

Appendix K: Drywell Information

As stated in the report, the City should develop a program to identify and confirm if the drywells located in the City of Los Altos are in fact drywells and if so confirm they are in compliance with local, state, and federal guidelines. The Regional Water Quality Control Board (RWQCB), US EPA, and the Santa Clara Valley Water District (SCVWD) all have programs that inventory and reduce impacts from drywells. The US EPA regulates drywells, also classified as Storm Water Drainage Wells, on a federal level. A Class V storm drainage well is defined as a well that “manage[s] surface water runoff (rainwater or snow melt) by placing it below the ground surface...[and] is any bored, drilled, or driven shaft, or dug hole that is deeper than its widest surface dimension, or an improved sinkhole, or a subsurface fluid distribution system.” The EPA began regulating drywells due to the Safe Drinking Water Act which requires the protection of Underground Sources of Drinking Water (USDW). Drywells pose a threat to these USDWs because a wide variety of contaminants, sediments, microorganisms, metals, and more pose potential harm to water quality underground. In order to manage what water is flowing into these underground water sources, the EPA requires that each drywell be registered at no additional cost.

The SCVWD is the additional regulatory agency that oversees drywells in the City of Los Altos. The District runs a Dry Wells Program that provides assistance for the installation, destruction, and possibly reconstruction of drywells depending on current water quality of well. Since 1993, the SCVWD has required the registration of drywells deeper than 10 feet. It is suggested that the City check with SCVWD to see if their wells are registered with the District.

If the City chooses to proceed with the identification of dry wells, these are the appropriate next steps for the dry wells:

1. Verify with the SCVWD whether the dry wells are registered or not. If not, register wells with both the district and the EPA.
2. Decide whether to reconstruct well or to cap it.
3. Once that is decided, fill out well permit application for drywells. **Fee applicable.**
4. Once the permit application has been filled out, schedule a well inspection.
 - a. Call the district’s Well Ordinance Program Hotline at (408) 630-2660.
 - b. They will give details about how to follow up regarding well sampling and application process.
5. Fill out application for either destruction or reconstruction of drywell depending on what the district decides about well.

This Appendix is informational in purpose and provides the following documents for that reason: SCVWD well applications, EPA Municipal Storm Water and Ground Water Discharge Regulations in California, detailed replacement drywell cost estimate, photos of drywells of concern, and Resolution No. 81, Statement of Policy on Sewer and Drainage Wells.

SANTA CLARA VALLEY WATER DISTRICT

Well Permit Fee Schedule

Effective: July 1, 2013

Exhibit A of Board Resolution No. 13-24

Permit Type	Permit Fee	Comment
Well Construction	\$400 per well	Applied to all devices requiring a well construction permit
Well Destruction	\$330 per well	Applied to all devices requiring a well destruction permit
Well Reconstruction	\$170 per well	Applied to all events requiring a well reconstruction permit
Closed Loop Geothermal Heat Exchange Well System	See Below	Based on number of wells in proposed system ¹
Exploratory Boring	\$300 per site/event	Applied per site, per continuous event
Standby Well Permit	\$300 initial \$220 extension	For all new standby permits and permit extensions (permit void after two years)
Permit Fee Refund	70% of permit fee	

Closed Loop Geothermal Heat Exchange Well Permit Fee Schedule¹

Number of Wells in Proposed System	Permit Fee
1 to 5	\$565
6 to 10	\$750
11 to 20	\$1,050
21 to 50	\$1,700
51 to 100	\$2,250
101 to 200	\$4,500
201 to 300	\$6,750
More than 300	\$9,000

1 – Open loop geothermal heat exchange wells are permitted and regulated as water supply wells. One Well Construction Permit is required for each well installed.



TO BE COMPLETED BY DISTRICT

District Permit No.:	Date Issued:	Driller's Log No.:	Well Registration No.:
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Well Owner:	Property Owner:	Name of Property at Well Site:
Well Owner's Mailing Address:	Property Owner's Mailing Address:	Address of Well Site:
City, State, Zip	City, State, Zip	City, State, Zip
Telephone No.:	Telephone No.:	Assessor's Parcel No. of Well Site: Book _____ Page _____ Parcel _____

Do other wells exist on the property? ☐ Yes ☐ No How many wells total currently exist? _____

Reasons for installing new well: _____

LIST ALL EXISTING WELLS AND THEIR STATUS, IF KNOWN	ENVIRONMENTAL HEALTH DEPT.												
<table><tr><td>Well Registration No.:</td><td>Owner's Well No.:</td></tr><tr><td>Permit No.:</td><td>Purpose of Well:</td></tr><tr><td>Status: <input type="checkbox"/> Active <input type="checkbox"/> Inactive</td><td>Depth: Casing:</td></tr><tr><td colspan="2">Comments:</td></tr><tr><td colspan="2">Do you plan to use this well? <input type="checkbox"/> Yes <input type="checkbox"/> No</td></tr><tr><td colspan="2">Comments:</td></tr></table>	Well Registration No.:	Owner's Well No.:	Permit No.:	Purpose of Well:	Status: <input type="checkbox"/> Active <input type="checkbox"/> Inactive	Depth: Casing:	Comments:		Do you plan to use this well? <input type="checkbox"/> Yes <input type="checkbox"/> No		Comments:		<input type="checkbox"/> Well in Good Condition <input type="checkbox"/> Well in Use <input type="checkbox"/> Abandoned <input type="checkbox"/> Damaged <input type="checkbox"/> Well on Standby <input type="checkbox"/> Well Should Be Destroyed Comments:
Well Registration No.:	Owner's Well No.:												
Permit No.:	Purpose of Well:												
Status: <input type="checkbox"/> Active <input type="checkbox"/> Inactive	Depth: Casing:												
Comments:													
Do you plan to use this well? <input type="checkbox"/> Yes <input type="checkbox"/> No													
Comments:													
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Permit No.:	Purpose of Well:												
Status: <input type="checkbox"/> Active <input type="checkbox"/> Inactive	Depth: Casing:												
Comments:													
Do you plan to use this well? <input type="checkbox"/> Yes <input type="checkbox"/> No													
Comments:													

*This form must be completed and submitted with any Well Construction Application for a water supply well. Also attach a map showing all well locations with respect to property boundaries and structures.



Please complete both sides of this form.

Page 1 of 2

Property Owner:	Well Owner (if different):	Name of Business/Residence at Well Site:
Property Owner Address:	Well Owner Address:	Address of Well Site:
City, State, Zip:	City, State, Zip:	City, State, Zip:
Telephone No:	Telephone No:	Telephone No:
Assessor's Parcel Number of Well Site:	Well Registration No:	Date of Reactivation:
Book: Page: Parcel:		

THIS SECTION TO BE COMPLETED FOR MONITORING/EXTRACTION WELLS ONLY

Consultant's Company Name (if any):	Address:
City, State, Zip:	Telephone No:
Owner's/Consultant's Well No:	Original Permit No:

Well Description:

☐ Vertical Well ☐ Dewatering Well ☐ Elevator Shaft ☐ Multiple Casing ☐ Horizontal Well ☐ Pit Well

Well Type, check all that apply:

☐ Water Producing (supply or extraction): ☐ Contamination Cleanup ☐ Agricultural ☐ Domestic ☐ Municipal & Industrial
☐ Vapor Extraction
☐ Monitoring: ☐ Inclinator ☐ Groundwater ☐ Vadose ☐ Piezometer ☐ Interface ☐ Suction Lysimeter ☐ Seismic
☐ Injection/Infiltration: ☐ Contamination Cleanup ☐ Reclaimed Water ☐ Air Sparging
☐ Cathodic Protection

Has an Inactive/Standby Well Permit been issued for the period of time the well was not in use? ☐ Yes ☐ No

If yes, please give the most recent Inactive/Standby Well Permit No: _____ (Go to page 2)

If no, please complete the following section and page 2.

CONSULTANT/DRILLER/PUMP CONTRACTOR'S CERTIFICATION STATEMENT

1. Certify that the well head has no defects which may impair the quality water in the well or in the water-bearing formations penetrated;
2. The well head is appropriately protected to prevent injury or accidental entry by persons or animals;
3. The well head is watertight and appropriately protected to prevent the entrance of undesirable water or foreign matter;
4. The well head is watertight and appropriately protected to prevent the uncontrolled flow of water from the well;
5. The well is marked so that it can be clearly seen;
6. The area around the well is free of brush and debris;
7. The well is capable of being used for its intended purpose.

Company Name:	Address:		
City, State, Zip:	Telephone No: ()	License No:	
Signature of Driller/Pump Contract or/Consultant:	Print Name:	Date:	



I agree to properly maintain the well described in this permit so that:

1. The well head has no defects which may impair quality of water in the well or in the water-bearing formation penetrated;
2. The well head is appropriately protected to prevent injury or accidental entry by persons or animals;
3. The well head is watertight and appropriately protected to prevent the entrance of undesirable water or foreign matter;
4. The well head is watertight and appropriately protected to prevent the uncontrolled flow of water from the well;
5. The well is marked so that it can be clearly seen;
6. The area surrounding the well is kept clear of brush or debris.

Signature of Well Owner:	Date:
Print Name:	

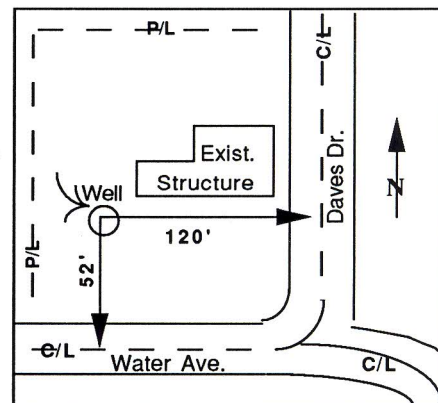
Site Plan

WELL LOCATION

(Draw accurately; recommend using assessor's map)

1. Sketch well location to scale, show dimensions to nearest foot.
2. Show a minimum of two dimensions at right angles. dimensions shall be from the centerline of the closest named streets, roads or highways .

EXAMPLE →



Sketch well location as described above:



5750 Almaden Expressway
San Jose, CA 95118-3686
(408) 265-2600

WELL RECONSTRUCTION APPLICATION

FC 1756 (03-26-15)
Page 1 of 4

► Please complete all information.

Well Owner:		Property Owner:	DISTRICT PERMIT NO.:
Well Owner's Mailing Address:		Property Owner's Mailing Address:	Name of Business/Residence at Site:
City, State, Zip		City, State, Zip	Address of Well Site:
Telephone No.:		Telephone No.:	City, State, Zip
			Assessor's Parcel No. of Well Site:
			Book _____ Page _____ Parcel _____
<input type="checkbox"/> Well on District property/easement (See General Condition E.)			
Consultant:		Drilling Company:	
Address:		Address:	
City, State, Zip		City, State, Zip	
Telephone No.:		Telephone No.:	C-57 License No.:
<input type="checkbox"/> Check if address or phone number has changed		<input type="checkbox"/> Check if address or phone number has changed	

► **All questions below are to be completed before permit can be issued; if unknown, applicant shall make on-site investigation to determine correct answers.**

WELL INFORMATION								
Well Registration No.:		Owner/Consultant Well No.:		Original Well Construction Permit No.:				
Well Casing Depth:		Total Boring Depth:		Well Casing Diameter:				
This Section to Be Completed for All Monitoring Wells or Extraction/Recovery Wells								
Case Name/No.:				Caseworker Name:				
Oversight Agency:				Caseworker Telephone No.:				
WELL TYPE/USE	<input type="checkbox"/> WATER PRODUCTION	<input type="checkbox"/> MONITORING	<input type="checkbox"/> REMEDIATION	<input type="checkbox"/> DEWATERING	<input type="checkbox"/> HEAT EXCHANGE	<input type="checkbox"/> INJECTION	<input type="checkbox"/> CATHODIC PROTECTION	<input type="checkbox"/> OTHER
	<input type="checkbox"/> Agricultural <input type="checkbox"/> Domestic <input type="checkbox"/> Industrial <input type="checkbox"/> Municipal	<input type="checkbox"/> GW Level <input type="checkbox"/> GW Quality <input type="checkbox"/> Inclinator <input type="checkbox"/> Vapor <input type="checkbox"/> Other	<input type="checkbox"/> Air Sparge <input type="checkbox"/> GW Extraction <input type="checkbox"/> Material Emplacement <input type="checkbox"/> Vapor Extraction <input type="checkbox"/> Other	<input type="checkbox"/> Permanent <input type="checkbox"/> Temporary	<input type="checkbox"/> Closed Loop <input type="checkbox"/> Open Loop	<input type="checkbox"/> Groundwater Cleanup Reinjection <input type="checkbox"/> Stormwater <input type="checkbox"/> Water Supply Recharge <input type="checkbox"/> Other		

IMPORTANT: A minimum 24-hour notice must be given to Santa Clara Valley Water District prior to installing the annular seal. Call (408) 630-2660. Please allow 10 working days to process permit application.

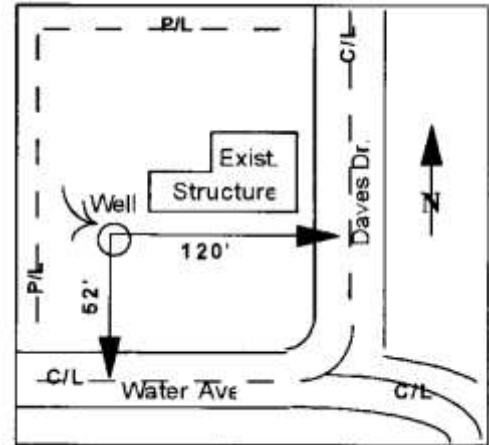
SITE PLAN

Well Location

(Draw accurately; recommend using assessor's map):

1. Sketch well location to scale; show dimensions to nearest foot.
2. Show a minimum of two dimensions at right angles. Dimensions shall be from the centerline of the closest named streets, roads, or highways.

EXAMPLE:



Sketch well location as described above:



5750 Almaden Expressway
San Jose, CA 95118-3686
(408) 265-2600

WELL RECONSTRUCTION APPLICATION

FC 1756 (03-26-15)
Page 3 of 4

Please describe in detail the proposed reconstruction method:

SIGNATURES

I understand and agree that all work associated with this permit is required to be done in accordance with Santa Clara Valley Water District (District) Well Ordinance 90-1, the District Well Standards, and conditions of this permit (see page 4). I certify that the information given in this permit is correct to the best of my knowledge and that the signature below, whether original, electronic, or photocopied, is authorized and valid, and is affixed with the intent to be enforceable. I also certify that a right of entry/encroachment agreement has been formalized between the well owner and property owner, if parties differ.

Signature of Well Owner/Agent:	Print Name:	Date:
Signature of Property Owner/Agent:	Print Name:	Date:
Signature of Driller/Agent:	Print Name:	Date:
Signature of Consultant/Agent (if any):	Print Name:	Date:

DISTRICT USE ONLY

☐ Special Conditions: _____

Permit Approved by:	Date:
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District Permit No.:	Date Issued:	Expiration Date:	Driller's Log No.:
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Please allow 10 working days to process this application.



GENERAL CONDITIONS

- A. **District** (telephone 408-630-2660) **must be notified a minimum of one working day before the well reconstruction activities.** An authorized District representative must be on site to witness the reconstruction activities. This requirement may be waived by an authorized District representative. If the District waives the inspection requirement, the District may request the permittee(s) to furnish certification under penalty of perjury that the well was reconstructed in accordance with the District Well Standards and with the permit conditions.
- B. This permit is valid only for the purpose specified herein. Well reconstruction methods authorized under this permit may not be changed except by written approval of an authorized District representative, and only if the District believes that such a change will result in equal or superior compliance with the District and State Well Standards (e.g., if the District representative believes that site conditions warrant such a change).
- C. This permit is only valid for the Assessor's Parcel No. indicated on it.
- D. If any work associated with this permit will take place on District property/easement, an encroachment or construction permit must be granted by the District's Community Projects Review Unit (telephone 408-630-2350, -2217, or -2253).
- E. Within 30 days of the completion of the well reconstruction activities, the driller identified on this permit shall fully complete State of California DWR Form 188 and submit the original to the District's Well Ordinance Program.
- F. The permittee(s) shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend, and hold the District, its officers, agents, and employees free and harmless from any and all expense, cost, and liability in connection with or resulting from, the granting of or exercise of this permit including, but not limited to, property damage, personal injury, and wrongful death.
- G. Permittees are required to be in full compliance with Cal/OSHA California Labor Code Section 6300.
- H. A current C-57 Water Well Drilling Contractor's License is required for the reconstruction of all wells.
- I. Permittee, permittee's contractors, consultants, or agents shall be responsible to assure that all materials generated during drilling, well destruction, well development, pump testing, or other activities associated with this permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case shall these materials/waters be allowed to enter, or potentially enter, on- or off-site storm sewers, dry wells, or waterways. Such materials/waters shall not be allowed to move off the property where the work is being completed.
- J. The driller and consultants (if applicable) shall have an active copy of their Worker's Compensation Insurance on file with the District.
- K. This permit shall expire if not exercised within 180 calendar days of its approval unless an extension of the permit expiration date is granted by an authorized District representative.
- L. This permit must be kept on site during all activities associated with it and shall immediately be presented to an authorized District representative upon request.
- M. Permittee shall notify Underground Service Alert (USA) at 1-800-227-2600 or 811 prior to any digging.

Please allow 10 working days to process this application.



5750 Almaden Expressway
San Jose, CA 95118-3686
(408) 265-2600

WELL DESTRUCTION APPLICATION

FC 198 (03-26-15)
Page 1 of 4

► Please complete all information.

DISTRICT PERMIT NO.:		
Well Owner:	Property Owner:	Name of Business/Residence at Site:
Well Owner's Mailing Address:	Property Owner's Mailing Address:	Address of Well Site:
City, State, Zip	City, State, Zip	City, State, Zip
Telephone No.:	Telephone No.:	Assessor's Parcel No. of Well Site : Book _____ Page _____ Parcel _____
<input type="checkbox"/> Well on District property/easement (See General Condition E.)		
Consultant:	Drilling Company:	
Address:	Address:	
City, State, Zip	City, State, Zip	
Telephone No.:	Telephone No.:	C-57 License No.:
<input type="checkbox"/> Check if address or phone number has changed	<input type="checkbox"/> Check if address or phone number has changed	

► **All questions below are to be completed before permit can be issued; if unknown, applicant shall make on-site investigation to determine correct answers.**

WELL INFORMATION								
Well Registration No.:		Owner/Consultant Well No.:		Original Well Construction Permit No.:				
Well Casing Depth:		Total Boring Depth:		Well Casing Diameter:				
This Section to Be Completed for All Monitoring Wells or Extraction/Recovery Wells								
Case Name/No.:				Caseworker Name:				
Oversight Agency:				Caseworker Telephone No.:				
WELL TYPE/USE	<input type="checkbox"/> WATER PRODUCTION	<input type="checkbox"/> MONITORING	<input type="checkbox"/> REMEDIATION	<input type="checkbox"/> DEWATERING	<input type="checkbox"/> HEAT EXCHANGE	<input type="checkbox"/> INJECTION	<input type="checkbox"/> CATHODIC PROTECTION	<input type="checkbox"/> OTHER
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ADDITIONAL QUESTIONS FOR WATER PRODUCING WELLS								
Does the well have:		1. Outer conductor casing?	<input type="checkbox"/> Yes <input type="checkbox"/> No					
		2. Annular cement seal outside of casing at surface?	<input type="checkbox"/> Yes <input type="checkbox"/> No					
		3. A S.C.V.W.D. water meter attached?	<input type="checkbox"/> Yes <input type="checkbox"/> No					
Original Drilling Method: _____								

IMPORTANT: A minimum 24-hour notice must be given to Santa Clara Valley Water District prior to installing the annular seal. Call (408) 265-2607, ext. 2660. Please allow 10 working days to process permit application.



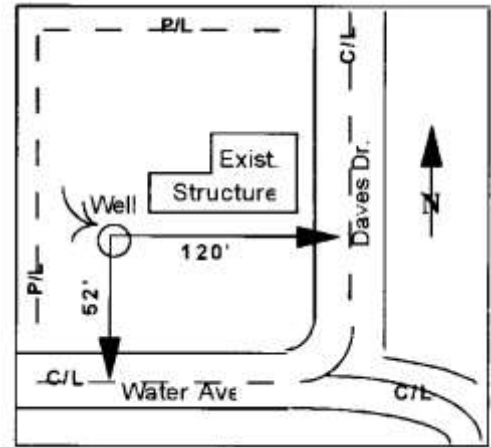
SITE PLAN

Well Location

(Draw accurately; recommend using assessor's map):

1. Sketch well location to scale; show dimensions to nearest foot.
2. Show a minimum of two dimensions at right angles. Dimensions shall be from the centerline of the closest named streets, roads, or highways.

EXAMPLE:



Sketch well location as described above:



Please describe in detail, the proposed destruction method (Any well destruction in which the well casing is left in place and in which the well has a filter pack outside the casing, must be destroyed using approved neat cement grout):

SIGNATURES

I understand and agree that all work associated with this permit is required to be done in accordance with Santa Clara Valley Water District (District) Well Ordinance 90-1, the District Well Standards, and conditions of this permit (see page 4). I certify that the information given in this permit is correct to the best of my knowledge and that the signature below, whether original, electronic, or photocopied, is authorized and valid, and is affixed with the intent to be enforceable. I also certify that a right of entry/encroachment agreement has been formalized between the well owner and property owner, if parties differ.

Signature of Well Owner/Agent:	Print Name:	Date:
Signature of Property Owner/Agent:	Print Name:	Date:
Signature of Driller/Agent:	Print Name:	Date:
Signature of Consultant/Agent (if any):	Print Name:	Date:

DISTRICT USE ONLY

The District has approved the following destruction methods for the well described in this permit:

- ☐ Pressure Grout Method (as outlined in Standards)
NOTE: Neat cement is the only sealing material approved for pressure grouting.
- ☐ Drill out well to a total depth of _____ feet, with a minimum bore of _____ Inches.
- ☐ Clean out well casing to a total depth of _____ feet and back fill with approved sealing material (if total depth is unknown, driller must determine total depth during clean out of well). NOTE: Neat cement is the only sealing material approved for back filling gravel packed wells.
- ☐ Well casing must be perforated at the following depths prior to backfilling: _____
- ☐ Other: _____

Permit Approved by:	Date:
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District Permit No.:	Date Issued:	Expiration Date:	Driller's Log No.:
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Please allow 10 working days to process this application.

GENERAL CONDITIONS

- A. **District** (telephone 408-265-2607, ext. 2660) **must be notified a minimum of one working day before the placement of the well destruction sealing materials.** An authorized District representative must be on site to witness the destruction activities. This requirement may be waived by an authorized District representative. If the District waives the inspection requirement, the District may request the permittee(s) to furnish certification under penalty of perjury that the well was destroyed in accordance with the District Well Standards and with the permit conditions.
- B. This permit is valid only for the purpose specified herein. Well destruction methods authorized under this permit may not be changed except by written approval of an authorized District representative, and only if the District believes that such a change will result in equal or superior compliance with the District and State Well Standards (e.g., if the District representative believes that site conditions warrant such a change).
- C. This permit is only valid for the Assessor's Parcel No. indicated on it.
- D. This permit may be voided if it contains incorrect information. If the permit is voided after work has begun, the well or boring that is being destroyed under this permit may be required to be reconstructed in accordance with District and State Well Standards.
- E. If any work associated with this permit will take place on District property/easement, an encroachment or construction permit must be granted by the District's Community Projects Review Unit (telephone 408-265-2607, ext. 2350, 2217, or 2253).
- F. Within 30 days of the completion of the well destruction activities, the driller or consultant identified on this permit shall fully complete State of California DWR Form 188 and submit the original to the District's Wells and Water Production Unit.
- G. The permittee(s) shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend, and hold the District, its officers, agents, and employees free and harmless from any and all expense, cost, and liability in connection with or resulting from, the granting of or exercise of this permit including, but not limited to, property damage, personal injury, and wrongful death.
- H. Permittees are required to be in full compliance with Cal/OSHA California Labor Code Section 6300.
- I. A current C-57 Water Well Drilling Contractor's License is required for the destruction of all wells.
- J. Permittee, permittee's contractors, consultants, or agents shall be responsible to assure that all materials generated during drilling, well destruction, well development, pump testing, or other activities associated with this permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case shall these materials/waters be allowed to enter, or potentially enter, on- or off-site storm sewers, dry wells, or waterways. Such materials/waters shall not be allowed to move off the property where the work is being completed.
- K. The driller and consultants (if applicable) shall have an active copy of their Worker's Compensation Insurance on file with the District.
- L. This permit shall expire if not exercised within 180 calendar days of its approval unless an extension of the permit expiration date is granted by an authorized District representative.
- M. If the well approved to be destroyed under this permit is a monitoring well, associated with an investigation/cleanup overseen by a regulatory agency, the proposed well destruction must be approved by the person with regulatory authority over the investigation/cleanup.
- N. This permit must be kept on site during all activities associated with it and shall immediately be presented to an authorized District representative upon request.
- O. Permittee shall notify Underground Service Alert (USA) at 1-800-227-2600 or 811 prior to any digging.

Please allow 10 working days to process this application.



Municipal Storm Water and Ground Water Discharge Regulations in California



Inside:

- Do I need to get a Permit?
- How do I Comply?



GUIDELINES FOR RULE AUTHORIZATION

1. All wastes are managed.
2. Dilution is not a method of treatment.
3. All disposal points are known.
4. All receiving waters are known.
5. Safe operation of well(s) is assured with routine inspection, maintenance and monitoring.
6. Close wells which cannot demonstrate compliance.

According to the 1996 National Water Quality Inventory, a biennial summary of State surveys of water quality, approximately 40 percent of surveyed U.S. waterbodies are impaired by pollution and do not meet water quality standards. A leading source of this impairment is polluted runoff. To reduce the impacts of polluted runoff, the Environmental Protection Agency (EPA) Storm Water program has developed a series of rules for municipalities and construction sites, requiring prevention of contamination of runoff, and retention of runoff where possible.

Urban and construction-related runoff has been documented to contain numerous substances known to have toxic or pathogenic properties, such as motor vehicle fluids, pesticides, heavy metals, and fecal coliform. Spilled fuel, solvents, waste oil, paints, and other maintenance fluids pose a risk to the environment but may be especially harmful if they enter someone's drinking water supply. Small amounts of some substances may cumulatively degrade an aquifer, if a significant proportion of contaminated runoff is percolated to the water table.

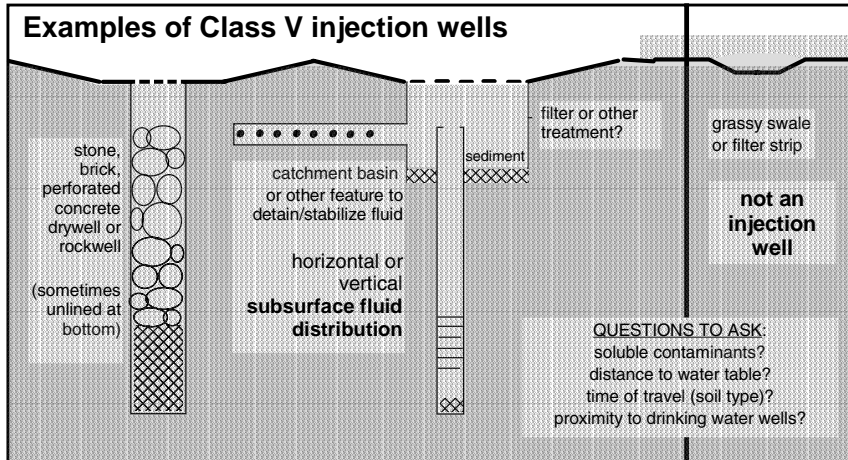
The percolation of contaminated runoff can cause unacceptable consequences to ground water resources. To prevent the trading of pollution from surface water to ground water, EPA Region 9 has prepared this fact sheet for municipalities contemplating the use of injection wells as a means of managing storm water.

The UIC regulations were promulgated to regulate subsurface disposal of fluids through drains, pipes, and other constructed conveyances that are intended to permanently emplace fluid below ground surface. Drywells, unlined sumps, seepage pits, and infiltration galleries are some of the terms used to describe the subcategory of injection wells known as shallow Class V injection wells. Municipalities who utilize injection wells as a means of storm water management need to be cognizant of the regulations applicable to this practice.

Storm water wells can be a community asset or liability. One incident of contamination could cause millions of dollars of damage to the public water system and to the local economy. Complying with the regulation may be as simple as reporting the number of wells you operate. Implementing additional management measures could prevent pollution and protect precious water resources.

What is a Class V injection well?

STORM WATER MANAGEMENT DEVICES



All percolation, deep or shallow, poses some environmental risk. Best management practices, pretreatment, and exposure to the elements all have a role in reducing storm water contaminants, but they provide no guarantee. Storm water programs can't eliminate risk, but they can significantly reduce it.

What are the requirements in California for owners and operators of Class V injection wells?

1. **Submit an Inventory Form** to EPA for all Class V injection wells. The inventory form registers the ownership and liability for the wells and notes their approximate location. Complying with the inventory requirement means you are "authorized by rule" to continue injecting unless EPA requires more information, a permit, or closure of your well(s). For a copy of the inventory form, contact EPA Region 9. *40 CFR 144.26*

2. Respond to requests for additional information about your well(s). If EPA suspects that your well(s) may be threatening an underground source of drinking water, it may require you to further investigate the location and use of your well(s) relevant to area aquifers and land uses. *40 CFR 144.27*

3. If requested by EPA, apply for and comply with an injection permit. *40 CFR 144.25*

4. Close any wells that are suspected or likely to cause contamination of underground sources of drinking water. *40 CFR part 144.89*

5. No owner or operator shall construct, operate, maintain, convert, plug, abandon, or conduct any other injection activity in a manner that allows the movement of fluid containing any contaminant into underground sources of drinking water, if the presence of that contaminant may cause a violation of any drinking water regulation under 40 CFR part 142 or may otherwise adversely affect the health of persons. *40 CFR 144.12*

...FROM THE REGULATIONS

(Injection) Well means: A bored, drilled, or driven shaft whose depth is greater than the largest surface dimension; or, a dug hole whose depth is greater than the largest surface dimension; or, an improved sinkhole; or, a subsurface fluid distribution system.

Subsurface fluid distribution system means an assemblage of perforated pipes, drain tiles, or other similar mechanisms intended to distribute fluids below the surface of the ground. *40 CFR 144.3*

DO I NEED A PERMIT?

EPA is the direct implementation agency for Class V injection wells in California. This means that they have the responsibility for collecting inventory data and determining which wells pose a risk that warrants further federal action, up to and including closure of endangering wells. The EPA office in San Francisco collects and maintains a database of all submitted inventory information.

Currently EPA does not have any permits for municipal storm water injection wells in California. This fact sheet is the first step in alerting municipalities of their legal obligations. Factors influencing EPA's decision to require a permit could include whether or not area ground water is a drinking water supply; its hydrogeologic susceptibility; land use practices and population density; or any documented contamination incidents linked to storm water injection wells.

Although California does not have delegation for the UIC program (like the NPDES program), the Water Code enables the Regional Water Quality Control Boards to prepare Waste Discharge Requirements for any discharge that may impair beneficial uses of waters of the state.

Local governments may set standards that are more stringent than EPA regulations.



Evaluating Storm Drain Failure

Injection/infiltration contaminates receiving ground water or surface water. Possible causes: receives human or animal waste, or chemical waste, through normal road use or illicit disposal. Constructed in a manner that there is inadequate time of travel between the “bottom” of the injection well/infiltration device and the receiving water body. Not maintained, so that heavily contaminated sediment from dry weather flow is flushed to the water table when wet season begins. Constructed hydrogeologically close to water body (inadequate setbacks.)

Clogs/doesn't percolate. Possible causes: Not maintained, clogged with solids. Illicit use for grease trap, waste oil or other viscous substance disposal. Constructed in soils with percolation rates less than 0.5 minutes per inch. Heavy clay, silty, or saturated soils. Constructed with too little setback to other fluid sources such as septic systems, leaking sewer lines, or “losing” streams (where surface water recharges ground water.)

IF AN INJECTION WELL NEEDS TO BE CLOSED:

The regulations specify minimum requirements for closure of an injection well: §144.89. You must plug or otherwise close the well in a manner that complies with the prohibition of fluid movement standard in §144.12 and summarized in §144.82(a). If the Regional Water Quality Control Board or other local agency has more stringent closure requirements, you should comply with those requirements as well. You must dispose or otherwise manage any soil, gravel, sludge, liquids, or other materials removed from or adjacent to your well in accordance with all applicable Federal, State, and local regulations and requirements, as in §144.82 (b).

EPA Region 9 requires that site characterization and closure of shallow injection wells where hazardous or toxic materials may be present be overseen and approved by a hazardous materials regulator from the local or state government (or EPA) and be performed by a qualified environmental professional.

Federal closure guidance is available. Contact EPA Region 9's Ground Water Office (see back page for numbers.)

Best Management Practices

Standard program elements recommended for storm drains leading to surface waters include:

- Public education and public involvement
- Illicit discharge detection and elimination
- Construction/post-construction site runoff control
- Pollution prevention/Good housekeeping

The same concepts apply to ground water discharges; **the cleaner the runoff, the safer the disposal.** Additional considerations for protecting underground sources of drinking water should be based on the value and vulnerability of the resource.

Is ground water a source of drinking water, through wells or through discharge to a surface water body that is tapped? Has the area been designated as a wellhead protection area, sole source aquifer, or source water area by the public water system?

Structural BMPs:

EPA has no design requirements for storm water injection wells that inject into or above the water table. Deeper injection through and below drinking water supply aquifers generally requires a permit to insure mechanical integrity and pollution prevention.

Shallow infiltration is generally environmentally safer than deep, but it is no guarantee that contamination will be prevented.

Pretreatment is needed where soluble contaminants are a concern. Sedimentation and absorbent materials may not remove dissolved pesticides, solvents, and some motor vehicle fluids.

Every injection well and infiltration device should be accessible for routine inspection and maintenance.

Non-structural BMPs

Evaluate the soils, geology, and water table. Develop an understanding of how much water can safely be land-applied to reflect natural recharge patterns. Account for other sources of infiltration that might affect subterranean flow and cause “breakouts” in low spots, or landslides.

Establish setbacks that provide sufficient time of travel in unsaturated soils for pollutant removal (and/or capture if materials spill occurs.)

Map all injection wells/infiltration devices; keep design and maintenance records for each one. Layer maps with land uses, sewer maps, and other data that might influence drainage system performance.

Assess regional or watershed impacts from injected/infiltrated fluid through monitoring programs. Depending on the proximity of drained areas to drinking water wells, collaborate with drinking water suppliers to analyze raw well water quality for early detection of runoff impacts.

For more information:

EPA National Stormwater NPDES program:
http://cfpub.epa.gov/npdes/stormwater/swfinal.cfm?program_id=6 or
<http://www.epa.gov/npdes/menuofbmps/>

BMPs specifically for ground water:
<http://www.epa.gov/reg3wapd/uic/pdf/stormwater.pdf>

Drinking Water Source Protection BMPs:
<http://www.epa.gov/safewater/protect/swpbmp.html>

For 1999 EPA summary of stormwater injection practices nationally:
<http://www.epa.gov/safewater/uic/classv/volume3.pdf>

For EPA's Environmental Technology Verification (ETV) project, which is testing stormwater treatment technologies:
<http://www.epa.gov/etv/index.htm>

California State Water Resources Control Board website: www.swrcb.ca.gov

To obtain EPA inventory form, write to EPA at the return address below, or forms can be emailed: send email to janes.elizabeth@epa.gov

Questions about this guidance?
Call (415) 972-3537

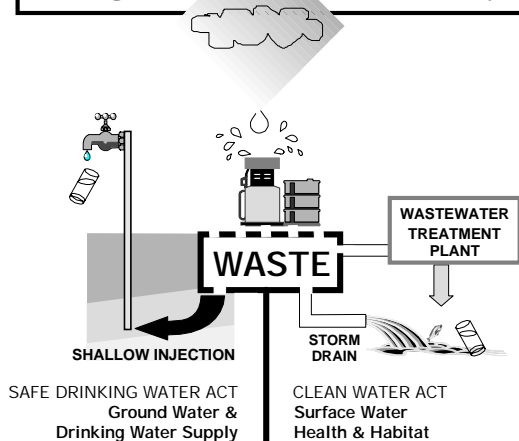
WHAT IF IT'S NOT THE DEPARTMENT'S INJECTION WELL?

Injection wells on private property (except for those strictly intended for roof runoff, or less than 2000 gpd sewage treatment) are subject to these regulations. Injection wells have been used at certain facilities to evade sewer pretreatment restrictions and other discharge limits. If you know or suspect of ground water problems arising from illicit (or hazardous) injection wells, please call the number above or your local/county hazardous materials agency. City departments are also recommended to seek their own authority to require abatement of such systems.

U.S. Environmental Protection Agency, Region 9
Underground Injection Control Program (WTR-9)
75 Hawthorne Street
San Francisco, California 94105-3109
OFFICIAL BUSINESS - PENALTY FOR PRIVATE USE \$300

FIRST CLASS MAIL
U.S. POSTAGE
PAID
U.S. EPA
Permit No. G-35

IS IT JUST RAIN
DOWN YOUR DRAIN?



CONTAIN - CONTROL - COMPLY

DISCLAIMER: The statements in this document are intended solely as guidance. This document is not intended, nor can it be relied upon, to create any rights enforceable by any party in litigation with the United States. EPA or the program Primacy Agency may decide to follow the guidance provided in this document, or to act at variance with the guidance based on its analysis of the specific facts presented. This guidance may be revised without public notice to reflect changes in EPA's approach to implementing the authorities discussed in the document or to clarify and update text.

Drywell Detailed Cost Analysis

Address	Street	Number of DW's	Inlets	MHs	Pipe (ft)	MH & Inlet Cost	Pipe Cost	Watershed
501	Alicia Way	1	1	3	397.11	\$25,018	\$59,567	Adobe
486	Alicia Way	1	1	0	80.27	\$25,018	\$83,648	Adobe
	Alicia Way				477	\$50,035	\$143,214	Adobe
624	Distel Drive	1	1	1	112.34	\$11,673	\$16,851	Adobe
625	Distel Drive	1	1	0	52.13	\$11,673	\$32,490	Adobe
	Distel Drive				164	\$23,345	\$49,341	Adobe
650	Milverton Road	1	1	0	50.58	\$18,345	\$101,094	Adobe
651	Milverton Road	1	1	0	326.13	\$18,345	\$85,920	Adobe
690	Milverton Road	1	1	3	394.80	\$18,345	\$44,440	Adobe
	Milverton Road				772	\$55,035	\$231,453	Adobe
123	Yerba Santa Avenue	1	1	1	48.00	\$18,345	\$14,399	Adobe
100	Yerba Santa Avenue	1	1	1	2.37	\$18,345	\$712	Adobe
	Yerba Santa Avenue				50	\$36,690	\$15,111	Adobe
1270	Grant Road	1	1	1	7.00	\$18,345	\$2,100	Perm/Stevens
1240	Grant Road	1	1	1	5.34	\$18,345	\$1,602	Perm/Stevens
	Grant Road				12	\$36,690	\$3,702	Perm/Stevens
1475	Oakhurst Avenue	1	1	1	274.60	\$42,811	\$219,564	Perm/Stevens
1245	Payne Drive	1	1	1	344.13	\$22,793	\$90,388	Perm/Stevens
1240	Payne Drive	1	1	0	37.72	\$22,793	\$101,704	Perm/Stevens
1194	Payne Drive	1	1	2	570.00	\$29,466	\$137,184	Perm/Stevens
1140	Payne Drive	1	1	5	844.52	\$16,121	\$51,684	Perm/Stevens
1215	Payne Drive	1	1	0	60.00	\$16,121	\$38,768	Perm/Stevens
	Payne Drive				2130.97	\$150,105	\$639,291	Perm/Stevens
	Dallas Court	1	1	3	314.63	\$45,035	\$94,390	Perm/Stevens
50	Pepper Drive	1	1	1	199.28	\$18,345	\$59,784	Adobe

Drywell Detailed Cost Analysis

160	Pine Lane	1	1	1	46.27	\$18,345	\$13,880	Adobe
	Loucks	1	1	1	108.82	\$18,345	\$32,647	Adobe
707	Edge Lane	1	1	3	604.89	\$45,035	\$181,468	Hale
40	Hawthorne Avenue	1	1	2	450.98	\$31,690	\$135,294	Hale
662	Oakwood Court	1	1	5	932.54	\$71,725	\$279,763	Hale
1868	Parma Way	1	1	4	720.65	\$58,380	\$216,194	Hale
		25	25	40	10592.15	\$658,800	\$2,095,532	

** This cost estimate does not include a contingency.

Milverton Rd.



650 Milverton Rd. (angled towards El Monte Rd.)



651 Milverton Rd.



Milverton Rd. facing El Monte Rd.

- no drains/inlets/ etc are visible



690 Milverton Rd.



50 Pepper Drive



**facing Eleanor Ave.
inlet under car**



50 Pepper Dr. (cont.)



40 Hawthorne Ave



Alicia Way



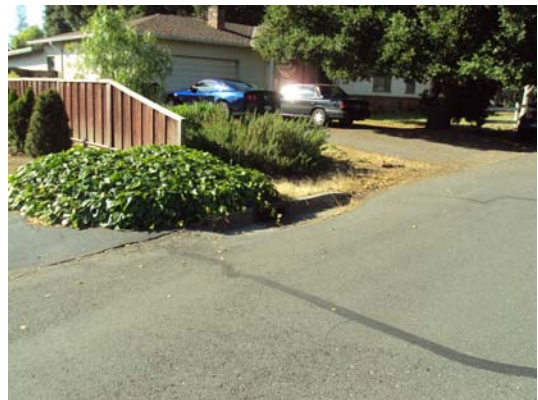
485 Alicia Way



486 Alicia Way



501 Alicia Way



Distel Dr.



624 Distel Dr.



625 Distel Dr. (end of the drive)



Close-up of drain at the end of the drive

160 Pine Lane



160 Pine facing Patrick Way



160 Pine facing the corner of Cherry Ave.

Yerba Santa Ave.



100 Yerba Santa Ave.





Corner of Cherry Ave and Yerba Santa Ave. – house number 123 not visible.

Loucks Ave



Corner of Loucks and Mercedes Ave. angled towards El Camino



Loucks and Mercedes – facing N. San Antonio Rd.

707 Edge Lane



707 Edge Lane.



**Corner of Edge and S. Springer
Rd**

**Completely covered with grasses,
plants.**

(below) 707 Edge Ln.



Oakwood Ct.



662 Oakwood Ct



Property line 668 and 662 Oakwood Ct.

1868 Parma Way (?)

***number on house not visible**



Payne Drive



1245 Payne Dr.



**1245 Payne Dr. (walking towards
Heritage Cr.)**



1240 Payne Dr.





1215 Payne Dr.

(to the side is a close- up of 1215 Payne)



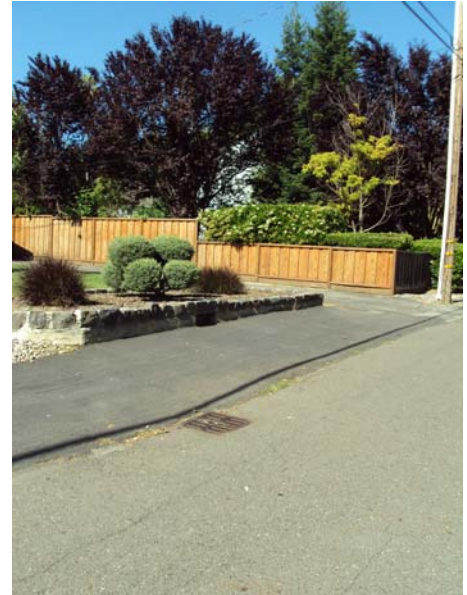
1194 Payne Dr.





1140 Payne Dr.

(close-up)



1475 Oakhurst Ave.





Oakhurst towards Payne

Grant Rd.



1240 Grant Rd.



1240/1230 Grant Rd.



1240/1250 Grant Rd.



1270 Grant Rd.



1270 Grant Rd, corner with Paula Ct.

Dallas Ct.



end of Court



End of Court



Court facing Fremont Rd.



Inlet at 1640 Dallas Ct.



Ct. to Fremont



Court at the corner of Fremont Rd.

RESOLUTION NO. 81

STATEMENT OF POLICY ON SEWER AND DRAINAGE WELLS

BE IT RESOLVED, that this Regional Water Pollution Control Board disapproves the construction and use of wells for the purpose of disposing of effluent from septic tanks or surface runoff from streets or highways except where such wells discharge into a formation which at no time will contain ground water fit for domestic, agricultural, or industrial use.

JOHN S. LONGWELL
Chairman

December 20, 1951

I, John B. Harrison, hereby certify that the foregoing is a true and correct copy of Resolution No. 81 and adopted by the Regional Water Pollution Control Board of Region No. 2, at its regular meeting on December 20, 1951.

JOHN B. HARRISON
Executive Officer
Regional Water Pollution Control
Board No. 2

EXPLANATION OF BOARD POLICY
AND
RESOLUTION NO. 81, STATING THE BOARD'S POLICY
ON SEWER AND DRAINAGE WELLS

The use of wells for the purpose of disposing of effluent from septic tanks or for disposing of surface runoff from streets or highways, has for some time been a matter of study and investigation by this Board. As the result of such studies and investigations the Board has, with certain exceptions, become greatly concerned over the continuation of such practices. Some of the reasons for this concern are as follows:

- a. The underground waters have been and will continue to be a most important source of supply for domestic, agricultural and industrial use. The economy of the Region is to a large extent built around the use of these underground waters. It is, therefore, essential that the basins and the water therein be protected against any conditions that might impair their use as a source of water supply.
- b. Wells used for disposal of septic tank effluent or the disposal of surface runoff from streets or highways by-pass the normal processes of nature which occur at or near the surface of the soil. Plants take up water and dissolved substances through their root systems. Transpiration, evaporation, and capillary action are also at work. A conventional septic tank with a properly designed and constructed leaching field laid out horizontally near the surface of the ground permits the application of septic tank effluent over a relatively large area without imposing any appreciable pressure and, except for periods when the soil is saturated, the waste is retained in the surface soil in which surface phenomena are able to exert their beneficial influence. On the other hand, wells of the type under consideration discharge within a relatively small area and under a pressure head or potential pressure head which injects waste into sub-surface strata rapidly and unchanged in chemical quality.
- c. It is not practicable to control the quality of septic tank effluent or street drainage nor to eliminate dissolved chemical substances or liquids which, if permitted to enter the ground water, would deny use of such water for domestic purposes because of taste, odor, or unpalatability. For similar reasons ground water pollution has occurred due to the introduction of chemical substances which rendered it unfit for irrigational and higher industrial uses.
- d. The only practical method of controlling underground water pollution is by preventing it in the first place. Unlike surface pollution which is susceptible of detection and correction in its early stages, underground water pollution is not usually noticed until the damage is done and rapid abatement of such underground water pollution is impractical.

- e. Underground water pollution affects not only the water itself but the underground storage basin as well. The impracticability of flushing out such a storage basin or separating one portion of it from another by construction of dams or otherwise cleaning it up is readily apparent. The damage, once done, may be long lasting or permanent.
- f. Pollution of underground waters and the storage basin itself may continue for years without being detected. Relatively small quantities of some pollutants may be introduced to underground waters by such wells over a long period of time and eventually cause cumulative damage of large proportions.
- g. Wells discharging effluent from septic tanks or surface runoff from streets and highways may cause pollution of underground basins regardless of whether the ground water is at present well below the bottom of such wells. The ground water may rise during cycles of higher precipitation or due to the discharging of water of satisfactory quality into the underground basin through properly controlled percolation beds or recharge wells. The underground basins should, therefore, be maintained in good condition at all times to permit their probable future use for water storage. The use of such controlled recharging practices will undoubtedly increase in the future as the demand for more underground water storage increases.

With the purpose in mind of protecting and preserving the quality of the underground waters in this Region from pollution, the Board has adopted the following resolution:

* * *

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Board No. 2

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