**NEWFLO Corporation**
80 E. Sir Francis Drake Boulevard, Suite One
Larkspur, CA 94939
(415) 925-3100
Fax: (415) 925-3111

ALCO
HAZMAT

94 JUN 14 AM 11:29

**John D. Lilla**
Vice President
Human Resources and Risk Management

June 13, 1994

Ms. Eva Chu
Hazardous Waste Specialist
Department of Environmental Health
Alameda County Health Care Services Agency
80 Swan Way, Room 200
Oakland, CA 94621

SUBJECT: Submittal of Work Plan for Installation of Monitoring Well 9MW5 and Request for Better Groundwater Characterization by Saint Vincent DePaul

PROJECT: PACO Pumps, Inc.
9201 San Leandro Street
Oakland, CA 94603

Dear Ms. Chu:

We are pleased to submit the attached Work Plan for Installation of Monitoring Well 9MW5 at PACO Pumps' facility at 9201 San Leandro Street, located in Oakland, California. This Work Plan is in accordance with your May 4, 1994 letter titled "Additional Investigation at the Former PACO Pumps, Inc., 9201 San Leandro Street, Oakland 94603." Please relay your approval of the document or any comments you may have to our consultant, Jonas and Associates, Inc., through Mr. Mark Jonas (510-933-5360). As soon as your agency has determined that the Work Plan is acceptable, our consultant will submit the Drilling Permit Application to Zone 7 Alameda County. After we have received their approval, we will then have the monitoring well installed. We anticipate having this new well included in the August, 1994 groundwater sampling round.

As you are aware, we have been diligently performing soil and groundwater characterization and excavation activities at the PACO Pumps facility. Our concern is that we consider Saint Vincent DePaul has been relatively slow in the adequate characterization of their site. In particular, we are not aware that any groundwater monitoring wells have been installed, even though significant concentrations of trichloroethene, methylene chloride, lead, total oil and grease, TEPH as Diesel, and TEPII as Motor Oil, along with benzene, toluene, ethyl benzene, total zylenes, and chlorobenzene have been detected in soil on their site (Subsurface Consultant, December 16, 1992). Additional analytes may have been subsequently

detected, but we do not have any more current reports, if they are available. As you are aware, it appears that Saint Vincent DePaul is apparently upgradient from the PACO Pumps facility. Therefore, groundwater which may have been contaminated by Saint Vincent DePaul could enter into groundwater underlying the PACO Pumps facility. We have been detecting various chlorinated solvents (TCE, 1,1-DCA, 1,2-DCA) in groundwater under the PACO Pumps facility that may be associated with contamination at the Saint Vincent DePaul facility. During our last round of groundwater samples, collected on May 26, 1994, three of the four monitoring wells contained detectable concentration of chlorinated solvents. This included the upgradient well adjacent to the fence line with Saint Vincent DePaul.

Therefore, we respectfully request that your agency direct Saint Vincent DePaul to install at least three monitoring wells, and if analytes are detected, then they should install additional wells. In particular, since the highest concentrations of chlorinated solvents appear to be present in our monitoring well 9MW3, that we request that Saint Vincent DePaul should install a monitoring well upgradient of 9MW3 in an area near their fence line between the two properties. In addition, because chlorinated solvents have been detected on their facility, they should have their groundwater samples analyzed for Volatile Organic Compounds, in addition to testing for any other analytes that were previously found in their soil or water samples. To discuss this issue further, we are proposing a meeting with you, our consultant, and the agency project manager for the Saint Vincent DePaul site.

We welcome your support on this issue. Please contact us at your convenience if you would like to discuss either the Work Plan or the request for Saint Vincent DePaul to adequately characterize their underlying groundwater.

Sincerely,

/fa
Attach: June 13, 1994 "Work Plan - Installation of Monitoring Well 9MW5, PACO Pumps, 9201 San Leandro Street, Oakland, California"
cc - Mark Jonas, Jonas & Associates, Inc.

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

RAFAT A. SHAHID, ASST. AGENCY DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
State Water Resources Control Board
Division of Clean Water Programs
UST Local Oversight Program
80 Swan Way, Rm 200
Oakland, CA 94621
(510) 271-4530

StID 4245

May 4, 1994

Mr. John Lilla
Newflo Corporation
80 E. Sir Francis Drake Blvd, Suite 1
Larkspur, CA 94939

**Subject: Additional Investigation at the Former Paco Pumps, Inc, 9201 San Leandro St., Oakland 94603**

Dear Mr. Lilla:

I have completed review of Jonas & Associates' April 1994 Ground Water Monitoring Report for the above referenced site. This report summarized the results of groundwater sampling to date at the site.

At this time additional investigations are required to delineate the extent of the groundwater contaminant plume. Monitoring well MW-3 is detecting elevated levels of petroleum hydrocarbons (up to 40,000 ppb TPH-G, 2,900 ppb benzene), and low levels of chlorinated hydrocarbons. At least one well is required, downgradient from well MW-3. Please submit a workplan for this phase of the investigation **within 45 days of the date of this letter.**

Also, the next round of sampling should include the analysis for chlorinated hydrocarbons from all monitoring wells. This would help to assess whether chlorinated hydrocarbons are from an offsite source, and/or a common problem in the general vicinity.

**Please be advised that this is a formal request for technical reports pursuant to Title 23, CCR, Section 2722(c). Any extensions of the stated deadlines, or modifications of the required tasks, must be confirmed in writing by this agency.**

Should you have any questions about the content of this letter, please contact me at (510) 271-4530.

eva chu
Hazardous Materials Specialist

cc: Mark Jonas, 2815 Mitchell Dr, Suite 209, Walnut Creek 94598
files

paco1.1

# WORK PLAN
## Installation of Monitoring Well 9MW5

**PACO PUMPS, INC.**
**9201 San Leandro Street**
**Oakland, California**

**June 13, 1994**

Report Prepared for:

PACO PUMPS, INC.
9201 San Leandro Street
Oakland, California 94603-1237

**WORK PLAN**
**Installation of Monitoring Well 9MW5**
**PACO PUMPS, INC.**
**9201 San Leandro Street, Oakland, California**

Jonas and Associates Inc. Job No. PCO-220

Prepared by:

Mr. Mark L. Jonas
Principal Hydrogeologist
Jonas and Associates Inc.
2815 Mitchell Drive, Suite 209
Walnut Creek, California 94598
(510) 933-5360

Technical Review by:

Dr. Vida G. Wright, P.E.
Professional Engineer #C042147

June 13, 1994

# WORK PLAN
## Installation of Monitoring Well 9MW5

**PACO PUMPS, INC.**
**9201 San Leandro Street**
**Oakland, California**

**June 13, 1994**

**Prepared for:**

**PACO PUMPS, INC.**
**Oakland, California**

**Prepared by:**

**Jonas and Associates Inc.**
**Walnut Creek, California**
**(510) 933-5360**

WORK PLAN
Installation of Monitoring Well 9MW5

PACO PUMPS, INC.
9201 San Leandro Street
Oakland, California

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# WORK PLAN
## Installation of Monitoring Well 9MW5

PACO PUMPS, INC.
9201 San Leandro Street
Oakland, California
June 13, 1994

## 1.0 INTRODUCTION

Jonas and Associates Inc. (J&A) has been requested by PACO Pumps Inc. (PACO or PACO Pumps) to submit this Work Plan for installation of a fifth monitoring well at their 9201 San Leandro Street facility, located in Oakland, California. Figure 1 identifies the regional location of the Paco Pumps facility. Once it is installed, this fifth monitoring well will be identified as 9MW5. Upon approval of the Work Plan by Alameda County Health Care Services Agency, we will then submit the Drilling Permit Application to Zone 7 Alameda County. We anticipate that monitoring well 9MW5 be installed within ten working days after approval by Zone 7 Alameda County. The well will then be sampled in August 1994 as part of the facility's monitoring program.

The rationale and construction details associated with the installation of monitoring well 9MW5 are presented in Sections 2 and 3. This is then followed by a discussion on sampling of monitoring well 9MW5 and well installation documentation. Relevant references are also provided. Figures are presented as attachments in Appendix A. A copy of the Zone 7 Alameda County Drilling Permit Application and Ordinance 73-68 is presented in Appendix B.

The lead agency for this project is the Alameda County Health Care Services Agency, Department of Environmental Health, Hazardous Division (Alameda County Health Services). The address of Alameda County Health Services is 80 Swan Way, Room 200, Oakland, California 94621. The agency representative is Ms. Eva Chu {(510) 271-4530}. PACO Pumps' environmental representative for this project is Mr. John Lilla {(415) 925-3100}.

## 2.0 RATIONAL FOR INSTALLING 9MW5

After reviewing the Jonas & Associates Inc., April 15, 1994, "Groundwater Monitoring Report, Sampling Rounds One Through Four" Ms. Eva Chu, of Alameda County Health Services, stated the following in a May 4, 1994 letter:

> *"At this time additional investigations are required to delineate the extent of the groundwater contaminant plume. Monitoring well MW-3 {9MW3} is detecting elevated levels of petroleum hydrocarbons (up to 40,000 ppb TPH-G, 2,900 ppb benzene), and low levels of chlorinated hydrocarbons. At least one well is required, downgradient from well MW-3"*

This requirement by the lead agency presents the rationale for installation of the proposed monitoring well 9MW5.

An active groundwater investigation is being performed at the site under guidance from Alameda Health Care Services Agency. Currently, four monitoring wells exist at the site and these have been sampled for five rounds. The results of the first four rounds are presented in documents referenced in Section 5, REFERENCES, of this report. These reports present both analytical results and potentiometric/water table information. The most recent sampling event occurred on May 26, 1994. As attachments to this report, Figure 2 presents the analytical results of the most recent sampling round and Figure 3 present the associated potentiometric/water table results. This information forms the basis for the construction and the selection of the location for the proposed monitoring well, along with the analytical tests to be perform on groundwater samples.

## 3.0 PROPOSED CONSTRUCTION OF MONITORING WELL 9MW5

Prior to the mobilization of the drilling rig at the facility, a Drilling Permit Application will be submitted and approved by Zone 7 Alameda County. Forty-eight hours prior to drilling, J&A will contact the Underground Service Alert at (800) 642-2444 so they can survey for known utilities. Even with performance of the utility survey, the drillers will be advised to exercise caution when drilling. It is currently anticipated that drilling and monitoring well installation will be performed by Advance Drilling Company Inc. (ADC). Figure 4 presents the locations of the current monitoring wells and the proposed monitoring well 9MW5.

Prior to drilling, an exclusion zone will be defined with barriers and caution tape. An Organic Vapor Meter (OVM) will be used for air monitoring. Prior to its usage the OVM will be calibrated. Air sampling stations will be sampled periodically, with one station located at the borehole at a height of approximately three feet. The other air sampling locations will be at the boundary and beyond the exclusion zone. All measurements will be recorded in the field log book.

ADC will use a CME-75 drilling rig with a hollow-stem auger with an approximate diameter of 8.5-inches. A bit is attached to the bottom of the auger flight. Cuttings created by the bit will be removed by the scroll as the stem of the auger turns. The cuttings will be collected in 55-gallon drums and will be set aside for proper disposal.

Figure 5 provides a graphic representation of the proposed construction details of monitoring well 9MW5. After penetrating the pavement, the borehole will be completed down to approximately 21 feet below ground surface (bgs). As stated previously, the borehole diameter will be approximately 8.5-inches. During drilling, soil samples will

be collected at various depths to characterize the lithology using the Unified Soil Classification System. After the borehole is completed, #3 sand will be placed into the borehole through an approximate depth range of 20.25 to 21 feet. A weighted measuring tape will be used to measure the depths of the various materials being placed into the borehole. Prior to placing a four-inch diameter Schedule 40 PVC 0.02-inch screen and casing blank into the hole, they will be removed from their protective packing material and then screwed together. All joints will be flush threaded and no solvents or cements will be used on the PVC. At the bottom, a cap will be screwed to 15 feet of screen. Approximately five feet of Schedule 40 PVC blank will be attached to the screen for the riser. The cap, screen, and riser will be centered in the hole and placed on the #3 sand at the base of the borehole. Therefore, with the screen and riser installed in the borehole, the screen depth will range from approximately 5.25 to 20.25 feet bgs.

After placing the cap, screen, and riser into the hole, #3 sand will be placed into the outer annular space as a filter pack up to a depth of approximately 4.25 feet bgs. A bentonite seal will be placed into the hole from approximately 3.75 to 4.25 feet, using one-half inch pellets. Portland Cement with approximately 5% bentonite will be used to finish the seal from approximately 3.75 feet to just below the surface. A christy-box will be installed in Portland Cement, with the top at the same elevations as the surrounding land. The monitoring well will be locked and the top of the christy-box bolted down.

It is anticipated that a screen set from a depth of 5.25 to 20.25 feet bgs should extend above the possible groundwater surface. Groundwater levels measured in May 1994 ranged between 8.57 to 10.04 feet bgs. It is not recommended that a screen greater than 15 feet in length be used.

During well construction, contamination of the borehole and well with construction materials shall be prevented to the extent practicable. The following procedures will be followed to help prevent contamination:

- Drilling augers will be steam-cleaned prior to usage;
- All screens and casing are assumed to be procured clean from the fabricators;
- The filter-pack material will be transferred directly from the bag. Spilled material will not be taken from the ground and placed into the boring; and
- No solvents or glues will be used to connect the PVC cap, screen lengths and blank.

Prior to developing the newly installed monitoring well, the water level will be measured. Approximately three to five well volumes will be removed to decrease

turbidity due to drilling activities. Additional water may be extracted from the well if it is necessary. All development water will be placed into labeled 55-gallon drums for temporary storage prior to proper disposal.

After 9MW5 has been installed, it will be surveyed by a professional surveyor. The surveyor will determine Easting and Northing, based upon the California State Plane Coordinate System, and the well casing elevation. The horizontal location of the monitoring well will have an accuracy of ±1.0 foot. The elevation of the casing at its north point will be determined, to an accuracy of ±0.01 foot, using a local benchmark.

## 4.0 MONITORING WELL SAMPLING AND INSTALLATION DOCUMENTATION

Sampling of monitoring well 9MW5 will follow the October 16, 1992 "Site Characterization Report and Work Plan" for the facility, modified by the current suite of analyses. In agreement with the current sampling approach, groundwater sampled from monitoring well 9MW5 shall be analyzed for Total Extractable Petroleum Hydrocarbons as -Kerosene, -Diesel, and -Motor Oil (EPA Methods 3510/8015); Total Petroleum Hydrocarbons as Gasoline and Benzene, Toluene, Ethyl Benzene, & Total Xylenes (EPA Methods 5030/8015/602); and Volatile Halogenated Organics (EPA Method 8010).

Assuming that the Work Plan and the drilling application is promptly approved, monitoring well 9MW5 will be sampled during the August 1994 sampling round. Details on installation of the monitoring well and sampling results shall be presented in the appropriate Groundwater Monitoring Report.

## 5.0 REFERENCES

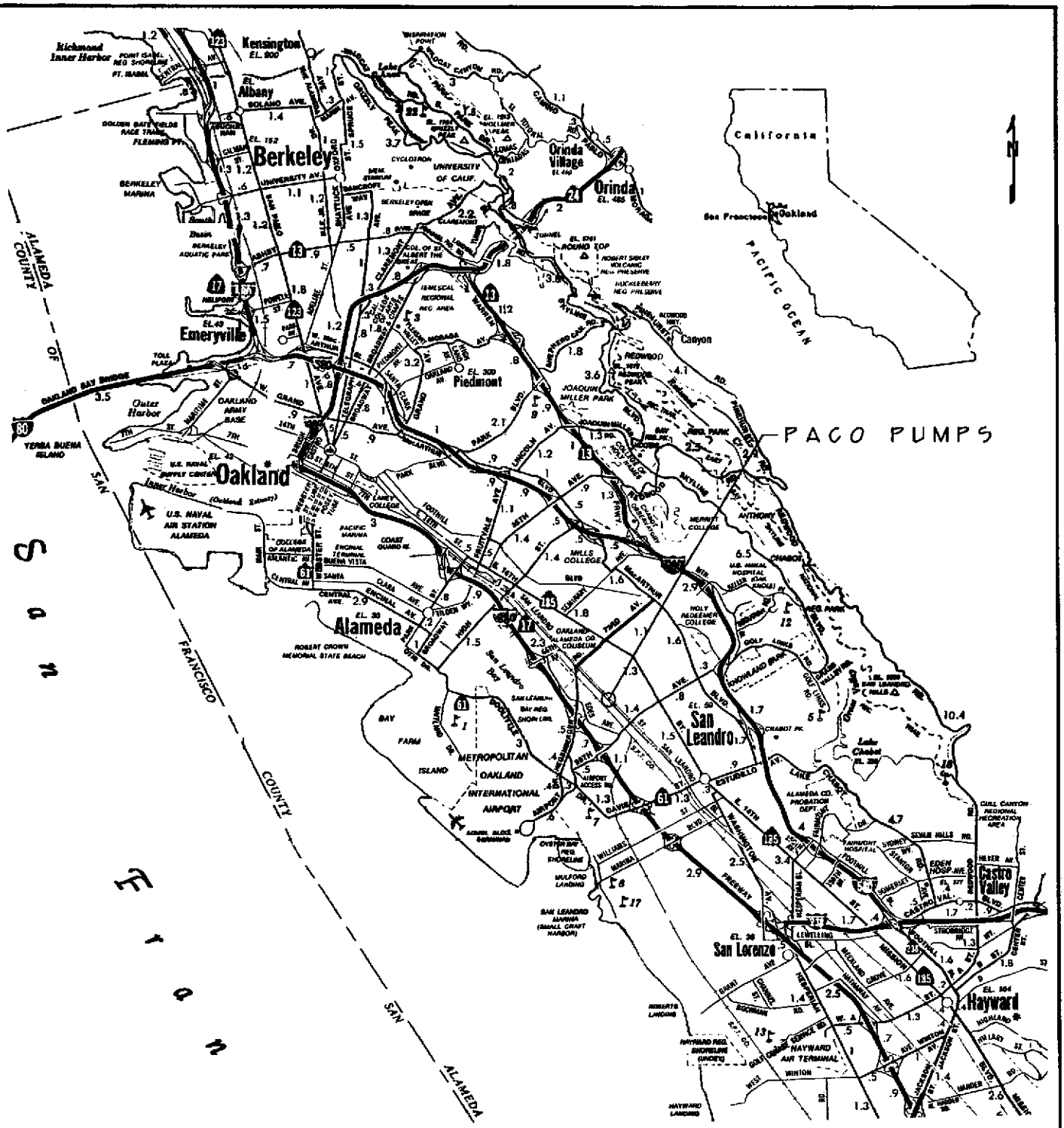
Alameda County, 1973, Ordinance No. 73-68 "An Ordinance to Regulate the Construction, Repair, Reconstruction, Destruction or Abandonment of Wells Within the Boundaries of the County of Alameda", Adopted July 17, 1973.

Jonas & Associates Inc., 1992. "Site Characterization Report and Work Plan, PACO Pumps, 9201 San Leandro Street, Oakland, California", October 16, 1992.

_____, 1993. "First Quarterly Status Report, PACO Pumps, 9201 San Leandro Street, Oakland, California", February 24, 1993.

_____, 1993. "Groundwater Monitoring Report, Sampling Round One, Two, and Three, PACO Pumps, 9201 San Leandro Street, Oakland, California", December 10, 1993.

_____, 1994. "Groundwater Monitoring Report, Sampling Rounds One Through Four, PACO Pumps, 9201 San Leandro Street, Oakland, California", April 15, 1994.




Regional Location

PACO PUMPS

Oakland, California

Prepared by

JONAS AND ASSOCIATES INC.

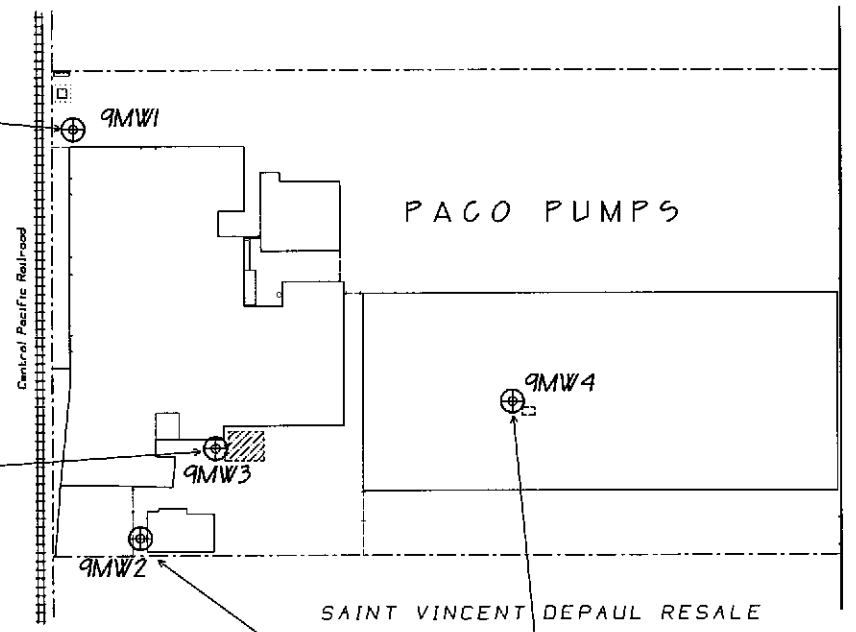
| Drawn by | M.J. |
|---|---|
| Date | 10-11-1991 |
| Drawing Number | PC0217-10/91-1-1 |
| Figure | Figure 1 |

| Date: 10-11-1991<br>Scale as shown | Figure 1 | Drawing Number<br>PC0217-10/91-1 |
|---|---|---|

Drawn by M.J. 6-6-1994

Drawning Number PCO220-6/94:9MW5-F2

Figure 2




## 9MW1 (Water Elev.: 6.45')

May 26, 1994 sampling results:

| | (mg/L) |
|---|---|
| TPH-Gasoline | ND(0.05) |
| Benzene | ND(0.0005) |
| Toluene | ND(0.0005) |
| Ethyl Benzene | ND(0.0005) |
| Total Xylenes | ND(0.0005) |

Method 8010 VOCs: none detected

## 9MW3 (Water Elev.: 7.09')

May 26, 1994 sampling results:

| | (mg/L) |
|---|---|
| **TPH-Gasoline** | **5.200** |
| **Benzene** | **0.890** |
| Toluene | 0.180 |
| Ethyl Benzene | 0.045 |
| Total Xylenes | 0.043 |

| | (mg/L) |
|---|---|
| TEPH-Diesel | ND(0.05) |
| TEPH-Kerosene | ND(0.05) |
| TEPH-Motor Oil | ND(0.5) |

Detected Method 8010 Volatile Organics:

| | (mg/L) |
|---|---|
| 1,2-DCA | 0.250 |

## 9MW2 (Water Elev.: 7.25')

May 26, 1994 sampling results:

| | (mg/L) |
|---|---|
| TPH-Gasoline | ND(0.05) |
| Benzene | 0.0023 |
| Toluene | 0.0080 |
| Ethyl Benzene | ND(0.0005) |
| Total Xylenes | ND(0.0005) |

| | (mg/L) |
|---|---|
| TEPH-Diesel | ND(0.05) |
| TEPH-Kerosene | ND(0.05) |
| TEPH-Motor Oil | ND(0.5) |

Detected Method 8010 Volatile Organics:

| | (mg/L) |
|---|---|
| 1,1-DCA | 0.0016 |

## 9MW4 (Water Elev.: 8.51')

May 26, 1994 sampling results:

| | (mg/L) |
|---|---|
| **TPH-Gasoline** | **0.130** |
| Benzene | 0.014 |
| Toluene | 0.0032 |
| Ethyl Benzene | 0.0061 |
| Total Xylenes | 0.0047 |

Detected Method 8010 Volatile Organics:

| | (mg/L) |
|---|---|
| 1,2-DCA | 0.0025 |

Legend:

⊕ Monitoring Well

TPH = Total Petroleum Hydrocarbons

TEPH = Total Extractable Petroleum Hydrocarbons

ND(0.05) = Not Detected above laboratory detection limit in parentheses.

| Well | Date Installed | Total Depth | Casing Diameter | Borehole Diameter | Screen Depth | Sand Pack Depth |
|---|---|---|---|---|---|---|
| 9MW1 | 11-4-1992 | 21' | 4" | 8.5" | 5.25'-20.25' | 4.25'-21' |
| 9MW2 | 11-3-1992 | 21' | 4" | 8.5" | 5.25'-20.25' | 4.25'-21' |
| 9MW3 | 11-4-1992 | 21' | 4" | 8.5" | 5.25'-20.25' | 4.25'-21' |
| 9MW4 | 11-9-1992 | 21' | 4" | 8.5" | 5.25'-20.25' | 4.25'-21' |

Scale

75 0 75 150 Feet

# May 26, 1994 Groundwater Sampling Results

PACO Pumps Inc.
9201 San Leandro Street
Oakland, California

Prepared by
JONAS & ASSOCIATES INC.

Date: 6-6-1994
Locations Approx.

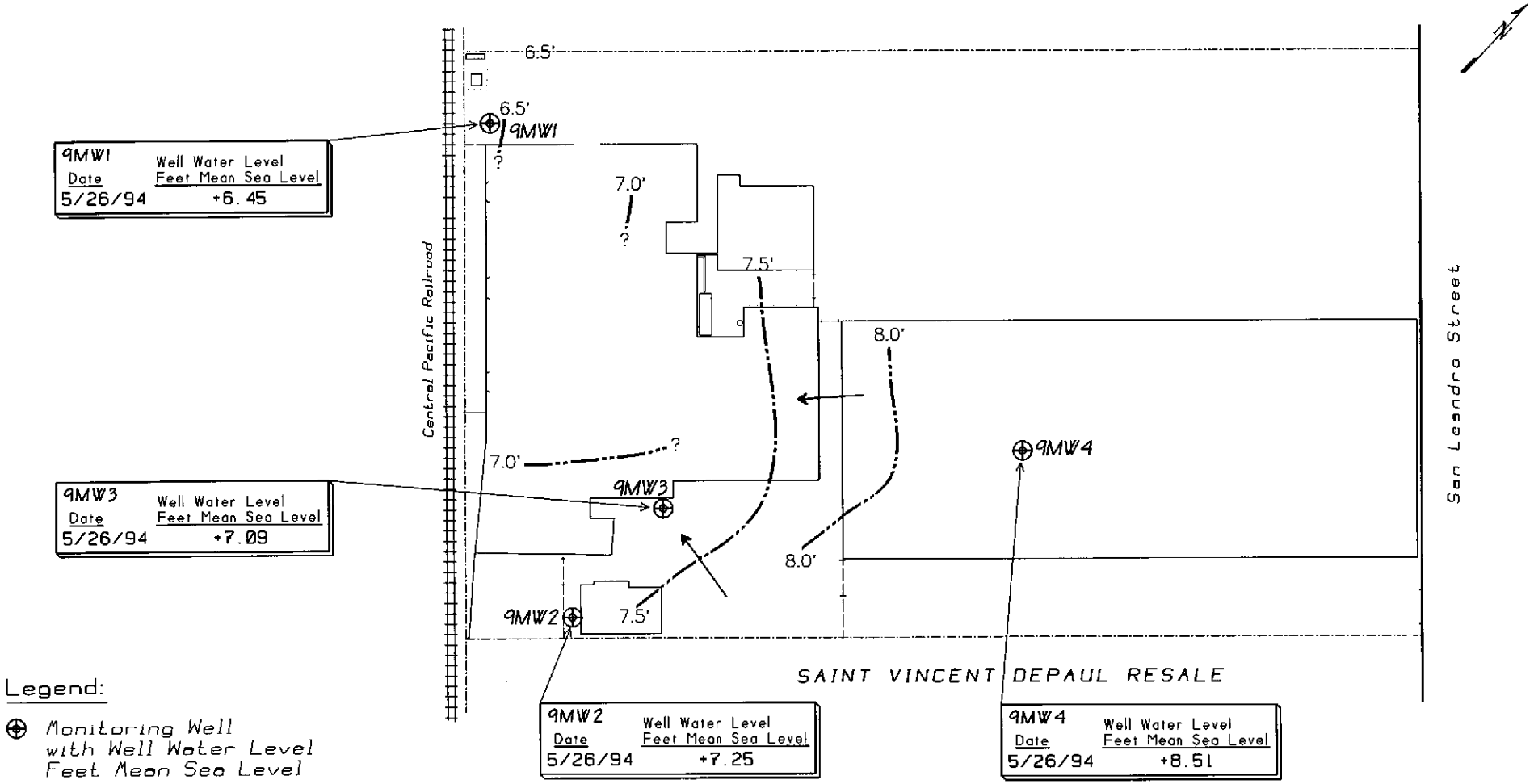
Figure 2

Drawing Number PCO220-6/94:9MW5-F2

Drawn by M.J. 6-6-1994

Drawing Number PCO220-6/94:9MW5-F3

Figure 3




Legend:

⊕ Monitoring Well with Well Water Level Feet Mean Sea Level

5/26/94 Equipotential Line

Assumed Groundwater Flow Direction

| Well | Date Installed | Total Depth | Casing Diameter | Borehole Diameter | Screen Depth | Sand Pack Depth |
|---|---|---|---|---|---|---|
| 9MW1 | 11-4-1992 | 21' | 4" | 8.5" | 5.25'-20.25' | 4.25'-21' |
| 9MW2 | 11-3-1992 | 21' | 4" | 8.5" | 5.25'-20.25' | 4.25'-21' |
| 9MW3 | 11-4-1992 | 21' | 4" | 8.5" | 5.25'-20.25' | 4.25'-21' |
| 9MW4 | 11-9-1992 | 21' | 4" | 8.5" | 5.25'-20.25' | 4.25'-21' |

Scale

50 0 50 100 Feet

# May 1994 - Spring Season
# Potentiometric/Water Table Results

PACO Pumps Inc.
9201 San Leandro Street
Oakland, California

Prepared by
JONAS & ASSOCIATES INC.

Date: 6-6-1994
Locations Approx.

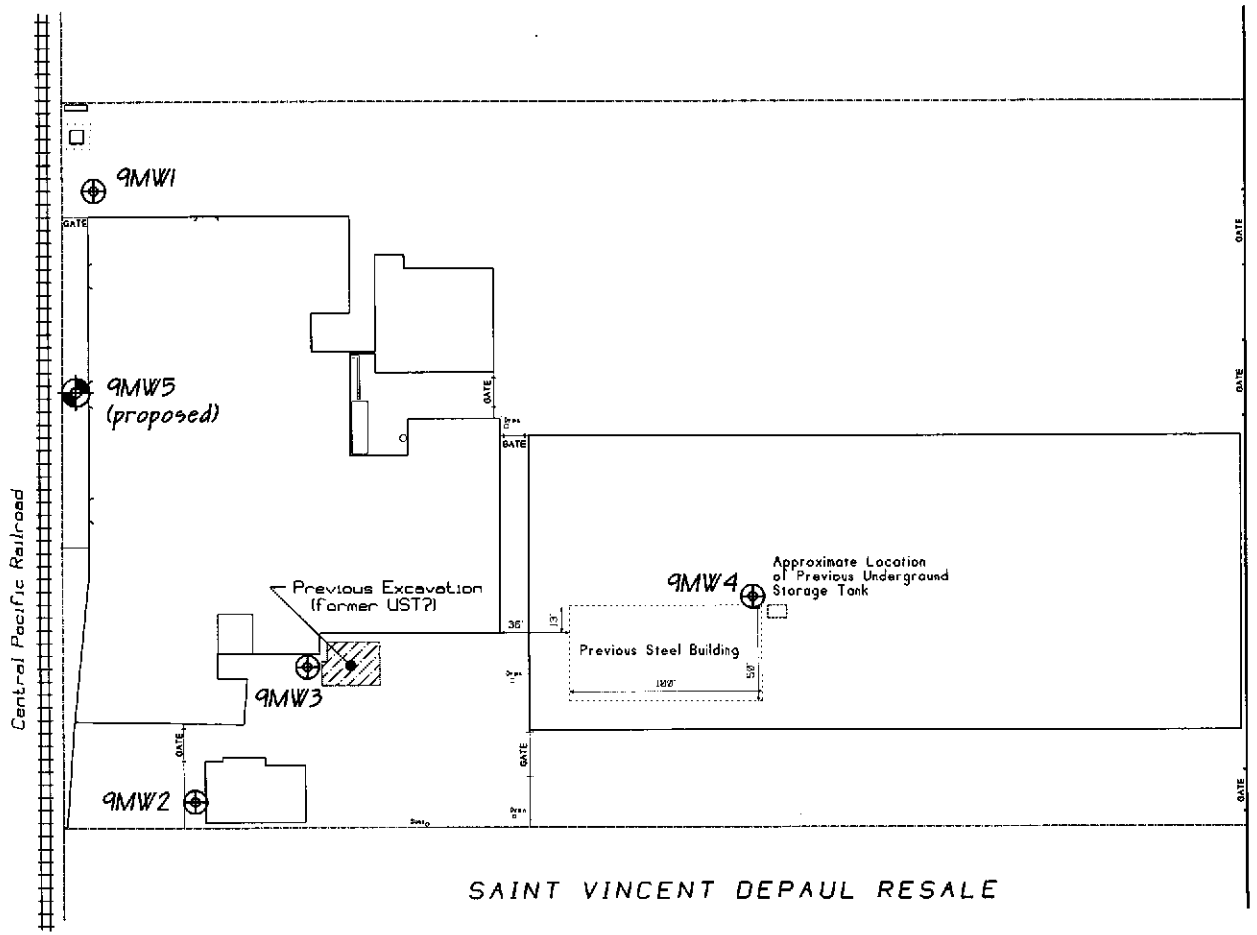
Figure 3

Drawing Number
PCO220-6/94:9MW5-F3

Drawn by M.J. 6-6-1994

Drawing Number PCO220-6/94:9MW5-F4

Figure 4




Legend:

⊕ Monitoring Well

⊕ proposed Monitoring Well

UST = Underground Storage Tank

| Well | Date Installed | Total Depth | Casing Diameter | Borehole Diameter | Screen Depth | Sand Pack Depth |
|---|---|---|---|---|---|---|
| 9MW1 | 11-4-1992 | 21' | 4" | 8.5" | 5.25'-20.25' | 4.25'-21' |
| 9MW2 | 11-3-1992 | 21' | 4" | 8.5" | 5.25'-20.25' | 4.25'-21' |
| 9MW3 | 11-4-1992 | 21' | 4" | 8.5" | 5.25'-20.25' | 4.25'-21' |
| 9MW4 | 11-9-1992 | 21' | 4" | 8.5" | 5.25'-20.25' | 4.25'-21' |
| 9MW5 | proposed | 21' | 4" | 8.5" | 5.25'-20.25' | 4.25'-21' |

Scale

50 0 50 100 Feet

# Current & Proposed Monitoring Wells

PACO Pumps Inc.
9201 San Leandro Street
Oakland, California

Prepared by
JONAS & ASSOCIATES INC.

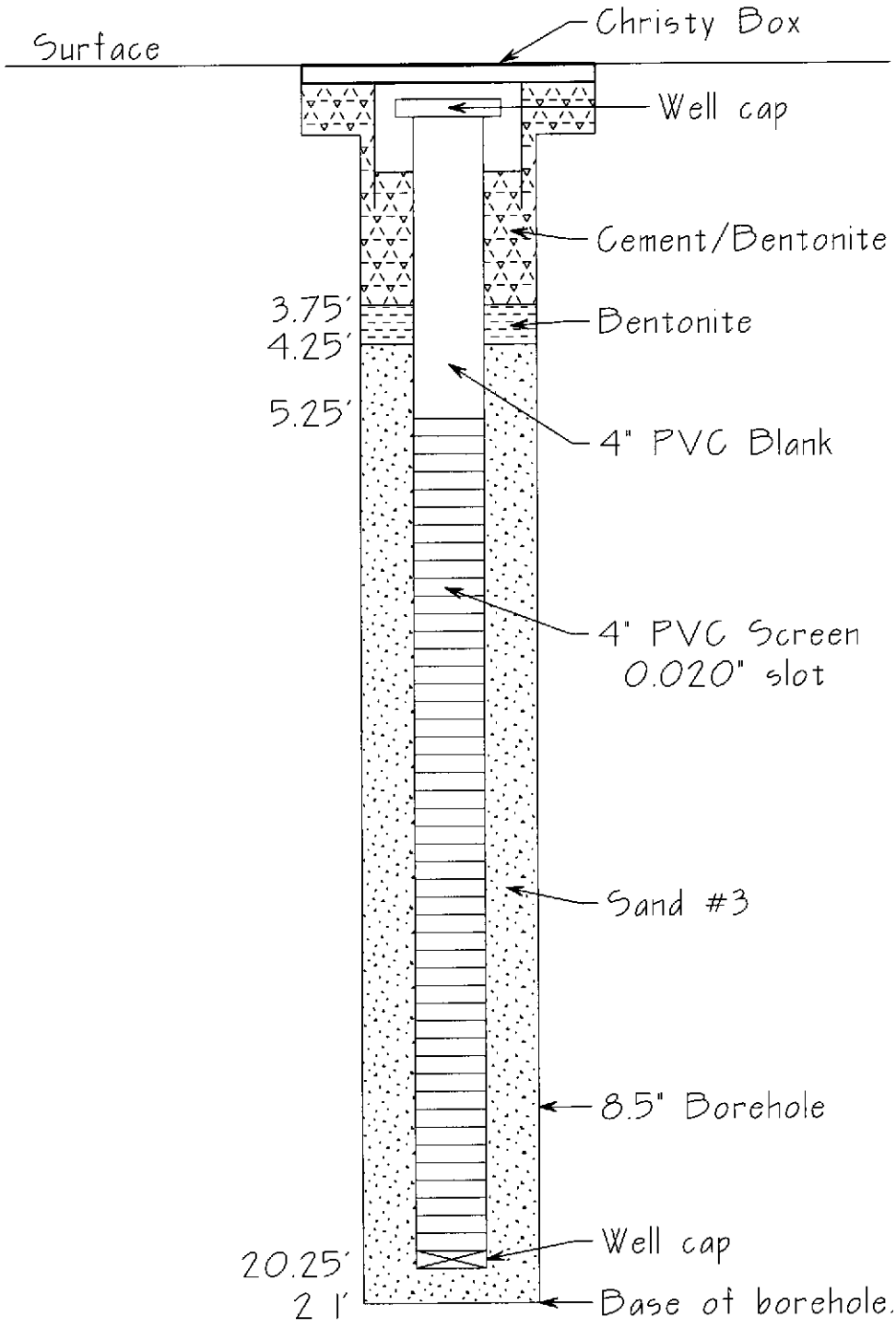
Date: 6-6-1994
Locations Approx.

Figure 4

Drawing Number
PCO220-6/94:9MW5-F4

Figure 5

Drawing Number PCO220-6/94:9MW5-F5




PACO PUMPS INC.
9201 San Leandro Street
Oakland, California

Schematic Diagram for
Proposed Well Construction

Prepared by
JONAS & ASSOCIATES INC.

Drawn by M.J. 6-6-1994

Date: 6-6-1994 | Figure 5 | Drawing Number PCO220-6/94:9MW5-F5

# Appendix B

## Drilling Permit Application and Ordinance 73-68

# ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588 VOICE (510) 484-2600
FAX (510) 462-3914

## DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

OCATION OF PROJECT _____

_____

_____

LIENT

Name _____

Address _____ Phone _____

ity _____ Zip _____

APPLICANT

ame _____

_____

Address _____ Phone _____

ity _____ Zip _____

TYPE OF PROJECT

| Well Construction | | Geotechnical Investigation | |
|---|---|---|---|
| Cathodic Protection | ____ | General | ____ |
| Water Supply | ____ | Contamination | ____ |
| Monitoring | ____ | Well Destruction | ____ |

ROPOSED WATER SUPPLY WELL USE

Domestic ___ Industrial ___ Other _____

Municipal ___ Irrigation ___

DRILLING METHOD:

Mud Rotary _____ Air Rotary _____ Auger _____

Cable _____ Other _____

DRILLER'S LICENSE NO. _____

WELL PROJECTS

| | | | | | |
|---|---|---|---|---|---|
| Drill Hole Diameter | ____ | in. | Maximum | | |
| Casing Diameter | ____ | in. | Depth | ____ | ft. |
| Surface Seal Depth | ____ | ft. | Number | ____ | |

GEOTECHNICAL PROJECTS

| | | | | | |
|---|---|---|---|---|---|
| Number of Borings | ____ | | Maximum | | |
| Hole Diameter | ____ | in. | Depth | ____ | ft. |

ESTIMATED STARTING DATE _____

ESTIMATED COMPLETION DATE _____

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE _____ Date _____

FOR OFFICE USE

PERMIT NUMBER _____

LOCATION NUMBER _____

PERMIT CONDITIONS

Circled Permit Requirements Apply

A. GENERAL
   1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
   2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well Projects, or drilling logs and location sketch for geotechnical projects.
   3. Permit is void if project not begun within 90 days of approval date.

B. WATER WELLS, INCLUDING PIEZOMETERS
   1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
   2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

E. WELL DESTRUCTION. See attached.

Approved _____ Date _____

31992

ORDINANCE NO. 73-68

AN ORDINANCE TO REGULATE THE CONSTRUCTION, REPAIR, RECONSTRUCTION, DESTRUCTION OR ABANDONMENT OF WELLS WITHIN THE BOUNDARIES OF THE COUNTY OF ALAMEDA.

The Board of Supervisors of the County of Alameda do ordain as follows:

SECTION I

Article 14 is hereby added to Chapter 6, Title 3, of the Alameda County Ordinance Code to read as follows:

CHAPTER 6
ARTICLE 14

CONSTRUCTION, REPAIR, RECONSTRUCTION, DESTRUCTION OR ABANDONMENT OF WELLS.

Section 3-160.0. Purpose: It is the purpose of this ordinance to provide for the construction, repair, reconstruction, and destruction of wells, including cathodic protection wells and exploratory holes, to the end that the groundwater found wholly or partially with the County of Alameda will not be polluted or contaminated and the water obtained from water wells will be suitable for the beneficial uses intended and will not jeopardize the health, safety or welfare of the people of the County of Alameda, and for the destruction of abandoned wells or wells found to be public nuisances, including cathodic protection wells and exploratory holes, to the end that such wells will not cause pollution or contamination or groundwater or otherwise jeopardize the health, safety, or welfare of the people of the County of Alameda.

Section 3-160.1. Definitions: Definitions of terms for the construction, repair, reconstruction, destruction, or abandonment of wells shall be as set forth in Chapter II and in Appendix I, of the Department of Water Resources Bulletin No. 74, "Water Well Standards: State of California," as modified and with additions herein.

(1) "County" shall mean the County of Alameda.

(2) "Board" shall mean the Board of Supervisors of the County of Alameda.

(3) "Advisory Board" shall mean a Well Standards Advisory Board, consisting of three (3) qualified persons, which may be appointed by the Board of Supervisors for two (2) year terms, ending 12:00 noon on the first Monday after January 1 of each odd numbered year. The matter of qualification lies solely within the discretion of the Board of Supervisors. In the event a Well Standards Advisory Board is not created, the Board of Supervisors shall assume the duties of said Advisory Board.

(4) "Director of Public Works" shall mean the Director of Public Works of the County of Alameda and the Alameda County Flood Control and Water Conservation District.

(5) "Person" shall mean any person, firm, corporation, municipality, district, or public agency.

(6) "Well" shall mean any artificial excavation constructed by any method for the purpose of extracting water from, or injecting water into, the underground. This definition shall not include: (a) oil and gas wells, or geothermal wells constructed under the jurisdiction of the Department of Conservation, except those wells converted to use as water wells; or (b) wells used for the purpose of (1) dewatering excavation

during construction, or (2) stabilizing hillsides or earth embankments.

(7) "Cathodic Protection Well" shall mean any artificial excavation constructed by any method for the purpose of installing equipment or facilities for the protection electrically of metallic equipment in contact with the ground, commonly referred to as cathodic protection.

(8) "Construction, Reconstruction" shall mean to dig, drive, bore, drill, or deepen a well, or to reperforate, remove, replace, or extend a well casing.

(9) "Destruction" shall mean the proper filling, sealing, or otherwise rendering unusable a well that is no longer useful or has become hazardous to public health or safety, so as to assure that the groundwater is protected and to eliminate a potential physical hazard.

(10) "Repair" shall mean the deepening or enlargement of a well or the perforation or replacement of a casing or sealing-off of aquifers, or other work to improve or maintain the integrity of the well and its water-producing capacity.

(11) "Exploratory Hole" shall mean any artificial excavation constructed by any method for the purpose of determining subsurface geological or hydrological conditions.

(12) "Public Nuisance" shall mean any well which threatens to impair the quality of groundwater or otherwise jeopardize the health or safety of the public.

Section 3-160.2. Jurisdiction: This ordinance shall have effect in the unincorporated area of the County of Alameda and in those incorporated areas which have by ordinance or resolution adopted the provisions of this ordinance by reference thereto and have designated the Alameda County Public Works Department, through the Alameda County Flood Control and Water Conservation District, as the administering agency.

Section 3-160.3. Prohibitions: No person, firm, corporation, or special district formed under the laws of this State shall, within the area subject to the provisions of this ordinance, construct, repair, reconstruct, destroy, alter, or abandon any well unless a written permit has been obtained therefor from the Director of Public Works of the County of Alameda as provided in this ordinance; provided, however, that any incorporated area may elect to adopt this ordinance by reference by resolution of the city council or city ordinance, which resolution or ordinance shall designate the Alameda County Department of Public Works as administering agency.

Section 6-160.4. Permit Procedure:

(1) Application: Written permits required by this Ordinance shall be issued by the Director of Public Works, subject to conditions set forth in this Ordinance, required by law or established by the Director of Public Works. The Director of Public Works shall prescribe and provide a regular form of application for the use of any applicant for a permit required by this Ordinance. The application form shall contain space for the name and address, together with such detail as in the judgement of the Director of Public Works is necessary to establish the identity of the applicant and the location, description of work to be done, and purpose of the proposed work, or other pertinent information. In addition, drawings and/or specifications of the proposed work shall be submitted in an approved form for review by the Director of Public Works; the Director may also require submission of a statement as to the environmental impact of any proposed work to be performed under this ordinance, in accordance with the provisions of the California Environmental Quality Act of 1970.

(2) Fees and Costs: The schedule of fees and costs will be those recommended by the Director of Public Works and established and adopted by the Board from time to time by resolution. Before a permit is issued, the applicant shall deposit with the County cash or a certified or cashier's check, in a sufficient sum to cover the fee for issuance of the permit, charges for field investigation, and the fee for necessary inspection or other work, all in accordance with schedules established and adopted by the Board. Public utilities or other governmental agencies may, at the option of the Director of Public Works, make payment for the above charges as billed by the County instead of by advance deposit as required above. If, upon completion of any work under a permit, there remains any excess of deposit or of fees or charges, the Director of Public Works shall certify the same to the auditor for refund to the permittee or refund the same from any trust fund established under his jurisdiction for such purposes.

(3) Waiver of Fees and Costs: Neither the County of Alameda, its departments, nor its contractors shall be required to make applications for permits as provided for hereunder, providing an agreed procedure for the mutual clearance of plans and prosecution of the proposed work has been reached between the County department heads responsible for such work and the Director of Public Works. All other public agencies must apply for permits but no permit fee shall be charged to them, and investigation and inspection costs for such permits may be waived by the Director of Public Works unless in his opinion they would constitute an undue burden upon the County. All privately owned public utilities making permit applications may have the fees and costs therefor waived upon a finding by the Director of Public Works that the County will incur no costs or expense beyond that which would normally be incurred under the procedure indicated above for other public agencies.

(4) Term and Completion of Work: The permittee shall begin the work authorized by a permit issued pursuant to this Ordinance within ninety (90) days from the date of issuance unless a different period is stated in the permit. If the work is not begun within ninety (90) days or within the time stated in the permit, then the permit shall become void. The permittee shall notify County three (3) working days in advance of beginning his permitted work of the date of said beginning of work. A permit shall be valid for a term of one year from the date of issuance unless a different term is specified in the permit, unless sooner terminated by discontinuance of the work for which the permit was issued, or revocation by the Board upon a showing of good cause therefor. The permittee shall complete the work authorized by a permit issued pursuant to this Ordinance within the time specified in the permit. A time extension to complete the work under the permit may be granted if, in the judgement of the Director of Public Works, a time extension is warranted.

(5) Guarantee of Performance: Prior to the issuance of a permit, the applicant shall post with the Director of Public Works a cash deposit or bond guaranteeing compliance with the terms of this Ordinance and the applicable permit, such bond to be in an amount deemed necessary by the Director of Public Works to remedy improper or uncompleted work, but not in excess of the total estimated cost of the work. Such deposit or bond may be waived by the Director of Public Works where other assurances of compliance are deemed adequate by him.

(6) Compliance with Other Regulations: The issuance of any permit pursuant to this ordinance shall not in any manner relieve the permittee from compliance with applicable Federal, State, County, Municipal, and local regulations regarding well work and public health requirements, and from the necessity of obtaining any permits or consents required thereof, nor impose upon the County any obligation with respect

to said permits or consents.

(7) Liability: Permittee shall be responsible for all liability imposed by law for personal injury or property damage proximately caused by work permitted and done by permittee under the permit, or proximately caused by failure on permittee's part to perform his obligation under said permit. If any claim of such liability is made against the County, or Alameda County Flood Control and Water Conservation District, and its agents, officers, or employees, permittee shall defend, indemnify, and hold them and each of them, harmless from such claim.

(8) Review and Appeal: Any person aggrieved in any manner under the procedures established under this ordinance may request in writing that the matter be reviewed by the Advisory Board or may appeal directly to the Board of Supervisors. If request for review is made, the Director of Public Works shall schedule the matter for review by said Advisory Board and give reasonable notice of the time and place thereof to the applicant. Recommendations by said Advisory Board shall not be binding and may be appealed to the Board of Supervisors. Such appeals must be submitted in writing and filed with the Board of Supervisors within ten (10) days after said Advisory Board recommendations have been sent to or served upon the applicant. The Board of Supervisors shall hold a hearing of said appeal and shall give reasonable notice of the time and place thereof to the applicant. The decision of the Board of Supervisors shall be binding upon all parties. In the event of the Advisory Board is not created under this Ordinance, requests for review of grievances shall be submitted in writing and filed directly with the Board of Supervisors. The Board of Supervisors shall hold a hearing of review of such grievances and shall give reasonable notice of the time and place thereof to the applicant. The decision of the Board of Supervisors shall be binding upon all parties.

Section 3-160.5. Standards: Standards for the construction, repair, reconstruction, destruction, or abandonment of wells shall be as set forth in Chapter II of the Department of Water Resources Bulletin No. 74, "Water Well Standards: State of California," and Appendixes E, F, and G a part thereof, together with the supplemental standards of Department of Water Resources Bulletin No. 74-2, "Water Well Standards: Alameda County," and Department of Water Resources Bulletin No. 74-1, "Cathodic Protection Wells Standards: State of California," with the following modifications:

(1) No well intended to produce fresh groundwater shall be perforated opposite aquifers producing saline water. It is recognized that in some instances production may be desired from areas and/or depths which contain poor or marginal quality water in all aquifers penetrated. It is not the intent of these standards to preclude such situations so long as the integrity of the fresh water supplies is maintained. Final judgement on well construction that would cause intermingling of waters of different qualities shall be at the discretion of the County.

(2) In wells open to fresh water aquifers, penetrated aquifers producing saline water shall be sealed off as specified in Section 13, Chapter II, Bulletin No. 74, and in Chapter IV, Bulletin 74-2.

(3) Perched saline water shall be excluded from wells by a deep annular seal as specified in Section 9, Chapter II, Bulletin No. 74, and in Chapter IV, Bulletin 74-2.

(4) As a guideline, saline water is considered as water which contains more than 250 ppm chloride ion. During well construction, the permittee shall provide some provision for the determination of groundwater quality characteristics of the major aquifers penetrated so that a judgement can be made as to whether or not intermingling will take place. Such determination can consist of evaluation of data regarding

adjacent wells, evaluation of samples of formation materials encountered. Final judgement as to the probability of intermingling and the need for evaluation of conditions shall be at the discretion of the County.

(5) Backfilling work on exploratory holes, as defined herein, shall be subject to requirements equivalent to those in the destruction of abandoned wells.

(6) All water wells shall be maintained in such a manner that water quality samples can be readily collected. The County shall be empowered to collect water quality samples and to perform tests on any well at any reasonable time.

(7) All work in the construction, repair, reconstruction, and destruction of wells shall be performed by contractors licensed in accordance with the provisions of the Contractors License Law (Chapter 9, Division 3, of the Business and Professions Code) unless exempted by that act.

(8) In no case will an outer casing or conductor casing be an acceptable substitute for a seal.

Section 3-160.6. Enforcement:

(1) Notice: In the event a well subject to this Ordinance is found to be a public nuisance or constructed, repaired, reconstructed, or destroyed contrary to the terms of this Ordinance or a permit issued for such well pursuant to this Ordinance, the Director of Public Works may send written notice to the owner of the land as shown on the most recent equalized assessment roll or the permittee, at his address listed on the permit, which notice shall state the manner in which the well is in violation, what corrective measures must be taken, the time within which such correction must be made, and that if the land owner or permittee fails to make corrections within the period provided, the corrections may be made by the County and the land owner or permittee shall be liable for the costs thereof.

(2) Abatement by the County: If the corrections listed in the notice given pursuant to (1) above are not made as required in said notice, the Director of Public Works with the approval of the Board of Supervisors, and after a reasonable opportunity for the person notified to be heard by said Board, may abate the condition and the cost thereof shall be a charge against the person notified.

(3) Emergency Abatement: If the Director of Public Works finds that the condition or operation of a well subject to this Ordinance is, by its operation or maintenance, causing significant irreparable damage to the groundwater and that it is impracticable to notify the owner or permittee, he may abate the condition without giving notice as required in (1) above, and the cost thereof shall be a charge against the owner of the land as shown on the last equalized assessment roll.

(4) Penalty: Any person who does any work for which a permit is required by this Ordinance and who fails to obtain a permit shall be guilty of a misdemeanor punishable by fine not exceeding FIVE HUNDRED DOLLARS ($500.00) or by imprisonment not exceeding six (6) months, or by both such fine and imprisonment, and such person shall be deemed guilty of a separate offense for each and every day a portion thereof during which any such violation is committed, continued, or permitted, and shall be subject to the same punishment as for the original offense.

Section 3-160.7. Conflicts: All ordinances of the County in conflict herewith are hereby repealed to the extent of such conflict.

Section 3-160.8. Severability: If any section, sub-section, paragraph, sub-paragraph, sentence, clause, or phrase of this Ordinance is for any reason held to be invalid or unconstitutional, such invalidity or unconstitutionality shall not affect the validity or constitutionality of the remaining portions of this Ordinance; and the Board declares that this Ordinance and each section, sub-section, paragraph, sub-paragraph, sentence, clause, and phrase thereof would have been adopted irrespective of the fact that one or more of such section, sub-section, paragraph, sub-paragraph, sentence, clause, or phrase be declared invalid or unconstitutional.

SECTION II

This Ordinance shall take effect and be in force thirty (30) days from and after the date of its passage and before the expiration of fifteen (15) days after its passage it shall be published once with the names of the members voting for and against the same in The Inter-City Express, a newspaper published in the County of Alameda.

Adopted by the Board of Supervisors of the County of Alameda on this 17th day of July, 1973, by the following called vote:

AYES: Supervisors Cooper, Hannon, Murphy, and Chairman Bort - 4.
NOES: Supervisors None.
EXCUSED: Supervisor Bates - 1.

J. P. BORT,
Chairman of the Board of Supervisors
of the County of Alameda,
State of California.

ATTEST: JACK K. POOL,
Clerk of the Board of Supervisors of
the County of Alameda,
State of California.
734834—7-27-1f

ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
5997 PARKSIDE DRIVE • PLEASANTON, CALIFORNIA 94588 • (510) 484-2600

13 August 1992

Mr. Mark Jonas
Jonas and Associates, Inc.
1056 Dale Place
Concord, CA 94518

Dear Mr. Jonas:

Enclosed are the permit applications and Groundwater Protection Ordinance 73-68 you requested for a monitoring well construction project in Oakland.

Please note that permit condition A-1 requests that an application be submitted five days prior to your proposed start of work.

If you have any questions, please contact Wyman Hong or Craig Mayfield at 484-2600.

Very truly yours,

Craig A. Mayfield

Craig A. Mayfield
Water Resources Engineer

WH:dkp
Enc.