

Name of Facility: Union Pacific Railroad Company

Active Management Area: Tucson

Sub-basin: Upper Santa Cruz

Maximum annual withdrawals: 100 acre-feet per annum

Authorized Points of Withdrawal: As referenced in Tables 1 and 2

Authorized Place of Use for Groundwater Withdrawn: Section 12, Township 14 South, Range 13 East, and Sections 20 and 21, Township 14 South, Range 14 East of the GSRB&M.

Authorized Use of Groundwater: Water shall be reinjected to the subsurface to the maximum extent feasible for sites at 31st and 34th Street. For the Passenger Depot and 22nd Street sites, water will be discharged to a sanitary sewer system or reinjected into the subsurface.

Effective Date: June 1, 2007

Expiration Date: May 31, 2027

Permit Conditions

1. Poor quality groundwater may be withdrawn by the Permittee pursuant to individual remedial action plans, as approved by Arizona Department of Environmental Quality, which are related to the following seven sites: Passenger Depot Sites 1, 2, and 3; 22nd Street Site; 31st Street PFE and Mainline Sites; and 34th Street Site. The Arizona Department of Water Resources and the Permittee recognize that as a result of optimization of the ongoing remediation, withdrawal of poor quality groundwater may differ from the process currently specified in the ADEQ approved remedial action plans. To the extent that the withdrawal process of poor quality groundwater differs from the ADEQ approved remedial action plans, such withdrawal is permitted provided that the withdrawal is for remedial purposes and the Permittee timely requests approval from ADEQ of such amendment or modification.
 2. For the purpose of this permit, poor quality groundwater is defined as groundwater that does not meet the state of Arizona Aquifer Water Quality Standards (AWQSs) or water withdrawn in the course of remediation of groundwater that does not meet AWQS or to minimize the spread of free product. For the purposes of this permit, the AWQSs do not constitute a remediation standard.
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3. The issuance of this permit does not constitute endorsement of the assertions or findings of investigations and studies submitted by the Permittee as part of its applications, nor as part of its other efforts to date to delineate the area and extent of contamination or to delineate contamination source or responsibility.
4. This permit shall terminate when the activities performed pursuant to the remediation documents end. If the activities being performed will extend beyond the expiration date of this permit, the Permittee may submit an application to renew this permit within six months prior to the date of the expiration of this permit.
5. Monitoring Requirements:

- a. Groundwater Withdrawal Monitoring:

For each site withdrawing groundwater listed in Permit Condition 1, the Permittee shall measure the volume of groundwater withdrawn with an approved water measuring device and method consistent with A.A.C. R12-15-903. The water quantity measuring devices and methods shall quantify flow accurately pursuant to A.A.C. R12-15-905.

- b. Groundwater Injection Monitoring:

For each site injecting water listed in Permit Condition 1, the Permittee shall measure the volume of groundwater injected with an approved water measuring device and method consistent with A.A.C. R12-15-903. The water quantity measuring devices and methods shall quantify flow accurately pursuant to A.A.C. R12-15-905.

- c. Groundwater Quality Monitoring:

The Permittee shall perform groundwater quality monitoring in accordance with the pertinent remedial action plans for the sites listed in Permit Condition No. 1 above. Monitoring results should allow ADWR to determine whether the groundwater withdrawn, because of its quality, has no other beneficial use. The Permittee shall notify ADWR of any changes to the groundwater quality data collection plans.

6. Reporting Schedule

The Permittee shall submit an "Annual Water Withdrawal and Use Report" as required under A.R.S. § 45-632, together with supplemental data reports described below, no later than March 31 following the end of each completed annual reporting period. The first reporting period shall be from the effective date of this permit through December 31, 2007. Subsequent reporting periods shall be from January 1 through December 31. Annual reports must be submitted regardless of whether groundwater has been withdrawn. If no groundwater is withdrawn during the reporting period, the Permittee

shall indicate that fact on the annual report and in the supplemental data report. **The Permittee shall send two (2) copies of all annual and supplemental data reports to the Information Management Unit, Arizona Department of Water Resources, 3550 North Central Avenue, Phoenix, Arizona 85012.**

7. Supplemental Data Reporting Requirements

The Permittee shall submit all monitoring data and analyses in the supplemental data reports as specified below. The supplemental data reports shall include:

a. Site Map:

The data reports shall include a site map showing the location of all monitoring points and relevant facility features such as extraction wells, injection wells, monitor wells, and water measurement devices. The site map shall include recent measured light non-aqueous phase liquid ("LNAPL") thicknesses relating to the known extent of LNAPL contamination. The data reports shall include the map data in electronic format.

b. Groundwater Withdrawal/Injection Data:

The data reports shall quantify all groundwater withdrawals and groundwater injections from the sites as specified in Permit Conditions 5.a and 5.b for the reporting period. The groundwater extraction data shall be presented in summary tables indicating the site (along with associated well registration numbers and the Permittee's well identifiers), beginning and ending flowmeter readings, and the volume of groundwater withdrawn in gallons and acre-feet. The groundwater injection data shall be presented in a summary table indicating the site, beginning and ending flowmeter readings and the volume of water injected in gallons and acre-feet for the reporting period. The data reports shall also include the data in electronic format such as a Microsoft Excel spreadsheet or Microsoft Access database.

c. Water Quality Monitoring Data:

The data reports shall contain all groundwater quality data collected pursuant to the remedial action plan for each site. The water quality data shall be presented in tables containing the following: monitoring point identifier, the sample date, the analyte, the laboratory method, the applicable regulatory level, and the sample result. Copies of the laboratory and supporting quality control reports shall be included in the data reports as an appendix and in electronic format such as a Microsoft Excel spreadsheet or Microsoft Access database.

8. General Provisions:

- a. The issuance of this permit does not waive compliance with any federal, state, county or local government statutes, rules or permits.
- b. All ADWR agency notifications, other than annual and supplemental data reports, shall be addressed to the Arizona Department of Water Resources, Tucson Active Management Area, 400 West Congress, Suite 518, Tucson, Arizona 85701-1374.

WITNESS my hand and seal of office this 1st day
of June, 2007.

Sandra Fabritz-Whitney, Assistant Director

Table 1 - Extraction Wells

	ADWR		Well Identifier	Township	Range	Section	10 Acre			40 Acre			160 Acre			Well Depth (feet bgs)	Screen Interval (feet bgs)
	Registration Number						SE	SW	SE	SW	SE	SW	SE	SW			
Extraction Wells	Passenger Depot - 1	55-574265	PT-1	14S	13E	12	NW	SW	SE	SE	SE	83.5	63.5-83.5				
		55-574266	PT-2	14S	13E	12	NW	SW	SE	SE	SE	80	65.0-80.0				
		55-574264	PT-3	14S	13E	12	NW	SW	SE	SE	SE	82.5	62.5-82.5				
		55-583972	EW-PD-01	14S	13E	12	NW	NE	SW	SW	SW	73.5	53.5 - 73.5				
		55-583971	EW-PD-02	14S	13E	12	NW	NE	SW	SW	SW	74	54 - 74				
		55-583970	EW-PD-03	14S	13E	12	NW	NE	SW	SW	SW	78	58 - 78				
		55-583969	EW-PD-04	14S	13E	12	NW	NE	SW	SW	SW	82	62 - 82				
		55-583966	EW-PD-05	14S	13E	12	NW	NE	SW	SW	SW	82	62 - 82				
		55-588782	EW-PD-06	14S	13E	12	NE	SW	SE	SE	SE	83	63 - 83				
		55-588780	EW-PD-07	14S	13E	12	NE	SW	SE	SE	SE	88.5	68.5 - 88.5				
55-588779	EW-PD-08	14S	13E	12	NE	SW	SE	SE	SE	89	69 - 89						
55-593341	EW-PD-14	14S	13E	12	NW	SW	SE	SE	SE	83	66 - 83						
55-593342	EW-PD-15	14S	13E	12	NW	SW	SE	SE	SE	84.5	69.5 - 84.5						
55-593344	EW-PD-16	14S	13E	12	SE	SW	SE	SE	SE	87.5	72.5 - 87.5						
Passenger Depot - 2	55-590042	EW-PD-09	14S	13E	12	SW	SE	SE	SE	SE	93	73 - 93					
	55-590043	EW-PD-10	14S	13E	12	SW	SE	SE	SE	SE	93	73 - 93					
	55-590044	EW-PD-11	14S	13E	12	SW	SE	SE	SE	SE	93	73 - 93					
	55-590045	EW-PD-12	14S	13E	12	SW	SE	SE	SE	SE	95	75 - 95					
	55-590046	EW-PD-13	14S	13E	12	SW	SE	SE	SE	SE	90	75 - 90					
	22nd Street	55-587534	EW-22-15	14S	14E	20	NW	NW	NW	NW	NW	129	109 - 129				
		55-599670	EW-22-16	14S	14E	20	NW	NW	NW	NW	NW	129	109 - 129				
		55-599671	EW-22-17	14S	14E	20	NW	NW	NW	NW	NW	129	109 - 129				
		55-599672	EW-22-18	14S	14E	20	NW	NW	NW	NW	NW	129	109 - 129				
		55-599673	EW-22-19	14S	14E	20	NW	NW	NW	NW	NW	129	109 - 129				
55-599674		EW-22-20	14S	14E	20	NW	NW	NW	NW	NW	129	109 - 129					
55-599669		EW-22-21	14S	14E	20	NW	NW	NW	NW	NW	129	109 - 129					
55-599666		EW-22-22	14S	14E	20	NW	NW	NW	NW	NW	129	109 - 129					
55-599675		EW-22-23	14S	14E	20	NW	NW	NW	NW	NW	129	109 - 129					
31st P.F.E.		55-586136	EW-31-01	14S	14E	20	SE	NE	SE	SE	SE	149	129 - 149				

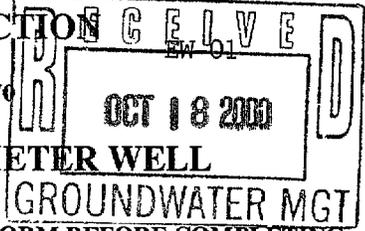
ADWR		Well Identifier	Township	Range	Section	10 Acre	40 Acre	160 Acre	Well Depth (feet bgs)	Screen Interval (feet bgs)
Registration Number	Well Identifier									
	55-586134	EW-31-02	14S	14E	20	SE	NE	SE	149	129 - 149
	55-585109	EW-31-03	14S	14E	20	SE	NE	SE	149	134 - 149
31st Mainline	55-900531	EW-31-04	14S	14E	21	NE	SW	SW	150	135 - 150
34th Street	55-572970	MW-34-08	14S	14E	21	SE	NE	SE	282	255-282

Table 2 - Injection Wells

ADWR		Well Identifier	Township	Range	Section	10 Acre	40 Acre	160 Acre	Well Depth (feet bgs)	Screen Interval (feet bgs)
Registration Number	Well Identifier									
Injection Wells										
Passenger Depot - 1	55-583968	IW-PD-01	14S	13E	12	NW	NE	SW	77	22 - 52, 62 - 77
	55-583967	IW-PD-02	14S	13E	12	NW	NE	SW	76	22 - 52, 61 - 76
	55-588781	IW-PD-03	14S	13E	12	NE	SW	SE	86	26 - 56, 66 - 86
	55-593343	IW-PD-06	14S	13E	12	SE	SW	SE	88	23 - 58, 68 - 88
Passenger Depot - 2	55-590040	IW-PD-04	14S	13E	12	SW	SE	SE	93	73 - 93
	55-590041	IW-PD-05	14S	13E	12	SW	SE	SE	93	73 - 93
22nd Street	55-587535	IW-22-24	14S	14E	20	NW	NW	NW	129	24 - 99, 109 - 129
	55-599668	IW-22-25	14S	14E	20	NW	NW	NW	129	24 - 99, 109 - 129
	55-599667	IW-22-26	14S	14E	20	NW	NW	NW	129	24 - 99, 109 - 129
31st P.F.E.	55-585110	IW-31-02	14S	14E	20	SE	NE	SE	148.5	118.5 - 148.5
	55-586135	IW-31-03	14S	14E	20	SE	NE	SE	149	24 - 119, 129 - 149
31st Mainline	55-585112	IW-31-01	14S	14E	20	SE	NE	SE	149	24 - 119, 129 - 149
34th Street	55-905288	IW-34-01	14S	14E	21	SE	NE	SE	98	18-98
	55-905289	IW-34-02	14S	14E	21	SE	NE	SE	98	18-98

**ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION**

MAIL TO: P.O. BOX 458, PHOENIX, ARIZONA 85001-0458
FOR INFORMATION: CALL MONICA ORTIZ AT (602) 417-2470



NOTICE OF INTENTION TO DRILL MONITOR/PIEZOMETER WELL

PLEASE READ GENERAL INSTRUCTIONS AND CONDITIONS ON REVERSE SIDE OF THIS FORM BEFORE COMPLETING.

1. Well/land Location:

14 N/S 13 R/W 12
Township Range Section
NW 1/4 NE 1/4 SW 1/4
10 Acre 40 Acre 160 Acre

2. Position location of the well on the land:

Latitude 32 ° 13 ' 33 "
Longitude 110 ° 58 ' 10 "

3. County: Pima

4. Owner of the well:

Union Pacific Railroad
Name
1416 Dodge Street, Rm 930
Mailing Address
Omaha NE 68179
City State Zip
Telephone No. (402) 271-6572

5. Lessee of the land of wellsite:

N/A
Name
Mailing Address
City State Zip
Telephone No.

6. Owner of the Land of Wellsite:

Union Pacific Railroad
Name
1416 Dodge Street, Rm 930
Mailing Address
Omaha NE 68179
City State Zip

Telephone No. (402) 271-6572

7. Consulting firm:

ERM West
Name
Manfred Plaschke
Contact Person
Telephone No. (480) 998-2401

8. Purpose of well drilled pursuant to this notice:

Monitor (remediation)
Piezometer

9. If for deepening or modifying, list well registration number:

55- _____

FOR DEPARTMENT USE ONLY

File No. DC14-13) 12CARB
Filed 10/18/00 By UB
Input _____ By _____

DUPLICATE

Mailed 11/2/00 By UB
Registration 55-583972
AMA/INA Tucson
W/S 09 S/B 10

10. Will this proposed well be associated with a permit: Yes _____ No

If yes, Permit No. _____

11. Construction will start:

November 6 2000
Month Day Year

12. Period well will remain in use:

10 Months/Years

13. For monitoring wells, is pump equipment to be installed?

Yes No _____

(a) If yes, design pump capacity:

2 to 5 gpm

(b) What use will be made of the water:

Remediate and reinject

14. Drilling Firm:

WDC
Name
7940 S Kolb Road
Mailing Address
Tucson AZ 85706
City State Zip
(520) 574-2904
Telephone No.
161
DWR License Number
102188 A-04
ROC License Category

15. Proposed method of abandonment of well after project is completed: Pressure grout

, pursuant to R12-15-816.

16. Is this well to monitor existing contamination? Potential contamination: _____ Please explain: Well will be used to

extract existing petroleum hydrocarbon-impacted groundwater

17. If construction plans have been coordinated with Arizona Department of Environmental Quality, who is the agency contact? Jeff Emde, URP

N/A

18. If construction plans have been coordinated with Arizona Department of Water Resources, who is the agency contact? _____

**ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION
500 North Third Street
Phoenix, Arizona 85004**

VARIANCE GRANTED

THIS AUTHORIZATION SHALL BE IN POSSESSION OF THE DRILLER DURING ALL DRILL OPERATIONS

WELL REGISTRATION NO: 55-583972

AUTHORIZED DRILLER: WATER DEVELOPMENT CORP. DBA WDC EXPLORATION LICENSE NO: 161

NOTICE OF INTENTION TO DRILL A MONITOR WELL(S) HAS BEEN FILED WITH THE DEPARTMENT BY:

WELL OWNER: UNION PACIFIC RAILROAD 1416 DODGE STREET RM930 OMAHA, NE 68179

The well(s) is/are to be located in the:

NW ¼ of the NE ¼ of the SW ¼ Section 12 Township 14 SOUTH Range 13 EAST

No. of wells in this project: 1

THIS AUTHORIZATION EXPIRES AT MIDNIGHT ON THE 17TH DAY OF OCTOBER, 2001

ARS

GROUNDWATER MANAGEMENT SUPPORT

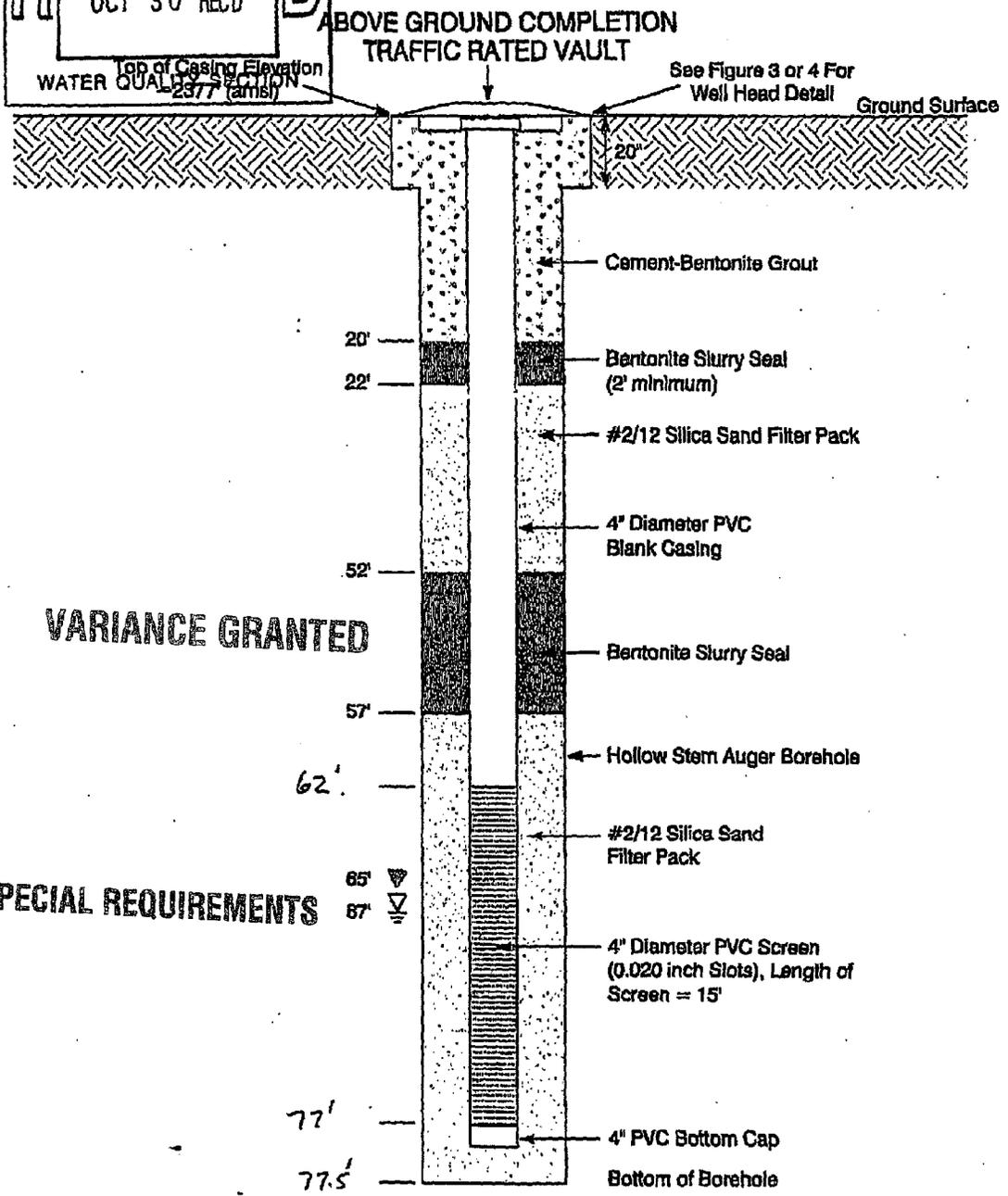
**THE DRILLER MUST FILE A LOG OF THE WELL
WITHIN 30 DAYS OF COMPLETION OF DRILLING**



RECEIVED
OCT 30 RECD

Diagram for EW-1 through EW-04

Project No. 8222.05
Date: 10/16/00
Drawn By: D. Ludlum
CAD File: G:\8222\05\82220501.dwg



VARIANCE GRANTED

SPECIAL REQUIREMENTS

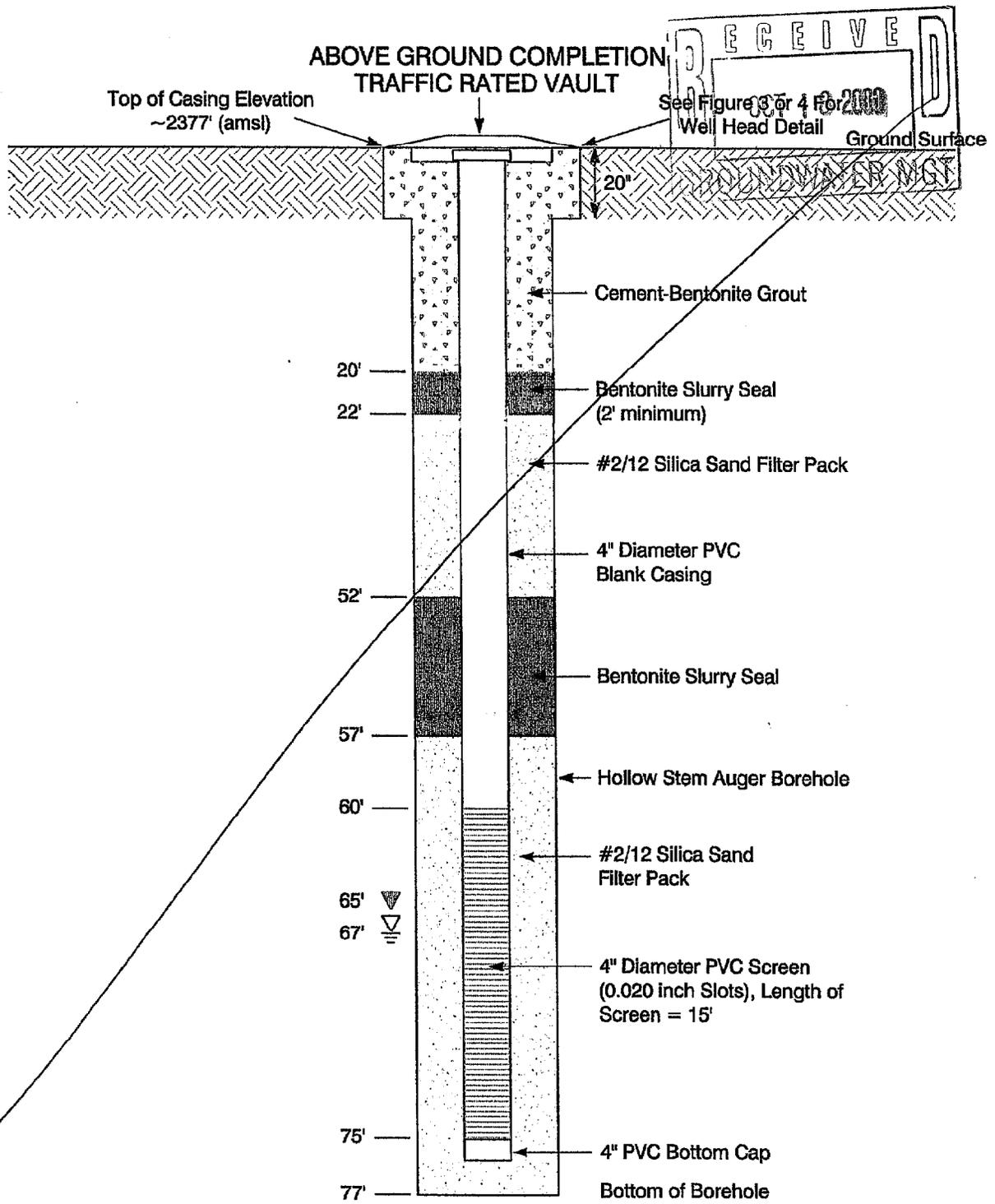
revised diagram

- 55-583969
 - 55-583970
 - 55-583971
 - 55-583972
- Water Table

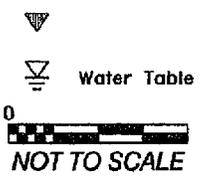
Dual Phase Extraction Well Design
 Passenger Depot Site
 Union Pacific Railroad Company
 Tucson, Arizona

NOT TO SCALE

Project No. 8222.05
 Date: 10/16/00
 Drawn By: D. Ludlam
 CAD File: G:\8222\05\82220501.dwg



original diagram
 55-583972



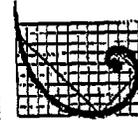
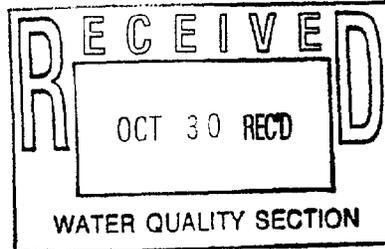
Dual Phase Extraction Well Design
 Passenger Depot Site
 Union Pacific Railroad Company
 Tucson, Arizona

Facsimile

Environmental Resources Management

To: Shannon Reif
Company: Arizona Department of Water Resources
 WQARF Section
Fax number: (602) 417 2426
From: Manfred Plaschke
File number: 8222.05
Date: 29 October 2000
Number of pages: 5 including cover sheet

7975 North Hayden Rd.
 Suite D-354
 Scottsdale, AZ 85258
 (480) 998-2401
 (480) 998-2106 (fax)



ERM.

Dear Shannon,

Per your telephone call last Friday afternoon (27 October 2000), I would like to request that several minor changes be made to the seven Notices of Intent (NOI) to Drill/Install Monitor Wells for Union Pacific Railroad in Tucson, Arizona, submitted by ERM on 17 October 2000. The following changes are requested based on our discussions to make the NOI form consistent with the well construction diagram. In each case the well construction diagrams were correct and the NOI form (section F/filter pack should be changed to start at 22 feet to 52 feet and section G/performation start at 62 feet to 77 feet) (for each of the seven well proposed). The remaining items on the NOI's will not change. T

ERM Well ID // Township/Range/Section	ADWR Well ID
IW-01 //14S/13E/12	55-583966
IW-02 //14S/13E/12	55-583967
IW-03 //14S/13E/12	55-583968
EW-01 //14S/13E/12	55-583969
EW-02 //14S/13E/12	55-583970
EW-03 //14S/13E/12	55-583971
EW-04 //14S/13E/12 <i>EW-01</i>	55-583972

Also attached is a signature of well IW-03. A hardcopy of this faxed info will be mailed to your attention today. Thanks

Manfred

19. WELL CONSTRUCTION PLAN:

- a) Drilling method (mud rotary, hollow-stem auger, etc.) hollow-stem
- b) Borehole diameters: 8 inches from 0 feet to 77.5' feet.
inches from _____ feet to _____ feet.
- c) Casing materials (PVC, steel, hollow-stem auger, etc.)
material PVC diameter 4 inches from 0 feet to 59 feet.
material _____ diameter _____ inches from _____ feet to _____ feet.
- d) Method of sealing at reductions Bentonite
- e) Annular seal materials (cement, grout, etc.); method of placement (tremied, circulated):
material cement bentonite grout method tremied from 0 feet to 20 feet.
material bentonite slurry seal method tremied from 52 feet to 57 feet.
- f) Filter packs (state material):
material sand #2/12 from 22 feet to 52 feet.
material sand #2/12 from 57 feet to 77 feet.
- g) Perforations or screen specifications:
Type .020 inch slot (PVC) from 62 feet to 77 feet.
Type _____ from _____ feet to _____ feet.
- h) Method of well development (bail, air lift, surge) bail and surge
- i) Will surface or conductor casing extend above grade?: Yes _____ No X

20. Include detailed construction diagram showing expected water depth in feet below land surface, and details of vault, if specified.

I state that this Notice is filed in compliance with Rule A.A.C. R12-15-809, is complete and correct to the best of my knowledge and belief and that I understand the conditions set forth on this form.

Manfred Plaschke Project Manager ERW Agency for WRR [Signature] 10/17/00
 Typed or Printed Name and Title Signature Land Owner Lessee of Wellsite, Title Date

Necessary Steps and Instructions to Obtain Drilling Authority (Monitor/Piezometer Wells)

1. Arizona Revised Statutes ("A.R.S.") § 45-596 provides that prior to drilling a monitor or piezometer well, a Notice of Intention to Drill must be filed with the Department. To assist you in understanding the substantive requirements for this application, copies of A.R.S. § 45-596 and Arizona Administrative Code ("A.A.C.") R12-15-810 are available thru the department bookstore.
2. Information to complete items 1, 2, and 3 may be available from your County Tax Receipt or your County Assessors Office.
3. Information to complete item 9 is available from your copy of the original Notice of Intent to Drill or our Records Division at (602)417-2405.
4. Information to complete items 11, 14 and 15 may be available from your driller.
5. If an individual other than the land owner or lessee signs this notice, an original notarized letter of authorization from the land owner/lessee, stating that the individual has permission to sign this specific Notice on his or her behalf, must accompany the Notice of Intention to Drill a Monitor/Piezometer Well.
6. Please complete two original notices with original signatures and include a \$10.00 check or money order for the processing fee, in accordance with A.R.S. § 45-113. Submit them to: P.O. Box 458, Phoenix, Arizona 85001-0458.

TIME FRAME FOR REVIEW OF YOUR APPLICATION

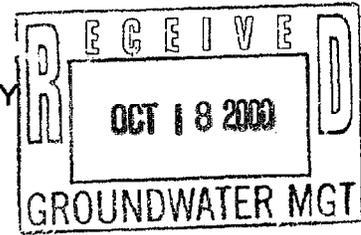
Within 15 days after receipt of your Notices of Intention, the Arizona Department of Water Resources ("Department") will determine whether your application should be granted or denied, unless this time is extended for lack of a complete application. If your application is incomplete, the Department will notify you in writing and will specify what information is necessary to make the application complete. Until the missing information is received, the time frame for review of your application will be suspended. Your application will not be complete until all of the requested information is received. If you do not supply the missing information within sixty (60) days, the Department may deem your application withdrawn and close the file.

At the end of its review, the Department will send you written notice either granting or denying your application for drilling authority. If your application is approved, the Drill Card will be mailed directly to the drilling company. If denied, the Department's notice will state justification for the denial and an explanation of your right to appeal.

Construction and Follow-up Requirements

1. Construction and abandonment standards for all wells must be in accordance with Department Rules.
2. A.A.C. Rule R12-15-811(H)(2) requires a monitor well to be identified as such on the vault cover or at the top of the steel casing. Identification information must include the well registration number.
3. Pursuant to A.R.S. § 45-596(E), drilling, deepening or modification of the well must be completed within one year after the date of the Notice of Intent.
4. A Well Driller Report is required within thirty (30) days of completion of drilling. Within thirty (30) days after installation of pumping equipment in monitor wells, a Completion Report must be filed with the Department.
5. Pump equipment may not be installed on a well drilled for piezometer purposes. If a monitor well is pumped, pumping is limited to the maximum amount required for monitor purposes, but in no case may exceed 35 gallons per minute and an annual total volume of 10 acre feet.
6. Special construction standards required pursuant to A.A.C. Rule R12-15-821: 55-583972

UNION PACIFIC RAILROAD COMPANY



Joel R. Strafelda
Program Manager
(402) 271-6572
(402) 271-4461 (Fax)
jrstrafe@notes.up.com

UNION PACIFIC RAILROAD COMPANY

Environmental Management Group
1416 Dodge Street, Room 930
Omaha, NE 68179-0930

AZ Department of Water Resources
GMSS, Notice of Intent Unit
500 North 3rd Street
Phoenix, AZ 85004-3921

RE: Delegation of Signature Authorization

Dear Department of Water Resources:

This letter confirms that Union Pacific Railroad Company has given its signature authority to Environmental Resources Management (ERM) for the purpose of well permitting.

If you have any questions, please do not hesitate to contact me.

Sincerely Yours,

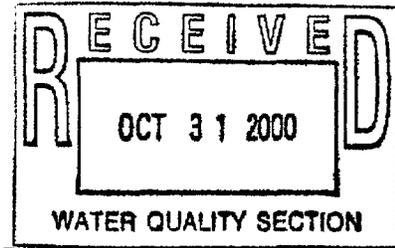
A handwritten signature in black ink, appearing to read "J. R. Strafelda".

J. R. Strafelda
Program Manager



WDC Exploration

Environmental, Mineral, Water and Geotechnical Drilling Services



October 30, 2000

Hydrology Division
Arizona Department of Water Resources
500 North 3rd Street
Phoenix, Arizona 85004

Attn: Ms. Shannon Reif

Reference: Request for Variance
Groundwater Monitoring Wells, Union Pacific Railroad

Dear Ms. Reif,

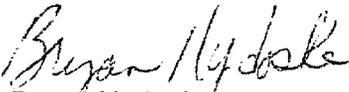
WDC Exploration respectfully requests variance of Arizona Administrative Code R12-15-811, "Minimum Well Construction Requirements," Subsection B, Item 1, on construction of 7 groundwater monitoring well at the Union Pacific Railroad, Tucson, AZ.

1. 7 wells will be constructed with 4" schedule 40 PVC rather than the required 20' of steel casing at the top of the well.
2. 7 wells will be constructed with flush, traffic rated boxes rather than the required above grade completion.

Registration number: 55-583966 55-583968 55-583970
 55-583967 55-583969 55-583971 55-583972

Thank you for considering this request for variance. We look forward to your response. Should you have any questions please contact me at 1-800-914-7506.

Respectfully,
WDC Exploration


Bryan Nydoske
Arizona District Manager

ARIZONA DEPARTMENT OF WATER RESOURCES

500 North Third Street, Phoenix, Arizona 85004
Telephone 602 417-2448
Fax 602 417-2425



JANE DEE HULL
Governor

**RITA PEARSON
MAGUIRE**
Director

October 31, 2000

Bryan Nydoske
WDC Exploration
7940 S. Kolb Road
Tucson, Arizona 85706

**Re: Variance for Seven Monitor Wells
Well Registry Nos. 55-583966 through 55-583972
T14S, R13E, Section 12 CAB**

Dear Mr. Nydoske:

The Arizona Department of Water Resources (ADWR) received your request on October 30, 2000, for a variance in the construction of seven groundwater monitor wells located in Pima County for Union Pacific Railroad. The purpose of these wells is to monitor potential contamination.

ADWR approves the request for the following variance:

- Thermoplastic inner casing (riser) with a watertight cap may be used in lieu of steel (R-12-15-811.B.1).

The following *special requirements* are conditions for this variance (R-12-15-821):

- The PVC inner casings (risers) shall comply with ASTM Standard Guide D5092, Section 6.5.
- The wells shall be constructed per the "Variance Granted" Notice of Intention to Drill.
- The wells shall be abandoned (decommissioned) per A.A.C. R-12-15-816.

Any questions should be directed to Shannon Reif at 602-417-2400, x7270.

Sincerely,

A handwritten signature in cursive script, appearing to read "Frank Corkhill".

Frank Corkhill,
Supervisor, Technical Support Section

cc: Owner
File

ARIZONA DEPARTMENT OF WATER RESOURCES

Water Quality Assurance Program
500 North Third Street, Phoenix, Arizona 85004
Telephone 602 417-2473
Fax 602 417-2426



JANE DEE HULL
Governor

**RITA PEARSON
MAGUIRE**
Director

October 30, 2000

ERM West
Attn: Manfred Plaschke
7975 North Hayden Road
Suite D-354
Scottsdale, AZ 85258

RE: Well Registration Nos. 55-583966 through 55-583972

Dear Mr. Plaschke:

The Department of Water Resources recently received your Notice of Intention to Drill seven (7) monitor wells for Union Pacific Railroad in Township 14South, Range 13 East, Section 12. This location has been determined to be in proximity to a contaminated groundwater area known as the 7th Street and Arizona Avenue Water Quality Assurance Revolving Fund (WQARF) remedial site.

Please be advised that according to R12-15-851, you are required to notify the Department at least two (2) business days in advance of commencement of well drilling activities for the above referenced wells. You may submit this required notice to the Department by either letter or facsimile, and the Department must receive it at least two (2) business days prior to drilling.

Mailing Address:
Water Quality Assurance Program
Arizona Department of Water Resources
500 N. 3rd Street
Phoenix, AZ 85004

Facsimile Number:
(602) 417-2426

If you have any questions, please contact the WQARF Section at (602) 417-2473.

Sincerely,


Shannon L. Reif
Water Quality Section

ARIZONA DEPARTMENT OF WATER RESOURCES

500 North 3rd Street, Phoenix, Arizona 85004

Telephone (602) 417-2470

Fax (602) 417-2422



JANE DEE HULL
Governor

RITA PEARSON MAGUIRE
Director

November 02, 2000

UNION PACIFIC RAILROAD
1416 DODGE STREET RM930
OMAHA, NE 68179

Registration No. 55-583972
File No. D(14-13) 12 CAB

Dear Well Owner:

Enclosed for your records is an annotated copy of the Notice of Intention to Drill a well. This is returned to you as evidence of compliance with A.R.S. §45-596. A drilling card has been mailed to your designated driller. Prior to drilling he must have it in his possession.

Since this well is being drilled as a Monitor well, or for Cathodic Protection, Grounding, Geotechnical or Piezometer purposes, our standard driller report form is also being furnished to the driller. He is required to complete it and return it to the Department within 30 days after the completion of the well. A Completion Report form is being furnished for monitor wells where pump installation is authorized. This must be completed within thirty days of installation as required by A.R.S. §45-600.

A Change of Well Information form is enclosed for your future use. If you deem it necessary to change the location of the proposed well, please notify the Department on the enclosed form. A properly amended Drilling Card will then be issued and must be in possession of the driller before drilling begins. During the drilling of a new well, if it is determined that it must be abandoned, then a Well Abandonment Completion Report must be submitted per R12-15-816.F.

Per A.R.S. §45-593, the person to whom a well is registered shall notify this Department of a change of ownership of the well and/or information pertaining to the physical characteristics of the well, in order to keep the well registration file current and accurate.

Sincerely,

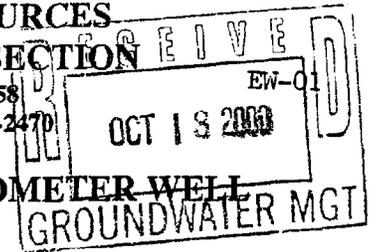
A handwritten signature in cursive script that reads "Toni Bergeman".

Toni Bergeman
Water Resource Technician
Groundwater Management Support Section

Enclosures

**ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION**

MAIL TO: P.O. BOX 458, PHOENIX, ARIZONA 85001-0458
FOR INFORMATION: CALL MONICA ORTIZ AT (602) 417-2470



NOTICE OF INTENTION TO DRILL MONITOR/PIEZOMETER WELL

PLEASE READ GENERAL INSTRUCTIONS AND CONDITIONS ON REVERSE SIDE OF THIS FORM BEFORE COMPLETING.

1. Well/Land Location:

14 N/S 13 E/W 12
Township Range Section

NW 1/4 NE 1/4 SW 1/4
10 Acre 40 Acre 160 Acre

2. Position location of the well on the land:

Latitude 32 ° 13 ' 33 "
Longitude 110 ° 58 ' 10 "

3. County: Pima

4. Owner of the well:

Union Pacific Railroad
Name
1416 Dodge Street, Rm 930
Mailing Address
Omaha NE 68179
City State Zip
Telephone No. (402) 271-6572

6. Owner of the Land of Wellsite:

Union Pacific Railroad
Name
1416 Dodge Street, Rm 930
Mailing Address
Omaha NE 68179
City State Zip
Telephone No. (402)271-6572

7. Consulting firm:

ERM West
Name
Manfred Plaschke
Contact Person
Telephone No. (480) 998-2401

8. Purpose of well drilled pursuant to this notice:

Monitor X (remediation)
Piezometer
9. If for deepening or modifying, list well registration number:
55-

10. Will this proposed well be associated with permit: Yes _____ No X
If yes, Permit No. _____

11. Construction will start:
November 6 2000
Month Day Year

12. Period well will remain in use:
10 Months/ Years

13. For monitoring wells, is pump equipment to be installed?
Yes X No _____

(a) If yes, design pump capacity:
2 to 5 gpm
(b) What use will be made of the water:
remediate and reinject

14. Drilling Firm:

C
Name
40 S Kolb Road
Address
Chson AZ 85706
City State Zip
20) 574-2904
Phone No.
License Number
2188 A-04
License Category

HEIDI V. KOHZ-WILLIAMS
TODD L. WILLIAMS
2434 E MARILYN RD.
PHOENIX, AZ 85032

91-2153 977
1221
22461457
10/17/00
Date

Pay to the order of ADWR \$ 70.00
Seventy and 0/100 Dollars

BANK ONE
Bank One, Arizona, NA
McCormick Ranch Office (153)
Scottsdale, Arizona

Memo 3222.05

pursuant to R12-15-816.

explain: Well will be used

to extract petroleum hydrocarbon-impacted groundwater.

17. If construction plans have been coordinated with Arizona Department of Environmental Quality, who is the agency contact? Jeff Emde, URP

18. If construction plans have been coordinated with Arizona Department of Water Resources, who is the agency contact? N/A

upon receipt

005700 -

WELL REGISTRY No. 55-583972 -

CADASTRAL LOCATION: D(14B)12CAB

Date Received 10/18/00

Date to Water Quality 10/26/00

Date Returned to GMSS 10-31-00

Date to Hydrology 10-26-00

Variance Letter Received

Yes 10-31-00 SR

No

Well diagram Received

Yes

No

TYPE OF WELL:

Monitor/Piezometer 7

Other

Domestic

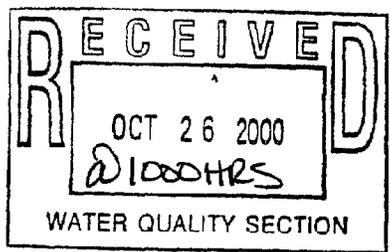
NOI to Abandon

Geotechnical

WATER QUALITY - WOARF ANALYST COMMENTS:

Dulling @ monitor wells located in the buffer zone of the "9th St + Az. Avenue" WOARF site in Tucson AMA

Site Map attached - Referred to Hydrologist
Subbasin Map attached - Returned to GMSS



WATER QUALITY APPROVAL:

Granted

Not granted

Letter issued

Signature: Shannon L. Reef

Date: 10-26-00

HYDROLOGY DIVISION - WOARF HYDROLOGIST COMMENTS:

10/26/00 requested to request a variance - rec'd 10-31-00 SR

55-583966 through 55-583972 D(14B)12 CAB

Notes + Well diagrams have been revised and resubmitted - copies are included in each copy

HYDROLOGY DIVISION APPROVAL:

Granted

Not Granted

Letter Issued

Variance

Not Required

Granted

Not Granted

Letter issued

Signature: Shannon L. Reef

Date: 10-31-00 SR

SR