater monitor wells.

4.1 GROUNDWATER ASSESSMENT

Groundwater assessment activities conducted at the Site since January 2013 have included collection of groundwater samples for laboratory analysis, water level measurements, and installation of additional groundwater monitor wells. The purpose of these investigations is to address data gaps and further define the extent of VOCs in groundwater beneath the Site. All assessment activities were performed in accordance with work plans submitted to and approved by ADEQ in 2013 and the Quality Assurance Project Plan (H+A, 2013a, 2013b, 2013c, and 2013d).

4.1.1 Monitor Well Installation

Between December 2013 and January 2014, eight groundwater monitor wells (BMW-04 to BMW-07) were drilled and constructed at four locations. Each location included dual completion of shallow (A) and deep (B) monitor wells. Shallow monitor wells generally were screened from approximately 30 to 65 feet bls (Table 1). Deep monitor wells generally were screened from 75 to 115 feet bls.

All drilling was performed using Rotosonic drilling methods (Sonic). At each location the deeper monitor well was first drilled and a continuous core collected to obtain detailed lithologic data. The core was screened for evidence of VOCs with a photoionization detector/flame ionization detector.

Groundwater grab samples were collected during drilling using low-flow methods with a Simulprobe® from the borehole per the approved work plan (H+A, 2013c). The clay content of the sediments made it difficult to obtain a viable sample. Additionally, the grab water samples were displaying a strong reaction with the preservative (hydrochloric acid) in the 40 milliliter (mL) glass VOA vials during sample collection. The amount of effervescence from these water samples indicated high in calcium carbonate content and likely affected sample integrity. Monitor wells were constructed with 4-inch diameter Schedule 40 polyvinyl chloride (PVC) well casing. Screen lengths ranged between 30 and 40 feet with 0.020 inch screen slot size.

4.1.2 In-Situ Groundwater Sampling

During the drilling of monitor well BMW-07, four grab groundwater samples were collected at 42.5, 65, 102.5, and 112.5 feet bls. The samples were analyzed for VOCs by EPA Method 8260B (Table 5).

4.1.3 Groundwater Level Monitoring

Depth to groundwater was measured in all existing Site monitor wells in January and October 2013. Depth to groundwater was measured in all newly installed monitor wells in February 2014. Subsequently, depth to groundwater was measured in all monitor wells on May 3, 2014. Depth to groundwater was not measured at SRP Well 17.9E-7.5N.

The depth to groundwater ranged from approximately 32 to 38 feet bls (Table 2). The groundwater elevation ranged from a high of 1,179.90 feet msl at monitor well BMW-6A to a low of 1,149.82 feet msl at monitor well BMW-07A. The direction of groundwater flow at the Site is west-southwest with a hydraulic gradient of 0.007 (Figure 6).

4.1.4 Monitor Well Sampling

Groundwater samples were collected from existing and newly installed monitor wells using PDB samplers in accordance with the approved groundwater characterization and well installation work plans (H+A, 2013a and 2013c).

Groundwater samples were collected during three sampling events in 2013 to 2014 (Table 4). Prior to the drilling of additional RI monitor wells, the existing monitor wells (BMW-01, BMW-01B, BMW-02A, BMW-02B, BMW-03A, and BMW-03B) were sampled in October 2013 to identify data gaps and aid in determination of locations for additional monitor wells. Generally, samples referred to as “shallow” are collected approximately 2 feet below the groundwater surface. A sample, referred to as “Deep” is collected near the bottom of the screen interval. If there is a large enough distance between the two samples, an “Intermediate” sample is collected between the “Shallow” and “Deep” sample.

The second sampling event was conducted in February 2014, when the newly installed monitor wells (BMW-04A, BMW-04B, BMW-05A, BMW-05B, BMW-06A, BMW-06B, BMW-07A, and BMW-07B) were sampled. Groundwater samples during this sampling were collected generally at 5-foot intervals along the screen lengths.

The third sampling event occurred in May 2014, when all Site monitor wells were sampled. These samples were collected at intervals from the “Shallow”, “Intermediate”, and “Deep” sample intervals as described above.

Four in situ groundwater samples were collected during the drilling of monitor well BMW-07B between 42.5 feet to 112.5 feet bls (Table 5). PCE, TCE, and cis-1,2-dichloroethene (cis-1,2-DCE) were not detected in the four groundwater samples collected.

During the groundwater sampling events conducted in 2013 and 2014, PCE was detected in 3 of the 14 monitor wells sampled at concentrations ranging from 1.2 to 28 µg/L (Table 4). Specifically, the following was noted:

- At monitor well BMW-02B, PCE was detected from 84.7 feet to 96.7 feet bls, at concentrations ranging from 1.2 to 28 µg/L.
- PCE was detected from 67 to 115 feet bls ranging in concentration from 1.2 to 2.1 µg/L at monitor wells BMW-04A and BMW-04B.
- SRP sampled Well 17.9E-7.5N in April 2013, and PCE was detected at 3.0 µg/L.
- TCE was only detected in monitor well BMW-02B from sample depths of 90.7 and 96.7 feet bls at concentrations ranging from 1.8 to 3.3 µg/L.
- cis-1,2-DCE was not detected in the 2013 and 2014 sampling events.

4.1.5 Investigation Derived Waste

Investigation derived waste (IDW) was temporarily stored in secure storage containers including a poly tank (development water) and roll off bins (drill cuttings), which displayed Site and investigation information. Prior to disposal, drill cuttings and development water were analyzed for VOCs using EPA Method 8260B, the eight Resource Conservation Recovery Act (RCRA) metals by Toxicity Characteristic Leaching Procedure (TCLP); and groundwater was also analyzed for flashpoint to 200 ºF and pH. All IDW was then transported by Chemical Transportation, Inc. and disposed of at Butterfield Station Landfill in Mobile, Arizona, a certified, licensed disposal facility accepting Non-Hazardous Materials.

5.0 NATURE AND EXTENT OF CONTAMINATION

The following discussion on nature and extent of contamination constitutes the Conceptual Site Model (CSM). The CSM is based on the CSM presented for the Site in 2008, updated to include results of additional RI Site investigations conducted to date (SECOR, 2008a).

5.1 CONTAMINANTS OF CONCERN

The Contaminant of Concern (COC) for the Site is PCE in groundwater. A COC, as defined by A.A.C. R18-16-401, "means a hazardous substance that results from a release and that has been identified by the Department as the subject of remedial action at a site." The approximate current lateral and vertical distribution of PCE in groundwater has been summarized (Table 5; Figure 6).

5.2 PHYSICAL AND CHEMICAL PROPERTIES OF PCE

PCE is a colorless, non-flammable liquid that does not occur naturally in the environment. Its solubility is approximately 206 milligrams per liter, and has a density of 1.62 grams/milliliter (EPA, 2013). Thus PCE is more dense than water and is considered a dense non-aqueous phase liquid (DNAPL). Approximately 60 percent of the PCE used in the US (in 1991) was in the dry cleaning and textile industries (EPA, 1994). Among other applications, PCE is also used in vapor degreasing and metal cleaning operations, and in the production of solvent soaps, adhesives, sealants, insecticides, and as a solvent in various consumer products.

5.3 CONTAMINANT SOURCES

The source(s) of the dissolved-phase PCE in groundwater at the Site is unknown. Literature reviews and record searches identify several dry cleaning operations along East Indian School Road as potential sources; however, Site investigations have not identified a specific source or sources. Dry cleaning operations located along East Indian School Road between North 44th Street and North 49th Street are directly upgradient of SRP well 17.9E-7.5N. Dry Cleaning operations along this portion of East Indian School Road were conducted from the late 1950's until the present. These operations are between 0.75 mile to 1.25 miles from the Site.

5.4 DISTRIBUTION AND TRENDS OF SOIL VAPOR CONTAMINATION

The investigation of soil vapor has been limited, thus little information is available regarding the distribution of PCE in soil vapor. A soil vapor survey was not performed since no potential source has been identified in the vicinity of the Site. In June 2008, five (5) shallow passive soil vapor modules were placed at 30-foot intervals with depths ranging from 18 inches to 32 inches upgradient of SRP Well 17.9E-7.5N and along the Osborn Road easement west of 40th Street. PCE was detected in a single sample with a reported mass of 0.05 µg. The relevance of this minor detection is undetermined because there is no nearby source, the depth to groundwater is greater than 20 feet, the soils are clayey sand, and PCE has not been detected in shallow groundwater. It should be noted that PCE has been used in the formulation of various insecticides and the detection may be related to such use in the area, and not the groundwater plume.

5.5 DISTRIBUTION AND TRENDS OF SOIL CONTAMINATION

No potential source has been identified in the vicinity of the Site, thus no soil samples were collected and/or analyzed for VOCs during Site investigations.

5.6 DISTRIBUTION AND TRENDS OF GROUNDWATER CONTAMINATION

SRP Well 17.9E-7.5N has been sampled and analyzed for PCE since 1983. Between 1983 and 1996, concentrations of dissolved PCE showing no distinctive trend with detected concentrations ranging from 17 to 90 µg/L (Appendix E, Figure E-1). The highest concentration of PCE, 210 µg/L, was detected in 1998. Since 1998, concentrations of PCE have trended downward to the most recent concentration of 3 µg/L measured in April 2013. SRP Well 17.9E-7.5N is screened over the lowest 20 feet of the UAU and the upper 180 feet of the LAU. The vertical distribution of PCE over this interval has not been investigated. Requests have been made to conduct vertical sampling of the well during pump maintenance, however, this has not been performed.

In 2013 and 2014, the only exceedance of the AWQS for PCE was detected in monitor well BMW-02B at 90.7 and 97.7 feet bls. PCE was detected up to 28 µg/L, five times greater than the AWQS of 5 µg/L (Table 4).

In 2008, PCE was detected in monitor well BMW-03B up to 20 µg/L; however, in 2013 and 2014 PCE was not detected. Minor detections of PCE, below AWQS for PCE, have occurred in monitor wells BMW-01B, BMW-02A, BMW-04A, and BMW-04B. PCE has not been detected in monitor wells BMW-01, BMW-03A, BMW-05A, BMW-05B, BMW-06A, BMW-06B, BMW-07A and BMW-07B.

Historically, PCE has not been detected within the upper 25 feet to 30 feet of the water table surface in any Site monitor well. The shallowest PCE detections are not observed until approximately 42 feet below the surface of the water table and generally increase with depth. The vertical extent and the downgradient areal extent of monitor well BMW-02 with regard to PCE concentrations above the AWQS have not been delineated.

6.0 FATE AND TRANSPORT

6.1 FATE AND TRANSPORT OF TETRACHLOROETHENE IN SOILS

The fate and transport of PCE in soil is largely influenced by the physical and chemical properties of PCE and the type of subsurface sediments. Processes that primarily affect the mobility of PCE in soil include dissolution into percolating surface water, sorption, volatilization, and biodegradation.

The Site is underlain by an approximately 41-foot thick vadose zone, consisting of clayey sand and silty sand. Much of the land surface in the vicinity of the Site is covered by vegetation and or bare soil; the remaining areas are covered by asphalt or concrete. Consequently, infiltration of rain water can occur during and following rainfall events. Since no potential source has been identified, no soil samples have been analyzed for VOCs. Minor detections of PCE in soil gas suggest that minor concentrations of PCE may be present.

Sorption and release from soils is largely dependent on soil type, organic carbon content, temperature, saturation, and salinity. It has been reported that approximately 97 percent of PCE released to the subsurface will undergo sorption in the unsaturated topsoil. Approximately 2 percent of the PCE in the unsaturated topsoil will volatilize into soil vapor. In deeper saturated soils, 26 percent of sorbed mass will leach into the groundwater, and volatilization of dissolved mass back into the soil vapor may occur. Small amounts of anaerobic microbial degradation may also occur in the unsaturated zone (U.S. Air Force, 1989).

6.2 FATE AND TRANSPORT OF TETRACHLOROETHENE IN GROUNDWATER

The fate and transport of dissolved compounds at the Site is controlled by a number of physical, chemical, and biological processes that are briefly described below. Processes that primarily affect the mobility of dissolved compounds in groundwater include advection, dispersion, diffusion, sorption, and biodegradation.

6.2.1 Advection

Advection is the process whereby constituents dissolved in groundwater are transported along with the flowing groundwater. Although it is the most easily understood of the transport processes, it must be evaluated within the context of two main considerations.

First, what portion of the fluid in the porous media can be mobilized, and second, what is the true velocity of the groundwater through the porous media. For porous media with relatively high hydraulic conductivities, such as sands, advection is the primary transport mechanism for dissolved constituents.

The rate of groundwater flow is determined by the hydraulic conductivity of the sediments, the effective porosity of the sediments, and the hydraulic gradient. The horizontal hydraulic conductivity of the UAU at the Site is estimated to range between approximately 21 feet/day to 30 feet/day (ADWR, 2009). Published values of total porosity for the types of sediment observed at the Site (mixed sand and gravel) range from 20 to 35 percent (Fetter, 1994). The effective porosity of the sediments is the pore space through which groundwater moves. The effective porosity is less than the total porosity of the soil, and for the purposes of this report it was assumed that effective porosity was approximately 80 percent of total porosity (16 to 28 percent). The average hydraulic gradient is estimated to be approximately 0.007. Based on these hydraulic properties, groundwater is estimated to flow west-southwest at a rate of approximately 0.5 feet/day to 1.3 feet/day, with PCE possibly transported via advective processes. The horizontal hydraulic conductivity of the LAU at the Site is estimated to range between approximately 11 feet/day to 20 feet/day (ADWR, 2009). Specific capacity results from SRP Well 17.9N-7.5E range from 14 to 32 gallons per minute per foot.

6.2.2 Dispersion and Diffusion

Contaminant plumes tend to spread laterally and longitudinally as they migrate downgradient within the groundwater due to several mixing processes that cause dispersion of the contaminant. Dispersion processes operate both at the pore scale and at the field scale due to variations in pore size and configuration and field scale heterogeneity in hydraulic conductivity. Differences in hydraulic conductivity are a function of the different types of sediment and also may be related to vertical stratification or channel-related deposition of sediments.

Diffusion is a transport process where dissolved constituents migrate from areas of high concentration to areas of low concentration. Diffusion will occur as long as a concentration gradient exists, even when groundwater is not moving. For porous media with relatively low hydraulic conductivities, such as clays, diffusion is the primary transport mechanism for dissolved constituents. The degree to which dissolved constituents diffuse into low conductivity zones, such as clays, is often a function of how long the constituents have been present in the subsurface. Conversely, removal of dissolved constituents from low conductivity zones may be limited by the rate at which these constituents can diffuse out of the low conductivity zones.

Dispersion can be measured by injecting a tracer and measuring the concentration at different points over time. However, at most sites (including the subject Site) this kind of testing is not conducted due to the time and effort required to set up a tracer test and because dispersion can vary spatially.

6.2.3 Sorption

As groundwater flows through porous media, dissolved constituents in the groundwater may undergo sorption processes including: adsorption, chemisorption, absorption, and ion exchange (Fetter, 1994). These sorption processes tend to slow the rate at which dissolved constituents travel through the porous media relative to the average linear velocity of groundwater. The phenomenon is termed retardation, and the ratio of the average linear groundwater velocity to the velocity of the dissolved constituent is called the retardation factor. The partitioning of a dissolved constituent between the dissolved phase and solid surfaces is dependent on the chemical properties of the dissolved constituent, the amount of sorbing material present in the aquifer matrix, and the concentration of the dissolved constituents.

Adsorption is the process whereby dissolved constituents cling to a solid surface. Hydrophobic organic compounds adsorb to organic carbon present in the aquifer matrix. The more hydrophobic a compound is, the greater the affinity it has for organic carbon. In general semi-volatile organic compounds/polycyclic aromatic hydrocarbons have a greater affinity for sorption than many VOCs. TOC concentrations at the Site have ranged from 0.5 to 0.8 percent. Absorption occurs when the aquifer materials are porous enough for dissolved constituents to diffuse into and/or on the particles associated with the sediments and be sorbed onto the interior and exterior surfaces of the particles.

Sorption processes may be reversible or non-reversible. For reversible sorption, the net effect of the sorption process is to slow the movement of dissolved constituents, and the total mass of the dissolved constituent in the system does not decrease.

6.2.4 Biodegradation

Biodegradation is the process whereby organic compounds are biologically degraded to other compounds, usually by microorganisms. The process by which intrinsic microbial metabolism or co-metabolism by indigenous microorganisms within the subsurface results in a chemical or biological transformation of contaminants, and a corresponding reduction of contaminant mass, is called "intrinsic biodegradation".

The microorganisms break down the organic compound into different chemical components. Biodegradation may also cause conversion of organic compounds to inorganic compounds. This process is termed mineralization.

Biodegradation rates are highly variable. Biodegradation rates are affected in part by the concentration of the organic compound; the types and number of organisms present; the presence of other compounds; the presence of oxygen; oxidation reduction potential (ORP); temperature; pH; salinity; composition of the aquifer matrix; and the quantity and quality of nutrients in the aquifer (Weed and Weber, 1974; Kobayashi and Rittman, 1982; Verschueren, 1983; Cheng and Koskinen, 1986).

Biological transformations result in a reduction in the mass of the dissolved constituent being degraded. However, daughter products may be formed which may have different mobility and toxicity characteristics than the parent constituent.

Persistence of PCE in the environment, under all but the most favorable conditions (e.g., high availability of electron donors, anaerobic environment, suitable and robust microbial population, etc.), can be measured in terms of decades. PCE is degraded anaerobically through a process known as reductive dechlorination. Reductive dechlorination is an oxidation-reduction reaction whereby electrons are transferred from a donor (e.g., reduced organic substrate) to a chlorinated hydrocarbon acceptor, thus resulting in the replacement of a chlorine atom on the VOC molecule with a hydrogen atom (Vogel and Criddle, 1987). Under optimal conditions, this process can proceed until all of the chlorine atoms are removed. As this occurs, PCE is dechlorinated in the order of PCE~ TCE~ cis-1 ,2- DCE~ vinyl chloride~ ethene (Vogel and McCarty, 1985). It should be noted that, following the reductive dechlorination of PCE to TCE, further degradation may occur either aerobically or anaerobically. The efficiency of the PCE bioremediation process is difficult to measure due to such physical processes as adsorption/desorption, advection, mixing, and dispersion. The presence of degradation daughter products in groundwater, and to a lesser extent in subsurface soil, is an industry-standard indicator that biodegradation is occurring.

If PCE were being anaerobically biodegraded to TCE, the TCE concentrations would be expected to increase as the PCE concentrations decreased, and likewise, as TCE biodegrades to cis-1,2-DCE. TCE has only been detected in SRP Well 17.9N-7.5E and monitor wells BMW-02B and BMW-03B and at concentrations generally an order of magnitude below the corresponding PCE concentrations.
Additionally, the detections of TCE at SRP Well 7.9E-7.5E ceased in 2003 and were only once detected in monitor well BMW-03B. cis-1,2-DCE has not been detected in SRP Well 17.9E-7.5N or any Site

monitor well. Therefore, there does not appear to be any evidence that significant biodegradation is occurring at the Site.

7.0 RISK EVALUATION

7.1 ROUTES OF EXPOSURE

Migration or "exposure" pathways are routes potentially taken by contaminants from the Site as they migrate away from the sources through the environmental media to potential environmental receptors. An exposure pathway is incomplete if any of the following elements is missing (American Society for Testing and Materials, 2003):

- A mechanism of contaminant release from primary or secondary sources;
- A transport medium, if potential environmental receptors are not located at the source; and/or
- A point of potential contact between environmental receptors and the contaminated medium.

Possible migration pathways for a given site might include groundwater, surface water, air, sediment, soils, and biological transport. Descriptions of each of the potential migration pathways are discussed below.

7.1.1 Groundwater

Given the current depth to groundwater (approximately 41 feet bgs), human receptor contact is improbable. However, a potential groundwater pathway could be established if active groundwater supply wells in the vicinity of the Site were to pump PCE-impacted groundwater to the surface, such as the SRP wells supplying water to the canals for irrigation in the ECP WQARF area. This type of pathway could create a transport mechanism that may allow human and or ecological receptors to come in contact with PCE-impacted groundwater.

7.1.2 Surface Water

There are no natural surface water bodies within a one-mile radius of the Site. Surface water impacts resulting from a source is improbable. However, the ECP Site area irrigation is supplied by the SRP through the lateral canal system which connect to the Arizona and Grand Canals. The canal water is supplied by groundwater pumped from SRP wells (Appendix F). This type of pathway could create a transport mechanism that may allow human receptors located in residential/business communities nearby or served by canal irrigation to come in contact with PCE-impacted groundwater.

Although SRP Well 17.9N-7.5E had not been dynamically pumping in recent years, it remains active as part of the SRP well system. Therefore, the exposure pathway from an irrigation lateral to a surface water body is possible.

7.1.3 Air

- Migration of PCE by the air pathway is possible, given PCE's high potential for volatilization from liquid to gas. However, the following is known about site conditions:
- The current depth to groundwater is approximately 41 feet bls,
- PCE is not detected in the upper 25 to 30 feet of the water table surface,
- PCE in groundwater concentrations are low,
- Any potential source of PCE is 0.75 to over one (1) mile from the Site, and
- Near surface soils are generally clayey sands, silty sand, and or sandy silt.

These data make a direct exposure pathway from soil gas to potential receptors improbable. It should be noted that little to no soil analyses and soil vapor data has been collected at the Site. Only a small detection of PCE (mass of 0.05 µg), slightly above the detection level, was identified from one of the six (6) probes installed in 2008.

7.1.4 Soil and Sediments

The nearest potential source of PCE is 0.75 to over one (1) mile from the Site. Therefore, the potential impact to soil and or sediments is limited to volatilization of PCE from groundwater to the vadose zone and the discharge of PCE-impacted groundwater to the surface. Given the low concentrations of PCE in groundwater and the limited discharge from SRP Well 17.9E-7.5N since 1991, the current impact to soil and sediments at the Site are minimal. It should be noted that no soil and little soil vapor data has been collected at the Site. As discussed above, only a small detection of PCE mass (0.05 µg), slightly above the detection level, was identified from one of the six (6) soil vapor modules installed in 2008. The transport and fate of PCE in irrigation waters discharge from SRP Well 17.9E-7.5N to irrigation ditches has not been evaluated.

Sediment transport can occur via surface erosion and wind. Some areas of the Site are covered with asphalt pavement or concrete, thereby forming a barrier between the sediment and potential human receptors. Much of the Site is covered by vegetation and/or bare soil and disturbance of sediment within such areas could establish a direct exposure pathway.

7.1.5 Biota

Biota transport can occur if contaminated groundwater is used in agricultural or livestock practices. Although SRP Well 17.9N-7.5E had not been dynamically pumping in recent years, it remains active as part of the SRP well system and is connected to the SRP lateral canal system. Should the water be used for agricultural or livestock practices, contact with biota is possible.

7.2 POTENTIAL RECEPTORS

Potential receptors include human and ecological receptors. Descriptions of each of these receptors is discussed below.

7.2.1 Human Receptors

The Site is located in a residential area and potential human receptors include residential populations, Site workers, and Site visitors. Because PCE primarily occurs presently in the groundwater at approximately 40 feet bls, at low concentrations, and is believed to originate from a source 0.75 to over one (1) mile from the Site, the exposure to human receptors at the Site via soil and soil gas is unlikely. The transport and fate of PCE in irrigation waters discharged from SRP Well 17.9E-7.5N to irrigation ditches has not been evaluated. Discharge from SRP Well 17.9E-7.5N became limited in 1991; however the well remains part of the active SRP inventory of wells (Appendix F). Potential human exposure is most likely to result from groundwater extraction. No active potable water wells are located within a 1,000-foot radius of the Site. While unlikely, it is possible for onsite workers and/or visitors to be exposed to PCE impacted media (soil, groundwater, and investigation derived waste). Site workers and visitors may be exposed to contaminants through dermal contact or ingestion of contaminated soil/groundwater and/or inhalation of contaminant vapors if any vapors or contaminants remain in soil pores or adhered to the soil.

7.2.2 Ecological Receptors

The Site is located in an urban, residential/business district. The properties are mostly covered with asphalt or bare soil. Typical plants in the area are ornamental and native species used for landscaping at business and residential properties. Normal ecological receptors are not considered a factor.

7.3 CURRENT AND FORESEEABLE FUTURE USES OF LAND AND WATER

The land and water uses described in the Land and Water Use Report (Appendix F) most likely to be relevant to the discussion of remedial objectives are presented below.

7.3.1 Land Use

Within 1/4 mile of the Site 70 percent of the land is zoned for single family residences and 30 percent for multiple family residences. However, two churches are located along 40th Street (The Valley Community Church of God and the Monte Vista Church of the Nazarene) and the Baker Nursery. The zoning pattern in the area has been long established and there are no foreseeable changes for the future, other than possibly changing the plant nursery to low-density multifamily residential. Land uses for this Site are expected to remain predominantly residential.

7.3.2 Groundwater Use

The COP and SRP pump groundwater as needed when surface water supplies cannot meet their customer needs. Current and future groundwater uses within the Site include the following:

- The most accessible alternate water source for COP is local groundwater. The COP currently has no plans to develop groundwater within the Site but will consider the Site area for well development in the future. Therefore, the potential exists for the COP to install future municipal wells within the Site or within one mile of the Site plumes.
- SRP Well 17.9E-7.5N is located at the Site. Additionally, SRP operates and maintains nine (9) other irrigation wells within one-mile of the 40th Street and Osborn Road Site (Appendix F).

ADWR 55-Registry No.	SRP Well No.
55-202398	18.6E-7.6N
55-607672	17.5E-7N
55-607712	18.5E-7N
55-607731	17.1E-7.4N
55-607748	19E-8.1N

ADWR 55-Registry No.	SRP Well No.
55-608431	17E-8N
55-608433	19E-7.6N
55-617825	18E-8.8N
55-617857	17.9E-7.5N
55-607748	19E-8.1N

The last groundwater sample collected from SRP well 17E-8N in June 2011 contained PCE at a concentration of 2.2 µg/L, and in April 2013, SRP reported PCE at a concentration of 3 µg/L in well 17.9E-7.5N (Elliott, 2014a and 2014b). Groundwater quality data collected from these wells indicates that PCE concentrations in these two SRP wells are below the AWQS of 5 µg/L. Groundwater pumpage at these wells has been intermittent in the recent past, but the wells can potentially be activated.

- SRP will continue to need the irrigation wells in the Site area to be operational to supplement surface water supplies. SRP has indicated that they may change water usage from irrigation to drinking water within the foreseeable future to accommodate COP needs.

7.3.3 Surface Water Use

Currently, surface water uses within the Site are for residential irrigation and they are likely to remain as such in the future.

8.0 SUMMARY AND CONCLUSIONS

RI activities at the Site included the installation of additional groundwater monitor wells and groundwater characterization. Results of RI activities have been used to further characterize and reasonably identify the approximate extent of VOCs in groundwater. PCE in groundwater has been identified as the COC at the Site.

Analytical results of water quality samples collected from SRP Well 17.9E-7.5N and Site monitor wells indicate that a portion of the aquifer beneath the Site contains PCE in exceedance of the AWQS of 5 µg/L. In 2013 and 2014, the only exceedances of the AWQS for PCE were detected in monitor well BMW-02B. The highest detection of PCE in monitor well BMW-02B was 28 µg/L, five times greater than the AWQS of 5 µg/L.

PCE was first detected in SRP Well 17.9E-7.5N in 1983 and since the high of 210 µg/L, in 1998, has since declined. The most recent result from SRP Well 17.9E-7.5N was 3.0 µg/L in 2013. Because Site monitor wells where PCE has been detected have been sampled only two to three times, concentration trends of PCE have not been established.

PCE has not been detected within the upper 25 feet to 30 feet of the water table surface in any Site monitor well. Historically, the shallowest detection occurred approximately 42 feet below the surface of the water table. Additionally, PCE concentrations generally increase with depth. These results indicate that the upper portions of the aquifer are clean and PCE occurs from 42 feet to at least 84 feet below the water table surface. This suggests that the PCE originates from a distant source and is migrating deeper vertically as it moves laterally toward SRP Well 17.9E-7.5N.

The vertical extent and the downgradient areal extent of monitor well BMW-02 with regard to PCE concentrations above the AWQS have not been delineated. Upgradient and perpendicular to the groundwater flow direction are monitor well locations BMW-02, BMW-03, and BMW-04. The highest concentrations of PCE were detected at monitor well BMW-02. The consistent low level detections of PCE at monitor well BMW-04 from 67 feet to 115 feet bls may be the result of dispersion.

PCE has not been detected at monitor wells BMW-05 and BMW-06, which are upgradient of monitor wells BMW-02, BMW-03 and BMW-04. The non-detection of PCE at monitor wells BMW-05 and BMW-06 may be the result of the following:

- The migration of detectable PCE past these locations,
- The migration of detectable PCE on either side of these locations, or
- The migration of detectable PCE below the monitor wells at these locations.

Little to no evidence indicates significant biodegradation of PCE is occurring.

It is recommended that the Site monitor wells remain in the ECP WQARF well network to be periodically monitored to provide water level data and PCE concentrations over time, and the monitoring network be expanded to include at least one deeper well screen at BMW-2B to determine the vertical extent of the PCE plume.

8.1 DATA GAPS

Based on the data obtained from the RI and previous investigations, the following data gaps have been identified:

- the vertical extent of contamination in the vicinity of BMW-02;
- the lateral extent of contamination at depths greater than 25 feet to 30 feet below the water table northwest of BMW-02;
- the source(s) of PCE;
- changes of water levels, groundwater flow direction, and PCE concentration during the pumping of SRP Well 17.9E-7.5N; and
- the vertical distribution of PCE in SRP Well 17.9E-7.5N.

In 2008, ADEQ proposed performing vertical plume profiling at SRP Well 17.9E-7.5N, which included 1) running a temperature log and a spinner tool log, 2) collecting depth-specific samples at 15-foot intervals along the screen length, and 3) investigating the integrity of the well casing. This task was not performed because access to the SRP well was not granted (ADEQ. 2012). Additional data collected from the SRP Well 17.9E-7.5N would be useful in helping to determining the vertical extent of contamination at the Site.

8.2 REMEDIAL OBJECTIVES

As noted in A.A.C. R18-16-406(I) and A.A.C. R18-16-406(J) the Remedial Objectives (RO) report is not included in this draft Remedial Investigation Report. According to the A.A.C. R18-16-406(I) and A.A.C. R18-16-406(J): "After the draft remedial investigation report is made available, the Department shall hold one or more public meetings to obtain information for purposes of establishing remedial objectives for the site…The initial public meeting shall be held not less than 45 calendar days and not more than 90 calendar days after release of the draft remedial investigation report, unless the Department sets a different date for good cause…Following the community involvement activities regarding the draft remedial investigation report and the remedial objectives report, a final remedial investigation report shall be prepared containing the results of the site characterization and the final remedial objectives report." The RO report will be provide in the final Remedial Investigation Report.

9.0 REFERENCES

American Society for Testing and Materials, 2003. Standard Guide for Developing Conceptual Site Models for Contaminated Sites. Designation: E 1689-95.

Anderson, T.W., G.W. Freethey, and P. Tucci, 1990. United States Geological Survey (USGS) Open-File Report 89-378, Geohydrology and Water Resources of Alluvial Basins in South-Central Arizona and Parts of Adjacent States.

Arizona Department of Environmental Quality, 2000. Site Registry Report, 40th Street & Osborn. May 18, 2000.

_____, 2009. Annual Registry Report, EQR 09-03. 2009.

_____, 2011. Soil Vapor Sampling Guidance. July 10, 2008. Revised May 19, 2011.

_____, 2012. Memo to file. September 21, 2012.

_____, 2013. East Central Phoenix, Water Quality Assurance Revolving Fund (WQARF) Sites, Phoenix, Arizona, Community Involvement Plan. March, 2013.

_____, 2014. East Central Phoenix (ECP) 40th Street and Osborn Road, Narrative Site Information. Accessed February 13, 1014. http://azdeq.gov/environ/waste/sps/phxsites.html#ecpa2

Arizona Department of Water Resources, 1993. A Regional Groundwater Flow Model of the Salt River Valley – Phase I, Phoenix Active Management Area, Hydrogeologic Framework and Basic Data Report. April, 1993.

_____, 2009. Regional Groundwater Flow Model of the Salt River Valley, Phoenix Active Management Area, Model Update and Calibration. April, 2009.

Cheng, H.H., and W.C. Koskinen, 1986. "Processes and Factors Affecting Transport of Pesticides to Ground Water"; in W.Y. Garner, R.C. Honeycutt and H.N. Nigg, editors, Evaluation of Pesticides in Ground Water. Washington, D.C.: American Chemical Society, Symposium Series 315.

City of Phoenix, 2014. Phoenix Maps Online – School Information Search Page. Accessed March 2014. (http://maps.phoenix.gov/WebPMO/Portal/EduYouth.asp).

Elliott, Gregg, Salt River Project, 2014a. E-mail to Laura Menken (Hargis + Associates, Inc.), entitled "SRP Well Pumping Information for Wells within ECP WQARF Site". May 12, 2014.

_____, Gregg, Salt River Project, 2014b. E-mail to Laura Menken (Hargis + Associates, Inc.), entitled "additional water quality and pump data for ECP Site". June 18, 2014.

Environmental Systems Research Institute, Inc., 2014. ARCGIS: USA Median Household Income. Accessed March 2014.

Earth Technology Corporation, 1988. Draft Phase I Report, East Central Phoenix Area, Task Assignment E-2, Phoenix, Arizona. October 1988.

_____, 1996. Final Site Characterization Report, Kachina Cleaners & Laundry, 3926 East Osborn Road, East Central Phoenix Water Quality Assurance Revolving Fund, Phoenix, Arizona. June 1996.

Fetter, C.W., 1994. Applied Hydrogeology, Third Edition.

The Flood Control District of Maricopa County, 2014. Web page access 2/20/14. http://www.fcd.maricopa.gov/Education/monsoon.aspx

Hargis + Associates, 2013a. Work Plan to Conduct Groundwater Characterization, East Central Phoenix WQARF Site, Phoenix, Arizona. October 1, 2013.

_____, 2013b. Work Plan to Conduct Soil Vapor Sampling at the East Central Phoenix WQARF Site. October 15, 2013.

_____, 2013c. Work Plan to Drill and Construct Additional Monitor Wells Within Four Potential Source Areas of the East Central Phoenix Water Quality Assurance Revolving Fund Site, Phoenix, AZ. November 25, 2013.

_____, 2013d. Quality Assurance Project Plan, Revision 1.1, East Central Phoenix Water Quality Assurance Revolving Fund Site, Phoenix, AZ. December 16, 2013.

HydroGeoLogic, Inc., 2002. Final Industrial Survey For East Central Phoenix 40th Street and Osborn Road WQARF Registry Site Phoenix, Arizona. April 16, 2002.

_____, 2014. Final Letter Report – Remedial Investigation, ECP 40th Street and Osborn Road WQARF Registry Site, Contract No. 13-048324, ADEQ Task Assignment No. 14-055490, HGL Project No. AR8003. March 10, 2014.

Kobayashi, H., and B.E. Rittmann, 1982. "Microbial Removal of Hazardous Organic Compounds." Environmental Science & Technology 16(3):170A-183A.

Schmidli, Robert J., 1996. Climate of Phoenix, Arizona: An Abridged On-Line Version of NOAA Technical Memorandum NWS WR-177. December 1996. Accessed March 2014. http://www.public.asu.edu/~aunjs/ClimateofPhoenix/phxwx.htm

Salt River Project, 1992. Baseline Data: SRP Well 17.9E-7.5N, Reason Well Removed from Service: VOC Contamination. Dated July 17, 1992.

SECOR International, Inc., 2007. Proposed Vertical Plume Profiling at SRP Well 17.9E-7.5N, 40th Street and Osborn Road WQARF Registry Site, East Central Phoenix WQARF Site, Phoenix, Arizona. October 5, 2007.

_____, 2008a. Work Plan for Remedial Investigation, East Central Phoenix, 40th Street and Osborn Road, Water Quality Assurance Revolving Fund Site, Phoenix, Arizona. March 31, 2008.

_____, 2008b. Hand written field notes indicating locations of 566567 to 566571. File dated June 8, 2008. Included in March 22, 2013 transmittal of documents from Stantec to Hargis + Associates.

Stantec, 2009a. Addendum to Work Plan for Remedial Investigation, East Central Phoenix 40th and Osborn Road, Water Quality Assurance Revolving Fund Site, Phoenix, Arizona, February 1, 2008. January 7, 2009.

_____, 2009b. Groundwater Monitoring Wells BMW-2AB and BMW-3AB Installation Report, 40th Street and Osborn Road, Water Quality Assurance Revolving Fund Site, Phoenix, Arizona. January 26, 2009.

_____, 2009c. Draft Groundwater Monitoring Well BMW-1B Installation Report, 40th Street and Osborn Road, Water Quality Assurance Revolving Fund Site, Phoenix, Arizona. January 28, 2009.

_____, 2012. Email page 8 09/29/2012

U.S. Air Force. 1989. Tetrachloroethylene. In: The Installation Restoration Program Toxicology Guide, Vol. 2. Wright-Patterson Air Force Base, OH, pp. 17-1 through 17-38.

U.S. Environmental Protection Agency, 1994. Chemical Summary for Perchloroethylene prepared by Office of Pollution Prevention and Toxics. August, 1994.

_____, 2013. Region 9 Regional Screening Level (RSL) Chemical-Specific Parameters Supporting Table. November, 2013.

United States Environmental Protection Agency, Office of Solid Waste and Emergency Response (OSWER), 1992. Estimating Potential for Occurrence of DAP: at Superfund Sites, OSWER Publication 9355.4-07FS. January, 1992.

Verschueren, K., 1983. Handbook of Environmental Data on Organic Chemicals. Second edition. New York: Van Nostrand Reinhold Company, Inc.

Vogel, T.M., and P.L. McCarty. 1985. Biotransformation of Tetrachloroethylene to Trichloroethylene, Dichloroethylene, Vinyl Chloride, and Carbon Dioxide Under Methanogenic Conditions. Applied and Environmental Microbiology. Vol. 49, pp. 1080-1083.

Vogel, T.M., and C.S. Criddle, 1987. Transformation of Halogenated Aliphatic Compounds, Environmental Science Technology, Vol. 21, pp. 722-736.

Weed, S.B., and J.B. Weber, 1974. "Pesticide-Organic Matter Interaction"; in W.D. Guenzi, editor, Pesticides in Soil and Water. Madison, Wisconsin: Soil Science Society of America, Inc.

Western Regional Climate Center (WRCC), 2014a. Table: Mean Monthly and Annual Precipitation, Annual Precipitation Summary. Accessed March 2014.
WEB: http://www.wrcc.dri.edu/climatedata/climtables/citycompppt/

_____, 2014b. Table: Climatological Summary, Period of Record: Jul 1996 to Dec 2008. For Station: Phoenix Sky Harbor Intl Airport (KPHZ), AZ
WEB: http://www.wrcc.dri.edu/summary/phx.az.html

W.L. Gore & Associates, 2008. Gore™ Surveys Analytical Results, Secor International, Tempe, AZ. July 28, 2008.

TABLES

TABLE 1
WELL CONSTRUCTION DATA

Well Identifier	Casing Identifier	Well Type	ADWR Reg. #	Date Completed	Drilling Method	Boring Diameter (inches)	Boring Depth (ft bgs)	Casing Material/ Diameter/ Slot Size (inches)	Perforated Interval (ft bgs)	Sand Pack Interval (ft bgs)	Filter Pack Material	Bentonite Seal (ft bgs)	Current Top of Casing Elevation (1) (ft amsl)	Ground Surface Elevation(1) (ft amsl)	Location Coordinates Northing (ft)	Location Coordinates Easting (ft)	Comments
17.9E-7.5N	NA	IRR	617857	May-65	Cable Tool	Unk	300	Unk / 18 / Unk	100 - 300	48 - 300	Gravel	Unk	Unk	1193	904856.4	675615.9	
BMW-01	NA	MW	598109	Jun-03	Unk	Unk	Unk	Unk / Unk / Unk	20.0 - 60.0	Unk	Unk	Unk	1191.90	1192	905007.2	675777.6	
BMW-01B	B	MW	909970	12/4/08	HSA	Unk	100	PVC / 2 / 0.010	70.0 - 100.0	Unk	Unk	Unk	1191.54	1192	904977.8	675778.6	
BMW-02	A	MW	908743	4/18/08	Sonic	10	101.5	PVC / 2 / 0.020	20.0 - 60.0	15.0 - 61.0	#8/12 Sand	10 - 15	1197.98		905848.3	676234.6	Nested Well
	B							PVC / 2 / 0.020	70.0 - 100.0	65.0 - 100.0	#8/12 Sand	61 - 65	1198.01		905848.3	676234.6	Nested Well
BMW-03	A	MW	908744	5/16/08	HSA	10	101	PVC / 2 / 0.020	20.0 - 60.0	15.0 - 60	#8/12 Sand	10 - 15	1199.44		905646.4	676743.9	Nested Well
	B	MW						PVC / 2 / 0.020	70.0 - 100.0	65.0 - 101.0	#8/12 Sand	61 - 65	1199.45		905646.4	676743.9	Nested Well
BMW-04	A	MW	916200	1/4/2014	Sonic	8.625 6.0	70.0 71.1	PVC / 4 / 0.020	30.0 - 70.0	27.0 - 71.1	#10-20 Sand	23.5 - 27.0	1198.35	1198.91	905375.53	677042.20	
	B	MW	916201	1/3/2014	Sonic	8.625 6.0	120.0 121.7	PVC / 4 / 0.020	78.8 - 118.8	75.4 - 121.7	#10-20 Sand	71.6 - 75.4	1198.38	1198.91	905381.42	677042.05	
BMW-05	A	MW	916202	1/9/2014	Sonic	8.625 6.0	66.0 67.0	PVC / 4 / 0.020	29.6 - 64.6	26.3 - 66.0	#10-20 Sand	23.0 - 26.3	1210.89	1211.4	906726.20	677788.83	Slough 66.0 - 67.0 feet
	B	MW	916203	1/10/2014	Sonic	8.625 6.0	115.0 116.0	PVC / 4 / 0.020	75.1 - 115.1	68.8 - 115.5	#10-20 Sand	63.2 - 68.8	1210.91	1211.43	906732.31	677788.72	Slough 115.5 - 116.0 feet
BMW-06	A	MW	916204	1/9/2014	Sonic	8.625 6.0	61.0 62.5	PVC / 4 / 0.020	30.3 - 60.3	27.0 - 60.5	#10-20 Sand	23.0 - 27.0	1212.45	1212.94	906101.80	678711.22	Slough 60.5 - 62.5 feet
	B	MW	916205	1/10/2014	Sonic	8.625	120	PVC / 4 / 0.020	75.4 - 110.4	72.0 - 111.0	#10-20 Sand	68.0 - 72.0 111.0 - 115.0	1212.48	1212.92	906102.15	678704.84	Bentonite seal 111.0 to 115.0 feet Slough 115.0 -120.0 feet
BMW-07	A	MW	916198	41637	Sonic	8.625 6.0	70.0 74.0	PVC / 4 / 0.020	29.6 - 69.6	26.0 - 70.0	#10-20 Sand	23.0 - 26.0	1187.29	1187.76	904650.06	675130.30	Slough 70.0 - 74.0 feet
	B	MW	916199	41636	Sonic	8.625 6.0	115.0 116.0	PVC / 4 / 0.020	85.0 - 115.0	80.0 - 116.0	#10-20 Sand	70.0 - 80.0	1187.29	1187.77	904650.67	675136.29	

NOTES:

(1) = NGVD29
PVC = Polyvinyl chloride
ft bgs =feet below ground surface
ft amsl =feet above mean sea level

Sonic =Rotosonic drilling method
- =not applicable
MW =groundwater monitor well
SVMW =permanent soil vapor monitor/extraction well

NA =not available
HSA =hollow stem auger drilling method
WQARF =Water Quality Assurance Revolving Fund
ADWR =Arizona Department of Water Resources

TABLE 2

HISTORICAL GROUNDWATER ELEVATIONS

Well Identifier (Screen Interval)	Date Measured	Reference Point Elevation (a) (feet msl)	Depth to Water (feet bls)	Water Level Elevation (feet msl)	Notes
17.9E-7.5N	01/01/81	NA	24	--	No measuring point elevation provided.
(100-300 ft bls)	01/01/83		26	--	
	01/01/84		21	--	
	01/01/85		30	--	
	01/01/86		19	--	
	01/01/87		21	--	
	01/01/88		39	--	
	01/01/89		16	--	
	01/01/90		34	--	
	01/01/91		28	--	
	01/01/92		30	--	
	03/26/02		NM	--	
	09/09/02		NM	--	
	12/06/02		NM	--	
	03/06/03		NM	--	
	06/03/03		NM	--	
	12/10/03		NM	--	
	04/01/04		NM	--	
	10/11/04		NM	--	
	03/23/05		NM	--	
	10/05/05		NM	--	
	03/14/06		NM	--	
	10/24/06		NM	--	
	03/14/07		NM	--	
	06/22/07		NM	--	
	09/26/07		NM	--	
	04/21/08		NM	--	
	10/08/08		NM	--	
	10/01/13		NM	--	
BMW-01	06/13/03	1191.9	26.90	1165.00	
(20-60 ft bls)	12/10/03		28.71	1163.19	
	03/30/04		29.61	1162.29	
	10/12/04		31.29	1160.61	
	03/22/05		31.95	1159.95	
	10/07/05		30.31	1161.59	
	03/14/06		31.52	1160.38	
	10/25/06		29.91	1161.99	
	02/27/07		30.99	1160.91	
	06/22/07		32.84	1159.06	
	09/26/07		32.59	1159.31	
	04/09/08		32.51	1159.39	
	06/19/08	1191.93	32.16	1159.77	
	10/01/08		30.99	1160.94	
	12/17/08		31.26	1160.67	
	01/19/09	1191.93	31.92	1160.01	
	01/30/13		34.55	1157.38	Roots at 32 ft.
	10/01/13		34.59	1157.34	Roots in Well
	05/04/14		35.89	1156.01	
BMW-01B	12/17/08	1191.54	30.96	1160.58	
(70-100 ft bls)	01/19/09		31.54	1160.00	
	10/19/11		32.85	1158.69	
	04/18/12		33.75	1157.79	
	01/30/13		34.20	1157.34	
	10/01/13		34.23	1157.31	
	05/04/14		35.51	1156.03	

TABLE 2

HISTORICAL GROUNDWATER ELEVATIONS

Well Identifier (Screen Interval)	Date Measured	Reference Point Elevation (a) (feet msl)	Depth to Water (feet bls)	Water Level Elevation (feet msl)	Notes
BMW-02A	04/21/08	1197.98	33.22	1164.76	
(20-60 ft bls)	06/19/08		32.63	1165.35	
	10/01/08		31.48	1166.50	
	12/17/08		NM	--	
	01/19/09		32.61	1165.37	
	11/15/10		32.85	1165.13	
	01/30/13		35.45	1162.53	
	10/01/13		35.28	1162.70	Roots in Well
	05/04/14		36.75	1161.23	
BMW-02B	04/21/08	1198.01	33.09	1164.92	
(70-100 ft bls)	06/03/08		30.77	1167.24	
	06/19/08		32.59	1165.42	
	10/01/08		31.48	1166.53	
	12/17/08		NM	--	
	01/19/09		32.58	1165.43	
	11/15/10		32.82	1165.19	
	01/30/13		35.44	1162.57	
	10/01/13		35.26	1162.75	
	05/04/14		36.71	1161.30	
BMW-03A	06/03/08	1199.44	30.75	1168.69	
(20-60 ft bls)	06/19/08		30.66	1168.78	
	10/01/08		29.58	1169.86	
	12/17/08		NM	--	
	01/19/09		30.86	1168.58	
	11/15/10		31.04	1168.40	
	01/30/13		33.72	1165.72	
	10/01/13		33.35	1166.09	
	05/04/14		34.92	1164.52	
BMW-03B	06/19/08	1199.45	30.68	1168.77	
(70-100 ft bls)	10/01/08		29.66	1169.79	
	12/17/08		NM	--	
	01/19/09		30.88	1168.57	
	11/15/10		31.07	1168.38	
	01/30/13		33.74	1165.71	
	10/01/13		33.33	1166.12	
	05/04/14		34.94	1164.51	
BMW-04A	02/27/14	1198.35	32.32	1166.03	
(30-70 ft bls)	05/04/14		32.60	1165.75	
BMW-04B	02/27/14	1198.38	32.25	1166.13	
(78.8-118.8 ft bls)	05/04/14		32.61	1165.77	
BMW-05A	02/27/14	1210.89	37.20	1173.69	
(29.6-64.6 ft bls)	05/04/14		37.53	1173.36	
BMW-05B	02/27/14	1210.91	37.22	1173.69	
(75.1-115.1 ft bls)	05/04/14		37.54	1173.37	
BMW-06A	02/27/14	1212.45	32.55	1179.90	
(30.3-60.3 ft bls)	05/04/14		32.98	1179.47	
BMW-06B	02/27/14	1212.48	32.61	1179.87	
(75.3-110.3 ft bls)	05/04/14		33.03	1179.45	
BMW-07A	02/27/14	1187.29	37.02	1150.27	
(30-70 ft bls)	05/04/14		37.47	1149.82	
BMW-07B	02/27/14	1187.29	36.96	1150.33	
(85-115 ft bls)	05/04/14		37.42	1149.87	

TABLE 2

HISTORICAL GROUNDWATER ELEVATIONS

Well Identifier (Screen Interval)	Date Measured	Reference Point Elevation (a) (feet msl)	Depth to Water (feet bls)	Water Level Elevation (feet msl)	Notes
AMW-03	08/10/92	1200.42	23.30	1177.12	
(20-60 ft bls)	01/18/94		20.55	1179.87	
	12/12/94		21.22	1179.20	DTW Suspect. Adjusted by Stantec
	03/29/96		21.94	1178.48	
	02/20/97		22.27	1178.15	
	03/11/97		22.34	1178.08	
	04/14/97		22.58	1177.84	
	05/06/97		22.70	1177.72	
	11/17/97		21.80	1178.62	DTW Suspect. Adjusted by Stantec
	12/17/97		22.00	1178.42	
	01/07/98		21.93	1178.49	
	02/02/98		22.34	1178.08	
	03/02/98		21.89	1178.53	
	03/21/02		27.86	1172.56	
	09/04/02		28.80	1171.62	
	04/09/08		37.75	1162.67	
	10/01/08		35.84	1164.58	
	01/19/09		36.66	1163.76	
	11/15/10		37.01	1163.41	
	05/09/11		38.28	1162.14	
	10/19/11		38.12	1162.30	
	04/18/12		39.26	1161.16	
	01/30/13		39.67	1160.75	
	09/30/13		39.73	1160.69	
	05/04/14		41.11	1159.31	
Flores	06/24/03	NA	NM	--	

FOOTNOTES

bls = Below land surface
msl = Mean sea level
NA = Reference Point Not Available
NM = Not Measured
ft = Feet
-- = Unable to calculate water level elevation

HARGIS + ASSOCIATES, INC.

TABLE 3

HISTORICAL VOLATILE ORGANIC COMPOUNDS IN SOIL VAPOR

Well Identifier / Sample Identifier	Date Sampled	Sample Depth (inches bls)	PCE	TCE	cis-1,2-DCE	Chloroform	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	Notes
			……Concentration (micrograms per liter)……									
566567	07/01/08	32	**0.05**	< 0.01	< 0.02	< 0.05	NA	NA	NA	NA	NA	
566568	07/01/08	32	< 0.02	< 0.01	< 0.02	< 0.05	NA	NA	NA	NA	NA	
566569	07/01/08	32	< 0.02	< 0.01	< 0.02	< 0.05	NA	NA	NA	NA	NA	
566570	07/01/08	32	< 0.02	< 0.01	< 0.02	< 0.05	NA	NA	NA	NA	NA	
566571	07/01/08	18	< 0.02	< 0.01	< 0.02	< 0.05	NA	NA	NA	NA	NA	
566572	07/01/08	32	< 0.02	< 0.01	< 0.02	< 0.05	NA	NA	NA	NA	NA	DUP

NOTE: Detections are shown in **BOLD** type.

FOOTNOTES

bls = Below land surface
PCE = Tetrachloroethylene
TCE = Trichloroethylene
cis-1,2-DCE = cis-1,2-Dichloroethylene
MTBE = Methyl Tertiary Butyl Ether
(<) = Less than; the value is the Limit of Detection for that compound
NA = Not analyzed for constituent
DUP = Duplicate sample

TABLE 4

HISTORICAL VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER

Well Identifier / Sample Identifier	Sample Interval	Date Sampled	Sample Depth (feet btoc)	PCE	TCE	cis-1,2-DCE	Chloroform	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	Notes
				……..Concentration (micrograms per liter)……									
			MCL	5	5	70	--	5	1,000	700	10,000	--	
17.9E-7.5N	Wellhead	07/01/83	NA	**53**	**0.5**	NA	NA	NA	NA	NA	NA	NA	
17.9E-7.5N	Wellhead	02/28/84	NA	**90**	ND	NA	NA	NA	NA	NA	NA	NA	
17.9E-7.5N	Wellhead	05/07/84	NA	**29**	ND	NA	NA	NA	NA	NA	NA	NA	
17.9E-7.5N	Wellhead	05/10/84	NA	**65**	NA	NA	NA	NA	NA	NA	NA	NA	
17.9E-7.5N	Wellhead	06/18/84	NA	**24.5**	ND	NA	NA	NA	NA	NA	NA	NA	
17.9E-7.5N	Wellhead	06/18/84	NA	**25.9**	ND	NA	NA	NA	NA	NA	NA	NA	
17.9E-7.5N	Wellhead	07/10/85	NA	**43.2**	ND	NA	NA	NA	NA	NA	NA	NA	
17.9E-7.5N	Wellhead	08/04/87	NA	**17.9**	ND	NA	ND	NA	NA	NA	NA	NA	
17.9E-7.5N	Wellhead	06/28/88	NA	**66.0**	ND	NA	< 0.5	NA	NA	NA	NA	NA	
17.9E-7.5N	Wellhead	06/29/89	NA	**81.5**	< 0.5	NA	< 0.5	NA	NA	NA	NA	NA	
17.9E-7.5N	Wellhead	11/01/91	NA	**55**	< 0.5	NA	< 0.5	NA	NA	NA	NA	NA	
17.9E-7.5N	Wellhead	11/14/96	NA	**47**	**9.9**	NA	NA	NA	NA	NA	NA	NA	
17.9E-7.5N	Wellhead	09/28/98	NA	**210**	**0.7**	NA	NA	NA	NA	NA	NA	NA	
17.9E-7.5N	Wellhead	03/26/02	NA	**79**	**1.4**	< 0.5	NA	< 0.5	< 3.0	< 2.0	< 3.0	< 2.0	
17.9E-7.5N	Wellhead	09/09/02	NA	**85**	**1.1**	< 0.5	NA	< 0.5	< 3.0	< 2.0	< 3.0	< 2.0	
17.9E-7.5N	Wellhead	09/09/02	NA	**87**	**1.1**	< 0.5	NA	< 0.5	< 3.0	< 2.0	< 3.0	< 2.0	DUP
17.9E-7.5N	Wellhead	12/06/02	NA	**76**	**0.63**	< 0.5	NA	< 0.5	< 3.0	< 2.0	< 3.0	< 2.0	
17.9E-7.5N	Wellhead	03/06/03	NA	**90**	**1.2**	< 0.5	NA	< 0.5	< 3.0	< 2.0	< 3.0	< 2.0	
17.9E-7.5N	Wellhead	03/06/03	NA	**82**	**1.1**	< 0.5	NA	< 0.5	< 3.0	< 2.0	< 3.0	< 2.0	DUP
17.9E-7.5N	Wellhead	06/03/03	NA	**110**	**1.4**	< 0.5	NA	< 0.5	< 3.0	< 2.0	< 3.0	< 2.0	
17.9E-7.5N	Wellhead	12/10/03	NA	**80**	**1.3**	< 0.5	NA	< 0.5	< 3.0	< 2.0	< 3.0	< 2.0	
17.9E-7.5N	Wellhead	04/01/04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
17.9E-7.5N	Wellhead	10/11/04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	PUMP BROKEN
17.9E-7.5N	Wellhead	03/23/05	NA	**41**	< 1.0	< 1.0	NA	< 1.0	< 5.0	< 1.0	< 3.0	< 1.0	PUMPED 30 MIN
17.9E-7.5N	Wellhead	10/07/05	NA	NS	NS	NS	NA	NS	NS	NS	NS	NS	INACCESSIBLE
17.9E-7.5N	Wellhead	03/14/06	NA	**24**	< 1.0	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 3.0	< 1.0	
17.9E-7.5N	Wellhead	10/24/06	NA	**28**	< 1.0	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 3.0	< 1.0	PUMPED 20 MIN
17.9E-7.5N	Wellhead	03/14/07	NA	**24**	< 1.0	< 1.0	< 5	< 1.0	< 5.0	< 1.0	< 3.0	< 1.0	PUMPED 20 MIN
17.9E-7.5N	Wellhead	03/14/07	NA	**25**	< 1.0	< 1.0	< 5	< 1.0	< 5.0	< 1.0	< 3.0	< 1.0	DUP
17.9E-7.5N	Wellhead	10/15/07	NA	**15**	< 1.0	< 1.0	< 5	< 1.0	< 5.0	< 1.0	< 3.0	< 1.0	PUMPED 5 MIN
17.9E-7.5N	Wellhead	10/15/07	NA	**13**	< 1.0	< 1.0	< 5	< 1.0	< 5.0	< 1.0	< 3.0	< 1.0	DUP
17.9E-7.5N	Wellhead	04/21/08	NA	**14**	< 1.0	< 1.0	< 5	< 1.0	< 5.0	< 1.0	< 3.0	< 1.0	
17.9E-7.5N	Wellhead	04/21/08	NA	**13**	< 1.0	< 1.0	< 5	< 1.0	< 5.0	< 1.0	< 3.0	< 1.0	DUP
17.9E-7.5N	Wellhead	10/08/08	NA	**6.8**	< 1.0	< 1.0	< 5	< 1.0	< 5.0	< 1.0	< 3.0	< 1.0	
17.9E-7.5N	Wellhead	04/03/13	NA	**3.0**	--	--	--	--	--	--	--	--	
BMW-01	Shallow	06/13/03	28.9	< 0.5	< 0.5	< 0.5	NA	< 0.5	< 3.0	< 2.0	< 3.0	< 2.0	
BMW-01	Shallow	10/11/07	34.5	< 1.0	< 1.0	< 1.0	< 5	< 1.0	< 5.0	< 1.0	< 3.0	< 1.0	
BMW-01	Shallow	04/25/08	34.5	< 1.0	< 1.0	< 1.0	NA	< 1.0	< 5.0	< 1.0	< 3.0	< 1.0	
BMW-01	Shallow	10/07/08	33.5	< 1.0	< 1.0	< 1.0	< 5	< 1.0	< 5.0	< 1.0	< 3.0	< 1.0	
BMW-01	Shallow	05/20/14	38.6	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<3.0	NA	
BMW-01	Deep	06/13/03	57.9	< 0.5	< 0.5	< 0.5	NA	< 0.5	< 3.0	< 2.0	< 3.0	< 2.0	
BMW-01	Deep	12/10/03	58.71	< 0.5	< 0.5	< 0.5	NA	< 0.5	< 3.0	< 2.0	< 3.0	< 2.0	
BMW-01	Deep	03/30/04	59.61	< 0.5	< 0.5	< 0.5	NA	< 0.5	< 3.0	< 2.0	< 3.0	< 2.0	
BMW-01	Deep	10/12/04	58.29	< 0.4	< 1.0	< 0.5	< 0.8	< 0.6	< 0.7	< 0.6	< 1.8	< 0.8	
BMW-01	Deep	03/22/05	57.95	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 3.0	**3.6**	
BMW-01	Deep	10/07/05	57.31	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 3.0	**1.5**	
BMW-01	Deep	03/14/06	59.52	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 3.0	< 1.0	
BMW-01	Deep	10/25/06	57.91	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 3.0	< 1.0	
BMW-01	Deep	10/25/06	56.91	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 3.0	< 1.0	DUP

TABLE 4

HISTORICAL VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER

Well Identifier / Sample Identifier	Sample Interval	Date Sampled	Sample Depth (feet btoc)	PCE	TCE	cis-1,2-DCE	Chloroform	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	Notes
				……..Concentration (micrograms per liter)……									
			MCL	5	5	70	--	5	1,000	700	10,000	--	
BMW-01	Deep	03/14/07	58.99	< 1.0	< 1.0	< 1.0	< 5	< 1.0	< 5.0	< 1.0	< 3.0	< 1.0	ERB: PCE 1.1 ug/l
BMW-01	Deep	10/11/07	56.5	< 1.0	< 1.0	< 1.0	< 5	< 1.0	< 5.0	< 1.0	< 3.0	< 1.0	
BMW-01	Deep	04/25/08	56.5	< 1.0	< 1.0	< 1.0	< 5	< 1.0	< 5.0	< 1.0	< 3.0	< 1.0	
BMW-01	Deep	10/07/08	56.5	< 1.0	< 1.0	< 1.0	< 5	< 1.0	< 5.0	< 1.0	< 3.0	< 1.0	
BMW-01	Deep	10/23/13	57.3	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-01B	Shallow	12/17/08	72.5	**2.0**	< 1.0	< 1.0	NA	NA	NA	NA	NA	NA	
BMW-01B	Shallow	10/23/13	78.5	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	
BMW-01B	Shallow	05/20/14	72.5	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<3.0	NA	
BMW-01B	Shallow	05/20/14	72.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	NA	SPLIT
BMW-01B	Intermediate	12/17/08	84.5	**2.0**	< 1.0	< 1.0	NA	NA	NA	NA	NA	NA	
BMW-01B	Deep	12/17/08	96.5	**2.4**	< 1.0	< 1.0	NA	NA	NA	NA	NA	NA	
BMW-01B	Deep	12/17/08	96.5	**2.3**	< 1.0	< 1.0	NA	NA	NA	NA	NA	NA	DUP
BMW-01B	Deep	10/23/13	96.4	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	
BMW-01B	Deep	10/23/13	96.4	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	SPLIT
BMW-01B	Deep	05/20/14	96.4	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<3.0	NA	
BMW-02A	Shallow	10/07/08	34.5	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 3.0	< 1.0	
BMW-02A	Intermediate	10/07/08	45.5	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 3.0	< 1.0	
BMW-02A	Deep	04/21/08	59	**4.2**	< 1.0	< 1.0	NA	NA	NA	NA	NA	NA	DEV
BMW-02A	Deep	10/07/08	56.5	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 3.0	< 1.0	
BMW-02A	Deep	10/23/13	57.4	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	
BMW-02A	Deep	05/20/14	57.4	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<3.0	NA	
BMW-02B	Shallow	10/07/08	72.5	**1.3**	< 1.0	< 1.0	**7.8**	< 1.0	< 5.0	< 1.0	< 3.0	< 1.0	
BMW-02B	Shallow	10/23/13	78.6	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	
BMW-02B	Intermediate	10/07/08	84.5	**2.7**	< 1.0	< 1.0	**5.4**	< 1.0	< 5.0	< 1.0	< 3.0	< 1.0	
BMW-02B	Intermediate	10/07/08	84.5	**4.3**	< 1.0	< 1.0	**7.8**	< 1.0	< 5.0	< 1.0	< 3.0	< 1.0	DUP
BMW-02B	Intermediate	05/20/14	84.7	**1.2**	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<3.0	NA	
BMW-02B	Intermediate	05/20/14	84.7	**1.2**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	NA	SPLIT
BMW-02B	Deep	04/21/08	98	**13**	< 1.0	< 1.0	NA	NA	NA	NA	NA	NA	DEV
BMW-02B	Deep	10/07/08	96.5	**67**	**1.2**	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 3.0	< 1.0	
BMW-02B	Deep	10/23/13	96.7	**20**	**3.3**	< 1.0	**3.5**	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	
BMW-02B	Deep	05/20/14	90.7	**28**	**1.8**	<1.0	**2.8**	<1.0	<1.0	<1.0	<3.0	NA	
BMW-02B	Deep	05/20/14	96.7	**17**	**2.6**	<1.0	**2.3**	<1.0	<1.0	<1.0	<3.0	NA	
BMW-03A	Shallow	10/07/08	32.5	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 3.0	< 1.0	
BMW-03A	Intermediate	10/07/08	44.5	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 3.0	< 1.0	
BMW-03A	Deep	06/03/08	59	< 1.0	< 1.0	< 1.0	NA	NA	NA	NA	NA	NA	DEV
BMW-03A	Deep	10/07/08	56.5	< 1.0	< 1.0	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 3.0	< 1.0	
BMW-03A	Deep	10/23/13	58.1	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	
BMW-03A	Deep	10/23/13	58.1	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	DUP
BMW-03A	Deep	05/20/14	58	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<3.0	NA	
BMW-03A	Deep	05/20/14	58	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<3.0	NA	DUP
BMW-03B	Shallow	10/07/08	72.5	**8.8**	< 1.0	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 3.0	< 1.0	
BMW-03B	Shallow	10/23/13	78.4	< 1.0	< 1.0	< 1.0	**2.4**	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	
BMW-03B	Intermediate	10/07/08	84.5	**13**	< 1.0	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 3.0	< 1.0	
BMW-03B	Deep	06/03/08	97	**20**	**2.1**	< 1.0	NA	NA	NA	NA	NA	NA	DEV
BMW-03B	Deep	10/07/08	96.5	**7.1**	< 1.0	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 3.0	< 1.0	
BMW-03B	Deep	10/07/08	96.5	**12**	< 1.0	< 1.0	< 5.0	< 1.0	< 5.0	< 1.0	< 3.0	< 1.0	DUP
BMW-03B	Deep	10/23/13	95.5	< 1.0	< 1.0	< 1.0	**2.1**	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	
BMW-03B	Deep	05/20/14	95.5	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<3.0	NA	

TABLE 4

HISTORICAL VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER

Well Identifier / Sample Identifier	Sample Interval	Date Sampled	Sample Depth (feet btoc)	PCE	TCE	cis-1,2-DCE	Chloroform	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	Notes
				……..Concentration (micrograms per liter)……									
			MCL	5	5	70	--	5	1,000	700	10,000	--	
BMW-04A		02/27/14	35.5	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-04A		02/27/14	40.8	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-04A		02/27/14	46.1	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-04A		02/27/14	51.4	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-04A		02/27/14	56.6	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-04A		02/27/14	61.9	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-04A		02/27/14	67.2	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-04A		05/20/14	35.5	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<3.0	NA	
BMW-04A		05/20/14	51.4	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<3.0	NA	
BMW-04A		05/20/14	67.2	**1.2**	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<3.0	NA	
BMW-04A		05/20/14	67.2	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<3.0	NA	DUP
BMW-04B		02/27/14	81.2	**1.8**	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-04B		02/27/14	86.9	**1.7**	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-04B		02/27/14	92.6	**1.6**	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-04B		02/27/14	92.6	**1.6**	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	DUP
BMW-04B		02/27/14	98.3	**2.1**	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-04B		02/27/14	104	**1.1**	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-04B		02/27/14	109.7	**1.4**	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-04B		02/27/14	115.4	**1.6**	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-04B		05/20/14	81.2	**1.6**	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<3.0	NA	
BMW-04B		05/20/14	98.3	**1.5**	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<3.0	NA	
BMW-04B		05/20/14	115.4	**1.5**	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<3.0	NA	
BMW-05A		02/27/14	40.4	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-05A		02/27/14	45.7	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-05A		02/27/14	51.1	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-05A		02/27/14	56.4	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-05A		02/27/14	61.8	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-05A		05/20/14	40.4	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<3.0	NA	
BMW-05B		02/27/14	77.5	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-05B		02/27/14	83.2	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-05B		02/27/14	88.9	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-05B		02/27/14	94.6	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-05B		02/27/14	100.3	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-05B		02/27/14	106	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-05B		02/27/14	111.7	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-05B		05/20/14	77.5	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<3.0	NA	
BMW-05B		05/20/14	111.7	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<3.0	NA	
BMW-05B		05/20/14	111.7	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<3.0	NA	DUP
BMW-06A		02/27/14	34.9	< 1.0	< 1.0	< 1.0	**2.3**	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-06A		02/27/14	40.5	< 1.0	< 1.0	< 1.0	**2.3**	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-06A		02/27/14	46.2	< 1.0	< 1.0	< 1.0	**2.2**	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-06A		02/27/14	51.8	< 1.0	< 1.0	< 1.0	**4.6**	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-06A		02/27/14	51.8	< 1.0	< 1.0	< 1.0	**4.9**	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-06A		02/27/14	57.4	< 1.0	< 1.0	< 1.0	**4.9**	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-06A		05/20/14	34.9	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<3.0	NA	
BMW-06B		02/27/14	77.9	< 1.0	< 1.0	< 1.0	**2.3**	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-06B		02/27/14	83.8	< 1.0	< 1.0	< 1.0	**2.5**	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-06B		02/27/14	89.6	< 1.0	< 1.0	< 1.0	**2.5**	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-06B		02/27/14	95.4	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-06B		02/27/14	101.3	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-06B		02/27/14	107.1	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-06B		05/20/14	77.9	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<3.0	NA	
BMW-06B		05/20/14	77.9	<1.0	<1.0	<1.0	**1.7**	<1.0	<1.0	<1.0	<2.0	NA	SPLIT
BMW-06B		05/20/14	107.1	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<3.0	NA	

TABLE 4

HISTORICAL VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER

Well Identifier / Sample Identifier	Sample Interval	Date Sampled	Sample Depth (feet btoc)	PCE	TCE	cis-1,2-DCE	Chloroform	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	Notes
				……..Concentration (micrograms per liter)……									
			MCL	5	5	70	--	5	1,000	700	10,000	--	
BMW-07A		02/27/14	40.5	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-07A		02/27/14	45.8	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-07A		02/27/14	51.1	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-07A		02/27/14	56.3	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-07A		02/27/14	56.3	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	DUP
BMW-07A		02/27/14	61.9	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-07A		05/20/14	40.5	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<3.0	NA	
BMW-07B		02/27/14	87.5	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-07B		02/27/14	93.5	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-07B		02/27/14	99.5	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-07B		02/27/14	105.5	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-07B		02/27/14	105.5	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	DUP
BMW-07B		02/27/14	111.5	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	NA	
BMW-07B		05/20/14	87.5	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<3.0	NA	
BMW-07B		05/20/14	111.5	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<3.0	NA	
Patterson	Wellhead	06/24/03	NA	< 0.5	**3.9**	< 0.5	--	< 0.5	< 3.0	< 2.0	< 3.0	< 2.0	

NOTE: Detections are shown in **BOLD** type.

FOOTNOTES

MCL = Maximum Contaminant Level
(--) = Not promulgated
btoc = below top of casing
PCE = Tetrachloroethylene
TCE = Trichloroethylene
cis-1,2-DCE = cis-1,2-Dichloroethylene
MTBE = Methyl Tertiary Butyl Ether
NA = Not analyzed for constituent
ND = Nondetect
(<) = Less than; the value is the Limit of Detection for that compound

DUP = Duplicate sample
PDB = Passive diffusion bag
ug/l = micrograms per liter
ERB = Equipment rinsate blank
DEV = Development Water
PUMPED __ MIN = Pumped ## minutes prior to sampling

HARGIS + ASSOCIATES, INC.

TABLE 5

HISTORICAL VOLATILE ORGANIC COMPOUNDS IN GROUNDWATER IN-SITU SAMPLES

Well Identifier / Sample Identifier	Sample Interval	Date Sampled	Sample Depth (feet btoc)	PCE	TCE	cis-1,2-DCE	Chloroform	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	Notes
				……Concentration (micrograms per liter)……									
BMW-01B	NA	12/02/08	40	< 1.0	< 1.0	< 1.0	--	--	--	--	--	--	
BMW-01B	NA	12/02/08	50	< 1.0	< 1.0	< 1.0	--	--	--	--	--	--	
BMW-01B	NA	12/02/08	60	< 1.0	< 1.0	< 1.0	--	--	--	--	--	--	
BMW-01B	NA	12/02/08	70	< 1.0	< 1.0	< 1.0	--	--	--	--	--	--	
BMW-01B	NA	12/02/08	70	< 1.0	< 1.0	< 1.0	--	--	--	--	--	--	DUP
BMW-01B	NA	12/02/08	80	< 1.0	< 1.0	< 1.0	--	--	--	--	--	--	
BMW-01B	NA	12/02/08	90	**2.0**	< 1.0	< 1.0	--	--	--	--	--	--	
BMW-01B	NA	12/02/08	100	**1.2**	< 1.0	< 1.0	--	--	--	--	--	--	
BMW-02	NA	04/15/08	50	< 1.0	< 1.0	< 1.0	--	--	--	--	--	--	
BMW-02	NA	04/15/08	60	< 1.0	< 1.0	< 1.0	--	--	--	--	--	--	
BMW-02	NA	04/15/08	60	< 1.0	< 1.0	< 1.0	--	--	--	--	--	--	DUP
BMW-02	NA	04/15/08	65	< 1.0	< 1.0	< 1.0	--	--	--	--	--	--	
BMW-02	NA	04/16/08	70	< 1.0	< 1.0	< 1.0	--	--	--	--	--	--	
BMW-02	NA	04/16/08	80	**9.7**	< 1.0	< 1.0	--	--	--	--	--	--	
BMW-02	NA	04/16/08	90	**44**	< 1.0	< 1.0	--	--	--	--	--	--	
BMW-02	NA	04/16/08	100	**110**	**1.3**	< 1.0	--	--	--	--	--	--	
BMW-03	NA	05/12/08	52	< 1.0	< 1.0	< 1.0	--	--	--	--	--	--	
BMW-03	NA	05/12/08	67	**1.8**	< 1.0	< 1.0	--	--	--	--	--	--	
BMW-03	NA	05/13/08	72	**2.4**	< 1.0	< 1.0	--	--	--	--	--	--	
BMW-03	NA	05/13/08	80.5	**3.6**	< 1.0	< 1.0	--	--	--	--	--	--	
BMW-03	NA	05/14/08	92	**58**	**6.3**	< 1.0	--	--	--	--	--	--	
BMW-03	NA	05/14/08	92	**52**	**5.4**	< 1.0	--	--	--	--	--	--	DUP
BMW-03	NA	05/14/08	101	**69**	**8.1**	< 1.0	--	--	--	--	--	--	
BMW-07B	NA	12/27/2013	42.5	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	
BMW-07B	NA	12/27/2013	65	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	
BMW-07B	NA	12/28/2013	102.5	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	
BMW-07B	NA	12/28/2013	112.5	< 1.0	< 1.0	< 1.0	< 2.0	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	

NOTE: Detections are shown in **BOLD** type.

FOOTNOTES

btoc = below top of casing
PCE = Tetrachloroethylene
TCE = Trichloroethylene
cis-1,2-DCE = cis-1,2-Dichloroethylene
MTBE = Methyl Tertiary Butyl Ether
(--) = Not promulgated
(<) = Less than; the value is the Limit of Detection for that compound
DUP = Duplicate sample

TABLE 6

HISTORICAL METALS IN GROUNDWATER

		……..Concentration (micrograms per liter)……												
		Sb	As	Be	Cd	Cr	Cu	Pb	Ni	Se	Ag	Tl	Zn	Hg
	FEDERAL MCL		10	4	5	100	1,300[a]	15[a]		50	100[b]	2	5,000[b]	2
WELL IDENTIFIER	DATE SAMPLED													
17.9E-7.5N	Jun-89	NA	**15.0**	NA	<0.2	**19.0**	NA	<2.0	NA	**4.0**	<1.0	NA	NA	<0.2
	Nov-91	NA	**14.0**	NA	<0.2	**28.0**	NA	<2.0	NA	**6.0**	<1.0	NA	NA	**0.3**

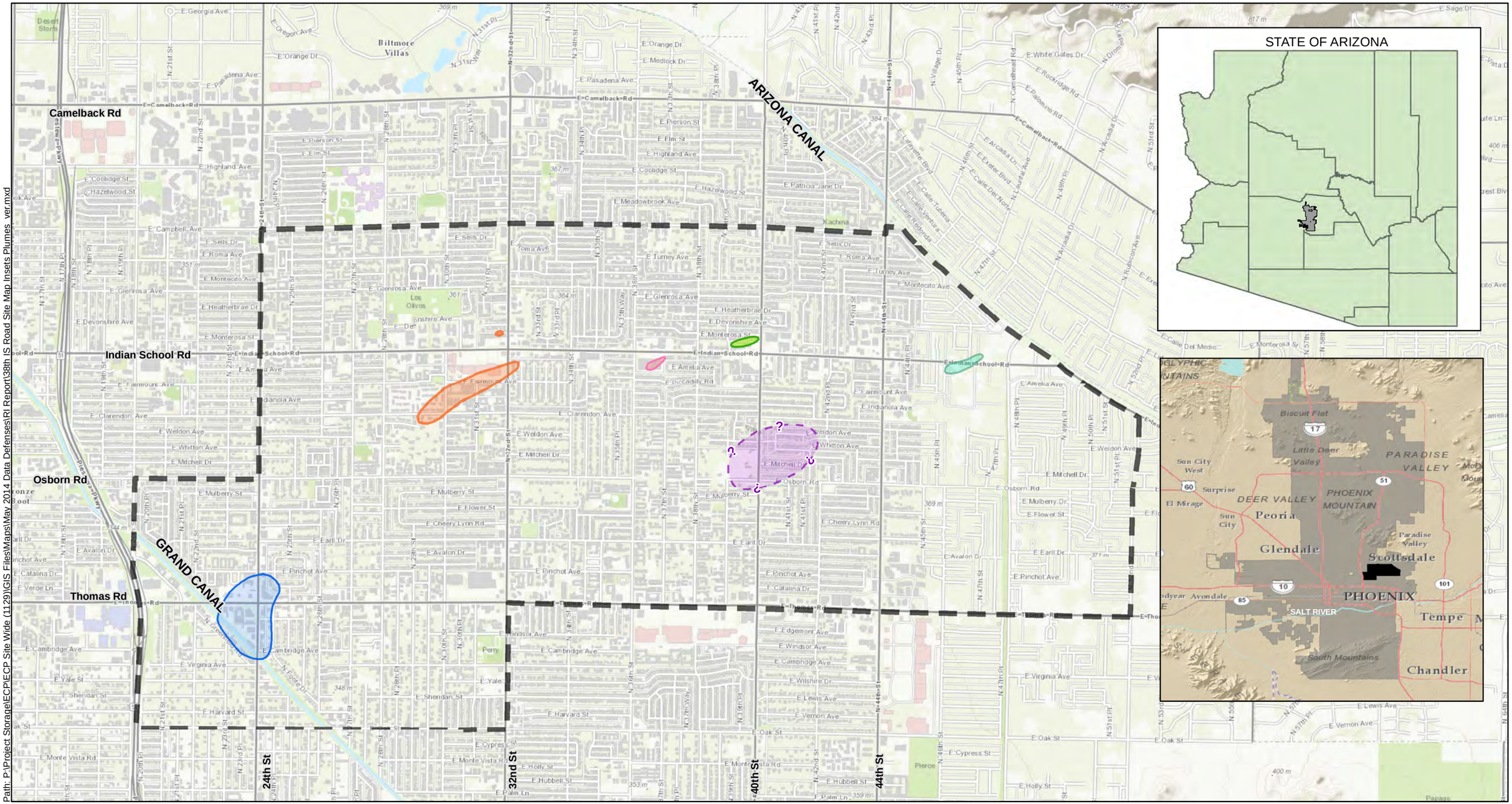
NOTES:
Detections are shown in BOLD type
Detections above Federal MCL are highlighted in gray
Federal MCL found at http://water.epa.gov/drink/contaminants/index.cfm
[a] = Action Levels
[b] = Secondary Drinking Water Regulation

FOOTNOTES

Sb = Antimony	Ni = Nickel	MCL = Maximum Contaminant Level
As = Arsenic	Se = Selenium	NA = Not Analyzed
Be = Beryllium	Ag = Silver	< = Less than
Cd = Cadmium	Tl = Thallium	
Cr = Chromium	Zn = Zinc	
Cu = Copper	Hg = Mercury	
Pb = Lead		

FIGURES

Path: P:\Project Storage\ECP\ECP Site Wide (1129)\GIS Files\Maps\May 2014 Data Defenses\RI Report\38th IS Road Site Map Insets Plumes_ver.mxd



East Central Phoenix WQARF Site Project Community Involvement Area

- ECP 24th Street and Grand Canal
- ECP 32nd Street and Indian School Road
- ECP 38th Street and Indian School Road
- ECP 40th Street and Indian School Road
- ECP 40th Street and Osborn Road
- ECP 48th Street and Indian School Road

Note:
Dashed where inferred, queried where uncertain.

0 2,000 Feet

N

EAST CENTRAL PHOENIX
WQARF SITE
PHOENIX, ARIZONA

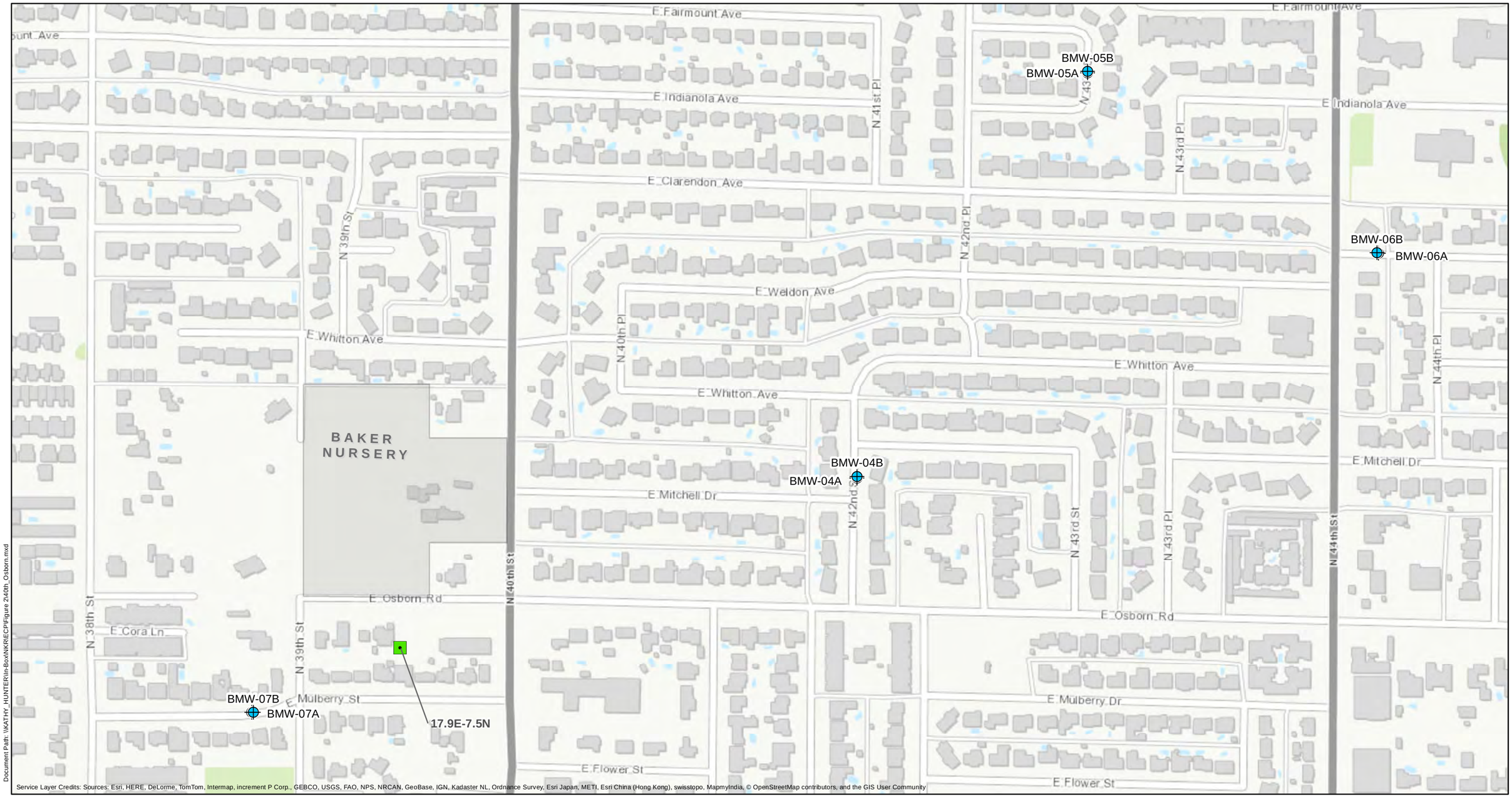
SITE LOCATION MAP

HARGIS + ASSOCIATES, INC.
HYDROGEOLOGY • ENGINEERING

10/21/2014

FIGURE 1

PREP BY JWM/NKR REV BY LLJM RPT NO 1133.31



Document Path: \\KATHY_HUNTER\In-Box\NKR\EC\P\Figure 2\40th_Osborn.mxd

Groundwater Monitor Well Locations

SRP Production Well Location

0 75 150 300 Feet

N

EAST CENTRAL PHOENIX
WQARF SITE
PHOENIX, ARIZONA

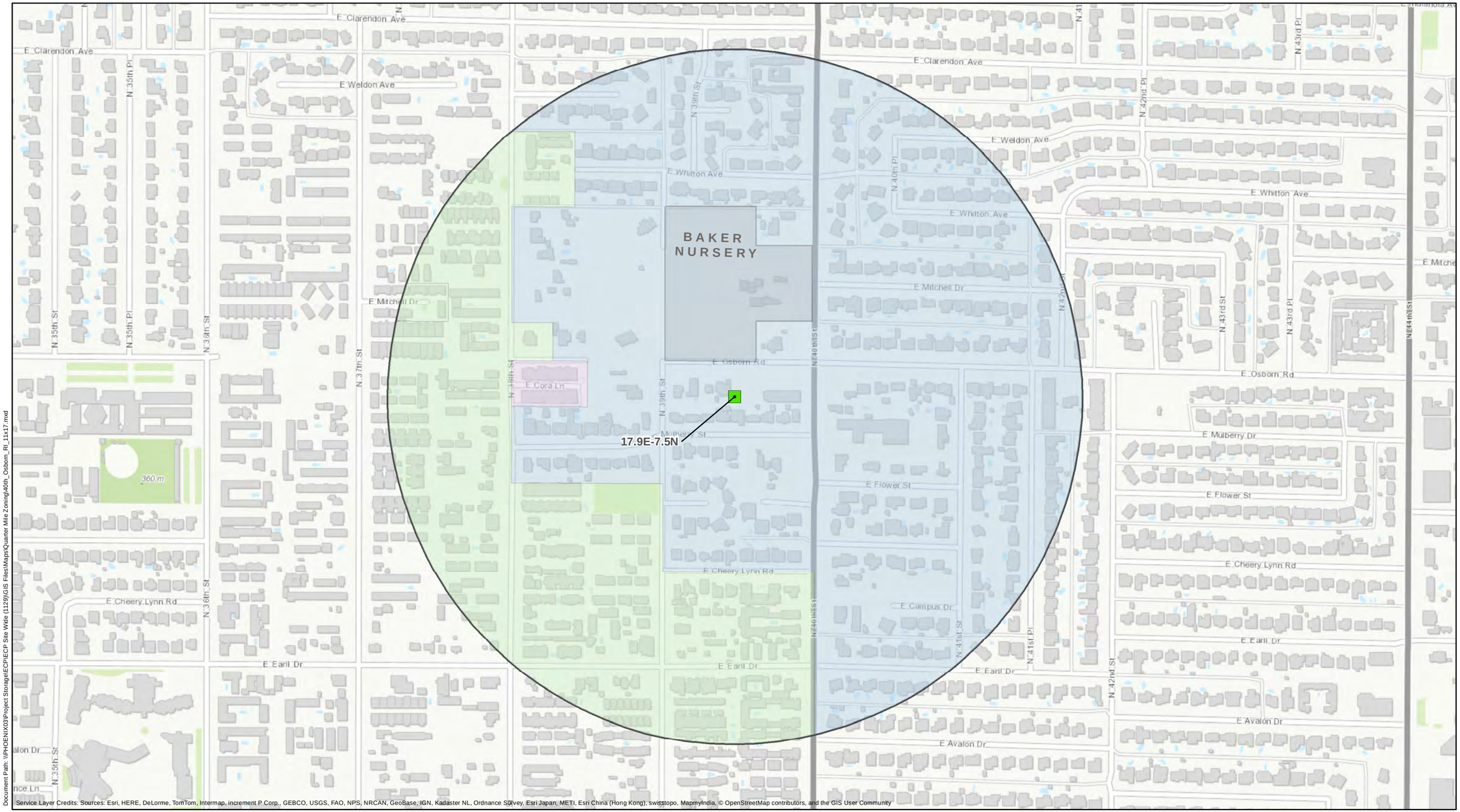
40TH STREET AND OSBORN ROAD SITE MAP

HARGIS + ASSOCIATES, INC.
HYDROGEOLOGY • ENGINEERING

10/1/2014

FIGURE 2

PREP BY NKR REV BY LLJM RPT NO 1134.41



Document Path: \\PHOENIX03\Project Storage\ECP\ECP Site Wide (1129)\GIS Files\Maps\Quarter Mile Zoning\40th_Osborn_Pl_11x17.mxd

- Planned Area Development
- Residential (Multi)
- Residential (Single)
- 0.25mi Buffer Around Site
- SRP Production Well

0 100 200 400 Feet

N

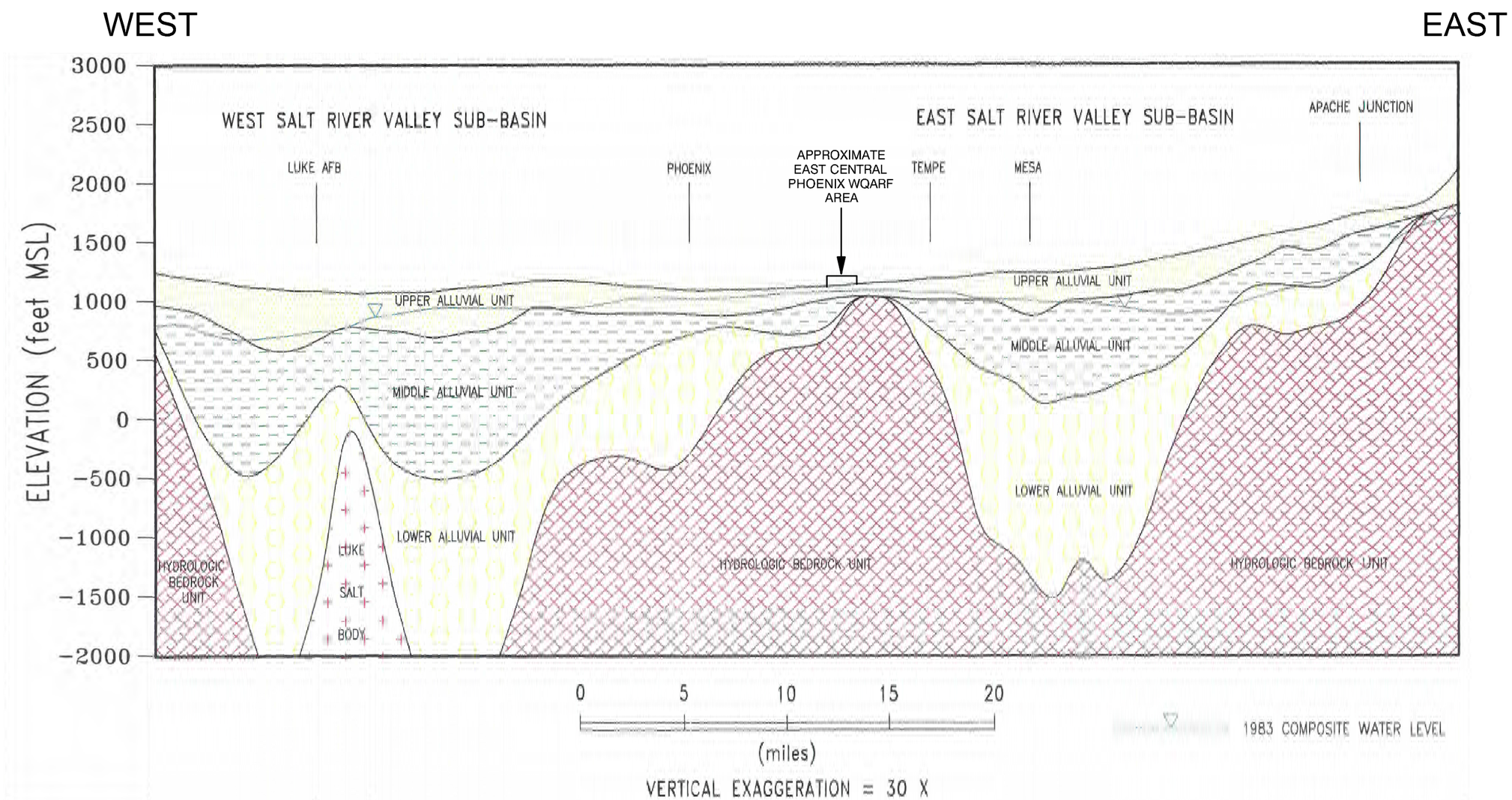
EAST CENTRAL PHOENIX
WQARF SITE
PHOENIX, ARIZONA

LAND USE & ZONING
40TH STREET AND OSBORN ROAD SITE

HARGIS + ASSOCIATES, INC
HYDROGEOLOGY • ENGINEERING

10/1/2014
FIGURE 3

PREP BY NKR REV BY LLJM RPT NO 1137.41



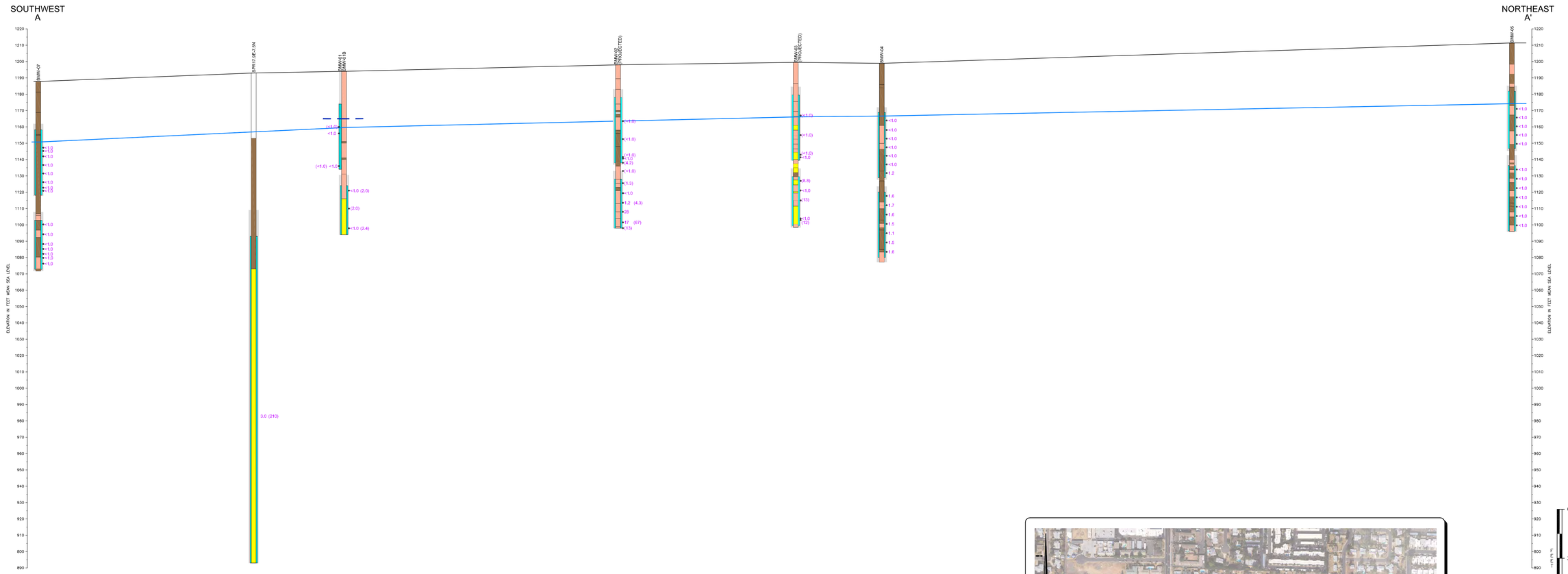
NOTE:
SOURCE: ADWR MODELING REPORT No. 6 "REGIONAL GROUNDWATER FLOW MODEL OF THE SALT RIVER VALLEY - PHASE I, PHOENIX ACTIVE MANAGEMENT AREA, HYDROGEOLOGIC FRAMEWORK AND BASIC DATA REPORT" BY CORKHILLET AL, APRIL 1993.

Jun 03, 2014 – 11:30am ADH – T:\2014\1100-1199\1133 East Central Phoenix\211 Maroney\X-Sections\310-1249.dwg

HARGIS + ASSOCIATES, INC.
Hydrogeology/Engineering

06/14	RPT NO.	310-1249	A

FIGURE 4.
CONCEPTUALIZED REGIONAL HYDROGEOLOGIC CROSS SECTION OF THE SALT RIVER VALLEY

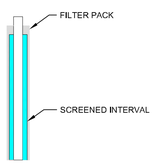


BOREHOLE LITHOLOGY

- NO RECOVERY/UNKNOWN
- FILL / ASPHALT
- SILTY OR CLAYEY SAND AND GRAVEL; AND SAND MIXTURES
- PREDOMINANTLY SAND OR GRAVEL
- PREDOMINANTLY SILT AND CLAY

EXPLANATION

- 87 — RECENT CONCENTRATION OF TETRCHLOROETHYLENE (PCE) DETECTED IN GROUNDWATER IN MICROGRAMS PER LITER (ug/l), OCTOBER 2013 TO MAY 2014
- (180) — HISTORICAL MAXIMUM PCE CONCENTRATION DETECTED IN GROUNDWATER (ug/l)
- WATER LEVEL ELEVATION MEASURED IN OCTOBER 2013 - MAY 2014
- HISTORICAL HIGH WATER LEVEL ELEVATION MEASURED IN 2003
- DEPTH-DISCRETE GROUNDWATER SAMPLE (e.g. SIMULPROBE/HYDROPUNCH OR PASSIVE DIFFUSION BAG/BOMB SAMPLER)

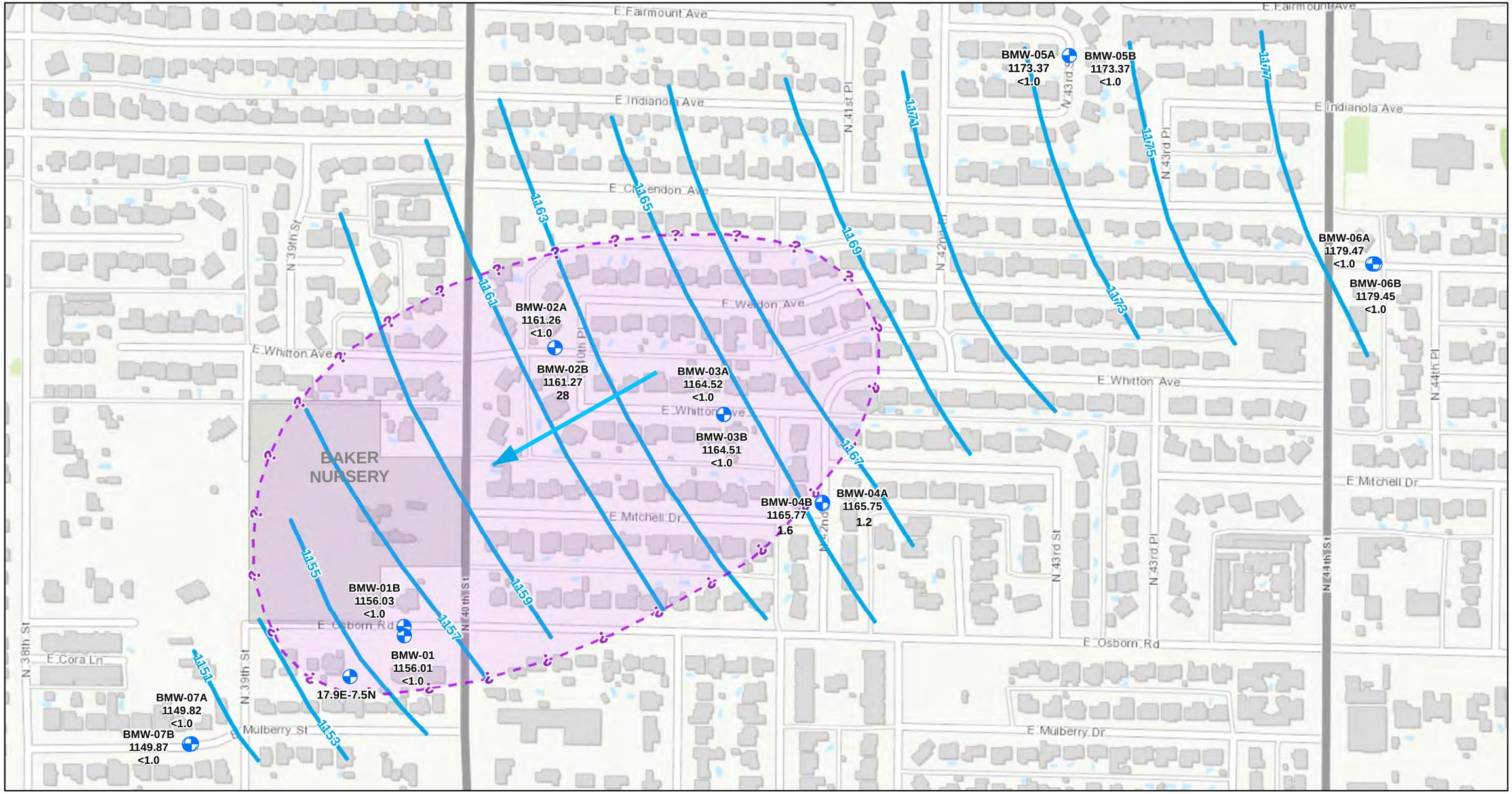


HARGIS + ASSOCIATES, INC.
Hydrogeology/Engineering

FIGURE 5. CROSS SECTION LOCATIONS A–A'
40TH STREET AND OSBORN ROAD, EAST CENTRAL PHOENIX WQARF SITE

06/14	RPT NO.	310–1243	A

Jul 10, 2014 - 8:59am JON - I:\310\1100-1199\1133 East Central Phoenix\311 Monitoring\X-Sections\X10-1243.dwg



Path: P:\Project Storage\ECP\ECP Site Wide (1129)\GIS Files\Maps\May 2014 Data Defenses\40th Street and Osborn Road _MayData_UpdatedPlume.mxd

EXPLANATION

Groundwater Monitor Well Locations

Water Level Contour

Estimated PCE Plume in Groundwater

1161.26 -- Groundwater elevation (ft above mean sea level) - May 2014

<1.0 -- Recent PCE groundwater concentration (µg/L) (May 2014)

Note:
Dashed where inferred, queried where uncertain.

0 75 150 300 Feet

N

EAST CENTRAL PHOENIX
WQARF SITE
PHOENIX, ARIZONA

WATER LEVEL ELEVATION AND TETRACHLOROETHENE IN GROUNDWATER 40TH STREET AND OSBORN ROAD SITE

HARGIS + ASSOCIATES, INC.
HYDROGEOLOGY • ENGINEERING

10/15/2014

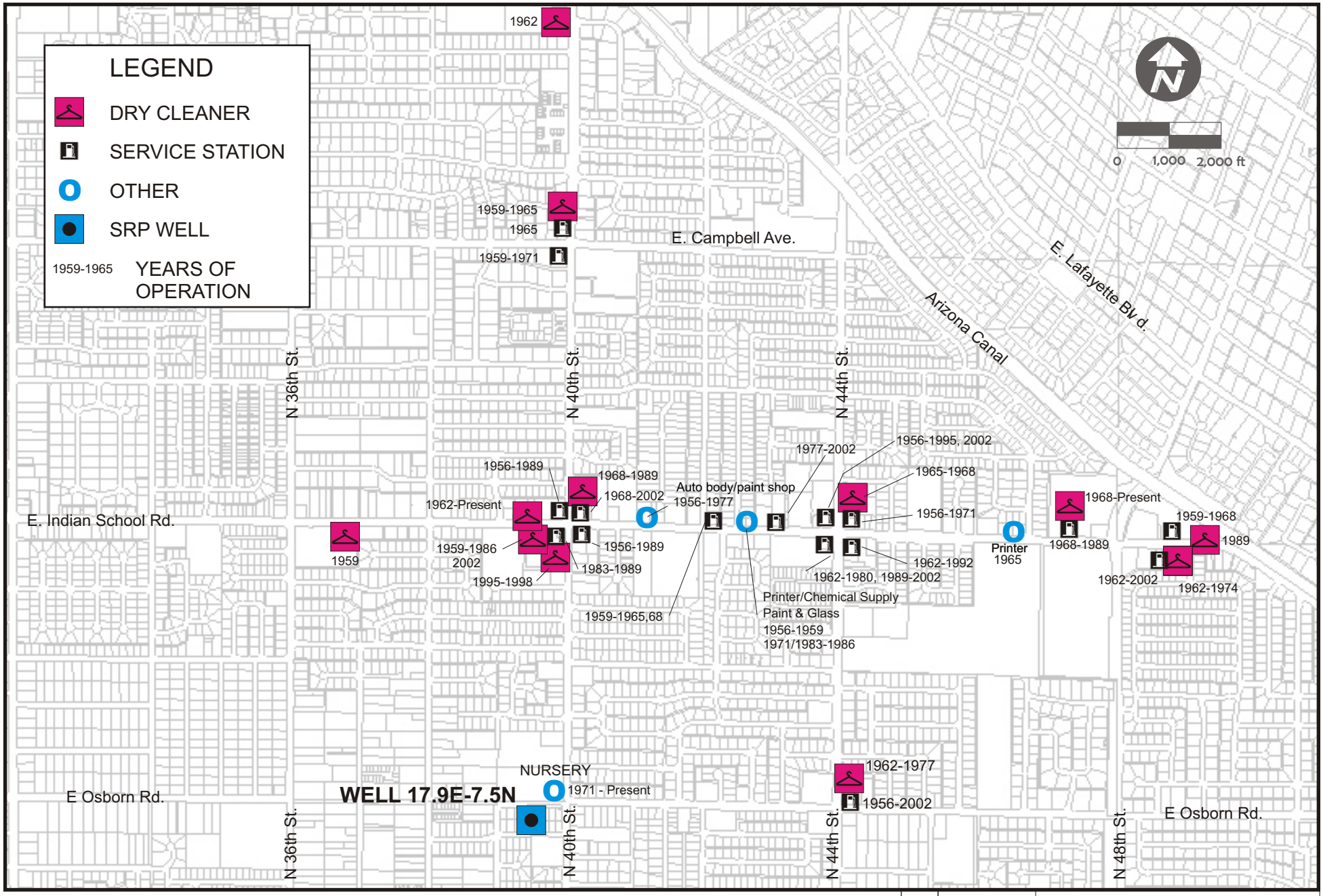
FIGURE 6

PREP BY NKR REV BY LLJM RPT NO 1134.41

APPENDIX A

2009 CITY DIRECTORY SUMMARY

Street Address	Listing	Years
Indian School Road		
3635	Dry cleaners	1959
3926	Dry cleaners	1962 – 2008
3931	Dry cleaners	2002
3933	Dry cleaners	1959 – 1986
3948	Service station	1956 – 1989
4001	Service station	1956 – 1977
4002	Service station	1968 – 2002
4108	Auto body/paint shop	1956 – 1977
4200	Service station	1959 – 1965
4202	Service station	1968
4226	Printer/chemical supply co	1971/1983 - 1986
4230	Paint and glass	1956 – 1959
4290	Service station	1977 – 2002
4342	Service station	1956 – 1995
4345	Service station	1962 – 1980
4349	Gas station	1989 – 2002
4350	Service station	2002
4401	Service station/Gas station	1962 – 1992
4402	Service station	1962 – 1968
4410	Service station	1956 – 1971
4414	Dry cleaners	1956 – 1962
4628	printer	1965
4710/4712	Dry cleaners	1968 – 2008
4752	Service station	1968 – 1989
4827	Service station	1962 – 2002
4835	Dry cleaners	1962 – 1974
4840	Service station	1959 – 1968
4910	Dry cleaners	1989
Osborn Road		
4402	Service station/gas station	1956 – 2002
40th Street		
3414	Baker Nursery	1971 – 2008
4040	Dry cleaners	1995 – 1998
4050	Gas station	1983 – 1989
4129	Dry cleaners	1968 – 1989
4434	Service station	1959 – 1971
4502	Gas station	1965
4522	Dry cleaners	1959 - 1965
4812	Dry Cleaners	1962
44th Street		
3411	Gas station	1959 -65, 1983
3421	Dry cleaners	1962 – 1977
4113	Dry Cleaners	1965 - 1968



HARGIS + ASSOCIATES, INC.
Hydrogeology/Engineering

5/14	RPT NO. 1137	APPENDIX A 2009 City Directory Summary.crd

FIGURE A1: 2009 CITY DIRECTORY SUMMARY

APPENDIX B

HISTORICAL ANALYTICAL RESULTS AND SOIL BORING LOCATIONS

APPENDIX B

HISTORICAL ANALYTICAL RESULTS AND SOIL BORING LOCATIONS

TABLE OF CONTENTS

TABLES

Table	
2-1	1983-1987 GROUNDWATER QUALITY DATA FOR SRP WELLS
5-5	1983-1988 RESULTS OF GROUNDWATER SAMPLING INVESTIGATIONS (SRP WELLS)
5-6	MAJOR CATION AND ANION LABORATORY RESULTS
5-7	GROUNDWATER WITHDRAWAL FROM SRP WELLS IN THE EAST CENTRAL PHOENIX AREA
5-3	1988 GROUNDWATER QUALITY DATA FOR VOLATILE ORGANIC COMOUNDS
5-4	GROUNDWATER SAMPLING FIELD MEASUREMENTS
A-3	WATER QUALITY DATA FOR ACTIVE WELLS
1	WELL CONSTRUCTION DETIALS, HISTORICAL GROUNDWATER ELEVATIONS, AND FIELD PARAMETER DATA, 40TH STREET AND OSBORN ROAD WQARF SITE
2	HISTORICAL GROUNDWATER ANALYTICAL RESULTS – SELECTED VOLATILE ORGANIC COMPOUNDS, 40TH STREET AND OSBORN ROAD WQARF SITE
2	IN SITU GROUNDWATER SAMPLES, CONCENTRATIONS OF SELECT VOCS, BMW-2AB AND BMW-3AB, 40TH STREET AND OSBORN ROAD WQARF SITE, PHOENIX, AZ
2	IN SITU, WELL DEVELOPMENT, AND BASELINE GROUNDWATER SAMPLES, CONCENTRATIONS OF SELECT VOCs, BMW-1B, 40TH STREET AND OSBORN ROAD WQARF SITE, PHOENIX, AZ

FIGURES

Figure	
2-2	WATER QUALITY DATA, EAST CENTRAL PHOENIX AREA 1983 – 1987 (The Earth Technology Corporation)
1-1	FACILITY AND WELL LOCATION MAP, EAST CENTRAL PHOENIX WQARF PROJECT AREA (Earth Tech)
2	GROUNDWATER CONDITIONS MAP, FALL 2007, (Secor)
1	GROUNDWATER CONDITIONS MAP, 09/27/04 & 10/12/04, (Secor)
	Hand drawn map for survey probes
1	SITE MAP (Stantec, 01/22/2009)

TABLE 2-1. 1983 - 1987 GROUNDWATER QUALITY DATA FOR SRP WELLS

ID No.	Well Location Identifier	Well Name	Date Sampled	Collected By	Lab	TCA(1) ug/l	TCE(2) ug/l	PCE(1) ug/l
47*	(A-2-3)22ddd	SRP 16E-8	7-01-83	SRP	SRP	1.6	ND	1.6
			4-26-84	SRP	SRP	ND	0.4	ND
			7-29-86	SRP	SRP	0.57	0.71	1.08
			8-03-87	SRP	SRP	ND	ND	1.85
11	(A-2-3)24aaa	SRP 18E-8.8N	7-01-83	SRP	SRP	9.2	ND	0.3
			7-25-84	SRP	SRP	ND	0.5	ND
			7-01-86	SRP	SRP	ND	ND	ND
			6-30-87	SRP	SRP	0.09	ND	ND
7	(A-2-3)25bbb	SRP 17E-8N	7-29-83	SRP	SRP	3.7	1.7	20.0
			6-12-84	ADHS	ATI	ND	ND	66.7
			6-29-84	SRP	SRP	ND	ND	20.0
			8-13-85	SRP	SRP	ND	ND	6.75
			7-28-86	SRP	SRP	0.78	0.67	22.8
8	(A-2-3)25cbb	SRP 17.1E-7.4N	7-28-83	SRP	SRP	ND	1.2	10.3
			6-18-84	SRP	SRP	ND	1.6	20.2
			6-18-84	SRP	ADHS	ND	0.74	13E
			6-19-87	SRP	SRP	ND	3.4	0.8
10	(A-2-3)25daa	SRP 17.9E-7.5N	7-01-83	SRP	SRP	ND	0.5	53.0
			2-28-84	E&E	Mead	ND	ND	90.0
			5-10-84	ADHS	ATI	---	---	65.0
			6-18-84	SRP	SRP	ND	ND	24.5
			6-18-84	SRP	SRP	ND	ND	25.9
			7-10-85	SRP	SRP	ND	ND	43.2
			8-04-87	SRP	SRP	ND	ND	17.9
48*	(A-2-3)36aaa	SRP 18E-7N	7- -83	SRP	SRP	ND	ND	ND
			2-28-84	EPA	COP	---	ND	---
			2-28-84	EPA	IT	1K	1K	---
			5-10-84	ADHS	ATI	ND	2.2	0.9
			6-17-87	SRP	SRP	ND	ND	ND
18	(A-2-4)19ddd	SRP 19E-8.1N	5-10-84	ADHS	ATI	ND	ND	ND
			7-14-86	SRP	SRP	1.03	ND	ND
			6-15-87	SRP	SRP	ND	ND	ND
17	(A-2-4)30aad	SRP 19E-7.6N	5-10-84	ADHS	ATI	ND	1.2	ND
			7-31-84	ADHS	ATI	ND	ND	0.5K
			10-6-86	SRP	SRP	ND	ND	ND
			6-16-87	SRP	SRP	ND	ND	ND
14	(A-2-4)30acc	SRP 18.5E-7.5N	7-06-83	SRP	SRP	ND	0.7	ND
			5-10-84	ADHS	ATI	ND	2.8	ND
			8-13-85	SRP	SRP	ND	2.39	0.1
			7-16-86	SRP	SRP	1.04	9.36	1.34
			7-16-87	SRP	SRP	0.17	4.8	0.19
13	(A-2-4)30cdd	SRP 18.5E-7N	8-12-83	SRP	SRP	12.4	21.7	6.0
			2-28-84	EPA	COP	---	0.1	---
			2-28-84	EPA	IT	14.0	1K	---
			7-25-84	SRP	SRP	1.0	ND	ND
			7-15-86	SRP	SRP	0.83	ND	ND
			8-17-87	SRP	SRP	0.84	0.86	ND

Key:
- * = Located out of study area (Plate 1)
- --- = Not analyzed for
- ND = Not detected at lab detection limit
- K = Constituent detected but at limit less than indicated detection limit
- E = Estimated Concentration
- COP = City of Phoenix
- ATI, IT = Private Laboratories
- ID No. = Earth Technology database identification number
- E & E = Ecology and Environment

NOTE:
(1) Arizona action levels for TCA and PCE are 200.0 ug/l and 1.0 ug/l, respectively.
(2) EPA Maximum Contaminant Level for TCE is 5.0 ug/l.

Source: Graf, 1985; Schmidt, 1985; Salt River Project, 1988; and Ecology and Environment, 1984.

DRAFT - SUBJECT TO REVIEW

FSDEQP002414

TABLE 5-5. 1983 - 1988 RESULTS OF GROUNDWATER SAMPLING INVESTIGATIONS (SRP WELLS)

ID No.	Well Location Identifier	Well Name	Date Sampled	Collected By	Lab	TCA(1) ug/l	TCE(2) ug/l	PCE(1) ug/l
47*	(A-2-3)22ddd	SRP 16E-8N	7-01-83	SRP	SRP	1.6	ND	1.6
			4-26-84	SRP	SRP	ND	0.4	ND
			7-29-86	SRP	SRP	0.57	0.71	1.08
			8-03-87	SRP	SRP	ND	ND	1.85
11	(A-2-3)24aaa	SRP 18E-8.8N	7-01-83	SRP	SRP	9.2	ND	0.3
			7-25-84	SRP	SRP	ND	0.5	ND
			7-01-86	SRP	SRP	ND	ND	ND
			6-30-87	SRP	SRP	0.09	ND	ND
7	(A-2-3)25bbb	SRP 17E-8N	7-29-83	SRP	SRP	3.7	1.7	20.0
			6-12-84	ADHS	ATI	ND	ND	66.7
			6-29-84	SRP	SRP	ND	ND	20.0
			8-13-85	SRP	SRP	ND	ND	6.75
			7-28-86	SRP	SRP	0.78	0.67	22.8
			6-09-88	SRP	SRP	ND	ND	8.7
8	(A-2-3)25cbb	SRP 17.1E-7.4N	7-28-83	SRP	SRP	ND	1.2	10.3
			6-18-84	SRP	SRP	ND	1.6	20.2
			6-18-84	SRP	ADHS	ND	0.74	13E
			6-19-87	SRP	SRP	ND	3.4	0.8
			7-25-88	TETC	ATI	ND	ND	0.6
10	(A-2-3)25daa	SRP 17.9E-7.5N	7-01-83	SRP	SRP	ND	0.5	53.0
			2-28-84	E&E	Mead	ND	ND	90.0
			5-10-84	ADHS	ATI	---	---	65.0
			6-18-84	SRP	SRP	ND	ND	24.5
			6-18-84	SRP	SRP	ND	ND	25.9
			7-10-85	SRP	SRP	ND	ND	43.2
			8-04-87	SRP	SRP	ND	ND	17.9
			6-29-88	SRP	SRP	ND	ND	66.0
48*	(A-2-3)36aaa	SRP 18E-7N	7- -83	SRP	SRP	ND	ND	ND
			2-28-84	EPA	COP	---	ND	---
			2-28-84	EPA	IT	1K	1K	---
			5-10-84	ADHS	ATI	ND	2.2	0.9
			6-17-87	SRP	SRP	ND	ND	ND
18	(A-2-4)19ddd	SRP 19E-8.1N	5-10-84	ADHS	ATI	ND	ND	ND
			7-14-86	SRP	SRP	1.03	ND	ND
			6-15-87	SRP	SRP	ND	ND	ND
17	(A-2-4)30aad	SRP 19E-7.6N	5-10-84	ADHS	ATI	ND	1.2	ND
			7-31-84	ADHS	ATI	ND	ND	0.5K
			10-6-86	SRP	SRP	ND	ND	ND
			6-16-87	SRP	SRP	ND	ND	ND
14	(A-2-4)30acc	SRP 18.5E-7.5N	7-06-83	SRP	SRP	ND	0.7	ND
			5-10-84	ADHS	ATI	ND	2.8	ND
			8-13-85	SRP	SRP	ND	2.39	0.1
			7-16-86	SRP	SRP	1.04	9.36	1.34
			7-16-87	SRP	SRP	0.17	4.8	0.19
			6-10-88	SRP	SRP	ND	3.0	ND
13	(A-2-4)30cdd	SRP 18.5E-7N	8-12-83	SRP	SRP	12.4	21.7	6.0
			2-28-84	EPA	COP	---	0.1	---
			2-28-84	EPA	IT	14.0	1K	---
			7-25-84	SRP	SRP	1.0	ND	ND
			7-15-86	SRP	SRP	0.83	ND	ND
			8-17-87	SRP	SRP	0.84	0.86	ND

KEY:
- * = Located out of study area (Plate 1, Figure 5-2)
- --- = Not analyzed for
- ND = Not detected at lab detection limit
- K = Constituent detected but at limit less than indicated detection limit
- ID No. = Earth Technology database identification number
- ATI, IT = Private Laboratories
- TETC = The Earth Technology Corporation
- E = Estimated
- COP = City of Phoenix
- E & E = Ecology and Environment

NOTE: (1) Arizona action levels for TCA and PCE are 200.0 ug/l and 1.0 ug/l, respectively.
(2) EPA Maximum Contaminant level for TCE is 5.0 ug/l.

Source: Graf, 1985; Schmidt, 1985; Salt River Project, 1988; and Ecology and Environment, 1984.

DRAFT - SUBJECT TO REVIEW

FSDEQP002473

TABLE 5-6. MAJOR CATION AND ANION LABORATORY RESULTS

MAJOR IONS (1)	WELL ID NO. AND NAME						
	ID No. 47 SRP 16E-8N	ID No. 7 SRP 17E-8N	ID No. 10 SRP 17.9E-7.5N	ID No. 14 SRP18.5E-7.5N	ID. No. 35 PETERSON	ID No. 36 TEEPLES	FEDERAL PRIMARY(4) AND SECONDARY WATER STANDARDS
Bicarbonate	458	342	397	323	386	531	NA(5)
Carbonate	0	12	0	0	20	32	NA
Chloride	333	245	271	241	157	359	250
Sulfate	110	144	235	127	130	176	250
Nitrate	46(2)	40(2)	40(2)	37(2)	5.5(3)	7.8(3)	45(2),10(3)
Calcium	36	29	39	43	20	27	NA
Magnesium	29	21	33	27	35.6	37	NA
Potassium	5.1	3.1	0.4	5.5	5.1	2.6	NA
Sodium	356	290	359	255	237	451	NA
Total (6) Dissolved Solids	1,268	975	1,235	962	974	1,670	500

Note: (1) All results reported in mg/l
(2) Nitrate as No 3
(3) Nitate as N
(4) From ADHS (1985)
(5) NA-no standard has been set by the EPA or ADHS
(6) Calculated using a factor of 0.65

DRAFT - SUBJECT TO REVIEW

TABLE 5-7. GROUNDWATER WITHDRAWAL FROM SRP WELLS IN THE EAST CENTRAL PHOENIX AREA

ID No.	SRP WELL ID	YEAR	TOTAL PUMPAGE (acre feet)
7	17E-8N	1983	8
		1984	829
		1985	5
		1986	20
		1987	66
8	17.1E-7.4N	1983	5
		1984	587
		1985	15
		1986	17
		1987	46
10	17.9E-7.5N	1983	14
		1984	695
		1985	22
		1986	5
		1987	5
11	18E-8.8N	1983	15
		1984	400
		1985	7
		1986	6
		1987	0
13	18.5E-7N	1983	2
		1984	213
		1985	2
		1986	1
		1987	2
14	18.5E-7.5N	1983	107
		1984	374
		1985	8
		1986	99
		1987	2
17	19E-7.6N	1983	3
		1984	295
		1985	2
		1986	4
		1987	2
18	19E-8.1N	1983	6
		1984	483
		1985	1
		1986	9
		1987	3
47	16E-8N	1983	5
		1984	526
		1985	5
		1986	4
		1987	4
48	18E-7N	1983	13
		1984	622
		1985	3
		1986	3
		1987	4

Source: Salt River Project, 1988.

DRAFT - SUBJECT TO REVIEW

FSDEQP002445

TABLE 5-3. 1988 GROUNDWATER QUALITY DATA FOR VOLATILE ORGANIC COMPOUNDS

ID No.	SRP WELL ID	Date Sampled	TCA ug/l	TCE(1) ug/l	PCE(2) ug/l
7	17E-8N	6-10-88	ND	ND	8.7
8	17.1E-7.4N	6-29-88	ND	ND	0.6
10	17.9E-7.5N	6-28-88	ND	ND	66.0
14	18.5E-7.5N	6-15-88	ND	3.0	ND
35	NA	6-29-88	ND	ND	ND
36	NA	6-29-88	ND	ND	ND

(1) EPA Maximum Contaminant Level is 5.0 ug/l
(2) Arizona Action Level is 1.0 ug/l

ND = Not Detected
NA = Not Applicable

Source: Salt River Project, 1988
Earth Technology

DRAFT - SUBJECT TO REVIEW

FSDEQP002469

TABLE 5-4. GROUNDWATER SAMPLING FIELD MEASUREMENTS

ID No.	SRP WELL ID	Date Sampled	Discharge (gpm)	Hours Pumped	Temp (°F)	Specific Conductance (umhos)	pH
7	17E-8N	6-10-88	1199	29.0	76	1540	7.4
8	17.1E-7.4N	7-25-88	823	15.5	75	1650	7.5
10	17.9E-7.5N	6-28-88	1047	28.5	76	1980	7.6
14	18.5E-7.5N	6-15-88	649	26.0	72	1600	7.6
35	NA	6-29-88	10	1.0	72	1498	7.7
36	NA	6-29-88	10	1.5	73	2570	7.4

NA = Not Applicable

Source: Salt River Project, 1988
Earth Technology, 1988

DRAFT - SUBJECT TO REVIEW

FSDEQP002472

TABLE A-3. WATER QUALITY DATA FOR ACTIVE WELLS (PAGE 1 OF 2)

ID NO.	REF NO.	WELL OWNER ID	LOCATION- (TRS DQQ)	LABORATORY	COLLECTED BY	SAMPLE DATE	ANALYSIS DATE	ANALYTICAL METHOD	CHEMICALS DETECTED AND CONC (ug/l) TCE	TCA	PCE	REMARKS
7	7	SRP 17E-8N	020325 bbb2	SRP	SRP	06/09/88		601	ND	ND	8.7	
7	7	" "	" "	SRP	SRP	07/28/86		601	0.67	0.78	22.8*	
7	7	" "	" "	SRP	SRP	08/13/85		601	ND	ND	6.75	
7	1.2	" "	" "	SRP	SRP	06/29/84			ND	ND	20.0*	
7	1	" "	" "	ATI	ADHS	06/12/84			ND	ND	66.7*	
7	1.3	" "	" "	SRP	SRP	07/29/83	08/17/83		1.7	3.7	20*	
8	7	SRP 17.1E-7.4N	020325 cbb	ATI	TETC	06/29/88		601	ND	ND	0.6	
8	7	" "	" "	SRP	SRP	06/19/87		601	3.4	ND	0.8	
8	1.2	" "	" "	SRP	SRP	06/18/84			1.6	ND	20.2*	
8	1	" "	" "	ADHS	SRP	06/19/84			0.74	ND	13*	PCE conc. estimated
8	1.3	" "	" "	SRP	SRP	07/28/83	07/29/83		1.2	ND	10.3*	
10	7	SRP 17.9E-7.5N	020325 daa2	SRP	SRP	06/29/88		601	ND	ND	66.0*	
10	7	" "	" "	SRP	SRP	08/04/87		601	ND	ND	17.9*	
10	7	" "	" "	SRP	SRP	07/10/85		601	ND	ND	43.2*	
10	1.2	" "	" "	SRP	SRP	06/18/84			ND	ND	25.9*	
10	1	" "	" "	SRP	SRP	06/18/84			ND	ND	24.5*	
10	1	" "	" "	ADHS	ATI	05/10/84					65*	
10	6	" "	" "	Acurex		5/7-11/84		624	ND		29*	
10	5	" "	" "	Mead	E & E	02/28/84			ND	ND	90*	
10	1.3	" "	" "	SRP	SRP	07/01/83	07/29/83		0.5	ND	53*	
11	7	SRP 18E-8.8N	020324 aaa	SRP	SRP	06/30/87		601	ND	0.09	ND	
11	7	" "	" "	SRP	SRP	07/01/86		601	ND	ND	ND	
11	1.2	" "	" "	SRP	SRP	07/25/84			0.5	ND	ND	
11	1.3	" "	" "	SRP	SRP	07/01/83	07/29/83		ND	9.2	0.3	
13	7	SRP 18.5E-7N	020430 cdd	SRP	SRP	08/17/87		601	0.86	0.84	ND	
13	7	" "	" "	SRP	SRP	07/15/86		601	ND	0.83	ND	
13	1.2	" "	" "	SRP	SRP	07/25/84			ND	1.0	ND	
13	1	" "	" "	IT	EPA	02/28/84			1	14.0		< indicated detection limit
13	1	" "	" "	COP	EPA	02/28/84			0.1	-	-	
13	1.3	" "	" "	SRP	SRP	08/12/83	08/22/83		21.7*	12.4	6.0*	

DRAFT - SUBJECT TO REVIEW

TABLE A-3. WATER QUALITY DATA FOR ACTIVE WELLS (PAGE 2 OF 2)

ID NO.	REF NO.	WELL OWNER ID	LOCATION- (TRS QQQ)	LABORATORY	COLLECTED BY	SAMPLE DATE	ANALYSIS DATE	ANALYTICAL METHOD	CHEMICALS DETECTED AND CONC (ug/l) TCE	TCA	PCE	REMARKS
14	7	SRP 18.5E-7.5N	020430 acc	SRP	SRP	06/15/88		601	3.0	ND	ND	
14	7	" "	" "	SRP	SRP	07/16/87		601	4.8	0.17	0.19	
14	7	" "	" "	SRP	SRP	07/16/86		601	9.36	1.04	1.34	
14	7	" "	" "	SRP	SRP	08/13/85		601	2.39	ND	0.1	
14	1	" "	" "	ATI	ADHS	05/10/84			2.8	ND	ND	
14	6	" "	" "	ERG		5/7-11/84		624	<3		<1	
14	5	" "	" "	Mead		02/28/84			ND	ND	ND	
14	1.3	" "	" "	SRP		07/06/83	07/29/83		0.7	ND	ND	
17	7	SRP 19E-7.6N	020430 ada	SRP	SRP	06/16/87		601	ND	ND	ND	
17	7	" "	" "	SRP	SRP	10/06/86		601	ND	ND	ND	
17	1	" "	" "	ATI	ADHS	07/31/84			ND	ND	0.5	< indicated detection limit (Table 2.5.1)
17	1	" "	" "	ATI	ADHS	05/10/84			1.2	ND	ND	
17	6	" "	" "	ERG		5/7-11/84		624	ND		ND	
17	5	" "	" "	Mead		02/28/84			ND	ND	ND	
18	7	SRP 19E-8N	020419 ddd	SRP	SRP	06/15/87		601	ND	ND	ND	
18	7	" "	" "	SRP	SRP	07/14/86		601	ND	1.03	ND	
18	1	" "	" "	ATI	ADHS	05/10/84			ND	ND	ND	
18	6	" "	" "	ERG		5/7-10/84		624	ND		<1	
18	5	" "	" "	Mead		02/28/84			ND	ND	ND	
33	1	McGregor	020323 acb	UBTL		10/22/84			ND	ND	ND	
35	1	Peterson	020430 bdb	UBTL		10/25/84			ND	ND	ND	
36	1	Reid Teeples	020430 cca	UBTL		10/17/84			ND	ND	ND	
47	7	SRP 16E-8N	020322 ddd	SRP	SRP	08/03/87		601	ND	ND	1.85	
"	7	" "	" "	SRP	SRP	07/29/86		601	0.71	0.57	1.08	
	7	" "	" "	SRP	SRP	04/26/84		601	0.4	ND	ND	
	7	" "	" "	SRP	SRP	07/01/83		601	ND	1.6	1.6	
48	7	SRP 18E-7N	020336 aaa	SRP	SRP	06/17/87		601	ND	ND	ND	
"	7	" "	" "	ATI	ADHS	05/10/84		601	2.2	ND	0.9	
"	7	" "	" "	IT	EPA	02/28/84		601	1K	1K	-	
"	7	" "	" "	COP	EPA	02/28/84		601	-	ND	-	
"	7	" "	" "	SRP	SRP	07/-/83		601	ND	ND	ND	

References:

1. Graf, 1985
2. Salt River Project, 1985
3. Graf, 1988
4. Schmidt, 1985
5. Goloubow et al., 1984
6. Surfus, 1985
7. Salt River Project, 1989

DRAFT - SUBJECT TO REVIEW

Table 1
Well Construction Details, Historical Groundwater Elevations, and Field Parameter Data
40th Street and Osborn Road WQARF Site

Well ID	Owner	ADWR 55#	Screen Int. (feet bgs)	MPE (feet amsl)	Date	DTW (feet)	GW Elev. (feet amsl)	pH	Temp. (Celsius)	D.O. (mg/L)	Cond. (mS/cm)	Notes
17.9E-7.5N	SRP	617857	100-300	NA	03/26/02	NM	NM	7.8	23.8	NM	1.72	
					09/09/02	NM	NM	8.18	24.5	NM	1.65	
					12/06/02	NM	NM	8.31	12.2	NM	0.62	
					03/06/03	NM	NM	7.80	21.7	NM	1.5	
					06/03/03	NM	NM	7.33	23.7	3.5	1.67	
					12/10/03	NM	NM	NM	NM	NM	NM	
					04/01/04	NM	NM	NM	NM	NM	NM	
					10/11/04	NM	NM	NM	NM	NM	NM	
					03/23/05	NM	NM	7.61	24.1	0.99	1.79	
					10/05/05	NM	NM	NM	NM	NM	NM	
					03/14/06	NM	NM	7.81	24.3	1.98	1.76	
					10/24/06	NM	NM	NM	NM	NM	NM	
					03/14/07	NM	NM	7.68	24.0	3.26	1.75	
					06/22/07	NM	NM	NM	NM	NM	NM	
					09/26/07	NM	NM	7.12	26.7	4.42	1.85	1,2
BMW1	ADEQ	598109	20-60	1191.90	06/13/03	26.90	1165.00	7.40	27.5	3.91	0.99	
					12/10/03	28.71	1163.19	7.14	21.9	3.85	1.52	
					03/30/04	29.61	1162.29	4.97	29.7	4.64	7.28	
					10/12/04	31.29	1160.61	4.94	27.3	1.55	18.00	
					03/22/05	31.95	1159.95	4.68	23.6	0.89	NM	
					10/07/05	30.31	1161.59	7.78	25.9	4.31	1.59	
					03/14/06	31.52	1160.38	7.36	24.0	1.72	1.31	
					10/25/06	29.91	1161.99	7.98	25.7	4.6	1.49	
					2/27/07[1]	30.99	1160.91	7.40	27.7	2.23	1.27	
					06/22/07	32.84	1159.06	NM	NM	NM	NM	
					09/26/07	32.59	1159.31	3.95	20.7	5.5.30	0.00	1,2
Patterson	Flores	NA	NA	NA	06/24/03	NM	NM	NM	NM	NM	NM	

Notes:
Well ID = Well identification
ADWR = Arizona Department of Water Resources
Screen Int. = Well screen interval
bgs = Below ground surface
MPE = Measuring point elevation
amsl = Above mean sea level
DTW = Measured depth to water
GW Elev. = Calculated groundwater elevation
D.O. = Dissolved oxygen
mg/L = Milligrams per liter
mS/cm = MilliSiemens per centimeter
NA = Not available
NM = Not measured
(1) Gauging date reported, well sampled and water parameters measured approximately two weeks following gauging event
(2) pH and conductivity instrument malfuntioning, readings suspect

Table 2
Historical Groundwater Analytical Results - Selected Volatile Organic Compounds
40th Street and Osborn Road WQARF Site

Well ID	Owner	ADWR 55#	Sample Date	Sample Depth (Feet)[1]	PCE	TCE	1,1,1-TCA	Benzene	Toluene	Ethylbenzene	Total xylenes	cis-1,2-Dichloroethene	MTBE
Arizona Water Quality Standards in micrograms per liter (µg/L)					5	5	200	5	1,000	700	10,000	70	NE
17.9E-7.5N	SRP	617857	07/01/83	NA	**53.0**	0.5	ND	NA	NA	NA	NA	NA	NA
			02/28/84	NA	**90.0**	ND	ND	NA	NA	NA	NA	NA	NA
			05/10/84	NA	**65.0**	NA	NA	NA	NA	NA	NA	NA	NA
			06/18/84	NA	**25.9**	ND	ND	NA	NA	NA	NA	NA	NA
			07/10/85	NA	**43.2**	ND	ND	NA	NA	NA	NA	NA	NA
			08/04/87	NA	**17.9**	ND	ND	NA	NA	NA	NA	NA	NA
			06/28/88	NA	**66.0**	ND	ND	NA	NA	NA	NA	NA	NA
			06/29/89	NA	**81.5**	<0.5	<0.5	NA	NA	NA	NA	NA	NA
			11/01/91	NA	**55.0**	<0.5	<0.5	NA	NA	NA	NA	NA	NA
			11/14/96	NA	**47**	**9.9**	NA	NA	NA	NA	NA	NA	NA
			09/28/98	NA	**210**	0.7	NA	NA	NA	NA	NA	NA	NA
			03/26/02	NA	**79**	1.4	<0.50	<0.50	<3.0	<2.0	<3.0	<0.50	<2.0
			09/09/02	NA	**85**	1.1	<0.50	<0.50	<3.0	<2.0	<3.0	<0.50	<2.0
			09/09/02[2]	NA	**87**	1.1	<0.50	<0.50	<3.0	<2.0	<3.0	<0.50	<2.0
			12/06/02	NA	**76**	0.63	<0.50	<0.50	<3.0	<2.0	<3.0	<0.50	<2.0
			03/06/03	NA	**90**	1.2	<0.50	<0.50	<3.0	<2.0	<3.0	<0.50	<2.0
			03/06/03[2]	NA	**82**	1.1	<0.50	<0.50	<3.0	<2.0	<3.0	<0.50	<2.0
			06/03/03	NA	**110**	1.4	<0.50	<0.50	<3.0	<2.0	<3.0	<0.50	<2.0
			12/10/03	NA	**80**	1.3	<0.50	<0.50	<3.0	<2.0	<3.0	<0.50	<2.0
			04/01/04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
			10/11/04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
			03/23/05	NA	**41**	<1.0	<1.0	<1.0	<5.0	<1.0	<3.0	<1.0	<1.0
			10/07/05	NA	NS	NS	NS	NS	NS	NS	NS	NS	NS
			03/14/06	NA	**24.0**	<1.0	<1.0	<1.0	<5.0	<1.0	<3.0	<1.0	<1.0
			10/24/06	NA	**28.0**	<1.0	<1.0	<1.0	<5.0	<1.0	<3.0	<1.0	<1.0
			03/14/07	NA	**24.0**	<1.0	<1.0	<1.0	<5.0	<1.0	<3.0	<1.0	<1.0
			03/14/07[2]	NA	**25.0**	<1.0	<1.0	<1.0	<5.0	<1.0	<3.0	<1.0	<1.0
			10/15/07	NA	**15**	<1.0	<1.0	<1.0	<5.0	<1.0	<3.0	<1.0	<1.0
			10/15/07[2]	NA	**13**	<1.0	<1.0	<1.0	<5.0	<1.0	<3.0	<1.0	<1.0

Table 2
Historical Groundwater Analytical Results - Selected Volatile Organic Compounds
40th Street and Osborn Road WQARF Site

Well ID		Owner	ADWR 55#	Sample Date	Sample Depth (Feet)[1]	PCE	TCE	1,1,1-TCA	Benzene	Toluene	Ethylbenzene	Total xylenes	cis-1,2-Dichloroethene	MTBE
Arizona Water Quality Standards in micrograms per liter (µg/L)						5	5	200	5	1,000	700	10,000	70	NE
BMW1	Shallow	ADEQ	598109	06/13/03	2	<0.50	<0.50	<0.50	<0.50	<3.0	<2.0	<3.0	<0.50	<2.0
				06/13/03	31	<0.50	<0.50	<0.50	<0.50	<3.0	<2.0	<3.0	<0.50	<2.0
				12/10/03	30	<0.50	<0.50	<0.50	<0.50	<3.0	<2.0	<3.0	<0.50	<2.0
				03/30/04	30	<0.50	<0.50	<0.50	<0.50	<3.0	<2.0	<3.0	<0.50	<2.0
				10/12/04	27	<0.4	<1.0	<0.9	<0.6	<0.7	<0.6	<1.8	<0.5	<0.8
				03/22/05	26	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<3.0	<1.0	3.6
				10/07/05	28	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<3.0	<1.0	1.5
				03/14/06	27	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<3.0	<1.0	<1.0
				10/25/06	28	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<3.0	<1.0	<1.0
				10/25/06[2]	28	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<3.0	<1.0	<1.0
				03/14/07	27	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<3.0	<1.0	<1.0
				10/11/07	34.5	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<3.0	<1.0	<1.0
	Deep			10/11/07	56.5	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<3.0	<1.0	<1.0
Patterson		Flores	NA	06/24/03	NA	<0.50	3.9	<0.50	<0.50	<3.0	<2.0	<3.0	<0.50	<2.0
Equipment Blank				10/25/06	NA	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<3.0	<1.0	<1.0
				03/14/07	NA	1.1	<1.0	<1.0	<1.0	11	<1.0	<3.0	<1.0	<1.0
Trip Blank				10/25/06	NA	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<3.0	<1.0	<1.0
				03/14/07	NA	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<3.0	<1.0	<1.0
				10/11/07	NA	<1.0	<1.0	<1.0	<1.0	<5.0	<1.0	<3.0	<1.0	<1.0

Notes:
Well ID = Well identification
ADWR = Arizona Department of Water Resources
PCE = Tetrachloroethene
TCE = Trichloroethene
1,1,1-TCA = 1,1,1-Trichloroethane
MTBE = Methyl tert-butyl ether
ADEQ = Arizona Department of Environmental Quality
NA = Not analyzed; not available; or not applicable
NE = Aquifer Water Quality Standard not established
ND = Concentration reported as non-detect; detection limit unknown
NS = Not Sampled
BOLD = Laboratory results exceed AWQS

(1) Sample depth is approximate feet below the measured water table surface
(2) Duplicate sample

Table 2
***In Situ* Groundwater Samples**
Concentrations of Select VOCs
BMW-2AB and BMW-3AB
40th Street and Osborn Road WQARF Site
Phoenix, AZ

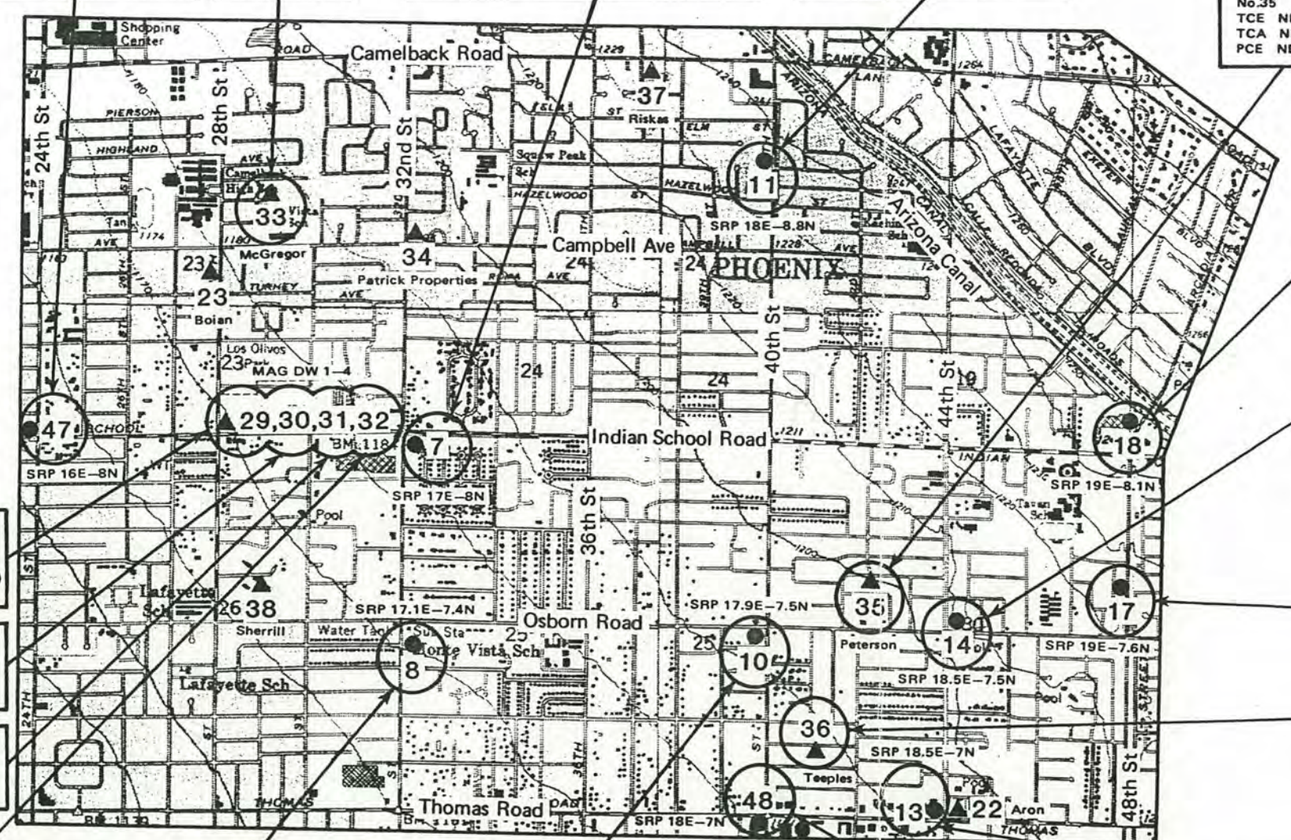
Sample Identification	Sample Depth (feet bgs)	Sample Date	Analytical Method	Sampling Method	PCE (µg/L)	TCE (µg/L)	cis 1,2-DCE (µg/L)
ADEQ Arizona Water Quality Standards					**5.0**	**5.0**	**70.0**
BMW2-50	50	4/15/08	8260B	SimulProbe	<1.0	<1.0	<1.0
BMW2-60	60	4/15/08	8260B	SimulProbe	<1.0	<1.0	<1.0
BMW2-600(1)	60	4/15/08	8260B	SimulProbe	<1.0	<1.0	<1.0
BMW2-65	65	4/15/08	8260B	SimulProbe	<1.0	<1.0	<1.0
BMW2-70	70	4/16/08	8260B	SimulProbe	<1.0	<1.0	<1.0
BMW2-80	80	4/16/08	8260B	SimulProbe	**9.7**	<1.0	<1.0
BMW2-90	90	4/16/08	8260B	SimulProbe	**44**	<1.0	<1.0
BMW2-100	100	4/16/08	8260B	SimulProbe	**110**	1.3	<1.0
BMW3-GW1-52 ft	52	5/12/08	8260B	Hydro Punch	<1.0	<1.0	<1.0
BMW3-GW2-67 ft	67	5/12/08	8260B	Hydro Punch	1.8	<1.0	<1.0
BMW3-GW3-72 ft	72	5/13/08	8260B	Hydro Punch	2.4	<1.0	<1.0
BMW3-GW4-80.5 ft	80.5	5/13/08	8260B	Hydro Punch	3.6	<1.0	<1.0
BMW3-GW5-92	92	5/14/08	8260B	Hydro Punch	**58**	**6.3**	<1.0
BMW3-GW6-600(1)	92	5/14/08	8260B	Hydro Punch	**52**	**5.4**	<1.0
BMW3-GW6-101	101	5/14/08	8260B	Hydro Punch	**69**	**8.1**	<1.0
Equipment Blank 1	NA	4/15/08	8260B	Grab	<1.0	<1.0	<1.0
Equipment Blank 2	NA	4/16/08	8260B	Grab	<1.0	<1.0	<1.0
Equipment Blank 3	NA	5/14/08	8260B	Grab	<1.0	<1.0	<1.0
Trip Blank	NA	4/15/08	8260B	NA	<1.0	<1.0	<1.0
Trip Blank	NA	5/12/08	8260B	NA	<1.0	<1.0	<1.0

Notes:
bgs = below ground surface
PCE = tetrachloroethene
µg/L = micrograms per liter
TCE = trichloroethene
cis 1,2-DCE = cis 1,2-dichloroethene
ADEQ = Arizona Department of Environmental Quality
Bold = concentration exceeds AWQS
(1) Duplicate sample
NA = not applicable

Table 2
***In Situ,* Well Development, and Baseline Groundwater Samples**
Concentrations of Select VOCs
BMW-1B
40th Street and Osborn Road WQARF Site
Phoenix, AZ

Sample Identification	Sample Depth (feet bgs)	Sample Date	Analytical Method	Sampling Method	PCE (µg/L)	TCE (µg/L)	cis 1,2-DCE (µg/L)
ADEQ Arizona Water Quality Standards					**5.0**	**5.0**	**70.0**
BMW1B-40	40	12/2/08	8260B	Hydropunch	<1.0	<1.0	<1.0
BMW1B-50	50	12/2/08	8260B	Hydropunch	<1.0	<1.0	<1.0
BMW1B-60	60	12/2/08	8260B	Hydropunch	<1.0	<1.0	<1.0
BMW1B-70	70	12/3/08	8260B	Hydropunch	<1.0	<1.0	<1.0
BMW1B-600(1)	70	12/3/08	8260B	Hydropunch	<1.0	<1.0	<1.0
BMW1B-80	80	12/3/08	8260B	Hydropunch	<1.0	<1.0	<1.0
BMW1B-90	90	12/3/08	8260B	Hydropunch	2.0	<1.0	<1.0
BMW1B-100	100	12/3/08	8260B	Hydropunch	1.2	<1.0	<1.0
Trip Blank	NA	12/2/08	8260B	NA	<1.0	<1.0	<1.0
Equipment Blank	NA	12/3/08	8260B	Hydropunch	<1.0	<1.0	<1.0
BMW1B-WD	NA	12/4/08	8260B	Well Development	2.8	<1.0	<1.0
BMW1B-72.5	72.5	12/17/08	8260B	DIS	2.0	<1.0	<1.0
BMW1B-84.5	84.5	12/17/08	8260B	DIS	2.0	<1.0	<1.0
BMW1B-96.5	96.5	12/17/08	8260B	DIS	2.4	<1.0	<1.0
BMW1B-600(1)	96.5	12/17/08	8260B	DIS	2.3	<1.0	<1.0
Trip Blank	NA	12/17/08	8260B	NA	<1.0	<1.0	<1.0
Equipment Blank	NA	12/17/08	8260B	DIS	<1.0	<1.0	<1.0

Notes:
bgs = below ground surface
PCE = tetrachloroethene
µg/L = micrograms per liter
TCE = trichloroethene
cis 1,2-DCE = cis 1,2-dichloroethene
ADEQ = Arizona Department of Environmental Quality
Hydropunch = in-situ sample collected with Hydropunch sampler
DIS = Discrete Interval Sampler
Bold = concentration exceeds AWQS
(1) Duplicate sample
NA = not applicable



No. 47
TCE ND(83), 0.4(84), 0.71(86), <0.1(87)
TCA 1.6(83), ND(84), 0.57(86), <0.1(87)
PCE 1.6(83), ND(84), 1.08(86), 1.85(87)

No. 33
TCE ND(84)
TCA ND(84)
PCE ND(84)

No. 7
TCE 1.7(83), ND(84), ND(85), 0.67(86)
TCA 3.7(83), ND(84), ND(85), 0.78(86)
PCE 20(83), 20.0-66.6(84), 6.75(85), 22.8(86)

No. 11
TCE ND(83), 0.5(84), <0.1(87)
TCA 9.2(83), ND(84,86), <0.1(87)
PCE 0.3(83), ND(84,86), 0.09(87)

No.35
TCE ND(84)
TCA ND(84)
PCE ND(84)

No. 18
TCE ND(84),<0.4(86),<0.1(87)
TCA ND(84), 1.03(86),<0.1(87)
PCE ND-<1(84),<0.5(86),<0.1(87)

No. 14
TCE 0.7(83), 2.8(84), 2.39(85), 9.36(86), 4.8(87)
TCA ND(83,84), ND(85), 1.04(86), 0.17(87)
PCE ND(83), ND(84), 0.1(85), 1.34(86), 0.19(87)

No. 29
TCE ND(84)
TCA ND(84)
PCE 0.6-0.7(84)
(abandoned)

No. 30
TCE ND(84)
TCA ND(84)
PCE ND(84)

No. 31
TCE ND(84)
TCA ND(84)
PCE ND(84)

No. 17
TCE ND-1.2(84), <0.4(86), <0.1(87)
TCA ND(84), <0.4(86), <0.1(87)
PCE ND-0.5(84), <0.5(86), <0.1(87)

No. 36
TCE ND(84)
TCA ND(84)
PCE ND(84)

No. 32
TCE ND(84)
TCA ND(84)
PCE ND(84), 0.6(84)

No. 8
TCE 1.2(83), 0.74-1.6(84), 3.4(87)
TCA ND(83,84), <0.1(87)
PCE 10.3(83), 13-20.2(84), 0.8(87)

No. 10
TCE 0.5(83), ND(84,85), <0.1(87)
TCA ND(83,84,85), <0.1(87)
PCE 53(83), 24.5-90(84), 43.2(85), 17.9(87)

No. 48
TCE ND(83), ND-2.2(84), <0.1(87)
TCA ND(83,84), 1K(84), <0.1(87)
PCE ND(83), 0.9(84), <0.1(87)

No. 13
TCE 21.7(83), ND-1(84), <0.4(86), 0.86(87)
TCA 12.4(83), 1-14(84), 0.83(86), 0.84(87)
PCE 6.0(83), ND(84), <0.5(86), <0.1(87)

Source: USGS, 1952a, 1952b, 1965a, and 1965b.

SCALE IN FEET

0 1000 2000 3000 4000 5000

Explanation:

● 7 SRP Well Location and Database Identification Number.

▲ 36 Private or Unknown Ownership Well Location and Database Identification Number.

(● 7) Wells analyzed for VOCs. Concentrations in ug/l are shown in adjacent boxes.

TCE	Trichloroethylene
TCA	1,1,1–Trichloroethane
PCE	Tetrachloroethylene
K	Constituent detected but at a level less than the indicated detection limit.
ND	Not Detected

All laboratory results reported in ug/l.

See Appendix A for Well Information.

NORTH

The Earth Technology Corporation

Project No: 88–884
WQARF
East Central Phoenix

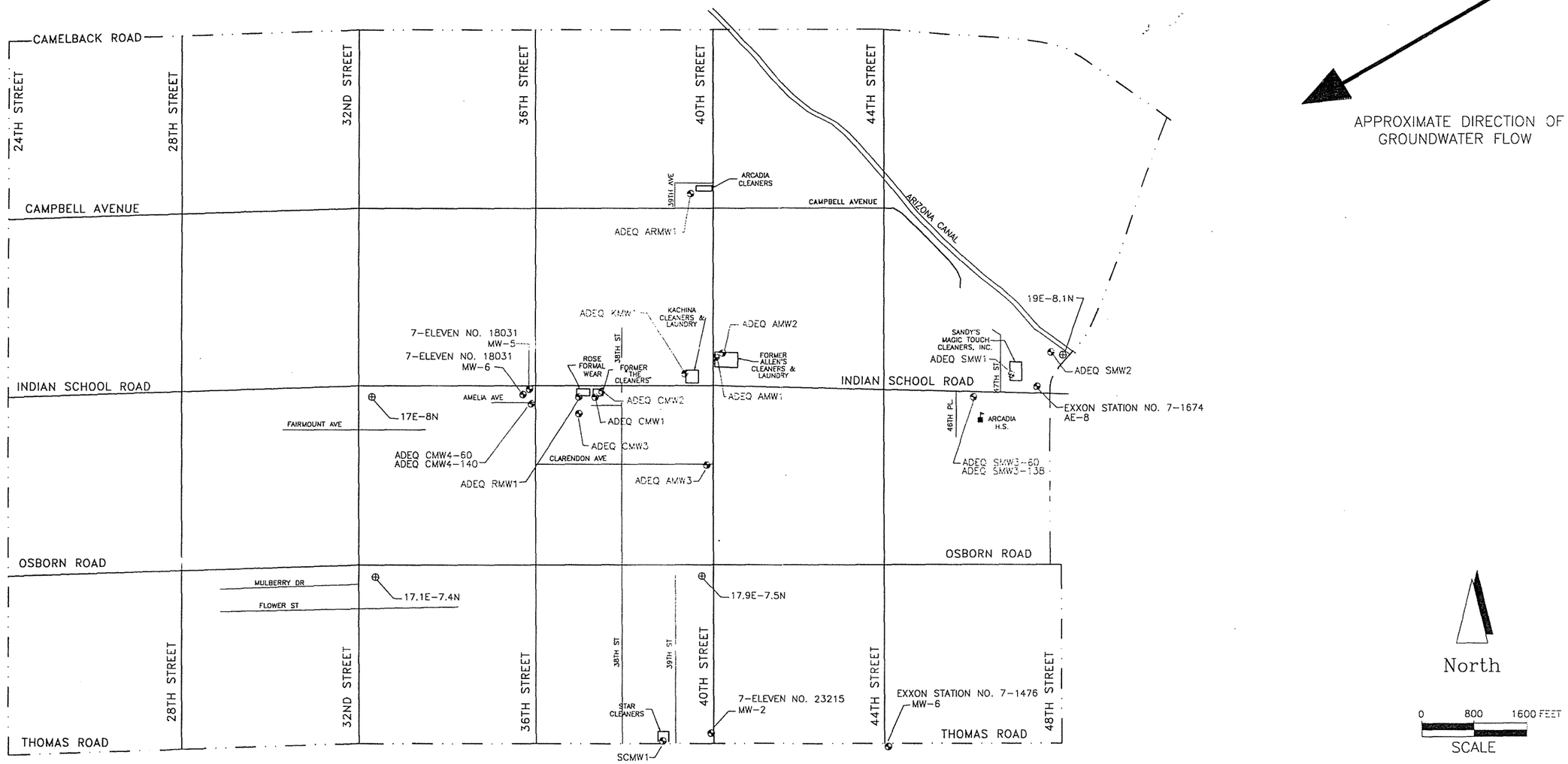
WATER QUALITY DATA
EAST CENTRAL PHOENIX AREA
1983–1987

Figure 2–2

10–88

DRAFT - SUBJECT TO REVIEW

FSDEQP002412



LEGEND

- EAST CENTRAL PHOENIX PROJECT AREA BOUNDARY
- APPROXIMATE BOUNDARY OF FACILITY UNDER INVESTIGATION THROUGH WQARF
- ADEQ AMW2 — EAST CENTRAL PHOENIX WQARF MONITOR WELL LOCATION AND IDENTIFICATION CMW4 AND SMW3 DUAL-COMPLETION WELLS WITH INTERVALS AS INDICATED
- EXXON CO. USA AE-8 — OTHER MONITOR WELL LOCATION AND IDENTIFICATION
- 17.1E-7.4N — SALT RIVER PROJECT (SRP) WELL AND IDENTIFICATION

EARTH TECH

PROJECT NO. 95-6121
ADEQ
TA-95-ET-50

FACILITY AND WELL LOCATION MAP
EAST CENTRAL PHOENIX WQARF PROJECT AREA

3/95

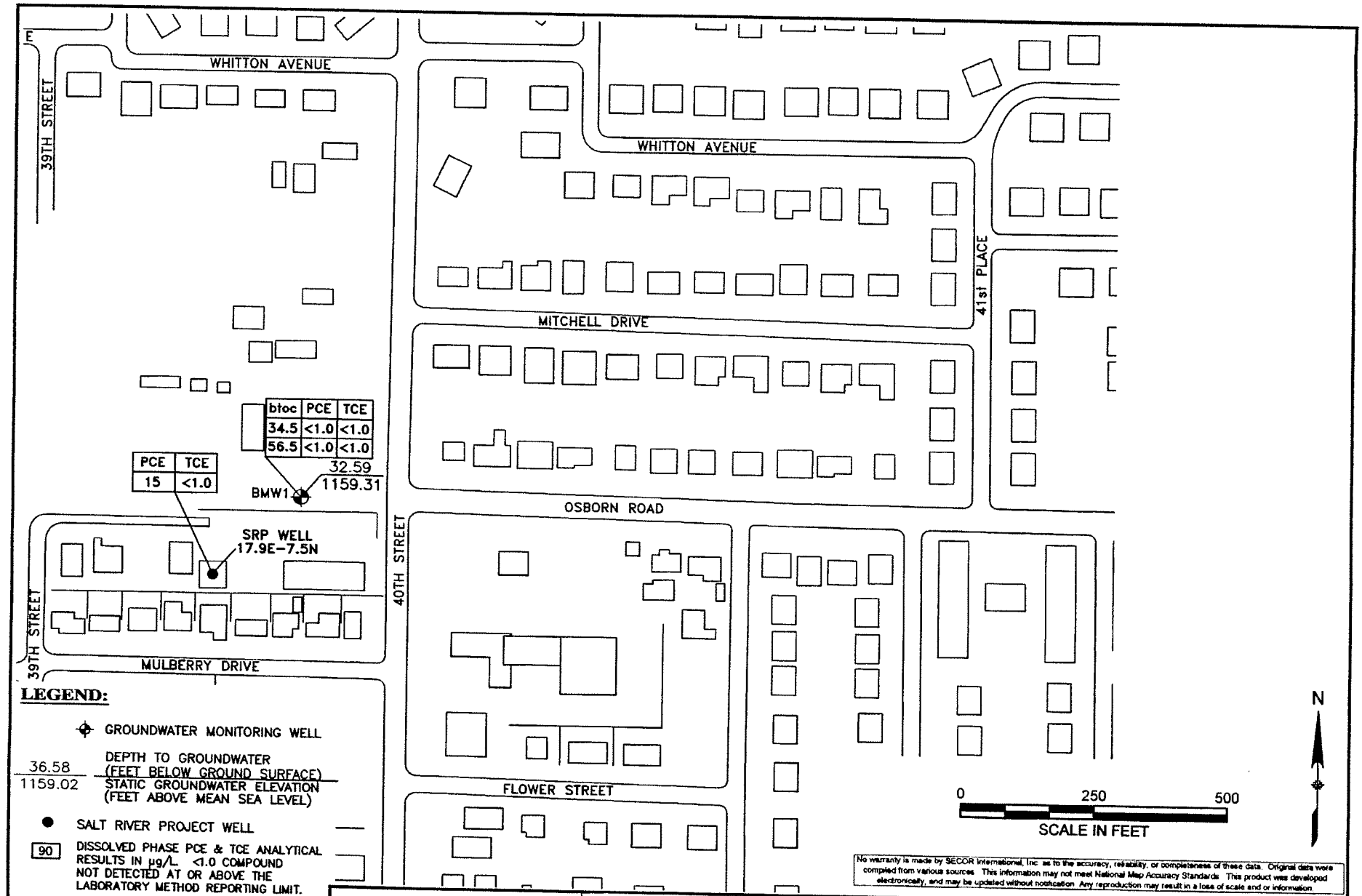
FIGURE 1-1

Plot Scale: 1=1600'

File Name: C:\ET\95\121\0108\BASEMAP.DWG

Last Date Revised: 3-20-95

FSDEQP002906



LEGEND:

GROUNDWATER MONITORING WELL

36.58 / 1159.02 — DEPTH TO GROUNDWATER (FEET BELOW GROUND SURFACE) / STATIC GROUNDWATER ELEVATION (FEET ABOVE MEAN SEA LEVEL)

SALT RIVER PROJECT WELL

90 — DISSOLVED PHASE PCE & TCE ANALYTICAL RESULTS IN µg/L. <1.0 COMPOUND NOT DETECTED AT OR ABOVE THE LABORATORY METHOD REPORTING LIMIT.

btoc = FEET BELOW TOP OF WELL CASING AT WHICH PDBS WAS SET

PCE = TETRACHLOROETHENE

TCE = TRICHLOROETHENE

µg/L = MICROGRAMS PER LITER OR PARTS PER BILLION

No warranty is made by SECOR International, Inc. as to the accuracy, reliability, or completeness of these data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed electronically, and may be updated without notification. Any reproduction may result in a loss of scale and or information.

SECOR
1403 West 10th Place, Suite B-107
Tempe, Arizona 85281
PHONE: 480-804-1420 FAX: 480-804-1482

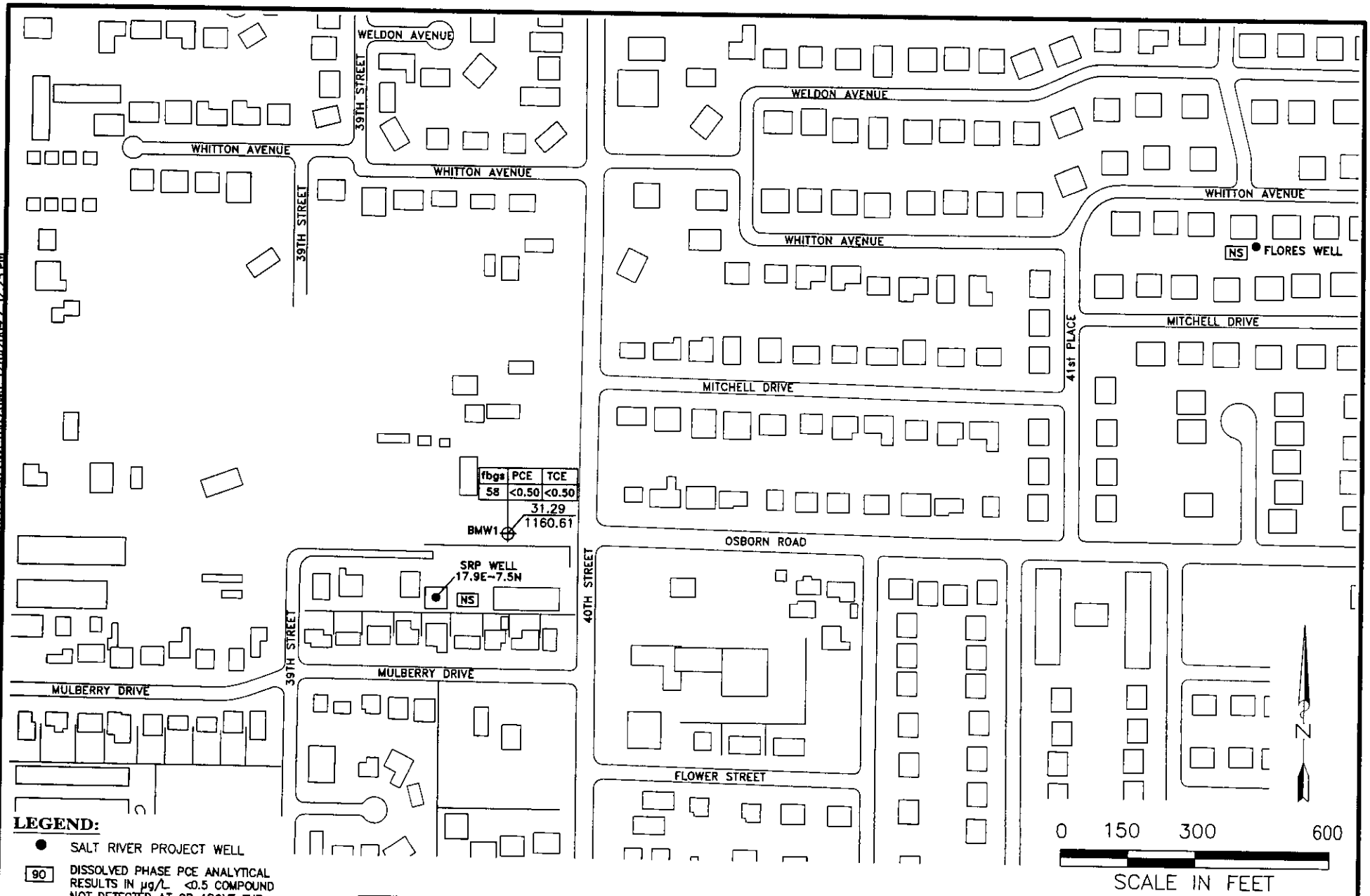
FOR: 40th STREET & OSBORN ROAD WQARF SITE PHOENIX, ARIZONA

GROUNDWATER CONDITIONS MAP FALL 2007

FIGURE: 2

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
18OT.20421.08	KJG	RP	TAK	3/24/2008

FILEPATH:I:\ASRAC\East Central Phoenix\40th St & Osborn Road (20421)\4.3 Maps\2042101 GWCONDITIONS FALL07.dwg|kganning|Mar 26, 2008 at 11:11|Layout: Figure2



LEGEND:

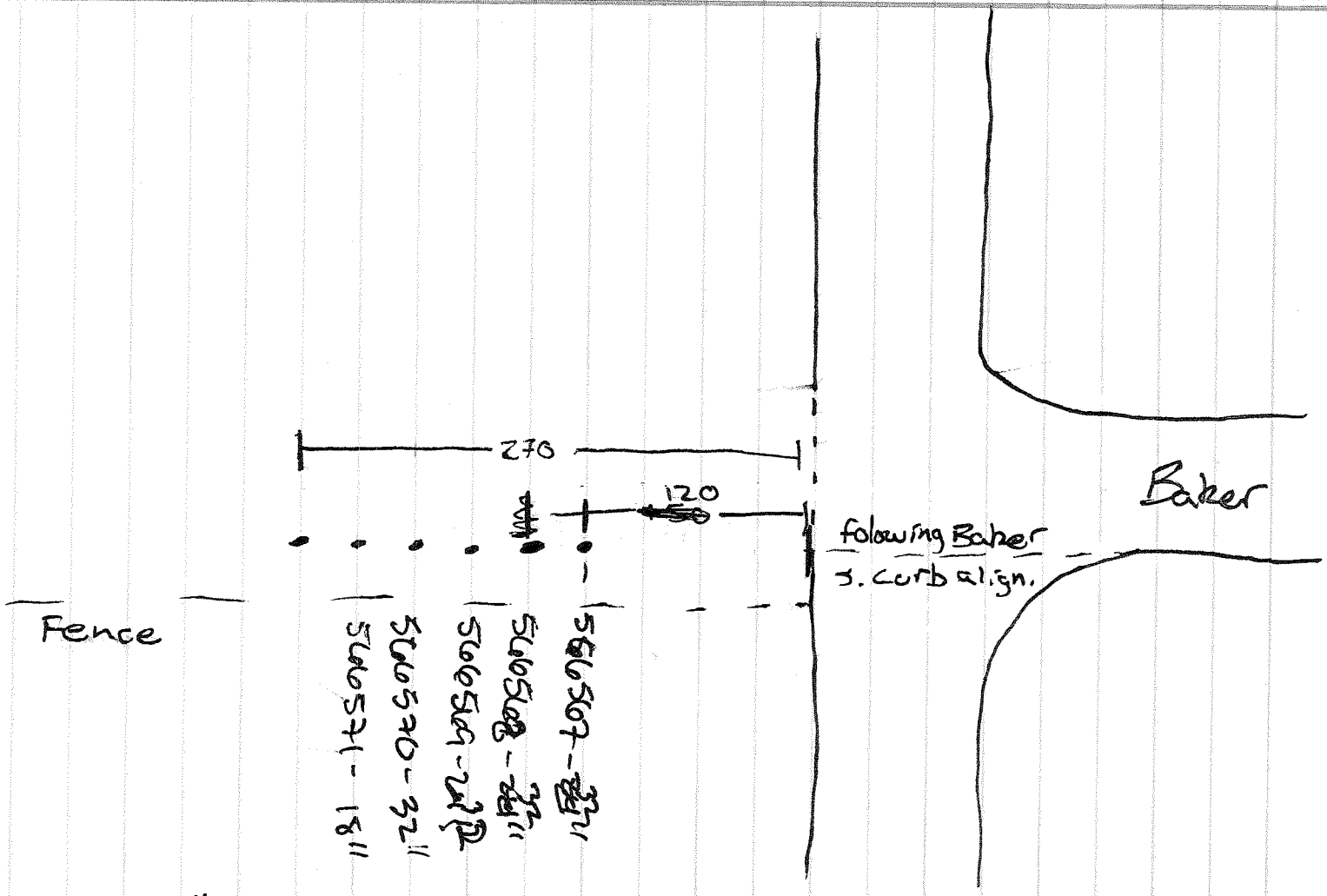
- ● SALT RIVER PROJECT WELL
- [90] DISSOLVED PHASE PCE ANALYTICAL RESULTS IN µg/L. <0.5 COMPOUND NOT DETECTED AT OR ABOVE THE LABORATORY METHOD DETECTION LIMIT.
- PCE = TETRACHLOROETHENE
- TCE = TRICHLOROETHENE
- µg/L = MICROGRAMS PER LITER OR PARTS PER BILLION
- [NS] NOT SAMPLED

SECOR INTERNATIONAL INCORPORATED
1403 WEST 10th PLACE, SUITE B-107
TEMPE, ARIZONA 85281

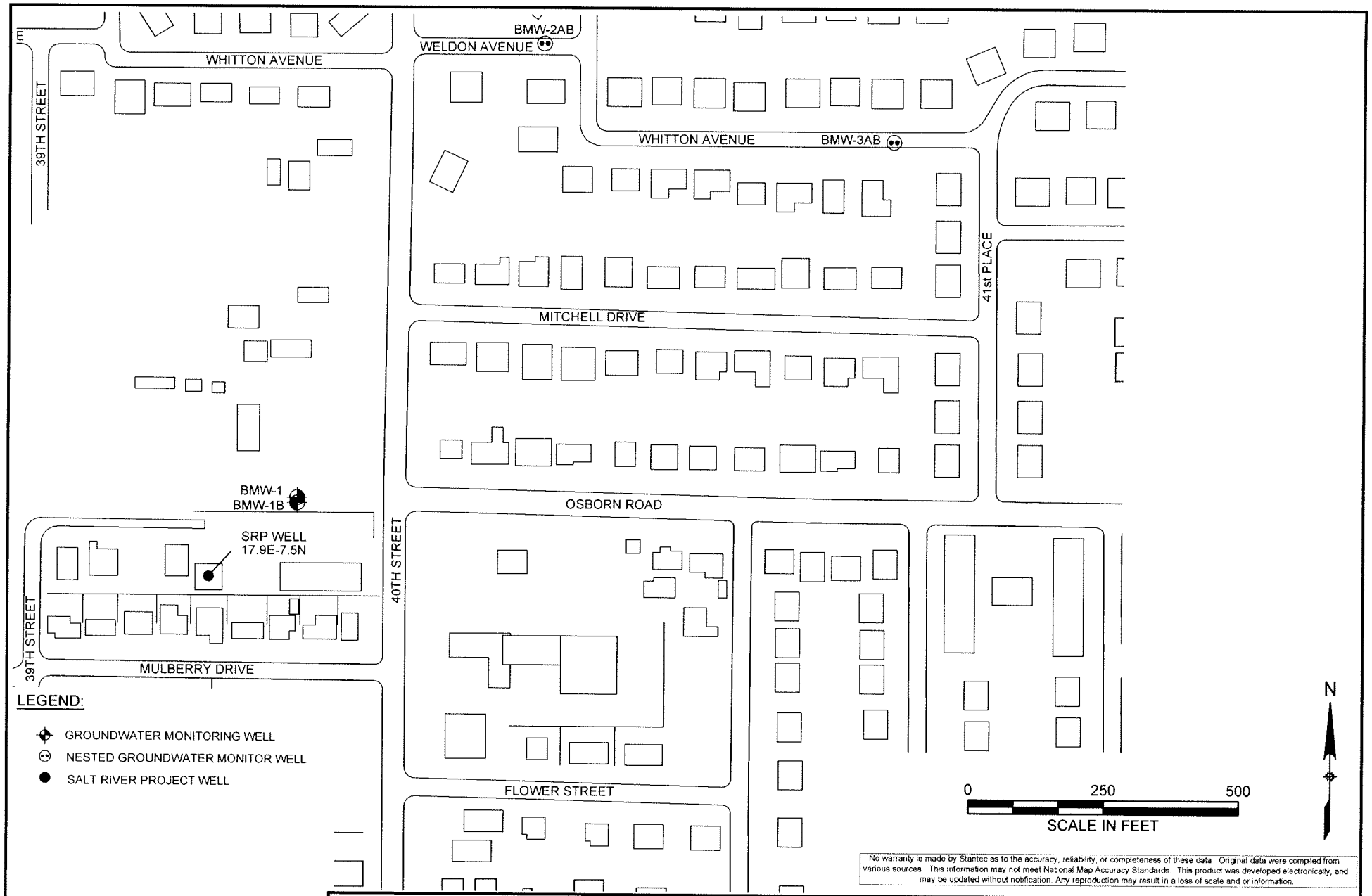
GROUNDWATER CONDITIONS MAP
09/27/04 & 10/12/04
40th STREET & OSBORN ROAD
WQARF SITE
PHOENIX, ARIZONA

FIGURE: 1
DATE: 11/22/04
PROJECT NO: 18OT.20413.50

I:\ASBAC\20406 - 20413 (ASBAC - ECP)\ECP Archive\40th St & Osborn WQARF Site\dwg\20413 50 GWC1004.dwg, 12/6/2004 2:52:25 PM



Ø: from fence along 40th St. Start survey probes 120' W. of Ø.



No warranty is made by Stantec as to the accuracy, reliability, or completeness of these data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed electronically, and may be updated without notification. Any reproduction may result in a loss of scale and or information.

Stantec
8211 S. 48th Street
Phoenix, AZ 85044
PHONE: 602-438-2200 FAX: 602-431-9562

FOR:			FIGURE:
40th STREET & OSBORN ROAD WQARF SITE PHOENIX, ARIZONA		SITE MAP	1

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
18OT.20421.09	KJG	TAK	TAK	1/22/2009

FILEPATH:I:\ASRAC\East Central Phoenix\40th St & Osborn Road (20421)\4.3 Maps\2042101_SP.dwg|kganning|Jan 22, 2009 at 9:45|Layout: Figure2

APPENDIX C

BORING LOGS

APPENDIX C

BORING LOGS

TABLE OF CONTENTS

HISTORICAL LOGS

Baseline Data: SRP Well 17.9E-7.5N 07-17-92

Groundwater Monitoring Well BMW-1B As-Bui8lt Construction Diagram (Stantec, 01-22-09)

BMW-2 Boring Log Secor April 2008

Groundwater Monitoring Well BMW-2AB As-Built Construction Diagram (Stantec, 09-18-08)

BMW-3AB Boring Log Secor May 2008

Groundwater Monitoring Well BMW-3AB As-Built Construction Diagram (Stantec, 09-18-08)

HARGIS LOGS

Lithologic and well construction log: BMW-04A, January 2014

Lithologic and well construction log: BMW-04B, January 2014

Lithologic and well construction log: BMW-05A, January 2014

Lithologic and well construction log: BMW-05B, January 2014

Lithologic and well construction log: BMW-06A, January 2014

Lithologic and well construction log: BMW-06B, January 2014

Lithologic and well construction log: BMW-07A, December 2013

Lithologic and well construction log: BMW-07B, December 2013

SRP 17.9E-7.5N
(40th & Osborn)

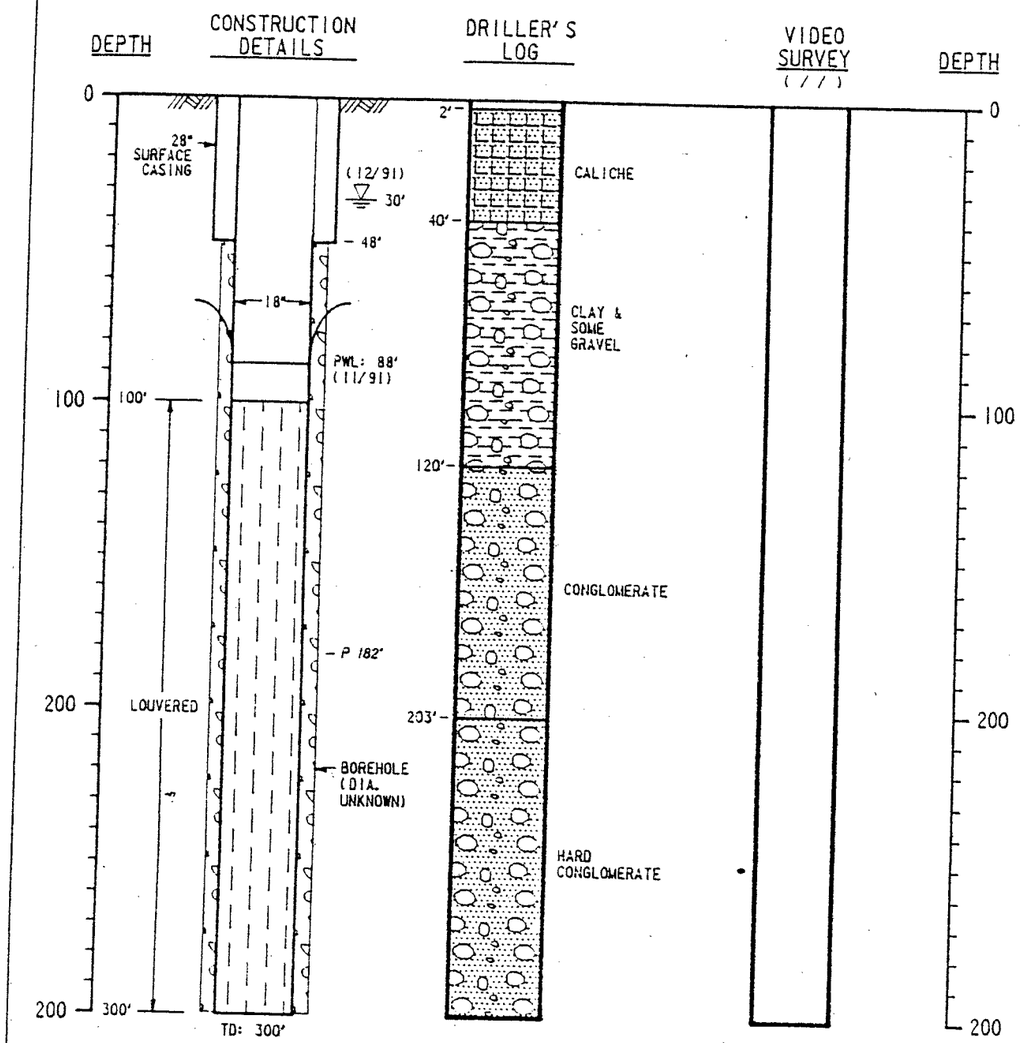
40th St & Osborn

WEST SIDE OF CHURCH –

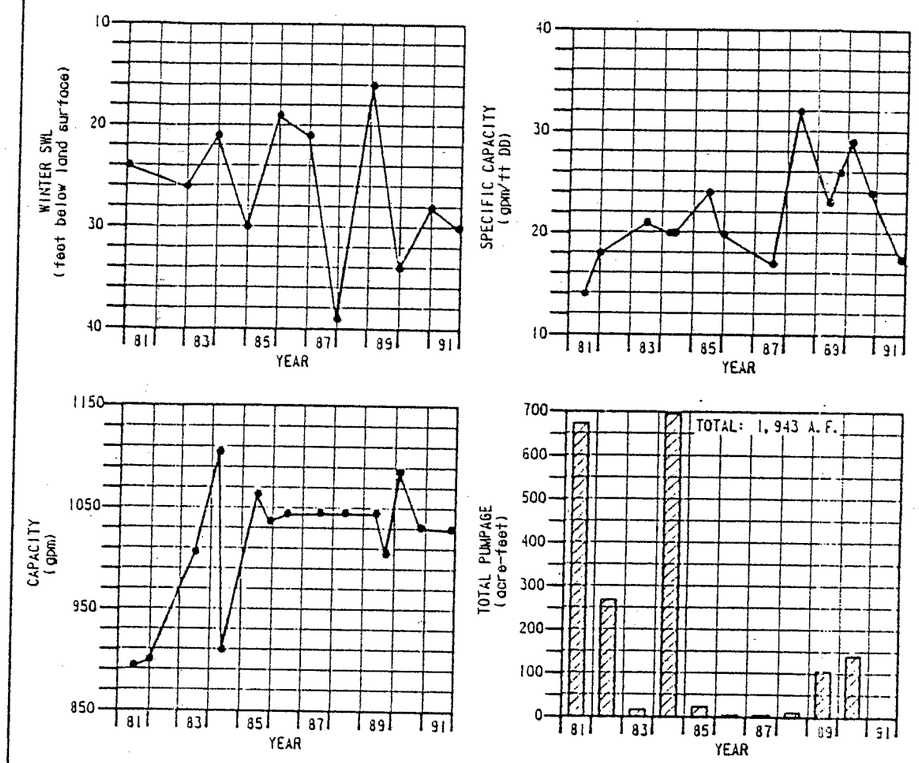
BASELINE DATA: SRP WELL 17.9E-7.5N

REASON WELL REMOVED FROM SERVICE: VOC CONTAMINATION

PHYSICAL WELL DATA



WATER QUANTITY DATA



MISC. DATA

DRILLED: 5-1965

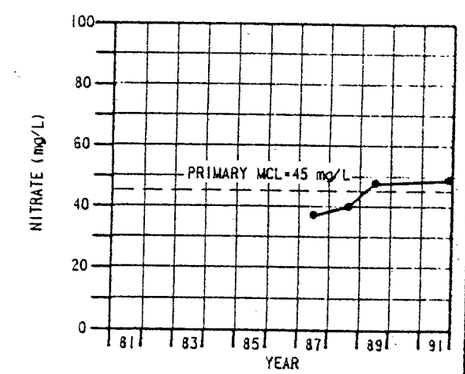
DRILLING METHOD: CABLE TOOL

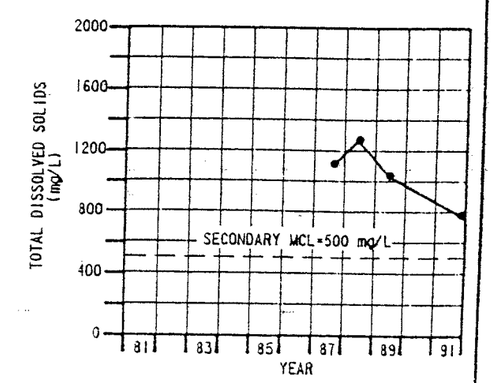
TRANSMISSIVITY: N/A

GAP SEQ NO: 83

COMMENTS: 67 TONS GRAVEL INSTALLED IN THE WELL

* NOTE FILTER PACK GRAVEL FROM 48 to 300 FBG

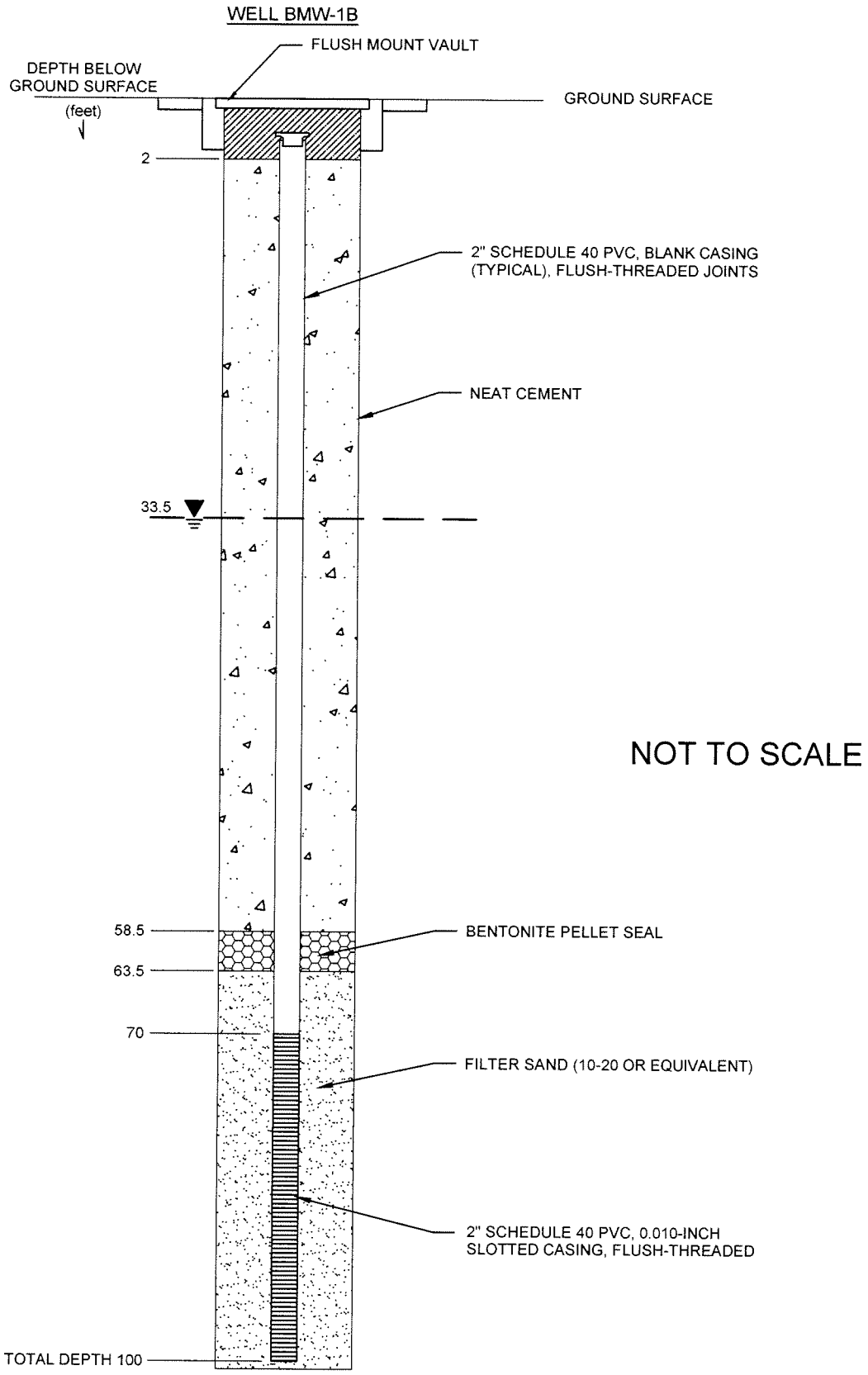




WATER QUALITY DATA

ORGANICS	7/83	8/84	7/85	8/87	6/88	6/89	11/91	STANDARD
1,1,1-TRICHLOROETHANE (TCA). . ug/L	ND	ND	ND	ND	ND	<0.5	<0.5	200.0 (MCL)
TRICHLOROETHENE (TCE). . . . . ug/L	0.5	ND	ND	ND	ND	<0.5	<0.5	5.0 (MCL)
TETRACHLOROETHYLENE (PCE). . . ug/L	53.0	25.9	43.5	17.9	66.0	81.5	55.0	5.0 (MCL)
CHLOROFORM . . . . . ug/L	—	—	—	ND	<0.5	<0.5	<0.5	100.0 (MCL)
DIBROMOCHLOROPROPANE (DBCP). . ug/L	—	—	—	—	—	<0.02	<0.005	0.2 (MCL)
ETHYLENE DIBROMIDE (EDB). . . ug/L	—	—	—	—	—	<0.005	<0.005	0.05 (MCL)
TRACE METALS								
ARSENIC (As). . . . . ug/L	—	—	—	—	—	15.0	14.0	50.0 (MCL)
BARIUM (Ba). . . . . ug/L	—	—	—	—	—	27.0	26.0	1000 (MCL)
CADMIUM (Cd). . . . . ug/L	—	—	—	—	—	<0.2	<0.2	5.0 (MCL)
CHROMIUM (Cr). . . . . ug/L	—	—	—	—	—	19.0	28.0	100.0 (MCL)
LEAD (Pb). . . . . ug/L	—	—	—	—	—	<2.0	<2.0	15.0 (MCL)
MERCURY (Hg). . . . . ug/L	—	—	—	—	—	<0.2	0.3	2.0 (MCL)
SELENIUM (Se). . . . . ug/L	—	—	—	—	—	4.0	6.0	50.0 (MCL)
SILVER (Ag). . . . . ug/L	—	—	—	—	—	<1.0	<1.0	50.0 (MCL)

7/17/92 AA107C.DGN



Stantec
8211 S. 48th Street
Phoenix, Arizona 85044
PHONE: 602-438-2200 FAX: 602-431-9562

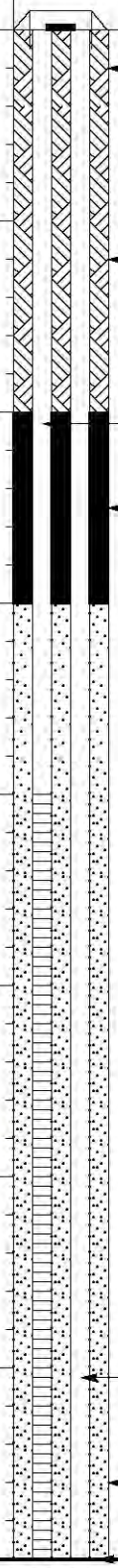
FOR:			FIGURE:
40TH STREET AND OSBORN ROAD WQARF SITE PHOENIX, ARIZONA		GROUNDWATER MONITORING WELL BMW-1B AS-BUILT CONSTRUCTION DIAGRAM	2
JOB NUMBER: 18OT.20421.09	DRAWN BY: KJG	CHECKED BY: RP	APPROVED BY: TAK	DATE: 1/22/2009

FILEPATH:I:\ASRAC\East Central Phoenix\40th St & Osborn Road (20421)\4.3 Maps\GWM, BMW-1B AS-BUILT.dwg|kganning|Jan 22, 2009 at 9:45|Layout: Figure 3

PROJECT: 40th Street and Osborn Road WQARF Site	WELL / PROBEHOLE / BOREHOLE NO: **BMW-2** PAGE 1 OF 3
LOCATION: Weldon and 42nd Street	SECOR
PROJECT NUMBER: 18OT.20421.08	
DRILLING: STARTED 4/14/08 COMPLETED: 4/18/08	NORTHING (ft): EASTING (ft):
INSTALLATION: STARTED 4/14/08 COMPLETED: 4/18/08	LATITUDE: LONGITUDE:
DRILLING COMPANY: Boart/LongYear	GROUND ELEV (ft): TOC ELEV (ft):
DRILLING EQUIPMENT: Sonic Rig 1513	INITIAL DTW (ft): 29 4/15/08 BOREHOLE DEPTH (ft): 100.0
DRILLING METHOD: Sonic 6" x 10" core	STATIC DTW (ft): WELL DEPTH (ft): 100.0
SAMPLING EQUIPMENT: Simulprobe	WELL CASING DIAMETER (in): 2" BOREHOLE DIAMETER (in): 10"
	LOGGED BY: PMP CHECKED BY:

Time & Depth (feet)	USCS	Description	Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)
1432	SM	**SILTY SAND**; SM; 5 YR 5/6 yellowish red; medium dense; moist; no odor; no staining; poorly graded; Approximately 60% sand 40% silt, trace clay.					
5 / 1500			1503 BMW-2@ 5-10'			0.4	5
		Loose; subangular; well graded; Approximately trace gravel (<1/4"), 60% sand, 30% silt 10% clay.	1515 BMW-2@ 7.5-12.5'			2.1	10
15	SM	SM; dense; dry; Approximately 5% gravel (<1/4"), 45% sand, 40% silt, and 10% clay.					15
1623 20			1530 BMW-2@ 17.5-22.5'			1.6	20
			1623 BMW-2@ 20-25'			0.8	
1627 25	SC	**CLAYEY SAND**; SC; moist; subrounded; Approximately 10% gravel (<1/2"), 20% sand, 60% silt 10% clay.					25
		10 YR 5/8 yellowish brown; hard; dry; Approximately 6" crust of caliche.	1627 BMW-2@ 25-30'			1.3	
1649 30	CL	**CLAY WITH SAND**; CL; low plasticity; hard; saturated; subangular; Approximately trace gravel (<1/4"), 20% sand, 60% silt, and 20% clay.					30
	SC	Moist lense	1649 BMW-2@ 30-35'			4.8	
		CLAYEY SAND; SC; saturated; Approximately 5% gravel (<1/2"), 15% sand, 60% silt, and 20% clay.					
0817 35		5YR 4/4 reddish brown; saturated					35
		Moist lense					
		Moist lense	0817 BMW-2@ 35-40'			20.4	

Well Construction

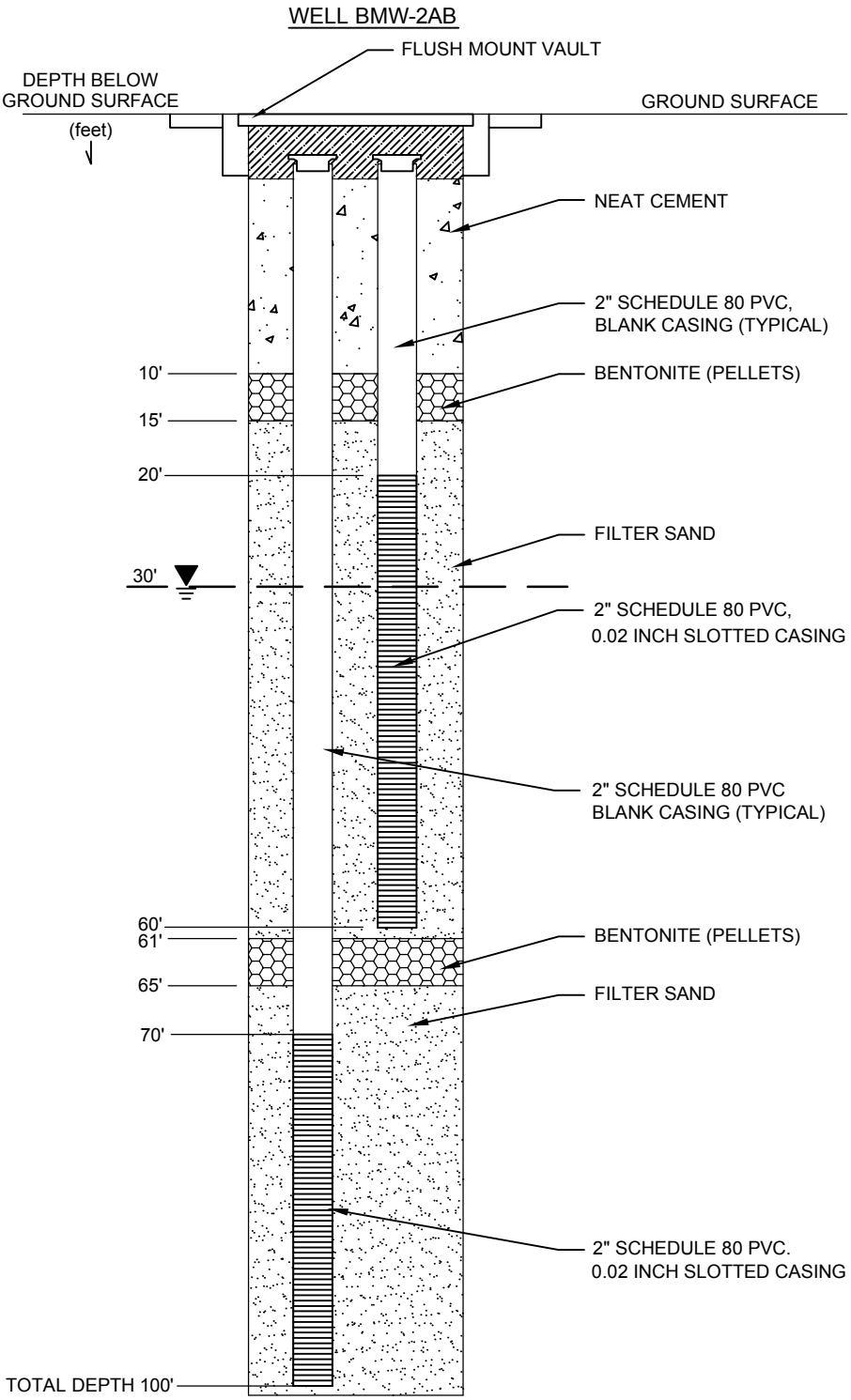


PROJECT: 40th Street and Osborn Road WQARF Site	WELL / PROBEHOLE / BOREHOLE NO: **BMW-2** PAGE 2 OF 3
LOCATION: Weldon and 42nd Street	SECOR
PROJECT NUMBER: 18OT.20421.08	
DRILLING: STARTED 4/14/08 COMPLETED: 4/18/08	NORTHING (ft): EASTING (ft):
INSTALLATION: STARTED 4/14/08 COMPLETED: 4/18/08	LATITUDE: LONGITUDE:
DRILLING COMPANY: Boart/LongYear	GROUND ELEV (ft): TOC ELEV (ft):
DRILLING EQUIPMENT: Sonic Rig 1513	INITIAL DTW (ft): 29 4/15/08 BOREHOLE DEPTH (ft): 100.0
DRILLING METHOD: Sonic 6" x 10" core	STATIC DTW (ft): WELL DEPTH (ft): 100.0
SAMPLING EQUIPMENT: Simulprobe	WELL CASING DIAMETER (in): 2" BOREHOLE DIAMETER (in): 10"
	LOGGED BY: PMP CHECKED BY:

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)	Well Construction
0917		ML	**SILT WITH SAND AND CLAY**; ML; 2.5 YR 6/4 light reddish brown; hard; moist; Approximately 10% gravel (<1/4"), 10% sand, 70% silt and 10% clay.		0917 BMW-2@ 40-45'			10.5		
			SANDY SILT; subrounded; Approximately trace gravel (<1/4"), 20% sand, 70% silt, 10% clay.							
0923 45									45	2" Sch. 80 PVC 0.020" slotted screen
0950 50			**SANDY SILT**; saturated; Approximately 5% gravel (<1/4"), 20% sand, 65% silt, 10% clay.		0950 BMW-2@ 50-55'	50		12.6	50	
1108 55					1108 BMW-2@ 55-60'			393	55	
1130 60						10			60	
		GC	**CLAYEY GRAVEL WITH SILT AND SAND**; GC; 5YR 4/4 reddish brown; medium plasticity; saturated; Approximately 30% gravel (<1/2"), 20% sand, 20% silt and 30% clay.		1130 BMW-2@ 60-65'			211		1/4" coated TR30 bentonite pellets
	65					5			65	
1655 70		SC	**CLAYEY SAND**; SC; saturated; Approximately 10% gravel (<1/4"), 60% sand, 10% silt, 20% clay.			5			70	
			CLAYEY SAND WITH GRAVEL; saturated; Approximately 5% gravel (<1/4"), 70% sand, 5% silt, 20% clay.		0725 BMW-2@ 70-75'			0.9		
0901 75		ML	**SANDY CLAY**; ML; hard; moist; Approximately 5% gravel (<1/4"), 20% sand, 70% silt; 10% clay.						75	
			SAND WITH CLAY; saturated; Approximately 5% gravel (<1/2"), 75% coarse sand, 20% clay/silt. Matrix is clast supported.		0902 BMW-2@ 75-80'			1.3		

PROJECT: 40th Street and Osborn Road WQARF Site	WELL / PROBEHOLE / BOREHOLE NO: **BMW-2** PAGE 3 OF 3
LOCATION: Weldon and 42nd Street	SECOR
PROJECT NUMBER: 18OT.20421.08	
DRILLING: STARTED 4/14/08 COMPLETED: 4/18/08	NORTHING (ft): EASTING (ft):
INSTALLATION: STARTED 4/14/08 COMPLETED: 4/18/08	LATITUDE: LONGITUDE:
DRILLING COMPANY: Boart/LongYear	GROUND ELEV (ft): TOC ELEV (ft):
DRILLING EQUIPMENT: Sonic Rig 1513	INITIAL DTW (ft): 29 4/15/08 BOREHOLE DEPTH (ft): 100.0
DRILLING METHOD: Sonic 6" x 10" core	STATIC DTW (ft): WELL DEPTH (ft): 100.0
SAMPLING EQUIPMENT: Simulprobe	WELL CASING DIAMETER (in): 2" BOREHOLE DIAMETER (in): 10"
	LOGGED BY: PMP CHECKED BY:

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)	Well Construction
						10				
					1120 BMW-2@ 80-85'			3.9		8/12 Colorado silica sand
1140 85		SM	**SAND**; SM; saturated; Approximately 5% gravel (<1/4"), 75% sand, 15% silt, 5% clay.						85	2" Sch. 80 PVC 0.020" slotted screen
					1140 BMW-2@ 85-90'			3.5		
1150 90		SC	**CLAYEY SAND**; SC; saturated; subangular; Approximately trace gravel (<1/4"), 50% sand, 20% silt 30% clay.			10			90	
					1150 BMW-2@ 90-95'			1.5		
1320 95			**SAND WITH CLAY**; moist; subrounded; Approximately 5% gravel (<1/4"), 75% sand, 20% clay/ silt.						95	
					1320 BMW-2@ 95-100'			2.7		
1356 100			**CLAYEY SAND**; hard; moist; Approximately 5% gravel (<1/4"), 35% sand, 10% silt, 50% clay. Hole terminated at 101.5 feet.			10			100	
					1356 BMW-2@ 100-105'			2.7		
105									105	
110									110	
115									115	



NOT TO SCALE

No warranty is made by Stantec as to the accuracy, reliability, or completeness of these data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed electronically, anc may be updated without notification. Any reproduction may result in a loss of scale and or information.

Stantec
8211 S. 48th Street
Phoenix, AZ 85044
PHONE: 602-438-2200 FAX: 602-431-9562

FOR:	GROUNDWATER MONITORING WELL BMW-2AB AS-BUILT CONSTRUCTION DIAGRAM	FIGURE:
40TH STREET AND OSBORN ROAD WQARF SITE PHOENIX, ARIZONA		2

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
18OT.20421.08	KJG	RP	TAK	9/18/2008

PROJECT:	40th St & Osborn WQARF Site	WELL / PROBEHOLE / BOREHOLE NO:	**BMW-3AB** PAGE 1 OF 3
LOCATION:	Whitton Street & 42nd Street		SECOR
PROJECT NUMBER:	18OT.20421.08		
DRILLING:	STARTED 5/12/08 COMPLETED: 5/15/08	NORTHING (ft):	EASTING (ft):
INSTALLATION:	STARTED 5/15/08 COMPLETED: 5/16/08	LATITUDE:	LONGITUDE:
DRILLING COMPANY:	Geomechanics Southwest, Inc	GROUND ELEV (ft):	TOC ELEV (ft):
DRILLING EQUIPMENT:	CME-95	INITIAL DTW (ft): 33 5/12/08	BOREHOLE DEPTH (ft): 101.0
DRILLING METHOD:	Hollow-Stem Auger	STATIC DTW (ft):	WELL DEPTH (ft): 100/60
SAMPLING EQUIPMENT:	Split-Barrel/Continuous Core	WELL CASING DIAMETER (in): 2/2	BOREHOLE DIAMETER (in): 10
		LOGGED BY: CRP/MLN	CHECKED BY: C. Pollock

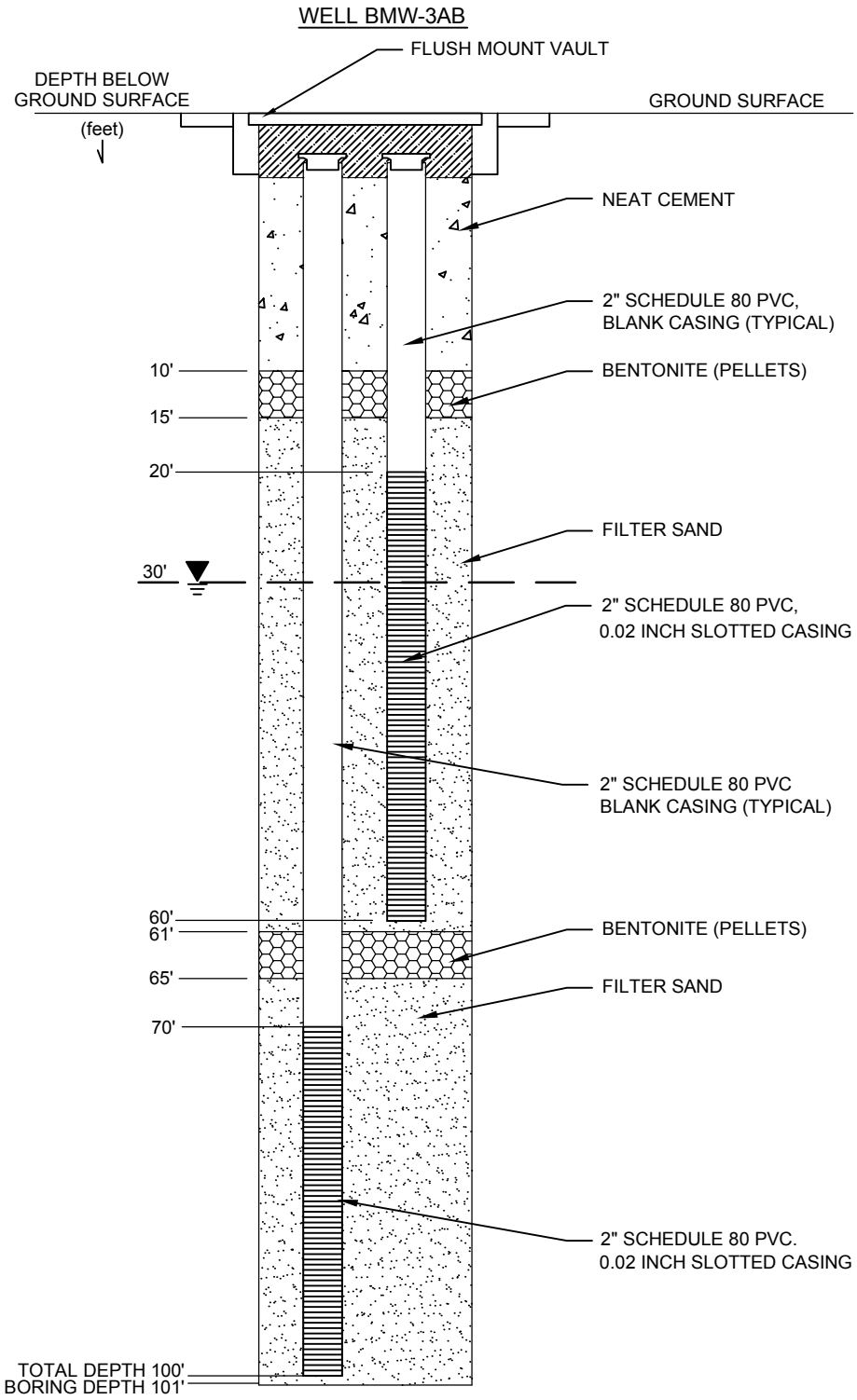
Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)	Well Construction
			Asphalt-5-inches							concrete
		SM	**SILTY SAND**; SM; 5YR 5/4 reddish brown; fine to medium-grained; medium dense; dry; no odor; no staining							
5			Airknifed to 5 feet. Lithology described from visual observation and cuttings		0850 ---	1.0	8 12 12		5	neat cementgrout
10		SM	**SAND WITH SILT**; SM; 5YR 6/6 light reddish brown; fine to medium-grained; dense; dry; no odor; no staining		0900 ---	1.1	7 23 24		10	2-inch Sch. 80 PVC blank casing; 1/4-inch uncoated bentonite pellets
15		SC	**CLAYEY SAND**; SC; 5YR 6/4 light reddish brown; fine to medium-grained; dense; dry; no odor; no staining; Approx. 35% clay, 60% sand, 5% fine gravel		0910 ---	1.2	8 20 17		15	
			5YR 5/4 reddish brown; dense; dry; no odor; no staining; few fine subangular gravel							
20			Approx. 40% clay, 55% sand, 5% fine gravel		0920 ---	1.1	12 15 16		20	2-inch Sch. 80 PVC blank casing
					0940 ---	3.5	NR			
25		CL	**SANDY CLAY**; CL; 5YR 5/4 reddish brown; hard; dry; no odor; no staining; Approx. 65% clay, 35% very fine to fine sand						25	
			Moist		1010 ---	5.0	NR			
30			5YR 6/4 light reddish brown; gradational contact						30	2-inch Sch. 80 PVC 0.020-inch slotted casing
		SC	**CLAYEY SAND**; SC; 5YR 5/4 reddish brown; medium dense; moist; Approx. 65% sand, 30% clay, 5% gravel		1040 ---	4.0	NR			
		SW	**SAND**; SW; 5YR 4/4 reddish brown; fine to coarse-grained; medium dense; wet; well graded; Trace clay							
		CL								
35			**SANDY CLAY**; CL; 5YR 5/4 reddish brown; hard; moist; no odor; no staining; Approx. 65% clay, 35% very fine to fine sand						35	
			Wet; Approx. 55% clay, 40% sand, 5% fine gravel; from 36 ft		1055 ---	5.0	NR			8-12 silica sand
		SP	**SAND**; SP; 5YR4/4 reddish brown; fine to coarse-grained; medium dense; wet; poorly							

PROJECT:	40th St & Osborn WQARF Site	WELL / PROBEHOLE / BOREHOLE NO:	**BMW-3AB** PAGE 2 OF 3
LOCATION:	Whitton Street & 42nd Street		SECOR
PROJECT NUMBER:	18OT.20421.08		
DRILLING:	STARTED 5/12/08 COMPLETED: 5/15/08	NORTHING (ft):	EASTING (ft):
INSTALLATION:	STARTED 5/15/08 COMPLETED: 5/16/08	LATITUDE:	LONGITUDE:
DRILLING COMPANY:	Geomechanics Southwest, Inc	GROUND ELEV (ft):	TOC ELEV (ft):
DRILLING EQUIPMENT:	CME-95	INITIAL DTW (ft): 33 5/12/08	BOREHOLE DEPTH (ft): 101.0
DRILLING METHOD:	Hollow-Stem Auger	STATIC DTW (ft):	WELL DEPTH (ft): 100/60
SAMPLING EQUIPMENT:	Split-Barrel/Continuous Core	WELL CASING DIAMETER (in): 2/2	BOREHOLE DIAMETER (in): 10
		LOGGED BY: CRP/MLN	CHECKED BY: C. Pollock

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)	Well Construction
		SP	graded; Approx. 10% fine gravel							
		CL	**CLAY WITH SAND**; CL; 5YR 6/4 light reddish brown; fine to medium-grained; very stiff; moist; Approx. 50% clay, 40% sand, 10% fine gravel		1130 ---	5.0	NR			
45		SC	**CLAYEY SAND**; SC; 5YR 5/4 reddish brown; fine to medium-grained; medium dense; wet; Trace fine gravel						45	2-inch Sch. 80 PVC 0.020-inch slotted casing
		CL	**SANDY CLAY**; CL; 5YR 6/4 light reddish brown; fine to medium-grained; very stiff; wet; Approx. 5% fine gravel		1155 ---	5.0	NR			
					1350 BMW3-TOC1-49					
50		SC	**CLAYEY SAND**; SC; 5YR 5/4 reddish brown; fine to medium-grained; medium dense; moist; Trace fine gravel		1330 BMW3-GW1-52	3.0	8 16 19 27, 34, 36		50	8-12 silica sand
		CL	**CLAY WITH SAND**; CL; 5YR 5/4 reddish brown; fine to medium-grained; hard; moist; Approx. 70% clay, 25% sand, 5% gravel		1400 ---	2.0	NR			
55		SW	**SAND**; SW; 5YR 5/4 reddish brown; fine to coarse-grained; medium dense; wet; well graded; Approx. 85% sand, 15% fine to coarse gravel		1430 ---	5.0	NR		55	2-inch Sch. 80 PVC blank casing
60		CL	**SANDY CLAY**; CL; 5YR 6/4 light reddish brown; fine to medium-grained; stiff; moist		No Sample ---	3.0	12 14 19 23, 21, 38		60	
		GW	**GRAVEL**; GW; 5YR 5/4 reddish brown; fine to coarse-grained; very dense; wet; Approx. 35% medium to very coarse sand		1540 ---	2.0	NR			1/4-inch TR30 coated bentonite pellets
65		SP	**SAND**; SP; 5YR 5/4 reddish brown; fine to coarse-grained; very dense; wet; poorly graded		1615 BMW3-GW2-67	3.0	12 18 24 24, 29, 33		65	
		CL	**CLAY**; CL; 5YR 5/4 reddish brown; hard; moist; Approx. 10% fine sand		1630 ---	2.0	NR			
70			CL/SW - sluff from hydropunch, mix 40% SW, 60% clay		0815 BMW3-GW3-72	3.0	10 16 21 27, 25, 34		70	8-12 silica sand
		SW	**SAND**; SW; 5YR 5/4 reddish brown; fine to coarse-grained; dense; wet; well graded; Trace fine gravel		0825 ---	2.0	8 12 18 34			
75		CL	**SANDY CLAY**; CL; 5YR 5/4 reddish brown; fine-grained; hard; moist; Approx. 70% clay, 30% sand		0950 ---	2.0	6 21 24 16		75	2-inch Sch. 80 PVC 0.020-inch slotted casing
					1010 ---	2.0				
		SP	**SAND**; SP; 5YR 5/4 reddish brown; medium							

PROJECT:	40th St & Osborn WQARF Site	WELL / PROBEHOLE / BOREHOLE NO:	
LOCATION:	Whitton Street & 42nd Street	**BMW-3AB** PAGE 3 OF 3	SECOR
PROJECT NUMBER:	18OT.20421.08		
DRILLING:	STARTED 5/12/08 COMPLETED: 5/15/08	NORTHING (ft):	EASTING (ft):
INSTALLATION:	STARTED 5/15/08 COMPLETED: 5/16/08	LATITUDE:	LONGITUDE:
DRILLING COMPANY:	Geomechanics Southwest, Inc	GROUND ELEV (ft):	TOC ELEV (ft):
DRILLING EQUIPMENT:	CME-95	INITIAL DTW (ft): 33 5/12/08	BOREHOLE DEPTH (ft): 101.0
DRILLING METHOD:	Hollow-Stem Auger	STATIC DTW (ft):	WELL DEPTH (ft): 100/60
SAMPLING EQUIPMENT:	Split-Barrel/Continuous Core	WELL CASING DIAMETER (in): 2/2	BOREHOLE DIAMETER (in): 10
		LOGGED BY: CRP/MLN	CHECKED BY: C. Pollock

Time & Depth (feet)	Graphic Log	USCS	Description	Sample	Time Sample ID	Measured Recov. (feet)	Blow Count	Headspace PID (units)	Depth (feet)	Well Construction
		CL	to coarse-grained; very dense; wet; poorly graded; 75% sand, 25% fine gravel		1105 BMW3-GW4-80.5	1.6	10 23 40 50/2"			8-12 silica sand
			SANDY CLAY; CL; 5YR 5/4 reddish brown; fine-grained; hard; wet; Approx. 65% clay, 35% sand		1145 BMW3-TOC2-83.5	1.7	8 19 30 50/4"			
85		SC	**CLAYEY SAND**; SC; 5YR 5/4 reddish brown; fine to medium-grained; very dense; moist; Approx. 55% sand, 45% clay		1440 ---	2.0			85	2-inch Sch. 80 PVC 0.020-inch slotted casing
			Wet							
		SW	**SAND**; SW; 5YR 5/4 reddish brown; fine to coarse-grained; wet; subrounded; Approx. 85% sand, 15% fine gravel		1605 ---	1.8	20 22 28 50/5"			
90					0845 BMW3-GW5-92	2.5	11 24 25 36, 50/4"		90	
95					0930 BMW3-TOC3-95	1.5	25 38 50/5"	0.2	95	
		CL	**SANDY CLAY**; CL; 5YR 4/4 reddish brown; stiff to hard; wet; no odor; no staining; Approx. 70% clay, 30% fine to medium sand		1330 ---	1.5	16 24 50/5"	0.1		
100					1440 BMW3-GW6-101	.75	40 50/3"		100	
			Hole terminated at 101 feet.							
105									105	
110									110	
115									115	



NOT TO SCALE

No warranty is made by Stantec as to the accuracy, reliability, or completeness of these data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed electronically, anc may be updated without notification. Any reproduction may result in a loss of scale and or information.

Stantec
8211 S. 48th Street
Phoenix, AZ 85044
PHONE: 602-438-2200 FAX: 602-431-9562

FOR:
40TH STREET AND OSBORN ROAD
WQARF SITE
PHOENIX, ARIZONA

GROUNDWATER MONITORING WELL
BMW-3AB AS-BUILT
CONSTRUCTION DIAGRAM

FIGURE: 3

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
18OT.20421.08	KJG	RP	TAK	9/18/2008

East Central Phoenix Phoenix, AZ

Lithologic and well construction log: BMW-04A

Northing (ft) 905375.53
Easting (ft) 677042.20
LS Elev. (ft) 1198.91
Ref. Pnt. Top of casing
Ref. Pnt. Elev. (ft) 1198.35
Total Depth bmp (ft) 69.8
Depth to Water (ft) 32.3
Date 1/04/14 - 1/05/14

Drill Method RotoSonic
Diameter of Casing 4"
Type of Casing PVC
Slot Size 0.020"
Filter #10-20 Sand
ADWR Reg. No. 55-916200

Depth (Feet Below Land Surface)	PID/TEMP (ppm/degF)	Lithologic Log	USCS	Lithologic Description	Well Construction	Comments
0				Asphalt		Flush mounted vault
5			ML	SILT - Yellowish red (5YR5/6); 90% nonplastic fines; 10% fine to coarse subrounded sand; trace fine subrounded gravel to ¾". Dry, soft, strong reaction to HCL. Borehole air knifed to 7 feet, reported refusal in caliche.		8.625 inch diameter borehole. (0.0 - 70.0 feet bls)
10	4.0/ 82.7				4" ID Schedule 40 PVC Blank (0.58 - 30.0 feet bls)	
	2.6/ 93.0					
15	5.1/ 113.0		ML/CL	CLAYEY SILT - Dark reddish brown (10YR3/4); 90% low plastic fines; 10% fine to coarse subrounded sand. No reaction to HCl, contains clay stringers.		
	2.1/ 95.0			SILT WITH SAND - Reddish brown (5YR4/4); 85% nonplastic fines 15% fine to coarse, subrounded to rounded sand; trace rounded gravel to ½". Strong reaction to HCl, dry. At 23'; caliche stringers.	Cement Grout (1.0 - 23.5 feet bls)	
	6.0/ 92.1					
20	18.8/ 106.3		ML			
	26.6/ 92.1					
25	10.3/ 99.1				Bentonite Seal (23.5 - 27.0 feet bls)	
	7.0/ 132.8			SILT WITH GRAVEL - Dark reddish brown (5YR3/4); 75% low plastic fines; 15% fine to coarse angular to subrounded gravel to 1½"; 10% fine to coarse subrounded sand. Moderate reaction to HCl, firm, abundant biotite. At 34'; moist. At 37'; wet.		
30	10.0/ 143.7					

HARGIS + ASSOCIATES, INC

TEMP = Temperature Degrees Fahrenheit
PID = Photoionization detector
bmp = below measuring point

Lithologic and well construction log: BMW-04A

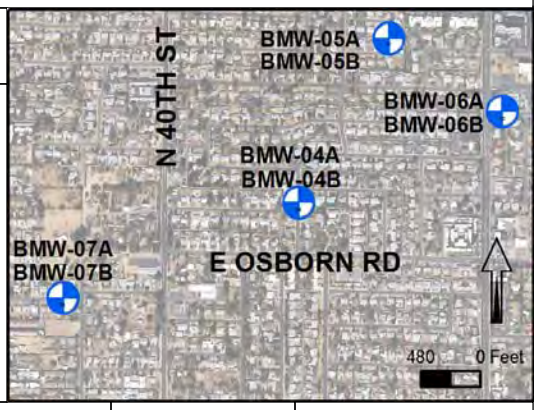
Depth (Feet Below Land Surface)	PID/TEMP (ppm/degF)	Log Lithologic	USCS	Lithologic Description	Well Construction	Comments
	10.4/ 129.3		ML			
35	24.1/ 126.1					
	0.9/ 105.2					
40	2.0/ 98.0		ML	SANDY SILT WITH GRAVEL - Reddish brown (5YR4/4); 70% nonplastic fines; 15% fine to coarse sand; 15% fine gravel to ½". Caliche stringers 40 to 42', wet.		# 10-20 Sand (27.0- 71.1 feet bls)
	1.6/ 99.8					
45	3.7/ 87.6					4" ID Schedule 40 PVC 0.020 inch Screen (30.0 - 70.0 feet bls)
	42.0/ 95.1					
50	31.1/ 85.2		SM	SILTY SAND WITH GRAVEL - Reddish brown (5YR4/4); 45% fine to coarse subangular to subrounded sand 40% nonplastic fines; 15% fine subangular to subrounded gravel to ¾". Wet.		
	19.2/ 83.4		ML	SILT - Reddish brown (2.5R4/4); 90% nonplastic fines; 10% fine, to medium sand; trace fine subrounded gravel. Weak reaction to HCl.		
55	21.7/ 84.2					
	62.2/ 106.8		ML	SILT WITH SAND - Reddish brown (5YR4/4); 75% nonplastic fines; 25% medium to coarse angular to subrounded sand. Moderate to strong reaction to HCl, dry, hard Caliche stringers 56 to 57'.		
60	69.9/ 103.2					
	25.5/ 104.7					
65	43.3/ 100.7					
	16.3/ 81.6		ML	SILT - Yellowish red (5YR4/6); 90% nonplastic fines; 10% fine to medium subrounded sand. Slight to moderate reaction to HCl.		Flush threaded end cap
	13.2/ 96.6					6 inch diameter borehole (70.0 - 71.1 feet bls)
70	5.7/ 88.8					Total depth = 71.1 feet bls

East Central Phoenix Phoenix, AZ

Lithologic and well construction log: BMW-04B

Northing (ft) 905381.42
Easting (ft) 677042.05
LS Elev. (ft) 1198.91
Ref. Pnt. Top of casing
Ref. Pnt. Elev. (ft) 1198.38
Total Depth bmp (ft) 118.6
Depth to Water (ft) 32.3
Date 1/02/14 - 1/03/14

Drill Method RotoSonic
Diameter of Casing 4"
Type of Casing PVC
Slot Size 0.020"
Filter #10-20 Sand
ADWR Reg. No. 55-916201



Depth (Feet Below Land Surface)	PID/TEMP (ppm/degF)	Lithologic Log	USCS	Lithologic Description	Well Construction	Comments
0				Asphalt		Flush mounted vault
			ML	SILT - Yellowish red (5YR5/6); 90% nonplastic fines; 10% fine to coarse subrounded sand; trace fine subrounded gravel to ¾". Dry, soft, strong reaction to HCL. Borehole air knifed to 7 feet, reported refusal in caliche.		8.625 inch diameter borehole. (0.0 - 120.0 feet bls)
5						
10	4.0/ 82.7					4" ID Schedule 40 PVC Blank (0.53 - 78.8 feet bls)
	2.6/ 93.0					
			ML/CL	CLAYEY SILT - Dark reddish brown (10YR3/4); 90% low plastic fines; 10% fine to coarse subrounded sand. No reaction to HCl, contains clay stringers.		
15	5.1/ 113.0					
	2.1/ 95.0			SILT WITH SAND - Reddish brown (5YR4/4); 85% nonplastic fines 15% fine to coarse, subrounded to rounded sand; trace rounded gravel to ½". Strong reaction to HCl, dry. At 23'; caliche stringers.		Cement Grout (1.0 - 71.6 feet bls)
	6.0/ 92.1					
20	18.8/ 106.3		ML			
	26.6/ 92.1					
25	10.3/ 99.1					

Lithologic and well construction log: BMW-04B

Depth (Feet Below Land Surface)	PID/TEMP (ppm/degF)	Log Lithologic	USCS	Lithologic Description	Well Construction	Comments
	7.0/ 132.8		ML	SILT WITH GRAVEL - Dark reddish brown (5YR3/4); 75% low plastic fines; 15% fine to coarse angular to subrounded gravel to 1½"; 10% fine to coarse subrounded sand. Moderate reaction to HCl, firm, abundant biotite. At 34'; moist. At 37'; wet.		
30	10.0/ 143.7					
	10.4/ 129.3					
35	24.1/ 126.1					
	0.9/ 105.2					
40	2.0/ 98.0		ML	SANDY SILT WITH GRAVEL - Reddish brown (5YR4/4); 70% nonplastic fines; 15% fine to coarse sand; 15% fine gravel to ½". Caliche stringers 40 to 42', wet.		
	1.6/ 99.8					
45	3.7/ 87.6					
	42.0/ 95.1					
50	31.1/ 85.2		SM	SILTY SAND WITH GRAVEL - Reddish brown (5YR4/4); 45% fine to coarse subangular to subrounded sand 40% nonplastic fines; 15% fine subangular to subrounded gravel to ¾". Wet.		
	19.2/ 83.4		ML	SILT - Reddish brown (2.5R4/4); 90% nonplastic fines; 10% fine, to medium sand; trace fine subrounded gravel. Moist, weak reaction to HCl.		
55	21.7/ 84.2					
	62.2/ 106.8			SILT WITH SAND - Reddish brown (5YR4/4); 75% nonplastic fines; 25% medium to coarse angular to subrounded sand. Moderate to strong reaction to HCl, dry, hard Caliche stringers 56 to 57'.		
60	69.9/ 103.2					

Lithologic and well construction log: BMW-04B

Depth (Feet Below Land Surface)	PID/TEMP (ppm/degF)	Log Lithologic	USCS	Lithologic Description	Well Construction	Comments
	25.5/ 104.7		ML			
65	43.3/ 100.7					
	16.3/ 81.6			SILT - Yellowish red (5YR4/6); 90% nonplastic fines; 10% fine to medium subrounded sand. Slight to moderate reaction to HCl.		
	13.2/ 96.6		ML			
70	5.7/ 88.8					
	7.3/ 96.4		ML	SILT WITH SAND - Reddish brown (5YR4/4); 75% non to low plastic fines; 25% fine to coarse subrounded to rounded sand; trace fine rounded gravel. Weak to moderate reaction to HCl. Silty sand stringer from 74 to 75'.		Bentonite Seal (71.6 - 75.4 feet bls)
75	37.3/ 101.3					
	31.2/ 91.0		ML	SILT - Yellowish red (5YR4/6); 90% nonplastic fines; 10% fine to medium subrounded sand. Moist, slight to moderate reaction to HCl.		
80	6.5/ 88.8					
85	2.6/ 91.7		ML	SANDY SILT - Reddish brown (5YR4/4); 70% non to low plastic fines; 30% fine to coarse subangular to subrounded sand; trace angular gravel to 1/2". Wet, weak reaction to HCl.		
	35.3/ 93.2		SM	SILTY SAND - reddish brown (7.5YR4/6); 65% fine to coarse, subrounded to rounded sand; 35% nonplastic fines; trace subrounded gravel to 1½". No reaction to HCl, wet.		
90	45.5/ 98.9					# 10-20 Sand (75.4- 121.7 feet bls)
	34.0/ 103.8		ML	SILT WITH SAND - Reddish brown (5YR4/4); 75% non to low plastic fines; 25% fine to coarse subrounded to rounded sand; trace fine rounded gravel. Moist, weak to moderate reaction to HCl.		
95	40.5/ 95.1					

Lithologic and well construction log: BMW-04B

Depth (Feet Below Land Surface)	PID/TEMP (ppm/degF)	Log Lithologic	USCS	Lithologic Description	Well Construction	Comments
	33.7/ 89.7		SM	SILTY SAND - reddish brown (7.5YR4/6); 65% fine to coarse, subrounded to rounded sand; 35% nonplastic fines; trace subrounded gravel to 1½". No reaction to HCl, wet.		
100	28.7/ 86.1		ML	SILT WITH SAND - Reddish brown (5YR4/4); 75% non to low plastic fines; 25% fine to coarse subrounded to rounded sand; trace fine rounded gravel. Moist, no reaction to HCl. At 100.5 to 102'; higher sand content, 5% fine subangular gravel, moderate reaction to HCl. At 103'; Contains siltstone clasts to 2½". At 113'; Wet.		
	33.7/ 93.3					
105	50.4/ 124.5					4" ID Schedule 40 PVC 0.020 inch Screen (78.8 - 118.8 feet bls)
	44.8/ 111.2					
110	62.5/ 131.3					
	59.9/ 130.4					
115	39.5/ 123.2		ML	SILT- Reddish brown (5YR4/4); 95% low plastic fines; 5% fine subrounded to rounded gravel; trace fine sand. Moderate reaction to HCl, dry, visible clay stringers.		
	13.0/ 98.2		ML	SANDY SILT - Reddish brown (5YR4/4); 70% non to low plastic fines; 25% coarse subangular to subrounded to rounded sand; 5% fine subrounded gravel to 5/8". No reaction to HCl, contains clasts of well cemented silt to 2 1/2".		Flush threaded end cap
120	12.0/ 91.4					6 inch diameter borehole (120 - 121.7 feet bls)
						Total depth = 121.7 feet bls

East Central Phoenix Phoenix, AZ

Lithologic and well construction log: BMW-05A

Northing (ft) 906726.20
Easting (ft) 677788.83
LS Elev. (ft) 1211.40
Ref. Pnt. Top of casing
Ref. Pnt. Elev. (ft) 1210.89
Total Depth bmp (ft) 115.0
Depth to Water (ft) 37.2
Date 1/10/14

Drill Method RotoSonic
Diameter of Casing 4"
Type of Casing PVC
Slot Size 0.020"
Filter #10-20 Sand
ADWR Reg. No. 55-916202

Depth (Feet Below Land Surface)	PID/TEMP (ppm/degF)	Lithologic Log	USCS	Lithologic Description	Well Construction	Comments
0				Asphalt		Flush mounted vault
				Compacted aggregate base course		
5			ML	SILT - Reddish brown (5YR5/4); 95% nonplastic fines; 5% fine to coarse subrounded to rounded sand. Dry, soft, strong reaction to HCL. Borehole air knifed to 7 feet, reported refusal in caliche.		8.625 inch diameter borehole. (0.0 - 66.0 feet bls)
	40.8/ 84.2					
10	31.3/ 91.2					4" ID Schedule 40 PVC Blank (0.50 - 29.6 feet bls)
			ML	SILT WITH SAND - Reddish brown (5YR4/4); 85% nonplastic fines 15% fine to coarse, subrounded to rounded sand. Strong reaction to HCl, dry, soft.		
	56.3/ 103.8					
15	18.6/ 91.7		ML	SANDY SILT - Reddish brown (5YR5/4 to 5YR4/4); 70% nonplastic fines 25% fine to coarse, sub angular to subrounded sand; 5% fine subangular blocky gravel to ¾". Competent 13 to 14", loose 14 to 19', strong reaction to HCl, dry, very micaceous.		Cement (1.0 - 23.0 feet bls)
	29.9/ 88.5					
20	41.3/ 108.5			SILT - Reddish brown (5YR5/3); 90% nonplastic fines; 10% fine to medium sand; trace fine angular blocky gravel. Strong reaction to HCl, soft, manganese vugs at 24'		
	23.4/ 104.1		ML			
25	25.8/ 93.7					Bentonite Seal (23.0 - 26.3 feet bls)
	15.8/ 106.8		ML	SILT WITH GRAVEL - Dark reddish brown (5YR3/4); 70% nonplastic fines; 20% fine, trace coarse subrounded to rounded granitic gravel; 10% fine sand; Strong reaction to HCl.		
	30.2/ 115.8					

HARGIS + ASSOCIATES, INC

TEMP = Temperature Degrees Fahrenheit
PID = Photoionization detector
bmp = below measuring point

Lithologic and well construction log: BMW-05A

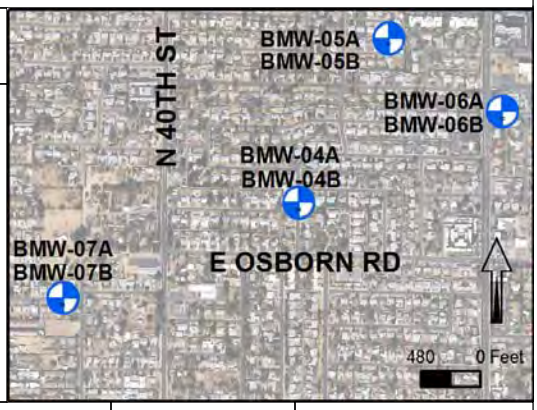
Depth (Feet Below Land Surface)	PID/TEMP (ppm/degF)	Log Lithologic	USCS	Lithologic Description	Well Construction	Comments
30	13.0/ 99.5		ML	SILT - Reddish brown (5YR4/4); 95% nonplastic fines; 5% coarse sand; trace fine rounded gravel to ½". Moist, strong reaction to HCl, soft, firm at 30', contains manganese lined vugs.		
	19.7/ 105.0					
	34.2/ 123.9					
35	75.5/ 120.7					
	57.0/ 121.2					
40	44.4/ 102.3		ML	SANDY SILT - Reddish brown (5YR5/4); 65% non to low plastic fines; 25% medium to coarse subangular sand; 10% fine, trace coarse subangular gravel to 1½". Moist, no to weak reaction to HCl.		
	30.4/ 98.2					# 10-20 Sand (26.3 - 66.0 feet bls)
45	29.1/ 91.5		ML	SILT - Reddish brown (5YR4/4); 95% non to low plastic fines; 5% fine, trace coarse angular sand. Wet. At 51'; trace angular granitic gravel to 1".		
	41.1/ 90.8					
50	41.4/ 97.1					
	38.2/ 95.9					4" ID Schedule 40 PVC 0.020 inch Screen (29.6 - 64.6 feet bls)
55	25.1/ 88.5		ML	SANDY SILT - Reddish brown (5YR4/4); 65% non to low plastic fines; 25% medium to coarse angular to subrounded sand; 10% fine angular to subrounded gravel, trace coarse rounded gravel to 1¼". Soft, moist to locally wet.		
	30.2/ 89.9					
60	28.2/ 94.2					
	31.8/ 89.0		ML	SILT WITH SAND - Reddish brown (5YR4/4); 85% low plastic fines; 15% fine to coarse blocky angular sand. Firm, wet, no to weak reaction to HCl.		
65	26.5/ 84.7					Flush threaded end cap
						6 inch diameter borehole (66.0 - 67.0 feet bls)
	30.7/ 92.8					Total depth = 67 feet bls

East Central Phoenix Phoenix, AZ

Lithologic and well construction log: BMW-05B

Northing (ft) 906732.31
Easting (ft) 677788.72
LS Elev. (ft) 1211.43
Ref. Pnt. Top of casing
Ref. Pnt. Elev. (ft) 1210.91
Total Depth bmp (ft) 115.0
Depth to Water (ft) 37.2
Date 1/08/14 - 1/09/14

Drill Method RotoSonic
Diameter of Casing 4"
Type of Casing PVC
Slot Size 0.020"
Filter #10-20 Sand
ADWR Reg. No. 55-916203



Depth (Feet Below Land Surface)	PID/TEMP (ppm/degF)	Lithologic Log	USCS	Lithologic Description	Well Construction	Comments
0				Asphalt		8.625 inch diameter borehole. (0.0 - 115 feet bls)
				Compacted aggregate base course		
5			ML	SILT - Reddish brown (5YR5/4); 95% nonplastic fines; 5% fine to coarse subrounded to rounded sand. Dry, soft, strong reaction to HCL. Borehole air knifed to 7 feet, reported refusal in caliche.		Cement (1.0 - 63.2 feet bls)
	40.8/ 84.2					
10	31.3/ 91.2					4" ID Schedule 40 PVC Blank (0.50 - 75.1 feet bls)
			ML	SILT WITH SAND - Reddish brown (5YR4/4); 85% nonplastic fines 15% fine to coarse, subrounded to rounded sand. Strong reaction to HCl, dry, soft.		
	56.3/ 103.8					
15	18.6/ 91.7		ML	SANDY SILT - Reddish brown (5YR5/4 to 5YR4/4); 70% nonplastic fines 25% fine to coarse, sub angular to subrounded sand; 5% fine subangular blocky gravel to ¾". Competent 13 to 14', loose 14 to 19', strong reaction to HCl, dry, very micaceous.		
	29.9/ 88.5					
20	41.3/ 108.5			SILT - Reddish brown (5YR5/3); 90% nonplastic fines; 10% fine to medium sand; trace fine angular blocky gravel. Strong reaction to HCl, soft, manganese vugs at 24'		
	23.4/ 104.1		ML			
25	25.8/ 93.7					
	15.8/ 106.8		ML	SILT WITH GRAVEL - Dark reddish brown (5YR3/4); 70% nonplastic fines; 20% fine, trace coarse subrounded to rounded granitic gravel; 10% fine sand; Strong reaction to HCl.		

TEMP = Temperature Degrees Fahrenheit
PID = Photoionization detector
bmp = below measuring point

Lithologic and well construction log: BMW-05B

Depth (Feet Below Land Surface)	PID/TEMP (ppm/degF)	Log Lithologic	USCS	Lithologic Description	Well Construction	Comments
	30.2/ 115.8			SILT - Reddish brown (5YR4/4); 95% nonplastic fines; 5% coarse sand; trace fine rounded gravel to ½". Moist, strong reaction to HCl, soft, firm at 30', contains manganese lined vugs.		
30	13.0/ 99.5					
	19.7/ 105.0		ML			
	34.2/ 123.9					
35	75.5/ 120.7					
	57.0/ 121.2					
40	44.4/ 102.3		ML	SANDY SILT - Reddish brown (5YR5/4); 65% non to low plastic fines; 25% medium to coarse subangular sand; 10% fine, trace coarse subangular gravel to 1½". Moist, no to weak reaction to HCl.		
	30.4/ 98.2					
45	29.1/ 91.5			SILT - Reddish brown (5YR4/4); 95% non to low plastic fines; 5% fine, trace coarse angular sand. Wet. At 51'; trace angular granitic gravel to 1".		
	41.1/ 90.8		ML			
50	41.4/ 97.1					
	38.2/ 95.9					
55	25.1/ 88.5					
	30.2/ 89.9		ML	SANDY SILT - Reddish brown (5YR4/4); 65% non to low plastic fines; 25% medium to coarse angular to subrounded sand; 10% fine angular to subrounded gravel, trace coarse rounded gravel to 1¼". Soft, moist to locally wet.		
60	28.2/ 94.2					
	31.8/ 89.0			SILT WITH SAND - Reddish brown (5YR4/4); 85% low plastic fines; 15% fine to coarse blocky angular sand; trace fine gravel. Firm, wet, no to weak reaction to HCl.		
65	26.5/ 84.7					

Lithologic and well construction log: BMW-05B

Depth (Feet Below Land Surface)	PID/TEMP (ppm/degF)	Log Lithologic	USCS	Lithologic Description	Well Construction	Comments
65			ML			Bentonite Seal (63.2 - 68.8 feet bls)
	30.7/ 92.8					
70	25.1/ 91.5					
	23.8/ 84.9		SM	SILTY SAND - Reddish brown (5YR4/4); 55% fine to coarse subrounded to rounded sand; 45% nonplastic fines; trace fine angular granitic gravel. Non to weak reaction with HCL, soft.		
			ML			
75	26.9/ 85.2		SM/ML	SILT WITH SAND - Reddish brown (5YR4/4); 55% fine to coarse subrounded to rounded sand; 45% nonplastic fines; trace fine angular granitic gravel. Non to weak reaction with HCL, soft.		
			ML			
	14.5/ 81.8		SM	SILTY SAND / SANDY SILT - Reddish brown (5YR4/4); 50% fine to coarse subrounded to rounded sand; 50% nonplastic fines; trace fine gravel to ½". Wet, soft, no reaction to HCl		
80	19.5/ 87.9		ML	SILT WITH SAND - Reddish brown (5YR4/4); 50% fine to coarse subrounded to rounded sand; 50% nonplastic fines; trace fine gravel to ½". Wet, soft, no reaction to HCl.		
	21.6/ 81.6					
			SM	SILTY SAND - Reddish brown (5YR4/4); 55% fine to coarse subrounded to rounded sand; 45% nonplastic fines; trace fine angular granitic gravel to 2". Soft, wet, no reaction to HCl.		
85	10.3/ 83.4					
	21.5/ 80.9		ML	SILT - Reddish brown (5YR4/4); 95% non to low plastic fines; 5% fine sand. No reaction to HCl.		
90	21.7/ 92.6			SILTY SAND - Reddish brown (5YR4/6); 55% fine to coarse, subrounded to rounded sand; 40% nonplastic fines; 5% fine subrounded to rounded gravel to ¾". No reaction to HCl, wet, soft.		# 10-20 Sand (68.8- 116 feet bls)
			ML	SILT WITH SAND - Reddish brown (5YR4/4); 85% low plastic fines; 15% fine to coarse angular to subangular sand. Wet, no reaction to HCl.		
	6.3/ 86.5					
95	20.4/ 81.1		ML	SANDY SILT- Reddish brown (5YR4/4); 80% low plastic fines; 15% fine to coarse angular to subrounded sand; 5% fine angular to subangular gravel. No reaction to HCl, firm.		
	22.1/ 92.4		ML	SILT - Reddish brown (5YR4/4); 95% non to low plastic fines; 5% fine to coarse sand. Moderate to strong reaction to HCl, contains caliche nodules.		
100	29.7/ 91.9		ML	SANDY SILT- Reddish brown (5YR4/4); 80% low plastic fines; 15% fine to coarse angular to subrounded sand; 5% fine to coarse angular to subangular gravel to 1½".		
			ML	SILT -Same as above. Strong reaction to HCl at 101.5'.		

Lithologic and well construction log: BMW-05B

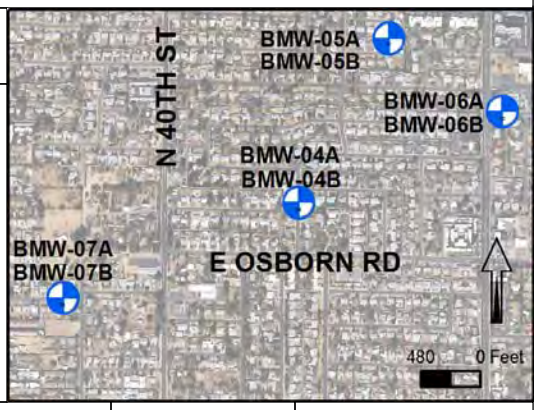
Depth (Feet Below Land Surface)	PID/TEMP (ppm/degF)	Log Lithologic	USCS	Lithologic Description	Well Construction	Comments
	28.3/ 93.2		SM			
105	37.7/ 98.2		ML	SILTY SAND - Reddish brown (5YR4/6); 55% fine to coarse, subrounded to rounded sand; 45% nonplastic fines.		
				SANDY SILT- Reddish brown (5YR4/4); 70% nonplastic fines; 25% fine to coarse angular to subrounded sand; 5% fine angular gravel.		4" ID Schedule 40 PVC 0.020 inch Screen (75.1 - 115.1 feet bls)
	34.9/ 122.1		ML	SILT WITH SAND - Reddish brown (5YR4/4); 80% low plastic fines; 15% fine to coarse sand; 5% fine to coarse subangular granitic gravel. Countains rounded siltstone clasts to 1 3/4. No to weak reaction to HCl.		
110	31.8/ 109.9					
	23.4/ 106.1		ML	SANDY SILT- Reddish brown (5YR4/4); 70% nonplastic fines; 25% fine to coarse angular sand; 5% fine angular granitic gravel.		6 inch diameter borehole (115 - 116 feet bls)
115	19.1/ 99.8					Flush threaded end cap
						Total depth = 116 feet bls

East Central Phoenix Phoenix, AZ

Lithologic and well construction log: BMW-06A

Northing (ft) 906101.80
Easting (ft) 678711.22
LS Elev. (ft) 1212.94
Ref. Pnt. Top of casing
Ref. Pnt. Elev. (ft) 1212.45
Total Depth bmp (ft) 60.2
Depth to Water (ft) 32.5
Date 1/8/14 - 1/10/14

Drill Method RotoSonic
Diameter of Casing 4"
Type of Casing PVC
Slot Size 0.020"
Filter #10-20 Sand
ADWR Reg. No. 55-916204



Depth (Feet Below Land Surface)	PID/TEMP (ppm/degF)	Lithologic Log	USCS	Lithologic Description	Well Construction	Comments
0			ML	SANDY SILT - Brown (7.5YR 4/4); 60% nonplastic fines; 40% fine to coarse sand. No odor, dry. Pot holed 0 - 7 feet.		Flush mounted vault 8.625 inch diameter borehole. (0.0 - 61.0 feet bls)
5						
	0.3/ 78.4		ML	SANDY SILT - Light Brown (7.5YR 6/4); 65% nonplastic fines; 35% fine to coarse sand. No odor, dry. Small reactive caliche nodules throughout		4" ID Schedule 40 PVC Blank (0.50 - 30.3 feet bls)
10	0.2/ 82.6					
	0.3/ 82.6					
	0.1/ 88.7					
15	3.0/ 119.5		ML	SANDY SILT - Strong Brown (7.5YR 5/6); 75% nonplastic fines; 25% fine to coarse sand. No odor, slightly moist. Reactive to HCl. Very compressed, forming chunks that are easily broken apart.		Cement (1.0 - 23.0 feet bls)
	7.8/ 112.5					
20	3.2/ 112.5					
	2.7/ 126.5					
	2.5/ 100.6		ML	SANDY SILT - Same As Above Moisture content increases at 24.5 feet to slight moisture. Water encountered at approximately 32.5 feet.		Bentonite Seal (23.0 - 27.0 feet bls)
25	8.8/ 138.9					

Lithologic and well construction log: BMW-06A

Depth (Feet Below Land Surface)	PID/TEMP (ppm/degF)	Log Lithologic	USCS	Lithologic Description	Well Construction	Comments
	6.5/ 129.6					
30	1.5/ 123.8					
	3.7/ 105.6		ML	SANDY SILT - Strong Brown (7.5YR 5/6); 85% nonplastic fines; 15% fine to coarse sand. No odor, very moist. Reactive to HCl. Sand grains are more angular than above.		
	2.9/ 100.2					
35	4.4/ 108.3		ML	SANDY SILT - Strong Brown (7.5YR 5/6); 60% nonplastic fines; 40% fine to coarse angular to sub angular, multicolored sand (decomposed granite). No odor, very moist. Reactive to HCl. Sand content decreased to 10-15% at 42 feet. Fine grained sand (some larger <3mm grains still present).		
	0.9/ 96.8					
40	3.6/ 92.8				4" ID Schedule 40 PVC 0.020 inch Screen (30.3 - 60.3 feet bls)	
	5.8/ 123.1					
	9.4/ 91.6					
45	4.9/ 113.5					
	10.2/ 117.7		ML	SANDY SILT - Strong Brown (7.5YR 5/6); 60% nonplastic fines; 40% fine to coarse angular to sub angular, multicolored sand (decomposed granite). No odor, very moist. Reactive to HCl.		
50	3.7/ 113.5				# 10-20 Sand (27.0 - 60.5 feet bls)	
	2.1/ 102.4					
	9.4/ 88.0					
55	3.2/ 124.0					
	1.8/ 104.5		ML	SANDY SILT - Strong Brown (7.5YR 5/6); 80% nonplastic fines; 20% fine to coarse angular to sub angular, multicolored sand (decomposed granite). No odor, very moist. Reactive to HCl.		
60	3.5/ 105.3				Flush threaded end cap	
	4.4/ 102.9				Slough (60.5 - 62.5 feet bls)	
			ML	SILT - Strong Brown (7.5YR 5/6); 90% nonplastic fines; 10% fine multicolored sand. Soft, no odor, very moist.		
	1.2/ 102.2				Total depth = 62.5 feet bls	

TEMP = Temperature Degrees Fahrenheit
PID = Photoionization detector
bmp = below measuring point

East Central Phoenix Phoenix, AZ

Lithologic and well construction log: BMW-06B

Northing (ft) 906102.15
Easting (ft) 678704.84
LS Elev. (ft) 1212.92
Ref. Pnt. 1212.48
Ref. Pnt. Elev. (ft) 1212.4
Total Depth bmp (ft) 110.8
Depth to Water (ft) 32.6
Date 1/8/14 - 1/10/14

Drill Method RotoSonic
Diameter of Casing 4"
Type of Casing PVC
Slot Size 0.020"
Filter #10-20 Sand
ADWR Reg. No. 55-916205

Depth (Feet Below Land Surface)	PID/TEMP (ppm/degF)	Lithologic Log	USCS	Lithologic Description	Well Construction	Comments
0			ML	SANDY SILT - Brown (7.5YR 4/4); 60% nonplastic fines; 40% fine to coarse sand. No odor, dry. Pot holed 0 - 7 feet.		Flush mounted vault
5						8.625 inch diameter borehole. (0.0 - 120.0 feet bls)
	0.3/ 78.4		ML	SANDY SILT - Light Brown (7.5YR 6/4); 65% nonplastic fines; 35% fine to coarse sand. No odor, dry. Small reactive caliche nodules throughout		
10	0.2/ 82.6					4" ID Schedule 40 PVC Blank (0.45 - 73.3 feet bls)
	0.3/ 82.6					
	0.1/ 88.7					
15	3.0/ 119.5		ML	SANDY SILT - Strong Brown (7.5YR 5/6); 75% nonplastic fines; 25% fine to coarse sand. No odor, slightly moist. Reactive to HCl. Very compressed, forming chunks that are easily broken apart.		Cement (1.0 - 68.0 feet bls)
	7.8/ 112.5					
20	3.2/ 112.5					
	2.7/ 126.5					
	2.5/ 100.6		ML	SANDY SILT - Same As Above Moisture content increases at 24.5 feet to slight moisture. Water encountered at approximately 32.5 feet.		
25	8.8/ 138.9					

HARGIS + ASSOCIATES, INC

TEMP = Temperature Degrees Fahrenheit
PID = Photoionization detector
bmp = below measuring point

Lithologic and well construction log: BMW-06B

Depth (Feet Below Land Surface)	PID/TEMP (ppm/degF)	Log Lithologic	USCS	Lithologic Description	Well Construction	Comments
	6.5/ 129.6					
30	1.5/ 123.8					
	3.7/ 105.6					
	2.9/ 100.2		ML	SANDY SILT - Strong Brown (7.5YR 5/6); 85% nonplastic fines; 15% fine to coarse sand. No odor, very moist. Reactive to HCl. Sand grains are more angular than above.		
35	4.4/ 108.3		ML	SANDY SILT - Strong Brown (7.5YR 5/6); 60% nonplastic fines; 40% fine to coarse angular to sub angular, multicolored sand (decomposed granite). No odor, very moist. Reactive to HCl. Sand content decreased to 10-15% at 42 feet. Fine grained sand (some larger <3mm grains still present).		
	0.9/ 96.8					
40	3.6/ 92.8					
	5.8/ 123.1					
	9.4/ 91.6					
45	4.9/ 113.5					
	10.2/ 117.7		ML	SANDY SILT - Strong Brown (7.5YR 5/6); 60% nonplastic fines; 40% fine to coarse angular to sub angular, multicolored sand (decomposed granite). No odor, very moist. Reactive to HCl.		
50	3.7/ 113.5					
	2.1/ 102.4					
	9.4/ 88.0					
55	3.2/ 124.0					
	1.8/ 104.5		ML	SANDY SILT - Strong Brown (7.5YR 5/6); 80% nonplastic fines; 20% fine to coarse angular to sub angular, multicolored sand (decomposed granite). No odor, very moist. Reactive to HCl.		
60	3.5/ 105.3					
	4.4/ 102.9		ML	SILT - Strong Brown (7.5YR 5/6); 90% nonplastic fines; 10% fine multicolored sand. Soft, no odor, very moist.		
	1.2/ 102.2					
65						

Lithologic and well construction log: BMW-06B

Depth (Feet Below Land Surface)	PID/TEMP (ppm/degF)	Log Lithologic	USCS	Lithologic Description	Well Construction	Comments
65	0.8/ 94.5		ML	SANDY SILT - Strong Brown (7.5YR 5/6); 65% nonplastic fines; 35% fine angular to sub angular, multicolored sand. Soft, no odor, very moist. Reactive to HCl. Sand content decreases to ~25% at 69 feet.		
	1.3/ 86.9					
70	0.4/ 84.9					Bentonite Seal (68.0 - 72.0 feet bls)
	0.0/ 126.3					
	0.0/ 128.1		ML	SANDY SILT - Strong Brown (7.5YR 5/6); 60% nonplastic fines; 40% fine to coarse sub angular to sub rounded, multicolored sand; trace gravel (<25mm). Moderate hardness, no odor, slight moisture. Still reactive to HCl.		
75	0.1/ 119.8					
	0.0/ 115.3					
80	0.1/ 96.6		SM	SILTY SAND - 55% fine to coarse sub rounded to sub angular grained sand; 45% nonplastic fines.		
	0.0/ 128.5		ML	SANDY SILT - Strong Brown (7.5YR 5/6); 55% nonplastic fines; 45% fine to coarse sub angular to sub rounded, multicolored sand. Moderate hardness, no odor, slightly moist.		
	0.1/ 128.8		SM	SILTY SAND - 60% fine sub rounded to sub angular grained sand; 40% nonplastic fines. Weak reaction to HCl.		
85	0.0/ 95.2		SM/ML	SILTY SAND/SANDY SILT - 50% fine sub rounded to sub angular grained sand; 50% nonplastic fines. Weak reaction to HCl.		
	0.0/ 91.6		SM	SILTY SAND - 55% fine sub rounded to sub angular grained sand; 45% nonplastic fines. Weak reaction to HCl. Vertical stringer of sand about 1 foot long.		
90	0.1/ 92.5					
	0.0/ 103.5		ML	SANDY SILT - Strong Brown (7.5YR 5/6); 65% nonplastic fines; 35% fine to coarse sub angular to sub rounded, multicolored sand; trace clay. Very low plasticity, soft, no odor, moist. Sand content decreases to 25% at 97 feet.		
	0.0/ 105.8					# 10-20 Sand (72.0 - 111.0 feet bls)
95	0.0/ 116.6					
	0.0/ 101.8					
100	0.0/ 93.2					
	0.1/ 100.6					

Lithologic and well construction log: BMW-06B

Depth (Feet Below Land Surface)	PID/TEMP (ppm/degF)	Log Lithologic	USCS	Lithologic Description	Well Construction	Comments
	0.0/ 108.3		SM/ML	SILTY SAND/SANDY SILT - Strong Brown (7.5 YR 5/6) 50% fine sub rounded to sub angular grained sand; 50% nonplastic fines. No odor, moist.		
105	0.2/ 101.5		SM	SILTY SAND - Reddish Brown; 60% fine sub rounded to sub angular grained sand; 40% nonplastic fines; trace gravel. Moist.		4" ID Schedule 40 PVC 0.020 inch Screen (75.3 - 110.4 feet bls)
	0.3/ 103.5		ML	SANDY SILT - Strong Brown (7.5YR 5/6); 65% nonplastic fines; 35% fine to coarse sub angular to sub rounded, multicolored sand; trace clay. Very low plasticity, soft, no odor, moist.		
110	0.2/ 106.5					Flush threaded end cap
	0.0/ 113.2		ML	SILT - Strong Brown (7.5YR 5/6); 90% nonplastic fines; 10% sand; trace gravel. Soft, moist, no odor. Moisture decreases to slightly moist at 112.5 feet.		
	0.0/ 127.2					Bentonite hole plug (111.0 - 115.0 feet bls)
115	0.0/ 108.9					Slough (115.0 - 120.0 feet bls)
	0.0/ 111.6					
	0.0/ 105.4					Total depth = 120 feet bls
120						

East Central Phoenix Phoenix, AZ

Lithologic and well construction log: BMW-07A

Northing (ft) 904650.06
Easting (ft) 675130.3
LS Elev. (ft) 1187.76
Ref. Pnt. Top of casing
Ref. Pnt. Elev. (ft) 1187.29
Total Depth bmp (ft) 69.5
Depth to Water (ft) 37.0
Date 12/29/13 - 12/30/13

Drill Method RotoSonic
Diameter of Casing 4"
Type of Casing PVC
Slot Size 0.020"
Filter #10-20 Sand
ADWR Reg. No. 55-916198

Depth (Feet Below Land Surface)	PID/TEMP (ppm/degF)	Lithologic Log	USCS	Lithologic Description	Well Construction	Comments
0				Asphalt		Flush mounted vault
5			ML	SILT - Reddish brown to yellowish red (5YR5/4 to 5YR4/6); 90% nonplastic fines; 10% fine sand. Dry, soft, strong reaction to HCL, formation harder at 6.5'. Borehole air knifed to 8 feet. At 9'; color change, caliche horizon.		8.625 inch diameter borehole. (0.0 - 70.0 feet bls)
10	3.5/ 86.1					4" ID Schedule 40 PVC Blank (0.50 - 29.6 feet bls)
	2.2/ 85.1		ML	SILT WITH SAND - Reddish brown (5YR4/4); 85% nonplastic fines 15% fine sand; trace coarse gravel to 3". Dry, soft to firm At 16'; formation shows bedding, slightly more plastic.		
15	0.5/ 87.9					Cement (1.0 - 23.0 feet bls)
	0.7/ 88.3					
20	18.8/ 167.7			CLAYEY SILT - Reddish brown (5YR5/4 to 5YR4/4); 90% non to low plastic fines; 10% fine to medium, trace coarse sand. Soft, strong reaction to HCl, dry.		
	5.5/ 102.2		ML/CL			
25	2.7/ 85.1			SILT WITH SAND - Reddish brown (5YR5/4); 90% nonplastic fines; 10% fine to medium sand. Strong reaction to HCl, soft, moist.		Bentonite Seal (23.0 - 26.0 feet bls)
	8.2/ 104.9					

HARGIS + ASSOCIATES, INC

TEMP = Temperature Degrees Fahrenheit
PID = Photoionization detector
bmp = below measuring point

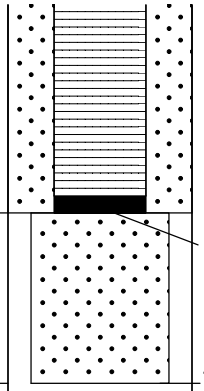
Lithologic and well construction log: BMW-07A

Depth (Feet Below Land Surface)	PID/TEMP (ppm/degF)	Log Lithologic	USCS	Lithologic Description	Well Construction	Comments
30	4.7/ 105.8		ML			
	3.6/ 124.1					
35	2.7/ 91.0		ML/CL	CLAYEY SILT - Reddish brown (5YR5/4); 100% non to low plastic fines. Strong reaction to HCl, firm. At 35'; Moderate reaction to HCl, moist. At 37 to 38'; low plastic fines, firm to hard, moist to wet. At 45'; contains caliche nodules, below sand content increases to 10%.		
	4.4/ 124.3					
40	2.1/ 90.6					
	2.2/ 96.2					
45	0.8/ 86					
	0.6/ 110.4					
50	0.2/ 106.8					4" ID Schedule 40 PVC 0.020 inch Screen (29.6 - 69.6 feet bls)
55	0.4/ 110.6		ML/CL	CLAYEY SILT WITH SAND - Reddish brown (5YR5/4); 85% low, usually moderately plastic fines; 15% fine to medium sand. Moist, dry 57.5 to 60', firm to hard, strong reaction to HCl.		
	0.8/ 94.4					
60	0.8/ 92.4					# 10-20 Sand (26.0 - 70.0 feet bls)
	0.1/ 88.7					
65	0.4/ 86.1					

TEMP = Temperature Degrees Fahrenheit
PID = Photoionization detector
bmp = below measuring point

Lithologic and well construction log: BMW-07A

Depth (Feet Below Land Surface)	PID/TEMP (ppm/degF)	Log Lithologic	USCS	Lithologic Description	Well Construction	Comments
65						
	0.4/ 100.0					
70	1.1/ 86.7		ML/CL	CLAYEY SILT - Reddish brown (5YR5/4); 90% non to low plastic fines; 10% fine to medium sand. Moist, strong reaction to HCl. At 73 to 74.5'; formation hard to very hard.		Flush threaded end cap
	0.8/ 86.3					Total depth = 74.0 feet bls
75						

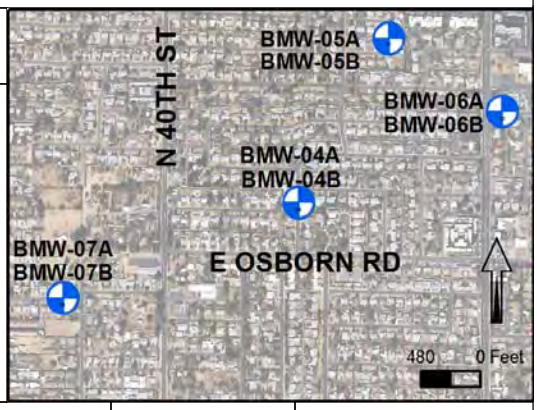


East Central Phoenix Phoenix, AZ

Lithologic and well construction log: BMW-07B

Northing (ft) 904650.67
Easting (ft) 675136.29
LS Elev. (ft) 1187.77
Ref. Pnt. Top of casing
Ref. Pnt. Elev. (ft) 1187.29
Total Depth bmp (ft) 114.9
Depth to Water (ft) 37.0
Date 12/27/13 - 12/29/13

Drill Method RotoSonic
Diameter of Casing 4"
Type of Casing PVC
Slot Size 0.020"
Filter #10-20 Sand
ADWR Reg. No. 55-916199



Depth (Feet Below Land Surface)	PID/TEMP (ppm/degF)	Lithologic Log	USCS	Lithologic Description	Well Construction	Comments
0				Asphalt		Flush mounted vault
5			ML	SILT - Reddish brown to yellowish red (5YR5/4 to 5YR4/6); 90% nonplastic fines; 10% fine sand. Dry, soft, strong reaction to HCL, formation harder at 6.5'. Borehole air knifed to 8 feet. At 9'; color change, caliche horizon.		8.625 inch diameter borehole. (0.0 - 115.0 feet bls)
10	3.5/ 86.1					4" ID Schedule 40 PVC Blank (0.51 - 85.0 feet bls)
	2.2/ 85.1		ML	SILT WITH SAND - Reddish brown (5YR4/4); 85% nonplastic fines 15% fine sand; trace coarse gravel to 3". Dry, soft to firm At 16'; formation shows bedding, slightly more plastic.		
15	0.5/ 87.9					Cement (1.0 - 70.0 feet bls)
	0.7/ 88.3					
20	18.8/ 167.7		ML/CL	CLAYEY SILT - Reddish brown (5YR5/4 to 5YR4/4); 90% non to low plastic fines; 10% fine to medium, trace coarse sand. Soft, strong reaction to HCl, dry.		
	5.5/ 102.2					
25	2.7/ 85.1			SILT WITH SAND - Reddish brown (5YR5/4); 90% nonplastic fines; 10% fine to medium sand. Strong reaction to HCl, soft, moist.		

HARGIS + ASSOCIATES, INC

TEMP = Temperature Degrees Fahrenheit
PID = Photoionization detector
bmp = below measuring point

Lithologic and well construction log: BMW-07B

Depth (Feet Below Land Surface)	PID/TEMP (ppm/degF)	Log Lithologic	USCS	Lithologic Description	Well Construction	Comments
	8.2/ 104.9		ML			
30	4.7/ 105.8					
	3.6/ 124.1					
35	2.7/ 91.0		ML/CL	CLAYEY SILT - Reddish brown (5YR5/4); 100% non to low plastic fines. Strong reaction to HCl, firm. At 35'; Moderate reaction to HCl, moist. At 37 to 38'; low plastic fines, firm to hard, moist to wet. At 45'; contains caliche nodules, below sand content increases to 10%.		
	4.4/ 124.3					
40	2.1/ 90.6					
	2.2/ 96.2					
45	0.8/ 86					
	0.6/ 110.4					
50	0.2/ 106.8					
55	0.4/ 110.6		ML/CL	CLAYEY SILT WITH SAND - Reddish brown (5YR5/4); 85% low, usually moderately plastic fines; 15% fine to medium sand. Moist, dry 57.5 to 60', firm to hard, strong reaction to HCl.		
	0.8/ 94.4					
60	0.8/ 92.4					
	0.1/ 88.7					

Lithologic and well construction log: BMW-07B

Depth (Feet Below Land Surface)	PID/TEMP (ppm/degF)	Log Lithologic	USCS	Lithologic Description	Well Construction	Comments
65	0.4/ 86.1					
	0.4/ 100.0					
70	1.1/ 86.7		ML/CL	CLAYEY SILT - Reddish brown (5YR5/4); 90% non to low plastic fines; 10% fine to medium sand. Moist, strong reaction to HCl. At 73 to 74.5'; formation hard to very hard.		
	0.8/ 86.3					
75	0.5/ 87.2					Bentonite Seal (70.0 - 80.0 feet bls)
	0.5/ 96.8					
80	0.7/ 96.8		SM	SILTY SAND - Reddish brown (5YR4/4); 55% fine to medium sand 45% low plastic fines. Wet. At 51'; trace angular granitic gravel to 1".		
	2.8/ 96.6		ML	SANDY SILT - Reddish brown (5YR4/4); 65% non to low plastic fines; 35% fine to medium sand. Hard, moist to wet.		
85	0.5/ 89.4		ML	SILT - Reddish brown (5YR4/4); 95% non to low plastic fines; 5% fine sand. No reaction with HCl, wet.		
	0.8/ 100.4					
90	0.9/ 94.4					# 10-20 Sand (80.0 - 116.0 feet bls)
			SM	SILTY SAND - Reddish brown (5YR4/4); 60% fine to coarse sand; 40% nonplastic fines. Soft, firm 93 to 95', wet, no reaction to HCl.		
95	1.4/ 82.9					
	5.7/ 105			SILT - Reddish brown (5YR4/4); 90% non to low plastic fines; 10% fine sand, trace fine gravel to ½' at 103.5'. Firm to hard, weak to moderate reaction to HCl, sand content increases with depth.		

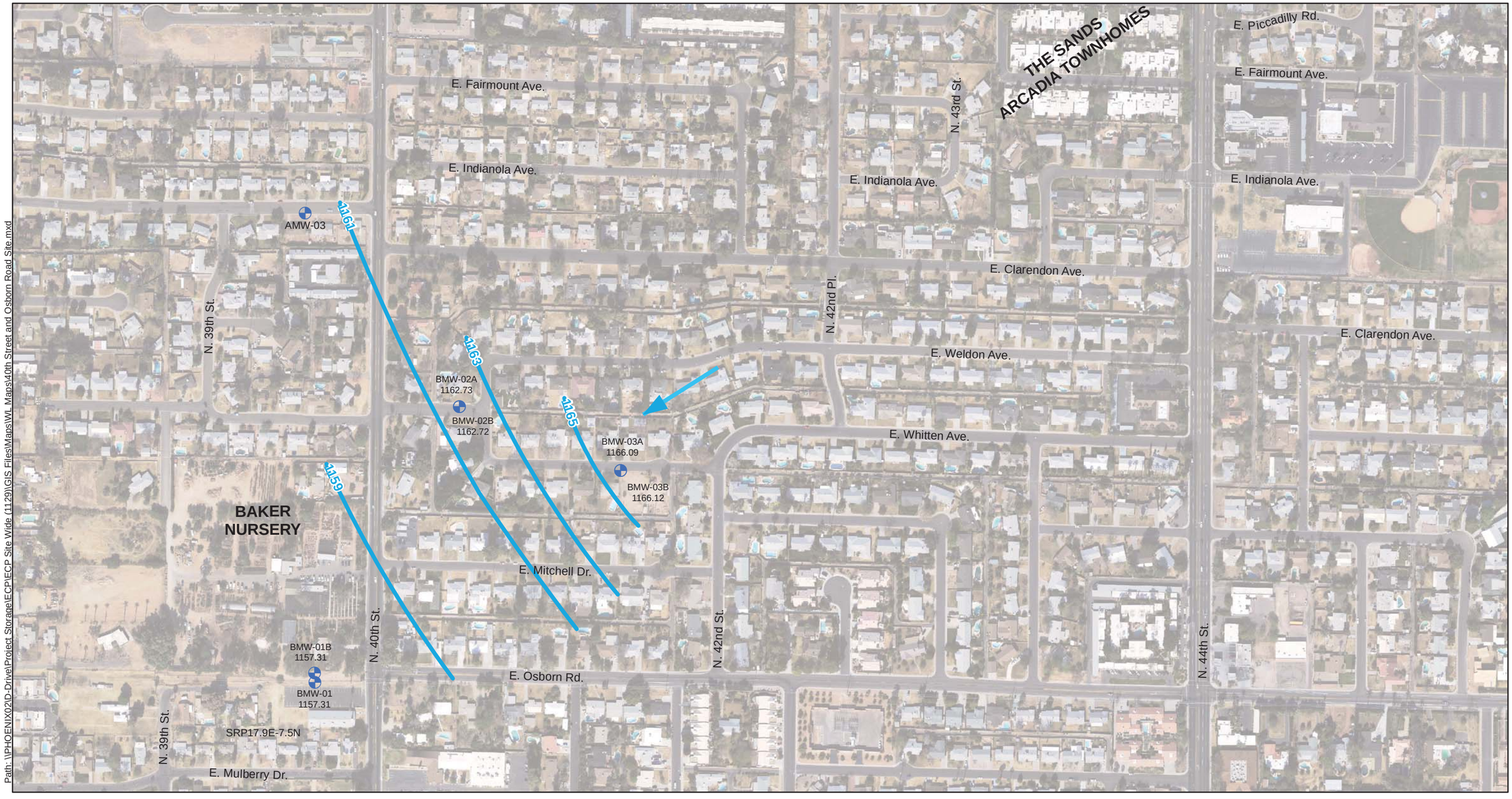
TEMP = Temperature Degrees Fahrenheit
PID = Photoionization detector
bmp = below measuring point

Lithologic and well construction log: BMW-07B

Depth (Feet Below Land Surface)	PID/TEMP (ppm/degF)	Log Lithologic	USCS	Lithologic Description	Well Construction	Comments
100	2.6/ 107		ML			
	0.5/ 115.1					
105	1.1/ 113					4" ID Schedule 40 PVC 0.020 inch Screen (85.0 - 115.0 feet bls)
	2.3/ 97.8		SM	SILTY SAND - Reddish brown (5YR4/4); 55% fine to coarse sand; 45% nonplastic fines. Soft, firm 93 to 95', wet, no reaction to HCl.		
110	3.6/ 90.5					
	2.4/ 91					Flush threaded end cap
115	0.8/ 85.1		ML	SILT WITH SAND - Reddish brown (5YR4/4); 85% low plastic fines; 15% fine to medium sand. Wet, no reaction to HCl.		6.0 inch diameter borehole. (115.0 - 116.0 feet bls)
						Total depth = 116 feet bls

APPENDIX D

HISTORICAL WATER LEVEL CONTOUR MAP



Legend

- Monitor Well Locations
- Direction of Groundwater Flow
- October 2013 Groundwater Elevation Contour

N

0 300 600 Feet

EAST CENTRAL PHOENIX
WQARF SITE
PHOENIX, ARIZONA

GROUNDWATER POTENTIOMETRIC SURFACE MAP (OCTOBER 2013) 40TH STREET AND OSBORN ROAD

HARGIS + ASSOCIATES, INC.
HYDROGEOLOGY • ENGINEERING

11/13/2013

FIGURE 10

PREP BY JWM REV BY LLJM RPT NO 1137.41

APPENDIX E

WATER QUALITY AND WATER LEVEL HYDROGRAPHS

APPENDIX E

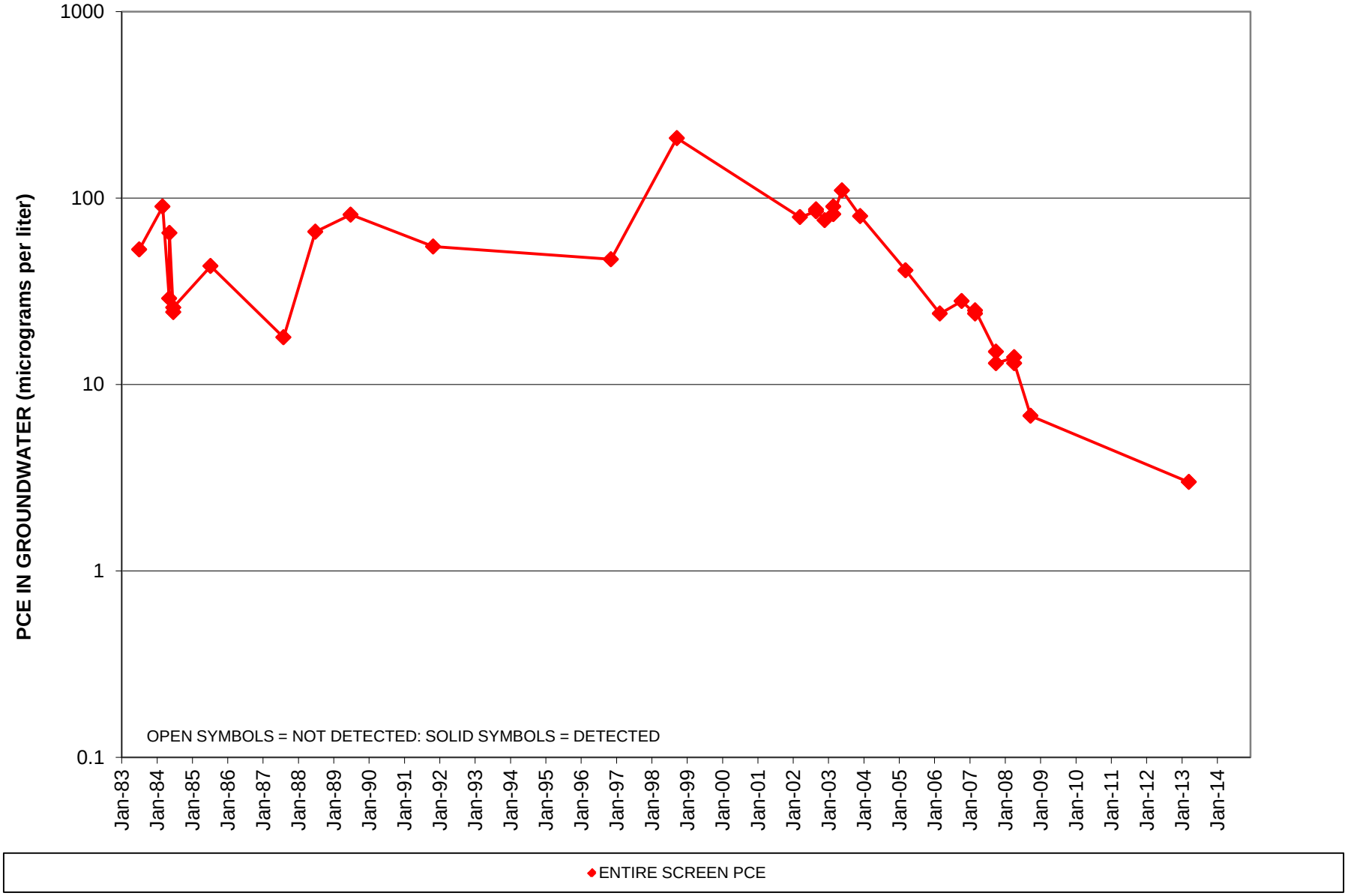
WATER QUALITY AND WATER LEVEL HYDROGRAPHS

TABLE OF CONTENTS

Figure

E-1	SRP WELL 17.9E-7.5N HYDROGRAPH – 40TH AND OSBORN ROAD SITE
E-2	MONITOR WELL BMW-01 HYDROGRAPH – 40TH AND OSBORN ROAD SITE
E-3	MONITOR WELL BMW-01B HYDROGRAPH – 40TH AND OSBORN ROAD SITE
E-4	MONITOR WELL BMW-02A HYDROGRAPH – 40TH AND OSBORN ROAD SITE
E-5	MONITOR WELL BMW-02B HYDROGRAPH – 40TH AND OSBORN ROAD SITE
E-6	MONITOR WELL BMW-03A HYDROGRAPH – 40TH AND OSBORN ROAD SITE
E-7	MONITOR WELL BMW-03B HYDROGRAPH – 40TH AND OSBORN ROAD SITE

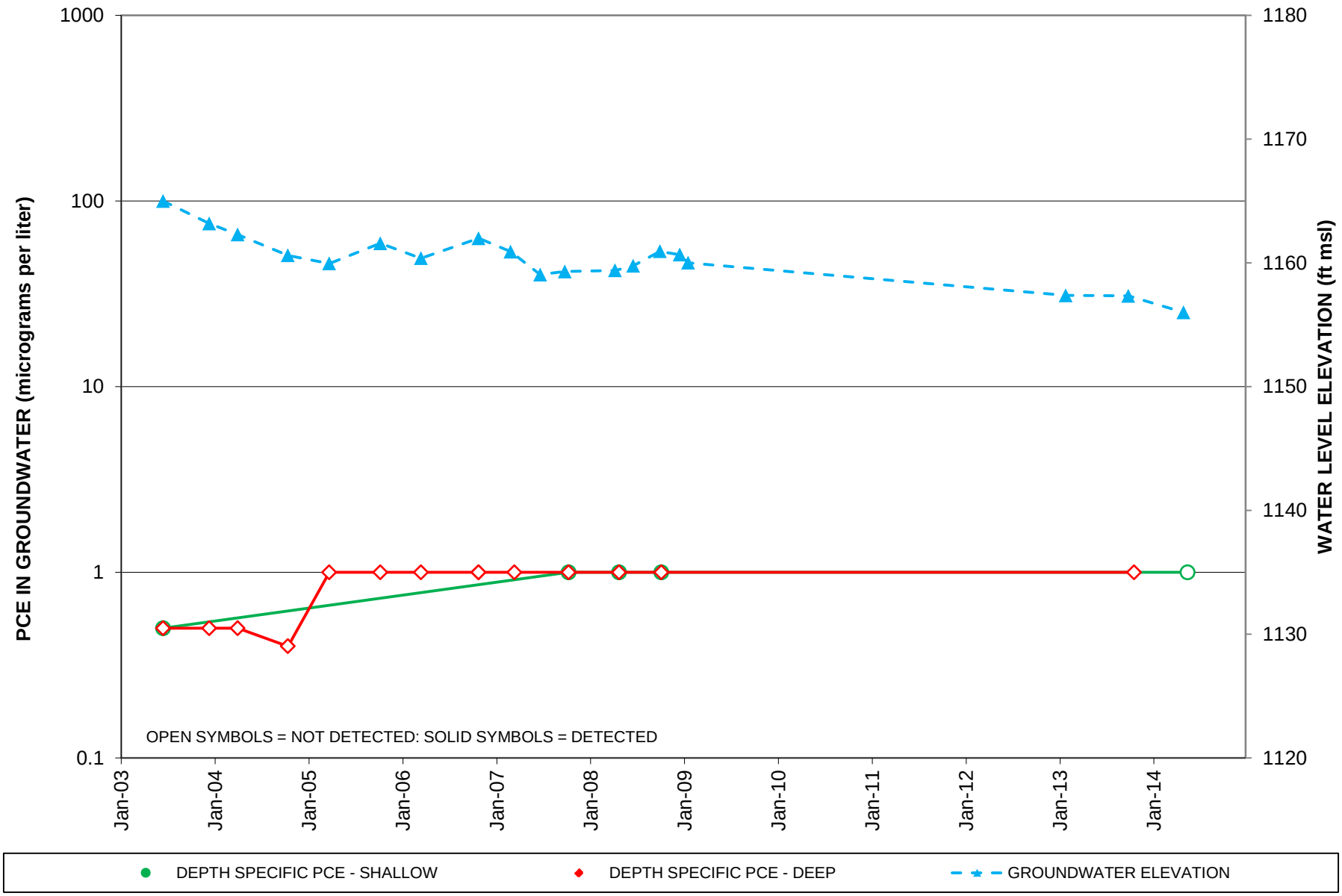
HARGIS + ASSOCIATES, INC.



PCE = Tetrachloroethylene
ft msl = feet mean sea level

FIGURE E-1. SRP WELL 17.9E-7.5N HYDROGRAPH - 40TH AND OSBORN ROAD SITE

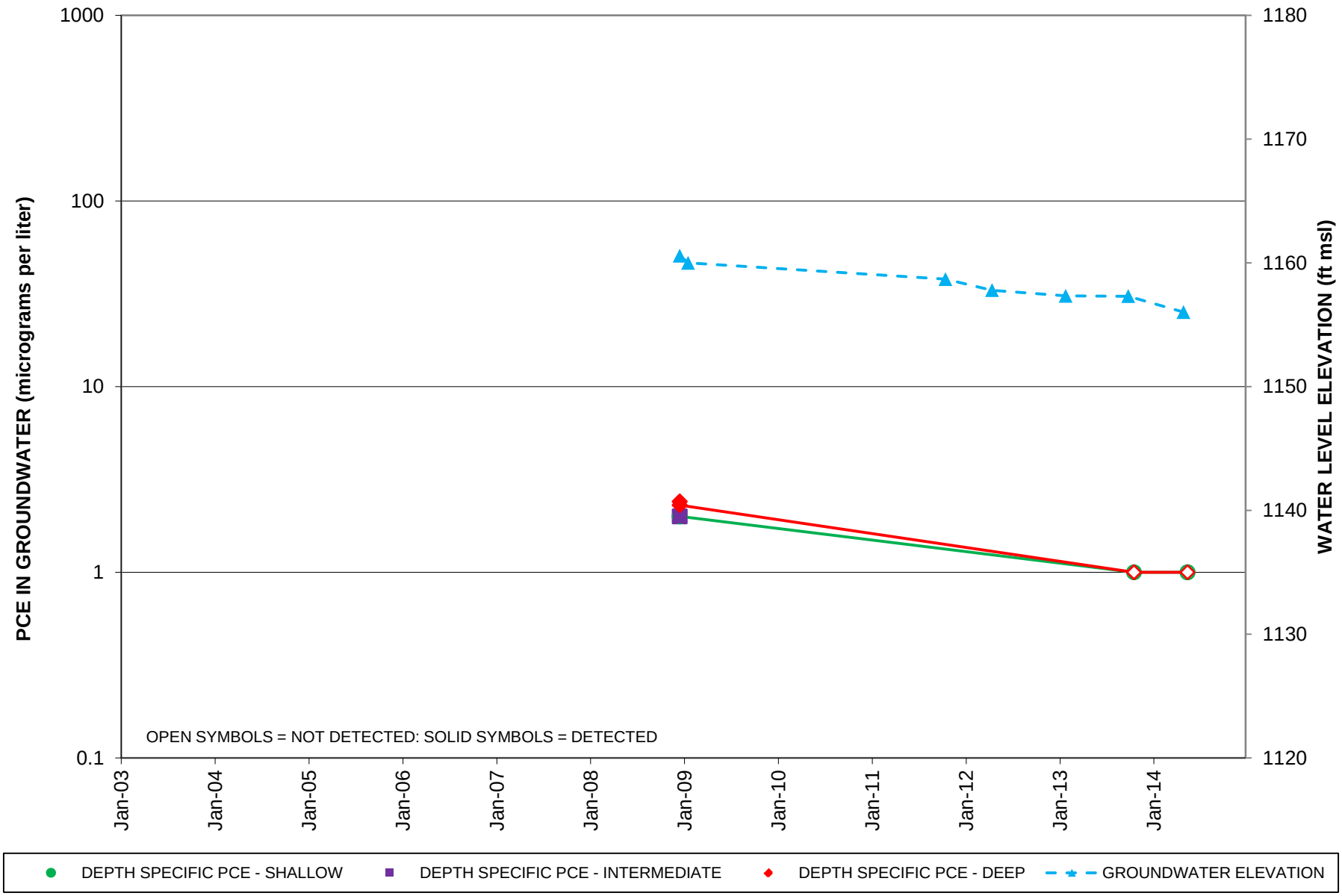
HARGIS + ASSOCIATES, INC.



PCE = Tetrachloroethylene
ft msl = feet mean sea level

FIGURE E-2. MONITOR WELL BMW-01 HYDROGRAPH - 40TH AND OSBORN ROAD SITE

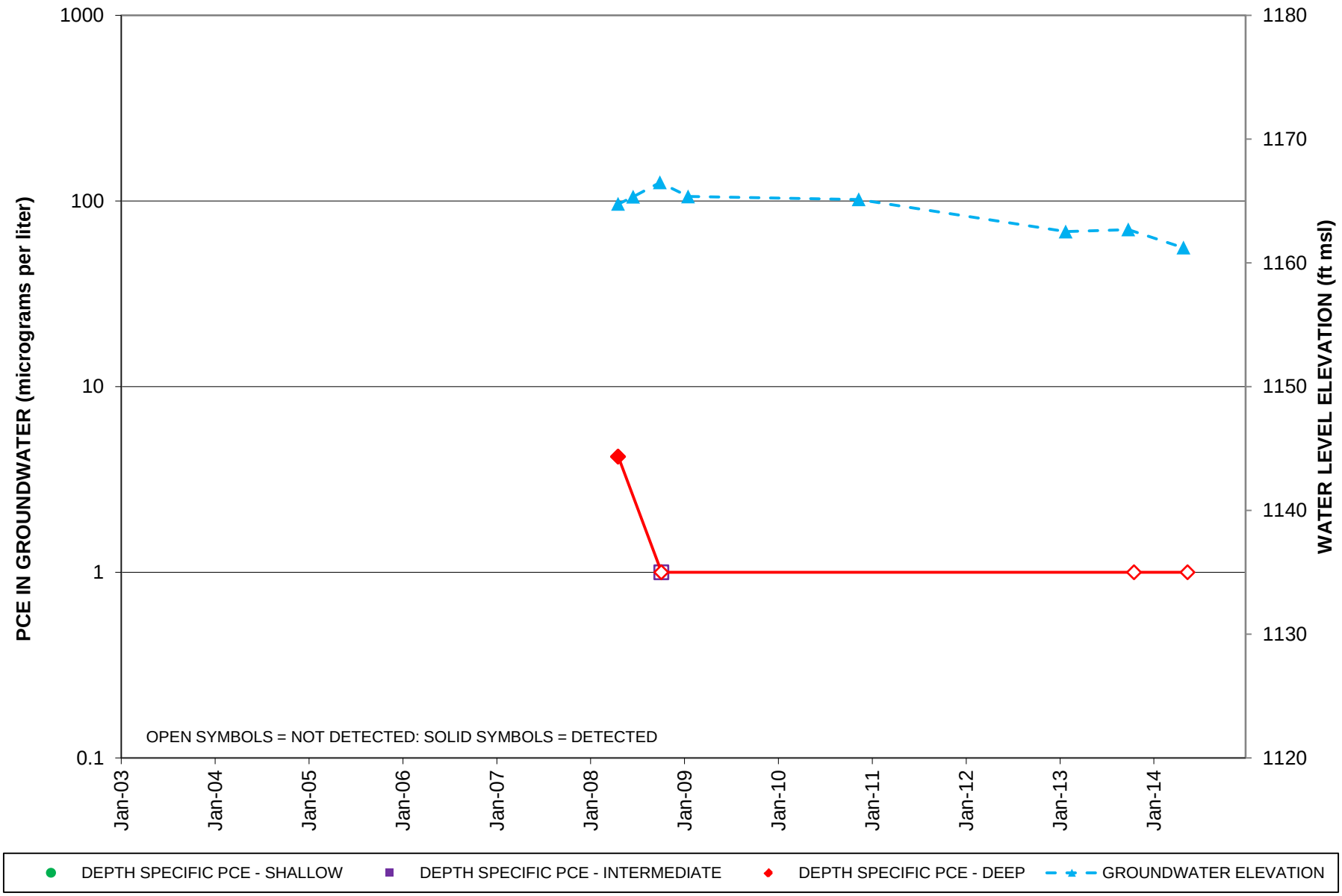
HARGIS + ASSOCIATES, INC.



PCE = Tetrachloroethylene
ft msl = feet mean sea level

FIGURE E-3. MONITOR WELL BMW-01B HYDROGRAPH - 40TH AND OSBORN ROAD SITE

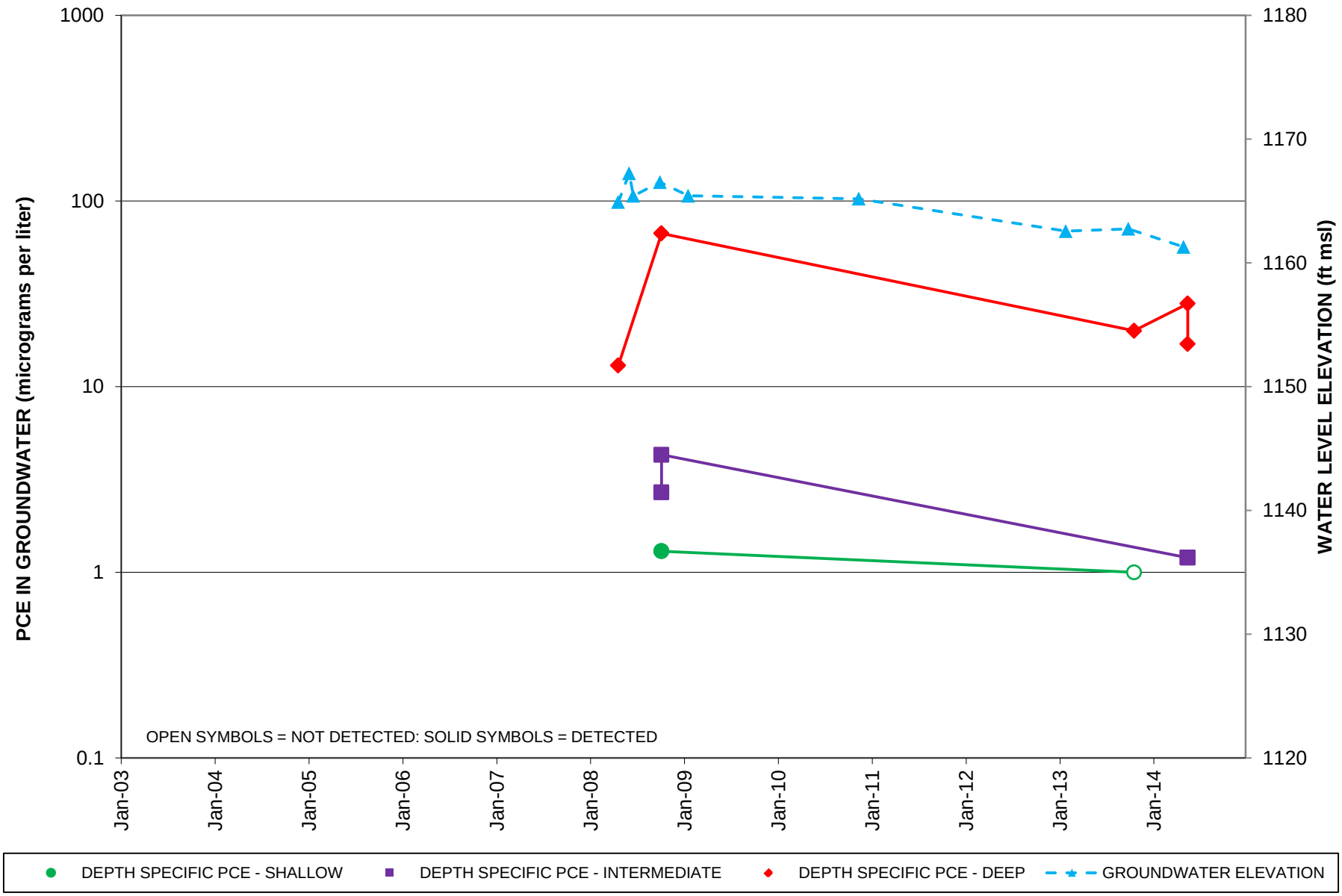
HARGIS + ASSOCIATES, INC.



PCE = Tetrachloroethylene
ft msl = feet mean sea level

FIGURE E-4. MONITOR WELL BMW-02A HYDROGRAPH - 40TH AND OSBORN ROAD SITE

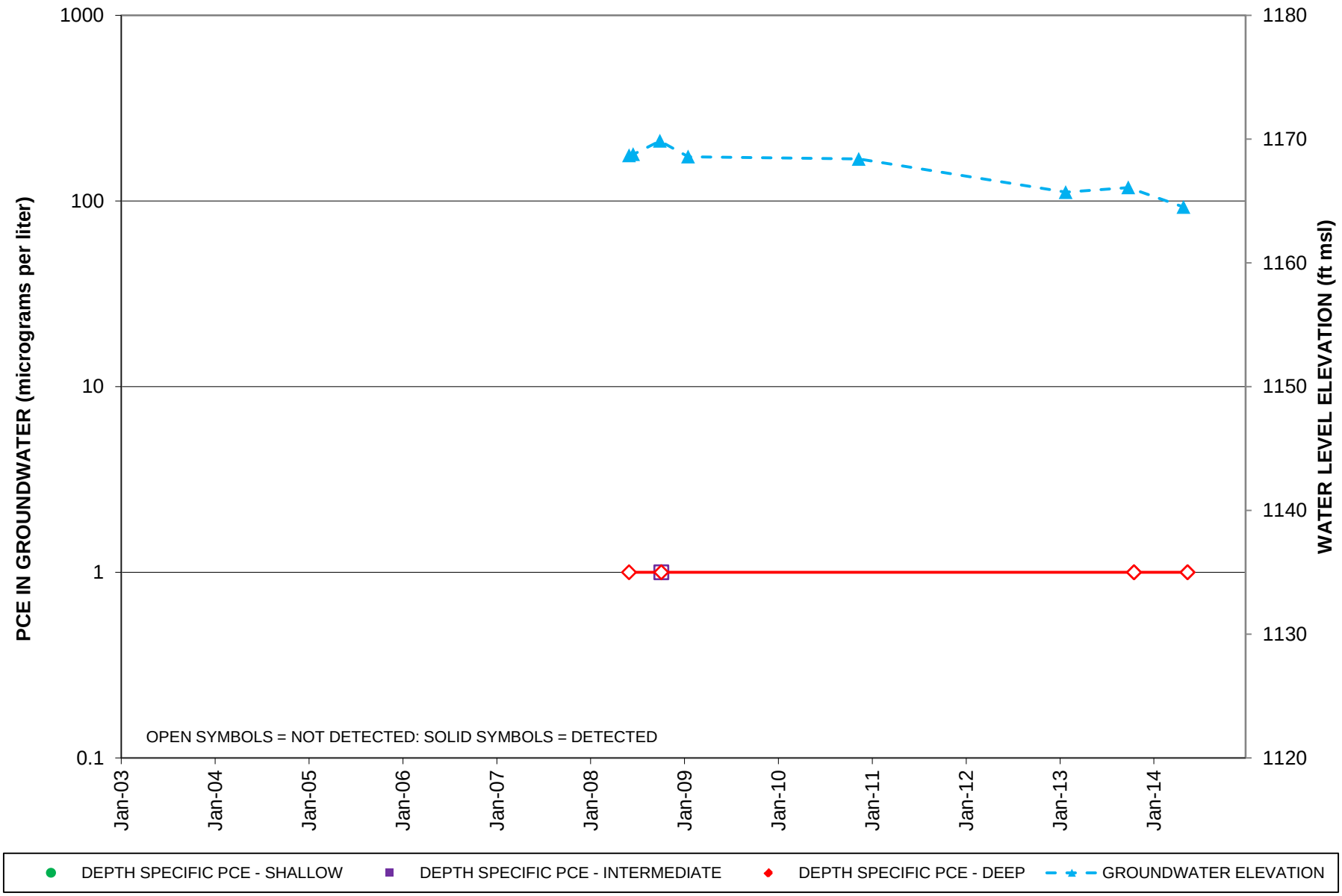
HARGIS + ASSOCIATES, INC.



PCE = Tetrachloroethylene
ft msl = feet mean sea level

FIGURE E-5. MONITOR WELL BMW-02B HYDROGRAPH - 40TH AND OSBORN ROAD SITE

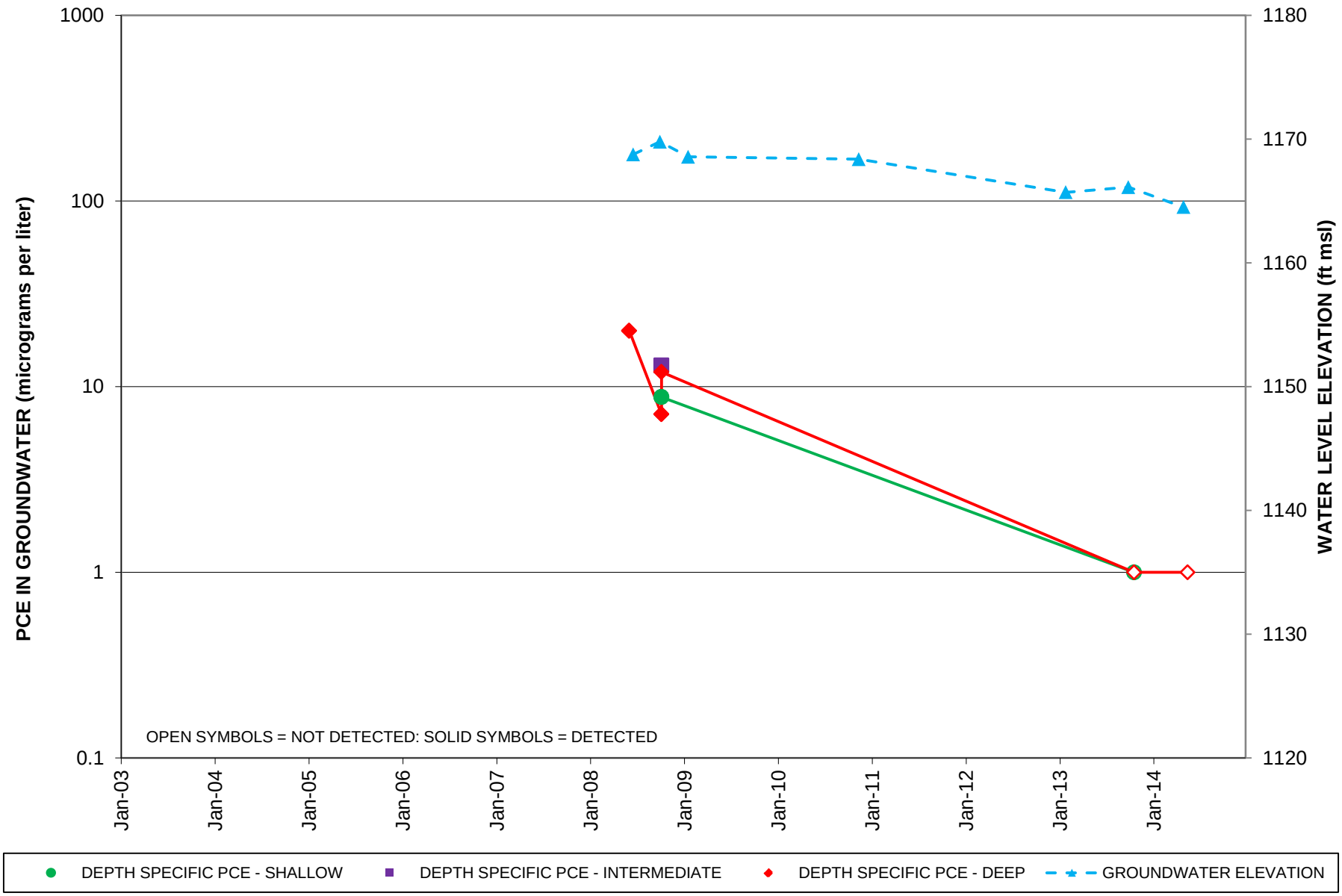
HARGIS + ASSOCIATES, INC.



PCE = Tetrachloroethylene
ft msl = feet mean sea level

FIGURE E-6. MONITOR WELL BMW-03A HYDROGRAPH - 40TH AND OSBORN ROAD SITE

HARGIS + ASSOCIATES, INC.



PCE = Tetrachloroethylene
ft msl = feet mean sea level

FIGURE E-7. MONITOR WELL BMW-03B HYDROGRAPH - 40TH AND OSBORN ROAD SITE

APPENDIX F

LAND AND WATER USE REPORT

NOVEMBER 25, 2014

DRAFT FINAL
LAND AND WATER USE REPORT
40TH AND OSBORN ROAD SITE

EAST CENTRAL PHOENIX
WATER QUALITY ASSURANCE REVOLVING FUND SITE
PHOENIX, ARIZONA

Prepared For:
Arizona Department of Environmental Quality
1110 West Washington Street
Phoenix, Arizona 85007

PREPARED BY:

1640 South Stapley Drive
Suite 209
Mesa, AZ 85204

LAND AND WATER USE REPORT
40TH AND OSBORN ROAD SITE

EAST CENTRAL PHOENIX
WATER QUALITY ASSURANCE REVOLVING FUND SITE
PHOENIX, ARIZONA

TABLE OF CONTENTS

EXECUTIVE SUMMARY ES-1
1.0 INTRODUCTION 1
1.1 Process Overview 1
1.2 Land and Water Use Report 1
1.3 Site Background 2
1.4 General Groundwater Quality 2
2.0 USE EVALUATION 4
2.1 Land and Water Use Questionnaires 4
2.2 Land Use 4
2.2.1 Current Site-Specific Land Use 5
2.2.2 Current Regional Land Use 5
2.2.3 Future Land Use 6
2.3 Groundwater Use 6
2.3.1 Municipality and Utility Groundwater Use 7
2.3.1.1 Current City of Phoenix Needs 7
2.3.1.2 Future City of Phoenix Needs 8
2.3.1.3 Current Salt River Project Needs 10
2.3.1.4 Future Salt River Project Needs 11
2.3.2 Private Groundwater Use 12
2.4 Surface Water Use 12
3.0 SUMMARY OF USES 13
3.1 Land Use 13
3.2 Groundwater Use 13
3.3 Surface Water Use 13
4.0 REFERENCES 14

TABLE OF CONTENTS (continued)

TABLES

TABLE F-1	City of Phoenix Zoning Districts with Brief Descriptions
TABLE F-2	Groundwater Withdrawal Wells within One Mile of the Site

FIGURES

FIGURE F-1	40th and Osborn Road Site Map
FIGURE F-2	City of Phoenix Village Planners Map
FIGURE F-3	Camelback East General Plan Map
FIGURE F-4	Camelback East Zoning Map
FIGURE F-5	ADWR AMA Location Map
FIGURE F-6	Registered Withdrawal Wells within One-Mile Radius of Site
FIGURE F-7	Groundwater Elevations (May 2014)
FIGURE F-8	City of Phoenix Recharge and Recovery Sites
FIGURE F-9	City of Phoenix Deficit Scenarios
FIGURE F-10	Salt River Project Canals

ATTACHMENTS

ATTACHMENT A	Land and Water Use Study Questionnaires
ATTACHMENT B	ADWR Well Registration Records

EXECUTIVE SUMMARY

The East Central Phoenix (ECP) Water Quality Assurance Revolving Fund (WQARF) Site – 40th and Osborn Road (the Site) is located in the 3900 block of North 40th Street near the intersection of Osborn Road. The Site is one of six ECP WQARF sites. The current Site boundary is an approximate circle about 400 feet in diameter encompassing the Salt River Project (SRP) Well 17.9E-7.5N (Figure F-1). Tetrachloroethene (PCE) is the contaminant of concern (COC) in the subsurface at the Site. The source of contamination has not been identified; however, several upgradient potential sources, including dry cleaning establishments, have been identified. These potential sources are from 0.75 to over one mile from the Site. Data collected to date have not shown a definitive correlation linking these sources to the observed Site contamination.

The land and water use study (use study) is required in accordance with Arizona Administrative Code (A.A.C.) R18-16-406(A)(3), which states that the remedial investigation (RI) shall identify current and reasonably foreseeable uses of land and waters of the state. As specified in A.A.C. R18-16-406(D), reasonably foreseeable uses of water are those likely to occur within 100 years.

In order to obtain consistent land and water use information from specified stakeholders, a standardized land and water use study questionnaire was prepared and mailed by ADEQ and ADEQ's consultant Hargis + Associates, Inc. (H+A) to Maricopa County (the County), municipalities, and utilities in the Site area. Questionnaires were completed and returned to ADEQ/H+A by City of Phoenix (COP), the County, and Salt River Project (SRP). The questionnaires requested specific information in the following areas:

- Property information
- On-site wells
- Water use
- Waste streams

Based on the land and water use study questionnaires and the answers returned to ADEQ, very limited, if any significant change to respondent properties would be expected to occur.

The entire Site is located within the COP. Arizona State law requires each city to have a General Plan that establishes policy for the city's physical development (Arizona Revised Statutes [A.R.S.] 9-461.05).

The COP General Plan includes goals, policies, and recommendations to guide land use and neighborhood development for the next 10 to 20 years and beyond. Thus, most of the discussion of land use centers on the COP General Plan, most recently amended in January 2013.

The COP is comprised of 15 "urban villages". The Site is located in the Camelback East Village (CEV). CEV has two primary cores: the 24th Street and Camelback Road core and the 44th Street and Van Buren Street core. The primary land use within the CEV and the Site is single family residential followed by multiple family residential and commercial.

The COP Water Services Department issued a water resources plan (Plan) in 2011. The plan includes water development and water use policies. Plans for specific groundwater development within the ECP Site are not addressed in the Plan.

Since 1985, groundwater use by the COP steadily declined due to the availability of Central Arizona Project (CAP) water, the development of SRP-based surface water supplies, and provisions in the State's Water Code (1919), updated by A.R.S. 9-461.05, which mandates groundwater use limitations. In effect, the Water Code and COP corresponding policy rely on groundwater as an essential supply to mitigate future water shortages. The COP currently meets over 95 percent of its demand with surface water sources. The COP also relies on groundwater to accommodate water system maintenance and as a back-up during temporary outages. The COP has the current capability of producing 28 million gallons per day (mgd) (15-20,000 acre-feet) per year, and typically withdraws between 6,000 and 9,000 acre-feet per year. Sufficient wells exist to produce more than 28 mgd, though rehabilitation and/or treatment may be needed to increase the yield due to aquifer contamination and aging well conditions.

In 2010, the Arizona Department of Water Resources (ADWR) approved the COP's application for a designation of assured water supply. This designation, reconfirmed the original approval by ADWR in 1998, and confirms the COP has sufficient water supplies to support existing customers and projected growth demands through the year 2025 for at least 100 years. The COP concludes in their Water Resources Plan that sustainable water supplies exist for all growth currently anticipated through 2060 under normal supply (non-shortage) conditions (COP, 2011).

Degraded groundwater constitutes a vast reserve of water for use in meeting the COP's future water needs. The COP maintains several wells within or adjacent to WQARF sites for emergency use and future use in meeting service area water needs; these wells could be placed back in service with the addition of wellhead treatment systems or approved blending programs. Also, the COP holds "Special Pump Rights" with SRP, which are rights to groundwater well capacity developed by SRP. The COP does not have any wells within one mile of the Site contaminant plumes.

SRP generally uses groundwater to supplement its surface water supply. Thus, annual use of groundwater fluctuates depending upon the availability of surface water. SRP currently has four groundwater supply wells within one mile of the within the ECP WQARF area. As the area becomes more urbanized, wells with suitable water quality may be shifted to municipal use. SRP indicated in their Land and Water Use Questionnaire response that all its properties within the vicinity of the ECP WQARF Area will remain in use over the next 100 years. Additionally, SRP anticipates its groundwater supply wells in the ECP WQARF Area will transition from irrigation to municipal service (potable supply) in the reasonably foreseeable future.

1.0 INTRODUCTION

The Arizona Department of Environmental Quality (ADEQ) has prepared this Land and Water Use Report for the East Central Phoenix (ECP) 40th and Osborn Road Site Water Quality Assurance Revolving Fund (WQARF) Site (the Site) to meet the requirements established under Arizona Administrative Code (A.A.C.) R18-16-406(D). The purpose of the report is to gather information regarding current and foreseeable uses of land or waters that have been or are threatened to be impacted by a contaminant release.

1.1 Process Overview

The process to complete the remedial investigation (RI) and select remedial objectives (ROs) begins with the completion of the Draft RI Report. Following the completion of the Draft RI Report, which includes the Land and Water Use Report, a public meeting is held to discuss the reports and solicit input for the selection of ROs. Typically, the public will be given 30 to 60 days to comment on the reports. Following the public meeting and comment period, ADEQ issues the Proposed RO Report. The ROs chosen for a site may be based on none, some, or all of the uses identified in the Land and Water Use Report. If there is significant public interest or additional information has been discovered, an additional public meeting to discuss the ROs is held. The Final RO Report is then prepared and included in the Final RI Report.

1.2 Land and Water Use Report

The purpose of the Land and Water Use Report is to gather information regarding current and "foreseeable" uses of land or waters that have been or are threatened to be impacted by a contaminant release, and to project time frames for future changes in those uses. Information gathered from discussions with property owners, water providers, municipalities, and well owners are to be included in the report.

In general, this Land and Water Use Report identifies various current and potential future uses of land and water in the vicinity of the Site. However, the report does not evaluate the uses, nor does it classify the use as "reasonably foreseeable". The evaluation of uses will take place during public comment periods, and public meetings and will be presented in the Proposed RO Report.

1.3 Site Background

In the early 1980's, SRP Well 17.9E-7.5N was found to be contaminated with PCE, which is located in the 3900 block of North 40th Street in a residential neighborhood of Phoenix, Arizona (Figure F-1). The vicinity of SRP Well 17.9E-7.5N, now known as the 40th Street and Osborn Road Site (Site), was placed on the WQARF Registry List in May 2000 (ADEQ, 2000 and 2013). The vicinity of SRP Well 17.9E-7.5N has been investigated with regard to PCE in groundwater contamination.

Several phases of investigation have been conducted including soil vapor sample collection, and groundwater monitor well installation and sampling. The results of these investigations have indicated that volatile organic compounds (VOCs), primarily PCE, are present in the soil vapor and groundwater in the vicinity of the Site. The source of the dissolved-phase PCE groundwater at the Site is unknown (SECOR, 2008a). Literature reviews and record searches were performed in 1988, 2002, and 2009 to identify potential sources. A 1988 study, which covered the East Central Phoenix Study Area, identified Kachina Cleaners, The Cleaners of Phoenix, Inc. (The Cleaners), and Sandy's Magic Touch Cleaners as potential sources (Earth Technology Corporation [Earth Tech], 1988). A 2002 industrial survey did not identify any potential source areas within a 1/4 mile of the Site (HydroGeoLogic, Inc. [HGL] 2002). A 2009 city directory survey was performed to identify potential sources up and crossgradient of the Site and along Indian School Road, Osborn Road, 40th Street, and 44th Street (HGL, 2002).

The aquifer underlying the site is known as the Upper Alluvial Unit (UAU) Aquifer. The UAU extends to depths of approximately 400 feet below ground surface (feet bgs) in the surrounding area (Brown and Pool, 1989). It consists of basin fill sediments of sand and gravel proximal to the Salt and Gila Rivers and at the basin margins. In areas distal to the basin margins, which include the Site, the UAU is silt and sand and is significantly less thick. Typically, the UAU is considered an unconfined aquifer. Shallow groundwater beneath the Site and surrounding vicinity has historically flowed southwest and has a small gradient under non-pumping conditions.

1.4 General Groundwater Quality

Groundwater beneath the Site and the surrounding area generally contain concentrations of total dissolved solids (TDS) ranging from 500 milligrams per liter (mg/L) to slightly greater than 1,000 mg/L (Brown and Pool, 1989) (Thiros, S.A. et. al., 2010). The EPA has not set a maximum contaminant level for TDS, however, there is a secondary standard of 500 mg/L TDS for drinking water.

The secondary standards are non-enforceable guidelines regulating contaminants that may cause aesthetic effects in drinking water. The principal ions present within local groundwater include chloride, magnesium, sodium, and calcium (Reeter and Remick, 1986).

SRP provided the following water quality information from their wells located within the ECP WQARF Site, all of which show impacts:

SRP Well No.	ADWR 55 Registration	Approximate distance from 40/Osborn Site	Intersection (Local Area)	Maximum PCE Concentration (µg/L)	Maximum TCE Concentration (µg/L)
17.9E-7.5N	55-617857	At Site	40th/Osborn	**210**	**9.9**
17E-8N	55-608431	1 mile to the northwest	32nd/Indian School	**82**	1.5
17.1E-7.4N	55-607731	0.875 mile to the west	32nd/Osborn	**5.8**	ND
18E-7N	55-617849	0.5 mile to the south	40th/Thomas	ND	ND
18E-8.8N	55-617825	1.5 mile to the north	40th/Coolidge	1.1	ND
18.5E-7N	55-607712	0.75 mile to the southeast	43th/Thomas	ND	ND
18.6E-7.6N	55-202398	0.67 mile to the east	44th/Osborn	0.6	ND
19E-7.6N	55-608433	1.0625 mile to the east	48th/Whitton	ND	ND
19E-8.1N	55-607748	1.25 mile to the northeast	48th/Indian School	ND	ND

Note:

1. Bolded value indicates concentration detected above Aquifer Water Quality Standard.
2. Data obtained from SRP via questionnaire (See Appendix A).
3. ND – not detected.
4. µg/L – microgram per liter.

As mentioned above, PCE is the main COC that has been detected in groundwater samples collected from the Site wells. Trichloroethene (TCE) has also been detected in SRP well 17.9E-7.5N, at the 40th Street and Osborn Road Site. In May 2014 PCE and TCE were detected at concentrations of 28 and 1.8 micrograms per liter (µg/L) from a depth of 90.7 feet bls, in Site monitoring well BMW-02B, which is located approximately 1,000 feet upgradient of SRP well 17.9E-7.5N. The Aquifer Water Quality Standards (AWQS) for both PCE and TCE are 5 µg/L.

2.0 USE EVALUATION

The following sections outline current and foreseeable land and water uses for the Site and the surrounding area. Reasonably foreseeable uses for land are those uses of land likely to occur at the Site within a reasonable time period. Reasonably foreseeable uses of water are those likely to occur within 100 years unless a longer time period is shown to be reasonable based on site-specific circumstances [A.A.C. R18-16-406(D)].

2.1 Land and Water Use Questionnaires

In order to obtain consistent land and water use information from specified stakeholders, a standardized land and water use study questionnaire was prepared and mailed by ADEQ and Hargis + Associates, Inc. (H+A) to Maricopa County, municipalities, and utilities in the Site. Questionnaires were completed and returned to ADEQ/H+A, by City of Phoenix (COP), Maricopa County, and SRP; they are included in Attachment A.

The questionnaires requested specific information in the following areas:

- Property information
- On-site wells
- Water use
- Waste streams
-

The information provided in the questionnaires was used in conjunction with the references identified in this section.

2.2 Land Use

The entire Site is located within the COP in Maricopa County. Arizona State law requires each city to have a General Plan that establishes policy for the city's physical development. The COP General Plan includes goals, policies, and recommendations to guide land use and neighborhood development for the next 10 to 20 years and beyond. Thus, most of the discussion of land use centers on the COP General Plan, most recently amended in January 2013. As indicated on the questionnaire, Maricopa County has no specified land or water uses within the ECP Site; however, it is important that any planned remediation coordinate with Maricopa County Air Quality Department for the necessary permits (i.e. dust control, VOC emissions, etc.).

The COP is comprised of 15 "urban villages" (Figure F-2) (COP, 2002). The Site is located in the center of the Camelback East Village (CEV) (Figure F-3) which covers an area of 36.3 square miles. CEV has two primary cores: 1) the 24th Street and Camelback Road core, comprised of office and retail shops, including movie theaters, major department stores, restaurants, and hotels; and 2) the 44th Street and Van Buren Street core an area of airport and regional offices uses along with a Chinese cultural center. The area around 44th Street and Thomas Road is considered the secondary core of the village. This village offers a range of housing diversity and neighborhood types evenly split in the number of single family and multi-family residences. Areas such as the Arcadia neighborhood consist of large acre lots while higher density residential developments surround the more concentrated centers like the CEV primary core. A major portion of the housing stock was built between 1950 and 1970, but new construction of both single family and multi-family homes continues.

There are five school districts represented in the entire CEV, three are located within the ECP WQARF Site: Scottsdale Unified School District, Phoenix Union School District, and Creighton School District. Christ Lutheran School, Monte Vista School (Creighton School District) and the Arcadia Learning Community (specifically, Tavan Elementary School, Arcadia Neighborhood Learning Center, and Arcadia High School) are located in the vicinity of the 40th Street and Osborn Road Site.

Each village located within the COP has a Planning Coordinator and a Village Planning Committee who have input into planning decisions for that community and to the COP mayor and Planning Commission.

Development in the area occurs consistent with zoning laws and must go through a site-planning review and permit process. The primary land use within the Site is single family residential (38%) followed by parks/open space (26%), multiple family residential (12%) and commercial/industrial (12%), public/transportation (8%). Four (4%) percent of the land within the village is reportedly vacant (COP, 2013). Current zoning districts in the Site are identified below and are shown on Figure F-4. A more detailed description of COP zoning designations can be found in Table F-1.

2.2.1 Current Site-Specific Land Use

The current zoning designation for the 40th Street and Osborn Road Site is single family residential, church, and commercial (plant nursery) (Figure F-4) (COP, 2013).

2.2.2 Current Regional Land Use

The current land use in and surrounding the Site is as follows (Figure F-4):

Zoning District	Description
C-O	Commercial Office – Restricted Commercial (CO prior to 1986)
C-1	Commercial – Neighborhood Retail
PAD-13	Planned Area Development (No longer available for rezoning)
R-4	Multiple Family Residence (Detached SF 5 to 6.5 or 12 w/bonus) (Attached 29 to 30.45 or 34.8 w/bonus)
R1-6	Single Family Residence (Density range of 5 to 5.5 or 6.5 with bonus)
R-O	Residential Office – Restricted Commercial

2.2.3 Future Land Use

The CEV Planning Coordinator and CEV Planning Committee meet regularly to accept and review requests for zoning changes within the CEV. The COP response to their questionnaire indicated there are no current foreseeable plans to alter current zoning districts in the Site vicinity. Property owners can file to change the zoning designation of their property. Requests for zoning changes must go through a public hearing and be approved by the City Council prior to finalization.

In the 40th Street and Osborn Road area there may be possible redevelopment of the plant nursery to low-density multifamily residential.

2.3 Groundwater Use

The Site lies within the Phoenix Active Management Area (AMA) (Figure F-5) (ADWR, 2014b). The Phoenix AMA was created by the Arizona Groundwater Management Code passed in 1980 and covers approximately 5,646 square miles in central Arizona. All groundwater withdrawn from any AMA must occur under a groundwater right or permit, unless groundwater is being withdrawn from an exempt well. An exempt well is a well with a maximum pumping capacity of 35 gallons per minute. Exempt wells may be used to withdraw groundwater only for non-irrigation purposes and are generally used for domestic purposes. All exempt wells must be registered with the ADWR. Non-exempt wells have a pumping capacity greater than 35 gallons per minute and are associated with one of the following types of rights or permits: Grandfathered rights, service area rights, and withdrawal permits.

According to ADWR records, there are ten (10) non-exempt withdrawal wells located within one-mile of the Site; all owned and operated by SRP (Table F-2) (Figure F-6) (ADWR, 2014a). ADWR records indicate that there are three (3) exempt withdrawal wells located within one-mile of the Site; all three wells have an intended use for domestic irrigation (ADWR, 2014a, and Attachment B). There are no grandfathered rights in the Site (ADWR, 2014c). The COP and SRP have service area rights in the Site, however, only SRP is currently pumping groundwater from beneath the Site.

Water levels in the UAU at the Site have been monitored since April 1992. During the period of record for the Site monitor wells, the depth to water has ranged from approximately 21 feet bgs in the mid 1990's to approximately 38 feet bgs in 2014. Groundwater elevations measured in Site wells during May 2014 are depicted on Figure F-7. The direction of groundwater flow historically has been to the southwest at a gradient of approximately 0.007. Vertical gradients between the shallow and deeper zones of the UAU monitored at the Site are generally negligible.

2.3.1 Municipality and Utility Groundwater Use

The COP and SRP pump groundwater as needed when surface water supplies cannot meet their customer needs. The following sections discuss the current and future groundwater uses of the COP and SRP.

2.3.1.1 Current City of Phoenix Needs

The COP relies on four primary water supply sources: SRP, Central Arizona Project (CAP), groundwater pumped from COP wells, and reclaimed water (COP, 2011). SRP supplies water from the Salt and Verde Rivers to eligible lands within the Phoenix service areas which are generally south of the Arizona Canal. The remainder of the service area is supplied primarily by Colorado River water delivered by the CAP. Groundwater wells and reclaimed water make up the remainder of the COP water supplies. During normal supply years, approximately 50 percent of the COP water supply comes from SRP; 44 percent is from CAP; and approximately 3 percent is from groundwater pumpage and 3 percent reclaimed water. When SRP and/or CAP water supplies are reduced, the COP supplements water supplies with groundwater pumped from COP wells (COP, 2011).

Because of groundwater quality degradation due to the presence of industrial solvents such as PCE and TCE, the COP has abandoned or discontinued use of 20 wells (COP, 2011). This has resulted in a loss of approximately 23 million gallons per day of groundwater production.

The City of Phoenix total loss of well production due to elevated concentrations of organic and inorganic substances exceeds 90,000 acre-feet per year, according to the Water Resources Plan (COP, 2011), as a result of the closure of more than 60 wells (60 percent of the total production capacity of all COP wells). Any of these wells, if returned to service in the future, will require cleanup of the contaminated aquifers or the installation and operation of expensive wellhead treatment systems. No COP wells exist within one mile of the Site contaminant plume (Figure F-6).

2.3.1.2 Future City of Phoenix Needs

According to information provided by COP, since 2002 (a peak demand year), the total water demand declined by more than 16%, although the service population of COP increased by approximately 8% (COP, 2011). The decrease in overall per-capita total water demand has been attributed to the increased efficiency in water use which declined by 25 percent between 1996 and 2011. Contributing factors in the decrease include improved plumbing fixture standards, smaller residential lots, fewer new pools, increased installation of desert landscaping in both new and existing homes, increased customer "water awareness," and higher water rates.

Regional economic conditions are a large component of the future water demands, as well as the Phoenix General Plan for land development and recent trends in residential and commercial development. Growth projections for COP reflect annual growth rates of 1.0 percent (high), 0.8 percent (base level) and 0.6 percent (low) and are assumed to top out in the 2045-2055 period based on current COP boundaries. The low projection assumes that service area growth occurs at a slow pace and that existing customers continue to become more efficient without further incentives or regulation (moderate level). The high demand line reflects fast or high-density growth and no further efficiency improvements for existing and new customers. These rates are lower than those experienced during the 1990s and early 2000's; as of Spring 2011, data indicate the actual growth rate for COP could be lower or stagnant for the next 5-10 years. The COP estimates that a "base level" consumption growth will develop at today's efficiency levels and that current customers will remain stable. Possible "moderate efficiency" consumption gains are estimated at a 10% consumption reduction for existing customers and 5% reduction for post-2010 development by 2035. "High efficiency" consumption gains are estimated at a 20% reduction in consumption for existing customers and a 10% reduction for post-2010 customers by gain by 2035. However, there are numerous factors associated with growth and consumption that cannot be fully predicted and the consequences of this possible leveling off or increasing of demand will continue to be addressed in the COP General Plan and Water Resource Plan.

Uncertainty also exists regarding water resources and the ability to meet current and future demands (COP, 2011). The following items may affect the available COP water supply:

- Cyclical drought;
- Increasing demands in the Upper Colorado River Basin States (Utah, Colorado, Wyoming and New Mexico) affecting Arizona's supply of Colorado River water;
- The availability of water supplies from the Arizona Water Banking Authority to the CAP to offset shortages;
- Climate variability impacts on long-term flows, reservoir storage and deliveries by SRP and CAP;
- The probability of low reservoir conditions occurring in both watersheds simultaneously;
- State legal, institutional, or policy changes impacting surface water availability;
- The availability and volume of groundwater supplies without aquifer replenishment; and
- Impacts of increased groundwater pumping in the SRP watershed on river flow and reservoir storage.

If Colorado River flow should decline, allotment of CAP water for the COP and surface water supplies from SRP may be reduced if reservoir levels drop substantially and groundwater pumping cannot compensate the lack of surface water availability. As a buffer to potential surface water supply reductions, the COP has been recharging to underground storage or banking unused CAP allotments for future use (Figure F-8). However, high increases in consumption coupled with severe reductions in surface water supplies could deplete these reserves by 2020 (COP, 2011) (Figure F-9).

As part of their long-term deficit plan, COP developed a strategy to address a reasonable "worst case". These extreme conditions were modeled to represents deeper shortages than those observed in historic records. The "severe shortage" model scenario combined with the "high demand" scenario produces a maximum deficit of 165,000 acre-feet in the latter part of the 50 year planning horizon (COP, 2011).

Managing water use can be accomplished by continuing to increase efficiency of water distribution, curtailing demand, and monetary incentives, which can be addressed through infrastructure improvements, conservation programs, drought management plan, and water pricing strategies (COP, 2011). Alternate sources of water include expanded groundwater pumping, accessing water that has been stored for future use, importing water from the McMullen Valley farm, and purchasing water from other water providers (COP, 2011).

Besides obtaining additional surface water supplies, local groundwater is the most accessible alternate water source (COP, 2011). The COP has access to more than 3.5 million acre-feet of groundwater in the Phoenix service area over a 100 year period. Currently, the COP can produce 28 million gallons per day (mgd) (15-20,000 acre-feet) per year, but only withdraws between 6,000 and 9,000 acre-feet per year. Pumping capacity has been lost in the past two decades due to aquifer contamination and aging well conditions.

The most accessible alternate water source for COP is local groundwater; planning is ongoing for the expansion of well capacity within the service area (via well rehabilitation or the development of new service area wells). The COP plans to develop 15 additional wells at a cost of $233 million to yield approximately 70,000 acre-feet per year; this increased yield would be allowable in any one year as long as the 100 year average usage does not exceed available groundwater and stored water credits (COP, 2011). Recent well development by the COP has occurred in northeast Phoenix area. However, as indicated in the COP questionnaire response, the COP currently has no plans to develop groundwater near or within the Site but will consider the area for well development in the future. Therefore, the potential exists for the COP to install future municipal wells within the Site or within one mile of the Site plume.

2.3.1.3 Current Salt River Project Needs

As a water supplier, SRP delivers nearly a million acre-feet of water to the Phoenix area each year. In normal runoff years, most of the water is supplied from surface water on the Salt and Verde Watersheds. However, in more dry years, more groundwater must be pumped to supplement the surface water supply. During extended periods of low run off, groundwater can account for almost one-third of the total SRP water supply. Approximately 28 percent of the average annual municipal water demand in the Phoenix AMA, from 2001-2005, was supplied by groundwater (ADWR, 2014d).

Typically, groundwater comprises approximately 15% of the total water supplied by SRP to municipal treatment plants. The groundwater contribution varies seasonally with the highest contribution occurring March through August.

SRP operates and maintains nine (9) irrigation wells within a 1.5 mile radius from the 40th Street and Osborn Road Site, as discussed above (Figure F-6). SRP reported the most recent PCE concentrations in the wells historically containing PCE these wells as follows:

SRP Well No.	ADWR 55 Registration	Approximate distance from 40/Osborn Site	Intersection (Local Area)	Most Recent PCE Concentration (µg/L)
17.9E-7.5N	55-617857	At Site	40th/Osborn	3 (April 2013)
17E-8N	55-608431	1 mile to the northwest	32nd/Indian School	2.2 (June 2011)
17.1E-7.4N	55-607731	0.875 mile to the west	32nd/Osborn	0.5 (April 2014)
18E-8.8N	55-617825	1.5 mile to the north	40th/Coolidge	ND (June 2012)
18.6E-7.6N	55-202398	0.67 mile to the east	44th/Osborn	ND (April 2014)

As indicated above, no SRP wells in the 40th Street and Osborn Road Site area had PCE concentrations above the AWQS of 5 µg/L (Elliott, 2014a/b). As discussed previously, the source of PCE and TCE at the 40th Street and Osborn Road Site is unknown. Groundwater pumpage at these wells has been intermittent in the recent past, but the wells can be activated at any time.

2.3.1.4 Future Salt River Project Needs

Although recent use of the irrigation wells in and adjacent to the Site has been intermittent, SRP has no plans to eliminate any of these wells from their system. Based on demand analysis, SRP has indicated it will continue to need the wells in the area to remain operational, especially during dry years.

SRP anticipates all its properties in the vicinity of ECP WQARF Area will remain in use over the next 100 years. Additionally, SRP anticipates that its groundwater supply wells that are in the vicinity will transition from irrigation to municipal service (potable supply) within this time period.

Water shortage is an issue that can impact this Site and all of metropolitan Phoenix. As water quality issues compound the demand concerns already present with regard to anticipated climate change and already stressed water supplies. Water quality is a significant issue, as discussed above SRP expects its groundwater supply wells in the Site area will transition to potable supply in the future. The importance of groundwater and the ability to utilize the aquifer in local and large scale water management scenarios is critical to the future growth and wellbeing of the entire Phoenix metro-area. According to the questionnaire response, SRP does not plan on installing any new wells in the Site; however, this could change pending COP water needs.

2.3.2 Private Groundwater Use

As discussed above, three (3) exempt wells are located within one-mile of the Site; all three wells have an intended use for domestic irrigation (ADWR, 2014a, and Attachment B). There is no documented private drinking use of groundwater within the Site (ADWR, 2014a).

2.4 Surface Water Use

The nearest surface water body is the Arizona Canal, located approximately 1.25 miles to the northeast of the Site. The Site area is situated within an active flood irrigation district of SRP, which receives water from the Arizona Canal from SRP lateral canal 6.1 (Salt River Valley Water Users' Association, 1980). This water is used for residential irrigation (Figure F-10). SRP lateral 6.1 in the Site area receives water from the Arizona Canal, SRP well 17.9E-7.5N, and SRP 17E-8N. Water from the lateral canal is used for irrigation and also discharges into the Grand Canal. Grand Canal, also used for irrigation, is located approximately two (2) miles southwest of the Site. Future plans for the Grand Canal include a drinking water treatment plant that may be constructed at the end of the Grand Canal. The construction of the treatment plant would change the end use of the canal water requiring that water discharged to the canal meet stricter water quality criteria than what is currently required.

3.0 SUMMARY OF USES

The land and water uses described in Section 2.0 that are most likely to be relevant to the discussion of remedial objectives are presented below.

3.1 Land Use

The zoning pattern in the area has been long established and there are no foreseeable changes for the future, other than possibly changing the plant nursery to low-density multifamily residential. Land uses for this Site are expected to remain predominantly residential.

3.2 Groundwater Use

Current and future groundwater uses within the Site include the following:

- The COP anticipates the possible need for additional wells in and adjacent to the Site sometime in the future.
- The SRP owns four wells in and adjacent to the Site and will continue to need the wells to be operational to supplement surface water supplies. SRP has indicated that they may change water usage from irrigation to drinking water within the foreseeable future.

3.3 Surface Water Use

Currently, surface water uses within the Site are only for residential irrigation.

4.0 REFERENCES

Arizona Code, 1919. Water Code of the State of Arizona, Ch. 164, Secs. 1-62, Amended 1921, Ch. 64.

Arizona Department of Environmental Quality (ADEQ), 2013. East Central Phoenix, Water Quality Assurance Revolving Fund (WQARF) Sites, Phoenix, Arizona, Community Involvement Plan. March, 2013.

ADEQ, 2000. Site Registry Report, 40th Street & Osborn. May 18, 2000.

Arizona Department of Water Resources (ADWR), 2014a. Imaged Records, https://gisweb.azwater.gov/WellRegistry/SearchWellReg.aspx. 2014.

ADWR, 2014b. Active Management Areas, http://www.azwater.gov/azdwr/WaterManagement/AMAs/PhoenixAMA/default.htm. 2014.

ADWR, 2014c. Groundwater Rights and Permits, ADWR Data Center, Live Queries and Reports. http://infoshare.azwater.gov/docushare/dsweb/View/Collection-88. June, 2014.

ADWR, 2014d. AMA Cultural Water Demand - Municipal Demand, Table 8.0-12 Average annual municipal water demand in the AMA Planning Area in acre-feet (2001-2005), http://www.azwater.gov/azdwr/StatewidePlanning/WaterAtlas/ActiveManagementAreas/PlanningAreaOverview/CulturalWaterDemand-Municipal.htm, Accessed June 2014.

Brown, J.G., and D.R. Pool, 1989. Hydrogeology of the Western Part of the Salt River Valley Area, Maricopa County, Arizona, U.S. Geological Survey Water Resources Investigations Report 88-4202.

COP, 2002. Phoenix General Plan 2002, http://phoenix.gov/pdd/pz/phxgp.html. 2002.

COP, Water Services Department, 2011. 2011 Water Resource Plan. 2011.

COP, 2013. Phoenix Planning Department Map: H10. City of Phoenix. Revised November 5, 2013.

COP, 2014. Camelback East Village Planning Committee, http://phoenix.gov/pdd/pz/vpce.html. 2014.

Elliott, Gregg, Salt River Project, 2014a. E-mail to Laura Menken (Hargis + Associates, Inc.), entitled "SRP Well Pumping Information for Wells within ECP WQARF Site". May 12 2014.

Elliott, Gregg, Salt River Project, 2014b. E-mail to Laura Menken (Hargis + Associates, Inc.), entitled "additional water quality and pump data for ECP Site". June 18, 2014.

HydroGeoLogic, Inc., 2002. Final Industrial Survey For East Central Phoenix 40th Street and Osborn Road WQARF Registry Site Phoenix, Arizona. April 16, 2002.

Reeter, R.W. and W.H. Remick, 1986. Maps Showing Groundwater Conditions in the West Salt River, East Salt River, Lake Pleasant, Carefree and Fountain Hills Sub-Basins of the Phoenix Active Management Area, Maricopa, Pinal, and Yavapai Counties, Arizona 1983. Arizona Department of Water Resources. Hydrologic Map Series Report Number 12.

Salt River Valley Water Users' Association, 1980. Salt River Valley Water Users' Association, Zanjero Area Maps. 1980.

SECOR, 2008a. Work Plan for Remedial Investigation, East Central Phoenix, 40th Street and Osborn Road, Water Quality Assurance Revolving Fund Site, Phoenix, Arizona. March 31, 2008.

Thiros, S.A., Bexfield, L.M., Anning, D.W., and Huntington, J.M., eds., 2010, Conceptual understanding and groundwater quality of selected basin-fill aquifers in the Southwestern United States: U.S. Geological Professional Paper 1781, 288 p.

TABLES

TABLE F-1
City of Phoenix Zoning Districts with Brief Descriptions

Zoning District	Description
S-1	Ranch or Farm
S-2	Ranch or Farm Commercial
RE-43	One Family Residence (43,560 sq. ft. min.)(No longer available for rezoning)
RE-24	One Family Residence (24,000 sq. ft. min.)(No longer available for rezoning)
R1-14	One Family Residence (14,000 sq. ft. min.)(No longer available for rezoning)
RE-35	Single Family Residence (density range of 1.1 to 1.15 or 1.32 w/ bonus)
R1-18	Single Family Residence (density range of 1.95 to 2.05 or 2.34 w/bonus)
R1-10	Single Family Residence (density range of 3 to 3.5 or 4.5 w/bonus)
R1-8	Single Family Residence (density range of 4 to 4.5 or 5.5 w/bonus)
R1-6	Single Family Residence (density range of 5 to 5.5 or 6.5 w/bonus)
R-2	Multiple Family Residence (Detached SF 5 to 6.5 or 12 w/bonus) (Attached 10 to 10.5 or 12 w/bonus)
R-3	Multiple Family Residence (Detached SF 5 to 6.5 or 12 w/bonus) (Attached 14.5 to 15.23 or 17.4 w/bonus)
R-3A	Multiple Family Residence (Detached SF 5 to 6.5 or 12 w/bonus) (Attached 22 to 23.1 or 26.4 w/bonus)
R-4	Multiple Family Residence (Detached SF 5 to 6.5 or 12 w/bonus) (Attached 29 to 30.45 or 34.8 w/bonus)
R-5	Multiple Family Residence (Detached SF 5 to 6.5 or 12 w/bonus) (Attached 43.5 to 45.68 or 52.2 w/bonus)
R-4A	Multiple Family Residence (Dependent on lot area and unit type)
R-O	Residential Office – Restricted Commercial
C-O	Commercial Office – Restricted Commercial (C-O prior to 1986)
C-O/G-O	Commercial Office – General Office Option (Minimum 1 gross acre)
C-O/M-O	Commercial Office – Major Office Option (Minimum 5 gross acres)
C-1	Commercial – Neighborhood Retail
C-2	Commercial – Intermediate Commercial
C-3	Commercial – General Commercial
CP/SU	Commerce Park – Single User Option
CP/RP	Commerce Park – Research Park Option
CP/BP	Commerce Park – Business Park Option
CP/GCP	Commerce Park – General Commerce Park Option
IP or Ind. Pk.	Industrial Park (See CP) (No longer available for rezoning)
A-1	Light Industrial
A-2	Industrial
RH	Resort
RI	Residential Infill (Combined w/underlying zoning)
HR	High-Rise and High Density (Combined w/underlying zoning)
HR1	High-Rise and High Density (Downtown Area) (Combined w/underlying zoning)
HRI	High-Rise Incentive – High-Rise and Mixed Use (Combined w/underlying zoning)
MR PAD	Mid-Rise (Combined w/underlying zoning)
PCD	Planned Community District (Combined w/underlying zoning or approved zoning)
PSC	Planned Shopping Center (No longer available for rezoning)
RSC	Regional Shopping Center (No longer available for rezoning)
P-1	Passenger Automobile Parking, Limited (Surface parking)
P-2	Parking (Surface parking and parking structures)
GC	Golf Course
UR	Urban Residential (May apply between 7th Ave. to 7th St. & Lincoln St. to Grand
DC	Downtown Core (Underlying zoning for Fillmore to Harrison & 7th St. to 3rd Ave.)
W	Warehouse Overlay (Combined w/underlying zoning) (Applies to specific area near
Warehouse Parking	(Combined w/underlying zoning)
Capitol Mall Overlay	(Combined w/underlying zoning) (Applies to specific area near the Capitol)
SP	Special Permit (Combined w/underlying zoning) (Allows a number of specific uses not
MUA	Mixed Use Agricultural (Should be designated as MUA on the General Plan)
HCRO	Historic Canal-Side Restaurant Overlay (Combined w/underlying zoning) (Applies to
Baseline Area Overlay	(Combined w/underlying zoning) (Applies between Central to 40th St. & Southern to
Arcadia Camelback Special Planning District	(Combined w/underlying zoning) (Applies along Camelback Rd. from 44th St. to the
Desert Character Overlay	(Combined w/underlying zoning) (Applies to North Land Use Plan area)
NBCC	North Black Canyon Overlay (Combined w/underlying zoning) (Specific guidelines for
RSIO	Rio Salado Interim Overlay (Combined w/underlying zoning) (Applies between I-17/I-
HP	Historic Preservation Overlay (Combined w/underlying zoning)
CCSIO	Central City South Interim Overlay (Combined w/underlying zoning) (Applies to
Four Corners Overlay	(Applies to specific area near 24th St. & Broadway Rd.)
SPVTABDO	South Phoenix Village and Target Area B Design Overlay (Applies to specific areas
PSC Overlay	Planned Shopping Center Overlay
SPD	Special Planning District (Combined w/underlying zoning) (Applies to specific
EBRO	East Buckeye Road Overlay District (Combined w/underlying zoning) (Applies to
DVAO	Deer Valley Airport Overlay District (Combined w/underlying zoning) (Applies to
ACOD	Arts, Culture and Small Business Overlay District (Combined w/underlying zoning)
HRO	Hatcher Road Overlay (Combined w/underlying zoning) (Applies to specific area on
Downtown Code	A code to implement the Downtown Phoenix Plan increased mix of land uses, and
PUD	Planned Unit Development Individually tailored standards to create a built
TOD-1	Interim Transit-Oriented District One, to encourage appropriate mixture/density of
TOD-2	Interim Transit-Oriented District Two, to encourage appropriate mixture/density of
SAUMSO	Seventh Avenue Urban Main Street Overlay District (Combined w/underlying zoning)
NCASPD	North Central Avenue SPD Overlay District (Combined w/underlying zoning) Provide
AIO	Airport Noise Impact Overlay District (Combined w/underlying zoning) (Applies to
FH	Flood Hazard and Erosion Management District (Combined w/underlying zoning)

Note: See Section 608 of the Zoning Ordinance to calculate bonus points for residential development.

Source: www.phoenix.gov/pdd/pz
Revised 7/3/13

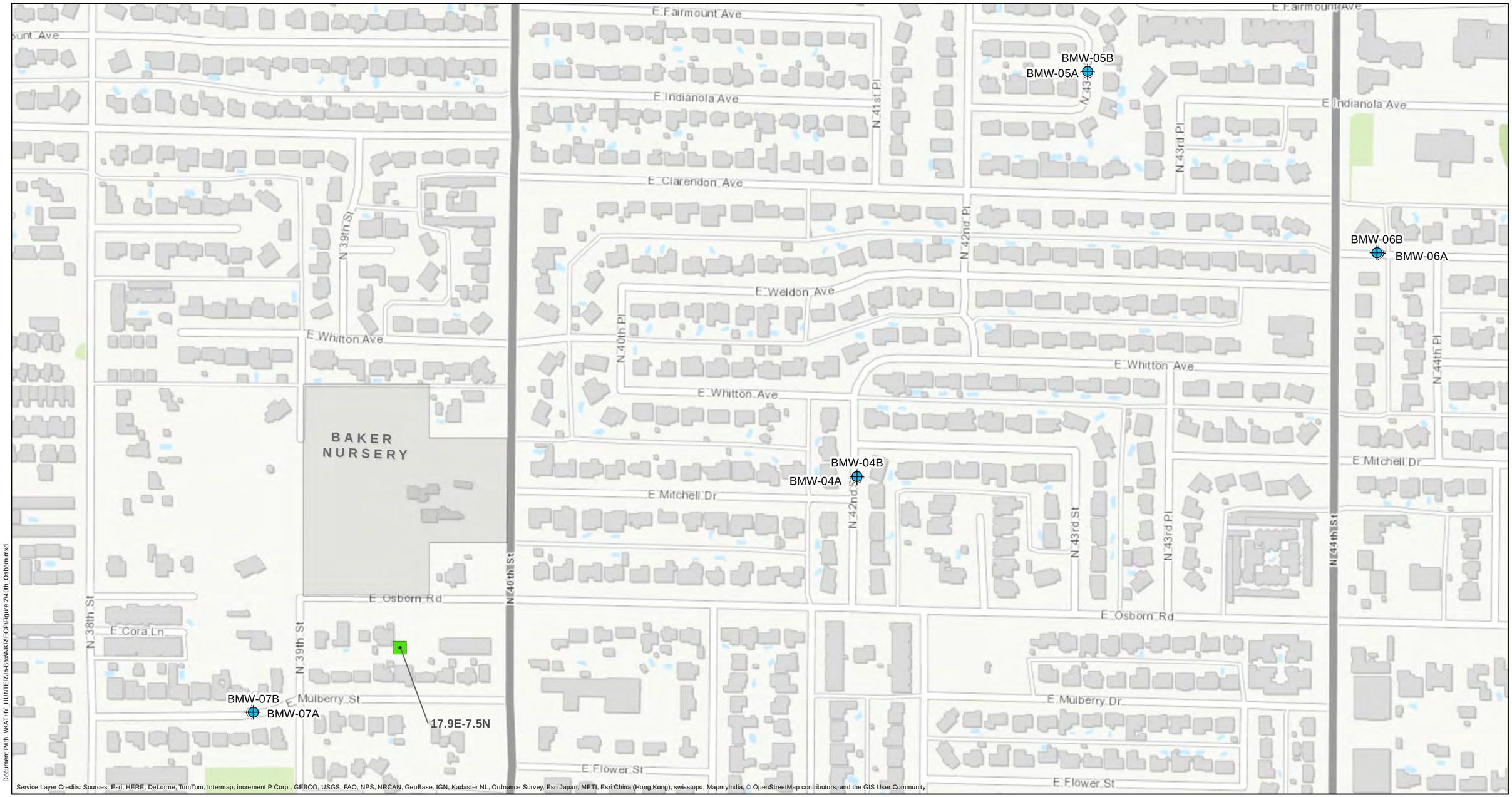
TABLE F-2
GROUNDWATER WITHDRAWAL WELLS WITHIN ONE MILE OF THE SITE
EAST CENTRAL PHOENIX 40TH STREET AND OSBORN ROAD SITE
REMEDIAL INVESTIGATION - LAND AND WATER USE SURVEY

55-REGISTRY ID	GWSI SITE	CADASTRAL	OWNER NAME	SRP Well No.	WELL TYPE	WELL DEPTH (FT BGS)	CASING DEPTH (FT BGS)	CASING DIAMETER (IN)	APPLICATION DATE	INSTALLED DATE	WATER LEVEL (FT BGS)	PUMP RATE (GPM)	UTM-X (METERS)	UTM-Y (METERS)
202398	332918111590701	A02004030ACC	Salt River Project	18.6E-7.6N	Non-Exempt	207	207	21	3/15/2004	12/30/2004	27	0	408419.8	3705868
501994	NR	A02004030BCA	Peterson, D D	NA	Exempt	65	85	4	*2/3/1982	1/1/1981	19	0	407829.4	3706089
607672	332853112000801	A02003025DCC	Salt River Project	17.5E-7N	Non-Exempt	202	188	12	*5/18/1982	10/1/1923	89	563	406803.9	3705103
607712	332849111591201	A02004030CDD	Salt River Project	18.5E-7N	Non-Exempt	172	172	12	*5/18/1982	9/20/1923	17	880	408205.2	3705070
607731	332915112004301	A02003025CBB	Salt River Project	17.1E-7.4N	Non-Exempt	400	400	18	*5/18/1982	4/21/1962	53	1196	406004.9	3705727
607748	332942111584101	A02004020CCC	Salt River Project	19E-8.1N	Non-Exempt	305	305	18	*5/18/1982	6/18/1971	17	808	409232.8	3706647
608431	332941112004301	A02003025BBB	Salt River Project	17E-8N	Non-Exempt	250	250	18	*5/11/1982	8/20/1964	52	1232	406012.9	3706543
608433	332926111584101	A02004030ADA	Salt River Project	19E-7.6N	Non-Exempt	150	150	12	*5/11/1982	3/8/1921	17	500	409018.8	3706050
617825	333026111594501	A02003024ADA	Salt River Project	18E-8.8N	Non-Exempt	417	417	16	*5/26/1982	1/1/1945	37	1457	407451.9	3707744
617849	332848111594201	A02003036AAA	Salt River Project	18E-7N	Non-Exempt	305	305	18	*5/26/1982	7/16/1971	22	954	407407.3	3704891
617857	332913111594601	A02003025DAA	Salt River Project	17.9E-7.5N	Non-Exempt	300	300	18	*5/26/1982	5/4/1965	24	1114	407421.7	3705699
634799	332858111593001	A02004030CCA	Abbey, D R	NA	Exempt	100	70	4	*5/26/1982	10/1/1979	23	10	407813.3	3705284
807925	NR	A02003024DBC	Thiher, L	NA	Exempt	0	0	0	*8/24/1999	prior to 1980	0	0	406831.8	3707137
Dewatering permit November 20, 1995-February 20, 1996														
552114	NR	A02004031BBB	Flood Control District, Maricopa County	NA	Non-Exempt	0	0	0	11/20/1995	NR	0	0	407607.1	3704886
Well never drilled														
623899	NR	A02004030CD0	B.O.L.S. 44 Partners	NA	Non-Exempt	0	0	0	6/14/1982	NR	0	0	408108.3	3705174
Abandoned September 1996														
807366	NR	A02004030DBC	Johns, R F	NA	Exempt	63	0	4	9/17/1996	NR	0	0	408411.5	3705466

NOTES:

Exempt - A well having a pump with a maximum capacity of not more than 35 GPM which is used to withdraw groundwater pursuant to A.R.S. § 45-454 and A.R.S. § 45-402(8).
FT BGS - Feet below ground surface
GPM - Gallons per minute
GWSI - Groundwater Site Inventory
IN - Inches
NA - Not Applicable
NR - Not Reported
Non-exempt - A well drilled within an Active Management Area drilled pursuant to a groundwater right authorized by A.R.S. Title 45, Chapter 2, Article 5, a service area right authorized by A.R.S. Title 45, Chapter 2, Article 6, or a groundwater withdrawal permit authorized by A.R.S. Title 45, Chapter 2, Article 7.
* Date well registered with Arizona Department of Water Resources

FIGURES



Document Path: \\KATHY_HUNTER\In-Box\NKR\ECP\Figure 2\40th_Osborn.mxd

Groundwater Monitor Well Locations

SRP Production Well Location

0 75 150 300 Feet

N

EAST CENTRAL PHOENIX
WQARF SITE
PHOENIX, ARIZONA

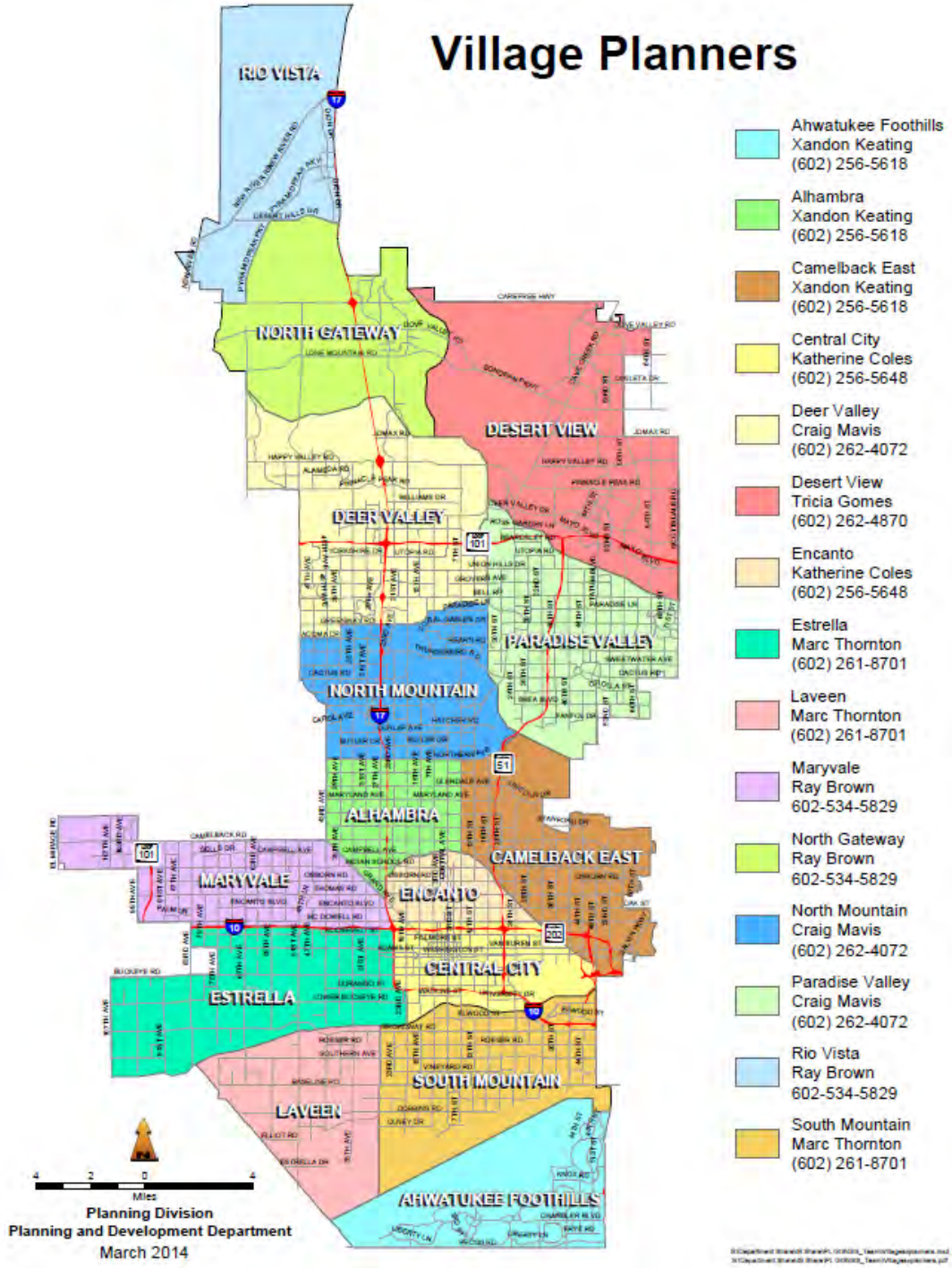
40TH STREET AND OSBORN ROAD SITE MAP

HARGIS + ASSOCIATES, INC.
HYDROGEOLOGY • ENGINEERING

10/1/2014

FIGURE F-1

PREP BY NKR REV BY LLJM RPT NO 1134.41



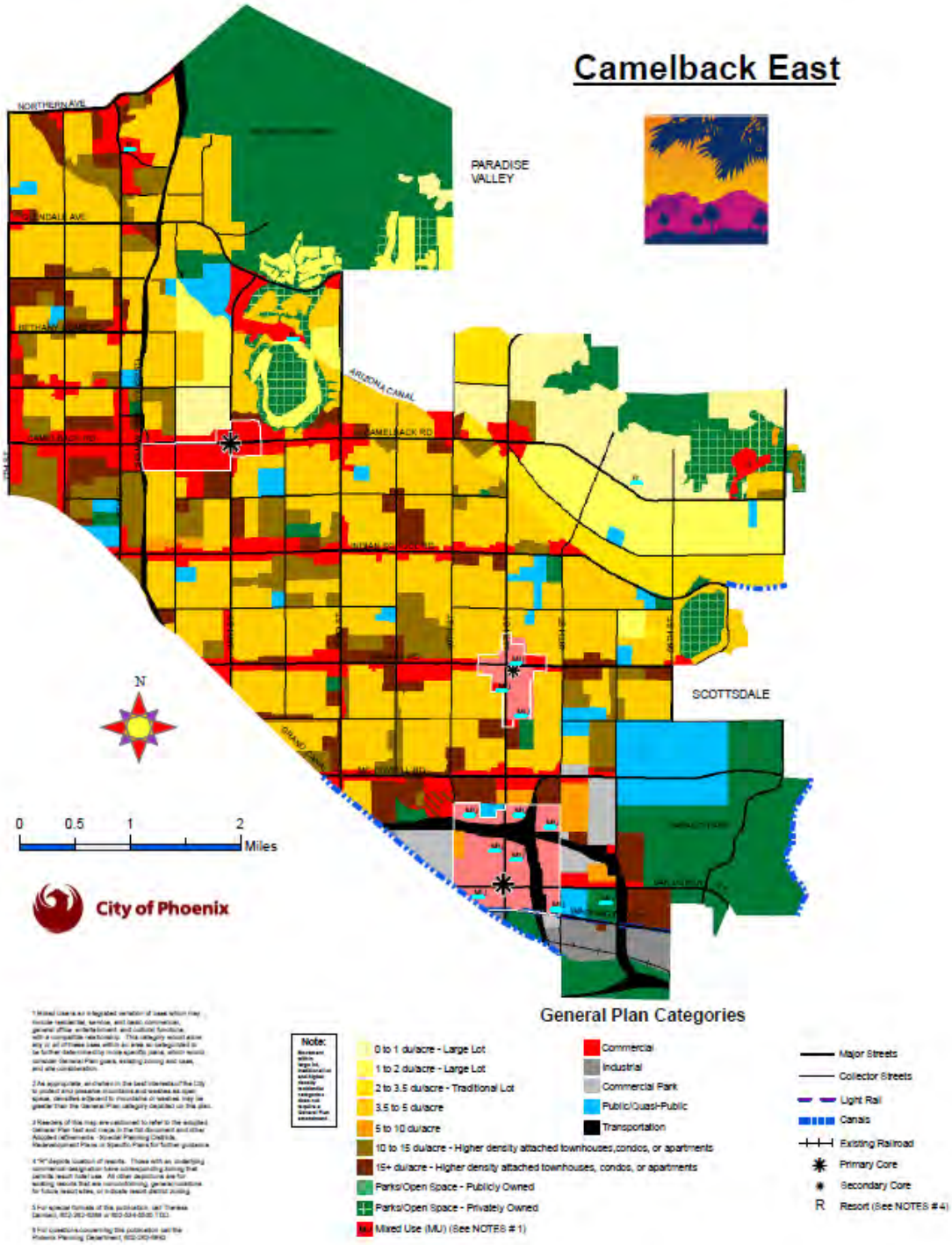
EAST CENTRAL PHOENIX WQARF SITE
PHOENIX, ARIZONA

CITY OF PHOENIX VILLAGE PLANNERS MAP

HARGIS + ASSOCIATES, INC.
HYDROGEOLOGY • ENGINEERING

6/13/2014
FIGURE F-2

Note: Figure adapted from
City of Phoenix, Planning and Development (June 2014)
www.phoenix.gov/pdd/pz/vpcomm.html



Note: Figure adapted from
City of Phoenix, Planning and Development (June 2014)
www.phoenix.gov/pdd/pz/vpce.html

EAST CENTRAL PHOENIX WQARF SITE
PHOENIX, ARIZONA

CAMELBACK EAST GENERAL PLAN MAP

HARGIS + ASSOCIATES, INC.
HYDROGEOLOGY • ENGINEERING

6/13/2014
FIGURE F-3

Note: Figure adapted from
City of Phoenix, Planning and Development
www.phoenix.gov/pdd/pz/vpce.html
(Zoning Maps G10 & H10, Revised 4/05/2012 & 11/05/2013)

N

400 200 0 400

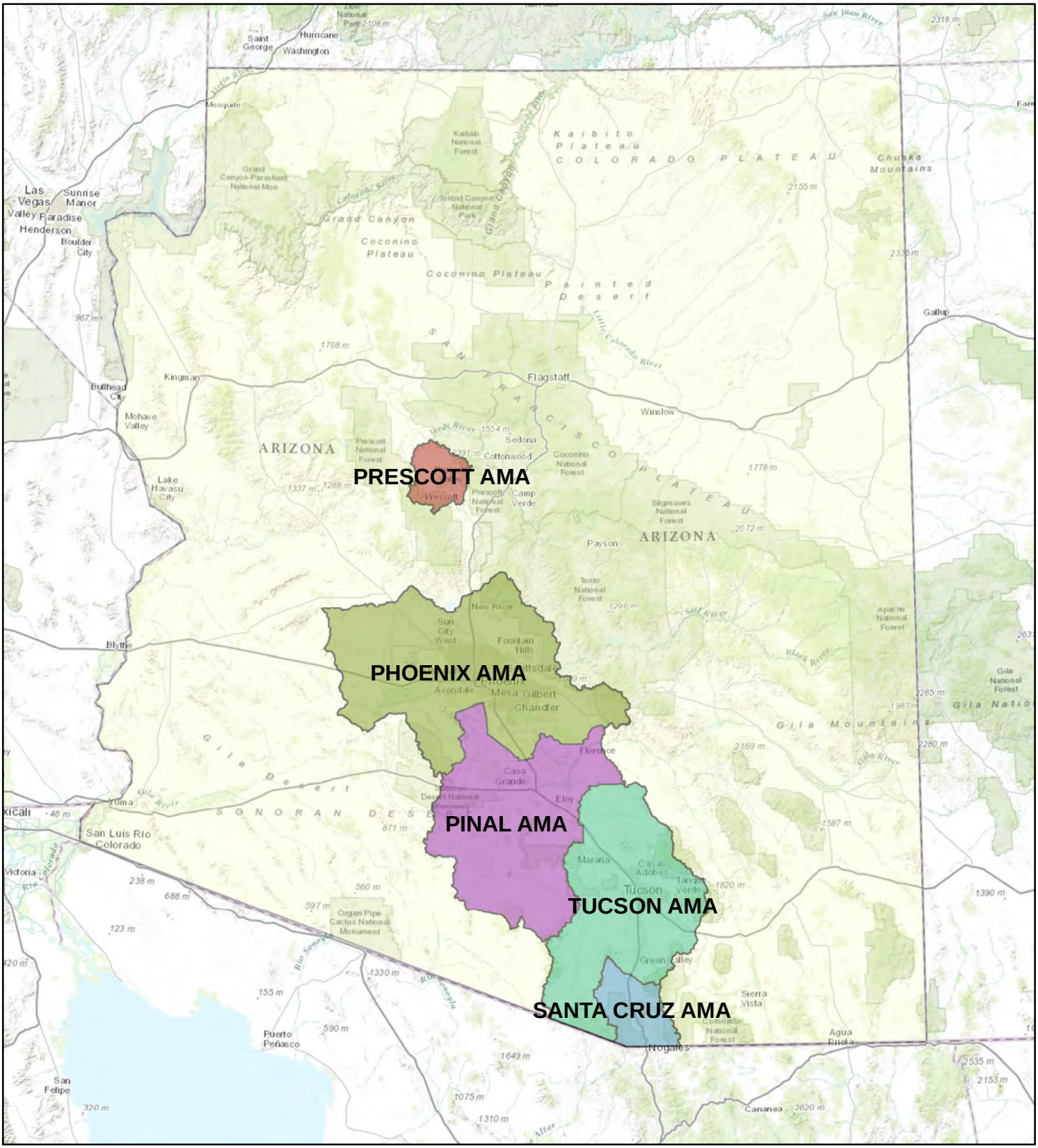
Feet

EAST CENTRAL PHOENIX WQARF SITE
PHOENIX, ARIZONA

CAMELBACK EAST ZONING MAP
40TH ST AND OSBORN RD

HARGIS + ASSOCIATES, INC.
HYDROGEOLOGY • ENGINEERING

6/2/2014
FIGURE F-4



NOTES:
1) AMA: Active Management Areas
2) Data obtained from Arizona Department of Water Resources (ADWR) Water Management Website (June 2014)

0 25 50 100 Miles

N

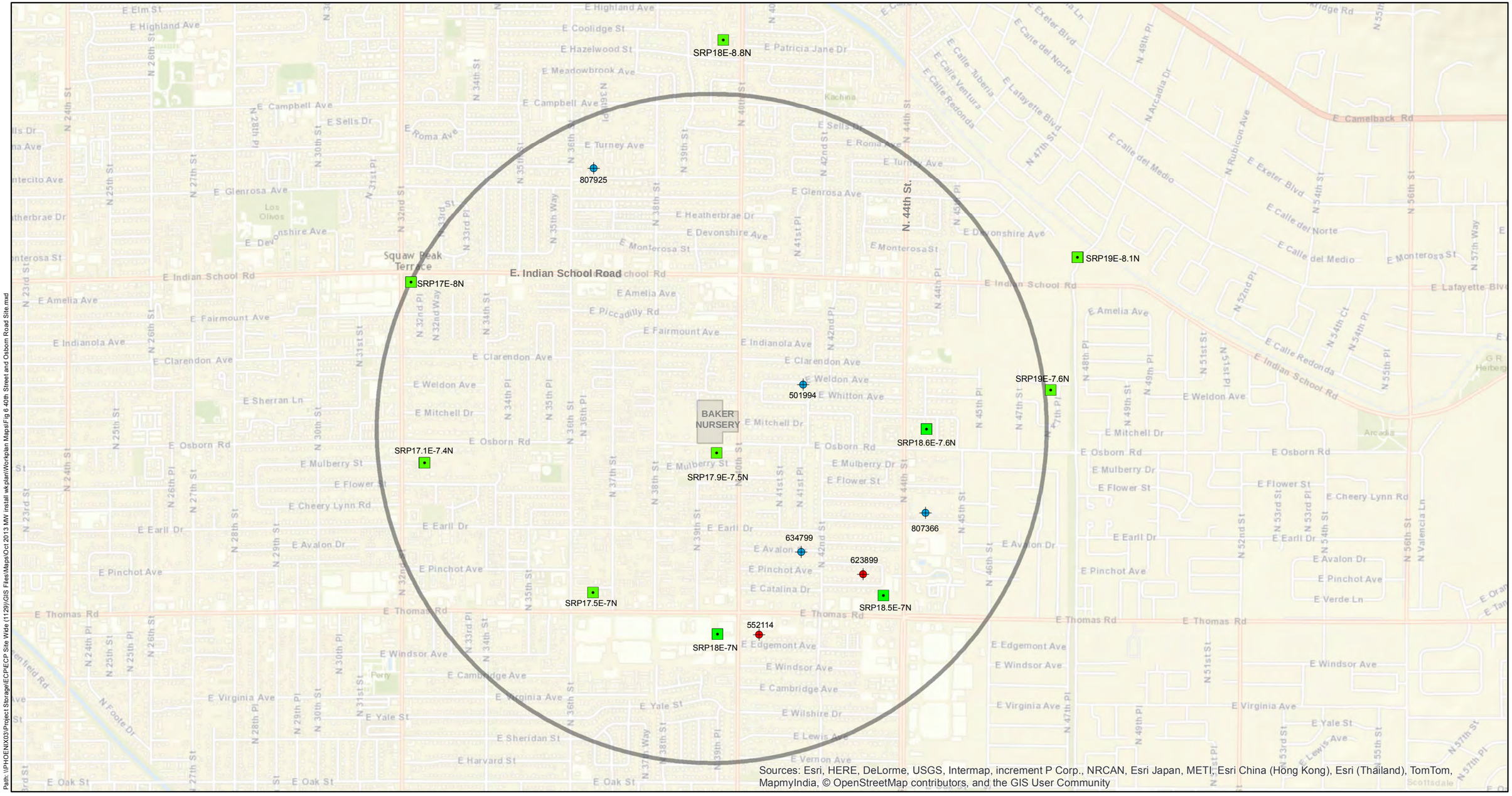
EAST CENTRAL PHOENIX WQARF SITE
PHOENIX, ARIZONA

ADWR AMA LOCATION MAP

HARGIS + ASSOCIATES, INC.
HYDROGEOLOGY • ENGINEERING

6/26/2014
FIGURE F-5

PREP BY NKR REV BY JWM



Path: \\PHOENIX03\Project Storage\ECP\ECP Site Wide (1129)\GIS Files\Maps\Oct 2013 MW install wk plan\Workplan Maps\Fig 6 40th Street and Osborn Road Site.mxd

1 Mile Area

SRP Production Well Locations

Non-Exempt Well Location -- A groundwater well drilled within an Active Management Area under a groundwater right for withdrawl pursuant to ARS Title 45, Chapter 2, Article 5, 6, or 7.

Exempt Well Locations -- A groundwater well with maximum capacity of <35 gallons per minute

518068 -- Well Registry Number for State of Arizona (55-XXXXXX)

NOTES:

- ARS = Arizona Revised Statutes
- WQARF = Water Quality Assurance Revolving Fund
- This map falls within the City of Phoenix municipal service area.
- Well informaiton obtained from Arizona Department of Water Resources 55 Registry.

N

0 375 750 1,500 Feet

EAST CENTRAL PHOENIX
WQARF SITE
PHOENIX, ARIZONA

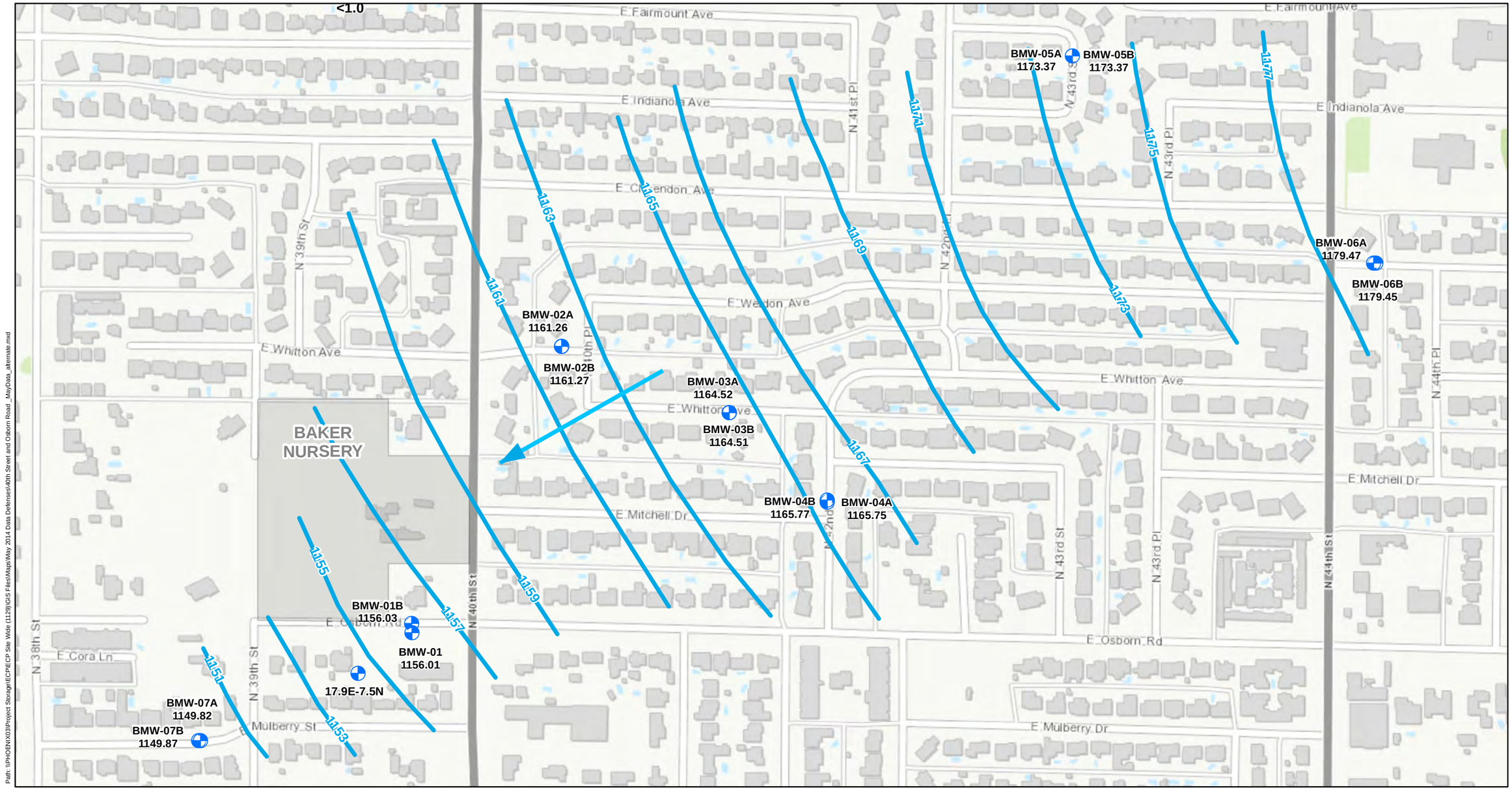
REGISTERED WITHDRAWAL WELLS WITHIN 1-MILE RADIUS OF SITE 40TH STREET AND OSBORN ROAD

HARGIS + ASSOCIATES, INC.
HYDROGEOLOGY • ENGINEERING

10/1/2014

FIGURE F-6

PREP BY NKR REV BY LLJM RPT NO 1137.41



Path: \\PHOENIX\03\Project Storage\EC\PECP Site Wide (1129)\GIS Files\Maps\May 2014 Data Defenses\40th Street and Osborn Road_MayData_alternate.mxd

EXPLANATION

Groundwater Monitor Well Locations

Water Level Contour

BMW-02A -- Existing groundwater well

1161.26 -- Groundwater elevation (ft above mean sea level) - May 2014

0 75 150 300 Feet

N

EAST CENTRAL PHOENIX
WQARF SITE
PHOENIX, ARIZONA

GROUNDWATER ELEVATION (MAY 2014)
40TH STREET AND OSBORN ROAD SITE

HARGIS + ASSOCIATES, INC.
HYDROGEOLOGY • ENGINEERING

10/1/2014

FIGURE F-7

PREP BY NKR REV BY LLJM RPT NO 1134.41

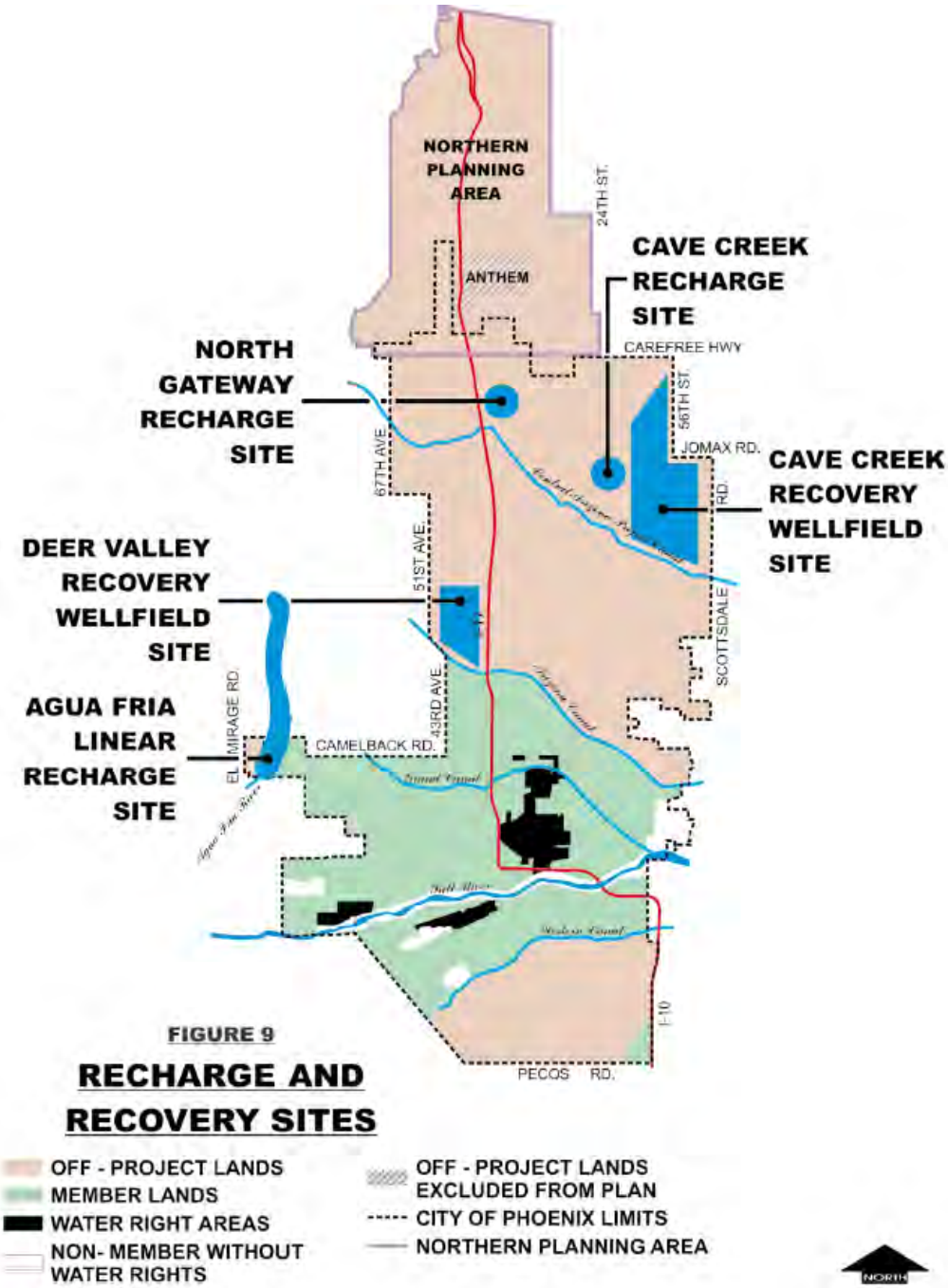


FIGURE 9

RECHARGE AND RECOVERY SITES

- OFF - PROJECT LANDS
- MEMBER LANDS
- WATER RIGHT AREAS
- NON- MEMBER WITHOUT WATER RIGHTS
- OFF - PROJECT LANDS EXCLUDED FROM PLAN
- CITY OF PHOENIX LIMITS
- NORTHERN PLANNING AREA

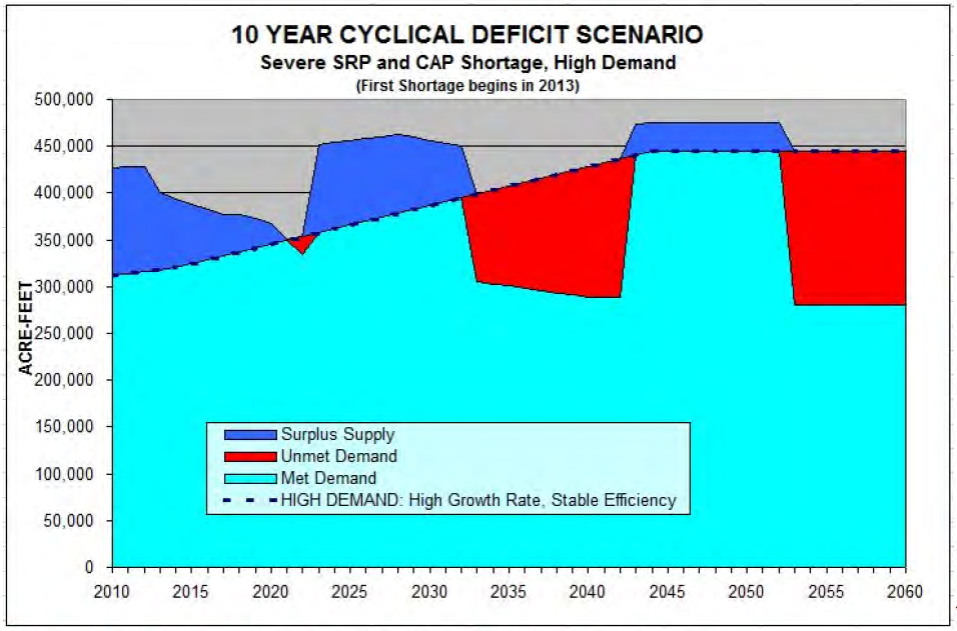
Note: Figure adapted from City of Phoenix Water Resources Element, General Plan 2002 .

EAST CENTRAL PHOENIX WQARF SITE
PHOENIX, ARIZONA

CITY OF PHOENIX RECHARGE AND RECOVERY SITES

HARGIS + ASSOCIATES, INC.
HYDROGEOLOGY • ENGINEERING

6/13/2014
FIGURE F-8



[12]

Figure 4-11. Severe SRP and CAP shortage 10 year deficit scenario

[12] First shortage to CAP occurs in 2010, but deficit to Phoenix would not materialize until 2020.

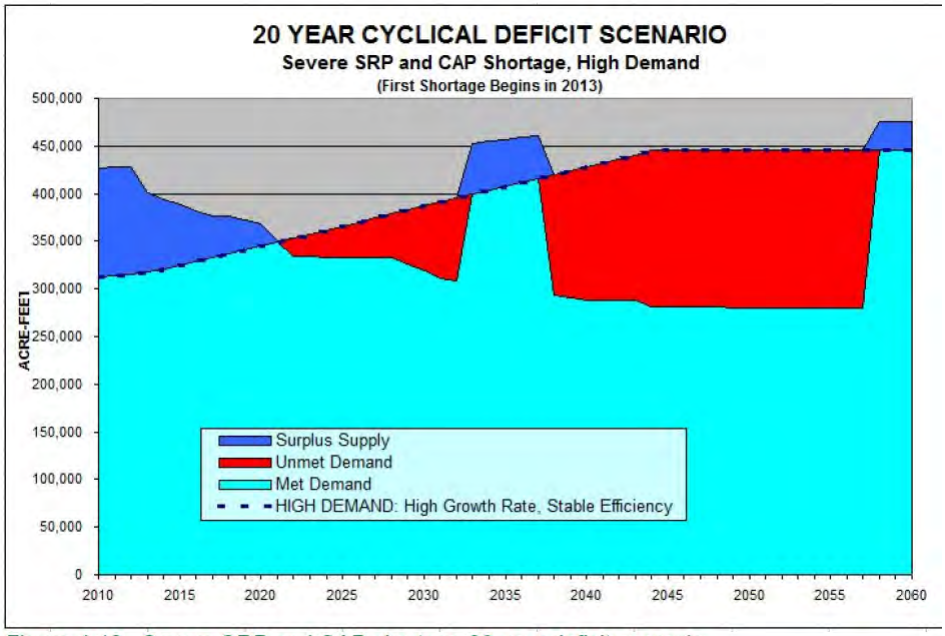


Figure 4-12. Severe SRP and CAP shortage 20 year deficit scenario

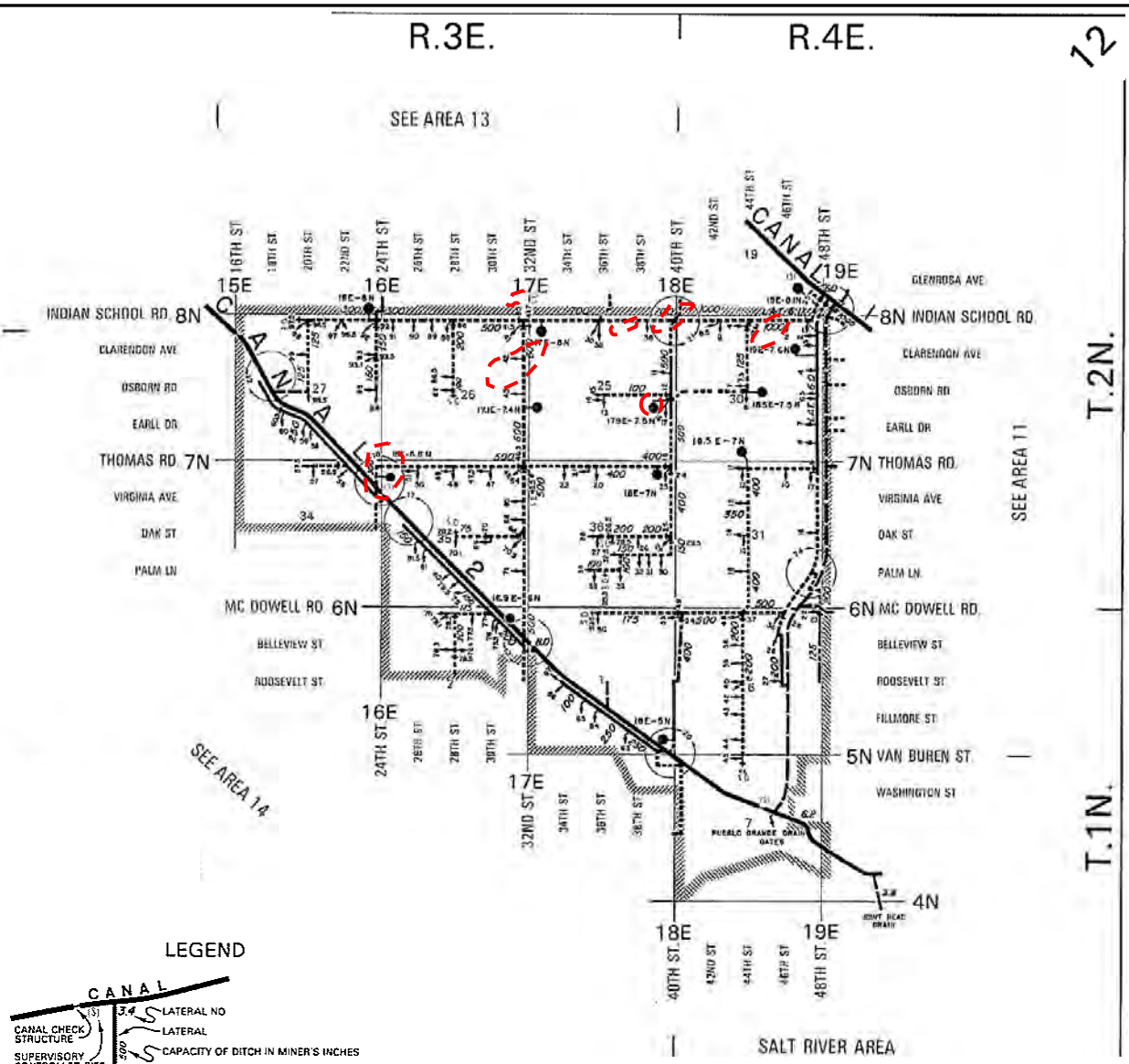
Note: Figure adapted from
City of Phoenix 2011 Water Resources Plan .

EAST CENTRAL PHOENIX WQARF SITE
PHOENIX, ARIZONA

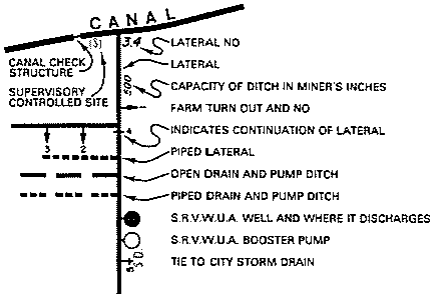
CITY OF PHOENIX DEFICIT SCENARIOS

HARGIS + ASSOCIATES, INC.
HYDROGEOLOGY • ENGINEERING

6/13/2014
FIGURE F-9



LEGEND



AREA 12
PHOENIX IRRIGATION

SCALE
0 — 1 MI.

FEBRUARY 20, 1980

Approximate ECP WQARF Site Locations

Note: Figure adapted from
Salt River Valley Water Users' Association, Zanjero Area Maps, 1980.

EAST CENTRAL PHOENIX WQARF SITE
PHOENIX, ARIZONA

SALT RIVER PROJECT CANALS

HARGIS + ASSOCIATES, INC.
HYDROGEOLOGY · ENGINEERING

FIGURE F-10

ATTACHMENT A

LAND AND WATER USE STUDY QUESTIONNAIRES

HARGIS + ASSOCIATES, INC.
HYDROGEOLOGY • ENGINEERING

1640 South Stapley Drive
Suite 209
Mesa, AZ 85204
Phone: 480.345.0888
Fax: 480.730.0508

VIA EMAIL

May 2, 2014

Philip McNeely
City of Phoenix
Office of Environmental Programs
200 W. Washington Street
14th Floor
Phoenix, AZ 85003

Re: Land and Water Use Study Questionnaire, East Central Phoenix
40th Street and Osborn Road Water Quality Assurance Revolving Fund (WQARF)
Registry Site, Phoenix, Arizona.

Dear Ms. Neill:

On behalf of the Arizona Department of Environmental Quality (ADEQ), Hargis + Associates, Inc. (H+A) has prepared a Land and Water Use Study Questionnaire for specified stakeholders located in and near the East Central Phoenix - 40th Street and Osborn Road WQARF Registry Site (Site). The Site is currently undergoing an evaluation for remedial actions to address tetrachloroethene (PCE) in the groundwater.

This land and water use study is an important tool for ADEQ in development of the remedial objectives for this site. Please complete the enclosed questionnaire within 30 days of receipt. The information you provide is very important for continuation of the remedial process. Please return the questionnaire to Laura Menken, H+A via e-mail at lmenken@hargis.com.

Please contact me at 480-345-0888, extension 260 with questions or comments.

Sincerely,

HARGIS + ASSOCIATES, INC.

Laura L.J. Menken, RG
Hydrogeologist/Project Manager
East Central Phoenix WQARF Site

Attachments

LAND AND WATER USE STUDY QUESTIONNAIRE
FOR MUNICIPALITIES/COUNTIES/UTILITIES WITHIN THE
EAST CENTRAL PHOENIX (40TH AND OSBORN ROAD)
WQARF REGISTRY SITE

Please answer all questions. Mark "NA" for questions that are not applicable. Mark "UNK" if the answer is unknown to you at the time of completion. Please attach any additional pages as needed.

Water user municipality/utility name: City of Phoenix

Date Questionnaire was completed: May 2, 2014

Name of person completing Questionnaire: Philip McNeely /Gary Gin /Xandon Keating

Contact Name: Philip McNeely

Title: Environmental Programs Manager

Division: Office of Environmental Programs / Water Services Dept

Address: 200 W. Washington St. / 14th Floor

Phoenix, AZ 85003

Phone Number: 602-256-5654

1. What is the current use of your municipality's/county's/utility's property within the limits of the East Central Phoenix (40th and Osborn Road) WQARF site? (Boundary is an approximate circle about 400 feet in diameter encompassing Salt River Project (SRP) well 17.9E-7.5N).

Single family residential, church, commercial (plant nursery)

2. Please list the municipality's/county's/utility's properties of concern/boundaries (neighborhood planning committees, zoning, canals, wells) within the East Central Phoenix (40th and Osborn Road) WQARF site boundary.

Camelback East Village Planning Committee

3. What are the foreseeable plans for the municipality's/county's/utility's property within the East Central Phoenix (40th and Osborn Road) WQARF site boundary as far into the future as they are known and up to 100 years, if possible?

Possible redevelopment of plant nursery to low density multifamily residential.

4. Does the municipality/county/utility have a published general plan for the property within the East Central Phoenix (40th and Osborn Road) WQARF site boundary?

Yes.

5. Are parcel, zoning, or land maps available through the municipality/county/utility? Where are they located?

Yes. Phoenix.gov/planning

6. Please list any specific neighborhood concern the municipality/county/utility is aware of within the East Central Phoenix (40th and Osborn Road) WQARF site boundaries? Please list future concerns (e.g.- freeway expansion, water use, water availability, etc.).

None.

7. Please list any future zoning plans or area plans for the municipality/county/utility within the East Central Phoenix (40th and Indian School Road) WQARF site boundary:

Plant nursery (currently zoned single family residential) may be rezoned to low density multifamily residential.

8. Please list any "special projects" projected or anticipated within the East Central Phoenix (40th and Osborn Road) WQARF site boundaries:

None.

9. If any property is leased (the municipality/county/utility is the lessor), how long is the lease term?

N/A.

10. If the property is leased, are there plans to renew the lease and is so, for how long?

N/A

11. Please list any environmental spill of material or waste products that has occurred within the municipality/county/utility within the East Central Phoenix (40th and Osborn Road) WQARF site boundary in the past 5 years?

Aware of none.

12 Is the municipality/county/utility currently sampling groundwater wells within the East Central Phoenix (40th and Osborn Road) WQARF site? If so, how often is the sampling conducted? Are analytical results being submitted to ADEQ for the groundwater database?

No.

13. Does your municipality/county/utility have an environmental manager or do you outsource environmental management to an environmental consulting firm? If so, please provide the following information:

Name:	Philip McNeely
Contact:	Office of Environmental Programs
Title:	Environmental Programs Manager
Address:	200 W. Washington St., 14th Floor
	Phoenix, AZ 85003
Phone:	602-256-5654

14. Please indicate anticipated groundwater development by the municipality/county/utility within the East Central Phoenix (38th and Osborn Road) WQARF site boundary.

None at this time.

15. Are there any groundwater wells owned by the water provider that have been affected by the East Central Phoenix (40th and Osborn Road) WQARF site? If so, please list the ADWR well identification numbers. What is the current status of these wells (e.g.- shut down, still pumping)?

No.

16. What is the future use (up to 100 years) for any wells that have been impacted by the East Central Phoenix (40th and Osborn Road) WQARF site?

N/A

Thank you for your time. The Project Manager, Mel Bunkers, or a representative from ADEQ's consultant, Hargis + Associates, Inc., may follow-up on answers provided.

From:	elizabeth.zima@phoenix.gov
To:	Mel Bunkers (mpb@azdeq.gov)
Cc:	Laura Menken; phil.mcneely@phoenix.gov
Subject:	Re: East Central Phoenix - Land & Water Use Questionnaire - 40th/Osborn
Date:	Tuesday, May 27, 2014 8:16:11 AM
Attachments:	LAND AND WATER USE STUDY QUESTIONNAIRE MUNICIPALITY-ECP-40OS.docx

---

Mel,

Please see our questionnaire for 40th/Osborn attached below. Let me know if you need anything further.

Thanks,
Beth

Beth Zima, R.G.
Environmental Quality Specialist
602-256-3447

City of Phoenix
Office of Environmental Programs
200 West Washington Street, 14th Floor
Phoenix, Arizona 85003

-----Laura Menken <LMENKEN@HARGIS.COM> wrote: -----

To: Elizabeth Zima/MGR/PHX@PHXENT
From: Laura Menken <LMENKEN@HARGIS.COM>
Date: 05/02/2014 02:34PM
Cc: Phil Mcneely/MGR/PHX@PHXENT, "Mel Bunkers (mpb@azdeq.gov)" <mpb@azdeq.gov>
Subject: East Central Phoenix - Land & Water Use Questionnaire - 40th/Osborn

Beth,

This is the additional questionnaire that I need input on from the City of Phoenix, as we discussed last week.

Please let me know if you have any questions, and thanks so much for your help.

Laura

Laura L.J. Menken, RG

Hargis + Associates, Inc.

1640 S. Stapley Drive, Ste 209

Mesa, Arizona 85204

Office 480.345.0888x260

Cell 480.271.5448

lmenken@hargis.com

[attachment "LWUS_Cov_Ltr&Survey_ECP-40OS_COPhx.pdf" removed by Elizabeth Zima/MGR/PHX]
[attachment "LAND AND WATER USE STUDY QUESTIONNAIRE MUNICIPALITY-ECP-40OS.docx" removed by Elizabeth Zima/MGR/PHX]

From: elizabeth.zima@phoenix.gov
To: Laura Menken
Subject: Re: East Central Phoenix - Land & Water Use Questionnaire - 40th/Osborn
Date: Friday, May 02, 2014 3:21:39 PM

Laura,

Got it, thanks.

Beth

Beth Zima, R.G.
Environmental Quality Specialist
602-256-3447

City of Phoenix
Office of Environmental Programs
200 West Washington Street, 14th Floor
Phoenix, Arizona 85003

-----Laura Menken <LMENKEN@HARGIS.COM> wrote: -----

To: Elizabeth Zima/MGR/PHX@PHXENT
From: Laura Menken <LMENKEN@HARGIS.COM>
Date: 05/02/2014 02:34PM
Cc: Phil Mcneely/MGR/PHX@PHXENT, "Mel Bunkers (mpb@azdeq.gov)" <mpb@azdeq.gov>
Subject: East Central Phoenix - Land & Water Use Questionnaire - 40th/Osborn

Beth,

This is the additional questionnaire that I need input on from the City of Phoenix, as we discussed last week.

Please let me know if you have any questions, and thanks so much for your help.

Laura

Laura L.J. Menken, RG

Hargis + Associates, Inc.

1640 S. Stapley Drive, Ste 209

Mesa, Arizona 85204

Office 480.345.0888x260

Cell 480.271.5448

lmenken@hargis.com

[attachment "LWUS_Cov_Ltr&Survey_ECP-40OS_COPhx.pdf" removed by Elizabeth Zima/MGR/PHX]
[attachment "LAND AND WATER USE STUDY QUESTIONNAIRE MUNICIPALITY-ECP-40OS.docx" removed by Elizabeth Zima/MGR/PHX]

HARGIS + ASSOCIATES, INC.
HYDROGEOLOGY • ENGINEERING

1640 South Stapley Drive
Suite 209
Mesa, AZ 85204
Phone: 480.345.0888
Fax: 480.730.0508

VIA EMAIL

April 25, 2014

Andrea Martinez
Mail Station PAB 352
PO Box 52025
Phoenix 85072-2025

Re: Land and Water Use Study Questionnaire, East Central Phoenix
40th Street and Osborn Road Water Quality Assurance Revolving Fund (WQARF)
Registry Site, Phoenix, Arizona.

Dear Ms. Martinez:

On behalf of the Arizona Department of Environmental Quality (ADEQ), Hargis + Associates, Inc. (H+A) has prepared a Land and Water Use Study Questionnaire for specified stakeholders located in and near the East Central Phoenix - 40th Street and Osborn Road WQARF Registry site (Site). The Site is currently undergoing an evaluation for remedial actions to address tetrachloroethene (PCE) in the groundwater.

This land and water use study is an important tool for ADEQ in development of the remedial objectives for this site. Please complete the enclosed questionnaire within 30 days of receipt. The information you provide is very important for continuation of the remedial process. Please return the questionnaire to Laura Menken, H+A via e-mail at lmenken@hargis.com.

Please contact me at 480-345-0888, extension 260 with questions or comments.

Sincerely,

HARGIS + ASSOCIATES, INC.

Laura L.J. Menken, RG
Hydrogeologist/Project Manager
East Central Phoenix WQARF Site

Attachments

LAND AND WATER USE STUDY QUESTIONNAIRE
FOR MUNICIPALITIES/UTILITIES WITHIN THE
EAST CENTRAL PHOENIX (40TH AND OSBORN ROAD)
WQARF REGISTRY SITE

Please answer all questions. Mark "NA" for questions that are not applicable. Mark "UNK" if the answer is unknown to you at the time of completion. Please attach any additional pages as needed.

Water user municipality/utility name:_____Salt River Project_____

Date Questionnaire was completed: __June 6, 2014 _____

Name of person completing Questionnaire: _____Andrea Martinez _____

Contact Name: ____Andrea Martinez _____

Title: ___Senior Environmental Engineer_____

Division: ___Environmental Compliance_____

Address: ___PAB 352, P. O. Box 52025_____

___Phoenix AZ 85233_____

Phone Number: ___602-236-2618_____

1. What is the current use of your municipality's/utility's property within the limits of the East Central Phoenix (40th and Osborn Road) WQARF site? (Boundary is an approximate circle about 400 feet in diameter encompassing Salt River Project (SRP) well 17.9E-7.5N).

SRP owns and operates groundwater supply well 17.9E-7.5N including other conveyance structures in the subject area. Power transmission and distribution lines are also within ECP boundaries. Additionally, SRP has multiple other groundwater supply wells in close proximity to the site.

2. Please list the municipality's/utility's properties of concern/boundaries (neighborhood planning committees, zoning, canals, wells) within the East Central Phoenix (40th and Osborn Road) WQARF site boundary.

In addition to groundwater supply well 17.9E-7.5N noted above in #1, SRP owns eight other groundwater supply wells within a mile or just over a mile of this site. They are listed below along with their direction and approximate distance:

Groundwater supply well 17E-8N – approx. 1 mile to the northwest;

Groundwater supply well 17.1E-7.4N – approx. 7/8 mile to the west;

Groundwater supply well 18E-7N – approx. ½ mile to the south;

Groundwater supply well, 18E-8.8N – approx. 1¼ mile to the north;

Groundwater supply well, 18.5E-7N – approx. ¾ mile to the southeast;

Groundwater supply well, 18.6E-7.6N – approx. 2/3 mile to the east;

Groundwater supply well 19E- 7.6N – approx. 1 1/16 mile to the east;

Groundwater supply well 19E-8.1N – approx. 1¼ mile to the northeast.

See question #15 for contamination concerns.

3. What are the foreseeable plans for the municipality's/utility's property within the East Central Phoenix (40th and Osborn Road) WQARF site boundary as far into the future as they are known and up to 100 years, if possible.

SRP anticipates all its properties in the vicinity of the ECP WQARF Area will remain in use over the next 100 years. Additionally, SRP anticipates that its groundwater supply wells that are in the vicinity (see question #2 above) will transition from irrigation to municipal service (potable supply) within this time period.

4. Does the municipality/utility have a published general plan for the property within the East Central Phoenix (40th and Osborn Road) WQARF site boundary?

No

5. Are parcel, zoning, or land maps available through the municipality/utility? Where are they located?

Not available

6. Please list any specific neighborhood concern the municipality/utility is aware of within the East Central Phoenix (40th and Osborn Road) WQARF site boundaries? Please list future concerns (e.g.- freeway expansion, water use, water availability, etc.)

Water shortage is an issue that can impact this neighborhood as it can all of metropolitan Phoenix. As water quality issues will impact water supplies as much as water quantity, SRP has a specific concern regarding water quality impacts associated with the East Central Phoenix

WQARF site. SRP expects the groundwater supply wells noted in #2 above will transition to potable supply in the future so the chemical quality of the groundwater is a significant issue. Our concern is heightened because of anticipated climate change and the additional stress expected to be applied to already stressed surface water supplies. The importance of groundwater and the ability to utilize the aquifer in local and large scale water management scenarios is critical to the future growth and wellbeing of the entire metro-area. We cannot overstate the importance of effective cleanups of contaminants which threaten the use of groundwater and the aquifers that host it.

7. Please list any future zoning plans or area plans for the municipality/utility within the East Central Phoenix (40th and Indian School Road) WQARF site boundary:

None, SRP does not do zoning.

8. Please list any "special projects" projected or anticipated within the East Central Phoenix (40th and Osborn Road) WQARF site boundaries:

Transition of SRP owned groundwater supply wells from irrigation to municipal service (potable supply). Additionally it may become necessary in the future to construct additional groundwater supply wells in close proximity to the East Central Phoenix WQARF site boundaries.

9. If any property is leased (the municipality/utility is the lessor), how long is the lease term?

There is no property in the area where SRP is the lessor.

10. If the property is leased, are there plans to renew the lease and is so, for how long?

N/A

11. Please list any environmental spill of material or waste products that has occurred within the municipality/utility within the East Central Phoenix (40th and Osborn Road) WQARF site boundary in the past 5 years?

None

12. Is the municipality/utility currently sampling groundwater wells within the East Central Phoenix (40th and Osborn Road) WQARF site? If so, how often is the sampling conducted? Are analytical results being submitted to ADEQ for the groundwater database?

SRP conducts routine groundwater sampling from its wells when possible. Water quality records are available on request, if not already submitted to the ADEQ groundwater database.

13. Does your municipality/utility have an environmental manager or do you outsource environmental management to an environmental consulting firm? If so, please provide the following information:

Name: *David Sultana*

Contact: _____

Title: *Manager, Water Quality, Waste Management & Field Services*

Address: *PAB 352, P.O. Box 52025*

Phoenix, AZ 85233

_____

Phone: *(602) 236-8118*

14. Please indicate anticipated groundwater development by the municipality/utility within the East Central Phoenix (38th and Osborn Road) WQARF site boundary.

Though SRP has no current plans to develop additional groundwater supplies within the East Central Phoenix WQARF site, it is very likely they will be added in the future. The site is completely within the SRP water service area and SRP must be responsive to the water supply needs of its shareholders and customers. To meet its water delivery needs SRP may elect to increase its groundwater use in close proximity to the WQARF site as noted in #8 above. SRP may do this by constructing additional groundwater supply wells or by connecting its existing water supply wells to direct municipal delivery or pipe them to the Arizona Canal or Grand Canal to provide greater flexibility in its delivery operations. In any case, there are many scenarios where usage of groundwater in the vicinity of the WQARF site can be expected to increase above historic levels.

15. Are there any groundwater wells owned by the water provider that have been affected by the East Central Phoenix (40th and Osborn Road) WQARF site? If so, please list the ADWR well identification numbers. What is the current status of these wells (e.g.- shut down, still pumping)?

Some of the SRP groundwater supply wells listed in #2 above have shown elevated PCE and TCE (one time 1996) levels since 1990:

17E-8N (55-608431) – PCE concentration as high as 82 µg/L and TCE as high as 1.5 ug/L;

17.1E-7.4N (55-607731) – PCE concentrations as high as 5.8 ug/L;

17.9E-7.5N (55-617857) – PCE concentration as high as 210 µg/L and one time above AWQS TCE 9.9 µg/L;

18E-8.8N (55-617825) – PCE concentrations as high as 1.1 ug/L;

18.6E-7.6N (55-202398) – PCE concentrations as high as 0.6 ug/L;

There were no PCE or TCE detections in wells 18E-7N (55-617849), 18.5E-7N (55-607712), 19E-7.6N (55-608433) or 19E-8.1N (55-607748) over this period. All of the wells noted above and listed in #2 are currently in service.

16. What is the future use (up to 100 years) for any wells that have been impacted by the East Central Phoenix (40th and Osborn Road) WQARF site?

All of SRP's groundwater supply wells in the vicinity of the East Central Phoenix WQARF site are anticipated to remain in use over the next 100 years. SRP delivers nearly 1,000,000 acre-feet of water per year to the metro Phoenix area. In normal run off years, most of this is supplied from surface water coming from the Salt and Verde Rivers. However, in dry years, groundwater must be pumped to supplement the surface water supplies. SRP's water supply wells are a critical resource especially in drought conditions and it is very important to SRP that it have a reliable supply of water to meet customer and shareholder needs.

Thank you for your time. The Project Manager, Mel Bunkers, or a representative from ADEQ's consultant, Hargis + Associates, Inc., may follow-up on answers provided.

From:	Martinez Andrea L
To:	Laura Menken; Mel P. Bunkers
Subject:	RE: SRP Water User Questionnaires
Date:	Friday, June 06, 2014 4:20:57 PM
Attachments:	SRP Land and Water Use Questionnaire, ECP 24th and Grand, 06-2014.pdf SRP Land and Water Use Questionnaire, ECP 38th and Indian School, 06-2014.pdf SRP Land and Water Use Questionnaire, ECP 40th and Osborn, 06-2014.pdf

Laura and Mel,

Sorry for the delay, please find the attached questionnaires from SRP.

Thanks,

Andrea Martinez | Senior Environmental EngineerI | 602.236.2618
Salt River Project | 1521 North Project Drive | Tempe, Arizona 85281

From: Laura Menken [mailto:LMENKEN@HARGIS.COM]
Sent: Monday, June 02, 2014 11:51 AM
To: Mel P. Bunkers; Martinez Andrea L
Subject: RE: SRP Water User Questionnaires

Andrea,

As Mel indicated, we are under deadline as well. I need the 38th and Indian School and 40th/Osborn as early as possible. The 24th/Grand Canal can come later if that helps.

If you could give us an update I'd appreciate it.

Thank you!
Laura

Laura L.J. Menken, RG
Hargis + Associates, Inc.
1640 S. Stapley Drive, Ste 209
Mesa, Arizona 85204
Office 480.345.0888x260
Cell 480.271.5448
lmenken@hargis.com

From: Mel P. Bunkers [mailto:Bunkers.Mel@azdeq.gov]
Sent: Monday, June 02, 2014 7:23 AM
To: 'Martinez Andrea L'; Laura Menken
Subject: RE: SRP Water User Questionnaires

Andrea,

Is it possible to get the questionnaires back earlier than June 20th as ADEQ reports that contain the questionnaires as attachments are due also?

Thank you,

Mel Bunkers, Project Manager
Remedial Projects Unit
Arizona Department of Environmental Quality
1110 W Washington St.
Phoenix, Arizona 85007
(602) 771-4556

From: Martinez Andrea L [mailto:Andrea.Martinez@srpnet.com]
Sent: Friday, May 30, 2014 1:26 PM
To: Laura Menken
Cc: Mel P. Bunkers
Subject: RE: SRP Water User Questionnaires

Hi Laura,

We are working on the three ECP questionnaires, unfortunately they are all taking us longer than expected due to other demands. Can we return all three by June 20th?

Thanks,

Andrea Martinez | Senior Environmental EngineerI | 602.236.2618
Salt River Project | 1521 North Project Drive | Tempe, Arizona 85281

From: Laura Menken [mailto:LMENKEN@HARGIS.COM]
Sent: Friday, April 25, 2014 3:09 PM
To: Martinez Andrea L
Cc: Mel Bunkers (mpb@azdeq.gov)
Subject: RE: SRP Water User Questionnaires

Andrea,

I've attached the letter and survey for the ECP 40th and Osborn Site as well. Please let me know if you have any questions.

Thanks,

Laura

Laura L.J. Menken, RG
Hargis + Associates, Inc.
1640 S. Stapley Drive, Ste 209

Mesa, Arizona 85204
Office 480.345.0888x260
Cell 480.271.5448
lmenken@hargis.com

From: Martinez Andrea L [mailto:Andrea.Martinez@srpnet.com]
Sent: Friday, April 25, 2014 11:50 AM
To: Laura Menken
Cc: Mel Bunkers (mpb@azdeq.gov)
Subject: RE: SRP Water User Questionnaires

Laura,

It makes no difference to us how we receive these questionnaires, they have come both hard copy from ADEQ, electrically from the Consulting firm. However Mel would like to handle. Either way I always request the word version as there are multiple groups within SRP that have input on the forms. Thanks Laura.

Thanks,

Andrea Martinez | Senior Environmental EngineerI | 602.236.2618
Salt River Project | 1521 North Project Drive | Tempe, Arizona 85281

From: Laura Menken [mailto:LMENKEN@HARGIS.COM]
Sent: Friday, April 25, 2014 11:46 AM
To: Martinez Andrea L
Cc: Mel Bunkers (mpb@azdeq.gov)
Subject: RE: SRP Water User Questionnaires

Andrea,
Thanks for your help. Here are the forms for the two sites.

I have one more site that I need to send a letter out to you. Would you prefer I send that via email, as well?

Laura

Laura L.J. Menken, RG
Hargis + Associates, Inc.
1640 S. Stapley Drive, Ste 209
Mesa, Arizona 85204
Office 480.345.0888x260
Cell 480.271.5448
lmenken@hargis.com

From: Martinez Andrea L [mailto:Andrea.Martinez@srpnet.com]
Sent: Friday, April 25, 2014 11:29 AM
To: Laura Menken
Subject: SRP Water User Questionnaires

Hi Laura,

Could you please send the two questionnaires electronically, word please? It is much easier internally to fill out answers in word then route to internal groups that need to provide input. Thanks.

Thanks,

Andrea Martinez | Senior Environmental EngineerI | 602.236.2618
Salt River Project | 1521 North Project Drive | Tempe, Arizona 85281

NOTICE: This e-mail (and any attachments) may contain PRIVILEGED OR CONFIDENTIAL information and is intended only for the use of the specific individual(s) to whom it is addressed. It may contain information that is privileged and confidential under state and federal law. This information may be used or disclosed only in accordance with law, and you may be subject to penalties under law for improper use or further disclosure of the information in this e-mail and its attachments. If you have received this e-mail in error, please immediately notify the person named above by reply e-mail, and then delete the original e-mail. Thank you.

From: Laura Menken
To: "Martinez Andrea L"
Cc: Mel Bunkers (mpb@azdeq.gov)
Subject: RE: SRP Water User Questionnaires
Date: Friday, April 25, 2014 3:08:00 PM
Attachments: LAND AND WATER USE STUDY QUESTIONNAIRE MUNICIPALITY-ECP-40OS.docx
LWUS_Ltr&Survey_ECP-40OS_SRP.pdf

Andrea,

I've attached the letter and survey for the ECP 40th and Osborn Site as well. Please let me know if you have any questions.

Thanks,

Laura

Laura L.J. Menken, RG
Hargis + Associates, Inc.
1640 S. Stapley Drive, Ste 209
Mesa, Arizona 85204
Office 480.345.0888x260
Cell 480.271.5448
lmenken@hargis.com

From: Martinez Andrea L [mailto:Andrea.Martinez@srpnet.com]
Sent: Friday, April 25, 2014 11:50 AM
To: Laura Menken
Cc: Mel Bunkers (mpb@azdeq.gov)
Subject: RE: SRP Water User Questionnaires

Laura,

It makes no difference to us how we receive these questionnaires, they have come both hard copy from ADEQ, electrically from the Consulting firm. However Mel would like to handle. Either way I always request the word version as there are multiple groups within SRP that have input on the forms. Thanks Laura.

Thanks,

Andrea Martinez | Senior Environmental EngineerI | 602.236.2618
Salt River Project | 1521 North Project Drive | Tempe, Arizona 85281

From: Laura Menken [mailto:LMENKEN@HARGIS.COM]
Sent: Friday, April 25, 2014 11:46 AM
To: Martinez Andrea L
Cc: Mel Bunkers (mpb@azdeq.gov)

Subject: RE: SRP Water User Questionnaires

Andrea,
Thanks for your help. Here are the forms for the two sites.

I have one more site that I need to send a letter out to you. Would you prefer I send that via email, as well?

Laura

Laura L.J. Menken, RG
Hargis + Associates, Inc.
1640 S. Stapley Drive, Ste 209
Mesa, Arizona 85204
Office 480.345.0888x260
Cell 480.271.5448
lmenken@hargis.com

From: Martinez Andrea L [mailto:Andrea.Martinez@srpnet.com]
Sent: Friday, April 25, 2014 11:29 AM
To: Laura Menken
Subject: SRP Water User Questionnaires

Hi Laura,

Could you please send the two questionnaires electronically, word please? It is much easier internally to fill out answers in word then route to internal groups that need to provide input. Thanks.

Thanks,

Andrea Martinez | Senior Environmental EngineerI | 602.236.2618
Salt River Project | 1521 North Project Drive | Tempe, Arizona 85281

HARGIS + ASSOCIATES, INC.
HYDROGEOLOGY • ENGINEERING

1640 South Stapley Drive
Suite 209
Mesa, AZ 85204
Phone: 480.345.0888
Fax: 480.730.0508

VIA EMAIL

May 2, 2014

Rita Neill
Environmental Programs Manager
Maricopa County Risk Management
222 North Central Avenue, Suite 1110
Phoenix, Arizona 85004

Re: Land and Water Use Study Questionnaire, East Central Phoenix
40th Street and Osborn Road Water Quality Assurance Revolving Fund (WQARF)
Registry Site, Phoenix, Arizona.

Dear Ms. Neill:

On behalf of the Arizona Department of Environmental Quality (ADEQ), Hargis + Associates, Inc. (H+A) has prepared a Land and Water Use Study Questionnaire for specified stakeholders located in and near the East Central Phoenix - 40th Street and Osborn Road WQARF Registry Site (Site). The Site is currently undergoing an evaluation for remedial actions to address tetrachloroethene (PCE) in the groundwater.

This land and water use study is an important tool for ADEQ in development of the remedial objectives for this site. Please complete the enclosed questionnaire within 30 days of receipt. The information you provide is very important for continuation of the remedial process. Please return the questionnaire to Laura Menken, H+A via e-mail at lmenken@hargis.com.

Please contact me at 480-345-0888, extension 260 with questions or comments.

Sincerely,

HARGIS + ASSOCIATES, INC.

Laura L.J. Menken, RG
Hydrogeologist/Project Manager
East Central Phoenix WQARF Site

Attachments

LAND AND WATER USE STUDY QUESTIONNAIRE
FOR MUNICIPALITIES/COUNTIES/UTILITIES WITHIN THE
EAST CENTRAL PHOENIX (40TH AND OSBORN ROAD)
WQARF REGISTRY SITE

Please answer all questions. Mark "NA" for questions that are not applicable. Mark "UNK" if the answer is unknown to you at the time of completion. Please attach any additional pages as needed.

Water user municipality/county/utility name: Maricopa County

Date Questionnaire was completed: May 5, 2014

Name of person completing Questionnaire: Rita Neill

Contact Name: Rita Neill

Title: Environmental Programs Manager

Division: Risk Management

Address: 222 N. Central Ave, Ste 1110

Phoenix, AZ 85004

Phone Number: 602-506-5063

1. What is the current use of your municipality's/county's/utility's property within the limits of the East Central Phoenix (40th and Osborn Road) WQARF site? (Boundary is an approximate circle about 400 feet in diameter encompassing Salt River Project (SRP) well 17.9E-7.5N).

NA

2. Please list the municipality's/county's/utility's properties of concern/boundaries (neighborhood planning committees, zoning, canals, wells) within the East Central Phoenix (40th and Osborn Road) WQARF site boundary.

NA

3. What are the foreseeable plans for the municipality's/county's/utility's property within the East Central Phoenix (40th and Osborn Road) WQARF site boundary as far into the future as they are known and up to 100 years, if possible?

NA

4. Does the municipality/county/utility have a published general plan for the property within the East Central Phoenix (40th and Osborn Road) WQARF site boundary?

NA

5. Are parcel, zoning, or land maps available through the municipality/county/utility? Where are they located?

The County has parcel maps and historical aerials available on the GIS section of its website at www.Maricopa.gov

6. Please list any specific neighborhood concern the municipality/county/utility is aware of within the East Central Phoenix (40th and Osborn Road) WQARF site boundaries? Please list future concerns (e.g.- freeway expansion, water use, water availability, etc.).

That any planned remediation coordinate with Maricopa County Air Quality Department for the necessary permits, ie, NESHAPs, dust control, VOC emissions.

7. Please list any future zoning plans or area plans for the municipality/county/utility within the East Central Phoenix (40th and Indian School Road) WQARF site boundary:

NA

8. Please list any "special projects" projected or anticipated within the East Central Phoenix (40th and Osborn Road) WQARF site boundaries:

NA

9. If any property is leased (the municipality/county/utility is the lessor), how long is the lease term?

NA

10. If the property is leased, are there plans to renew the lease and is so, for how long?

NA

11. Please list any environmental spill of material or waste products that has occurred within the municipality/county/utility within the East Central Phoenix (40th and Osborn Road) WQARF site boundary in the past 5 years?

NA

12 Is the municipality/county/utility currently sampling groundwater wells within the East Central Phoenix (40th and Osborn Road) WQARF site? If so, how often is the sampling conducted? Are analytical results being submitted to ADEQ for the groundwater database?

NA

13. Does your municipality/county/utility have an environmental manager or do you outsource environmental management to an environmental consulting firm? If so, please provide the following information:

Name: Rita Neill

Contact: _____

Title: Environmental Programs Manager

Address: Maricopa County Risk Management

222 N. Central Ave, Ste 1110

Phoenix, AZ 85004

Phone: 602-506-5063

14. Please indicate anticipated groundwater development by the municipality/county/utility within the East Central Phoenix (38th and Osborn Road) WQARF site boundary.

NA

15. Are there any groundwater wells owned by the water provider that have been affected by the East Central Phoenix (40th and Osborn Road) WQARF site? If so, please list the ADWR well identification numbers. What is the current status of these wells (e.g.- shut down, still pumping)?

NA

16. What is the future use (up to 100 years) for any wells that have been impacted by the East Central Phoenix (40th and Osborn Road) WQARF site?

NA

Thank you for your time. The Project Manager, Mel Bunkers, or a representative from ADEQ's consultant, Hargis + Associates, Inc., may follow-up on answers provided.

From: Rita Neill - RMX
To: Laura Menken
Subject: Questionnaires for East Central Phoenix WQARF Site
Date: Monday, May 05, 2014 1:57:30 PM
Attachments: LWUS_Cov_LtrSurvey_ECP-40OS_MaricopaCounty1.pdf
LWUS_Cov_LtrSurvey_ECP-38IS_MaricopaCounty1.pdf
LWUS_Cov_LtrSurvey_ECP-40IS_MaricopaCounty1.pdf

Laura – here you go. The County doesn't have any facilities or property within these areas, so most of the answers are not applicable.

Rita H. Neill, PE
Environmental Programs Manager
Maricopa County Risk Management
602-506-5063

ATTACHMENT B

ADWR WELL REGISTRATION RECORDS

Arizona Department of Water Resources
Water Management Support Section
P.O. Box 33589 Phoenix, Arizona 85067-3589
(602) 771-8500 • (800) 352-8488
www.azwater.gov

Request to Change Well Information

RECEIVED
NOV 21 2007
INFO MGMT

FILE NUMBER: A(2-4)30CCA
WELL REGISTRATION NUMBER: 55-634799

- Review instructions prior to completing form in black or blue ink.
- You must include with your Notice:
  - check or money order for any required fee(s)
- Authority for fee: A.A.C. R12-15-151(B)(4)(a), A.R.S. § 45-113(B)

** PLEASE PRINT CLEARLY **

SECTION 1. REGISTRY INFORMATION

Well Owner

FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL: Reid W. Teeples

MAILING ADDRESS: 2065 N. DORAN

CITY / STATE / ZIP CODE: Mesa AZ 85203

CONTACT PERSON NAME AND TITLE: Reid W. Teeples

TELEPHONE NUMBER: 480-629-5312 FAX:

Location of Well

WELL LOCATION ADDRESS (IF ANY): 4101 E. Avalon Dr., Phoenix, AZ 85018

TOWNSHIP (N/S)	RANGE (E/W)	SECTION	160 ACRE	40 ACRE	10 ACRE
2N	4E	30	SW ¼	SW ¼	NE ¼

LATITUDE Degrees	Minutes	Seconds N	LONGITUDE Degrees	Minutes	Seconds W
°	'	"	°	'	"

METHOD OF LATITUDE/LONGITUDE (CHECK ONE) ☐ *GPS: Hand-Held ☐ USGS Quad Map ☐ Conventional Survey ☐ *GPS: Survey-Grade

*IF GPS WAS USED, GEOGRAPHIC COORDINATE DATUM (CHECK ONE) ☐ NAD-83 ☐ Other (*please specify*):

COUNTY ASSESSOR'S PARCEL ID NUMBER			COUNTY WHERE WELL IS LOCATED
BOOK	MAP	PARCEL	
127	14	038	Maricopa

Type of Request (CHECK ONE)

☐ Change of Well Drilling Contractor *(Fill out Section 2)* XX Change of Well Ownership *(Fill out Section 3)* ☐ Change of Well Information (location, use, etc.) *(Fill out Section 4)*

SECTION 2. REQUEST TO CHANGE WELL DRILLING CONTRACTOR ($10 Fee Required) — $10 FEE

- If drilling or abandoning a well, the Department must receive this request and issue authorization to the new drilling firm prior to the commencement of well drilling or abandonment.

Current Well Drilling Contractor		New Well Drilling Contractor	
FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL		FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL	
DWR LICENSE NUMBER		DWR LICENSE NUMBER	ROC LICENSE CATEGORY
TELEPHONE NUMBER	FAX	TELEPHONE NUMBER	FAX

SECTION 3. STATEMENT OF CHANGE OF WELL OWNERSHIP ($10 Fee Required) — $10 FEE

- If this change pertains to more than one well and the names are the same, only one $10 fee is required.

Previous Well Owner		New Well Owner	
FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL: Same as Section 1		FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL: David Ross Abbey & Mary Louise Abbey	
MAILING ADDRESS		MAILING ADDRESS: 4195 N. 42nd Street	
CITY / STATE / ZIP CODE		CITY / STATE / ZIP CODE: Phoenix, AZ. 85018	
CONTACT PERSON NAME AND TITLE		CONTACT PERSON NAME AND TITLE: Marilyn Zembsch	
TELEPHONE NUMBER	FAX	TELEPHONE NUMBER: 480/502-1106	FAX

DS

SECTION 4. CHANGE OF WELL INFORMATION (No Fee Required) — NO FEE

NOTE: Applies only to wells that have already been drilled. For proposed wells, an amended Notice of Intent to Drill a Well must be filed.

EXPLAIN

I HEREBY CERTIFY that the above statements are true to the best of my knowledge and belief.

TYPE OR PRINT NAME AND TITLE	SIGNATURE OF WELL OWNER	DATE
REID W. TEEPLES	Reid W. Teeples	11/20/07

DEPARTMENT OF WATER RESOURCES
99 EAST VIRGINIA AVENUE
PHOENIX, ARIZONA 85004

RECEIVED MAY 26 1982 DEPT. OF WATER RESOURCES

REGISTRATION OF EXISTING WELLS

READ INSTRUCTIONS ON BACK OF THIS FORM BEFORE COMPLETING
PRINT OR TYPE — FILE IN DUPLICATE

07

FOR OFFICE USE ONLY
REGISTRATION NO. 55- 634799
FILE NO. A(2-4)30CCC
FILED 5-26-82 (DATE) AT 1PM (TIME)
INA
AMA PHOENIX

REGISTRATION FEE (CHECK ONE)
EXEMPT WELL (NO CHARGE) ☐
NON-EXEMPT WELL – $10.00 ☐

1. Name of Registrant:
Reid W. Teeples
4101 E. Avalon Drive (Address) Phoenix (City) AZ (State) 85018 (Zip)

2. File and/or Control Number under previous groundwater law:
_____ (File Number) 35- _____ (Control Number)

3. a. The well is located within the NE ¼ SW ¼ SW ¼, Section 30, of Township 2N N/S, Range 4E E/W, G & SRB & M, in the County of Maricopa.
b. If in a subdivision: Name of subdivision Rancho Ventura #12, Lot No. 311, Address 4101 E. Avalon Drive, Phoenix, Arizona, 85018.

4. The principal use(s) of water (Examples: irrigation - stockwater - domestic - municipal - industrial)
Watering lawn and garden only.

5. If for irrigation use, number of acres irrigated from well _____.

6. Owner of land on which well is located. If same as Item 1, check this box XX
_____ (Address) _____ (City) _____ (State) _____ (Zip)

7. Well data (If data not available, write N/A)
a. Depth of Well 100 feet
b. Diameter of casing 4 inches
c. Depth of casing 70 feet
d. Type of casing PVC Schedule 40.
e. Maximum pump capacity 10 gallons per minute.
f. Depth to water 23 feet below land surface.
g. Date well completed October (Month) _____ (Day) 1979 (Year).

8. The place(s) of use of water. If same as Item 3, check this box XX
____ ¼ ____ ¼ ____ ¼, Section ____ Township ____ Range ____
____ ¼ ____ ¼ ____ ¼, Section ____ Township ____ Range ____
Attach additional sheet if necessary.

9. DATE 5/25/82 SIGNATURE OF REGISTRANT Reid W. Teeples

Printed: 11/21/2007 11:49:16 AM

Store 0010
Sale Receipt #
11/21/2007
Page 1

Arizona Department of Water Resources

3550 N Central Ave
Phoenix AZ 85012

LAND AMERICA LAWYERS

7450 E PINNACLE PEAK RD SUITE 254
SCOTTSDALE,AZ 85255
480-502-1106

Date: 11/21/2007
Cashier: WRPAB
Type: Mail

DCS/INV#	DESCRIPTION		ATTR	SIZE	QTY	PRICE	EXT PRICE
F 78	4439-12	CHANGE OF WELL OWNERSHIP	15238		1	10.00	10.00

1 Unit(s) Subtotal: 10.00

RECEIPT TOTAL: 10.00

Tendered: 10.00

Check #: 10.00 # 00096029

55-634799

We Appreciate Your Business!

DEPARTMENT OF WATER RESOURCES
99 EAST VIRGINIA AVENUE
PHOENIX, ARIZONA 85004

RECEIVED MAY 26 1982 DEPT. OF WATER RESOURCES

REGISTRATION OF EXISTING WELLS

READ INSTRUCTIONS ON BACK OF THIS FORM BEFORE COMPLETING
PRINT OR TYPE — FILE IN DUPLICATE

07

FOR OFFICE USE ONLY
REGISTRATION NO. 55- 634799
FILE NO. A(2-4)30CCa
FILED 5-26-82 (DATE) AT 1PM (TIME)
INA
AMA PHOENIX

REGISTRATION FEE (CHECK ONE)
EXEMPT WELL (NO CHARGE) ☐
NON-EXEMPT WELL – $10.00 ☐

1. Name of Registrant:
Reid W. Teeples
4101 E. Avalon Drive (Address) Phoenix (City) AZ (State) 85018 (Zip)

2. File and/or Control Number under previous groundwater law:
_____ (File Number) 35- _____ (Control Number)

3. a. The well is located within the NE ¼ SW ¼ SW ¼, Section 30, of Township 2N N/S, Range 4E E/W, G & SRB & M, in the County of Maricopa.
b. If in a subdivision: Name of subdivision Rancho Ventura #12, Lot No. 311, Address 4101 E. Avalon Drive, Phoenix, Arizona, 85018.

4. The principal use(s) of water (Examples: irrigation - stockwater - domestic - municipal - industrial)
Watering lawn and garden only.

5. If for irrigation use, number of acres irrigated from well _____.

6. Owner of land on which well is located. If same as Item 1, check this box XX
_____ (Address) _____ (City) _____ (State) _____ (Zip)

7. Well data (If data not available, write N/A)
a. Depth of Well 100 feet
b. Diameter of casing 4 inches
c. Depth of casing 70 feet
d. Type of casing PVC Schedule 40.
e. Maximum pump capacity 10 gallons per minute.
f. Depth to water 23 feet below land surface.
g. Date well completed October (Month) (Day) 1979 (Year).

8. The place(s) of use of water. If same as Item 3, check this box XX
____ ¼ ____ ¼ ____ ¼, Section ____ Township ____ Range ____
____ ¼ ____ ¼ ____ ¼, Section ____ Township ____ Range ____
Attach additional sheet if necessary.

9. DATE 5/25/82 SIGNATURE OF REGISTRANT _____

DEPARTMENT OF WATER RESOURCES
99 EAST VIRGINIA AVENUE
PHOENIX, ARIZONA 85004

RECEIVED JUN 14 1982 DEPT. OF WATER RESOURCES

REGISTRATION OF EXISTING WELLS

READ INSTRUCTIONS ON BACK OF THIS FORM BEFORE COMPLETING
PRINT OR TYPE — FILE IN DUPLICATE

REGISTRATION FEE (CHECK ONE)	
EXEMPT WELL (NO CHARGE)	☐
NON-EXEMPT WELL – $10.00	☒

FOR OFFICE USE ONLY
REGISTRATION NO. 55-623899 07
FILE NO. A(2-4)30Cd
FILED 6-14-82 (DATE) AT 2p (TIME)
INA
AMA PHOENIX

1. Name of Registrant:
B.O.L.S. 44 PARTNERS
3042 N. 44th St. Phoenix, AZ 85018
(Address) (City) (State) (Zip)

2. File and/or Control Number under previous groundwater law:
N/A (File Number) 35- (Control Number)

3. a. The well is located within the SE ¼ of the SW ¼, Section 30, of Township 2 N/S, Range 4 E/W, G & SRB & M, in the County of MARICOPA.
   b. If in a subdivision: Name of subdivision N/A, Lot No. _____, Address _____.

4. The principal use(s) of water (Examples: irrigation - stockwater - domestic - municipal - industrial)
irrigation (potential use - well is not now being used)

5. If for irrigation use, number of acres irrigated from well 2.

6. Owner of land on which well is located. If same as Item 1, check this box ☐
B.O.L.S. 44 PARTNERS c/o B&B PROPERTIES, INC
4455 E. CAMELBACK RD SUITE-160 PHOENIX AZ 85018
(Address) (City) (State) (Zip)

7. Well data (If data not available, write N/A) N/A
   a. Depth of Well _____ feet
   b. Diameter of casing _____ inches
   c. Depth of casing _____ feet
   d. Type of casing _____.
   e. Maximum pump capacity _____ gallons per minute.
   f. Depth to water _____ feet below land surface.
   g. Date well completed _____ (Month) (Day) (Year).

8. The place(s) of use of water. If same as Item 3, check this box ☒
   ____¼ ____¼ ____¼, Section ____ Township ____ Range ____
   ____¼ ____¼ ____¼, Section ____ Township ____ Range ____
   Attach additional sheet if necessary.

9. DATE 6/11/82 SIGNATURE OF REGISTRANT Gregory R. Blank
RESPONSIBLE PARTNER

INSTRUCTIONS FOR COMPLETING REGISTRATION FORM

General Instructions

1. A person who owns an "Existing Well" shall register the well, pursuant to A.R.S. 45-593, by filing this form in duplicate with the Department of Water Resources not later than midnight June 14, 1982. The form must be completed and signed. Failure to do so will constitute a violation of A.R.S. 45-593, and may subject the well owner to injunction and/or civil penalties, pursuant to A.R.S. Title 45, Article 12.

2. An "Existing Well" means, (1) a well which was drilled on or before June 12, 1980 and which is not abandoned or sealed, or (2) a well which was not completed on or before June 12, 1980, but for which a Notice of Intention to Drill was on file with the Arizona Water Commission on or before June 12, 1980.

3. No registration fee is required for Exempt Wells. A $10.00 registration fee must accompany registration forms for all Non-Exempt Wells.

4. An "Exempt Well" means a well having a pump with a maximum capacity of not more than 35 gallons per minute which is used to withdraw groundwater. An Exempt Well may include the non-commercial irrigation of not more than 1 acre of land.

5. A "Non-Exempt Well" means a well that is not an "Exempt Well".

INSTRUCTIONS FOR REGISTRATION QUESTIONS

1. The Registrant must be the owner of the well and may be an individual, public or private corporation, company, partnership, firm, association, society, estate, trust, any other private organization or enterprise, the United States, any state, territory or country or a governmental entity, political subdivision or municipal corporation organized under or subject to the constitution and laws of this State.

2. If you own an existing irrigation well drilled at any time, or any other type of well drilled on or after June 20, 1968, you should have an assigned control and/or file number. Write these numbers in item 2. If you do not know the number, please explain the reason on the form or on an attached sheet.

3. a. Fill in the Section, Township and Range in all cases if it is available.
   b. If the well is in a subdivision and you have this information, give the subdivision name, Lot Number, and Address.

4. Show all purposes for which the water is used.

5. If the well is used for irrigation, give the number of acres irrigated in 1980 from the well.

6. If the owner of the land is an individual, give the last name, first name, middle initial. If the owner of the land is a corporation, partnership, firm, etc., fill in the appropriate title.

7. Complete the section on Well Data with the most accurate information available to you. If the data is not available, write N/A in the blanks.

8. Give the legal description of the place of use of the water. If place of use is in a subdivision and legal description is not available, give the subdivision name, Lot Number and/or address on the blank line.

9. The person in whose name a well is registered shall notify the Department of any change in ownership and shall keep all information on the registration record current and accurate. A form entitled "Change of Well Information/Ownership" is available for this purpose. A blank form will be furnished with the returned duplicate copy of the registration form.

B.O.L.S. 44 PARTNERS
4455 E CAMELBACK RD STE #160-E
PHOENIX AZ 85062

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
WATER RIGHTS ADMINISTRATION
99 EAST VIRGINIA
PHOENIX, ARIZONA 85004

RECEIPT

KIND ENTRY	FILE REFERENCE NO.
55	623899
	THRU
55	

ACCOUNT NO. FUND SOURCE	AGENCY	CHAPTER	DIV.	INT. ACCT.	ITEM DESCRIPTION	RATE	$ AMOUNT
					Filing Fee for Registration of	10.00	10.00
					Existing Wells		
					File No. A(2-4)30cd		

WRITER PAYMENT
GUESTS 1
CHK NO 101
55-I 10.00
TAX 0.00
TOTAL 10.00
GEN.CHEK 10.00

3446 9 13:00

Check # 101
10-21-82 im

TOTAL $ 10.00

✓JOB FILE

Arizona Department of Water Resources
Records Management Section
500 N. 3rd Street γ Phoenix, Arizona 85004
(602) 417-2405 γ (800) 352-8488
www.water.az.gov

Well Driller Report and Well Log

- Review instructions prior to completing form
- This report should be prepared by the driller in detail and filed with the Department within 30 days following completion of the well.

30

FILE NUMBER: A (2-4)acc
WELL REGISTRATION NUMBER: 55-202398
PERMIT NUMBER (IF ISSUED):

** PLEASE PRINT CLEARLY **

SECTION 1 REGISTRY INFORMATION

Well Owner

FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL: Salt River Project

MAILING ADDRESS: PO Box 52025

CITY / STATE / ZIP CODE: Phoenix, AZ 85072

CONTACT PERSON NAME AND TITLE:

TELEPHONE NUMBER:

FAX:

Location of Well

WELL LOCATION ADDRESS (IF ANY): Near 44th st. and Osborn Phx, AZ

TOWNSHIP (N/S)	RANGE (E/W)	SECTION	160 ACRE	40 ACRE	10 ACRE
2N	4E	30	NE ¼	SW ¼	SW ¼

LATITUDE: 33 ° 29 ' 15.73 N

LONGITUDE: 111° 59 ' 12.51 W

LAND SURFACE ELEVATION AT WELL: Feet Above Sea Level

METHOD OF LATITUDE / LONGITUDE (CHECK ONE): ☐ Hand-Held ☐ USGS Quad Map ☐ Conventional Survey ☐ GPS: ☐ Survey-Grade

COUNTY ASSESSOR'S PARCEL ID NUMBER

BOOK	MAP	PARCEL
127	8	41-A

COUNTY WHERE WELL IS LOCATED: Maricopa

SECTION 2 DRILLING AUTHORIZATION

Drilling Firm

NAME: Weber Group LC

DWR LICENSE NUMBER: 215

TELEPHONE NUMBER: 480-961-1141

FAX: 480-961-0290

IMAGED

SECTION 3 WELL CONSTRUCTION DETAILS

DATE WELL CONSTRUCTION STARTED: 6-27-04

DATE WELL CONSTRUCTION COMPLETED: 12-30-04

IF FLOWING WELL, METHOD OF FLOW REGULATION: ☐ Valve ☐ Other:

Drill Method — CHECK ONE

- ☐ Air Rotary
- ☐ Bored or Augered
- ☒ Cable Tool
- ☐ Dual Rotary
- ☐ Mud Rotary
- ☐ Reverse Circulation
- ☐ Driven
- ☐ Jetted
- ☐ Air Percussion / Odex Tubing
- ☐ Other *(please specify)*:

Method of Well Development — CHECK ONE

- ☐ Airlift
- ☐ Bail
- ☒ Surge Block
- ☐ Surge Pump
- ☐ Other *(please specify)*:

Method of Sealing at Reduction Points — CHECK ONE

- ☐ None
- ☐ Packed
- ☐ Swedged
- ☐ Welded
- ☐ Other *(please specify)*:

Water Level Information

STATIC WATER LEVEL: 27 Feet Below Land Surface

DATE MEASURED: 11-22-04

ENTERED SEP - 6 2005

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55-202398

SECTION 4. WELL CONSTRUCTION DESIGN (AS BUILT) (attach additional page if needed)

Borehole			Installed Casing													
DEPTH FROM SURFACE			DEPTH FROM SURFACE			MATERIAL TYPE (T)				PERFORATION TYPE (T)						
FROM (feet)	TO (feet)	BOREHOLE DIAMETER (inches)	FROM (feet)	TO (feet)	OUTER DIAMETER (inches)	STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	SLOT SIZE IF ANY (inches)
0	38	36	0	38	28	X			.375	X						
			0	39	24 1/2	X			.312	X						
			39	137	24 1/2	X			.312				X			1"x3.5"
			+1	47	20 5/8	X			.312 HLSA	X						
			47	207	20 5/8	X			.312 HLSA			X			FUL FLO	.050

Installed Annular Material											
DEPTH FROM SURFACE		ANNULAR MATERIAL TYPE (T)								FILTER PACK		
						BENTONITE						
FROM (feet)	TO (feet)	NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	SAND	GRAVEL	SIZE
0	38			X								
20	205								TACNA		X	6x12
205	207		X						PLUG INSIDE AND OUT			

DEPTH OF BORING	DEPTH OF COMPLETED WELL
207 Feet Below Land Surface	205 Feet Below Land Surface

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55- 202398

SECTION 5. GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	Description Describe material, grain size, color, etc.	Check (T) every interval where water was encountered (if known)
0	5	TOP SOIL	
5	35	CALICHE	
35	50	WATER / SAND	X
50	53	RED CLAY	
53	70	SAND	
70	80	SAND AND PEA GRAVEL	
80	145	SAND / STREAKS OF CLAY	
145	160	COARSE SAND	
160	205	SOFT CONGLOMERATE	

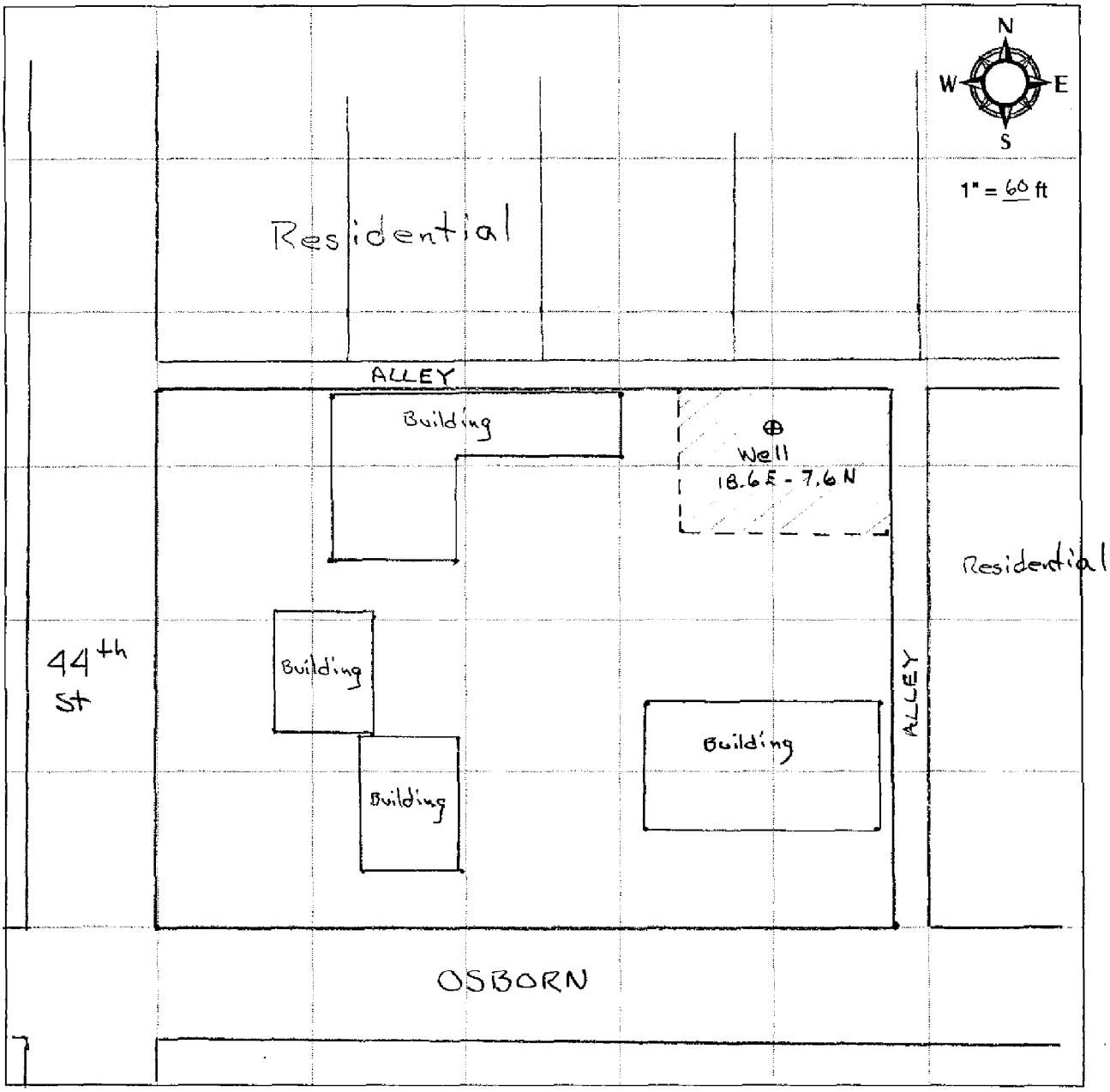
. Report and Well Log

WELL REGISTRATION NUMBER
55-202398

CTION 6. WELL SITE PLAN

NAME OF WELL OWNER	COUNTY ASSESSOR'S PARCEL ID NUMBER		
	BOOK	MAP	PARCEL
SALT RIVER PROJECT	127	8	41-A

- Please draw the following: (1) the boundaries of property on which the well was located; (2) the well location; (3) the locations of all septic tank systems and sewer systems on the property or within 100 feet of the well location, even if on neighboring properties; and (4) any permanent structures on the property that may aid in locating the well.
- Please indicate the distance between the well location and any septic tank system or sewer system.



I state that this notice is filed in compliance with A.R.S. § 45-596 and is complete and correct to the best of my knowledge and belief.

DRILLING FIRM	SIGNATURE OF QUALIFYING PARTY	DATE
WEBER GROUP LC		6/6/05

ARIZONA DEPARTMENT OF WATER RESOURCES
WATER MANAGEMENT DIVISION

300 North Third Street
Phoenix, Arizona 85004

REISSUE

THIS AUTHORIZATION SHALL BE IN POSSESSION OF THE DRILLER DURING ALL DRILL OPERATIONS

WELL REGISTRATION NO: 55-202398 **REPLACES: 55-607713**

AUTHORIZED DRILLER: WEBER GROUP, L.C. **LICENSE NO: 215**

A NOTICE OF INTENTION TO REPLACE AN EXISTING NON-EXEMPT WELL INSIDE THE PHOENIX ACTIVE MANAGEMENT AREA HAS BEEN GRANTED TO:

WELL OWNER: Salt River Project P.O. Box 52025 Phoenix, AZ 85072

The well(s) is/are to be located in the:

SW¼ of the SW¼ of the NE¼ Section 30 Township 2 North Range 4 East

No. of well(s) in this project: 1

THIS AUTHORIZATION EXPIRES AT MIDNIGHT ON THE 1ST DAY OF MARCH, 2005.

WATER MANAGEMENT DIVISION

THE DRILLER MUST FILE A LOG OF THE WELL
WITHIN 30 DAYS OF COMPLETION OF DRILLING

GREAT SEAL OF THE STATE OF ARIZONA
DITAT DEUS
1912

Weber Group, L.C.

August 26, 2005

Barb Sims
ADWR
Information Management Unit

RE: Salt River Project 55-202398

Barb,
Thank you for you assistance in recognizing and solving the registration issue on this new SRP production well. I have made the appropriate changes to the well completion report. I am unable to offer any assistance on 55-607713 as Weber Group did not abandon that well. If you should have any further questions please don't hesitate to contact me.

Thank you,

Marty Weber

Cc Walker Milici

7

RECEIVED
AUG 26 2005
Information Management

Weber Group L.C.

CONTRACTORS

16825 S. Weber Dr. Chandler, AZ 85226
Phone 480-961-1141 Fax 480-961-0290

Fax Transmission

Date 8/26/05

To:		From:	
Attention	BARB SIMS	Name	MARTY
Company	ADWR	Dept	
RE	55-202398	Number of pages included	7
Fax Number	602 417 2421		

Memo

BARB,

Sorry it took so long for such an easy fix. This should be what you need. THANK YOU. MARTY

I will send copy in the mail.

If you do not receive all pages please contact above number.

IMAGED

Weber Group, L.C.

August 26, 2005

AUG 26 2005
Information Management

Barb Sims
ADWR
Information Management Unit

RE: Salt River Project 55-202398

Barb,
Thank you for you assistance in recognizing and solving the registration issue on this new SRP production well. I have made the appropriate changes to the well completion report. I am unable to offer any assistance on 55-607713 as Weber Group did not abandon that well. If you should have any further questions please don't hesitate to contact me.

Thank you,

Marty Weber

Cc Walker Milici

16825 South Weber Drive • Chandler, Arizona 85226-4112 • Office (480) 961-1141 • Fax (480) 961-0290 • KA #146267, KB-01 #146265, L-11 #146266

✓JOB FILE

Arizona Department of Water Resources
Records Management Section
500 N. 3rd Street γ Phoenix, Arizona 85004
(602) 417-2405 γ (800) 352-8488
www.water.az.gov

Well Driller Report and Well Log

A(2-4)30ACC

- Review instructions prior to completing form
- This report should be prepared by the driller in detail and filed with the Department within 30 days following completion of the well.

RECEIVED AUG 26 2005 Information Management

LIFE NUMBER: A (2-4)30acc
WELL REGISTRATION NUMBER: 55-202398
PERMIT NUMBER (IF ISSUED):

** PLEASE PRINT CLEARLY **

SECTION 1 REGISTRY INFORMATION

Well Owner

FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL: Salt River Project

MAILING ADDRESS: PO Box 52025

CITY / STATE / ZIP CODE: Phoenix, AZ 85072

CONTACT PERSON NAME AND TITLE:

TELEPHONE NUMBER: | FAX:

Location of Well

WELL LOCATION ADDRESS (IF ANY): Near 44th st. and Osborn Phx, AZ

TOWNSHIP (N/S)	RANGE (E/W)	SECTION	160 ACRE	40 ACRE	10 ACRE
2N	4E	30	NE ¼	SW ¼	SW ¼

LATITUDE			LONGITUDE		
33 °	29 '	15.73 N	111°	59 '	12.51 W

LAND SURFACE ELEVATION AT WELL: Feet Above Sea Level

METHOD OF LATITUDE / LONGITUDE (CHECK ONE): ☐ Hand-Held ☐ USGS Quad Map ☐ Conventional Survey ☐ GPS: ☐ Survey-Grade

COUNTY ASSESSOR'S PARCEL ID NUMBER

BOOK	MAP	PARCEL
127	8	41-A

COUNTY WHERE WELL IS LOCATED: Maricopa

SECTION 2 DRILLING AUTHORIZATION

Drilling Firm

NAME: Weber Group LC

DWR LICENSE NUMBER: 215

TELEPHONE NUMBER: 480-961-1141 | FAX: 480-961-0290

SECTION 3 WELL CONSTRUCTION DETAILS

DATE WELL CONSTRUCTION STARTED: 6-27-04

DATE WELL CONSTRUCTION COMPLETED: 12-30-04

IF FLOWING WELL, METHOD OF FLOW REGULATION: ☐ Valve ☐ Other:

Drill Method

CHECK ONE

- ☐ Air Rotary
- ☐ Bored or Augered
- ☒ Cable Tool
- ☐ Dual Rotary
- ☐ Mud Rotary
- ☐ Reverse Circulation
- ☐ Driven
- ☐ Jetted
- ☐ Air Percussion / Odex Tubing
- ☐ Other *(please specify)*:

Method of Well Development

CHECK ONE

- ☐ Airlift
- ☐ Bail
- ☒ Surge Block
- ☐ Surge Pump
- ☐ Other *(please specify)*:

Method of Sealing of Reduction Points

CHECK ONE

- ☐ None
- ☐ Packed
- ☐ Swedged
- ☐ Welded
- ☐ Other *(please specify)*:

Water Level Information

STATIC WATER LEVEL: 27 Feet Below Land Surface

DATE MEASURED: 11-22-04

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 -202398

SECTION 4 WELL CONSTRUCTION DESIGN (AS BUILT) Attach additional page if needed

Borehole			Installed Casing													
DEPTH FROM SURFACE			DEPTH FROM SURFACE			MATERIAL TYPE (1)				PERFORATION TYPE (1)						
FROM (feet)	TO (feet)	BOREHOLE DIAMETER (inches)	FROM (feet)	TO (feet)	OUTER DIAMETER (inches)	STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	SLOT SIZE IF ANY (inches)
0	38	36	0	38	28	X			.375	X						
			0	39	24 1/2	X			.312	X						
			39	137	24 1/2	X			.312				X			1"x3.5"
			+1	47	20 5/8	X			.312 HLSA	X						
			47	207	20 5/8	X			.312 HLSA			X			FUL FLO	.050

AUG 26 2005
Information Management

Installed Annular Material

DEPTH FROM SURFACE		ANNULAR MATERIAL TYPE								SAND PACK		
						BENTONITE						
FROM (feet)	TO (feet)	NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	GROUT	CHIPS	PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	SAND	GRAVEL	SIZE
0	38			X								
20	205								TACNA		X	6x12
205	207		X						PLUG INSIDE AND OUT			

DEPTH OF BORING	DEPTH OF COMPLETED WELL
207 Feet Below Land Surface	205 Feet Below Land Surface

Well Driller Report and Well Log

WELL REGISTRATION NUMBER
55 - 202398

SECTION 5 GEOLOGIC LOG OF WELL

DEPTH FROM SURFACE FROM (feet)	TO (feet)	Description: Describe material, grain size, color, etc.	Check (T) every interval where water was encountered (if known)
0	5	TOP SOIL	
5	35	CALICHE	
35	50	WATER / SAND	X
50	53	RED CLAY	
53	70	SAND	
70	80	SAND AND PEA GRAVEL	
80	145	SAND / STREAKS OF CLAY	
145	160	COARSE SAND	
160	205	SOFT CONGLOMERATE	

RECEIVED
AUG 26
Information Management

Report and Well Log

WELL REGISTRATION NUMBER
55-202398

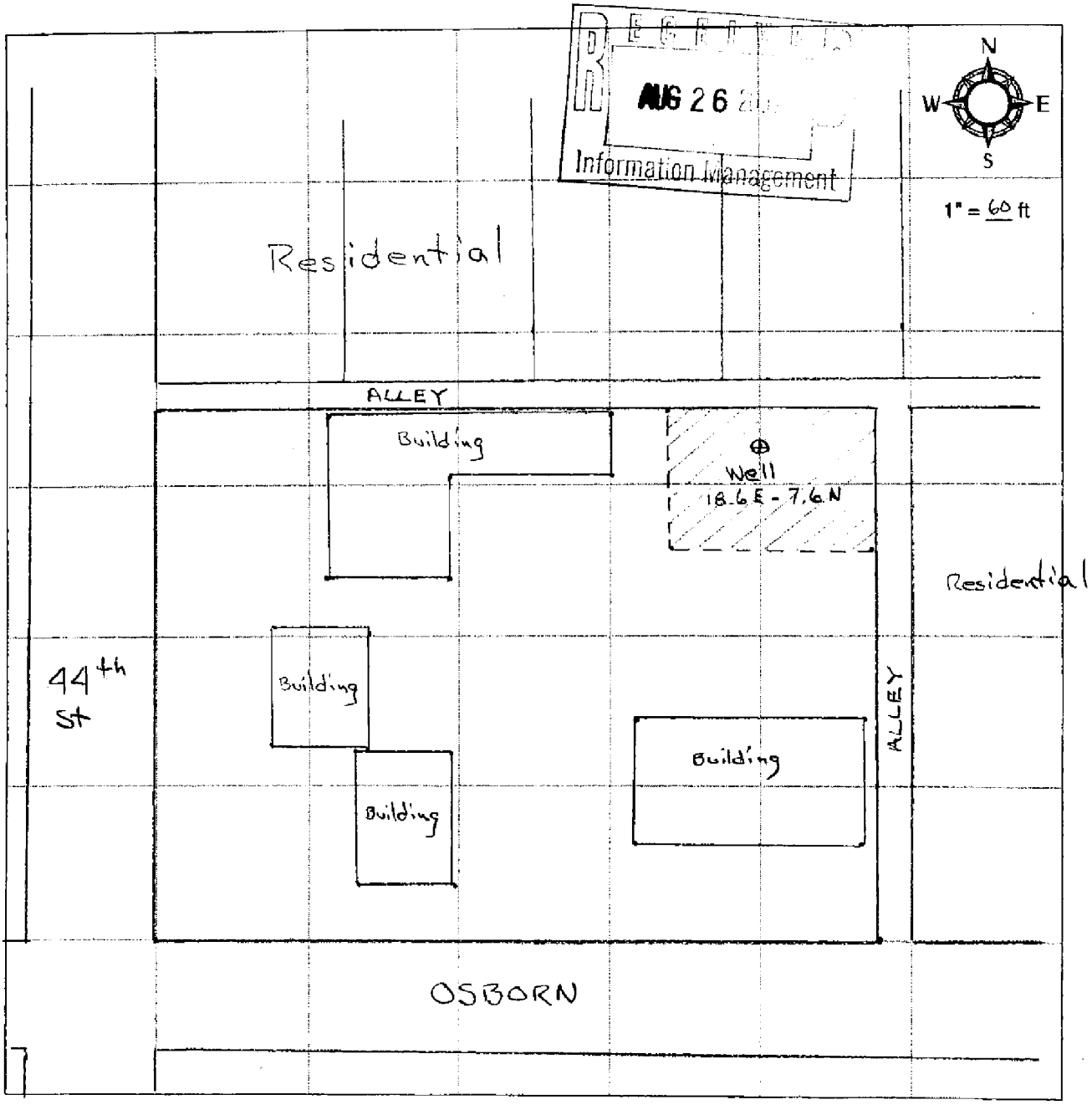
SECTION 6 WELL SITE PLAN

NAME OF WELL OWNER: SALT RIVER PROJECT

COUNTY ASSESSOR'S PARCEL ID NUMBER

BOOK	MAP	PARCEL
127	8	41-A

- Please draw the following: (1) the boundaries of property on which the well was located; (2) the well location; (3) the locations of all septic tank systems and sewer systems on the property or within 100 feet of the well location, even if on neighboring properties; and (4) any permanent structures on the property that may aid in locating the well.
- Please indicate the distance between the well location and any septic tank system or sewer system.



I state that this notice is filed in compliance with A.R.S. § 45-596 and is complete and correct to the best of my knowledge and belief.

DRILLING FIRM	SIGNATURE OF QUALIFYING PARTY	DATE
WEBER GROUP LC		6/6/05

ARIZONA DEPARTMENT OF WATER RESOURCES
WATER MANAGEMENT DIVISION

500 North Third Street
Phoenix, Arizona 85004

REISSUE

THIS AUTHORIZATION SHALL BE IN POSSESSION OF THE DRILLER DURING ALL DRILL OPERATIONS

WELL REGISTRATION NO: 55-202398 REPLACES: 55-607713

AUTHORIZED DRILLER: WEBER GROUP, L.C. LICENSE NO: 215

A NOTICE OF INTENTION TO REPLACE AN EXISTING NON-EXEMPT WELL INSIDE THE PHOENIX ACTIVE MANAGEMENT AREA HAS BEEN GRANTED TO:

WELL OWNER: Salt River Project P.O. Box 52025 Phoenix, AZ 85072

The well(s) is/are to be located in the:

SW¼ of the SW¼ of the NE¼ Section 30 Township 2 North Range 4 East

No. of well(s) in this project: 1

THIS AUTHORIZATION EXPIRES AT MIDNIGHT ON THE 1ST DAY OF MARCH, 2005.

WATER MANAGEMENT DIVISION

THE DRILLER MUST FILE A LOG OF THE WELL
WITHIN 30 DAYS OF COMPLETION OF DRILLING

GREAT SEAL OF THE STATE OF ARIZONA
DITAT DEUS
1912

ARIZONA DEPARTMENT OF WATER RESOURCES
WATER MANAGEMENT DIVISION
500 North Third Street
Phoenix, Arizona 85004

REISSUE

THIS AUTHORIZATION SHALL BE IN POSSESSION OF THE DRILLER DURING ALL DRILL OPERATIONS

WELL REGISTRATION NO: 55-202398 **REPLACES:** 55-607713

AUTHORIZED DRILLER: WEBER GROUP, L.C. **LICENSE NO:** 215

A NOTICE OF INTENTION TO REPLACE AN EXISTING NON-EXEMPT WELL INSIDE THE PHOENIX ACTIVE MANAGEMENT AREA HAS BEEN GRANTED TO:

WELL OWNER: Salt River Project P.O. Box 52025 Phoenix, AZ 85072

The well(s) is/are to be located in the:

SW¼ of the SW¼ of the NE¼ Section 30 Township 2 North Range 4 East

No. of well(s) in this project: 1

THIS AUTHORIZATION EXPIRES AT MIDNIGHT ON THE 1ST DAY OF MARCH, 2005.

JSM

WATER MANAGEMENT DIVISION

THE DRILLER MUST FILE A LOG OF THE WELL
WITHIN 30 DAYS OF COMPLETION OF DRILLING

IMAGED

Arizona Department of Water Resources
Groundwater Management Support Section
P.O. Box 458 • Phoenix, Arizona 85001-0458
(602) 417-2470 • (800) 352-8488
www.water.az.gov

Request to Change Well Information

RECEIVED APR 29 2004 Information Management

- Review instructions prior to completing form in black or blue ink.
- You must include with your Notice:
  - check or money order for any required fee(s)
- Authority for fee: A.A.C. R12-15-151(B)(4)(a), A.R.S. § 45-113(B)

FILE NUMBER

WELL REGISTRATION NUMBER 55 - 202398

** PLEASE PRINT CLEARLY **

SECTION 1. REGISTRY INFORMATION

Well Owner

FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL: SRP/16ST52

MAILING ADDRESS: P.O. Box 52025

CITY / STATE / ZIP CODE: Phoenix, AZ 85072-2025

CONTACT PERSON NAME AND TITLE: Walker Milici Geohydrologist

TELEPHONE NUMBER: 602-236-5363 FAX: 602-236-2987

Location of Well

WELL LOCATION ADDRESS (IF ANY): 18.5E-7.5N

TOWNSHIP (N/S)	RANGE (E/W)	SECTION	160 ACRE	40 ACRE	10 ACRE
2N	4E	30	NE ¼	SW ¼	SW ¼

LATITUDE			LONGITUDE		
33° Degrees	29' Minutes	15.73"N Seconds	-111° Degrees	59' Minutes	12.51"W Seconds

COUNTY ASSESSOR'S PARCEL ID NUMBER portions of...

BOOK	MAP	PARCEL
127	8	41 A & B

COUNTY WHERE WELL IS LOCATED: Maricopa — Description attached

Type of Request (CHECK ONE)

- [X] Change of Well Drilling Contractor *(Fill out Section 2)*
- [ ] Change of Well Ownership *(Fill out Section 3)*
- [ ] Change of Well Information (location, use, etc.) *(Fill out Section 4)*

SECTION 2. REQUEST TO CHANGE WELL DRILLING CONTRACTOR ($10 Fee Required)

$10 FEE

- If drilling or abandoning a well, the Department must receive this request and issue authorization to the new drilling firm prior to the commencement of well drilling or abandonment.

Current Well Drilling Contractor

FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL: Layne Christensen

DWR LICENSE NUMBER: 7

TELEPHONE NUMBER: 480-895-9404 FAX: 480-895-8699

New Well Drilling Contractor

FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL: The Weber Group

DWR LICENSE NUMBER: 215 ROC LICENSE CATEGORY: Exempt

TELEPHONE NUMBER: 480-961-1141 FAX: 480 961 0290

SECTION 3. STATEMENT OF CHANGE OF WELL OWNERSHIP ($10 Fee Required)

$10 FEE

SRP — Delivering More Than Power™
PO BOX 52025
PHOENIX, AZ
85072-2025
(602) 236-5900

BANK ONE, ARIZONA, NA
COMMERCIAL BANKING
PHOENIX, ARIZONA

LIMIT $500 — 160665 — 91-2 / 1221

PURPOSE: ADWR Permit

IMPORTANT: IF PURCHASE IS FOR MATERIALS OUT CHECK BOX

ORIGINATING COST CENTER	CHARGE NUMBER	DTOC	RELATED NUMBER	CROSS-CHARGE RESPONSIBLE CC	AMOUNT
91321	[illegible]				
91321	RC1-03002-601	401			10.00
				TOTAL AMOUNT	10.00

DATE

VOID AFTER 60 DAYS FROM ISSUE OR 12/31/2008 WHICHEVER COMES FIRST

NOT VALID FOR MORE THAN $500.00

EMPLOYEE NUMBER: 07510

PAY TO THE ORDER OF: ADWR $ 10.00

THE AMOUNT OF: ten & 00/100 DOLLARS

EMPLOYEE NUMBER: 13223

EXPENSE AUTHORIZED BY: [redacted]

[redacted]

DATE 4-9/04

O FEE

ust be filed.

Arizona Department of Water Resources
Groundwater Management Support Section
P.O. Box 458 • Phoenix, Arizona 85001-0458
(602) 417-2470 • (800) 352-8488
www.water.az.gov

A(2-4)30 ACC

Request to Change Well Information

RECEIVED APR 29 2004 Information Management

- Review instructions prior to completing form in black or blue ink
- You must include with your Notice:
  - check or money order for any required fee(s)
- Authority for fee: A.A.C. R12-15-151(B)(4)(a), A.R.S. § 45-113(B)

FILE NUMBER

WELL REGISTRATION NUMBER 55 - 202398

** PLEASE PRINT CLEARLY **

SECTION 1. REGISTRY INFORMATION

Well Owner

FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL: SRP/16ST52

MAILING ADDRESS: P.O. Box 52025

CITY / STATE / ZIP CODE: Phoenix, AZ 85072-2025

CONTACT PERSON NAME AND TITLE: Walker Milici Geohydrologist

TELEPHONE NUMBER: 602-236-5363 FAX: 602-236-2987

Location of Well

WELL LOCATION ADDRESS (IF ANY): 18.5E-7.5N

TOWNSHIP (N/S)	RANGE (E/W)	SECTION	160 ACRE	40 ACRE	10 ACRE
2N	4E	30	NE ¼	SW ¼	SW ¼

LATITUDE			LONGITUDE		
33°	29'	15.73"N	-111°	59'	12.51"W
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds

COUNTY ASSESSOR'S PARCEL ID NUMBER portions of...

BOOK	MAP	PARCEL
127	8	41A&B

COUNTY WHERE WELL IS LOCATED: Maricopa — Description attached

Type of Request (CHECK ONE)

- ☒ Change of Well Drilling Contractor *(Fill out Section 2)*
- ☐ Change of Well Ownership *(Fill out Section 3)*
- ☐ Change of Well Information (location, use, etc.) *(Fill out Section 4)*

SECTION 2. REQUEST TO CHANGE WELL DRILLING CONTRACTOR ($10 Fee Required)

$10 FEE

- If drilling or abandoning a well, the Department must receive this request and issue authorization to the new drilling firm prior to the commencement of well drilling or abandonment.

Current Well Drilling Contractor

FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL: Layne Christensen

DWR LICENSE NUMBER: 7

TELEPHONE NUMBER: 480-895-9404 FAX: 480-895-8699

New Well Drilling Contractor

FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL: The Weber Group

DWR LICENSE NUMBER: 215 ROC LICENSE CATEGORY: Exempt

TELEPHONE NUMBER: 480-961-1141 FAX: 480 961 0290

SECTION 3. STATEMENT OF CHANGE OF WELL OWNERSHIP ($10 Fee Required)

$10 FEE

- If this change pertains to more than one well and the names are the same, only one $10 fee is required.

Previous Well Owner		New Well Owner	
FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL		FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL	
MAILING ADDRESS		MAILING ADDRESS	
CITY / STATE / ZIP CODE		CITY / STATE / ZIP CODE	
CONTACT PERSON NAME AND TITLE		CONTACT PERSON NAME AND TITLE	
TELEPHONE NUMBER	FAX	TELEPHONE NUMBER	FAX

IMAGED

SECTION 4. CHANGE OF WELL INFORMATION (No Fee Required)

NO FEE

NOTE: Applies only to wells that have already been drilled. For proposed wells, an amended Notice of Intent to Drill a Well must be filed.

EXPLAIN

I HEREBY CERTIFY that the above statements are true to the best of my knowledge and belief.

TYPE OR PRINT NAME AND TITLE: Walker Milici Geohydrologist

SIGNATURE OF WELL OWNER: Walker Milici for SRP DATE: 4/29/04

PRELIMIARY LEGAL DESCRIPTIONS - PENDING SURVEY

Fee Purchase: Parcel 127-08-041A (KNIGHT)
The East 60 feet of the North 40 feet of Tract "A", CHESTLEY MANOR, according to Book 63 of Maps, Page 5, records of Maricopa County, Arizona. Said parcel contains 2,400 square feet, more or less.

Fee Purchase: Parcel 127-08-041B (Reyman)
The East 60 feet of the South 15 feet of the North 55 feet of Tract "A", CHESTLEY MANOR, according to Book 63 of Maps, Page 5, records of Maricopa County, Arizona. Said parcel contains 900 square feet, more or less.

RECEIVED
APR 29
GROUNDWATER MGT

Registry | Name Addr | Drilling Auth | Permits | Water/Site | PQU | Driller Log | Completion

Drilling Authorities

Registry ID	License #	Issue Date	Expiration Date
55-	215	05/04/2004	03/01/2005

Comments:

Driller Licenses

Company: WEBER GROUP, L.C.

Qualifying Party: SEE COMMENTS

☑ Active License

Address1: 1565 S. WEBER DRIVE

Address2:

City	State	Zip Code	Phone	ROC Licenses
CHANDLER	AZ	85228-41	480-961-1141	A-18 & KA

Comments:

BERNARD "BERNIE" LEE WEBER 00-04 ACTIVE
MARTY WEBER 2009-2003 ACTIVE
[illegible]

ARIZONA DEPARTMENT OF WATER RESOURCES
WATER MANAGEMENT SUPPORT SECTION
MAIL TO: P.O. BOX 458, PHOENIX, ARIZONA 85001-0458
500 North Third Street, Phoenix, Arizona 85004
Phone (602) 417-2470 Fax (602) 417-2422

RECEIVED MAR - 2 2004 OFC OF WATER MGT

NOTICE OF INTENTION TO DEEPEN, REPLACE OR MODIFY AN EXISTING, NON-EXEMPT WELL AT APPROXIMATELY THE SAME LOCATION IN AN ACTIVE MANAGEMENT AREA

PLEASE READ GENERAL INSTRUCTIONS AND CONDITIONS ON REVERSE SIDE OF THIS FORM BEFORE COMPLETING.
Section § 45-597, Arizona Revised Statutes provides: In an Active Management Area, prior to deepening, replacing or modifying an existing well at approximately the same location, a person entitled to withdraw groundwater, shall file a Notice of Intention to Drill with the Department.

1. **WELL/LAND LOCATION:** 2 (N/S) 4 (E/W) 30
   Township Range Section
   SW ¼ SW ¼ NE ¼
   10 Acre 40 Acre 160 Acre
2. **POSITION LOCATION OF THE WELL:**
   Latitude 33 ° 29 ' 15.73" N
   Longitude 111 ° 59 ' 12.51" W
3. **COUNTY** Maricopa
4. **APPLICANT** [redacted] SRP
   Name
   16ST52/PO Box 52025
   Mailing Address
   Phoenix AZ 85072-2025
   City State Zip
   Telephone No. 602-236-5363
5. **OWNER OF THE LAND OF WELLSITE:** SRP
   Name
   16ST52/PO Box 52025
   Mailing Address
   Phoenix AZ 85072-2025
   City State Zip
   Telephone No. 602-236-5363
6. **THIS NOTICE IS FILED BY:**
   Check one: ☒ Owner ☐ Lessee
   same as above
   Name
   Mailing Address
   City State Zip
7. **DESCRIPTION OF THE PROPOSED WELL:**
   Diameter 20 Inches
   Depth 300 Feet
   Type of Casing steel
8. **ESTIMATE OF TOTAL ANNUAL PUMPAGE:**
   1050 Acre Feet per Year
9. **ESTIMATED AMOUNT OF GROUNDWATER WITHDRAWN FROM THE ORIGINAL WELL:**
   1050 Acre Feet per Year
10. **PRINCIPAL USE OF WATER** (be specific): Irrigation
11. **OTHER USES INTENDED** (be specific): None
12. **CONSTRUCTION WILL START:**
    5 2003
    Month Year

FOR DEPARTMENT USE ONLY
File No. A(2-4)30 ACC
Filed 3-2-2004 By DSK
Input 3-2-04 By DSK

DUPLICATE
Mailed 3-15-04 By DSK
Registration 55- 202398
AMA/INA PHOENIX

13. **CLAIM OF ENTITLEMENT TO WITHDRAW GROUNDWATER:**
    Certificate 58 _____
    Permit 59- _____
    Irrigation District 57- 002520
    Service Area 56- _____
    Recovery Well Permit _____
14. **ACTION REQUESTED:**
    ☐ Deepen ☒ Replace ☐ Modify
    For a replacement well give distance from original well 430 Feet
15. **EXISTING WELL REGISTRATION NO. 55-** 607713
16. **WILL THE WELL REPLACED BE ABANDONED?** ☒ Yes ☐ No
17. **DRILLING FIRM:**
    Layne Christensen
    Name
    12030 E. Riggs Rd
    Mailing Address
    Chandler AZ 85249
    City State Zip
    480 ~~602~~ 895-9404
    Telephone No.
    7
    DWR License Number
    Exempt
    ROC License Category
18. **Is the proposed well within 100 feet of a septic tank system, sewage area, landfill, hazardous waste facility or storage area of hazardous material or a petroleum storage area and tank?** ☐ Yes ☒ No

19. Attach a detailed construction diagram of the proposed well design. The diagram should provide verification of consistency with minimum construction requirements. Specifically, the diagram should include an indication of the perforated interval location(s) in relationship to the expected water level; the depth and thickness of the surface seal, and grouting material used; whether the surface or conductor casing will extend above grade; and vault details, if specified.

I state that this Notice is filed in compliance with Rules A.A.C. R12-15-809 and R12-15-816(F), and is complete and correct to the best of my knowledge and belief, and that I understand the conditions set forth on the reverse side of this form.

Walker Milici Geohydrologist [signature] for SRP 3/1/04
Type or Print Name and Title / Signature [X] Land Owner [ ] Lessee of well site / Title / Date

DWR 55-41 Revised 5/03

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT DIVISION
500 North Third Street - Phoenix, Arizona 85004-3903
Telephone 602-417-2470
Fax 602-417-2422

MAR - 2 2004

NEW WELL CONSTRUCTION SUPPLEMENT (form DWR 55-90)

Well Registration Number 55- 202398
(FOR DEPARTMENT USE ONLY)

1. Well Location:

SW ¼ of the SW ¼ of the NE ¼, Sec. 30 Township 2N Range 4E.
10AC 40AC 160AC

2. Position Location of the Well:

Latitude 33 ° 29 ' 15.73" Longitude 111 ° 59 ' 12.51"

3. County Maricopa.

4. Date construction to start: 3/04.

5. Time period well will remain in use: 100 years.

6. Is pump equipment to be installed? Yes If so, design pump capacity: 750 GPM. (estimate)

7. Well construction plan:

a. Drilling method (mud rotary, hollow-stem auger, etc.) cable tool.

b. Borehole diameters 38" inches from 0 feet to 40 feet.
30" inches from 40 feet to 300 feet.

c. Casing materials steel blank & slotted casing.

d. Method of well development (bail, air lift, surge, etc.) swab & pump/surge

e. Will surface or conductor casing extend above grade? yes, approx. 1'.

8. Include a detailed construction diagram of the proposed well design. The diagram should verify consistency with minimum construction requirements specified in the Department's well construction rules found in Arizona Administrative Code (A.A.C.) R12-15-801 *et. seq.* Specifically, the diagram should include borehole diameters; casing materials and diameters; perforation intervals; the expected water level; depth and thickness of the surface seal; proposed grouting materials; and the length that the surface or conductor casing will extend above grade, or vault details, if specified.

9. Proposed materials and method of abandonment if well is to be abandoned after project is completed (Minimum requirements per A.A.C. R12-15-816):

Well will not be abandoned

10. Is the proposed wellsite within 100 feet of a septic tank system, sewage disposal area, landfill, hazardous waste facility, storage area of hazardous material, or petroleum storage area or tank? _____Yes __X__No

11. Is this well to monitor existing contamination? ____Yes __X__No

Potential contamination?_____Yes __X__No If yes, please provide explanation:_____

_____

_____

12. Will the proposed well be a replacement well in the same location (A.R.S. §§ 45-596 and 45-597, A.A.C. R12-15-840)? A replacement well is one located no more than 660 feet from the original well that it is replacing, and which is not expected to withdraw on an annual basis more groundwater than historical annual withdrawals from the original well. __X__Yes ____No

If yes then indicate the following:

(a) Record the registration number for the well that will be replaced: 55-607713

(b) Will the original well to be replaced be _____Capped, __X__ Abandoned _____Other.

If Other, please explain: _____.

13. Name of Consulting firm, if any :_____None_____

_____

Address City State Zip

Contact Person:_____Telephone Number_____

14. Drilling firm: Layne Christensen

DWR License Number: 7 ROC License Category: Exempt

15. Special construction standards, if any, required pursuant to A.A.C. R12-15-821: None

_____

_____

I (we), Walker Milici (print name) hereby swear that all information provided in this application is true and correct to the best of my/our knowledge and belief.

Walker Milici for SRP 3/1/04

Signature of Applicant Date

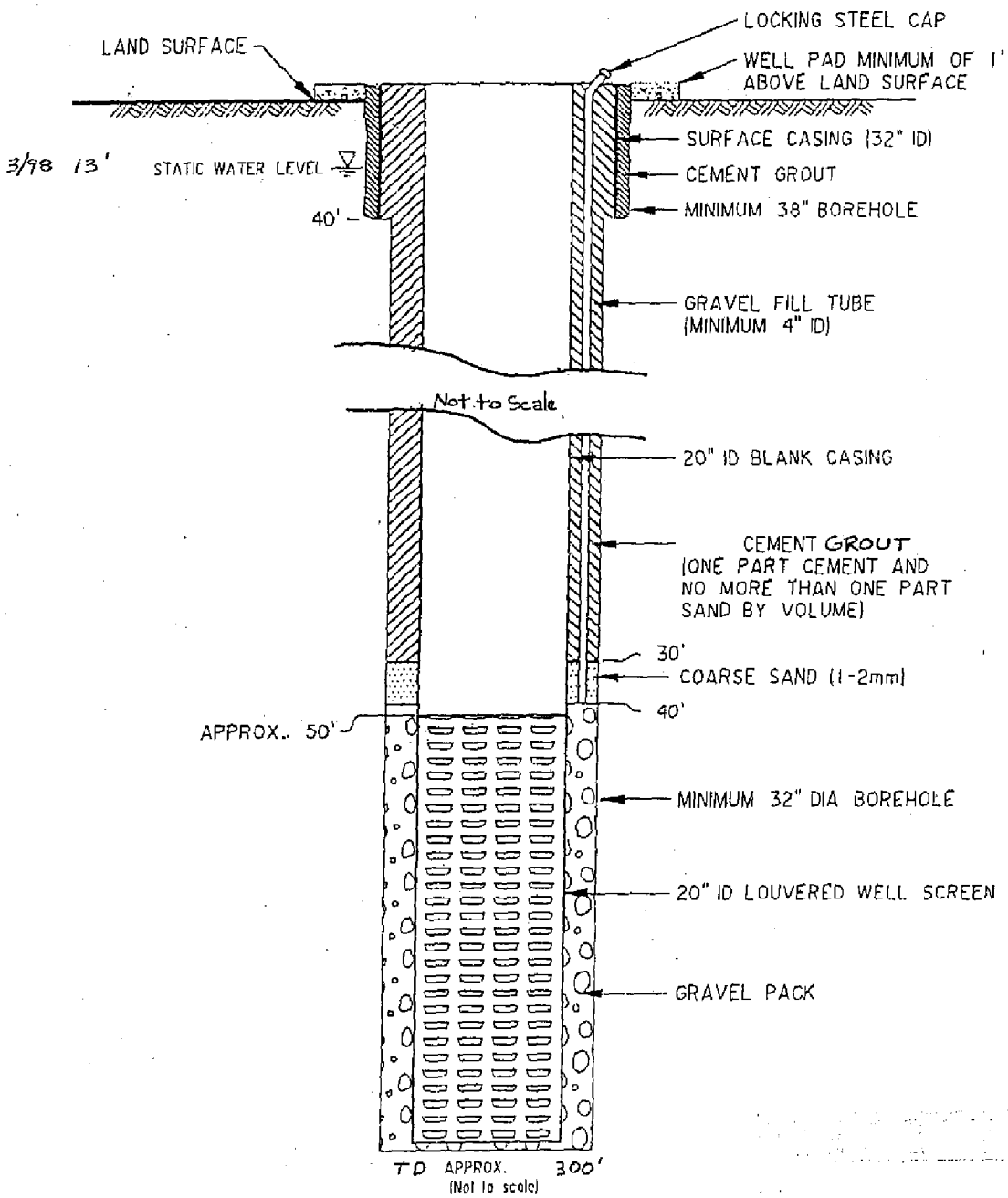
DWR-55-90 (Rev 9/02)

MAR - 2 2004

WELL No. 55-202398

SCHEMATIC DIAGRAM OF PROPOSED PRODUCTION WELL

SRP WELL 18.5E-7.5N



MAR - 2 2004

3/04

ARIZONA DEPARTMENT OF WATER RESOURCES
HYDROLOGY DIVISION - WQARF UNIT

MEMORANDUM

DATE: March 17, 2004

TO: Darlene Sumpter-King, Groundwater Management Support
Scott Miller, Phoenix AMA

THROUGH: Teri Davis, WQARF Unit

FROM: Andrew Scott, WQARF Unit

SUBJECT: **55-202398 – Salt River Project (SRP)**

APPLICATION: **NOI to Replace a Well (Old Well 55-607713)**

1. The area of groundwater withdrawal activities is located within in proximity to an area of known significant groundwater contamination known as the East Central Phoenix (ECP) Water Quality Assurance Revolving Fund (WQARF) site. The well site is located about ½ mile Southwest of the ECP 48th Street and Indian School Road site, about ½ mile Southeast of the ECP 40th Street and Indian School Road site, and about ½ mile East of the ECP 40th Street and Osborn Road site. According to Arizona Department of Environmental Quality (ADEQ) Groundwater Database, sample results from wells located within ¼ of a mile of the withdrawal activities indicate parameter concentrations that exceed Maximum Contaminant Level (MCL) standards for Fluoride (F), Trichloroethylene (TCE), Nitrate (NO_3). In addition, parameter concentrations also exceed Secondary Maximum Contaminant Level (MCL2) standards for Chloride, Total Dissolved Solids (TDS), and pH and Health Based Guidance Levels for Vanadium (V). These samples are taken from the old SRP at this location (55-607713), and the TCE exceedence was from a sample taken in 1986. Recent water quality sampling data were provided by SRP, which indicate that TCE was detected in 55-607713 up to 1990. Water samples from 1991 through 2003 were non-detect (BDL) or below the reporting limit (BRL) for TCE. See attached map and supporting information.

2. An NOI to replace 55-607713 was submitted on March 26, 2003. Hydrology/WQARF reviewed the NOI on April 10, 2003 and the drilling authority to replace 55-607713 was issued. The well was not drilled within the 1-year timeframe, so SRP submitted the same application to get a new authority. The original WQARF review found that the well was to be drilled in the Upper Alluvial Aquifer (UAU) and that bedrock (Red Unit?) is expected to be encountered at 300 feet below the land surface, at which point drilling would stop and the well would be completed above the rock.

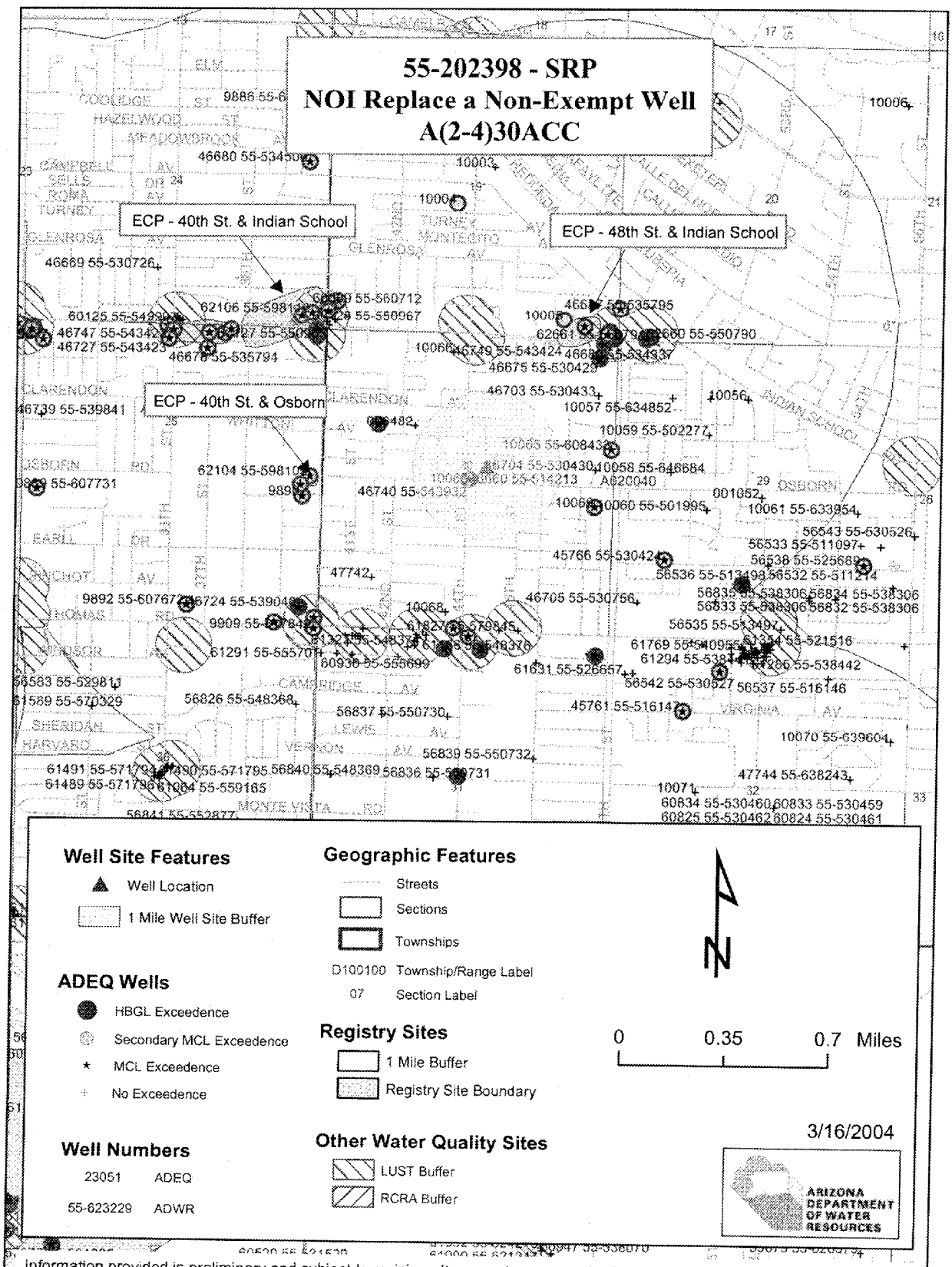
3. According to Walker Milici of SRP, the bedrock is expected to be found at a depth of **up** to 300 feet. SRP intends to produce primarily from the UAU and little or no production is expected from the bedrock if the well is even completed in rock.

4. Given the recent sampling data provided by SRP, the WQARF Unit has no objections to issuance of the drill card. However, given the history of contamination at the site, it is strongly recommended that the well be completed entirely within the UAU and that if the bedrock is encountered during drilling, the borehole should be backfilled with neat cement or bentonite grout to a depth that is at least 5 feet above the top of the bedrock.

5. References: Water Quality Information Maps Program (attached), the Groundwater Code (Arizona Revised Statutes, Title 45, Chapter 2), and the rules adopted thereunder.

6. If more information is needed, contact me at (602) 417-2448, ext. 7273. Thank you.

attachments: as stated



Information provided is preliminary and subject to revision. It may not represent the full extent of known water quality concerns.

55-202398 - SRP
NOI to Replace a Non-Exempt Well
A(2-4)30ACC

ADEQ Exceedences Within 1 Mile of Withdrawal Activities

2/16/2004

Rec	Results	Units	Detection Limits	Detection Limit Units	MCL	MCL Units	MCL2	MCL2 Units	Sample Date	Parameter Name	HBGL	HBGL Units	DEQ Well	Registry ID
1	371.85	mg/L		mg/L			250	mg/L	9/17/1985	CHLORIDE,TOTAL IN WATER			10064	55-607713
2	16.527	mg/L		mg/L	4	mg/L	2	mg/L	9/17/1985	FLUORIDE, TOTAL (AS F)	4	mg/L	10064	55-607713
3	3	ug/L	3	ug/L					7/16/1986	COBALT, DISSOLVED (AS CO)	0.7	ug/L	10064	55-607713
4	8	SU		SU			6.5	SU	7/16/1986	PH (STANDARD UNITS)			10064	55-607713
5	9.36	ug/L		ug/L	5	ug/L			7/16/1986	TRICHLOROETHYLENE, DISSOLVED			10064	55-607713
6	30	ug/L		ug/L					7/16/1986	VANADIUM, DISSOLVED (AS V)	7	ug/L	10064	55-607713
7	383.91	mg/L		mg/L			250	mg/L	10/14/1986	CHLORIDE,TOTAL IN WATER			10064	55-607713
8	67	mg/L		mg/L	45	mg/L			10/14/1986	NITRATE NITROGEN,TOTAL (AS NO3)			10064	55-607713
9	8	SU		SU			6.5	SU	7/16/1987	PH (STANDARD UNITS)			10064	55-607713
10	0.5	ug/L	0.5	ug/L					6/15/1988	METHYL CHLORIDE (CHLOROMETHANE), TOTAL WATER	0.19	ug/L	10064	55-607713
11	0.05	ug/L	0.05	ug/L					6/14/1989	ALDRIN IN WHOLE WATER SAMPLE	0.002	ug/L	10064	55-607713
12	0.1	ug/L	0.1	ug/L					6/14/1989	DIELDRIN IN WHOLE WATER SAMPLE	0.001	ug/L	10064	55-607713
13	0.5	ug/L	0.5	ug/L					6/14/1989	METHYL CHLORIDE (CHLOROMETHANE), TOTAL WATER	0.19	ug/L	10064	55-607713
14	0.5	ug/L	0.5	ug/L					6/14/1989	METHYL CHLORIDE (CHLOROMETHANE), TOTAL WATER	0.19	ug/L	10064	55-607713
15	0.5	ug/L	0.5	ug/L	0.08	ug/L			6/14/1989	PCB - 1016, TOTAL WATER			10064	55-607713
16	0.5	ug/L	0.5	ug/L	0.3	ug/L			6/14/1989	PCB - 1242 PCB SERIES WHOLE WATER SAMPLE			10064	55-607713
17	0.5	ug/L	0.5	ug/L	0.1	ug/L			6/14/1989	PCB - 1248 PCB SERIES WHOLE WATER SAMPLE			10064	55-607713
18	0.5	ug/L	0.5	ug/L	0.1	ug/L			6/14/1989	PCB - 1254 PCB SERIES WHOLE WATER SAMPLE			10064	55-607713
19	0.5	ug/L	0.5	ug/L	0.2	ug/L			6/14/1989	PCB - 1260 PCB SERIES WHOLE WATER SAMPLE			10064	55-607713
20	981	mg/L		mg/L			500	mg/L	10/18/1990	(TDS) RESIDUE,TOTAL FILTRABLE (DRIED AT 180C)			10064	55-607713

note: ug/L = micrograms per liter, equivalent to parts per billion (ppb)
mg/L = milligrams per liter, equivalent to parts per million (ppm)
SU = Standard Units

Rec	Results	Units	Detection Limits	Detection Limit Units	MCL	MCL Units	MCL2	MCL2 Units	Sample Date	Parameter Name	HBGL	HBGL Units	DEQ Well	Registry ID
21	5.7	mg/L		mg/L	4	mg/L	2	mg/L	10/18/1990	FLUORIDE, TOTAL (AS F)	4	mg/L	10064	55-607713
22	0.5	ug/L	0.5	ug/L					10/18/1990	METHYL CHLORIDE (CHLOROMETHANE), TOTAL WATER	0.19	ug/L	10064	55-607713

note: ug/L = micrograms per liter, equivalent to parts per billion (ppb)
mg/L = milligrams per liter, equivalent to parts per million (ppm)
SU = Standard Units

Analysis Results

3/17/200

3/17/04

Between: 01/01/1986 and 12/31/2004

		DBCP	TCE
18.5E-07.5 N	7/16/1986		9.36
	7/16/1987		4.8
	6/15/1988		3
	6/14/1989	BDL	2.4
	10/18/1990		0.9
	7/1/1991	BDL	BDL
	7/15/1992	BDL	BDL
	8/24/1993	BDL	BDL
	9/14/1994	BDL	BDL
	7/19/1995	BDL	BDL
	8/21/1996	BRL	BRL
	8/4/1998	BRL	BRL
	8/11/1999	BRL	BRL
	6/29/2000	BRL	BRL
	5/31/2001	BRL	BRL
	12/12/2002	BRL	BRL
	12/17/2003	BRL	BRL

RECEIVED
MAR 17 2004
WATER QUALITY SECTION

1 page

To: Andrew Scott

From: Walker Milici
SRP
602 236 5363

Phoenix AMA
Memorandum

To: Darlene Sumpter-King

From: Scott Miller

Date: March 15, 2004

Subject: Notice of Intent to Replace Well No. 55-607713 (Replacement Well No. 55-202398 – SRP)

I have reviewed the referenced application and it conforms to AMA policies and statutory requirements and with this memorandum recommend issuance of the permit.

3/8/4

From: Carol Norton
To: WRDts
Date: 3/8/04 9:56AM
Subject: 55-202398 SRP NOI to Replace

The Hydrology Division, Water Resources Section, is in receipt of the above referenced Notice of Intention to Replace a Well. The well being replaced is 55-607713. The diagram of the proposed replacement well meets the Minimum Construction Standards, will be within 660 feet of the original well and will not exceed historic pumpage. The Hydrology Division, Water Resources Section, supports issuance of this drill card.

CC: Modesto, Karen; WRjsm; Zachreson, Tana

ARIZONA DEPARTMENT OF WATER RESOURCES
Hydrology WQARF Unit
500 North Third Street, Phoenix, Arizona 85004
Telephone 602 417-2448
Fax 602 417-2425

JANET NAPOLITANO
Governor

HERB GUENTHER
Director

March 17, 2004

COPY

SRP
Attn: Walker Milici
P.O. Box 52025
Phoenix, AZ 85172-2025

Re: Notice of Intent to Drill a Non-Exempt Well
Well Registry #55-202398 (SRP 18.5E-7.5N)
T2N, R4E, Section 30 ACC

Dear Mr. Milici,

The Department of Water Resources recently approved a Notice of Intent to drill a non-exempt well registered as 55-202398. This well is to be located adjacent to an area of contaminated groundwater known as the East Central Phoenix Water Quality Assurance Revolving Fund (WQARF) remedial site. Please be aware that groundwater produced from the proposed well may not meet applicable federal, state, county or local water quality standards.

According to Arizona Administrative Code R12-15-851, you are required to notify the Department at least two (2) business days in advance of commencement of well drilling activities for the above referenced well(s). You may submit this required notice to the Department by either letter or facsimile, and the Department must receive it at least two (2) business days prior to drilling. If notice is sent via facsimile, please mail the original document to the Department.

Mailing Address:
Arizona Department of Water Resources
Hydrology/WQARF
500 N. 3rd Street
Phoenix, AZ 85004

Facsimile Number:
(602) 417-2425

If you have any questions, please contact the Hydrology Division at 602-417-2448 or me at extension 7273.

Sincerely,

Andrew Scott
Hydrology/WQARF Unit

ARIZONA DEPARTMENT OF WATER RESOURCES
WATER MANAGEMENT DIVISION
500 North Third Street, Phoenix, Arizona 85004
Telephone 602 417-2470
Fax 602 417-2422

JANET NAPOLITANO
Governor

HERB GUENTHER
Director

March 15, 2004

Walker Milici, Geohydrologist
Salt River Project
P.O. Box 52025 – 16ST52
Phoenix, Arizona 85072-2025

RE: Notice of Intention to Replace an Existing Non-Exempt Well
Registration No. 55-202398; File No. A (2-4) 30 ACC

Dear Mr. Milici:

The Notice of Intention to Replace an Existing Non-Exempt Well in the Same Location within an Active Management Area for Salt River Project has been approved. A copy of the Notice is enclosed for your records. The on-site inspection has been completed and the drill card for the proposed well has been delivered to the driller you selected.

In the event that the location of the proposed well changes, you must notify the Department of Water Resources of the change in writing. A drill card with the correct proposed well location must be in possession of the driller before drilling may commence. If the proposed new well is to be more than 660 feet from the well that it is replacing, then you may be required to obtain a well permit.

Within 30 days of completion of the well, the well driller is required to furnish this Department with a complete and accurate log of the well. In addition, the well owner is required to submit the enclosed Completion Report within 30 days of installation of pump equipment.

Pursuant to the provisions of A.R.S. § 45-604, any person withdrawing groundwater from a well is required to use a water measuring device to record rates of withdrawal in order to provide or allow the computation of an annual volume of pumpage from the well. The total volume of pumpage from the well which is being replaced and the completed new well shall be reported on your Annual Water Withdrawal and Use Report for calendar year 2004.

The Department has issued the authorization to drill this well pursuant to A.R.S. 45-597 of the Groundwater Code. The legal nature of the water withdrawn from the well may be the subject of court action in the future as part of a determination of surface water rights in your area. If there are court proceedings that could affect your well, you will be notified and be given the opportunity to participate.

Please be aware that the withdrawals of the proposed well cannot exceed the historic pumpage of the original well you wish to replace. The historic pumpage of the original well is 1050 acre-feet per year. In addition, if the original well will be used in conjunction with the proposed replacement well, the withdrawals from both wells cannot exceed the historic pumpage of the original well.

If the historic pumpage is exceeded in any calendar year, the well will no longer qualify as a replacement well in the same location, and will instead fall into the category of "new well." This means that you will not be able to pump the well again until you first submit a well impact analysis and obtain a determination from the Department that the well will not cause unreasonably increasing damage to other land and water users.

Hydrology/WQARF strongly recommends that, given the history of contamination at the well site and in the area, the well be completed entirely within the Upper Alluvial Aquifer and that if the bedrock is encountered during drilling, the borehole should be backfilled with neat cement or bentonite grout to a depth that is at least 5 feet above the top of the bedrock.

Under A.R.S. § 45-593, the person to whom a well is registered must notify this Department of any changes in ownership, status or physical characteristics to keep the Well Registry records current and accurate. For such future use, a Request to Change Well Information form is also enclosed.

If you have any questions, please contact Scott Miller at 602-417-2465.

Sincerely,

Darlene Sumpter-King
Water Resource Specialist

Enclosure

cc: Layne Christensen Company
Scott Miller, Phoenix Active Management Area

Registry | Name Addr | Drilling Auth | Permits | Water/Site | POU | Driller Log | Completion

Drilling Authorities

Registry ID	License #	Issue Date	Expiration Date
55-	7 ...	03/15/2004	03/01/2005

Comments:

Driller Licenses

Company: LAYNE CHRISTENSEN COMPANY

Qualifying Party: SEE COMMENTS

☑ Active License

Address1: 12030 EAST RIGGS ROAD

Address2:

City	State	Zip Code	Phone	ROC Licenses
CHANDLER	AZ	85249-37	(480) 895-9404	C53 & A-4

Comments:

DON SAVAGE	1993-2003	ACTIVE
LARRY G HRALL	1993-2001	ACTIVE
[illegible]	[illegible]	[illegible]

ARIZONA DEPARTMENT OF WATER RESOURCES
WATER MANAGEMENT DIVISION

500 North Third Street
Phoenix, Arizona 85004

THIS AUTHORIZATION SHALL BE IN POSSESSION OF THE DRILLER DURING ALL DRILL OPERATIONS

WELL REGISTRATION NO: 55-202398 **REPLACES: 55-607713**

AUTHORIZED DRILLER: LAYNE CHRISTENSEN COMPANY **LICENSE NO: 7**

A NOTICE OF INTENTION TO REPLACE AN EXISTING NON-EXEMPT WELL INSIDE THE PHOENIX ACTIVE MANAGEMENT AREA HAS BEEN GRANTED TO:

WELL OWNER: Salt River Project P.O. Box 52025 Phoenix, AZ 85072

The well(s) is/are to be located in the:

SW¼ of the SW¼ of the NE¼ Section 30 Township 2 North Range 4 East

No. of well(s) in this project: 1

THIS AUTHORIZATION EXPIRES AT MIDNIGHT ON THE 1ST DAY OF MARCH, 2005.

WATER MANAGEMENT DIVISION

THE DRILLER MUST FILE A LOG OF THE WELL WITHIN 30 DAYS OF COMPLETION OF DRILLING

WELL AND WITHDRAWAL PERMIT
CHECK DEPOSIT REQUEST

Submitted by: Darlene Sumpter-King

Date: March 2, 2004

Applicant: Salt River Project

Check submitted by: same as applicant

Application No. 55-202398 (replaces 55-607713)

Code	Type of Fee:	Amount:	Check No.
55	Application for Well Permit		
55	Well Permit Fee		
59	Application for Permit to Withdraw		
59	Withdrawal Permit Fee		
59	Conveyance of Groundwater Withdrawal Application and/or Permit		
Gen Fund	Legal Noticing Fees		
55	Notice of Intent for Non-Exempt Wells	$150.00	157174

SRP
Delivering More Than Power™

PO BOX 52025
PHOENIX, AZ
85072-2025
(602) 236-5900

BANK ONE, ARIZONA, NA
COMMERCIAL BANKING
PHOENIX, ARIZONA

LIMIT $500 157174 91-2 / 1221

PURPOSE Drill Permit

IMPORTANT: IF PURCHASE IS FOR MATERIALS OUT OF STATE, CHECK BOX ☐

ORIGINATING COST CENTER	CHARGE NUMBER	DTOC	RELATED NUMBER	CROSS-CHARGE RESPONSIBLE CC	AMOUNT
91321	RCI-03002-701	410			150.00
				TOTAL AMOUNT	150.00

DATE MO 3 DAY 2 YEAR 04

VOID AFTER 60 DAYS FROM ISSUE OR 12/31/2006 WHICHEVER COMES FIRST

NOT VALID FOR MORE THAN $500.00

EMPLOYEE NUMBER 07510

PAY TO THE ORDER OF Arizona Department of Water Resourses $150.00

THE AMOUNT OF one hundred fifty & 00/100 DOLLARS

EMPLOYEE NUMBER 13223

EXPENSE AUTHORIZED BY [redacted]

[redacted]

ARIZONA DEPARTMENT OF WATER RESOURCES

TEMPORARY DEWATERING PERMIT

PERMIT NO. 59-547438

STATE OF ARIZONA)
)ss.
County of MARICOPA)

This is to certify that I have examined Application Number 59-547438 and have determined that the applicant is entitled to withdraw groundwater in an active management area pursuant to Title 45, Chapter 2, Article 7, Arizona revised Statutes. By this examination, the Department has determined that dewatering is necessary for the construction of structural integrity of improvements on the land from which groundwater is proposed to be withdrawn.

Applicant: Flood Control District of Maricopa County
2801 West Durango
Phoenix, Arizona 85009

Active Management Area: Phoenix Sub-basin: East Salt River Valley

Authorized Well(s):

Registration Number	File Number
55- 552114	A(2-4)31 bbb (sump pump)

Total amount of groundwater to be withdrawn: 2421 acre feet per annum.

Duration of permit: November 20, 1995 to February 20, 1996

Conditions of the permit:

- In order for the Department to monitor the withdrawal of groundwater, the permittee shall provide the Department with the following:

  1. Monthly submittal of updated calculations of the actual amounts of water yet to be removed to accomplish the project objectives.

  2. Monthly report of daily schedule of pump operations and report of total volume of water pumped by each well.

  3. Monthly water level data from all pumping and all observation wells.

Witness my hand and seal of office this 4th day of December, 1995.

Mark Frank

Mark Frank, Acting Assistant Director

ARIZONA DEPARTMENT OF WATER RESOURCES

Groundwater Management Support Section
500 N. 3rd. Street, Phoenix, Arizona 85004-3903
Telephone (602) 417-2470
Fax (602) 417-2422

FIFE SYMINGTON
Governor

RITA P. PEARSON
Director

December 8, 1995

Flood Control District of Maricopa County
Attention: Mr. Bill Knight
2801 West Durango
Phoenix, Arizona 85009

RE: Temporary Dewatering Permit Application Number 59-547438

Dear Permittee:

Your permit as referenced above is enclosed for your records.

Pursuant to the provisions of A.R.S. § 45-604, any person withdrawing groundwater from a well or other means of withdrawal is required to use a water measuring device to record rates of withdrawal in order to provide or allow the computation of an annual volume of pumpage. The total volume of pumpage shall be reported on an annual report. The annual report shall be submitted no later than March 31 following the end of each completed annual reporting period. The first annual reporting period shall be from the date of this permit through December 31, 1995.

If you have any questions or require any corrections to your permit, please call the Groundwater Management Support Section at (602) 417-2470.

Sincerely,

Toni M. Bergeman

Toni M. Bergeman
Water Resource Technician

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES

NO FEE REQUIRED

GROUNDWATER MANAGEMENT SUPPORT SECTION
500 North Third Street-Phoenix, Arizona 85004-3903
(602) 417-2470 Fax (602) 417-2422

~~NO FEE REQUIRED~~

RECEIVED SEP 17 1996 GROUNDWATER MGT

NOTICE OF INTENT TO ABANDON A WELL

A.R.S. §45-594, R12-15-816: Well abandonment shall be performed only by a licensed well drilling contractor or single well licensee. The owner of a well shall file a Notice of Intent to Abandon the well prior to abandonment.

1. Well Location:
2N (Township) 4E (Range) 30 (Section)
SW ¼ (10 Acre) NW ¼ (40 Acre) SE ¼ (160 Acre)

2. Position Location of the Well on the Land:
Latitude ____ ____' ____"
Longitude ____ ____' ____"

3. County: MARICOPA
County Assessor's ID:
127 (Book) 07 (Map) 026 (Parcel)

4. Well Registration Number: 55- Not Registered 807366

5. Well Owner:
Robert F Johns
Name
1343 ~~1348~~ S WAYFARER
Current Mailing Address
MESA AZ 85204
City State Zip
602-507-6610
Telephone

6. Owner of the Land:
Robert F Johns
Name
1343 ~~1348~~ S WAYFARER
Current Mailing Address
MESA AZ 85204
City State Zip
602-507-6610
Telephone

7. Type of Well being Abandoned:
(Examples: Exempt, Non-exempt, Monitor Geotechnical, Mineral Exloration, etc.)
Please state: EXEMPT

FOR DEPARTMENT USE ONLY
File No. A(2-4)30 DBC
Filed 9-17-96 By eac
Input ENTERED SEP 23 1996 By
DUPLICATE
Mailed 9-19-96 By eac
Registration No: 55- 807366
AMA/INA Phoenix
W/S 07 S/B 04

DESCRIPTION OF WELL TO BE ABANDONED:

8. Well Diameter 4 inches
9. Well Depth 63 feet
10. Type of Casing PVC
11. Abandonment will begin: Month SEPT Year 96
12. Reason for abandonment: NO LONGER NEEDED
13. Materials and methods to be used to abandon the well: GROUT
____, pursuant to R-12-15-816.

14. To your knowledge, is there any information that exists which indicates that the water in this well may be or is contaminated? Yes___ No X. If yes, explain on an attached sheet. 9/17/96 MLB

15. Licensed Driller performing abandonment: ~~Firm Name~~: Robert F Johns License No. SWL 785
Address 1343 S WAYFARER City MESA State AZ Zip 85204

GENERAL INSTRUCTIONS

1. This form is to be used to obtain authority to abandon a well.
2. If this well has just been discovered pursuant to A.R.S. §45-593.D., and has not been registered, this form will serve to register the well when properly abandoned and reported.
3. Fill out this form in DUPLICATE and send to 500 North 3rd Street, Phoenix, Arizona 85004.
4. Construction standards for abandonment shall be in accordance with Department Rules and Regulations.

I state that this Notice is filed in compliance with A.R.S. §45-594 and A.A.C. R12-15-816 and is complete and correct to the best of my knowledge and belief.

Signature of Well Owner: Robert F Johns **Date** 9-17-97

DWR 55-38 (Rev 3/96)

Original

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North 3rd Street
Phoenix, Arizona 85004

WELL ABANDONMENT COMPLETION REPORT

A.R.S. §45-594;R12-15-816: Within 30 days after a well is abandoned, the well drilling contractor shall file a well Abandonment Completion Report on a form prescribed and furnished by the Director.

1. **Drilling firm:**

ROBERT F. JOHNS
1343 SWAYFARER
MESA, AZ 85204

RECEIVED SEP 25 1996 RECORDS MGT

License No. SWL 785

2. **Well Registration No. 55-** 807366 A(2-4)30 DBC

3. **Well Location: Township** 2 NORTH **Range** 4 EAST **Section** 30 ¼ SW ¼ NW ¼ SE

4. **Owner of the Land:**

Name: Robert F Johns Mail Address
4429 E Flower Phx AZ 85018 — 1343 S W AYFARER — 85204
ADDRESS — CITY/STATE — ZIP

5. **Well Description:** 63 (Hole Depth) 4 (Diameter) PVC (Type of Casing)

6. **Reason for abandonment:**
WELL WAS No Longer WANTED ON Property

7. Prior to abandonment, did the well have 20' of steel surface casing AND 20' of grout in the annular space surrounding the surface casing? Yes____ No X

8. If the answer to No. 6 is no, was the top 20' of casing removed prior to setting the cement plug? Yes X No___

9. Identify the materials and methods used to abandon the well: 58' OF PVC WAS Pulled From WELL. There WAS No STEEL CASING Use IN WELL Construction. THE COMPLETE BoreHOLE WAS FILLED WITH Grout To 18" From Ground SurFACE

10. Is this Abandonment Completion Report filed in accordance with R12-15-816,F.?: Yes Y No___

11. How deep does the cement plug extend below land surface? No Plug USED. Grout From 18" BELOW LAND SurFACE To 63' deep

12. Was the well backfilled above the cement plug? Yes X No___

13. Date abandonment completed: Sept 24 - 1996

DATE 9-24-96 **SIGNATURE OF WELL DRILLER** Robert F Johns

DWR 55-58-11/94 (REV)

CANCELLED

ENTERED SEP 26 1996

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North Third Street, Phoenix, Arizona 85004
Telephone (602) 417-2470
Fax (602) 417-2422

FIFE SYMINGTON
Governor

RITA P. PEARSON
Director

September 18, 1996

ROBERT F. JOHNS
1343 SWAYFARER
MESA, AZ 85204

Registration No. 55-807366
File No. A(2-4)30 DBC

Dear Applicant:

Enclosed is a copy of the Notice of Intent (NOI) to Abandon a Well. This NOI, which was recently filed with this Department is being returned to you as evidence of your compliance with ARS §45-594; R12-15-816. The enclosed Well Owners Notification of Abandonment is to be submitted when the well has been properly abandoned. The Well Abandonment Card and Abandonment Completion Report forms have been sent to your driller. He may not begin abandonment until he has received the Well Abandonment Card. If you change drillers, you must supply this Department with the new driller's identity. Well abandonments shall be performed only by a licensed well drilling contractor or single well licensee.

ARS §45-594; R12-15-816(K) requires the registered well owner to submit a Well Owners Notification of Abandonment form within thirty (30) days after the abandonment of the well. It also requires the driller to furnish this Department a complete and accurate Well Abandonment Report within thirty (30) days after completion of abandonment. You should insist, and ensure, that both of these are done.

Sincerely,

Elizabeth Choukalas

Elizabeth Choukalas
Water Resource Technician
Groundwater Management Support Section

ec
Enclosures

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

500 North Third Street
Phoenix, Arizona 85004-3903

ABANDON

THIS AUTHORIZATION SHALL BE IN POSSESSION OF THE DRILLER DURING ALL DRILL OPERATIONS

WELL REGISTRATION NO: 55-807366

AUTHORIZED DRILLER: ROBERT F. JOHNS LICENSE NO: SWL 785

NOTICE OF INTENTION TO ABANDON AN EXEMPT WELL HAS BEEN FILED WITH THE DEPARTMENT BY:

WELL OWNER: ROBERT F. JOHNS

The well(s) is/are to be located in the:

SW 1/4 of the NW 1/4 of the SE 1/4 Section 30 Township 2 NORTH Range 4 EAST

No. of wells in this project: 1

THIS AUTHORIZATION EXPIRES AT MIDNIGHT ON THE 16TH DAY OF SEPTEMBER, 1997.

CHIEF, GROUNDWATER MANAGEMENT SUPPORT

THE DRILLER MUST FILE A WELL ABANDONMENT COMPLETION REPORT WITHIN 30 DAYS OF COMPLETION OF DRILLING

GREAT SEAL OF THE STATE OF ARIZONA
DITAT DEUS
1912

STATE OF ARIZONA

DEPARTMENT OF
WATER RESOURCES

WELL DRILLER REPORT

This report should be prepared by the driller in all detail and filed with the Department within 30 days following completion of the well.

1. Owner DEAN D PETERSON
Name
4215 E WHITTON PHOENIX ARIZONA 85018
Address

2. Lessee or Operator _____
Name
_____
Address

3. Driller DEAN D. PETERSON
Name
4215 E WHITTON PHOENIX AZ 85018
Address

4. Location of well: 4215 E WHITTON

5. Permit No. _____
(if issued)

RECEIVED FEB 3 1982 DEP'T OF WATER RESOURCES

DESCRIPTION OF WELL

6. Total depth of hole 85 ft.
7. Type of Casing 4" PLASTIC PIPE (25') — Balance uncased
8. Diameter and length of casing 4 in. from 0 to 25, _____ in from _____ to _____.
9. Method of sealing at reduction points _____
10. Perforated from 0 to _____, from _____ to _____, from _____ to _____
11. Size of cuts _____ Number of cuts per foot _____
12. If screen was installed: Length _____ ft. Diam _____ in. Type _____
13. Method of construction drilled
drilled, dug, driven, bored, jetted, etc.
14. Date started SEPT 15 1981
Month day year
15. Date completed OCT 10 1981
Month day year
16. Depth to water 19 ft. (If flowing well, so state.)
17. Describe point from which depth measurements were made, and give sea-level elevation if available. FROM CONCRETE PUMP BASE
18. If flowing well, state method of flow regulation _____
19. REMARKS: _____

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
Registration No. 55-501994
Received _____ By _____
Entered 2-3-82 By _____
File No. A(2-4)30bca

(Well log to appear on Reverse side)

MICROFILMED

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	4	Topsoil
4	8	Caliche
8	19	Clay
19	21	Sand (Fine)
21	30	Clay
30	31	Sand (Fine)
31	39	Clay
39	40	Sand (Fine)
40	65	Clay
65	67	Sandy Clay
67	75	Clay & Caliche
75	78	Caliche with rock (Very hard + fine)
78	85	Clay

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller Dean D. Peterson
Name

4215 E Whitton
Address

Date 1/18/82 Phoenix Arizona 85018

2-73

DEPARTMENT OF WATER RESOURCES
99 East Virginia
Phoenix, Arizona 85004

Registration No. 55-501994
Owner of
Well Site Dean Peterson
File No. A(2.4)30 bca

COMPLETION REPORT

1. Completion Report to be filed with the Department within 30 days after installation of pump equipment.

2. The tested pumping capacity of the well in gallons per minute for a non-flowing well should be determined by measuring the discharge of the pump after continuous operation for at least 4 hours and for a flowing well by measuring the natural flow at the land surface.

3. Drawdown of the water level for a non-flowing well should be measured in feet after not less than 4 hours of continuous operation and while still in operation and for a flowing well the shut-in pressure should be measured in feet above the land or in pounds per square inch at the land surface.

4. The static groundwater level should be measured in feet from the land surface immediately prior to the well capacity test.

RECEIVED FEB 3 1982 DEP'T OF WATER RESOURCES

LOCATION OF THE WELL

4215 E WHITTON.

Date Well Completed OCT 1981 Depth of Well 85'

1. Well Test:
Test Pumping Capacity 10 to 12 (Gal. per min.) Date Well Tested NOV 1981

Method of Discharge Measurement Stop watch & 5 gal. can (weir, orifice, current meter, etc.)

Static Groundwater Level 19 ft. Drawdown approx 11 ft.

Total Pumping Lift approx 30 ft. Drawdown _____ lbs. (Flowing Well)

2. Equipment Installed:

Kind of Pump CONVERTIBLE JET PUMP Teel Model 3P648 (turbine, centrifugal, etc.)

Kind of Power ELECT (Elec., Nat. Gas, Etc.) H.P. Rating of Motor ½ HP

I HEREBY CERTIFY that the above statements are true to the best of my knowledge and belief.

Dean D Peterson
Signature

4215 E Whitton
Address

1/18, 1982
Date

Phoenix Arizona 85018
City State Zip

MICROFILMED

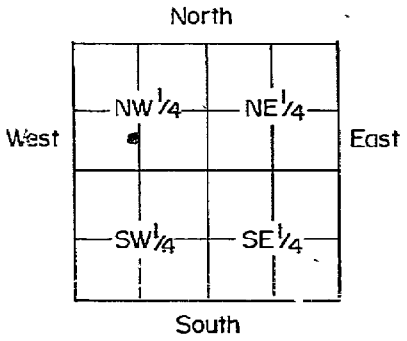
2-3-82 HP

EXEMPT WELL
FILING FEE: $3.00

DEPARTMENT OF WATER RESOURCES
NOTICE OF INTENTION TO DRILL OR DEEPEN AN EXEMPT WELL

EXEMPT WELL

Section 45-596, Arizona Revised Statutes, provides: A person may not drill or cause to be drilled any well or deepen or replace an existing well without first filing a Notice of Intention to Drill with the Department on a form prescribed and furnished by the Department. The well shall be completed within one year after the date of Notice. An exempt well means a well having a pump with a maximum design capacity of not more than 35 gallons per minute which is used to withdraw groundwater. An exempt well may include the non-commercial irrigation of not more than 1 acre of land.



- Indicate Well Location by X
(Above diagram represents one 640 acre section)

WELL/LAND LOCATION:
1. Township 2 N
2. Range 4 E
3. Section 30
4. NE ¼ SW ¼ NW ¼
10 acre sub-division
5. County MARICOPA
6. Owner of Well:
DEAN D PETERSON
Name
4215 E WHITTON
Address
PHOENIX ARIZONA 85018
City State Zip
7. Owner of Land:
DEAN D. PETERSON
Name
4215 E WHITTON
Address
PHOENIX ARIZONA 85018
City State Zip

DESCRIPTION OF WELL:
8. Diameter 4"
Depth 65'
9. Type of Casing
Class 40 Plastic
10. Principal use of Water.
irrigating yard
11. Other uses Intended
8,000 sq ft
(If for non-commercial irrigation, state approximate area being cultivated.)
12. Construction will start about:
Month Year
Feb 07

DO NOT WRITE IN THIS SPACE
OFFICE RECORD
FILE NO A(2-4)30bca
FILED 2-3-82 BY
INPUT 2-3-82 BY
DUPLICATE MAILED BY
REGISTRATION NO 55-501994
AMA NON EXPANSION AREA Phoenix

PLACE OF USE:
13. Township 2 N
14. Range 4 E
15. Section 30
16. Legal description of land water is to be used on:
4215 E WHITTON
17. Design Pump Capacity
10 GPM
18. Action Requested:
Drill X
Deepen
Replace
19. This notice filed by:
Owner X
Lessee
Driller

RECEIVED FEB 3 1982 DEPT OF WATER RESOURCES

DEAN D PETERSON
Name
4215 E WHITTON
Address
PHOENIX ARIZONA 85018
City State Zip
20. Drillers Name:
SAME
Name
Address
City State Zip
Department License Number

1. Fill out this form in duplicate and mail to P.O. Box 2600, Phoenix, Arizona, 85002, or deliver to 99 East Virginia, Suite 100, Phoenix, Arizona 85004.
2. If the Exempt Well is in fact a replacement (or deepening) well, state the registration number of the existing well.
3. Construction standards for new and replacement wells and the deepening and abandonment of existing wells, shall be in accordance with Department Rules and Regulations.

I, Dean D Peterson, state that the construction will be under the direct and personal supervision of the well driller designated on this form and that the designated driller holds a contractors license pursuant to ARS 32-1151.

MICROFILMED

1/18/82
Date

Dean D Peterson
Signature of Person Filing

Dean D. Peterson
4215 East Whitton
Phoenix, Arizona 85018

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
WATER RIGHTS ADMINISTRATION
99 EAST VIRGINIA
PHOENIX, ARIZONA 85004

4

RECEIPT

KIND ENTRY	FILE REFERENCE NO.
55	501994
	THRU

FUND SOURCE	ACCOUNT NO. AGENCY	CHAPTER	DIV.	INT. ACCT	ITEM DESCRIPTION	RATE	$ AMOUNT
					Filing Fee for Notice of Intention To		3.00
					Drill an Exempt Well		
					Water Rights (GW)		
					File No: A(2-4)30 bca		
					Registration No: 55-501994		
					Check # 7160		

MICROFILMED

WAITER PAYMENT
GUESTS 1
CHK NO 7160
55-I 3.00
TAX 0.00
TOTL 3.00
GEN.CHEK 3.00

4232 A 13:02

2/3/82

TOTAL $ 3.00

mw

Arizona Department of Water Resources
Operations Division
500 N. 3rd St.
Phoenix, AZ 85004-3903

DWR AR22 - Nov 84
Date Received: _____
Received By : _____
AMA : _____
Date Routed to AMA: _____

MEASURING DEVICE MALFUNCTION REPORT FORM
PART1 - NOTIFICATION

INSTRUCTIONS

A.C.R.R. R12-15-905 Requires that a report must be made in writing to Department of Water Resources within (7) seven calendar days of Discovering that a water measuring device has malfunctioned, if the malfunction lasts 72 hours or longer.

Well Owner/Operator: SALT RIVER PROJECT

Address: P.O. Box 52025 Phoenix, AZ 85072-2025

Telephone Number: (602) 236-2612

Well Registration Number: 55607712

SRP Coordinate Location: 18.5E-07.0N

SRP Pump Number: 114

Measuring Device Type: Flow Meter

Malfunctioned on: 7/28/07

For the reason that: Upgrade to mag meter

Should be back in service: 7/28/07

Signed: _____

Date: 7-30-07

RECEIVED
OCT 12 2007
PHOENIX AMA

18.5E-7N

DEPARTMENT OF WATER RESOURCES
99 EAST VIRGINIA AVENUE
PHOENIX, ARIZONA 85004

REGISTRATION OF EXISTING WELLS

READ INSTRUCTIONS ON BACK OF THIS FORM BEFORE COMPLETING
PRINT OR TYPE — FILE IN DUPLICATE

07

FOR OFFICE USE ONLY
REGISTRATION NO. 55- 607712
FILE NO. A(2-4)30cdd
FILED 5-18-82 (DATE) AT 10:15a (TIME)
INA —
AMA Phoenix

ARIZONA DEPT. OF WATER RESOURCES '82 MAY 18 A10:15

REGISTRATION FEE (CHECK ONE)	
EXEMPT WELL (NO CHARGE)	☐
NON-EXEMPT WELL — $10.00	☒

1. Name of Registrant:
Salt River Project Agricultural Improvement and Power District
P. O. Box 1980 (Address) Phoenix (City) Arizona (State) 85001 (Zip)

2. File and/or Control Number under previous groundwater law:
A02004030DCCGS1 (File Number) should be A02004030CDD 35- None (Control Number)

3. a. The well is located within the SE ¼ SE ¼ SW ¼, Section 30, of Township 2N N/S, Range 4E E/W, G & SRB & M, in the County of Maricopa.

b. If in a subdivision: Name of subdivision _____, Lot No. _____, Address _____.

4. The principal use(s) of water (Examples: irrigation - stockwater - domestic - municipal - industrial)
Irrigation and non-irrigation uses by SRP.

5. If for irrigation use, number of acres irrigated from well SRP member lands

6. Owner of land on which well is located. If same as Item 1, check this box ☒
(Address) (City) (State) (Zip)

7. Well data (If data not available, write N/A)
a. Depth of Well 172 feet
b. Diameter of casing 12 inches
c. Depth of casing 172 feet
d. Type of casing 10 ga stovepipe with mills knife perforations
e. Maximum pump capacity 880 gallons per minute.
f. Depth to water 17 static (Jan. 1982) feet below land surface.
g. Date well completed September (Month) 20 (Day) 1923 (Year).

8. The place(s) of use of water. If same as Item 3, check this box ☐.
____¼ ____¼ ____¼, Section ____ Township ____ Range ____
____¼ ____¼ ____¼, Section ____ Township ____ Range ____
SRP member lands through distribution system
Attach additional sheet if necessary.

9. DATE MAY 17 1982 SIGNATURE OF REGISTRANT [signature]
SALT RIVER PROJECT AGRICULTURAL IMPROVEMENT AND POWER DISTRICT

INSTRUCTIONS FOR COMPLETING REGISTRATION FORM

General Instructions

1. A person who owns an "Existing Well" shall register the well, pursuant to A.R.S. 45-593, by filing this form **in duplicate** with the Department of Water Resources not later than midnight June 14, 1982. The form must be completed and signed. Failure to do so will constitute a violation of A.R.S. 45-593, and may subject the well owner to injunction and/or civil penalties, pursuant to A.R.S. Title 45, Article 12.

2. An "Existing Well" means, (1) a well which was drilled on or before June 12, 1980 and which is not abandoned or sealed, or (2) a well which was not completed on or before June 12, 1980, but for which a Notice of Intention to Drill was on file with the Arizona Water Commission on or before June 12, 1980.

3. No registration fee is required for Exempt Wells. A $10.00 registration fee must accompany registration forms for all Non-Exempt Wells.

4. An "Exempt Well" means a well having a pump with a maximum capacity of not more than 35 gallons per minute which is used to withdraw groundwater. An Exempt Well may include the non-commercial irrigation of not more than 1 acre of land.

5. A "Non-Exempt Well" means a well that is not an "Exempt Well".

INSTRUCTIONS FOR REGISTRATION QUESTIONS

1. The Registrant must be the owner of the well and may be an individual, public or private corporation, company, partnership, firm, association, society, estate, trust, any other private organization or enterprise, the United States, any state, territory or country or a governmental entity, political subdivision or municipal corporation organized under or subject to the constitution and laws of this State.

2. If you own an existing irrigation well drilled at any time, or any other type of well drilled on or after June 20, 1968, you should have an assigned control and/or file number. Write these numbers in item 2. If you do not know the number, please explain the reason on the form or on an attached sheet.

3. a. Fill in the Section, Township and Range in all cases if it is available.
   b. If the well is in a subdivision and you have this information, give the subdivision name, Lot Number, and Address.

4. Show all purposes for which the water is used.

5. If the well is used for irrigation, give the number of acres irrigated in 1980 from the well.

6. If the owner of the land is an individual, give the last name, first name, middle initial. If the owner of the land is a corporation, partnership, firm, etc., fill in the appropriate title.

7. Complete the section on Well Data with the most accurate information available to you. If the data is not available, write N/A in the blanks.

8. Give the legal description of the place of use of the water. If place of use is in a subdivision and legal description is not available, give the subdivision name, Lot Number and/or address on the blank line.

9. The person in whose name a well is registered shall notify the Department of any change in ownership and shall keep all information on the registration record current and accurate. A form entitled "Change of Well Information/Ownership" is available for this purpose. A blank form will be furnished with the returned duplicate copy of the registration form.

Salt River Project Agricultural Impr. &
Power District
P O Box 1980
Phoenix AZ 85001

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
WATER RIGHTS ADMINISTRATION
99 EAST VIRGINIA
PHOENIX, ARIZONA 85004

RECEIPT

KIND ENTRY	FILE REFERENCE NO.
55 -	607704
	THRU
55 -	607743

ACCOUNT NO. FUND SOURCE	AGENCY	CHAPTER	DIV.	INT. ACCT.	ITEM DESCRIPTION	RATE	$ AMOUNT
					Filing Fee for Registration of Existing		
					Wells	10.00	400.00
					File # Various	WAITER PAYMENT	
						GUESTS 40	
						CHK NO 60934	
						40@ 10.00	
						55-I 400.00	
						TAX 0.00	
						TOTL 400.00	
						GEN.CHEK 400.00	
					Paid Check #060934		

5-20-82

TOTAL $ 400.00

8224 A 13:16

pb

23.5E-9.5N

DEPARTMENT OF WATER RESOURCES
99 EAST VIRGINIA AVENUE
PHOENIX, ARIZONA 85004

REGISTRATION OF EXISTING WELLS

READ INSTRUCTIONS ON BACK OF THIS FORM BEFORE COMPLETING
PRINT OR TYPE — FILE IN DUPLICATE

07

REGISTRATION FEE (CHECK ONE)	
EXEMPT WELL (NO CHARGE)	☐
NON-EXEMPT WELL — $10.00	☒

ARIZONA DEPT. OF WATER RESOURCES '82 MAY 18 A10:15

FOR OFFICE USE ONLY
REGISTRATION NO. 55- 607716
FILE NO. A(2-4)13 caa
FILED 5-18-82 (DATE) AT 10:15a (TIME)
INA
AMA Phoenix

1. Name of Registrant:
Salt River Project Agricultural Improvement and Power District
P. O. Box 1980 (Address) Phoenix (City) Arizona (State) 85001 (Zip)

2. File and/or Control Number under previous groundwater law:
A02004013CAAGS1 (File Number) 35- None (Control Number)

3. a. The well is located within the NE ¼ NE ¼ SW ¼, Section 13, of Township 2N N/S, Range 4E E/W, G & SRB & M, in the County of Maricopa.
b. If in a subdivision: Name of subdivision _____, Lot No. _____, Address _____.

4. The principal use(s) of water (Examples: irrigation - stockwater - domestic - municipal - industrial)
Irrigation and non-irrigation uses by SRP.

5. If for irrigation use, number of acres irrigated from well SRP member lands

6. Owner of land on which well is located. If same as Item 1, check this box ☒
_____
(Address) (City) (State) (Zip)

7. Well data (If data not available, write N/A)
a. Depth of Well 1020 feet
b. Diameter of casing 20" 0-742', 16" - 304' inches
c. Depth of casing 1020 feet
d. Type of casing 8 ga stovepipe with mills knife perforations
e. Maximum pump capacity 2020 gallons per minute.
f. Depth to water 344 static (Jan. 1982) feet below land surface.
g. Date well completed April (Month) 3 (Day) 1952 (Year).

8. The place(s) of use of water. If same as Item 3, check this box ☐.
____ ¼ ____ ¼ ____ ¼, Section ____ Township ____ Range ____
____ ¼ ____ ¼ ____ ¼, Section ____ Township ____ Range ____
SRP member lands through distribution system
Attach additional sheet if necessary.

9. DATE MAY 17 1982 SIGNATURE OF REGISTRANT [signature]
SALT RIVER PROJECT AGRICULTURAL IMPROVEMENT AND POWER DISTRICT

INSTRUCTIONS FOR COMPLETING REGISTRATION FORM

General Instructions

1. A person who owns an "Existing Well" shall register the well, pursuant to A.R.S. 45-593, by filing this form in **duplicate** with the Department of Water Resources not later than midnight June 14, 1982. The form must be completed and signed. Failure to do so will constitute a violation of A.R.S. 45-593, and may subject the well owner to injunction and/or civil penalties, pursuant to A.R.S. Title 45, Article 12.

2. An "Existing Well" means, (1) a well which was drilled on or before June 12, 1980 and which is not abandoned or sealed, or (2) a well which was not completed on or before June 12, 1980, but for which a Notice of Intention to Drill was on file with the Arizona Water Commission on or before June 12, 1980.

3. No registration fee is required for Exempt Wells. A $10.00 registration fee must accompany registration forms for all Non-Exempt Wells.

4. An "Exempt Well" means a well having a pump with a maximum capacity of not more than 35 gallons per minute which is used to withdraw groundwater. An Exempt Well may include the non-commercial irrigation of not more than 1 acre of land.

5. A "Non-Exempt Well" means a well that is not an "Exempt Well".

INSTRUCTIONS FOR REGISTRATION QUESTIONS

1. The Registrant must be the owner of the well and may be an individual, public or private corporation, company, partnership, firm, association, society, estate, trust, any other private organization or enterprise, the United States, any state, territory or country or a governmental entity, political subdivision or municipal corporation organized under or subject to the constitution and laws of this State.

2. If you own an existing irrigation well drilled at any time, or any other type of well drilled on or after June 20, 1968, you should have an assigned control and/or file number. Write these numbers in item 2. If you do not know the number, please explain the reason on the form or on an attached sheet.

3. a. Fill in the Section, Township and Range in all cases if it is available.
   b. If the well is in a subdivision and you have this information, give the subdivision name, Lot Number, and Address.

4. Show all purposes for which the water is used.

5. If the well is used for irrigation, give the number of acres irrigated in 1980 from the well.

6. If the owner of the land is an individual, give the last name, first name, middle initial. If the owner of the land is a corporation, partnership, firm, etc., fill in the appropriate title.

7. Complete the section on Well Data with the most accurate information available to you. If the data is not available, write N/A in the blanks.

8. Give the legal description of the place of use of the water. If place of use is in a subdivision and legal description is not available, give the subdivision name, Lot Number and/or address on the blank line.

9. The person in whose name a well is registered shall notify the Department of any change in ownership and shall keep all information on the registration record current and accurate. A form entitled "Change of Well Information/Ownership" is available for this purpose. A blank form will be furnished with the returned duplicate copy of the registration form.

Salt River Project Agricultural Impr. &
Power District
P O Box 1980
Phoenix AZ 85001

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
WATER RIGHTS ADMINISTRATION
99 EAST VIRGINIA
PHOENIX, ARIZONA 85004

RECEIPT

KIND ENTRY	FILE REFERENCE NO.
55 -	607704
	THRU
55 -	607743

ACCOUNT NO. FUND SOURCE	AGENCY	CHAPTER	DIV.	INT. ACCT.	ITEM DESCRIPTION	RATE	$ AMOUNT
					Filing Fee for Registration of Existing		
					Wells	10.00	400.00
					File # Various		
					Paid Check #060934		

WAITER PAYMENT
GUESTS 40
CHK NO 60934
40@ 10.00
55-I 400.00
TAX 0.00
TOTL 400.00
GEN.CHEK 400.00

8224 A 13:16

5-20-82

TOTAL $ 400.00

pb

17.1E - 7.4N

DEPARTMENT OF WATER RESOURCES
99 EAST VIRGINIA AVENUE
PHOENIX, ARIZONA 85004

REGISTRATION OF EXISTING WELLS

READ INSTRUCTIONS ON BACK OF THIS FORM BEFORE COMPLETING
PRINT OR TYPE — FILE IN DUPLICATE

07

FOR OFFICE USE ONLY
REGISTRATION NO. 55- 607731
FILE NO. A(2-3)25cbb
5-18-82 (DATE) AT 10:47a (TIME)
Phoenix

ARIZONA DEPT. OF WATER RESOURCES '82 MAY 18 AM 10:47

REGISTRATION FEE (CHECK ONE)	
EXEMPT WELL (NO CHARGE)	☐
NON-EXEMPT WELL – $10.00	☒

1. Name of Registrant:
Salt River Project Agricultural Improvement and Power District
P. O. Box 1980 (Address) Phoenix (City) Arizona (State) 85001 (Zip)

2. File and/or Control Number under previous groundwater law:
A02003025CBBGS2 (File Number) 35- None (Control Number)

3. a. The well is located within the NW ¼ NW ¼ SW ¼, Section 25, of Township 2N N/S, Range 3E E/W, G & SRB & M, in the County of Maricopa.
b. If in a subdivision: Name of subdivision _____, Lot No. _____, Address _____.

4. The principal use(s) of water (Examples: irrigation - stockwater - domestic - municipal - industrial)
Irrigation and non-irrigation uses by SRP.

5. If for irrigation use, number of acres irrigated from well SRP member lands.

6. Owner of land on which well is located. If same as Item 1, check this box ☒
_____
_____
(Address) (City) (State) (Zip)

7. Well data (If data not available, write N/A)
a. Depth of Well 400 feet
b. Diameter of casing 18 inches
c. Depth of casing 400 feet
d. Type of casing 5/16 wall steel pipe--pre-perforated
e. Maximum pump capacity 1196 gallons per minute.
f. Depth to water 53 static (Jan. 1982) feet below land surface.
g. Date well completed April (Month) 21 (Day) 1962 (Year).

8. The place(s) of use of water. If same as Item 3, check this box ☐.
____ ¼ ____ ¼ ____ ¼, Section ____ Township ____ Range ____
____ ¼ ____ ¼ ____ ¼, Section ____ Township ____ Range ____
SRP member lands through distribution system
Attach additional sheet if necessary.

9. DATE MAY 17 1982 SIGNATURE OF REGISTRANT Carl E. Sparks

SALT RIVER PROJECT AGRICULTURAL
IMPROVEMENT AND POWER DISTRICT

INSTRUCTIONS FOR COMPLETING REGISTRATION FORM

General Instructions

1. A person who owns an "Existing Well" shall register the well, pursuant to A.R.S. 45-593, by filing this form **in duplicate** with the Department of Water Resources not later than midnight June 14, 1982. The form must be completed and signed. Failure to do so will constitute a violation of A.R.S. 45-593, and may subject the well owner to injunction and/or civil penalties, pursuant to A.R.S. Title 45, Article 12.

2. An "Existing Well" means, (1) a well which was drilled on or before June 12, 1980 and which is not abandoned or sealed, or (2) a well which was not completed on or before June 12, 1980, but for which a Notice of Intention to Drill was on file with the Arizona Water Commission on or before June 12, 1980.

3. No registration fee is required for Exempt Wells. A $10.00 registration fee must accompany registration forms for all Non-Exempt Wells.

4. An "Exempt Well" means a well having a pump with a maximum capacity of not more than 35 gallons per minute which is used to withdraw groundwater. An Exempt Well may include the non-commercial irrigation of not more than 1 acre of land.

5. A "Non-Exempt Well" means a well that is not an "Exempt Well".

INSTRUCTIONS FOR REGISTRATION QUESTIONS

1. The Registrant must be the owner of the well and may be an individual, public or private corporation, company, partnership, firm, association, society, estate, trust, any other private organization or enterprise, the United States, any state, territory or country or a governmental entity, political subdivision or municipal corporation organized under or subject to the constitution and laws of this State.

2. If you own an existing irrigation well drilled at any time, or any other type of well drilled on or after June 20, 1968, you should have an assigned control and/or file number. Write these numbers in item 2. If you do not know the number, please explain the reason on the form or on an attached sheet.

3. a. Fill in the Section, Township and Range in all cases if it is available.
   b. If the well is in a subdivision and you have this information, give the subdivision name, Lot Number, and Address.

4. Show all purposes for which the water is used.

5. If the well is used for irrigation, give the number of acres irrigated in 1980 from the well.

6. If the owner of the land is an individual, give the last name, first name, middle initial. If the owner of the land is a corporation, partnership, firm, etc., fill in the appropriate title.

7. Complete the section on Well Data with the most accurate information available to you. If the data is not available, write N/A in the blanks.

8. Give the legal description of the place of use of the water. If place of use is in a subdivision and legal description is not available, give the subdivision name, Lot Number and/or address on the blank line.

9. The person in whose name a well is registered shall notify the Department of any change in ownership and shall keep all information on the registration record current and accurate. A form entitled "Change of Well Information/Ownership" is available for this purpose. A blank form will be furnished with the returned duplicate copy of the registration form.

55-607231

17E - 7½ N

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REPORT OF WELL DRILLER

IMPORTANT!

Please complete & return.

This report should be prepared by the driller in all detail and filed with the State Land Commissioner following completion of the well.

1. OWNER SALT RIVER VALLEY WATER USERS' ASSOCIATION (Name)
P. O. Box 1980, Phoenix, Arizona (Address)

2. Lessee or Operator ..... (Name)
..... (Address)

3. DRILLER Roscoe Moss Company (Name)
4360 Worth Street, Los Angeles, Calif. (Address)

4. Location of well: Twp. 2N Rge. 3E Section 25 NW ¼ NW ¼ SW ¼ (10-acre subdivision)

5. Intention to Drill File No. ..... Permit No. S-666

DESCRIPTION OF WELL

6. Total depth of hole 400 ft.

7. Type of casing Mild steel plate

8. Diameter and length of casing 28 in. from 0 to 72, 18 in. from 0 to 400, ... in. from ..... to .....

9. Method of sealing at reduction points .....

10. Perforated from 40 to 65 / 28" casing, from 150 to 400 / 18" casing, from ..... to ....., from ..... to .....

11. Size of cuts 1/4 x 2-1/2 Number of cuts per foot 19 per 5"

12. If screen was installed: Length ..... ft. Diam. ..... in. Type .....

13. Method of construction Drilled (drilled, dug, driven, bored, jetted, etc.)

14. Date started March 13, 1962 (Month Day Year)

15. Date completed April 21, 1962 (Month Day Year)

16. Depth of water 40 ft. (If flowing well, so state.)

17. Describe point from which depth measurements were made, and give sea-level elevation if available
Ground Surface.

18. If flowing well, state method of flow regulation .....

19. REMARKS: .....

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received 5-25-62 by K
Filed 5-31-62 by K
File No. (A-2-3)25 cbb

(Well Log to Appear on Reverse Side)

WD FORM G-301
REV. 4-27-52

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	3	Top soil
3	50	Clay and caliche
50	65	Sandy clay
65	165	Clay
165	245	Hard clay and caliche
245	400	Hard conglomerate

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

ROSCOE MOSS COMPANY.

Driller ..... Secretary

4360 Worth Street, Los Angeles, Calif.
Address

Date .....

RECEIVED
MAY 25 1962
STATE LAND DEPT.

8713

S-683 (A-2-3)25 cbb

Application No. S-683 File No. (A-2-3)25 cbb Permit No. S-666

Filed March 20, 1962
(Applicant must not fill in the above blanks)

This application shall be submitted to the State Land Department, Water Division, Phoenix, Arizona, in accordance with the provisions of Article 7, Chapter 1, Title 45, Arizona Revised Statutes, and the rules and regulations of the State Land Department.

Applications must be accompanied by fees made payable to the STATE LAND DEPARTMENT as follows:

Application Fee ---- $ 3.00
Permit Fee --------- $ 5.00

APPLICATION FOR A PERMIT

( ) TO DRILL)
( ) TO DEEPEN) AN IRRIGATION WELL IN A CRITICAL AREA
(X) TO REPLACE) WITHIN THE STATE OF ARIZONA

I, We, SALT RIVER VALLEY WATER USERS' ASSOCIATION
(Owners Name)

of P. O. Box 1980, County of Maricopa
(Post Office Address)
State of Arizona, do hereby make application for a permit to

( ) Drill new well, ( ) Deepen or (X) Replace the following described well

in the Salt River Valley Critical Area.

1. Location and description of proposed well:

Twp. 2N Rge. 3E Sec. 25 ; NW ¼ NW ¼ SW ¼
(10 Ac. Subdiv.)

Depth 400 ft. Type of casing 5/16"-Plate pipe

Proposed Withdrawal 2000
(Ac.ft. per year)

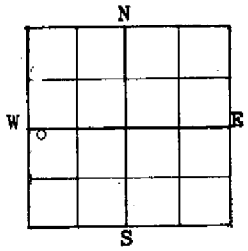
Name and Address of Driller:

Roscoe Moss Co.

Los Angeles, California

17E-7-1/2N Well #298

Location of Proposed Well



2. Location and description of existing well:

Twp. 2N Rge. 3E Sec. 26 ; NE ¼ NE ¼ NE ¼
(10 Ac. Subdiv.)

Depth 200 ft. Diameter 12 in.

Date drilled Oct., 1923

Driving Unit 20 HP electric motor H.P.

Rating of Motor

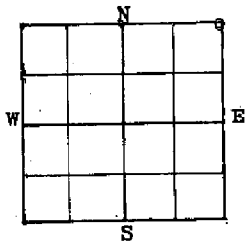
Discharge when Drilled 422 GPM
(g.p.m.)

Present Discharge 496 GPM
(g.p.m.)

Static Water Level 42.6 ft.
(below ground surface)

(Indicate location of well)

Location of Existing Well



Depth of Pump Setting submersible installation @ 139'

Pumping Lift 104.7 ft.

3. Reason new well required Supplement water supply.

4. Land to be irrigated: Lands within Association boundaries

Twp._____ Rge._____ Sec._____

(Legal Subdivision Description) (Acres)

Twp._____ Rge._____ Sec._____

(Legal Subdivision Description) (Acres)

5. Above described land is now irrigated as follows: Project Canals & wells

6. Record of cultivation and irrigation of land described herein:

All lands within Project under cultivation prior to 1948.

7. It is understood that the permit, if granted, will be in accordance with the Groundwater Code of 1948, and the Permittee will be bound by the provisions of such law, and the provisions of the permit issued herefor.

CERTIFICATE

8. I, We, SALT RIVER VALLEY WATER USERS' ASSOCIATION the applicant named in the above and foregoing application, do hereby certify under the penalty of perjury, that the information contained and statements therein made are, to the best of my knowledge and belief, true, correct, and complete.

DATED THIS March 15th day of March 1962

SALT RIVER VALLEY WATER USERS' ASSOCIATION
(Owner or his authorized agent)

P. O. Box 1980, Phoenix, Arizona
(Post Office address)

BY J. F. Griswold
J. F. Griswold, Secretary

RECEIVED MAR 20 1962 STATE LAND DEPT.

4673

WD Form No. GH303-1M/12-56
3-64

Application No. S-683 File No. (A-2-3)25 cbb Permit No. S-666

PERMIT

TO DRILL AN IRRIGATION WELL IN A CRITICAL AREA WITHIN THE STATE OF ARIZONA

SALT RIVER VALLEY WATER USERS' ASSOCIATION, PHOENIX, ARIZONA

STATE OF ARIZONA }
County of MARICOPA } ss.

This is to Certify that I have examined the above numbered application and do hereby approve the same and grant to the applicant a permit to DRILL the well described therein, subject to the following limitations and conditions:

1. Water shall be limited to use on lands described as follows:

Legal Subdivision	Acres
LANDS WITHIN ASSOCIATION BOUNDARIES.	
Total Acres	

( ) 2. No right is granted by this permit for the irrigation of lands which on September 1, 19 51, were not irrigated, or had not been cultivated within five years prior thereto.

(x) 3. The well for which permit is granted hereunder shall be completed and in operation within one year from the date hereof.

( ) 4. **Other Limitations:**

WITNESS my hand and seal of office this 22nd day of March, 19 62

Acting Deputy STATE LAND COMMISSIONER

S E A L

OBED M. LASSEN
STATE LAND COMMISSIONER
PHONE 271-4621

STATE LAND DEPARTMENT

STATE OF ARIZONA
STATE OFFICE BUILDING
PHOENIX 7, ARIZONA

March 22, 1962

Re: File No. ~~(A-2-3)25 abb~~
Application No. ~~S-683~~
Permit No. ~~S-666~~

SALT RIVER VALLEY WATER USERS' ASSOCIATION
c/o J. F. Griswold, Secretary
P. O. Box 1980
Phoenix, Arizona

Gentlemen:

Your application for a permit to drill a well in Twp. 2 North , Rge. 3 East ,

Section 25 , NW ¼ NW ¼ SW ¼ has been approved. Your permit is enclosed.

Also enclosed are a:

WELL DRILLING CARD, which should be in the hands of the driller before construction of the well is started;

REPORT OF WELL DRILLER form, which shall be filled in and sent to us within thirty days after completion of the well;

REPORT OF EQUIPMENT INSTALLED form, which shall be filled in and sent to us within thirty days after the installation of the pumping equipment.

In the event it is necessary to change the location of the proposed well you should obtain the written permission of the State Land Commissioner before proceeding with the drilling.

Very truly yours,

WATER DIVISION

By:
Donald LeMaster

Enclosure: G-301
G-304
G-306
cc: USGS, Tucson

Important

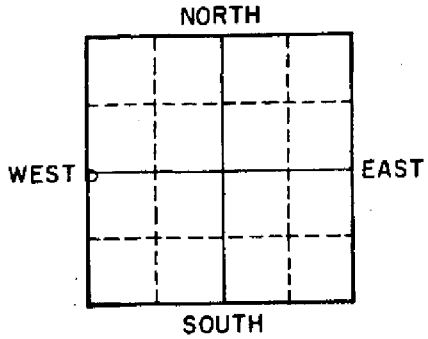
Please complete & return.

STATE LAND DEPARTMENT
Water Division
Phoenix 7, Arizona

17E-7½N #198

File No. (A-2-3)25 cbb

Location of Well



(Indicate Well Location by a circle "o" in the above Section Plat)

REPORT OF EQUIPMENT INSTALLED

OWNER Salt River Valley Water Users' Association

LOCATION OF WELL:

NW ¼ NW ¼ SW ¼, Sec. 25 Twp. 2N Rge. 3E

Date Well Completed: April, 1962 Depth 400

1. Well Test:

Discharge: 1196 (Gal. Per Min.) Date Well Tested: 8/1/62

Method of Discharge Measurement: Pitot (weir, orifice, current meter, etc.)

Static Water Level: 54.6 ft. Drawdown 65.1 ft.

Total Pumping Lift 119.77 ft.

2. Equipment Installed:

Kind of Pump: Turbine (turbine, centrifugal, etc.)

Kind of Power: Electric (Elec., Nat. Gas, Etc.) H. P. Rating of Motor 100

I HEREBY CERTIFY that all the above statements are true to the best of my knowledge and belief.

J. F. Griswold

Signature J. F. Griswold, Secty.
SALT RIVERY VALLEY WATER USERS' ASSOCIATION
P. O. Box 1980, Phoenix 1, Arizona
Address

Date August 7, 1962.

WD Form G-306
10-57

RECEIVED
AUG 8 1962
STATE LAND
DEPT.

12477

ARIZONA DEPARTMENT OF WATER RESOURCES WELL REPORT

ıad	Town	Range	Sect	Q160	Q40	Q10	Reg No.	Registered Full Name & Address	Well Depth	Case Depth	Case Diameter	Water Level	Pump (GPM)	Most Recent Auth. Issued: Drill Lic No	Most Recent Auth. Issued: Issue Date	Org. Drill Date	Reg Wtr Use	Wtr-shed	Log	CRT
\	2.0	3.0	25	B	C	B	55 - 539841	SOUTHWEST GAS CORP, 9 S 43RD AVE PHOENIX, AZ 85009	252	252	6	0	0	392		10/05/1993	N	07	X	N
B/M/P:																				
/ell Type: EXPLORATION																				
\	2.0	3.0	25	C	B	B	55 - 607731	SALT RIVER PROJECT, PO BOX 1980 PHOENIX, AZ 85001	400	400	18	53	1,196	0		04/21/1962	AB	07		
B/M/P:																				
/ell Type: NON-EXEMPT																				
\	2.0	3.0	25	C	C	C	55 - 550237	CIRCLE K CORP, 3003 N CENTRAL AVE PHOENIX, AZ 85013	58	37	4	40	0	175		07/25/1995	M	07	X	N
B/M/P:																				
/ell Type: MONITOR OR PIEZOMETER																				
A	2.0	3.0	25	C	C	C	55 - 550241	CIRCLE K CORP, 3003 N CENTRAL AVE PHOENIX, AZ 85013	0	0	0	0	0	175			M	07		N
B/M/P:																				
/ell Type: MONITOR OR PIEZOMETER																				
A	2.0	3.0	25	C	C	C	55 - 554017	CIRCLE K STORES INC, 3003 N CENTRAL AVE PHOENIX, AZ 85013	0	0	0	0	0	175			M	07		N
B/M/P:																				
/ell Type: MONITOR OR PIEZOMETER																				
A	2.0	3.0	25	C	C	C	55 - 554019	CIRCLE K STORES INC, 3003 N CENTRAL AVE PHOENIX, AZ 85013	0	0	0	0	0	175			M	07		N
B/M/P:																				
/ell Type: MONITOR OR PIEZOMETER																				
A	2.0	3.0	25	C	C	C	55 - 554021	CIRCLE K STORES INC, 3003 N CENTRAL AVE PHOENIX, AZ 85013	0	0	0	0	0	175			M	07		N
B/M/P:																				
Well Type: MONITOR OR PIEZOMETER																				
A	2.0	3.0	25	C	C	C	55 - 554023	CIRCLE K STORES INC, 3003 N CENTRAL AVE PHOENIX, AZ 85013	0	0	0	0	0	175			M	07		N
B/M/P:																				
Well Type: MONITOR OR PIEZOMETER																				
A	2.0	3.0	25	C	C	C	55 - 585797	CONOCOPHILLIPS COMPANY P O BOX 52085 PHOENIX, AZ 85072	60	55	2	45	0	78	03/05/2001	04/10/2001	T	07	X	
B/M/P:																				
Well Type: MONITOR																				
A	2.0	3.0	25	C	C	C	55 - 578962	PROFESSIONAL MOBILE CLEANING ATTN SCOTT STEVENS 5501 E CALLE CAMELIA PHOENIX, AZ 85018	0	0	0	0	0	7	01/19/2000		T	07		
Cancelled: Y B/M/P:																				
Well Type: MONITOR																				
A	2.0	3.0	25	C	C	C	55 - 578961	PROFESSIONAL MOBILE CLEANING ATTN SCOTT STEVENS 5501 E CALLE CAMELIA PHOENIX, AZ 85018	0	0	0	0	0	7	01/19/2000		T	07		
Cancelled: Y B/M/P:																				
Well Type: MONITOR																				
A	2.0	3.0	25	C	C	C	55 - 578960	PROFESSIONAL MOBILE CLEANING ATTN SCOTT STEVENS 5501 E CALLE CAMELIA PHOENIX, AZ 85018	0	0	0	0	0	7	01/19/2000		T	07		
Cancelled: Y B/M/P:																				
Well Type: MONITOR																				

Salt River Project Agricultural Impr. &
Power District
P O Box 1980
Phoenix AZ 85001

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
WATER RIGHTS ADMINISTRATION
99 EAST VIRGINIA
PHOENIX, ARIZONA 85004

RECEIPT

KIND ENTRY	FILE REFERENCE NO.
55 -	607704
	THRU
55 -	607743

ACCOUNT NO. FUND SOURCE	AGENCY	CHAPTER	DIV.	INT. ACCT.	ITEM DESCRIPTION	RATE	$ AMOUNT
					Filing Fee for Registration of Existing		
					Wells	10.00	400.00
					File # Various		
					Paid Check #060934		

WAITER PAYMENT
GUESTS 40
CHK NO 60934
40@ 10.00
55-I 400.00
TAX 0.00
TOTL 400.00
GEN.CHEK 400.00

~~# 8224 A 13:16~~

5-20-82

TOTAL $ 400.00

pb

Arizona Department of Water Resources
Operations Division
500 N. 3rd St.
Phoenix, AZ 85004-3903

DWR AR22 - Nov 84
Date Received: _____
Received By : _____
AMA : _____
Date Routed to AMA: _____

MEASURING DEVICE MALFUNCTION REPORT FORM
PART1 - NOTIFICATION

INSTRUCTIONS

A.C.R.R. R12-15-905 Requires that a report must be made in writing to Department of Water Resources within (7) seven calendar days of Discovering that a water measuring device has malfunctioned, if the malfunction lasts 72 hours or longer.

Well Owner/Operator: SALT RIVER PROJECT

Address: P.O. Box 52025 Phoenix, AZ 85072-2025

Telephone Number: (602) 236-2612

Well Registration Number: 55607748

SRP Coordinate Location: 19.0E-08.1N

SRP Pump Number: 113

Measuring Device Type: Flow Meter

Malfunctioned on: 5/3/07

For the reason that: Low mA reading

Should be back in service: 5/~~8~~3/07

Signed: [illegible]

Date: 5-7-07

Arizona Department of Water Resources
Operations Division
500 N. 3rd St.
Phoenix, AZ 85004-3903

DWR AR22 - Nov 84
Date Received: _____
Received By : _____
AMA : _____
Date Routed to AMA: _____

MEASURING DEVICE MALFUNCTION REPORT FORM
PART1 - NOTIFICATION

INSTRUCTIONS

A.C.R.R. R12-15-905 Requires that a report must be made in writing to Department of Water Resources within (7) seven calendar days of Discovering that a water measuring device has malfunctioned, if the malfunction lasts 72 hours or longer.

Well Owner/Operator: SALT RIVER PROJECT

Address: P.O. Box 52025 Phoenix, AZ 85072-2025

Telephone Number: (602) 236-2612 Well Registration Number: 55607748

SRP Coordinate Location: 19.0E-08.1N SRP Pump Number: 113

Measuring Device Type: Flow Meter Malfunctioned on: 4/26/2006

For the reason that: no signal

Steve Le Lamy 5/30/06

19E - 8.1N

DEPARTMENT OF WATER RESOURCES
99 EAST VIRGINIA AVENUE
PHOENIX, ARIZONA 85004

REGISTRATION OF EXISTING WELLS

READ INSTRUCTIONS ON BACK OF THIS FORM BEFORE COMPLETING
PRINT OR TYPE — FILE IN DUPLICATE

07

FOR OFFICE USE ONLY
REGISTRATION NO. 55-607748
FILE NO. A(2-4)20 ccc
FILED 5-18-82 (DATE) AT 10:51a (TIME)
INA
AMA Phoenix

ARIZONA DEPT. OF WATER RESOURCES
'82 MAY 18 A10 51

REGISTRATION FEE (CHECK ONE)

EXEMPT WELL (NO CHARGE) ☐
NON-EXEMPT WELL – $10.00 ☒

1. Name of Registrant:
Salt River Project Agricultural Improvement and Power District
P. O. Box 1980 (Address) Phoenix (City) Arizona (State) 85001 (Zip)

2. File and/or Control Number under previous groundwater law:
_____ (File Number) 35-_____ (Control Number)

3. a. The well is located within the SW ¼ SW ¼ SW ¼, Section 20, of Township 2N N/S, Range 4E E/W, G & SRB & M, in the County of Maricopa.
b. If in a subdivision: Name of subdivision _____, Lot No. _____, Address _____.

4. The principal use(s) of water (Examples: irrigation - stockwater - domestic - municipal - industrial)
Irrigation and non-irrigation uses by SRP.

5. If for irrigation use, number of acres irrigated from well SRP member lands

6. Owner of land on which well is located. If same as Item 1, check this box ☒
_____
_____ (Address) (City) (State) (Zip)

7. Well data (If data not available, write N/A)
a. Depth of Well 305 feet
b. Diameter of casing 18 inches
c. Depth of casing 305 feet
d. Type of casing steel casing with louvered perforations
e. Maximum pump capacity 808 gallons per minute.
f. Depth to water 17 static (Jan. 1982) feet below land surface.
g. Date well completed June (Month) 18 (Day) 1971 (Year).

8. The place(s) of use of water. If same as Item 3, check this box ☐.
____ ¼ ____ ¼ ____ ¼, Section ____ Township ____ Range ____
____ ¼ ____ ¼ ____ ¼, Section ____ Township ____ Range ____
SRP member lands through distribution system
Attach additional sheet if necessary.

9. DATE MAY 17 1982 SIGNATURE OF REGISTRANT Carl Sparks
SALT RIVER PROJECT AGRICULTURAL IMPROVEMENT AND POWER DISTRICT

INSTRUCTIONS FOR COMPLETING REGISTRATION FORM

General Instructions

1. A person who owns an "Existing Well" shall register the well, pursuant to A.R.S. 45-593, by filing this form **in duplicate** with the Department of Water Resources not later than midnight June 14, 1982. The form must be completed and signed. Failure to do so will constitute a violation of A.R.S. 45-593, and may subject the well owner to injunction and/or civil penalties, pursuant to A.R.S. Title 45, Article 12.

2. An "Existing Well" means, (1) a well which was drilled on or before June 12, 1980 and which is not abandoned or sealed, or (2) a well which was not completed on or before June 12, 1980, but for which a Notice of Intention to Drill was on file with the Arizona Water Commission on or before June 12, 1980.

3. No registration fee is required for Exempt Wells. A $10.00 registration fee must accompany registration forms for all Non-Exempt Wells.

4. An "Exempt Well" means a well having a pump with a maximum capacity of not more than 35 gallons per minute which is used to withdraw groundwater. An Exempt Well may include the non-commercial irrigation of not more than 1 acre of land.

5. A "Non-Exempt Well" means a well that is not an "Exempt Well".

INSTRUCTIONS FOR REGISTRATION QUESTIONS

1. The Registrant must be the owner of the well and may be an individual, public or private corporation, company, partnership, firm, association, society, estate, trust, any other private organization or enterprise, the United States, any state, territory or country or a governmental entity, political subdivision or municipal corporation organized under or subject to the constitution and laws of this State.

2. If you own an existing irrigation well drilled at any time, or any other type of well drilled on or after June 20, 1968, you should have an assigned control and/or file number. Write these numbers in item 2. If you do not know the number, please explain the reason on the form or on an attached sheet.

3. a. Fill in the Section, Township and Range in all cases if it is available.
   b. If the well is in a subdivision and you have this information, give the subdivision name, Lot Number, and Address.

4. Show all purposes for which the water is used.

5. If the well is used for irrigation, give the number of acres irrigated in 1980 from the well.

6. If the owner of the land is an individual, give the last name, first name, middle initial. If the owner of the land is a corporation, partnership, firm, etc., fill in the appropriate title.

7. Complete the section on Well Data with the most accurate information available to you. If the data is not available, write N/A in the blanks.

8. Give the legal description of the place of use of the water. If place of use is in a subdivision and legal description is not available, give the subdivision name, Lot Number and/or address on the blank line.

9. The person in whose name a well is registered shall notify the Department of any change in ownership and shall keep all information on the registration record current and accurate. A form entitled "Change of Well Information/Ownership" is available for this purpose. A blank form will be furnished with the returned duplicate copy of the registration form.

Salt River Project Agricultural Impr. &
Power District
P O Box 1980
Phoenix AZ 85001

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
WATER RIGHTS ADMINISTRATION
99 EAST VIRGINIA
PHOENIX, ARIZONA 85004

RECEIPT

KIND ENTRY	FILE REFERENCE NO.
55 -	607704
	THRU
55 -	607743

FUND SOURCE	ACCOUNT NO. AGENCY	CHAPTER	DIV.	INT. ACCT.	ITEM DESCRIPTION	RATE	$ AMOUNT
					Filing Fee for Registration of Existing		
					Wells	10.00	400.00
					File # Various		
					Paid Check #060934		

WAITER PAYMENT
GUESTS 40
CHK NO 60934
40@ 10.00
55-I 400.00
TAX 0.00
TOTL 400.00
GEN.CHEK 400.00

~~# 8224 A 13:16~~

5-20-82

TOTAL $ 400.00

pb

17.5E-7N

DEPARTMENT OF WATER RESOURCES
99 EAST VIRGINIA AVENUE
PHOENIX, ARIZONA 85004

REGISTRATION OF EXISTING WELLS

READ INSTRUCTIONS ON BACK OF THIS FORM BEFORE COMPLETING
PRINT OR TYPE — FILE IN DUPLICATE

07

FOR OFFICE USE ONLY
REGISTRATION NO. 55- 607672
FILE NO. A(2-3)25 dcc
FILED 5-18-82 (DATE) AT 11:02a (TIME)
INA
AMA Phoenix

ARIZONA DEPT. OF WATER RESOURCES
'82 MAY 18 A11:02

REGISTRATION FEE (CHECK ONE)
EXEMPT WELL (NO CHARGE) ☐
NON-EXEMPT WELL — $10.00 ☒

1. Name of Registrant:
Salt River Project Agricultural Improvement and Power District
P. O. Box 1980 (Address) Phoenix (City) Arizona (State) 85001 (Zip)

2. File and/or Control Number under previous groundwater law:
A02003025DCCGS1 (File Number) 35- (Control Number)

3. a. The well is located within the SW ¼ SW ¼ SE ¼, Section 25, of Township 2N N/S, Range 3E E/W, G & SRB & M, in the County of Maricopa.
b. If in a subdivision: Name of subdivision _____, Lot No. _____, Address _____.

4. The principal use(s) of water (Examples: irrigation - stockwater - domestic - municipal - industrial)
Irrigation and non-irrigation uses by SRP.

5. If for irrigation use, number of acres irrigated from well SRP member lands

6. Owner of land on which well is located. If same as Item 1, check this box ☒
_____
(Address) (City) (State) (Zip)

7. Well data (If data not available, write N/A)
a. Depth of Well 202 feet
b. Diameter of casing 12 inches
c. Depth of casing 188 feet
d. Type of casing 10 ga double wall stovepipe.
e. Maximum pump capacity 563 gallons per minute.
f. Depth to water 89 static (Jan. 1982) feet below land surface.
g. Date well completed October (Month) (Day) 1923. (Year).

8. The place(s) of use of water. If same as Item 3, check this box ☐.
____ ¼ ____ ¼ ____ ¼, Section ____ Township ____ Range ____
____ ¼ ____ ¼ ____ ¼, Section ____ Township ____ Range ____
SRP member lands through distribution system.
Attach additional sheet if necessary.

9. DATE ~~MAY 17 1982~~ MAY 17 1982 SIGNATURE OF REGISTRANT Carl Sparks
SALT RIVER PROJECT AGRICULTURAL IMPROVEMENT AND POWER DISTRICT

INSTRUCTIONS FOR COMPLETING REGISTRATION FORM

General Instructions

1. A person who owns an "Existing Well" shall register the well, pursuant to A.R.S. 45-593, by filing this form **in duplicate** with the Department of Water Resources not later than midnight June 14, 1982. The form must be completed and signed. Failure to do so will constitute a violation of A.R.S. 45-593, and may subject the well owner to injunction and/or civil penalties, pursuant to A.R.S. Title 45, Article 12.

2. An "Existing Well" means, (1) a well which was drilled on or before June 12, 1980 and which is not abandoned or sealed, or (2) a well which was not completed on or before June 12, 1980, but for which a Notice of Intention to Drill was on file with the Arizona Water Commission on or before June 12, 1980.

3. No registration fee is required for Exempt Wells. A $10.00 registration fee must accompany registration forms for all Non-Exempt Wells.

4. An "Exempt Well" means a well having a pump with a maximum capacity of not more than 35 gallons per minute which is used to withdraw groundwater. An Exempt Well may include the non-commercial irrigation of not more than 1 acre of land.

5. A "Non-Exempt Well" means a well that is not an "Exempt Well".

INSTRUCTIONS FOR REGISTRATION QUESTIONS

1. The Registrant must be the owner of the well and may be an individual, public or private corporation, company, partnership, firm, association, society, estate, trust, any other private organization or enterprise, the United States, any state, territory or country or a governmental entity, political subdivision or municipal corporation organized under or subject to the constitution and laws of this State.

2. If you own an existing irrigation well drilled at any time, or any other type of well drilled on or after June 20, 1968, you should have an assigned control and/or file number. Write these numbers in item 2. If you do not know the number, please explain the reason on the form or on an attached sheet.

3. a. Fill in the Section, Township and Range in all cases if it is available.
   b. If the well is in a subdivision and you have this information, give the subdivision name, Lot Number, and Address.

4. Show all purposes for which the water is used.

5. If the well is used for irrigation, give the number of acres irrigated in 1980 from the well.

6. If the owner of the land is an individual, give the last name, first name, middle initial. If the owner of the land is a corporation, partnership, firm, etc., fill in the appropriate title.

7. Complete the section on Well Data with the most accurate information available to you. If the data is not available, write N/A in the blanks.

8. Give the legal description of the place of use of the water. If place of use is in a subdivision and legal description is not available, give the subdivision name, Lot Number and/or address on the blank line.

9. The person in whose name a well is registered shall notify the Department of any change in ownership and shall keep all information on the registration record current and accurate. A form entitled "Change of Well Information/Ownership" is available for this purpose. A blank form will be furnished with the returned duplicate copy of the registration form.

FORM W-2 10-45 JAHN-TYLER

55-607672

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REGISTRATION OF WELL

Registration of well existing as of Oct. 3, 1945 is hereby made and filed with the State Land Commissioner as required by Section 5, Chapter 12, Senate Bill No. 3, Seventeenth Legislature, First Special Session 1945.

1. Owner SALT RIVER VALLEY WATER USERS' ASSOCIATION
Name
Phoenix, Arizona
Address

2. Lessee or Operator
Name
Address

3. Driller E. N. Brown Drilling Company
Name
Phoenix, Arizona
Address

4. Location of well: Twp. 2N Rge. 3E Section 25 SW ¼ SW ¼ SE ¼
17½E-7N
10-acre subdivision

DESCRIPTION OF WELL

5. Total depth of hole 202 ft.

6. Type of casing stovepipe

7. Diameter and length of casing 12 in. from to , in. from to , in. from to

8. Method of sealing at reduction points

9. Perforated from 192 to 50 , from to , from to , from to

10. Size of cuts 3/4 x 4" holes Number cuts per foot 6 holes every 6 inches

11. If screen was installed: Length ft. Diam in. Type

12. Method of construction: drilled
drilled, dug, driven, bored, jetted, etc.

13. Date completed October, 1923 Deepened
Month Year Month Year

14. Depth to water when drilled 7-1/2 ft.
If flowing well, so state.

15. Present depth to water 20.0 ft. Date of measurement December 19, 1945
If flowing well, so state.

16. Describe point from which depth measurements were made, and give sea-level elevation if available pumphouse floor - 1,170.3

17. If flowing well, state method of flow regulation

DISCHARGE DATA

18. Well discharge 422 g.p.m.
gal. per min. or cu. ft. per sec. or miner's inches.

19. Method of discharge measurement weir
weir, orifice, current meter, etc.

20. Drawdown 81.80 ft.
81.80

21. Annual discharge in acre-feet, or number of hours pumped: 1944 561 a.f. or hrs. 1945 574 a.f. or hrs.

22. Purpose of use Irrigation

23. Place of use: Twp. Rge. Section Acres
(See 24) Legal subdivision
Twp. Rge. Section Acres
Legal subdivision

24. If well is part of irrigation system of Irrigation District, Association or Company, omit 23 and give name of project.
SALT RIVER VALLEY WATER USERS' ASSOCIATION
Name of Project

(A-2-3) 25

EQUIPMENT DATA

25. Kind of pump turbine
turbine, centrifugal, etc.

26. Kind of power electric
electric, natural gas, etc.

27. Horsepower rating of motor 20

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received 2-1-46 by lj
Filed 2-5-46 by lj
File No. (A-2-3)25dcc
Cross-referenced (Name) by
Cross-referenced (Basin) by
Cross-referenced by

(See Other Side)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	5	Top soil
5	21	Caliche
21	30	Coarse sand
30	90	Clay
90	116	Caliche
116	140	Clay
140	170	Caliche
170	180	Cemented sand and gravel
180	182	Rock
182	202	Cemented gravel

I hereby certify that I have read the foregoing statements, and that each and all of the items therein contained are true to the best of my knowledge and belief.

SALT RIVER VALLEY WATER USERS' ASSOCIATION

By H. J. Lawson

H. J. LAWSON ~~Former Superintendent Engr.~~

General Superintendent and Chief Engineer

Phoenix, Arizona

Address

Date February 1, 1946

Qad	Town	Range	Sect	Q160	Q40	Q10	Reg No.	Registered Full Name & Address	Well Depth	Case Depth	Case Diameter	Water Level	Pump (GPM)	Most Recent Auth. Issued: Drill Lic No	Most Recent Auth. Issued: Issue Date	Org. Drill Date	Reg Wtr Use	Wtr-shed	Log	CRT*
\	2.0	3.0	25	D	C	C	55 - 607672	SALT RIVER PROJECT, PO BOX 1980 PHOENIX, AZ 85001	202	188	12	89	563	0		10/01/1923	AB	07		
Well Type: NON-EXEMPT			B/M/P:																	
\	2.0	3.0	25	D	C	D	55 - 582482	THOMAS HEATING & AIR CONDITIONING 3726 E THOMAS RD PHOENIX, AZ 85018	0	0	0	0	0	533	08/03/2000		T	07		
Cancelled: Y			B/M/P:																	
Well Type: MONITOR																				
\	2.0	3.0	25	D	C	D	55 - 582485	THOMAS HEATING & AIR CONDITIONING 3726 E THOMAS RD PHOENIX, AZ 85018	0	0	0	0	0	533	08/03/2000		T	07		
Cancelled: Y			B/M/P:																	
Well Type: MONITOR																				
A	2.0	3.0	25	D	C	D	55 - 585412	THOMAS HEATING & AIR CONDITIONING 3726 E THOMAS RD PHOENIX, AZ 85018	55	35	4	30	0	533	02/14/2001	02/27/2001	T	07	X	
Well Type: MONITOR			B/M/P:																	
A	2.0	3.0	25	D	C	D	55 - 585413	THOMAS HEATING & AIR CONDITIONING 3726 E THOMAS RD PHOENIX, AZ 85018	55	35	4	30	0	533	02/14/2001	02/26/2001	T	07	X	
Well Type: MONITOR			B/M/P:																	
A	2.0	3.0	25	D	C	D	55 - 582484	THOMAS HEATING & AIR CONDITIONING 3726 E THOMAS RD PHOENIX, AZ 85018	0	0	0	0	0	533	08/03/2000		T	07		
Cancelled: Y			B/M/P:																	
Well Type: MONITOR																				
A	2.0	3.0	25	D	C	D	55 - 582483	THOMAS HEATING & AIR CONDITIONING 3726 E THOMAS RD PHOENIX, AZ 85018	0	0	0	0	0	533	08/03/2000		T	07		
Cancelled: Y			B/M/P:																	
Well Type: MONITOR																				
A	2.0	3.0	25	D	D	C	55 - 540123	RISK, CELIA, 3632 E PASADINA PHOENIX, AZ 85018	65	30	2	27	0	319		08/10/1993	M	07	X	N
Well Type: MONITOR OR PIEZOMETER			B/M/P:																	
A	2.0	3.0	25	D	D	D	55 - 517412	US POSTAL SERVICE, 2502 E UNIVERSITY PHOENIX, AZ 85034	32	20	5	22	0	263		04/20/1987	T	07	X	N
Well Type: EXPLORATION			B/M/P:																	
A	2.0	3.0	25	D	D	D	55 - 517413	US POSTAL SERVICE, 2502 E UNIVERSITY PHOENIX, AZ 85034	31	20	5	18	0	263		04/20/1987	T	07	X	N
Well Type: EXPLORATION			B/M/P:																	
A	2.0	3.0	25	D	D	D	55 - 536141	SOUTHLAND CORP, 7167 S ALTON WAY ENGLEWOOD, CO 80112	42	20	4	23	0	533		08/18/1992	M	07	X	N
Well Type: MONITOR OR PIEZOMETER			B/M/P:																	
A	2.0	3.0	25	D	D	D	55 - 536142	SOUTHLAND CORP, 7167 S ALTON WAY ENGLEWOOD, CO 80112	0	0	0	0	0	533			M	07		N
Cancelled: Y			B/M/P:																	
Well Type: MONITOR OR PIEZOMETER																				

Salt River Project Agricultural Impr. &
Power District
P O Box 1980
Phoenix AZ 85001

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
WATER RIGHTS ADMINISTRATION
99 EAST VIRGINIA
PHOENIX, ARIZONA 85004

RECEIPT

KIND ENTRY	FILE REFERENCE NO.
55 -	607704
	THRU
55 -	607743

ACCOUNT NO. FUND SOURCE	AGENCY	CHAPTER	DIV.	INT. ACCT.	ITEM DESCRIPTION	RATE	$ AMOUNT
					Filing Fee for Registration of Existing		
					Wells	10.00	400.00
					File # Various		
					Paid Check #060934		

WAITER PAYMENT
GUESTS 40
CHK NO 60934
40@ 10.00
55-I 400.00
TAX 0.00
TOTL 400.00
GEN.CHEK 400.00

~~# 8224 A 13:16~~

5-20-82

TOTAL $ 400.00

pb

17E-8N

DEPARTMENT OF WATER RESOURCES
99 EAST VIRGINIA AVENUE
PHOENIX, ARIZONA 85004

REGISTRATION OF EXISTING WELLS

READ INSTRUCTIONS ON BACK OF THIS FORM BEFORE COMPLETING
PRINT OR TYPE — FILE IN DUPLICATE

07

FOR OFFICE USE ONLY
REGISTRATION NO. 55-608431
FILE NO. A(2-3)25bbb
FILED 5/11/82 (DATE) AT 3:22 (TIME)
INA ✓
AMA PHOENIX

REGISTRATION FEE (CHECK ONE)	
EXEMPT WELL (NO CHARGE)	☐
NON-EXEMPT WELL – $10.00	☒

ARIZONA DEPT. OF WATER RESOURCES '82 MAY 11 A3:22

1. Name of Registrant:
   Salt River Project Agricultural Improvement and Power District
   P. O. Box 1980 (Address) Phoenix (City) Arizona (State) 85001 (Zip)

2. File and/or Control Number under previous groundwater law:
   A02003025BBBGS1 (File Number) 35- None (Control Number)

3. a. The well is located within the NW ¼ NW ¼ NW ¼, Section 25, of Township 2N N/S, Range 3E E/W, G & SRB & M, in the County of Maricopa.
   b. If in a subdivision: Name of subdivision _____, Lot No. _____, Address _____.

4. The principal use(s) of water (Examples: irrigation - stockwater - domestic - municipal - industrial)
   Irrigation and non-irrigation uses by SRP.

5. If for irrigation use, number of acres irrigated from well SRP member lands

6. Owner of land on which well is located. If same as Item 1, check this box ☒
   _____
   (Address) (City) (State) (Zip)

7. Well data (If data not available, write N/A)
   a. Depth of Well 250 feet
   b. Diameter of casing 18 inches
   c. Depth of casing 250 feet
   d. Type of casing 5/16 ga steel pipe with punched slots
   e. Maximum pump capacity 1232 gallons per minute.
   f. Depth to water 52 static (Jan. 1982) feet below land surface.
   g. Date well completed August (Month) 20 (Day) 1964 (Year).

8. The place(s) of use of water. If same as Item 3, check this box ☐.
   ____ ¼ ____ ¼ ____ ¼, Section ____ Township ____ Range ____
   ____ ¼ ____ ¼ ____ ¼, Section ____ Township ____ Range ____
   SRP Member lands through distribution system.
   Attach additional sheet if necessary.

9. DATE MAY 11 1982 SIGNATURE OF REGISTRANT Carl E. Sparks
   SALT RIVER PROJECT AGRICULTURAL IMPROVEMENT AND POWER DISTRICT

INSTRUCTIONS FOR COMPLETING REGISTRATION FORM

General Instructions

1. A person who owns an "Existing Well" shall register the well, pursuant to A.R.S. 45-593, by filing this form **in duplicate** with the Department of Water Resources not later than midnight June 14, 1982. The form must be completed and signed. Failure to do so will constitute a violation of A.R.S. 45-593, and may subject the well owner to injunction and/or civil penalties, pursuant to A.R.S. Title 45, Article 12.

2. An "Existing Well" means, (1) a well which was drilled on or before June 12, 1980 and which is not abandoned or sealed, or (2) a well which was not completed on or before June 12, 1980, but for which a Notice of Intention to Drill was on file with the Arizona Water Commission on or before June 12, 1980.

3. No registration fee is required for Exempt Wells. A $10.00 registration fee must accompany registration forms for all Non-Exempt Wells.

4. An "Exempt Well" means a well having a pump with a maximum capacity of not more than 35 gallons per minute which is used to withdraw groundwater. An Exempt Well may include the non-commercial irrigation of not more than 1 acre of land.

5. A "Non-Exempt Well" means a well that is not an "Exempt Well".

INSTRUCTIONS FOR REGISTRATION QUESTIONS

1. The Registrant must be the owner of the well and may be an individual, public or private corporation, company, partnership, firm, association, society, estate, trust, any other private organization or enterprise, the United States, any state, territory or country or a governmental entity, political subdivision or municipal corporation organized under or subject to the constitution and laws of this State.

2. If you own an existing irrigation well drilled at any time, or any other type of well drilled on or after June 20, 1968, you should have an assigned control and/or file number. Write these numbers in item 2. If you do not know the number, please explain the reason on the form or on an attached sheet.

3. a. Fill in the Section, Township and Range in all cases if it is available.
   b. If the well is in a subdivision and you have this information, give the subdivision name, Lot Number, and Address.

4. Show all purposes for which the water is used.

5. If the well is used for irrigation, give the number of acres irrigated in 1980 from the well.

6. If the owner of the land is an individual, give the last name, first name, middle initial. If the owner of the land is a corporation, partnership, firm, etc., fill in the appropriate title.

7. Complete the section on Well Data with the most accurate information available to you. If the data is not available, write N/A in the blanks.

8. Give the legal description of the place of use of the water. If place of use is in a subdivision and legal description is not available, give the subdivision name, Lot Number and/or address on the blank line.

9. The person in whose name a well is registered shall notify the Department of any change in ownership and shall keep all information on the registration record current and accurate. A form entitled "Change of Well Information/Ownership" is available for this purpose. A blank form will be furnished with the returned duplicate copy of the registration form.

55-608431

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REPORT OF WELL DRILLER

IMPORTANT
PLEASE COMPLETE & RETURN

This report should be prepared by the driller in all detail and filed with the State Land Commissioner following completion of the well.

1. OWNER SALT RIVER VALLEY WATER USERS' ASSOCIATION (Name)
P. O. BOX 1980 - PHOENIX, ARIZONA 85001 (Address)

2. Lessee or Operator Roscoe Moss Co. (Name)
5909 E. Lafayette Phoenix Ariz. (Address)

3. DRILLER James P. Lott (Name)
154 E. Santa Cruz Tempe Ariz. (Address)

4. Location of well: Twp. 2 North Rge. 3 East Section 25 NW ¼ NW ¼ NW ¼ (10-acre subdivision)

5. Intention to Drill File No. ..... Permit No. S-759

DESCRIPTION OF WELL

6. Total depth of hole 250 ft.

7. Type of casing 5/16 plate

8. Diameter and length of casing 18 in. from 0 to 250 in. from ..... to ....., ... in. from ..... to .....

9. Method of sealing at reduction points .....

10. Perforated from 150 to 250, from ..... to ....., from ..... to ....., from ..... to .....

11. Size of cuts ¼" openings X 3" Number of cuts per foot .....

12. If screen was installed: Length ..... ft. Diam. ..... in. Type .....

13. Method of construction Drilled (drilled, dug, driven, bored, jetted, etc.)

14. Date started 7/23/64 (Month Day Year)

15. Date completed 8/10/64 (Month Day Year)

16. Depth of water 45' (If flowing well, so state.) ft.

17. Describe point from which depth measurements were made, and give sea-level elevation if available .....

18. If flowing well, state method of flow regulation .....

19. REMARKS: .....

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received 8-18-64 by K
Filed 8-19-64 by K
File No. A(2-3)25 bbb

(Well Log to Appear on Reverse Side)

WD FORM G-301
REV. 4-27-53

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
0	7	sandy clay
7	30	Clabbin
30	125	sandy clay & gravel
125	315	Cemented sand & gravel
315	—	Fountain formation

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller James D. Lant
Name

154 E. Santa Cruz, Tempe Ariz.
Address

Date 8/11/64

RECEIVED AUG 13 1964 STATE LAND DEPT.
RECEIVED AUG 18 1964 STATE LAND DEPT.
55507
55737

X Dme S-776 A(2-3)25 bbb S-759

Application No. S-776 File No. A(2-3)25 bbb Permit No. S-759

6-24-64

Filed June 24, 1964

(Applicant must not fill in the above blanks)

This application shall be submitted to the State Land Department, Water Division, Phoenix, Arizona, in accordance with the provisions of Article 7, Chapter 1, Title 45, Arizona Revised Statutes, and the rules and regulations of the State Land Department.

Applications must be accompanied by fees made payable to the ~~STATE~~ LAND DEPARTMENT as follows:

Application Fee ------ $3.00
Permit Fee - - - - - - $5.00

OK 6-24-64 JCR

APPLICATION FOR A PERMIT

( ) TO DRILL)
( ) TO DEEPEN) AN IRRIGATION WELL IN A CRITICAL AREA
(X) TO REPLACE) WITHIN THE STATE OF ARIZONA

I (We), SALT RIVER VALLEY WATER USERS' ASSOCIATION
(Owners Name)

of P. O. Box 1980, Phoenix, County of Maricopa
(Post Office Address)

State of Arizona, do hereby make application for a permit to

( ) Drill new well, ( ) Deepen or (X) Replace the following described well in the Salt River Valley Critical Area.

1. Location and description of proposed well:

Twp. 2N Rge. 3E Sec. 25 ; NW ¼ NW ¼ NW ¼ A(2-3)25 bbb
(10 Ac. Subdiv.)

Dept 300 ft. Type of casing 18" plate pipe

Proposed Withdrawal 1010
(Ac. ft. per year)

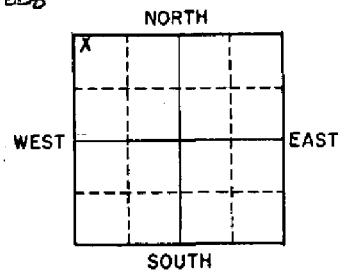
Name and Address of Driller:

Roscoe Moss Company

Los Angeles, California

Location of Proposed Well

17.0E-08.0N



(Indicate location of well)

2. Location and description of existing well:

Twp. 2N Rge. 3E Sec. 25 ; NW ¼ NW ¼ NW ¼
(10Ac. subdiv.)

Dept 205 ft. Diameter 12 in.

Date drilled November, 1920

Driving Unit Electric H. P.

Rating of Motor 10

Discharge when Drilled 427
(g. p. m.)

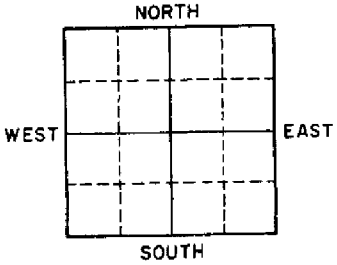
Present Discharge 337
(g. p. m.)

Static Water Level 50.1 ft.
(below ground surface)

Depth of Pump Setting 90'

Pumping Lift 65.1 ft.

17.0E-08.0N
Location of Existing Well



3. Reason new well required supplement water supply

4. Land to be irrigated: Land within Association boundaries.

Twp. _____ Rge. _____ Sec. _____

(Legal Subdivision Description) (Acres)

Twp. _____ Rge. _____ Sec. _____

(Legal Subdivision Description) (Acres)

5. Above described land is now irrigated as follows: Project canals & wells.

6. Record of cultivation and irrigation of land described herein:

All lands within Project under cultivation prior to 1948.

7. It is understood that the permit, if granted, will be in accordance with the Groundwater Code of 1948, and the Permittee will be bound by the provisions of such law, and the provisions of the permit issued herefor.

CERTIFICATE

8. I (We), SALT RIVER VALLEY WATER USERS' ASSOCIATION the applicant named in the above and foregoing application, do hereby certify under the penalty of perjury, that the information contained and statements therein made are to the best of my knowledge and belief true, correct and complete.

DATED THIS 19th day of June, 19 64.

Salt River Project
(Owner or his authorized agent)

P. O. Box 1980, Phoenix, Arizona 85001
(Post Office Address)

BY A. L. Monette
A. L. Monette, Secretary

RECEIVED JUN 24 1964 STATE LAND DEPT.

WD FORM No. G-303-1M/12-56

82392

JUL--2-64 132541 ● 049512 Ck 24.00

STATE OF ARIZONA
STATE LAND DEPARTMENT
STATE OFFICE BUILDING—PHOENIX, ARIZONA

OFFICE COPY

SECTION	TOWNSHIP	RANGE

KIND ENTRY	LEASE – REFERENCE NO.

ACCOUNT NO. GRANT	FUND	SUB	CARRYING CAPACITY OR STATIC WATER LEVEL	SEE OTHER SIDE FOR CODE DESCRIPTION: LAND CODE	CROP CODE	WATER CODE	BILLING DESCRIPTION	RATE	ACRES	$ AMOUNT

CERTIFICATE OF PURCHASE $ UNPAID BALANCE	BILLING PERIOD FROM MO. DAY YR.	TO MO. DAY YR.	DATE BILLED MO. DAY YR.	DATE DUE MO. DAY YR.	TOTAL ACRES	TOTAL AMOUNT $

IF PAYMENT IS MADE ON OR BEFORE THIS DATE → PAY THIS AMOUNT

SEE OTHER SIDE FOR LAW PERTAINING TO PENALTY AND INTEREST — A. R. S. SEC. 37-288.

RENTAL AMOUNT SUBJECT TO PENALTY AND INTEREST IF NOT PAID ON OR BEFORE DATE DUE - - - ($)

5% PENALTY OF RENTAL AMOUNT - - - - - - $

TOTAL RENTAL AMOUNT PLUS PENALTY - - - - ($)

10% INTEREST PER ANNUM OF RENTAL AMOUNT AND PENALTY — NUMBER OF DAYS DELINQUENT ( ) $

TOTAL AMOUNT DUE INCLUDING PENALTY AND INTEREST - - - - - $

CASH RECEIVED $

BALANCE DUE OR OVERPAYMENT $

PENALTY AND INTEREST	DISTRIBUTION
$	

TOTAL PENALTY AND INTEREST $

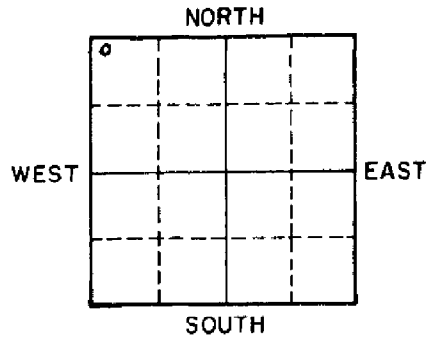
IMPORTANT

PLEASE COMPLETE & RETURN

17E-08.0N

STATE LAND DEPARTMENT
Water Division
Phoenix 7, Arizona

Location of Well



(Indicate Well Location by a circle "o" in the above Section Plat)

File No. A(2-3)25 bbb

REPORT OF EQUIPMENT INSTALLED

OWNER Salt River Valley Water Users' Association

LOCATION OF WELL:

NW 1/4 NW 1/4 NW 1/4, Sec. 25 Twp. 2N Rge. 3E

Date Well Completed: Sept. 1964 Depth 250'

1. Well Test:

Discharge: 1030 (Gal. Per Min.) Date Well Tested: 10/30/64

Method of Discharge Measurement: Pitot (weir, orifice, current meter, etc.)

Static Water Level: 51.0 ft. Drawdown 34.6 ft.

Total Pumping Lift 85.6 ft.

2. Equipment Installed:

Kind of Pump: Turbine (turbine, centrifugal, etc.)

Kind of Power: 75 Electric (Elec., Nat. Gas, Etc.) H. P. Rating of Motor 75 HP

I HEREBY CERTIFY that all the above statements are true to the best of my knowledge and belief.

SALT RIVER VALLEY WATER USERS' ASSOCIATION

A L Monette

Signature A. L. Monette, Secretary

Date December 2, 1964, 19____.

P. O. Box 1980, Phoenix, Arizona 85001
Address

WD Form G-306
10-57

Rec'd 12-3-64

10755

RECEIVED
DEC 3 1964
STATE LAND
DEPT.

SALT RIVER PROJECT
P. O. BOX 1980
PHOENIX 1, ARIZONA

VICTOR I. CORBELL, PRESIDENT
FLOYD N. SMITH, VICE-PRESIDENT

A. L. MONETTE, SECRETARY
L. H. DWERLKOTTE, TREASURER

June 23, 1964

NEW CARD #36

State Land Department
Water Division
Phoenix, Arizona 85007

Attention: Mr. F. C. Ryan

Gentlemen:

Enclosed is our check for $24.00 for the filing and permit fees to cover applications for three wells, as specified on your Form No. G-303-IM-12-56.

Very truly yours,

SALT RIVER VALLEY
WATER USERS' ASSOCIATION

H. J. Roth
Assistant Secretary
Association

HJR:mb
Enclosure

RECEIVED
JUN 24 1964
STATE LAND
DEPT.

2848

Application No. S-776 File No. A(2-3)25 bbb Permit No. S-759

PERMIT

TO DRILL (Replace) AN IRRIGATION WELL IN A CRITICAL AREA WITHIN THE STATE OF ARIZONA

SALT RIVER VALLEY WATER USERS' ASSOCIATION - P. O. Box 1980 - Phoenix, Arizona

STATE OF ARIZONA }
County of MARICOPA } ss.

This is to Certify that I have examined the above numbered application and do hereby approve the same and grant to the applicant a permit to DRILL (Replace) the well described therein, subject to the following limitations and conditions:

1. Water shall be limited to use on lands described as follows:

Legal Subdivision	Acres
ON LANDS WITHIN THE ASSOCIATION'S BOUNDARIES	
Total Acres	

( ) 2. No right is granted by this permit for the irrigation of lands which on September 1, 1951, were not irrigated, or had not been cultivated within five years prior thereto.

(x) 3. The well for which permit is granted hereunder shall be completed and in operation within one year from the date hereof.

( ) 4. **Other Limitations:**

WITNESS my hand and seal of office this 24th day of June, 1964.

SEAL
Expires: 6-24-65

Louis C. Duncan
Deputy STATE LAND COMMISSIONER

OBED M. LASSEN
STATE LAND COMMISSIONER
PHONE 271-4621

STATE LAND DEPARTMENT

STATE OF ARIZONA
STATE OFFICE BUILDING
PHOENIX 7, ARIZONA

June 24, 1964

Re: File No. A(2-3)25 bbb
Application No. S-776
Permit No. S-759

Salt River Valley Water Users' Association
% H. J. Roth, Assistant Secretary
P. O. Box 1980
Phoenix, Arizona 85001

Gentlemen:

Your application for a permit to drill a well in Twp. 2 North , Rge. 3 East ,

Section 25 , NW ¼ NW ¼ NW ¼ has been approved. Your permit is enclosed.

Also enclosed are a:

WELL DRILLING CARD, which should be in the hands of the driller before construction of the well is started;

REPORT OF WELL DRILLER form, which shall be filled in and sent to us within thirty days after completion of the well;

REPORT OF EQUIPMENT INSTALLED form, which shall be filled in and sent to us within thirty days after the installation of the pumping equipment.

In the event it is necessary to change the location of the proposed well you should obtain the written permission of the State Land Commissioner before proceeding with the drilling.

Very truly yours,

WATER DIVISION

By:
F. C. Ryan, Supervisor
kh

Enclosure: G-301
G-304
G-306
cc: USGS, Tucson

FORM W-2 10-45 JAHN-TYLER

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REGISTRATION OF WELL

Registration of well existing as of Oct. 3, 1945 is hereby made and filed with the State Land Commissioner as required by Section 5, Chapter 12, Senate Bill No. 3, Seventeenth Legislature, First Special Session 1945.

1. Owner SALT RIVER VALLEY WATER USERS' ASSOCIATION
Name
Phoenix, Arizona
Address

2. Lessee or Operator _____
Name
_____
Address

3. Driller E. N. BROWN DRILLING COMPANY
Name
Phoenix, Arizona
Address

4. Location of well: Twp. 2N (17E-8N) Rge. 3E Section 25 NW ¼ NW ¼ NW ¼
10-acre subdivision

DESCRIPTION OF WELL

5. Total depth of hole 205 ft.

6. Type of casing stovepipe

7. Diameter and length of casing 12 in. from ____ to ____, ____ in. from ____ to ____, ____ in. from ____ to ____

8. Method of sealing at reduction points _____

9. Perforated from 40 to 150, from ____ to ____, from ____ to ____, from ____ to ____

10. Size of cuts 1/2 x 4" holes Number cuts per foot 8 holes per foot

11. If screen was installed: Length ____ ft. Diam ____ in. Type ____

12. Method of construction drilled
drilled, dug, driven, bored, jetted, etc.

13. Date completed December 10, 1920 (Month, Year) Deepened ____ (Month, Year)

14. Depth to water when drilled ____ ft.
If flowing well, so state.

15. Present depth to water 21.0 ft. Date of measurement December 20, 1945
If flowing well, so state.

16. Describe point from which depth measurements were made, and give sea-level elevation if available pumphouse floor -- 1,186.5'

17. If flowing well, state method of flow regulation _____

DISCHARGE DATA

18. Well discharge 427 g.p.m.
gal. per min. or cu. ft. per sec. or miner's inches.

19. Method of discharge measurement weir
weir, orifice, current meter, etc.

20. Drawdown 85.88 ft.

21. Annual discharge in acre-feet, or number of hours pumped: 1944 599 a.f. or ____ hrs. 1945 623 a.f. or ____ hrs.

22. Purpose of use Irrigation

23. Place of use: Twp. ____ Rge. ____ Section ____ ____ Acres ____
(See 24) Legal subdivision
Twp. ____ Rge. ____ Section ____ ____ Acres ____
Legal subdivision

24. If well is part of irrigation system of Irrigation District, Association or Company, omit 23 and give name of project.
SALT RIVER VALLEY WATER USERS' ASSOCIATION
Name of Project

(A-2-3)25 bbb

EQUIPMENT DATA

25. Kind of pump turbine
turbine, centrifugal, etc.

26. Kind of power electric
electric, natural gas, etc.

27. Horsepower rating of motor 20

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received 2-1-46 by lj
Filed 2-5-46 by lj
File No. (A-2-3)25 bbb
Cross-referenced (Name) ____ by ____
Cross-referenced (Basin) ____ by ____
Cross-referenced ____ by ____

(See Other Side)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	20	Clay
20	107	Gravel and clay
107	120	Hard and and clay
120	150	Gravel
150	205	Cemented Gravel and Mountain wash

I hereby certify that I have read the foregoing statements, and that each and all of the items therein contained are true to the best of my knowledge and belief.

SALT RIVER VALLEY WATER USERS' ASSOCIATION

By H. J. Lawson

H. J. LAWSON ~~[illegible]~~

General Superintendent and Chief Engineer

Phoenix, Arizona

Address

Date February 1, 1946

Quad	Town	Range	Sect	Q160	Q40	Q10	Reg No.	Registered Full Name & Address	Well Depth	Case Depth	Case Diameter	Water Level	Pump (GPM)	Most Recent Auth. Issued: Drill Lic No	Most Recent Auth. Issued: Issue Date	Org. Drill Date	Reg Wtr Use	Wtr-shed	Log	CRT
A	2.0	3.0	25	B	B	B	55 - 577234	TOSCO MARKETING COMPANY 1500 N PRIEST DRIVE TEMPE, AZ 85281	60	47	2	35	0	78	09/29/1999	11/20/1999	T	07	X	
Well Type: MONITOR			B/M/P:																	
A	2.0	3.0	25	B	B	B	55 - 571530	TOSCO MARKETING COMPANY 1500 N PRIEST DRIVE TEMPE, AZ 85281	60	60	4	37	0	78	10/15/1999	12/09/1998	N	07	X	A
Cancelled: Y			B/M/P:	127-34-134B																
Well Type: MONITOR																				
A	2.0	3.0	25	B	B	B	55 - 571529	TOSCO MARKETING COMPANY 1500 N PRIEST DRIVE TEMPE, AZ 85281	60	60	4	37	0	269	12/28/1998	12/09/1998	T	07	X	
Well Type: MONITOR			B/M/P:																	
A	2.0	3.0	25	B	B	B	55 - 560317	CONOCO PHILLIPS COMPANY 1230 W WASHINGTON ST STE 2 TEMPE, AZ 85281	0	0	0	0	0	269			M	07		N
Well Type: MONITOR OR PIEZOMETER			B/M/P:																	
A	2.0	3.0	25	B	B	B	55 - 560316	CONOCO PHILLIPS COMPANY 1230 W WASHINGTON ST STE 2 TEMPE, AZ 85281	55	55	2	37	0	269		12/18/1996	M	07	X	N
Well Type: MONITOR OR PIEZOMETER			B/M/P:																	
A	2.0	3.0	25	B	B	B	55 - 560314	CONOCO PHILLIPS COMPANY 1230 W WASHINGTON ST STE 2 TEMPE, AZ 85281	55	55	2	37	0	269		12/18/1996	M	07	X	N
Well Type: MONITOR OR PIEZOMETER			B/M/P:																	
A	2.0	3.0	25	B	B	B	55 - 566223	CONOCO PHILLIPS COMPANY 1230 W WASHINGTON STE 212 TEMPE, AZ 85281	0	0	0	0	0	269	01/08/1998		M	07		
Cancelled: Y			B/M/P:																	
Well Type: MONITOR																				
A	2.0	3.0	25	B	B	B	55 - 566222	CONOCO PHILLIPS COMPANY 1230 W WASHINGTON STE 212 TEMPE, AZ 85281	0	0	0	0	0	269	01/08/1998		M	07		
Cancelled: Y			B/M/P:																	
Well Type: MONITOR																				
A	2.0	3.0	25	B	B	B	55 - 608431	SALT RIVER PROJECT, PO BOX 1980 PHOENIX, AZ 85001	250	250	18	52	1,232	0		08/20/1964	AB	07		
Well Type: NON-EXEMPT			B/M/P:																	
A	2.0	3.0	25	B	B	B	55 - 560320	TOSCO CORPORATION PO BOX 52085 PHOENIX, AZ 85072	0	0	0	0	0	269			M	07		N
Well Type: MONITOR OR PIEZOMETER			B/M/P:																	
A	2.0	3.0	25	B	B	B	55 - 560313	TOSCO CORPORATION PO BOX 52085 PHOENIX, AZ 85072	55	55	2	37	0	269		12/18/1996	M	07	X	N
Well Type: MONITOR OR PIEZOMETER			B/M/P:																	
A	2.0	3.0	25	B	B	B	55 - 548570	TOSCO CORPORATION PO BOX 52085 PHOENIX, AZ 85072	45	0	0	43	0	498		03/23/1995	N	07	X	N
Well Type: EXPLORATION			B/M/P:																	

Salt River Project Agricultural
Improvement & Power District
P O Box 1980
Phoenix, Arizona 85001

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
WATER RIGHTS ADMINISTRATION
99 EAST VIRGINIA
PHOENIX, ARIZONA 85004

RECEIPT

KIND ENTRY	FILE REFERENCE NO.
55	608398
	THRU
55	608437

ACCOUNT NO. FUND SOURCE	AGENCY	CHAPTER	DIV.	INT. ACCT.	ITEM DESCRIPTION	RATE	$ AMOUNT
					Filing Fee for Registration of	10.00	400.00
					Existing Wells		
					File No.:A(3-1)14 ddd		
					A(3-2)30 dad		
					A(3-2)30 ccc		
					A(3-2)30 baa		
					A(3-2)29 dda		
					Various		
					Check #059924		

WAITER PAYMENT
GUESTS 40
CHK NO 59924
55-I 400.00
TAX 0.00
TOTL 400.00
GEN.CHEK 400.00

9494 A 12:52

TOTAL $ 400.00

May 26, 1982
sg

55-608433

Arizona Department of Water Resources
Operations Division
500 N. 3rd St.
Phoenix, AZ 85004-3903

DWR AR22 - Nov 84
Date Received: _____
Received By : _____
AMA : _____
Date Routed to AMA: _____

RECEIVED
JUL -5 2012
ARIZONA DEPARTMENT OF WATER RESOURCES

MEASURING DEVICE MALFUNCTION REPORT FORM
PART 1 - NOTIFICATION

INSTRUCTIONS

A.C.R.R. R12-15-905 Requires that a report must be made in writing to Department of Water Resources within (7) seven calendar days of Discovering that a water measuring device has malfunctioned, if the malfunction lasts 72 hours or longer.

Well Owner/Operator: SALT RIVER PROJECT

Address: P.O. Box 52025 Phoenix, AZ 85072-2025

Telephone Number: (602) 236-2612

Well Registration Number: 55608433

SRP Coordinate Location: 19.0E-07.6N

SRP Pump Number: 116

Measuring Device Type: Flow Meter

Malfunctioned on: 6/26/2012

For the reason that: No mA signal

Should be back in service: 6/26/2012

Signed: _____

Date: 6/26/12

FLOWMETER CHANGEOUT REPAIR DATA SHEET

LOCATION 19E-7.6W

YEAR 2012

CHARGE NUMBER: W13-08044-15

INSTALLED FLOWMETER:

Date Installed: 6/26/12
Manufacture: WS
Serial No.: 20010681-6
Size: 6"
Flowmeter install read: 192260

14158

Flowmeter to be installed in (SRP pipeline) or CITY pipeline

Type of flowmeter: (Saddle) Vertical or High Pressure or Mag Meter

REMOVED FLOWMETER:

Date Removed: 6/26/12
Manufacture: WS
Serial No.: 994500-6
Size: 6"
Flowmeter removed read: 078097
Groundwater Clearance Number: N/A

13836

Date Installed: 3/28/07

Reason for flowmeter removal:
No mA reading

REPAIR REPORT:

What was found?

Repairs required:

DATA ENTRY:

Flowmeter removed/installed by: TK Date: 6/26/12

Flowmeter repair by: Date:

Data entered by: Taylor Cox Date: 6/26/12

Sent to Water Accounting by Taylor Cox Date: 6/26/12

Flowmeter sht

Arizona Department of Water Resources
Operations Division
500 N. 3rd St.
Phoenix, AZ 85004-3903

DWR AR22 - Nov 84
Date Received: _____
Received By : _____
AMA : _____
Date Routed to AMA: _____

MEASURING DEVICE MALFUNCTION REPORT FORM
PART1 - NOTIFICATION

INSTRUCTIONS

A.C.R.R. R12-15-905 Requires that a report must be made in writing to Department of Water Resources within (7) seven calendar days of Discovering that a water measuring device has malfunctioned, if the malfunction lasts 72 hours or longer.

Well Owner/Operator: SALT RIVER PROJECT

Address: P.O. Box 52025 Phoenix, AZ 85072-2025

Telephone Number: (602) 236-2612

Well Registration Number: 55608433

SRP Coordinate Location: 19.0E-07.6N

SRP Pump Number: 116

Measuring Device Type: Flow Meter

Malfunctioned on: 3/27/07

For the reason that: Water in lense

Should be back in service: 3/27/07

Signed: Taylor Combs

Date: 3-28-07

19E-7.6N

DEPARTMENT OF WATER RESOURCES
99 EAST VIRGINIA AVENUE
PHOENIX, ARIZONA 85004

REGISTRATION OF EXISTING WELLS

READ INSTRUCTIONS ON BACK OF THIS FORM BEFORE COMPLETING
PRINT OR TYPE — FILE IN DUPLICATE

07

REGISTRATION FEE (CHECK ONE)	
EXEMPT WELL (NO CHARGE)	☐
NON-EXEMPT WELL – $10.00	☒

ARIZONA DEPT OF WATER RESOURCES '82 MAY 11 A3:23

FOR OFFICE USE ONLY
REGISTRATION NO. 55-608433
FILE NO. A(2-4)30ada
FILED 5/11/82 (DATE) AT 3:23 (TIME)
INA —
AMA PHOENIX

1. Name of Registrant:
Salt River Project Agricultural Improvement and Power District
P. O. Box 1980 (Address) Phoenix (City) Arizona (State) 85001 (Zip)

2. File and/or Control Number under previous groundwater law:
A02004030A GSL (File Number) should be A02004030ACA 35- none (Control Number)

3. a. The well is located within the NE ¼ SE ¼ NE ¼, Section 30, of Township 2N N/S, Range 4E E/W, G & SRB & M, in the County of Maricopa.

b. If in a subdivision: Name of subdivision _____, Lot No. _____, Address _____.

4. The principal use(s) of water (Examples: irrigation - stockwater - domestic - municipal - industrial)
Irrigation and non-irrigation uses by SRP.

5. If for irrigation use, number of acres irrigated from well SRP member lands

6. Owner of land on which well is located. If same as Item 1, check this box ☐
Salt River Valley Water Users' Association
P. O. Box 1980 (Address) Phoenix (City) Arizona (State) 85001 (Zip)

7. Well data (If data not available, write N/A)
a. Depth of Well 150 feet
b. Diameter of casing 12 inches
c. Depth of casing 150 feet
d. Type of casing 12 ga stove pipe.
e. Maximum pump capacity 500 gallons per minute.
f. Depth to water 17 static (Jan. 1982) feet below land surface.
g. Date well completed March (Month) 8 (Day) 1921 (Year).

8. The place(s) of use of water. If same as Item 3, check this box ☐.
____ ¼ ____ ¼ ____ ¼, Section ____ Township ____ Range ____
____ ¼ ____ ¼ ____ ¼, Section ____ Township ____ Range ____
SRP Member lands through distribution sytem.
Attach additional sheet if necessary.

9. DATE MAY 11 1982 SIGNATURE OF REGISTRANT [signature]
SALT RIVER PROJECT AGRICULTURAL IMPROVEMENT AND POWER DISTRICT

INSTRUCTIONS FOR COMPLETING REGISTRATION FORM

General Instructions

1. A person who owns an "Existing Well" shall register the well, pursuant to A.R.S. 45-593, by filing this form in duplicate with the Department of Water Resources not later than midnight June 14, 1982. The form must be completed and signed. Failure to do so will constitute a violation of A.R.S. 45-593, and may subject the well owner to injunction and/or civil penalties, pursuant to A.R.S. Title 45, Article 12.

2. An "Existing Well" means, (1) a well which was drilled on or before June 12, 1980 and which is not abandoned or sealed, or (2) a well which was not completed on or before June 12, 1980, but for which a Notice of Intention to Drill was on file with the Arizona Water Commission on or before June 12, 1980.

3. No registration fee is required for Exempt Wells. A $10.00 registration fee must accompany registration forms for all Non-Exempt Wells.

4. An "Exempt Well" means a well having a pump with a maximum capacity of not more than 35 gallons per minute which is used to withdraw groundwater. An Exempt Well may include the non-commercial irrigation of not more than 1 acre of land.

5. A "Non-Exempt Well" means a well that is not an "Exempt Well".

INSTRUCTIONS FOR REGISTRATION QUESTIONS

1. The Registrant must be the owner of the well and may be an individual, public or private corporation, company, partnership, firm, association, society, estate, trust, any other private organization or enterprise, the United States, any state, territory or country or a governmental entity, political subdivision or municipal corporation organized under or subject to the constitution and laws of this State.

2. If you own an existing irrigation well drilled at any time, or any other type of well drilled on or after June 20, 1968, you should have an assigned control and/or file number. Write these numbers in item 2. If you do not know the number, please explain the reason on the form or on an attached sheet.

3. a. Fill in the Section, Township and Range in all cases if it is available.
   b. If the well is in a subdivision and you have this information, give the subdivision name, Lot Number, and Address.

4. Show all purposes for which the water is used.

5. If the well is used for irrigation, give the number of acres irrigated in 1980 from the well.

6. If the owner of the land is an individual, give the last name, first name, middle initial. If the owner of the land is a corporation, partnership, firm, etc., fill in the appropriate title.

7. Complete the section on Well Data with the most accurate information available to you. If the data is not available, write N/A in the blanks.

8. Give the legal description of the place of use of the water. If place of use is in a subdivision and legal description is not available, give the subdivision name, Lot Number and/or address on the blank line.

9. The person in whose name a well is registered shall notify the Department of any change in ownership and shall keep all information on the registration record current and accurate. A form entitled "Change of Well Information/Ownership" is available for this purpose. A blank form will be furnished with the returned duplicate copy of the registration form.

Salt River Project Agricultural
Improvement & Power District
P O Box 1980
Phoenix, Arizona 85001

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
WATER RIGHTS ADMINISTRATION
99 EAST VIRGINIA
PHOENIX, ARIZONA 85004

RECEIPT

KIND ENTRY	FILE REFERENCE NO.
55	608398
	THRU
55	608437

FUND SOURCE	ACCOUNT NO. AGENCY	CHAPTER	DIV.	INT. ACCT.	ITEM DESCRIPTION	RATE	$ AMOUNT
					Filing Fee for Registration of	10.00	400.00
					Existing Wells		
						WAITER PAYMENT	
						GUESTS 40	
						CHK NO 59924	
					File No.:A(3-1)14 ddd	55-I	400.00
					A(3-2)30 dad	TAX	0.00
					A(3-2)30 ccc	TOTL	400.00
					A(3-2)30 baa	GEN.CHEK	400.00
					A(3-2)29 dda		
					Various	# 8484 A	12:52
					Check #059924		

May 26, 1982
sg

TOTAL $ 400.00

18E-8.8N

DEPARTMENT OF WATER RESOURCES
99 EAST VIRGINIA AVENUE
PHOENIX, ARIZONA 85004

RECEIVED MAY 26 1982 DEPT. OF WATER RESOURCES

REGISTRATION OF EXISTING WELLS

READ INSTRUCTIONS ON BACK OF THIS FORM BEFORE COMPLETING
PRINT OR TYPE — FILE IN DUPLICATE

07

FOR OFFICE USE ONLY
REGISTRATION NO. 55- 617825
FILE NO. A(2-3)24ada
FILED 5-26-82 (DATE) AT 10- (TIME)
INA phx
AMA

REGISTRATION FEE (CHECK ONE)	
EXEMPT WELL (NO CHARGE)	☐
NON-EXEMPT WELL — $10.00	☒

1. Name of Registrant:
   Salt River Project Agricultural Improvement and Power District
   P. O. Box 1980 (Address) Phoenix (City) Arizona (State) 85001 (Zip)

2. File and/or Control Number under previous groundwater law:
   _____ (File Number) 35- _____ (Control Number)

3. a. The well is located within the NE ¼ SE ¼ NE ¼, Section 24, of Township 2N N/S, Range 3E E/W, G & SRB & M, in the County of Maricopa.
   b. If in a subdivision: Name of subdivision _____, Lot No. _____, Address _____.

4. The principal use(s) of water (Examples: irrigation - stockwater - domestic - municipal - industrial)
   Irrigation and non-irrigation uses by SRP.

5. If for irrigation use, number of acres irrigated from well SRP member lands.

6. Owner of land on which well is located. If same as Item 1, check this box ☒
   _____
   (Address) (City) (State) (Zip)

7. Well data (If data not available, write N/A)
   a. Depth of Well 417 feet
   b. Diameter of casing 20" to 362', 16" to 417' inches
   c. Depth of casing 417 feet
   d. Type of casing steel pipe with mills knife perforations
   e. Maximum pump capacity 1457 gallons per minute.
   f. Depth to water 37 static (Jan. 1982) feet below land surface.
   g. Date well completed _____ (Month) _____ (Day) 1945 (Year).

8. The place(s) of use of water. If same as Item 3, check this box ☐.
   ____ ¼ ____ ¼ ____ ¼, Section ____ Township ____ Range ____
   ____ ¼ ____ ¼ ____ ¼, Section ____ Township ____ Range ____
   SRP member lands through distribution system
   Attach additional sheet if necessary.

9. DATE MAY 25 1982 SIGNATURE OF REGISTRANT Carl E. Zahn
   SALT RIVER PROJECT AGRICULTURAL IMPROVEMENT AND POWER DISTRICT

INSTRUCTIONS FOR COMPLETING REGISTRATION FORM

General Instructions

1. A person who owns an "Existing Well" shall register the well, pursuant to A.R.S. 45-593, by filing this form in duplicate with the Department of Water Resources not later than midnight June 14, 1982. The form must be completed and signed. Failure to do so will constitute a violation of A.R.S. 45-593, and may subject the well owner to injunction and/or civil penalties, pursuant to A.R.S. Title 45, Article 12.

2. An "Existing Well" means, (1) a well which was drilled on or before June 12, 1980 and which is not abandoned or sealed, or (2) a well which was not completed on or before June 12, 1980, but for which a Notice of Intention to Drill was on file with the Arizona Water Commission on or before June 12, 1980.

3. No registration fee is required for Exempt Wells. A $10.00 registration fee must accompany registration forms for all Non-Exempt Wells.

4. An "Exempt Well" means a well having a pump with a maximum capacity of not more than 35 gallons per minute which is used to withdraw groundwater. An Exempt Well may include the non-commercial irrigation of not more than 1 acre of land.

5. A "Non-Exempt Well" means a well that is not an "Exempt Well".

INSTRUCTIONS FOR REGISTRATION QUESTIONS

1. The Registrant must be the owner of the well and may be an individual, public or private corporation, company, partnership, firm, association, society, estate, trust, any other private organization or enterprise, the United States, any state, territory or country or a governmental entity, political subdivision or municipal corporation organized under or subject to the constitution and laws of this State.

2. If you own an existing irrigation well drilled at any time, or any other type of well drilled on or after June 20, 1968, you should have an assigned control and/or file number. Write these numbers in item 2. If you do not know the number, please explain the reason on the form or on an attached sheet.

3. a. Fill in the Section, Township and Range in all cases if it is available.
   b. If the well is in a subdivision and you have this information, give the subdivision name, Lot Number, and Address.

4. Show all purposes for which the water is used.

5. If the well is used for irrigation, give the number of acres irrigated in 1980 from the well.

6. If the owner of the land is an individual, give the last name, first name, middle initial. If the owner of the land is a corporation, partnership, firm, etc., fill in the appropriate title.

7. Complete the section on Well Data with the most accurate information available to you. If the data is not available, write N/A in the blanks.

8. Give the legal description of the place of use of the water. If place of use is in a subdivision and legal description is not available, give the subdivision name, Lot Number and/or address on the blank line.

9. The person in whose name a well is registered shall notify the Department of any change in ownership and shall keep all information on the registration record current and accurate. A form entitled "Change of Well Information/Ownership" is available for this purpose. A blank form will be furnished with the returned duplicate copy of the registration form.

Salt River Project
P. O. Box 1980
Phoenix, AZ 85001

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
WATER RIGHTS ADMINISTRATION
99 EAST VIRGINIA
PHOENIX, ARIZONA 85004

RECEIPT

KIND ENTRY	FILE REFERENCE NO.
55	617781
	THRU
55	617830

ACCOUNT NO. FUND SOURCE	AGENCY	CHAPTER	DIV.	INT. ACCT.	ITEM DESCRIPTION	RATE	$ AMOUNT
					Filing fees for fifty (50) registration of existing wells	10.00	500.00

File No.	File No.	File No.
A(13-25) 24 dbb	A(13-26) 7 dbd	A(13-27) 21 acc
A(13-27) 21 dbb	A(13-26) 18 cbb	A(13-27) 22 dbb
A(13-27) 17 cac	A(13-29) 5baa	A(1-1) 36aad
A(13-27) 9 bca	A(13-28) 3 ddb	A(2-1) 1daa
A(13-27) 17 dbb	A(13-26) 7ac	A(3-1) 36ddd
A(13-27) 15 bdc	A(13-26) 8 bcc	A(3-2) 18aac
A(13-29) 9 bdd	A(13-26) 18cad	A(3-2) 18aad
A(14-29) 33 bbb	A(13-26) 18aaa	D(1-6) 17 dcc
A(13-20) 3acc	A(13-26) 24 cad	A(3-2) 26dcb
A(13-29) 6bdd	A(14-29) 33 bbb	A(2-3) 17bbb
A(13-29) 10 bdd	A(13-28) 12 bdc	A(2-3) 24ada
A (13-27) 9cca	A(13-28) 11dbc	D(1-4) 9bdc
A(13-27) 22 dbb	A(13-29) 6aac	D(1-4) 10cad
A(13-26) 17 bdd	A(13-29) 5bba	D(1-4) 36bb
A(13-26) 8cbb	A(13-29) 3aba	A(2-4) 12bdd
A(13-29) 1ccc	A(13-27) 15bdd	A(1-4) 1aba

WRITER	PAYMENT
GUESTS	50
CHK NO	60942
50@	10.00
55-I	500.00
TAX	0.00
TOTL	500.00
GEN.CHEK	500.00

TOTAL $ # 1340 A 13:24- 500.00

CHECK NO. 060942

8-18-82 vf

18E-7N

DEPARTMENT OF WATER RESOURCES
99 EAST VIRGINIA AVENUE
PHOENIX, ARIZONA 85004

RECEIVED MAY 26 1982 DEPT. OF WATER RESOURCES

REGISTRATION OF EXISTING WELLS

READ INSTRUCTIONS ON BACK OF THIS FORM BEFORE COMPLETING
PRINT OR TYPE — FILE IN DUPLICATE

07

FOR OFFICE USE ONLY
REGISTRATION NO. 55- 617849
FILE NO. A(2-3)36aaa
FILED 5-26-82 (DATE) AT 10 — (TIME)
INA Phx
AMA

REGISTRATION FEE (CHECK ONE)
EXEMPT WELL (NO CHARGE) ☐
NON-EXEMPT WELL — $10.00 ☒

1. Name of Registrant:
Salt River Project Agricultural Improvement and Power District
P. O. Box 1980 (Address) Phoenix (City) Arizona (State) 85001 (Zip)

2. File and/or Control Number under previous groundwater law:
A02003036AAAGS1 (File Number) 35- None (Control Number)

3. a. The well is located within the NE ¼ NE ¼ NE ¼, Section 36, of Township 2N N/S, Range 3E E/W, G & SRB & M, in the County of Maricopa.
b. If in a subdivision: Name of subdivision _____, Lot No. _____, Address _____.

4. The principal use(s) of water (Examples: irrigation - stockwater - domestic - municipal - industrial)
Irrigation and non-irrigation uses by SRP.

5. If for irrigation use, number of acres irrigated from well SRP member lands

6. Owner of land on which well is located. If same as Item 1, check this box ☐
Salt River Valley Water Users' Association
P. O. Box 1980 (Address) Phoenix (City) Arizona (State) 85001 (Zip)

7. Well data (If data not available, write N/A)
a. Depth of Well 305 feet
b. Diameter of casing 18 inches
c. Depth of casing 305 feet
d. Type of casing 3/8 wall steel pipe with louvered perforations
e. Maximum pump capacity 954 gallons per minute.
f. Depth to water 22 static (Jan. 1982) feet below land surface.
g. Date well completed July (Month) 16 (Day) 1971 (Year).

8. The place(s) of use of water. If same as Item 3, check this box ☐.
____ ¼ ____ ¼ ____ ¼, Section ____ Township ____ Range ____
____ ¼ ____ ¼ ____ ¼, Section ____ Township ____ Range ____
SRP member lands through distribution system
Attach additional sheet if necessary.

9. DATE MAY 25 1982 SIGNATURE OF REGISTRANT Carl E. Parker

SALT RIVER PROJECT AGRICULTURAL IMPROVEMENT AND POWER DISTRICT

INSTRUCTIONS FOR COMPLETING REGISTRATION FORM

General Instructions

1. A person who owns an "Existing Well" shall register the well, pursuant to A.R.S. 45-593, by filing this form **in duplicate** with the Department of Water Resources not later than midnight June 14, 1982. The form must be completed and signed. Failure to do so will constitute a violation of A.R.S. 45-593, and may subject the well owner to injunction and/or civil penalties, pursuant to A.R.S. Title 45, Article 12.

2. An "Existing Well" means, (1) a well which was drilled on or before June 12, 1980 and which is not abandoned or sealed, or (2) a well which was not completed on or before June 12, 1980, but for which a Notice of Intention to Drill was on file with the Arizona Water Commission on or before June 12, 1980.

3. No registration fee is required for Exempt Wells. A $10.00 registration fee must accompany registration forms for all Non-Exempt Wells.

4. An "Exempt Well" means a well having a pump with a maximum capacity of not more than 35 gallons per minute which is used to withdraw groundwater. An Exempt Well may include the non-commercial irrigation of not more than 1 acre of land.

5. A "Non-Exempt Well" means a well that is not an "Exempt Well".

INSTRUCTIONS FOR REGISTRATION QUESTIONS

1. The Registrant must be the owner of the well and may be an individual, public or private corporation, company, partnership, firm, association, society, estate, trust, any other private organization or enterprise, the United States, any state, territory or country or a governmental entity, political subdivision or municipal corporation organized under or subject to the constitution and laws of this State.

2. If you own an existing irrigation well drilled at any time, or any other type of well drilled on or after June 20, 1968, you should have an assigned control and/or file number. Write these numbers in item 2. If you do not know the number, please explain the reason on the form or on an attached sheet.

3. a. Fill in the Section, Township and Range in all cases if it is available.
   b. If the well is in a subdivision and you have this information, give the subdivision name, Lot Number, and Address.

4. Show all purposes for which the water is used.

5. If the well is used for irrigation, give the number of acres irrigated in 1980 from the well.

6. If the owner of the land is an individual, give the last name, first name, middle initial. If the owner of the land is a corporation, partnership, firm, etc., fill in the appropriate title.

7. Complete the section on Well Data with the most accurate information available to you. If the data is not available, write N/A in the blanks.

8. Give the legal description of the place of use of the water. If place of use is in a subdivision and legal description is not available, give the subdivision name, Lot Number and/or address on the blank line.

9. The person in whose name a well is registered shall notify the Department of any change in ownership and shall keep all information on the registration record current and accurate. A form entitled "Change of Well Information/Ownership" is available for this purpose. A blank form will be furnished with the returned duplicate copy of the registration form.

Salt River Project
P. O. Box 1980
Phoenix, Arizona 85001

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
WATER RIGHTS ADMINISTRATION
99 EAST VIRGINIA
PHOENIX, ARIZONA 85004

RECEIPT

KIND ENTRY	FILE REFERENCE NO.
55	617831
	THRU
55	617870

ACCOUNT NO. FUND SOURCE	AGENCY	CHAPTER	DIV.	INT. ACCT.	ITEM DESCRIPTION	RATE	$ AMOUNT
					Forty (40) filing fees for registration of existing wells	$10.00	400.00

A(1-6) 21bcc
D(2-5) 4add
D(1-5) 22ccc
D(1-5) 3ccc
D(1-5) 9dbb
D(1-5) 19ccc
A(1-5) 19bdd
D(1-5)21 bdc
D(1-5) 29dbc
A(1-5) 33cdd
A(1-5)16ccd
A(1-5)17aaa
A(2-4)11dcc
A(2-4)11aad

A(1-5)35baa
D(1-5) 32cab
D(1-5) ccc
D(1-2)3cdd
D(2-3)36aaa
A(2-2)25bcd
D(1-3)6caa
D(1-4)3bbb
D(1-4)3cdd
D(1-4)10bdd
D(1-5)7add
D(1-4)24aaa
A(2-3)25daa
A(1-5)2cdd

D(1-5)8acc
D(1-4)11bcc
D(1-4)12acc
D(1-4)14ccc
D(1-4)22bcc
A(1-6) 32cca
A(1-6)7abb
D(1-6)7ddc
A(1-6)30aba
A(1-6)32bba
A(1-6)8ccd
A(1-6)17acc

WRITER PAYMENT
GUESTS 40
CHK NO 60941
40@ 10.00
55-I 400.00
TAX 0.00
TOTL 400.00
GEN.CHEK 400.00

TOTAL $ # 1628 A 13:50 400.00

Check No. 060941
8-25-82 vf

55-617857

Arizona Department of Water Resources
Operations Division
500 N. 3rd St.
Phoenix, AZ 85004-3903

DWR AR22 - Nov 84
Date Received: _____
Received By : _____
AMA : _____
Date Routed to AMA: _____

RECEIVED
JUL -5 2012
ARIZONA DEPARTMENT OF WATER RESOURCES

MEASURING DEVICE MALFUNCTION REPORT FORM
PART 1 - NOTIFICATION

INSTRUCTIONS

A.C.R.R. R12-15-905 Requires that a report must be made in writing to Department of Water Resources within (7) seven calendar days of Discovering that a water measuring device has malfunctioned, if the malfunction lasts 72 hours or longer.

Well Owner/Operator: SALT RIVER PROJECT

Address: P.O. Box 52025 Phoenix, AZ 85072-2025

Telephone Number: (602) 236-2612

Well Registration Number: 55617857

SRP Coordinate Location: 17.9E-07.5N

SRP Pump Number: 112

Measuring Device Type: Flow Meter

Malfunctioned on: 6/4/2012

For the reason that: New discharge pipe

Should be back in service: 6/4/2012

Signed: _____

Date: 6/22/12

FLOWMETER CHANGEOUT REPAIR DATA SHEET

LOCATION 17.9E - 7.5N

YEAR 2012

CHARGE NUMBER: W3- 05044-15

INSTALLED FLOWMETER:

Date Installed: 6-5-12
Manufacture: WS
Serial No.: 9032584 - 10"
Size: 10
Flowmeter install read: 176648

11378

Flowmeter to be installed in (SRP pipeline) or CITY pipeline

Type of flowmeter: (Saddle) Vertical or High Pressure or Mag Meter

REMOVED FLOWMETER:

Date Removed: 6-4-12
Manufacture: WS
Serial No.: 20021743
Size: 10"
Flowmeter removed read: 556
Date Installed: 5/21/03
Groundwater Clearance Number: _____

14224

Reason for flowmeter removal:
New discharge pipe, years of use.

REPAIR REPORT:

What was found? _____

Repairs required: _____

DATA ENTRY:

Flowmeter removed/installed by: TK Date: 6-4-12

Flowmeter repair by: _____ Date: _____

Data entered by: Jaylor Cas Date: 6-22-12

Sent to Water Accounting by Jaylor Cas Date: 6-22-12

Flowmeter sht

17.9E - 7.5N

RECEIVED MAY 26 1982 DEPT. OF WATER RESOURCES

DEPARTMENT OF WATER RESOURCES
99 EAST VIRGINIA AVENUE
PHOENIX, ARIZONA 85004

REGISTRATION OF EXISTING WELLS

READ INSTRUCTIONS ON BACK OF THIS FORM BEFORE COMPLETING
PRINT OR TYPE — FILE IN DUPLICATE

07

FOR OFFICE USE ONLY
REGISTRATION NO. 55- 617857.1
FILE NO. A(2-3)25daa
FILED 5-26-82 (DATE) AT 10 (TIME)
INA Phx
AMA

REGISTRATION FEE (CHECK ONE)
EXEMPT WELL (NO CHARGE) ☐
NON-EXEMPT WELL – $10.00 ☒

1. Name of Registrant:
Salt River Project Agricultural Improvement and Power District
P. O. Box 1980 (Address) Phoenix (City) Arizona (State) 85001 (Zip)

2. File and/or Control Number under previous groundwater law:
A02003025DAAGS1 (File Number) 35- (Control Number)

3. a. The well is located within the NE ¼ NE ¼ SE ¼, Section 25, of Township 2N N/S, Range 3E E/W, G & SRB & M, in the County of Maricopa.
b. If in a subdivision: Name of subdivision _____, Lot No. _____, Address _____.

4. The principal use(s) of water (Examples: irrigation - stockwater - domestic - municipal - industrial)
Irrigation and non-irrigation uses by SRP.

5. If for irrigation use, number of acres irrigated from well SRP member lands

6. Owner of land on which well is located. If same as Item 1, check this box ☒
(Address) (City) (State) (Zip)

7. Well data (If data not available, write N/A)
a. Depth of Well 300 feet
b. Diameter of casing 18 inches
c. Depth of casing 300 feet
d. Type of casing 5/16 wall steel pipe.
e. Maximum pump capacity 1114 gallons per minute.
f. Depth to water 24 static (Jan. 1982) feet below land surface.
g. Date well completed May (Month) 4 (Day) 1965 (Year).

8. The place(s) of use of water. If same as Item 3, check this box ☐.
____ ¼ ____ ¼ ____ ¼, Section ____ Township ____ Range ____
____ ¼ ____ ¼ ____ ¼, Section ____ Township ____ Range ____
SRP member lands through distribution system
Attach additional sheet if necessary.

9. DATE MAY 25 1982 SIGNATURE OF REGISTRANT Carl E. Fisher
SALT RIVER PROJECT AGRICULTURAL IMPROVEMENT AND POWER DISTRICT

INSTRUCTIONS FOR COMPLETING REGISTRATION FORM

General Instructions

1. A person who owns an "Existing Well" shall register the well, pursuant to A.R.S. 45-593, by filing this form in duplicate with the Department of Water Resources not later than midnight June 14, 1982. The form must be completed and signed. Failure to do so will constitute a violation of A.R.S. 45-593, and may subject the well owner to injunction and/or civil penalties, pursuant to A.R.S. Title 45, Article 12.

2. An "Existing Well" means, (1) a well which was drilled on or before June 12, 1980 and which is not abandoned or sealed, or (2) a well which was not completed on or before June 12, 1980, but for which a Notice of Intention to Drill was on file with the Arizona Water Commission on or before June 12, 1980.

3. No registration fee is required for Exempt Wells. A $10.00 registration fee must accompany registration forms for all Non-Exempt Wells.

4. An "Exempt Well" means a well having a pump with a maximum capacity of not more than 35 gallons per minute which is used to withdraw groundwater. An Exempt Well may include the non-commercial irrigation of not more than 1 acre of land.

5. A "Non-Exempt Well" means a well that is not an "Exempt Well".

INSTRUCTIONS FOR REGISTRATION QUESTIONS

1. The Registrant must be the owner of the well and may be an individual, public or private corporation, company, partnership, firm, association, society, estate, trust, any other private organization or enterprise, the United States, any state, territory or country or a governmental entity, political subdivision or municipal corporation organized under or subject to the constitution and laws of this State.

2. If you own an existing irrigation well drilled at any time, or any other type of well drilled on or after June 20, 1968, you should have an assigned control and/or file number. Write these numbers in item 2. If you do not know the number, please explain the reason on the form or on an attached sheet.

3. a. Fill in the Section, Township and Range in all cases if it is available.
   b. If the well is in a subdivision and you have this information, give the subdivision name, Lot Number, and Address.

4. Show all purposes for which the water is used.

5. If the well is used for irrigation, give the number of acres irrigated in 1980 from the well.

6. If the owner of the land is an individual, give the last name, first name, middle initial. If the owner of the land is a corporation, partnership, firm, etc., fill in the appropriate title.

7. Complete the section on Well Data with the most accurate information available to you. If the data is not available, write N/A in the blanks.

8. Give the legal description of the place of use of the water. If place of use is in a subdivision and legal description is not available, give the subdivision name, Lot Number and/or address on the blank line.

9. The person in whose name a well is registered shall notify the Department of any change in ownership and shall keep all information on the registration record current and accurate. A form entitled "Change of Well Information/Ownership" is available for this purpose. A blank form will be furnished with the returned duplicate copy of the registration form.

Salt River Project
P. O. Box 1980
Phoenix, Arizona 85001

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
WATER RIGHTS ADMINISTRATION
99 EAST VIRGINIA
PHOENIX, ARIZONA 85004

RECEIPT

KIND ENTRY	FILE REFERENCE NO.
55	617831
	THRU
55	617870

ACCOUNT NO. FUND SOURCE	AGENCY	CHAPTER	DIV.	INT. ACCT.	ITEM DESCRIPTION	RATE	$ AMOUNT
					Forty (40) filing fees for registration of existing wells	$10.00	400.00
A(1-6)	21bcc			A(1-5)35baa	D(1-5)8acc		
D(2-5)	4add			D(1-5) 32cab	D(1-4)11bcc		
D(1-5)	22ccc			D(1-5) ccc	D(1-4)12acc		
D(1-5)	3ccc			D(1-2)3cdd	D(1-4)14ccc		
D(1-5)	9dbb			D(2-3)36aaa	D(1-4)22bcc		
D(1-5)	19ccc			A(2-2)25bcd	A(1-6) 32cca		
A(1-5)	19bdd			D(1-3)6caa	A(1-6)7abb		
D(1-5)	21 bdc			D(1-4)3bbb	D(1-6)7ddc		
D(1-5)	29dbc			D(1-4)3cdd	A(1-6)30aba		
A(1-5)	33cdd			D(1-4)10bdd	A(1-6)32bba		
A(1-5)	16ccd			D(1-5)7add	A(1-6)8ccd		
A(1-5)	17aaa			D(1-4)24aaa	A(1-6)17acc		
A(2-4)	11dcc			A(2-3)25daa			
A(2-4)	11aad			A(1-5)2cdd			

WAITER PAYMENT
GUESTS 40
CHK NO 60941
40@ 10.00
55-I 400.00
TAX 0.00
TOTL 400.00
GEN.CHEK 400.00

TOTAL $ # 1628 A 13:50 400.00

Check No. 060941
8-25-82 vf

55-617857

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REPORT OF WELL DRILLER

This report should be prepared by the driller in all detail and filed with the State Land Commissioner following completion of the well.

1. OWNER ROSCOE MOSSCOMPANY (SRVWUA)
Name
4360 Worth Street Los Angeles, Ca.
Address

2. Lessee or Operator
Name
Address

3. DRILLER J. O. EVANS
Name
Phoenix
Address

4. Location of well: Twp. 2N Rge. 3E Section 25 NE ¼ NE ¼ SE ¼
10-acre subdivision

5. Intention to Drill File No. ~~S-791~~ A(2-3)25 daa ~~Permit No.~~ appl. # S-791 2-16-65

DESCRIPTION OF WELL

6. Total depth of hole 300 ft.

7. Type of casing 5/16" plate pipe

8. Diameter and length of casing 18 in. from ..... to ....., ... in. from ..... to ....., ... in. from ..... to .....

9. Method of sealing at reduction points .....

10. Perforated from 100 to 300, from ..... to ....., from ..... to ....., from ..... to .....

11. Size of cuts 3/16 x 2-1/2 Number of cuts per foot 10 holes per 45 inches

12. If screen was installed: Length ..... ft. Diam. ..... in. Type .....

13. Method of construction Cable tool
drilled, dug, driven, bored, jetted, etc.

14. Date started March 30, 1965
Month Day Year

15. Date completed May 4, 1965
Month Day Year

16. Depth of water 30 ft.
If flowing well, so state.

17. Describe point from which depth measurements were made, and give sea-level elevation if available .....

18. If flowing well, state method of flow regulation .....

19. REMARKS: .....

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received ..... by .....
Filed ..... by .....
File No. A(2-3)25 daa

(Well Log to Appear on Reverse Side)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

FROM (FEET)	TO (FEET)	DESCRIPTION OF FORMATION MATERIAL
)	@	
0	2	Top soil
2	40	Caliche
40	120	Clay and some gravel
120	203	Conglomerate
203	300	Hard conglomerate

I hereby certify that this well was drilled by me (or under my supervision), and that each and all of the statements herein contained are true to the best of my knowledge and belief.

Driller ROSCOE MOSS COMPANY
Name

4360 Worth Street
Address

Los Angeles, CA
Date 5/4/65

2-73

RECEIVED
MAY 28 1974
STATE LANDS DEPT.

STATE OF ARIZONA
STATE LAND DEPARTMENT
STATE OFFICE BUILDING — PHOENIX, ARIZONA

OFFICE COPY

SECTION	TOWNSHIP	RANGE

KIND ENTRY	LEASE – REFERENCE NO.

ACCOUNT NO. GRANT FUND	SUB	CARRYING CAPACITY OR STATIC WATER LEVEL	SEE OTHER SIDE FOR CODE DESCRIPTION: LAND CODE	CROP CODE	WATER CODE	BILLING DESCRIPTION	RATE	ACRES	$ AMOUNT
						File			

CERTIFICATE OF PURCHASE UNPAID BALANCE $	BILLING PERIOD FROM MO.	DAY	YR.	TO MO.	DAY	YR.	DATE BILLED MO.	DAY	YR.	DATE DUE MO.	DAY	YR.	TOTAL ACRES	TOTAL AMOUNT $

IF PAYMENT IS MADE ON OR BEFORE THIS DATE → PAY THIS AMOUNT

SEE OTHER SIDE FOR LAW PERTAINING TO PENALTY AND INTEREST — A. R. S. SEC. 37-288.

RENTAL AMOUNT SUBJECT TO PENALTY AND INTEREST IF NOT PAID ON OR BEFORE DATE DUE - - - ($)

5% PENALTY OF RENTAL AMOUNT - - - - - - $

TOTAL RENTAL AMOUNT PLUS PENALTY - - - - ($)

10% INTEREST PER ANNUM OF RENTAL AMOUNT AND PENALTY — NUMBER OF DAYS DELINQUENT ( ) $

TOTAL AMOUNT DUE INCLUDING PENALTY AND INTEREST - - - - - $

CASH RECEIVED $

BALANCE DUE OR OVERPAYMENT $

TOTAL PENALTY AND INTEREST $

PENALTY AND INTEREST	DISTRIBUTION
	$

17.9E-7.5N

According to our records this report was furnished to your office in May, 1965 -- If you do not locate, please forms and we will furnish duplicates.

WATER RESOURCE OPERATIONS
R. Juetten, Supv.

Arizona
State Land Department

JACK WILLIAMS
GOVERNOR

1624 WEST ADAMS
PHOENIX, ARIZONA 85007
602 - 271-4634

ANDREW L. BETTWY
STATE LAND COMMISSIONER

May 6, 1974

Salt River Valley Water Users' Assoc.
P. O. Box 1980
Phoenix, AZ 85001

Re: Application for Permit to Drill for Well S-791
File # A(2-3)25 daa
Dated 2-16-65

Gentlemen:

The State Land Department, Water Rights Division is engaged in the processes of bringing its well files up to date.

Arizona Revised Statutes 45-306, 45-307, and 45-313 deal with Applications for Permit to Construct Irrigation Well, Filing of Log by Driller, Failure or Refusal to File Reports on Notices and Penalty.

Critical information included in these statutes requires that:

1. A well must be completed within one year of filing (in case of failure to complete a well within one year a new Application for Permit to Construct Irrigation Well may be filed);

2. Upon completion of drilling, a copy of the log, and other pertinent data shall be filed by the driller with the State Land Department; and

3. A person who fails or refuses to make any of these reports, give the notices required, or cooperate with the Department, is guilty of a misdemeanor and subject to a fine.

In the event the referenced well has been completed, please forward log, and other pertinent completion data to this Department within 30 days.

If no response is forthcoming, we will be compelled to assume that the well is not complete and the related file retired as cancelled.

Yours very truly,

Andrew L. Bettwy

NOTE: We usually receive the Report of Equipment Report covering the wells but not the Driller's report. That is the report we must have to complete your files.

5-73

Water Division

RECEIVED
MAY 28 1974
STATE LAND
DEPT.
2025

RECEIVED
MAY 10 1974
STATE LAND
DEPT.
715

JACK WILLIAMS
GOVERNOR

Arizona
State Land Department
1624 WEST ADAMS
PHOENIX, ARIZONA 85007
602 - 271-4634

ANDREW L. BETTWY
STATE LAND COMMISSIONER

May 6, 1974

Salt River Valley Water Users' Assoc.
P. O. Box 1980
Phoenix, AZ 85001

Re: Application for Permit to Drill for Well **S-791**
File # **A(2-3)25 daa**
Dated **2-16-65**

Gentlemen:

The State Land Department, Water Rights Division is engaged in the processes of bringing its well files up to date.

Arizona Revised Statutes 45-306, 45-307, and 45-313 deal with Applications for Permit to Construct Irrigation Well, Filing of Log by Driller, Failure or Refusal to File Reports on Notices and Penalty.

Critical information included in these statutes requires that:

1. A well must be completed within one year of filing (in case of failure to complete a well within one year a new Application for Permit to Construct Irrigation Well may be filed);

2. Upon completion of drilling, a copy of the log, and other pertinent data shall be filed by the driller with the State Land Department; and

3. A person who fails or refuses to make any of these reports, give the notices required, or cooperate with the Department, is guilty of a misdemeanor and subject to a fine.

In the event the referenced well has been completed, please forward log, and other pertinent completion data to this Department within 30 days.

If no response is forthcoming, we will be compelled to assume that the well is not complete and the related file retired as cancelled.

Yours very truly,

Andrew L. Bettwy

5-73

OBED M. LASSEN
STATE LAND COMMISSIONER
PHONE 271-4621

STATE LAND DEPARTMENT

STATE OF ARIZONA
STATE OFFICE BUILDING
PHOENIX 7, ARIZONA

February 16, 1965

Salt River Valley Water Users' Association
P. O. Box 1980
Phoenix, Arizona 85001

Re: File No. A(2-3)25 daa
Application No. S-791
Permit No. S-774

Attention: Mr. A. L. Monette, Secretary

Gentlemen:

Your application for a permit to drill a well in Twp. 2 North, Rge. 3 East, Section 25, NE ¼ NE ¼ SE ¼ has been approved. Your permit is enclosed.

Also enclosed are a:

WELL DRILLING CARD, which should be in the hands of the driller before construction of the well is started;

REPORT OF WELL DRILLER form, which shall be filled in and sent to us within thirty days after completion of the well;

REPORT OF EQUIPMENT INSTALLED form, which shall be filled in and sent to us within thirty days after the installation of the pumping equipment.

In the event it is necessary to change the location of the proposed well you should obtain the written permission of the State Land Commissioner before proceeding with the drilling.

Very truly yours,

WATER DIVISION

By:
F. C. Ryan, Supervisor
kh

Enclosure: G-301
G-304
G-306
cc: USGS, Tucson

S-791 a(2-3)25 daa S-774

Application No. S-791 File No. A(2-3)25 daa Permit No. S-774

Filed 2-16-65

(Applicant must not fill in the above blanks)

This application shall be submitted to the State Land Department, Water Division, Phoenix, Arizona, in accordance with the provisions of Article 7, Chapter 1, Title 45, Arizona Revised Statutes, and the rules and regulations of the State Land Department.

Applications must be accompanied by fees made payable to the STATE LAND DEPARTMENT as follows:

Application Fee ------ $3.00
Permit Fee - - - - - - $5.00

OK JCR 2-16-65

APPLICATION FOR A PERMIT

( ) TO DRILL)
( ) TO DEEPEN)
(X) TO REPLACE)

AN IRRIGATION WELL IN A CRITICAL AREA WITHIN THE STATE OF ARIZONA

I (We), SALT RIVER VALLEY WATER USERS' ASSOCIATION
(Owners Name)

of P. O. Box 1980 85001, County of Maricopa
(Post Office Address)

State of Arizona, do hereby make application for a permit to

( ) Drill new well, ( ) Deepen or (x) Replace the following described well in the

Salt River Valley Critical Area. a(2-3)25 daa

1. Location and description of proposed well:

Twp. 2N Rge. 3E Sec. 25 ; NE ¼ NE ¼ SE ¼ (10 Ac. Subdiv.) a a d 9-1-51

Dept 300 ft. Type of casing Stovepipe

Proposed Withdrawal 1048 (Ac. ft. per year)

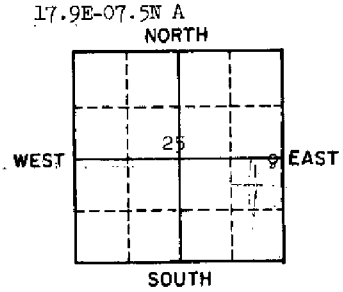
Name and Address of Driller:

Roscoe Moss Co.

Los Angeles, California

Location of Proposed Well

17.9E-07.5N A



(Indicate location of well)

2. Location and description of existing well:

Twp. 2N Rge. 3E Sec. 25 NE ¼ NE ¼ SE ¼ (10Ac. subdiv.)

Dept 165' ft. Diameter 12 in.

Date drilled 10/4/1920

Driving Unit 15 Electric H. P.

Rating of Motor 15

Discharge when Drilled 370 (g. p. m.)

Present Discharge 370 (g. p. m.)

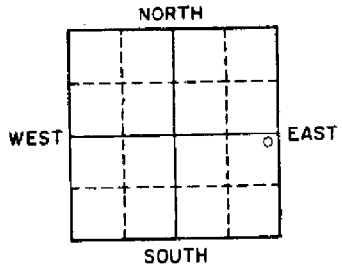
Static Water Level 40.5 ft. (below ground surface)

Depth of Pump Setting 110'

Pumping Lift 65.0 ft.

18.0E-07.5N A

Location of Existing Well



3. Reason new well required Supplement water supply.

4. Land to be irrigated: Land within Association boundaries.

Twp. _____ Rge. _____ Sec. _____

(Legal Subdivision Description) (Acres)

Twp. _____ Rge. _____ Sec. _____

(Legal Subdivision Description) (Acres)

5. Above described land is now irrigated as follows:

Project canals and wells.

6. Record of cultivation and irrigation of land described herein:

All lands within Project under cultivation prior 1948.

7. It is understood that the permit, if granted, will be in accordance with the Groundwater Code of 1948, and the Permittee will be bound by the provisions of such law, and the provisions of the permit issued herefor.

CERTIFICATE

8. I(We), Salt River Valley Water Users' Association the applicant named in the above and foregoing application, do hereby certify under the penalty of perjury, that the information contained and statements therein made are to the best of my knowledge and belief true, correct and complete.

DATED THIS 11th day of February, 19 65.

SALT RIVER VALLEY WATER USERS' ASSOCIATION
(Owner or his authorized agent)

P. O. Box 1980, Phoenix, Arizona 85001
(Post Office Address)

BY A L Monette
A. L. Monette, Secretary

RECEIVED FEB 16 1965 SURF. WTR. DEPT.

5200

WD FORM No. G-303-1M/12-56

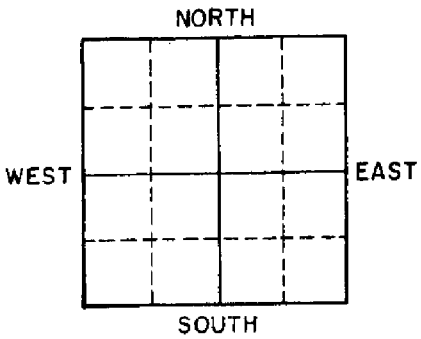
17.9E-07.5N A

IMPORTANT

PLEASE COMPLETE & RETURN TO THIS OFFICE

STATE LAND DEPARTMENT
Water Division
Phoenix 7, Arizona

Location of Well



(Indicate Well Location by a circle "o" in the above Section Plat)

File No. A(2-3)25 daa

REPORT OF EQUIPMENT INSTALLED

OWNER Salt River Valley Water Users' Association Phoenix, Arizona

LOCATION OF WELL:

NE ¼ NE ¼ SE ¼, Sec. 25 Twp. 2N Rge. 3E

Date Well Completed: May, 1965 Depth 300

1. Well Test:

Discharge: 1130 (Gal. Per Min.) Date Well Tested: 8/13/65

Method of Discharge Measurement: Pitot (weir, orifice, current meter, etc.)

Static Water Level: 29.3 ft. Drawdown 69.8 ft.

Total Pumping Lift 99.1 ft.

2. Equipment Installed:

Kind of Pump: Turbine (turbine, centrifugal, etc.)

Kind of Power: Electric (Elec., Nat. Gas, Etc.) H. P. Rating of Motor 40

I HEREBY CERTIFY that all the above statements are true to the best of my knowledge and belief.

SALT RIVER VALLEY WATER USERS' ASSOCIATION

A. L. Monette

Signature A. L. Monette, Secty.

Date Sept. 9, 1965.

P. O. Box 1980, Phoenix, Arizona
Address

WD Form G-306
10-57

85975

RECEIVED
SEP 13 1965
STATE LAND
DEPT.

SALT RIVER PROJECT
P.O. BOX 1980
PHOENIX, ARIZONA 85001

VICTOR I. CORBELL, PRESIDENT
FLOYD N. SMITH, VICE-PRESIDENT

A. L. MONETTE, SECRETARY
K. J. KNAUER, TREASURER

February 15, 1965

Mr. F. C. Ryan
State Land Department
Water Division
Phoenix, Arizona 85007

Dear Mr. Ryan:

Enclosed is our check for $8.00 for the filing and permit fee to cover application to replace one of our irrigation wells in the NE NE SE, Section 25, T-2N, R-3E.

This in conformance with the attached Form No. G-303-1M-12-56.

Very truly yours,

SALT RIVER VALLEY
WATER USERS' ASSOCIATION

H. J. Roth
Assistant Secretary

HJR:mb
Enclosure

5200

RECEIVED
FEB 16 1965
STATE LAND
DEPT.

Application No. S-791 File No. A(2-3)25.daa Permit No. S-774

PERMIT

TO DRILL (Replace) AN IRRIGATION WELL IN A CRITICAL AREA WITHIN THE STATE OF ARIZONA

SALT RIVER VALLEY WATER USERS' ASSOCIATION - P. O. Box 1980 - Phoenix, Arizona

STATE OF ARIZONA }
County of MARICOPA } ss.

This is to Certify that I have examined the above numbered application and do hereby approve the same and grant to the applicant a permit to DRILL (Replace) the well described therein, subject to the following limitations and conditions:

1. Water shall be limited to use on lands described as follows:

Legal Subdivision	Acres
On all lands within the boundaries of the Salt River Project	
Total Acres	

( ) 2. No right is granted by this permit for the irrigation of lands which on September 1, 19 51, were not irrigated, or had not been cultivated within five years prior thereto.

(x) 3. The well for which permit is granted hereunder shall be completed and in operation within one year from the date hereof.

( ) 4. **Other Limitations:**

WITNESS my hand and seal of office this 16th day of February, 19 65

SEAL
Expires: 2-16-66

Deputy STATE LAND COMMISSIONER

FORM W-2 10-46 JAHN-TYLER

LAND DEPARTMENT
WATER DIVISION
STATE OF ARIZONA

REGISTRATION OF WELL

Registration of well existing as of Oct. 3, 1945 is hereby made and filed with the State Land Commissioner as required by Section 5, Chapter 12, Senate Bill No. 3, Seventeenth Legislature, First Special Session 1945.

1. Owner SALT RIVER VALLEY WATER USERS' ASSOCIATION
Name
Phoenix, Arizona
Address

2. Lessee or Operator _____
Name
_____
Address

3. Driller _____
Name
_____
Address

4. Location of well: Twp. 2N (18E-7½N) Rge. 3E Section 25 NE ¼ NE ¼ SE ¼
10-acre subdivision

DESCRIPTION OF WELL

5. Total depth of hole 165 ft.

6. Type of casing stovepipe

7. Diameter and length of casing 12 in. from _____ to _____, _____ in. from _____ to _____, _____ in. from _____ to _____

8. Method of sealing at reduction points _____

9. Perforated from 40 to 144, from _____ to _____, from _____ to _____, from _____ to _____

10. Size of cuts 1/2 x 4" holes Number cuts per foot 8 holes per foot

11. If screen was installed: Length _____ ft. Diam _____ in. Type _____

12. Method of construction drilled
drilled, dug, driven, bored, jetted, etc.

13. Date completed Nov. 8, 1920 (Month, Year) Deepened _____ (Month, Year)

14. Depth to water when drilled _____ ft.
If flowing well, so state.

15. Present depth to water 13.4 ft. Date of measurement December 19, 1945
If flowing well, so state.

16. Describe point from which depth measurements were made, and give sea-level elevation if available pumphouse floor -- 1,194.4

17. If flowing well, state method of flow regulation _____

DISCHARGE DATA

18. Well discharge 370 g.p.m.
gal. per min. or cu. ft. per sec. or miner's inches.

19. Method of discharge measurement weir
weir, orifice, current meter, etc.

20. Drawdown 67.66 ft.

21. Annual discharge in acre-feet, or number of hours pumped: 1944 457 a.f. or _____ hrs. 1945 512 a.f. or _____ hrs.

22. Purpose of use irrigation

23. Place of use: Twp. _____ Rge. _____ Section _____ _____ Acres _____
(See 24) Legal subdivision
Twp. _____ Rge. _____ Section _____ _____ Acres _____
Legal subdivision

24. If well is part of irrigation system of Irrigation District, Association or Company, omit 23 and give name of project.
SALT RIVER VALLEY WATER USERS' ASSOCIATION
Name of Project

(A-2-3)25 daa

EQUIPMENT DATA

25. Kind of pump turbine
turbine, centrifugal, etc.

26. Kind of power electric
electric, natural gas, etc.

27. Horsepower rating of motor 15

DO NOT WRITE IN THIS SPACE
OFFICE RECORD

Received 2-1-46 by lj
Filed 2-5-46 by lj
File No. (A-2-3)25 daa
Cross-referenced (Name) _____ by _____
Cross-referenced (Basin) _____ by _____
Cross-referenced _____ by _____

(See Other Side)

LOG OF WELL

Indicate depth at which water was first encountered, and the depth and thickness of water bearing beds. If water is artesian, indicate depth at which encountered, and depth to which it rose in well.

From (feet)	To (feet)	Description of formation material
0	8	Surface soil
8	90	Clay
90	132	Cemented sand and gravel
132	144	Sandy Clay
144	160	Sandstone
160	165	Clay

I hereby certify that I have read the foregoing statements, and that each and all of the items therein contained are true to the best of my knowledge and belief.

SALT RIVER VALLEY WATER USERS' ASSOCIATION

By H. J. Lawson
H. J. LAWSON ~~[illegible]~~
General Superintendent and Chief Engineer
Phoenix, Arizona

Address

Date February 1, 1946

TEAR OFF ON THIS LINE AND DEPOSIT ABOVE CHECK. CHECK ATTACHED IS SENT YOU IN FULL SETTLEMENT OF THE FOLLOWING ACCOUNT.

SALT RIVER VALLEY WATER USERS' ASSOCIATION

CHECK NUMBER 4286

	GROSS AMOUNT	DISCOUNT	NET AMOUNT
FEES FOR ONE WELL DRILLING APPLICATIONS AND 2 PERMITS			8.00

PLEASE CASH WITHIN 60 DAYS

ad	Town	Range	Sect	Q160	Q40	Q10	Reg No.	Registered Full Name & Address	Well Depth	Case Depth	Case Diameter	Water Level	Pump (GPM)	Most Recent Auth. Issued: Drill Lic No	Most Recent Auth. Issued: Issue Date	Org. Drill Date	Reg Wtr Use	Wtr-shed	Log	CRT
	2.0	3.0	25	C	C	C	55 - 558214	CIRCLE K STORES 2857, 3003 N CENTRAL AVE PHOENIX, AZ 85013	53	33	4	37	0	175		07/11/1996	M	07	X	N
ell Type: MONITOR OR PIEZOMETER			B/M/P:																	
	2.0	3.0	25	C	C	C	55 - 558213	CIRCLE K STORES 2857, 3003 N CENTRAL AVE PHOENIX, AZ 85013	53	33	4	37	0	175		07/10/1996	M	07	X	N
ell Type: MONITOR OR PIEZOMETER			B/M/P:																	
	2.0	3.0	25	C	C	C	55 - 558212	CIRCLE K STORES 2857, 3003 N CENTRAL AVE PHOENIX, AZ 85013	53	23	4	37	0	175		07/11/1996	M	07	X	N
ell Type: MONITOR OR PIEZOMETER			B/M/P:																	
	2.0	3.0	25	C	C	C	55 - 554024	CIRCLE K STORESINC, 3003 N CENTRAL AVE PHOENIX, AZ 85013	0	0	0	0	0	175			M	07		N
ell Type: MONITOR OR PIEZOMETER			B/M/P:																	
	2.0	3.0	25	C	C	C	55 - 554022	CIRCLE K STORES INC, 3003 N CENTRAL AVE PHOENIX, AZ 85013	0	0	0	0	0	175			M	07		N
ell Type: MONITOR OR PIEZOMETER			B/M/P:																	
	2.0	3.0	25	C	C	C	55 - 554020	CIRCLE K STORES INC, 3003 N CENTRAL AVE PHOENIX, AZ 85013	0	0	0	0	0	175			M	07		N
ell Type: MONITOR OR PIEZOMETER			B/M/P:																	
	2.0	3.0	25	C	C	C	55 - 554018	CIRCLE K STORES INC, 3003 N CENTRAL AVE PHOENIX, AZ 85013	0	0	0	0	0	175			M	07		N
ell Type: MONITOR OR PIEZOMETER			B/M/P:																	
	2.0	3.0	25	C	C	C	55 - 550242	CIRCLE K CORP, 3003 N CENTRAL AVE PHOENIX, AZ 85013	0	0	0	0	0	175			M	07		N
ell Type: MONITOR OR PIEZOMETER			B/M/P:																	
A	2.0	3.0	25	C	C	C	55 - 550240	CIRCLE K CORP, 3003 N CENTRAL AVE PHOENIX, AZ 85013	57	27	4	40	0	175		07/31/1995	M	07	X	N
Well Type: MONITOR OR PIEZOMETER			B/M/P:																	
A	2.0	3.0	25	C	C	C	55 - 550239	CIRCLE K CORP, 3003 N CENTRAL AVE PHOENIX, AZ 85013	59	29	4	40	0	175		07/28/1995	M	07	X	N
Well Type: MONITOR OR PIEZOMETER			B/M/P:																	
A	2.0	3.0	25	C	C	C	55 - 550238	CIRCLE K CORP, 3003 N CENTRAL AVE PHOENIX, AZ 85013	58	28	7	40	0	175		07/27/1995	M	07	X	N
Well Type: MONITOR OR PIEZOMETER			B/M/P:																	
A	2.0	3.0	25	D	A	A	55 - 617857	SALT RIVER PROJECT, PO BOX 1980 PHOENIX, AZ 85001	300	300	18	24	1,114	0		05/04/1965	A	07		
Well Type: NON-EXEMPT			B/M/P:																	

ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION
MAIL TO: P.O. BOX 458, PHOENIX, ARIZONA 85001-0458
For Information: Call Monica Ortiz at (602)417-2470

RECEIVED AUG 24 1999 GROUNDWATER MGT

REGISTRATION OF WELLS
READ INSTRUCTIONS ON BACK OF THIS FORM BEFORE COMPLETING
PRINT (Blue or Black Ink) OR TYPE: FILE IN DUPLICATE

PRIOR TO COMPLETING THIS SECTION, SEE GENERAL INSTRUCTION ON REVERSE SIDE OF FORM

FILING FEE FOR REGISTRATION: (check one)

EXEMPT WELL LATE REGISTRATION FEE $10.00____

NON-EXEMPT WELL REGISTRATION FEE $10.00
LATE FEE $10.00
TOTAL $20.00 X

FOR DEPARTMENT USE ONLY

REGISTRATION NO. 55- 867925
FILE No A(2-3)24 DBC
FILED 8-24-99 By gm
(Date)

INA____
AMA Phoenix
WS 07 SB 04

Gm W-XX

1. Name of Well Owner: LARRY THIHER Telephone: 602. 955. 4854
4315 N. 36TH ST PHX AZ 85018
Mailing Address City State Zip

2. File and/or Control Number under previous groundwater law:_____ Control Number: 35-_____
File No. Control No.

3. County Assessor's Parcel I.D. Information: Book: 170 Map: 26 Parcel: 023A

4. The well is located within the SW ¼ NW ¼ SE ¼, Section 24 Township 2 N N/S Range 3 E E/W
10 Acre 40 Acre 160 Acre
in the County of Maricopa **(The above description is required for processing, see 5. under "Information" on reverse side)**

5. Is the wellsite within 100 feet of a septic tank system, sewer, disposal area, landfill, hazardous materials or petroluem storage area & tanks?
Yes_____ No X.

6. The principal use(s) of water: Domestic [redacted] (Examples: irrigation, stockwater, domestic, municipal, industrial)

7. If for irrigation use, number of acres irrigated from well: 1/3 Acres

8. Owner of land on which well is located. If same as Item 1, please check ✓
Name Telephone No.
Mailing Address City State Zip

9. Well data:
a. Depth of well 34 feet b. Depth to water: 24 feet below land surface
c. Type of casing(s) installed: ✓ steel _____PVC _____other
d. Casing diameter(s): 4 inch to a depth of _____feet, _____ inch to a depth of _____feet
e. Maximum pump capacity: _____gallons per minute NO PUMP
f. **Date well completed:** BEFORE 1980 _____(required for processing see #7 under "Instructions" on reverse side)
(Month) (Day) (Year)

10. The place(s) of use of water. If same as Item 3, please check ✓.
_____¼ _____¼ _____¼, Section_____ Township_____ N/S Range_____E/W
10 Acre 40Acre 160 Acre

I STATE THAT THIS REGISTRATION IS COMPLETE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND THAT I UNDERSTAND THE LIMITATIONS AND CONDITIONS SET FORTH ON THE REVERSE SIDE OF THIS FORM.

11. LARRY THIHER 12. [signature] 13. 8-24-99
TYPED OR PRINTED NAME **SIGNATURE OF WELL OWNER** **DATE**

DWR-55-65 (Rev 1/99)

INSTRUCTIONS FOR COMPLETING REGISTRATION FORM
GENERAL INSTRUCTIONS

1. Pursuant to Arizona Revised Statute (A.R.S.) § 45-593(A), all known wells within the State of Arizona were to be registered with the Department of Water Resources no later than midnight, June 12, 1982. Accordingly, all wells that are discovered after that date must be registered with the Department. Use this form in lieu of a Notice of Intention to Drill form for all wells drilled after June 12, 1980.

2. An "existing well" must be registered with the Department. An "existing well" is a well which was drilled before June 12, 1980 and which is not abandoned or sealed or a well which was not completed on June 12, 1980 but for which a Notice of Intention to Drill was on file with the Arizona Water Commission on June 12, 1980.

3. A well drilled after June 12, 1980 without first filing a Notice Of Intention to Drill pursuant to A.R.S. § 45-596 or obtaining a well permit pursuant to A.R.S. § 45-599 must also be registered with the Department.

4. Pursuant to A.R.S. § 45-593(D), "within thirty days after a change of ownership of real property, the new owner shall notify the Director in writing of the existence of any open well or wells on the property which the new landowner has discovered. Thereafter, the owner shall report the existence of any open well on the property within ten days after the owner discovers the well."

5. An "Exempt Well" means a well having a pump with a maximum capacity of not more than 35 gallons per minute which is used to withdraw groundwater for a non-irrigation use, including the application of groudwater on less than two (2) acres of land to grow crops for sale or human consumption or for use as feed for livestock, range livestock or poultry. A "Non-Exempt Well" means a well that is not an "Exempt Well".

6. In accordance with A.A.C. R12-15-151(B)(4), a $10 registration fee and a $10 late fee is required for Non-Exempt wells. For Registration of exempt wells, only a $10 late fee is required. Check the appropriate well type on the front of this form, submit the fee, and mail to P.O. Box 458, Phoenix, Arizona 85001-0458 or hand deliver to 500 North 3rd Street, Phoenix, Arizona.

INFORMATION FOR REGISTRATION QUESTIONS

1. This form must be filed in duplicate with original signatures on both copies.

2. The Registrant must be the owner of the well and may be an individual, public or private corporation, company, partnership, firm, association, society, estate, trust, any other private organization or enterprise, the United States, any state, territory or country or a governmental entity, political subdivision or municipal corporation organized under or subject to the constitution and laws of the State.

3. If you own any type of well drilled on or after June 20, 1968, or an existing irrigation well drilled prior to June 20, 1968, you should have an assigned control and/or file number. Write these numbers in item 2.

4. Provide the Assessor's I.D. Number. This information can be obtained from your recorded deed, or by contacting your county assessor's office.

5. Furnish complete well location to include the ¼ ¼ ¼ sections, Section Number, Township, and Range **(Required)**. If this required information is not known, you may contact the Mapping Division of the County Assessor's Office in which the property is located.

6. If the owner of the land is an individual, give the last name, first name, middle initial. If the owner of the land is a corporation, partnership, firm, etc., **provide the appropriate title of person signing.**

7. Complete the section on Well Data (item 9) with the most accurate information available to you. If data for items (a) thru (f) is not available, write "unknown" in the appropriate blank. **For Item f, if the month and day are unknown, at least an approximate year the well was completed is required.**

8. Provide the legal description of where the water will be used.

9. The person in whose name a well is registered shall notify the Department of any change in ownership and shall keep all information on the registration record current and accurate. A form entitled "Change of Well Information/Ownership" is available for this purpose. A blank form will be furnished.

ARIZONA DEPARTMENT OF WATER RESOURCES
500 North Third Street, Phoenix, Arizona 85004
Telephone (602) 417-2450
Fax (602) 417-2401

JANE DEE HULL
Governor

RITA P. PEARSON
Director

September 30, 1999

LARRY THIHER
4315 N 36TH STREET
PHOENIX AZ 85018

RE: Well Registration No. 55-807925 File (location) No. A(2-3) 24 DBC

Dear Well Owner:

Enclosed is a copy of the Well Registration form recently submitted to this Department. Your cancelled check can serve as your receipt. The Registration Number assigned is referenced above.

Also enclosed is a blank Change of Well Information form. This form should be used for any **future** changes to this well, as follows:

- Change of ownership of the well; (lower half of form)
- CHANGE OF ADDRESS
- Change in well data, such as pump capacity
- CORRECTION of legal description as to location of the well
- Change of well driller, PRIOR to drilling the well
- Amending information previously filed

Please contact this office if further assistance or information is required.

Sincerely,

Gloria Moss

Gloria Moss
Groundwater Management Support Section

Enclosures