

**Drinking Water Source Assessment for  
Mocho Well No. 4**

**prepared by EOA, Inc.  
for Zone 7 Water Agency**

**June 29, 2001**

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**TO:** Rhett Alzona, Zone 7 Water Agency

**FROM:** Jon Konnan, EOA, Inc.

**DATE:** June 29, 2001

**SUBJECT:** Drinking Water Source Assessment for Mocho Well No. 4

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This memo and the attached forms and map document the results of a source water assessment for Zone 7's Mocho Well No. 4. EOA, Inc. (EOA) performed this assessment in accordance with the guidelines of the California Department of Health Service's (DHS's) Drinking Water Source Assessment and Protection (DWSAP) program.<sup>1</sup> The DHS's Division of Drinking Water and Environmental Management developed the DWSAP program to meet state and federal requirements to assess the vulnerability to contamination of California's drinking water sources.

## **A. SOURCES OF INFORMATION FOR ASSESSMENT**

EOA obtained information for completing the assessment as follows:

1. Zone 7 staff provided EOA with much of the data used for the assessment, including well plans and specifications,<sup>2</sup> well location, construction and production data and hydrogeologic data.
2. On February 28, 2001, EOA drove through the area within the protection zones calculated as part of the assessment (see the attached drinking water source assessment map) to help identify Possible Contaminating Activities (Appendix K).
3. EOA obtained information from the Dublin San Ramon Services District's wastewater pretreatment program regarding activities carried out by businesses within the protection zones.<sup>3</sup>
4. EOA obtained information about underground and above-ground hazardous material/waste storage tanks from the Livermore – Pleasanton Fire Department (LPFD).<sup>4</sup>
5. EOA reviewed California Regional Water Quality Control, San Francisco Bay Region (Regional Board) contamination site data sets, as explained below.
6. EOA obtained information on contamination sites within the protection zones from the LPFD and the Alameda County Department of Environmental Health (ACDEH), as discussed below.

## **B. ASSESSMENT RESULTS**

The required forms and drinking water source assessment map are attached. It should be noted that the Physical Barrier Effectiveness form (Appendix J) was completed for each of the

three wells in the well field. Since a score that fell in the "moderate" range was calculated for each well, the corresponding score of three was used for the well field vulnerability analysis form (Appendix M). The Inventory of Possible Contaminating Activities (Appendix K) is based on field observations and available historical data and regulatory agency records.

### **Recharge Area**

The Drinking Water Source Location form (Appendix H) requests a general description of the recharge area, if known. Zone 7 provided the following description:

*The aquifer screened by Mocho Well No. 4 is mainly recharged from subsurface inflow and may be recharged by injection of treated State Project Water through newly constructed Mocho Wells No. 3 and 4. Subsurface inflow is thought to occur both laterally and vertically in this sub-basin. Water in overlying aquifers "leaks" through semi-confining and discontinuous aquitards to replenish the deeper aquifers. The shallow aquifers in this area of the basin are recharged directly from losing streams (i.e., Arroyo Mocho and Arroyo Valle), rainfall and irrigation percolation, and subsurface inflow from adjacent sub-basins (i.e., Dublin and Camp Sub-basins).*

### **Contamination Release Sites**

Contamination release sites were identified for the assessment based on 1) Zone 7's toxic site database, which was provided electronically to EOA during November, 2000, 2) discussions with LPFD and ACDEH staff and 3) the following data sets downloaded from the Regional Board's web site during February, 2001:

- LUSTIS (Leaking Underground Storage Tank Information System)
- SLIC (Spills, Leaks, Investigations, and Cleanup)
- List of Sites with MTBE Contamination

Two sites, both petroleum fuel leak sites, were identified within the protection zones for Mocho Well No. 4:

- 3192 Santa Rita Road
- Livermore – Pleasanton Fire Department Station No. 3

These sites comprise the Possible Contaminating Activities listed in the Appendix K and Appendix M forms as gas stations, known contaminant plumes and confirmed leaking tanks, and are described below:

#### 3192 Santa Rita Road

This site was formerly occupied by Exxon; it is now a Valero gas station. Underground fuel tanks were removed from the site in 1987. Subsequent investigation revealed low levels of MTBE (up to 490 parts-per-billion) in the shallow groundwater beneath the site. The ACDEH is providing regulatory oversight for an ongoing investigation at the site. The main purpose of the investigation is to ensure that the aquifers used for municipal water supply are not impacted. Six monitoring wells have been installed, and a work plan for a seventh well has been completed. The seventh well will be placed between the site and the Mocho wellfield.<sup>5</sup>

### Livermore – Pleasanton Fire Department Station No. 3

This site is located at 3200 Santa Rita Road. The LPFD informed EOA that two 500-gallon underground fuel tanks, one gasoline and one diesel, were removed from the site in 1996. Although the tanks appeared in good condition, petroleum hydrocarbons were detected in the soil beneath the tanks, possibly due to leakage from the associated piping. Contaminated soil was excavated from the site and properly disposed of off-site. No further action was deemed necessary at the site.<sup>6</sup>

### **C. DISCUSSION**

The two fuel leak sites identified above appear to be minor releases impacting only the shallow subsurface. 3192 Santa Rita is currently under investigation to ensure that this site does not impact the aquifers that are tapped by Zone 7's Mocho and Stoneridge wells. It does not appear that the minor release at LPFD Fire Station No. 3 impacted groundwater.

It appears unlikely that any of the remaining Possible Contaminating Activities identified (Appendix K and Appendix M) could impact the water quality from Mocho Well No. 4. A wide range of activities are included in these DHS forms such as dry cleaners, sewer collection systems, housing, parks, above-ground storage tanks and machine shops. Any releases from such activities would not likely be extensive, and would generally occur at or near the ground surface. Furthermore, Mocho No. 4 well is screened more than 500 feet below the ground surface, and there are several relatively impermeable clay layers between the surface and the screened aquifer.

### **D. REFERENCES**

1. Drinking Water Source Assessment and Protection (DWSAP) Program, Division of Drinking Water and Environmental Management, California Department of Health Services, January 1999 (revised April 1999 and January 2000).
2. Plans and Specifications for Construction of Mocho Wells No. 3 and No. 4, Zone 7 Water Agency, January 2000.
3. Dublin San Ramon Services District, information provided by Fernando Lomas, March 2001.
4. Livermore – Pleasanton Fire Department, information provided by Danielle Stefani, February, 2001.
5. Alameda County Department of Environmental Health, information provided by Scott Seery, February, 2001.
6. Livermore – Pleasanton Fire Department, information provided by Julie Wyman, March, 2001.

## Appendix H Drinking Water Source Location

Public Water System Name: Zone 7 Water Agency System No.: 0110010  
7-digit integer

Name of source: Mocho Well No. 4 Source No.: \_\_\_\_\_  
3-digit integer

or PS Code: 03S/01E-08H18 M  
15 characters

State Well Number: 03S/01E-08H18

Date: 2-13-01 Name of person completing form: Collen Morf, Zone 7 Water Agency

**LOCATION OF WELL: (decimal degrees)**

Latitude: 37.6884438 Longitude: -121.8773974  
10-digit signed decimal (2.6) sample: 41.20948311-digit signed decimal (2.6) sample: -121.573421

- Horizontal Datum:
- NAD27 (preferred)
  - NAD83
  - WGS84
  - Other: \_\_\_\_\_  
7 characters
  - Unknown

**DESCRIPTION:**

(e.g., plant entrance, well, intake, center of facility, etc. *Limit 50 characters.*): well

**METHOD OF DETERMINING LOCATION:**

*(If your method is not listed choose "other" and describe on next page)*

**USGS quadrangle (topographic map)**

Coordinates were determined:  Digitally (computer assisted)  
 Manually

Scale:  1:24,000 (7.5 minute series)  
 1:62,500 (15 minute series)  
 1:100,000 (1 x 1/2 degree series)  
 Other: \_\_\_\_\_

Year of map publication: \_\_\_\_\_

Year of map photorevision: \_\_\_\_\_

**Global Positioning System (GPS)**

Unit (manufacturer/model): Garmin GPS III

Grade of GPS unit:           (x)   Recreational (e.g., Garmin)  
  ()   Mapping (e.g., Trimble Geo Explorer)  
  ()   Survey (e.g., CORS, carrier-phase)

Differential correction:       ()   Yes  
  (x)   No

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**Other Method**            ()   Cadastral survey  
  ()   Parcel map  
  ()   Address matching  
  ()   PLSS System  
  ()   Other: \_\_\_\_\_  
  ()   Unknown

Accuracy, if known: +/- \_\_\_\_\_ meters

Scale of data source, if known: 1: \_\_\_\_\_

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## Appendix I

### Delineation of Ground Water Protection Zones

Public water system: Zone 7 Water Agency ID No.: 0110010

Name of source: Mocho Well No. 4 ID No.: 03S/01E-08H18 M

Delineation date: February, 2001 Delineation conducted by: EOA, Inc.

Indicate the method used to delineate the zones:

X Calculated Fixed Radius (Default) (Show calculations below)

Modified Calculated Fixed Radius (Show calculations below and attach documentation for direction of ground water flow)

More detailed methods

Type used (i.e., analytical methods, hydrogeologic mapping, modeling):

Arbitrary Fixed Radius (For use only by or with permission of DHS—use minimum distances shown below)

#### Calculated Fixed Radius Equation

The equation for the calculated fixed radius (R) is  $R_t = \sqrt{Qt / \pi \eta H}$

$R_t = R_2, R_5, \text{ or } R_{10}$  corresponding to  $t$  (Calculate  $R$  for each of three times of travel, TOT)

$Q$  = maximum pumping capacity of well  
( $\text{ft}^3/\text{year} = \text{gpm} * 70,267$ ): 46,202,959 (based on pumping 60 days per year at 4,000 gpm)

$t$  = time of travel (years), 2, 5 and 10 years

$\pi = 3.1416$

$\eta$  = effective porosity (decimal percent) (If unknown, assume 0.2):  
0.18

$H$  = screened interval of well (feet) (If unknown, assume 10% of  $Q$  gpm, 10 ft minimum):  
190 (based on well design; as-built data is not currently available)

**Specific methods follow on next page**

## Calculated Fixed Radius Delineation Method (Default)

Using the equation presented above, calculate the size of zones for the appropriate aquifer setting of the source.

### **Porous Media Aquifer**

Zone A (2 year TOT)  $R_2 = \underline{928}$  ft, minimum = 600 ft—use larger: 928 ft  
Zone B5 (5 year TOT)  $R_5 = \underline{1467}$  ft, minimum = 1,000 ft—use larger: 1467 ft  
Zone B10 (10 year TOT)  $R_{10} = \underline{2074}$  ft, minimum = 1,500 ft—use larger: 2074 ft

### **Fractured Rock Aquifer**

(Increase size of zones by 50%)

Zone A (2 year TOT)  $1.5R_2 = \underline{\hspace{2cm}}$  ft, minimum = 900 ft—use larger:        ft  
Zone B5 (5 year TOT)  $1.5R_5 = \underline{\hspace{2cm}}$  ft, minimum = 1,500 ft—use larger:        ft  
Zone B10 (10 year TOT)  $1.5R_{10} = \underline{\hspace{2cm}}$  ft, minimum = 2,250 ft—use larger:        ft

## Modified Calculated Fixed Radius Delineation Method

In porous media aquifers, if the direction of ground water flow is known (see Section 6.2.3), the default zone circle may be shifted upgradient by  $0.5R_i$ . The upgradient and downgradient limits of the zone are determined below.

### **Zone A (2-year TOT)**

upgradient distance =  $1.5R_2 = \underline{\hspace{2cm}}$  ft, minimum = 900 ft, use larger:        ft  
downgradient distance =  $0.5R_2 = \underline{\hspace{2cm}}$  ft, minimum = 300 ft, use larger:        ft

### **Zone B5 (5-year TOT)**

upgradient distance =  $1.5R_5 = \underline{\hspace{2cm}}$  ft, minimum = 1,500 ft, use larger:        ft  
downgradient distance =  $0.5R_5 = \underline{\hspace{2cm}}$  ft, minimum = 500 ft, use larger:        ft

### **Zone B10 (10-year TOT)**

upgradient distance =  $1.5R_{10} = \underline{\hspace{2cm}}$  ft, minimum = 2,250 ft, use larger:        ft  
downgradient distance =  $0.5R_{10} = \underline{\hspace{2cm}}$  ft, minimum = 750 ft, use larger:        ft



## Appendix J

### Physical Barrier Effectiveness Checklist and Well Data Sheet - Ground Water Source

Public water system: Zone 7 Water Agency ID No.: 0110010

Name of source: Mocho Well No. 4 ID No.: 03S/01E-08H18 M

Assessment date: March, 2001 Assessment conducted by: EOA, Inc.

Complete DHS Well Data Sheet (attached) and include with Assessment Report

Directions:

1. Read through the form and collect the information needed to complete the form. (Hydrogeology, Soils, Presence of abandoned or improperly destroyed wells, Well construction and operation.)
2. Determine Parameter A, Type of Aquifer.
  - If the aquifer is confined, use the right-hand column, and evaluate only the parameters indicated for confined aquifers.
  - If the aquifer is unconfined, semi-confined, or the degree of confinement is unknown, or if the aquifer is fractured rock, use the left-hand column and evaluate only the parameters for unconfined aquifers.
3. For each parameter appropriate for the source, place a check in the box for the answer that most closely applies to that source. If more than one answer is possible, select the more conservative (i.e. lower points) answer. *[For example, if the depth to static water (Parameter D) has varied between 45 and 55 feet, choose answer 2 (20 to 50 feet).]*
4. Add the points in the column appropriate for the source and interpret the score as shown on the bottom of the last page.
  - Determine whether the source has a High, Moderate or Low Physical Barrier Effectiveness. Use this in the Vulnerability analysis. The higher the points, generally the more effective the source and site are to retarding the movement of contaminants to the water supply.

NOTE: If the source is located in fractured rock the source is considered to have a Low Physical Barrier Effectiveness, regardless of the point total. So, if Parameter B, Aquifer Material is 3, the remainder of the form does not need to be completed.

Physical Barrier Effectiveness (PBE) – Ground Water, page 1 of 2

Source Name: Mocho Well No. 4

Source No.: 03S/01E-08H18 M

| PARAMETER   | POINTS     |   |          |  |
|---|------------|---|----------|--|
|   | Unconfined |   | Confined |  |
| <b>A. TYPE OF AQUIFER</b>   |            |   |          |  |
| Confinement (up to 50 points maximum) choose one  |            |   |          |  |
| a. Unconfined, Semi-confined, Fractured Rock, Unknown   | 0          | X |          |  |
| b. Confined   |            |   | 50       |  |
| <b>B. AQUIFER MATERIAL (Unconfined Aquifer)</b>   |            |   |          |  |
| Type of materials within the aquifer (up to 20 points maximum) choose one   |            |   |          |  |
| 1. Porous Media (Interbedded sands, silts, clays, gravels) with continuous clay layer minimum 25' thick above water table within Zone A | 20         | X |          |  |
| 2. Porous Media (Interbedded sands, silts, clays, and gravels)  | 10         |   |          |  |
| 3. Fractured rock *   | 0          |   |          |  |
| (* Low Physical Barrier Effectiveness - no further questions required)  |            |   |          |  |
| <b>C. PATHWAYS OF CONTAMINATION (All Aquifers)</b>  |            |   |          |  |
| Presence of Abandoned or Improperly Destroyed Wells (up to 10 points maximum)   |            |   |          |  |
| 1. Are they present within Zone A (2-year time of travel (TOT) distance)?   |            |   |          |  |
| a. Yes or unknown   | 0          | X | 0        |  |
| b. No   | 5          |   | 5        |  |
| 2. Are they present within Zone B5 (2- to 5-year TOT distance)?   |            |   |          |  |
| a. Yes or unknown   | 0          | X | 0        |  |
| b. No   | 3          |   | 3        |  |
| 3. Are they present within Zone B10 (5- to 10-year TOT distance)?   |            |   |          |  |
| a. Yes or unknown   | 0          | X | 0        |  |
| b. No   | 2          |   | 2        |  |
| <b>D. STATIC WATER CONDITIONS (Unconfined Aquifer)</b>  |            |   |          |  |
| Depth to static Water (DTW) = 89 feet<br>(up to 10 points maximum) choose one   |            |   |          |  |
| 1. 0 to 20 feet   | 0          |   |          |  |
| 2. 20 to 50 feet  | 2          |   |          |  |
| 3. 50 to 100 feet   | 6          | X |          |  |
| 4. > 100 feet   | 10         |   |          |  |
| <b>E. WELL OPERATION (Unconfined Aquifer)</b>   |            |   |          |  |
| Depth to Uppermost Perforations (DUP) DUP = 515* feet   |            |   |          |  |
| Maximum Pumping Rate of Well (Q) Q = 4000 gallons/minute  |            |   |          |  |
| Length of screened interval (H) H = 190 feet  |            |   |          |  |
| $[(DUP - DTW) / (Q/H)] = 20.2$  |            |   |          |  |
| (up to 10 points maximum) choose one  |            |   |          |  |
| 1. < 5  | 0          |   |          |  |
| 2. 5 to 10  | 5          |   |          |  |
| 3. > 10   | 10         | X |          |  |

| PARAMETER   | POINTS     |   |          |  |
|---|------------|---|----------|--|
|   | Unconfined |   | Confined |  |
| <b>F. HYDRAULIC HEAD (Confined Aquifer)</b><br>What is the relationship in hydraulic head between the confined aquifer and the overlying unconfined aquifer? (i.e. does the well flow under artesian conditions?)<br>(up to 20 points maximum) choose one |            |   |          |  |
| 1. head in confined aquifer is higher than head in unconfined aquifer <u>under all conditions</u>   |            |   | 20       |  |
| 2. head in confined aquifer is higher than head in unconfined aquifer <u>under static conditions</u>  |            |   | 10       |  |
| 3. head in confined aquifer is lower than or same as head in unconfined aquifer   |            |   | 0        |  |
| 4. unknown  |            |   | 0        |  |
| <b>G. WELL CONSTRUCTION (All Aquifers)</b>  |            |   |          |  |
| 1. Sanitary Seal (Annular Seal) Depth = <u>440</u> feet<br>(up to 10 points maximum) choose one   |            |   |          |  |
| a. None or less than 20 feet deep   | 0          |   | 0        |  |
| b. 20 to 50 ft deep   | 6          |   | 10       |  |
| c. 50 ft or greater   | 10         | X | 10       |  |
| 2. Surface seal (concrete cap) (up to 4 points maximum) choose one  |            |   |          |  |
| a. Not present or improperly constructed  | 0          |   | 0        |  |
| b. Watertight, slopes away from well, at least 2' laterally in all directions   | 4          | X | 4        |  |
| 3. Flooding potential at well site (up to 1 point maximum) choose one   |            |   |          |  |
| a. Subject to localized flooding (i.e. in low area or unsealed pit or vault) or Within 100 year flood plain   | 0          |   | 0        |  |
| b. Not subject to flooding  | 1          | X | 1        |  |
| 4. Security at well site (up to 5 points maximum) choose one  |            |   |          |  |
| a. Not secure   | 0          |   | 0        |  |
| b. Secure (i.e. housing, fencing, etc.)   | 5          | X | 5        |  |
| Maximum Points Possible   | 70         |   | 100      |  |
| <b>POINT TOTAL FOR THIS SOURCE</b>  | 56         |   |          |  |

\* Based on well design specifications; as built data not available at this time.

**Physical Barrier Effectiveness SCORE INTERPRETATION**

|                         |   |                 |  |
|-------------------------|---|-----------------|--|
| <u>      </u> 0 to 35   | = | <b>Low</b>      | (includes all sources in Fractured Rock) |
| <u>  X  </u> 36 to 69   | = | <b>Moderate</b> |  |
| <u>      </u> 70 to 100 | = | <b>High</b>     |  |

WELL DATA SHEET (Page 1)

Complete as much information as possible. Leave blank if information is not available, use N.A. if not applicable.

\* Indicates items required for Source Water Assessment

\*\* Indicates additional items required for assessments and Ground Water Rule

| DATA SHEET GENERAL INFORMATION                                       |   | (separate multiple entries in field with semi-colon) | Actual, Estimated or Default? |
|--|---|--|-------------------------------|
| System Name  | Zone 7 Water Agency                                     |  |                               |
| System Number  | 0110010   |  |                               |
| Source of Information (well log, DHS/County files, system, etc)      | Well plans <sup>1</sup> and Zone 7 staff                |  |                               |
| Organization Collecting Information (DHS, County, System, other)     | Zone 7 Water Agency and EOA, Inc. (Zone 7's consultant) |  |                               |
| Date Information Collected/Updated                                   | May-01  |  |                               |
| <b>WELL IDENTIFICATION</b>   |   |  |                               |
| * Well Number or Name  | Mocho Well No. 4  |  |                               |
| * DHS Source Identification Number (PS Code)                         | 03S/01E-08H18 M   |  |                               |
| DWR Well Log on File? ("YES" or "NO")                                | YES   |  |                               |
| State Well Number (from DWR)   | 03S/01E-08H18   |  |                               |
| Well Status (Active, Standby, Inactive)                              | Inactive  |  |                               |
| <b>WELL LOCATION</b>   |   |  |                               |
| Latitude   | 37.6884438  |  | Estimated via GPS             |
| Longitude  | -121.8773974  |  | Estimated via GPS             |
| Ground Surface Elevation (ft above Mean Sea Level)                   | 340   |  | Estimated                     |
| Street Address   | Santa Rita Rd.  |  |                               |
| Nearest Cross Street   | Stoneridge Dr.  |  |                               |
| City   | Pleasanton  |  |                               |
| County   | Alameda   |  |                               |
| * Neighborhood/Surrounding Area (see Note 1)                         | Re: Co  |  |                               |
| Site plan on file? ("YES" or "NO")                                   | YES   |  |                               |
| DWR Ground Water Basin   | Livermore - Amador Valley                               |  |                               |
| DWR Ground Water Sub-basin   | Amador  |  |                               |
| <b>SANITARY CONDITIONS</b>   |   |  |                               |
| ** Distance to closest Sewer Line, Sewage Disposal, Septic Tank (ft) | 300   |  | Estimated                     |
| Distance to Active Wells (ft)  | 500   |  | Actual                        |
| Distance to Abandoned Wells (ft)                                     | 170-8H5   |  |                               |
| Distance to Surface Water (ft)                                       | 200   |  | Actual                        |
| ** Size of controlled area around well (square feet)                 | 1160  |  | Actual                        |
| * Type of access control to well site (fencing, building, etc)       | locked building   |  |                               |

WELL DATA SHEET (Page 2)

Complete as much information as possible. Leave blank if information is not available, use N.A. if not applicable.

\* Indicates items required for Source Water Assessment

\*\* Indicates additional items required for assessments and Ground Water Rule

|  | (separate multiple entries in field with semi-colon) | Actual, Estimated or Default? |
|--|--|-------------------------------|
| * Surface Seal? (Concrete slab)("YES", "NO" or "UNKNOWN")  | YES  |                               |
| * Dimensions of concrete slab: Length(ft)/ Width(ft)/ Thick(in)  | ((38'x25')+(15'x14'))x6"                             |                               |
| * Within 100 year flood plain? ("YES", "NO" or "UNKNOWN")  | NO   |                               |
| * Drainage away from well? ("YES" or "NO")   | YES  |                               |
| <b>ENCLOSURE/HOUSING</b>   |  |                               |
| Enclosure Type (building, vault, none, etc.)   | split-face block building                            |                               |
| Floor material   | concrete   |                               |
| Located in Pit? ("YES" or "NO")  | NO   |                               |
| Pit depth (feet) (if applicable)   | N.A.   |                               |
| <b>WELL CONSTRUCTION</b>   |  |                               |
| Date drilled   | August, 2000   | Actual                        |
| Drilling Method  | rotary   | Actual                        |
| Depth of Bore Hole (feet below ground surface)   | 760  | Estimated <sup>4</sup>        |
| Casing Beginning Depth/Ending Depth (ft below surface);<br>2nd Casing Beginning Depth/Ending Depth; 3rd Casing, etc.                             | 0/90; -21745   | Estimated <sup>4</sup>        |
| Casing Diameter (inches); 2nd Casing Diameter; 3rd Casing, etc.  | 36; 20   | Estimated <sup>4</sup>        |
| Casing Material; 2nd Casing Material; 3rd Casing, etc.   | steel; stainless steel                               | Estimated <sup>4</sup>        |
| Conductor casing used? ("YES", "NO" or "UNKNOWN") (See Note 2)   | YES  |                               |
| Conductor casing removed? ("YES", "NO" or "UNKNOWN")   | NO   |                               |
| * Depth to highest perforations/screens (ft below surface) (or "UNKNOWN")  | 515  | Estimated <sup>4</sup>        |
| Screened Interval Beginning Depth/Ending Depth (ft below surface);<br>2nd Screened Interval Beg. Depth/Ending Depth; 3rd Screened Interval, etc. | 515/530; 550/610; 620/735                            | Estimated <sup>4</sup>        |
| * Total length of screened interval (ft)<br>(default = 10% pump capacity in gpm) (or "UNKNOWN")  | 190  | Estimated <sup>4</sup>        |
| * Annular Seal? ("YES", "NO" or "UNKNOWN") (See Note 3)  | YES  | Estimated <sup>4</sup>        |
| * Depth of Annular Seal (ft)   | 440  | Estimated <sup>4</sup>        |
| Material of Annular Seal (cement grout, bentonite, etc.)   | sand/cement grout                                    | Estimated <sup>4</sup>        |
| Gravel pack, Depth to top (ft below ground surface)  | 440  | Estimated <sup>4</sup>        |
| Total length of gravel pack (ft)   | 320  | Estimated <sup>4</sup>        |
| <b>AQUIFER</b>   |  |                               |
| * Aquifer Materials<br>(list all that apply: sand, silt, clay, gravel, rock, fractured rock)   | sand, gravel, clay, silt                             | Actual                        |

WELL DATA SHEET (Page 3)

Complete as much information as possible. Leave blank if information is not available, use N.A. if not applicable.

\* Indicates items required for Source Water Assessments

\*\* Indicates additional items required for assessments and Ground Water Rule

|   | (separate multiple entries in field with semi-colon) | Actual, Estimated or Default? |
|---|--|-------------------------------|
| * Effective porosity (decimal percent) (default = 0.2) (or "UNKNOWN")           | 0.18   | Estimated                     |
| * Confining layer (Impervious Strata) above aquifer? ("YES", "NO" or "UNKNOWN") | YES  | Actual                        |
| Thickness of confining layer, if known (ft)                                     | 44 (uppermost clay layer)                            | Actual                        |
| Depth to confining layer, if known (ft below ground)                            | 0  | Actual                        |
| * Static water level (ft below ground surface)                                  | 89   | Actual                        |
| Static water level measurement: Date/Method                                     | March 2001/electric sounder                          | Actual                        |
| Pumping water level (ft below ground surface)                                   | 270  | Actual                        |
| Pumping water level measurement: Date/Method                                    | Transducer   | Actual                        |
| <b>WELL PRODUCTION</b>  |  |                               |
| Well Yield (gpm)  | 4000   | Estimated                     |
| Well Yield Based On (i.e., pump test, etc.)                                     | PUMP TEST  | Actual                        |
| Date measured   | March, 2001  | Actual                        |
| Is the well metered? ("YES" or "NO")  | YES  | Actual                        |
| Production (gallons per year)   | 350,400,000 (projected) <sup>2</sup>                 | Estimated                     |
| Frequency of Use (hours/year)   | 1,460 (projected) <sup>3</sup>                       | Estimated                     |
| Typical pumping duration (hours/day)  | zero to 24   | Estimated                     |
| <b>PUMP</b>   |  |                               |
| Make  | Floway   |                               |
| Type  | 16 DKH   |                               |
| Size (hp)   | 600  |                               |
| * Capacity (gpm)  | 4200   | Estimated                     |
| Depth to suction intake (ft below ground surface)                               | 420  | Estimated                     |
| Lubrication Type  | Water Lubrication                                    |                               |
| Type of Power: (i.e., electric, diesel, etc.)                                   | Electric   |                               |
| Auxiliary power available? ("YES" or "NO")                                      | NO   |                               |
| Operation controlled by: (i.e., level in tank, pressure, etc.)                  | Operator Assessment of Demand,                       |                               |
| Pump to Waste capability? ("YES" or "NO")                                       | SCADA  |                               |
| Discharges to: (i.e., distribution system, storage, etc.)                       | YES  |                               |
|   | Distribution System                                  |                               |

WELL DATA SHEET (Page 4)

Complete as much information as possible. Leave blank if information is not available, use N.A. if not applicable.

\* Indicates items required for Source Water Assessment

\*\* Indicates additional items required for assessments and Ground Water Rule

|  | (separate multiple entries in field with semi-colon) | Actual, Estimated or Default? |
|--|--|-------------------------------|
|--|--|-------------------------------|

**NOTES**

1. Neighborhood/Surrounding Area (list all that apply): A= Agricultural, Ru = Rural, Re = Residential, Co = Commercial, I = Industrial, Mu = Municipal, P = Pristine, O = Other  
 2. Conductor Casing - Oversized casing used to stabilize bore hole during well construction. Should be removed during installation of annular seal.  
 3. Annular Seal - Seal of grout in the space between the well casing and the wall of the drilled hole. Sometimes called "sanitary seal".

<sup>1</sup>Plans and Specifications for Construction of Mocho Wells No. 3 and No. 4, Zone 7 Water Agency, January 2000.

<sup>2</sup>Gallons per year calculation (assumes well is pumped 2 months per year at 4000 gpm):  
 $4000 \text{ gal/min} * 60 \text{ min/hour} * 24 \text{ hours/day} * 365 \text{ days/year} * (2/12) = 350,400,000$

<sup>3</sup>Hours per year calculation (assumes well is pumped 2 months per year):  
 $24 \text{ hours/day} * 365 \text{ days/year} * (2/12) = 1,460$

<sup>4</sup>Based on well design specifications; as-built data not available at this time.

# Appendix K

## Possible Contaminating Activities (PCA) Inventory Form

### Ground Water Source

Public water system: Zone 7 Water Agency ID No.: 0110010

Name of source: Mocho Well No. 4 ID No.: 03S/01E-08H18 M

Inventory date: March 2001 Inventory conducted by: EOA, Inc. and Zone 7 Water Agency

Indicate PCAs pertinent to the drinking water source, its source area and protection zones, from the following tables, as applicable:

Commercial/Industrial (Table K-1) X

Residential/Municipal (Table K-2) X

Agricultural/Rural (Table K-3) N.A.

Other (required for all) (Table K-4) X

Is this for a ground water recharge area? NO. (If YES, also use Appendix D, Tables D-1 through D-4, as appropriate)

Attach map of Drinking Water Source with Zones A, B5 and B10 indicated, and buffer zones (if defined).

Attached

Proceed to appropriate checklist or checklists. Place a mark in the appropriate boxes.

Example:

|  |  |   |
|--|--|---|
|  |  |   |
|  |  | X |
|  |  |   |

Risk Ranking of PCAs (see Tables 7-2, 7-3, 7-4 and 7-5 for separate category lists), where VH = Very High Risk, H = High Risk, M = Moderate Risk, L = Low Risk



**PCA Checklist**  
**Table K-1, page 1 of 2**

**COMMERCIAL/INDUSTRIAL**

| PCA (Risk Ranking)                         | No PCA in zones | PCA in Zone A? | PCA in Zone B5? | PCA in Zone B10? | Unknown | Comments  |
|--|-----------------|----------------|-----------------|------------------|---------|---|
| <b>Automobile-related activities</b>       |                 |                |                 |                  |         |   |
| Body shops (H)                             | X               |                |                 |                  |         |   |
| Car washes (M)                             | X               |                |                 |                  |         |   |
| Gas stations (VH)                          |                 |                | X               |                  |         | Valero gas station at 3192 Santa Rita Rd. (formerly Exxon, a fuel leak site). |
| Repair shops (H)                           | X               |                |                 |                  |         |   |
| Boat services/repair/refinishing (H)       | X               |                |                 |                  |         |   |
| Chemical/petroleum processing/storage (VH) | X               |                |                 |                  |         |   |
| Chemical/petroleum pipelines (H)           |                 | X              | X               | X                |         | High-pressure fuel line along old SP line.                                    |
| Dry cleaners (VH)                          |                 |                | X               |                  |         |   |
| Electrical/electronic manufacturing (H)    | X               |                |                 |                  |         |   |
| Fleet/truck/bus terminals (H)              | X               |                |                 |                  |         |   |
| Furniture repair/manufacturing (H)         | X               |                |                 |                  |         |   |
| Home manufacturing (H)                     | X               |                |                 |                  |         |   |
| Junk/scrap/salvage yards (H)               | X               |                |                 |                  |         |   |
| Machine shops (H)                          |                 |                |                 | X                |         |   |
| Metal plating/finishing/fabricating (VH)   | X               |                |                 |                  |         |   |
| Photo processing/printing (H)              |                 | X              |                 |                  |         |   |
| Plastics/synthetics producers (VH)         | X               |                |                 |                  |         |   |
| Research laboratories (H)                  | X               |                |                 |                  |         |   |
|  |                 |                |                 |                  |         |   |

**PCA Checklist**  
**Table K-1, page 2 of 2**

**COMMERCIAL/INDUSTRIAL**

| PCA (Risk Ranking)                                      | No PCA in zones | PCA in Zone A? | PCA in Zone B5? | PCA in Zone B10? | Unknown | Comments |
|---|-----------------|----------------|-----------------|------------------|---------|----------|
| Wood preserving/treating (H)                            | X               |                |                 |                  |         |          |
| Wood/pulp/paper processing and mills (H)                | X               |                |                 |                  |         |          |
| Lumber processing and manufacturing (H)                 | X               |                |                 |                  |         |          |
| Sewer collection systems (H, if in Zone A, otherwise L) |                 | X              | X               | X                |         |          |
|   |                 |                |                 |                  |         |          |
| Parking lots/malls (>50 spaces) (M)                     |                 | X              | X               | X                |         |          |
| Cement/concrete plants (M)                              | X               |                |                 |                  |         |          |
| Food processing (M)                                     |                 |                |                 | X                |         |          |
| Funeral services/graveyards (M)                         | X               |                |                 |                  |         |          |
| Hardware/lumber/parts stores (M)                        | X               |                |                 |                  |         |          |
|   |                 |                |                 |                  |         |          |
| Appliance/Electronic Repair (L)                         | X               |                |                 |                  |         |          |
| Office buildings/complexes (L)                          |                 | X              | X               | X                |         |          |
| Rental Yards (L)  | X               |                |                 |                  |         |          |
| RV/mini storage (L)                                     | X               |                |                 |                  |         |          |
|   |                 |                |                 |                  |         |          |
| Other (list)  |                 |                |                 |                  |         |          |
|   |                 |                |                 |                  |         |          |
|   |                 |                |                 |                  |         |          |
|   |                 |                |                 |                  |         |          |
|   |                 |                |                 |                  |         |          |

**PCA Checklist**  
**Table K-2, page 1 of 2**

| <b>RESIDENTIAL/MUNICIPAL</b>   |                 |                |                 |                  |         |          |
|--|-----------------|----------------|-----------------|------------------|---------|----------|
| PCA (Risk Ranking)   | No PCA in zones | PCA in Zone A? | PCA in Zone B5? | PCA in Zone B10? | Unknown | Comments |
| Airports - Maintenance/ fueling areas (VH)                               | X               |                |                 |                  |         |          |
| Landfills/dumps (VH)   | X               |                |                 |                  |         |          |
| Railroad yards/ maintenance/ fueling areas (H)                           | X               |                |                 |                  |         |          |
| Septic systems - high density (>1/acre) (VH if in Zone A, otherwise M)   | X               |                |                 |                  |         |          |
| Sewer collection systems (H, if in Zone A, otherwise L)                  |                 | X              | X               | X                |         |          |
| Utility stations - maintenance areas (H)                                 | X               |                |                 |                  |         |          |
| Wastewater treatment and disposal facilities (VH in Zone A, otherwise H) | X               |                |                 |                  |         |          |
|  |                 |                |                 |                  |         |          |
| Drinking water treatment plants (M)                                      | X               |                |                 |                  |         |          |
| Golf courses (M)   | X               |                |                 |                  |         |          |
| Housing - high density (>1 house/0.5 acres) (M)                          |                 | X              | X               | X                |         |          |
| Motor pools (M)  | X               |                |                 |                  |         |          |
| Parks (M)  |                 | X              | X               | X                |         |          |
| Waste transfer/recycling stations (M)                                    | X               |                |                 |                  |         |          |
|  |                 |                |                 |                  |         |          |

**PCA Checklist**  
**Table K-2, page 2 of 2**

**RESIDENTIAL/MUNICIPAL**

| PCA (Risk Ranking)                     | No PCA in zones | PCA in Zone A? | PCA in Zone B5? | PCA in Zone B10? | Unknown | Comments                                   |
|--|-----------------|----------------|-----------------|------------------|---------|--|
| Apartments and condominiums (L)        |                 | X              | X               | X                |         |  |
| Campgrounds/<br>Recreational areas (L) | X               |                |                 |                  |         |  |
| Fire stations (L)                      |                 |                | X               |                  |         | LPPD Fire Station No. 3, a fuel leak site. |
| RV Parks (L)                           | X               |                |                 |                  |         |  |
| Schools (L)                            |                 |                |                 | X                |         |  |
| Hotels, Motels (L)                     | X               |                |                 |                  |         |  |
|  |                 |                |                 |                  |         |  |
| Other (list)                           |                 |                |                 |                  |         |  |
|  |                 |                |                 |                  |         |  |
|  |                 |                |                 |                  |         |  |
|  |                 |                |                 |                  |         |  |
|  |                 |                |                 |                  |         |  |
|  |                 |                |                 |                  |         |  |
|  |                 |                |                 |                  |         |  |
|  |                 |                |                 |                  |         |  |

**PCA Checklist**  
**Table K-4, page 1 of 3**

**OTHER ACTIVITIES**

| PCA (Risk Ranking)   | No PCA in zones | PCA in Zone A? | PCA in Zone B5? | PCA in Zone B10? | Unknown | Comments  |
|--|-----------------|----------------|-----------------|------------------|---------|---|
| NPDES/WDR permitted discharges (H)                             |                 |                |                 |                  | X       |   |
| Underground Injection of Commercial/Industrial Discharges (VH) |                 |                |                 |                  | X       |   |
| Historic gas stations (VH)                                     |                 |                |                 |                  | X       |   |
| Historic waste dumps/landfills (VH)                            | X               |                |                 |                  |         |   |
| Illegal activities/unauthorized dumping (H)                    |                 |                |                 |                  | X       |   |
| Injection wells/ dry wells/ sumps (VH)                         | X               |                |                 |                  |         |   |
| Known Contaminant Plumes (VH)                                  |                 |                | X               |                  |         | 3192 Santa Rita Rd. (formerly Exxon, a fuel leak site). |
| Military installations (VH)                                    | X               |                |                 |                  |         |   |
| Mining operations - Historic (VH)                              | X               |                |                 |                  |         |   |
| Mining operations - Active (VH)                                | X               |                |                 |                  |         |   |
| Mining - Sand/Gravel (H)                                       | X               |                |                 |                  |         |   |
| Wells - Oil, Gas, Geothermal (H)                               | X               |                |                 |                  |         |   |
| Salt Water Intrusion (H)                                       | X               |                |                 |                  |         |   |
| Recreational area— surface water source (H)                    | X               |                |                 |                  |         |   |

**PCA Checklist**  
**Table K-4 , page 2 of 3**  
**OTHER ACTIVITIES**

| PCA (Risk Ranking)  | No PCA in zones | PCA in Zone A? | PCA in Zone B5? | PCA in Zone B10? | Unknown | Comments   |
|---|-----------------|----------------|-----------------|------------------|---------|--|
| <b>Underground storage tanks</b>                              |                 |                |                 |                  |         |  |
| Confirmed leaking tanks (VH)                                  |                 |                | X               |                  |         | Tanks were removed from 3192 Santa Rita Rd. (formerly Exxon) and LPFD Fire Station No. 3.                    |
| Decommissioned - inactive tanks (L)                           |                 |                |                 |                  | X       |  |
| Non-regulated tanks (tanks smaller than regulatory limit) (H) |                 |                |                 |                  | X       |  |
| Not yet upgraded or registered tanks (H)                      |                 |                |                 |                  | X       |  |
| Upgraded and/or registered - active tanks (L)                 |                 |                | X               | X                |         | Valley Care Medical Center and Valero gas station at 3192 Santa Rita Rd. (formerly Exxon, a fuel leak site). |
| Above ground storage tanks (M)                                |                 |                | X               |                  |         | AT&T at 2166 Rheem Dr. and Valero gas station at 3192 Santa Rita Rd. (formerly Exxon, a fuel leak site).     |
| Wells – Water supply (M)                                      |                 | X              |                 |                  |         |  |
| Construction/demolition staging areas (M)                     | X               |                |                 |                  |         |  |
| Contractor or government agency equipment storage yards (M)   |                 |                |                 | X                |         |  |
| Dredging (M)  | X               |                |                 |                  |         |  |
| <b>Transportation corridors</b>                               |                 |                |                 |                  |         |  |
| Freeways/state highways (M)                                   | X               |                |                 |                  |         |  |
| Railroads (M)   | X               |                |                 |                  |         |  |
| Historic railroad right-of-ways (M)                           |                 | X              | X               | X                |         |  |
| Road Right-of-ways (herbicide use areas) (M)                  |                 | X              | X               | X                |         |  |
| Roads/ Streets (L)  |                 | X              | X               | X                |         |  |

**PCA Checklist**  
**Table K-4, page 3 of 3**

**OTHER ACTIVITIES**

| PCA (Risk Ranking)                       | No PCA in zones | PCA in Zone A? | PCA in Zone B5? | PCA in Zone B10? | Unknown | Comments                  |
|--|-----------------|----------------|-----------------|------------------|---------|---------------------------|
| Hospitals (M)                            |                 |                |                 | X                |         |                           |
| Storm Drain Discharge Points (M)         |                 |                |                 |                  | X       |                           |
| Storm Water Detention Facilities (M)     | X               |                |                 |                  |         |                           |
| <b>Artificial Recharge Projects</b>      |                 |                |                 |                  |         |                           |
| Injection wells (potable water) (L)      |                 | X              |                 |                  |         | Mocho Wells 3 and 4 (ASR) |
| Injection wells (non-potable water) (M)  | X               |                |                 |                  |         |                           |
| Spreading Basins (potable water) (L)     | X               |                |                 |                  |         |                           |
| Spreading Basins (non-potable water) (M) | X               |                |                 |                  |         |                           |
| Medical/dental offices/clinics (L)       |                 |                | X               |                  |         |                           |
| Veterinary offices/clinics (L)           |                 |                | X               |                  |         |                           |
| Surface water - streams/lakes/rivers (L) |                 | X              | X               | X                |         |                           |
| Wells - monitoring, test holes (L)       |                 | X              | X               | X                |         |                           |
| Other (list)                             |                 |                |                 |                  |         |                           |
|  |                 |                |                 |                  |         |                           |
|  |                 |                |                 |                  |         |                           |
|  |                 |                |                 |                  |         |                           |
|  |                 |                |                 |                  |         |                           |
|  |                 |                |                 |                  |         |                           |
|  |                 |                |                 |                  |         |                           |
|  |                 |                |                 |                  |         |                           |

## Appendix M

### Vulnerability Analysis Procedures – Ground Water Source

The Vulnerability analysis incorporates the types of Possible Contaminating Activities (PCAs) identified in the inventory, their respective Risk Rankings, the Zone and the Physical Barrier Effectiveness determination. These factors are used to develop a prioritized listing of types of PCAs and to determine the types of PCAs to which the drinking water source is most vulnerable.

Public water system: Zone 7 Water Agency ID No.: 0110010

Name of source: Mocho Well No. 4 ID No.: 03S/01E-08H18 M

Assessment date: March, 2001 Assessment conducted by: EOA, Inc.

Vulnerability analysis steps:

1. For each type of PCA identified as existing in the protection zones, or as unknown, determine the number of PCA risk ranking points for that type of PCA. (If the risk ranking for a type of PCA has been modified, Appendix E should be attached). *(For example, Very High (VH) risk activities are 7 points.)*
2. For each type of PCA determine the zone in which it occurs (if zones are defined, or within the watershed if zones are not defined). Add the points associated with that zone to the PCA risk ranking points. If the type of PCA exists within more than one zone, repeat the process for each zone. *(For example, if a type of PCA exists in Zone A add 5 points. For a VH risk PCA in Zone A, the PCA Risk Ranking points + Zone points = 7 + 5 = 12 points.)*
3. Determine the Physical Barrier Effectiveness (PBE) for the drinking water source (from Appendix J). Add the points associated with that PBE to the PCA risk ranking and zone points. The total is the Vulnerability Score. *(For example, if the PBE is Low add 5 points. For a VH risk PCA in Zone A, the Vulnerability Score = PCA Risk Ranking points + Zone points + PBE points = 7 + 5 + 5 = 17 points.)*
4. Prioritize all types of PCAs by the Vulnerability Score, from the most points to the least. A sample form is shown below.
5. The drinking water source is vulnerable to all types of PCAs with a Vulnerability Score of 8 or greater. Refer to the Vulnerability Matrix below. The source is most vulnerable to the types of PCAs with the highest score.
6. **In addition, the Drinking Water Source is most vulnerable to all types of PCAs associated with a contaminant detected in the water source, regardless of Vulnerability Score.**



Mocho Well No. 4

Prioritized List of Possible Contaminating Activities (PCAs)

| Zone    | Type of PCA   | PCA Points                        | Zone Points                               | PBE Points              | Vulnerability Score                               |
|---------|---|-----------------------------------|---|-------------------------|---|
|         |   | VH = 7<br>M = 3<br>L = 1<br>H = 5 | A = 5<br>B10 = 1<br>Unknown = 0<br>B5 = 3 | L = 5<br>H = 1<br>M = 3 | plus Zone points<br>plus PBE points<br>PCA points |
| A       | Chemical/petroleum pipelines                            | 5                                 | 5   | 3                       | 13  |
| B5      | Confirmed leaking tanks                                 | 7                                 | 3   | 3                       | 13  |
| B5      | Dry cleaners  | 7                                 | 3   | 3                       | 13  |
| B5      | Gas stations  | 7                                 | 3   | 3                       | 13  |
| B5      | Known contaminant plumes                                | 7                                 | 3   | 3                       | 13  |
| A       | Photo processing/printing                               | 5                                 | 5   | 3                       | 13  |
| A       | Sewer collection systems (Com/Ind)                      | 5                                 | 5   | 3                       | 13  |
| A       | Sewer collection systems (Res/Mun)                      | 5                                 | 5   | 3                       | 13  |
| B5      | Chemical/petroleum pipelines                            | 5                                 | 3   | 3                       | 11  |
| A       | Historic railroad right-of-ways                         | 3                                 | 5   | 3                       | 11  |
| A       | Housing - high density (>1 house/0.5 acres)             | 3                                 | 5   | 3                       | 11  |
| A       | Parking lots/malls (>50 spaces)                         | 3                                 | 5   | 3                       | 11  |
| A       | Parks   | 3                                 | 5   | 3                       | 11  |
| A       | Road right-of-ways (herbicide use areas)                | 3                                 | 5   | 3                       | 11  |
| A       | Wells - water supply                                    | 3                                 | 5   | 3                       | 11  |
| Unknown | Historic gas stations                                   | 7                                 | 0   | 3                       | 10  |
| Unknown | Underground injection of com/ind discharges             | 7                                 | 0   | 3                       | 10  |
| B5      | Above ground storage tanks                              | 3                                 | 3   | 3                       | 9   |
| A       | Apartments and condominiums                             | 1                                 | 5   | 3                       | 9   |
| B10     | Chemical/petroleum pipelines                            | 5                                 | 1   | 3                       | 9   |
| B5      | Historic railroad right-of-ways                         | 3                                 | 3   | 3                       | 9   |
| B5      | Housing - high density (>1 house/0.5 acres)             | 3                                 | 3   | 3                       | 9   |
| A       | Injection wells (potable water)                         | 1                                 | 5   | 3                       | 9   |
| B10     | Machine shops   | 5                                 | 1   | 3                       | 9   |
| A       | Office buildings/complexes                              | 1                                 | 5   | 3                       | 9   |
| B5      | Parking lots/malls (>50 spaces)                         | 3                                 | 3   | 3                       | 9   |
| B5      | Parks   | 3                                 | 3   | 3                       | 9   |
| B5      | Road right-of-ways (herbicide use areas)                | 3                                 | 3   | 3                       | 9   |
| A       | Roads/streets   | 1                                 | 5   | 3                       | 9   |
| A       | Surface water - streams/lakes/rivers                    | 1                                 | 5   | 3                       | 9   |
| A       | Wells - monitoring, test holes                          | 1                                 | 5   | 3                       | 9   |
| Unknown | Illegal activities/unauthorized dumping                 | 5                                 | 0   | 3                       | 8   |
| Unknown | Non-regulated tanks                                     | 5                                 | 0   | 3                       | 8   |
| Unknown | Not yet upgraded or registered tanks                    | 5                                 | 0   | 3                       | 8   |
| Unknown | NPDES/WDR permitted discharges                          | 5                                 | 0   | 3                       | 8   |
| B5      | Apartments and condominiums                             | 1                                 | 3   | 3                       | 7   |
| B10     | Contractor or government agency equipment storage yards | 3                                 | 1   | 3                       | 7   |
| B5      | Fire Stations   | 1                                 | 3   | 3                       | 7   |
| B10     | Food Processing   | 3                                 | 1   | 3                       | 7   |
| B10     | Historic railroad right-of-ways                         | 3                                 | 1   | 3                       | 7   |
| B10     | Hospitals   | 3                                 | 1   | 3                       | 7   |
| B10     | Housing - high density (>1 house/0.5 acres)             | 3                                 | 1   | 3                       | 7   |
| B5      | Medical/dental offices/clinics                          | 1                                 | 3   | 3                       | 7   |
| B5      | Office buildings/complexes                              | 1                                 | 3   | 3                       | 7   |
| B10     | Parking lots/malls (>50 spaces)                         | 3                                 | 1   | 3                       | 7   |

Mocho Well No. 4

Prioritized List of Possible Contaminating Activities (PCAs)

| Zone    | Type of PCA                               | PCA Points                        | Zone Points                               | PBE Points              | Vulnerability Score                               |
|---------|---|-----------------------------------|---|-------------------------|---|
|         |   | VH = 7<br>M = 3<br>L = 1<br>H = 5 | A = 5<br>B10 = 1<br>Unknown = 0<br>B5 = 3 | L = 5<br>H = 1<br>M = 3 | plus Zone points<br>plus PBE points<br>PCA points |
| B10     | Parks                                     | 3                                 | 1   | 3                       | 7   |
| B10     | Road right-of-ways (herbicide use areas)  | 3                                 | 1   | 3                       | 7   |
| B5      | Roads/streets                             | 1                                 | 3   | 3                       | 7   |
| B5      | Sewer collection systems (Com/Ind)        | 1                                 | 3   | 3                       | 7   |
| B5      | Sewer collection systems (Res/Mun)        | 1                                 | 3   | 3                       | 7   |
| B5      | Surface water - streams/lakes/rivers      | 1                                 | 3   | 3                       | 7   |
| B5      | Upgraded and/or registered - active tanks | 1                                 | 3   | 3                       | 7   |
| B5      | Veterinary offices/clinics                | 1                                 | 3   | 3                       | 7   |
| B5      | Wells - monitoring, test holes            | 1                                 | 3   | 3                       | 7   |
| Unknown | Storm drain discharge points              | 3                                 | 0   | 3                       | 6   |
| B10     | Apartments and condominiums               | 1                                 | 1   | 3                       | 5   |
| B10     | Office buildings/complexes                | 1                                 | 1   | 3                       | 5   |
| B10     | Roads/streets                             | 1                                 | 1   | 3                       | 5   |
| B10     | Schools                                   | 1                                 | 1   | 3                       | 5   |
| B10     | Sewer collection systems (Com/Ind)        | 1                                 | 1   | 3                       | 5   |
| B10     | Sewer collection systems (Res/Mun)        | 1                                 | 1   | 3                       | 5   |
| B10     | Surface water - streams/lakes/rivers      | 1                                 | 1   | 3                       | 5   |
| B10     | Upgraded and/or registered - active tanks | 1                                 | 1   | 3                       | 5   |
| B10     | Wells - monitoring, test holes            | 1                                 | 1   | 3                       | 5   |
| Unknown | Decommissioned - inactive tanks           | 1                                 | 0   | 3                       | 4   |

Note: PCAs with a vulnerability score of 8 or higher are shaded.

F:\ZN08\Zn08-04\reports\mocho pca listings and well data sheets.xls\mocho 4 pca listing

## Appendix N

### Checklist for Drinking Water Source Assessment – Ground Water Source

Public water system: Zone 7 Water Agency ID No.: 0110010

Name of source: Mocho Well No. 4 ID No.: 03S/01E-08H18 M

Assessment date: March, 2001 Assessment conducted by: EOA, Inc.

The following information should be contained in the drinking water source assessment submittal.

If another report that is the functional equivalent to the drinking water assessment (e.g., parts of a Ground Water Management Plan) is included in this assessment, the part of that report that fulfills the components of the source water assessment should be clearly indicated.

Source name, system name, source and system identification numbers, date of assessment, name of person and/or organization conducting the assessment (Appendix N, this form)

Assessment map with source location, source area (if known), and protection zones.

Drinking water source location coordinates and accuracy of method used (Appendix H or equivalent)

Delineation of protection zones (Appendix I or equivalent)

Drinking water Physical Barrier Effectiveness Checklist (Appendix J)

Well Data Sheet

Possible contaminating activities (PCA) inventory form (Appendix K).

Possible contaminating activities evaluation (optional) (Appendix L)

Vulnerability ranking (Appendix M)

Additional maps (optional) (e.g. local maps of zones and PCAs, recharge area maps, or maps indicating direction of ground water flow)

Means of Public Availability of Report (indicate those that will be used)

Notice in the annual consumer confidence report\* (minimum)

Copy in DHS district office (minimum)

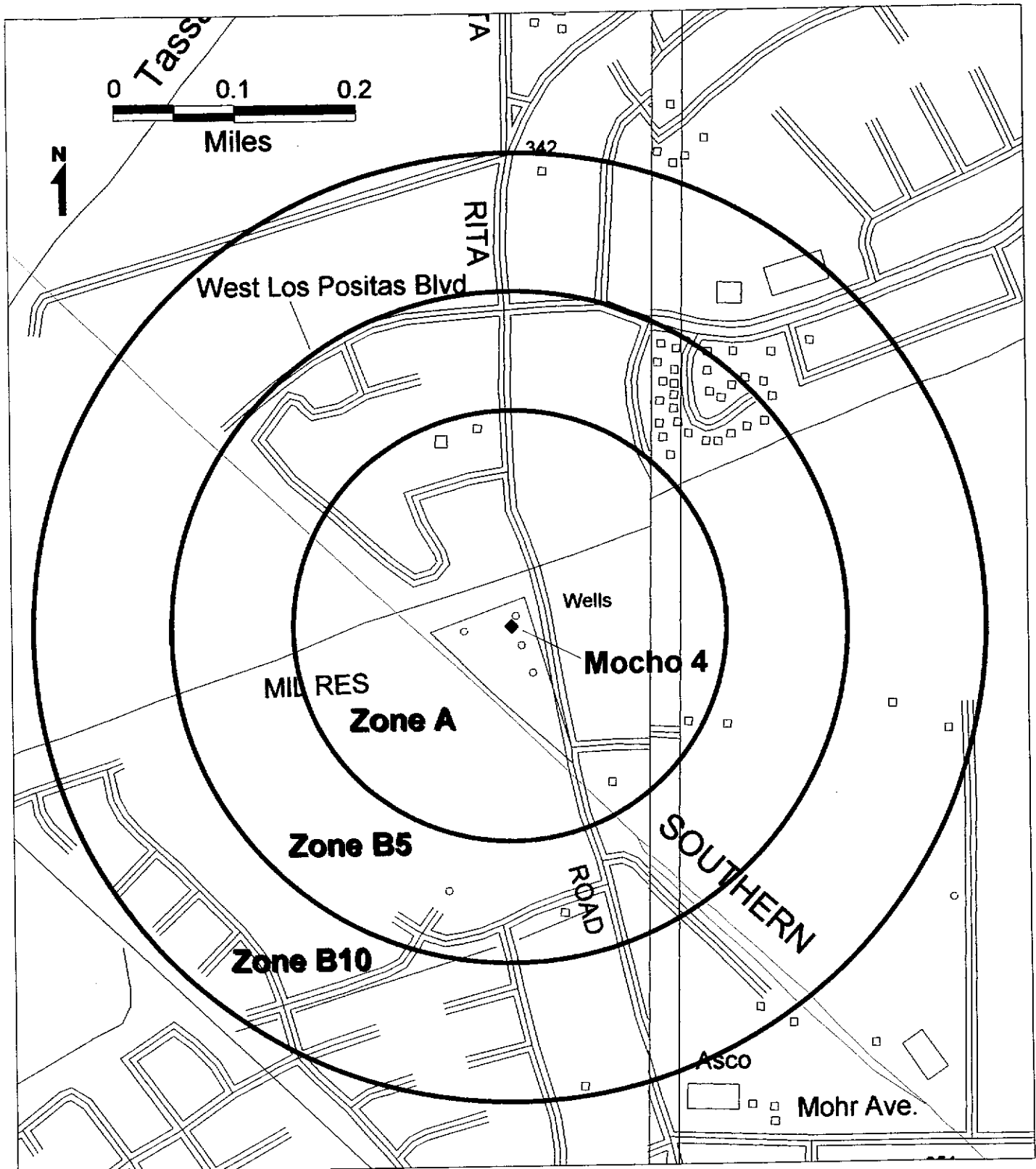
Copy in public water system office (recommended)

Copy in public library/libraries

Internet (indicate Internet address: \_\_\_\_\_)

Other (describe)

\*The annual report should indicate where customers can review the assessments.



**Drinking Water Source Assessment Map  
Zone 7 Water Agency Mocho Well No. 4  
JUNE 2001**