



DEPARTMENT OF THE NAVY  
SOUTHWEST DIVISION  
NAVAL FACILITIES ENGINEERING COMMAND  
1220 PACIFIC HIGHWAY  
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N00236.001546  
ALAMEDA POINT  
SSIC NO. 5090.3

5090  
Ser 06CA.JS\1226  
August 25, 2003

Ms. Judy Huang  
Regional Water Quality Control Board  
1515 Clay Street, Suite 1400  
Oakland, CA 94612

Dear Ms. Huang:

Subj: BENEFICIAL USE OF GROUNDWATER AT IR SITE 28, TODD SHIPYARD, AT  
ALAMEDA POINT, ALAMEDA, CALIFORNIA

The Navy is requesting that the Regional Water Quality Control Board grant an exemption from the municipal or domestic water supply designation for groundwater beneath IR Site 28 at Alameda Point. The request is based on site-specific data that has been collected during the remedial investigation for IR Site 28, after the *Determination of the Beneficial Uses of Groundwater, Alameda Point, Alameda, California* (Technical Memorandum) was finalized in July 2000. In addition, IR Site 28 was not a CERCLA site at the time when the technical memorandum was completed.

The technical memorandum, previously reviewed and approved by the BRAC Cleanup Team, evaluates the potential beneficial uses for groundwater at Alameda Point. Although IR Site 28 is not included in the technical memorandum, the factors that were evaluated to determine whether the groundwater beneath the 25 CERCLA sites, which existed at the time, should be considered a potential drinking water source for CERCLA cleanup decisions are applicable to IR Site 28. Referring to Figure 2 in the technical memorandum, IR Site 28 is located within the Central Geologic Region at Alameda Point. The enclosed map (enclosure 1) shows the location of the IR Site 28 and its monitoring wells (28SW01 – 28SW04).

Based on federal TDS and yield criteria, the First Water Bearing Zone (FWBZ) beneath IR Site 28 is classified as the combination of Class II and III aquifers. The FWBZ beneath the inland portion (28SW04) of IR Site 28 is a Class II aquifer while the FWBZ beneath the shoreline portion (28SW01 – 28SW03) of Site 28 is a Class III aquifer.

The site-specific data that has been collected from IR Site 28 monitoring wells (28SW01 – 28SW04) during the remedial investigation is enclosed for your review (enclosure 2).

The inland well (28SW04) has a maximum TDS concentration of 2,300 mg/l, which is below the limit (3,000 mg/L) that would indicate its use as a domestic or municipal water supply under SWRCB Resolution No. 88-63. In addition, the estimated maximum pumping rate from this inland well is 2,600 gpd, which could meet the beneficial use criterion for sustainable well yield. However, pumping this inland well may not be sustainable because the pumping would draw saltwater into this well due to the short distance (200 feet) to the bay.

Shoreline wells (28SW01 – 28SW03) already exceed the SWRCB TDS limit of 3,000 mg/L and the EPA guidance for potential as a drinking water supply of 10,000 mg/L. Although the maximum pumping rate of these wells (1,440 – 3,600 gpd) may be sufficient as a domestic or municipal water supply, seawater intrusion will occur after pumping begins.

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The other site-specific factors listed in the technical memorandum were also evaluated to determine whether the groundwater beneath IR Site 28 should be considered a potential drinking water source.

1. Given the short distance (200 feet) between the inland well (28SW04) and the bay, extraction of groundwater from this well will result in drawing seawater into the formation. At the pumping rate of 2,600 gpd at this well, the TDS level due to seawater intrusion will exceed 3,000 mg/l within a matter of weeks. The elevated TDS levels will continue to increase in 4 – 8 years.

Existing saltwater intrusion of the shoreline wells at the base of the FWBZ occurs since the groundwater samples collected from the shoreline wells have chemistry consistent with saltwater (TDS at 21,000 to 27,880 mg/l). The estimated arrival time of the seawater in these wells is within the matter of days based on the pumping rate of 1,440 – 3,600 gpd.

2. No supply wells currently exist within or down gradient of contaminated groundwater at Site 28.
3. State and county limitations on well construction exist because of the thin, vulnerable FWBZ aquifer.

In consideration of the factors listed above, the groundwater beneath IR Site 28 has little potential as a source of drinking water. Evaluation of CERCLA cleanup goals for groundwater will be made on a site-specific basis and documented in the FS report, along with the alternatives required to achieve the desired clean up levels. The proposed alternatives that will be considered in the FS report may include capping, excavation, and/or institutional controls.

The Navy respectfully requests that an exemption from the municipal or domestic water supply designation be granted for groundwater at IR Site 28 at Alameda Point, in accordance with Regional Board Resolution Number 89-39 "Sources of Drinking Water."

A prompt response to this request would be greatly appreciated. Please contact the Navy Remedial Project Manager, Ms. Jennifer Stewart, at [StewartJA@efds.w.navy.mil](mailto:StewartJA@efds.w.navy.mil), if you have any questions.

Sincerely,



MICHAEL MCCLELLAND  
BRAC Environmental Coordinator  
By direction

Encl: (1) IR Site 28 map  
(2) IR Site 28 data

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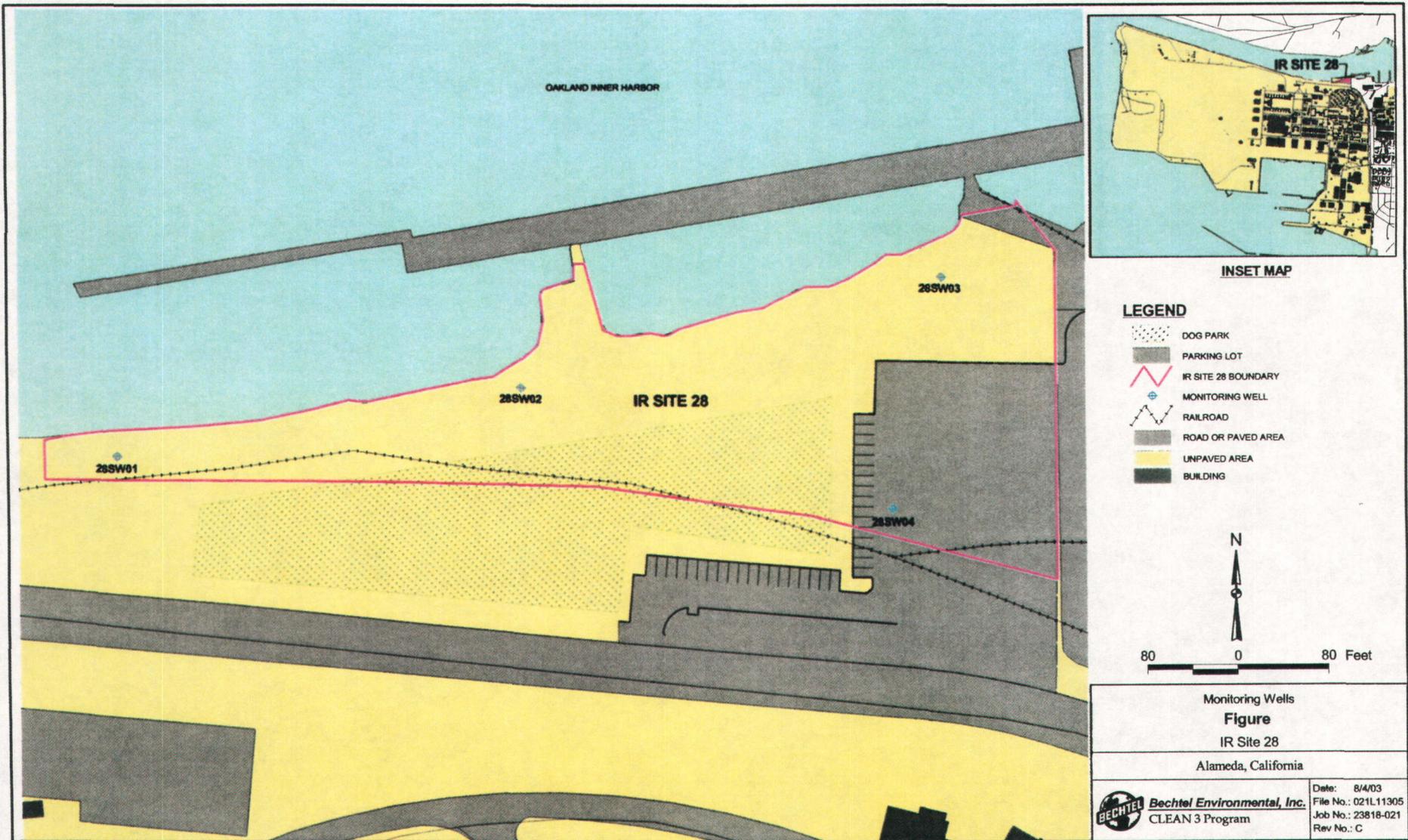
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ENCLOSURE (1)

**Table 1 : Total Dissolved Solids (TDS) Data  
IR Site 28, Alameda Point**

<b>Monitoring Wells</b>	<b>Well ID</b>	<b>Date</b>	<b>TDS (mg/L)</b>
<b>Shoreline</b>	<b>28SW01</b>	April 18, 2002	25,000
		May 23, 2002	26,000
		June 27, 2002	27,880
	<b>28SW02</b>	April 19, 2002	25,000
		May 23, 2002	24,000
		June 28, 2002	25,000
	<b>28SW03</b>	April 19, 2002	22,000
		May 24, 2002	21,000
		June 28, 2002	23,640
<b>Inland</b>	<b>28SW04</b>	April 17, 2002	2,200
		May 24, 2002	2,300
		July 1, 2002	2,300

**Table 2 : Maximum Pumping Rate and Maximum TDS Data  
for IR Site 28, Alameda**

<b>Well ID</b>	<b>Max Pumping Rate (gpd)</b>	<b>Max TDS (mg/L)</b>	<b>Comments</b>
28SW01	1,440	27,880	Insufficient data for yield (see note below)
28SW02	-	25,000	
28SW03	3,600	23,640	
28SW04	2,600	2,300	

Note - The most reliable method of estimating well yield is to use actual well extraction data, which we have access to from the well development records. The purpose of well development is to remove fines from the well and achieve stabilization of pH, temperature, conductivity and turbidity so that we are assured that when sampling occurs the well and the formation surrounding the well have stabilized. Methods of well development include 1) surging, 2) bailing and 3) pumping. Any combination of these methods can be used to achieve the desired state. Wells 28SW01, 28SW03 and 28SW04 were developed using all three methods, whereas for well 28SW02, only bailing and purging was used because the necessary criteria were established after the use of these two techniques. Because pumping was not needed to develop this well, the well yield from 28SW02 could not be determined using this technique. However, due to the proximity of 28SW02 being between 28SW01 and 28SW03, and the fact that it is completed in the same hydrogeologic unit, the well yield would most likely be within the range defined by wells 28SW01 and 28SW03.