



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF OCEANOGRAPHY AND MARINE ASSESSMENT
OCEAN ASSESSMENTS DIVISION
Hazardous Material Response Branch
c/o U.S. Environmental Protection Agency
26 Federal Plaza
New York, New York 10278

February 21, 1990

Ronald Borsellino
Chief, New Jersey Remedial Action Branch
Emergency and Remedial Response Division
U.S. Environmental Protection Agency
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New York, NY 10278

Dear Mr. Borsellino:

In response to your memo dated January 17, 1990, NOAA has completed its review of the draft remedial investigation report for the Pomona Oaks Well Contamination Site, Galloway Township, Atlantic County, New Jersey. The following comments describe NOAA's natural resource concerns regarding this site.

The Pomona Oaks Well Contamination site includes the Pomona Oaks subdivision of nearly 200 homes and a nearby shopping area in Galloway Township, Atlantic County, New Jersey. The subdivision is surrounded by undeveloped wooded areas and scattered residences within the New Jersey Pinelands Protection Area. Groundwater, contaminated primarily with volatile organic compounds was observed in several investigations beginning in 1982. Elevated concentrations of several metals were also observed. A gas station, a gas station/salvage yard and a dry cleaner are possible sources of contamination although the exact source(s) have not been determined. Groundwater flow is to the east and southeast towards North Branch, a stream which flows into the Atlantic City Reservoir.

Surface water bodies of interest include North Branch which flows near the southern border of the site to the southeast for approximately three kilometers into the Atlantic City Reservoir. The Atlantic City Reservoir is a large artificial impoundment (~2 kilometers long) of Absecon Creek. Absecon Creek flows for five kilometers into Absecon Bay. Alewife (*Alosa pseudoharengus*) spawning and juvenile rearing have been documented at the base of the reservoir dam approximately five kilometers downgradient of the site (Byrne 1985). Further upstream access to the reservoir or North Branch is not available due to this impassable dam. Although not documented, it is likely that the catadromous American eel (*Anguilla rostrata*) can breach this barrier and are present in the reservoir and possibly in North Branch.

The primary contaminants observed on the Pomona Oaks site were several volatile organic compounds including benzene, trichloroethene, 1,2-dichloroethane, vinyl chloride and chloroform. All concentrations observed during the RI and previous investigations were low (>2,100µg/l). It is unlikely that volatile organic contamination at the site poses a significant risk to resources and habitats of concern to NOAA.

Elevated concentrations of several trace metals were also observed in groundwater samples collected during the RI (Table 1). Concentrations of chromium, copper and zinc exceeded EPA ambient water quality criteria for the protection of freshwater organisms (EPA 1986). Chromium and copper concentrations only slightly exceeded AWQC and were observed in less

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then half of the groundwater samples collected. Zinc was observed in all groundwater samples with the highest concentrations approximately one order of magnitude above AWQC. Eighteen of 20 samples contained zinc at levels above AWQC including background samples (204-438 $\mu\text{g/l}$) collected upgradient of the site. No investigations were conducted in North Branch.

Table 1. Range and frequency of metals observed in the groundwater at the site compared to AWQC ($\mu\text{g/l}$) (EPA 1986).

Metal	Observed Site Concentrations		Site Background		AWQC	
	Frequency	Concentration	Frequency	Concentration	Acute	Chronic
Chromium	9/20	7.4-18.3	2/3	15.9-16.9	16	11
Copper	8/20	9.9-41.3	2/3	38.3-41.3	9.2	6.5
Zinc	20/20	41.8-767	3/3	204-438	65	59

The RI concluded that the concentrations of chemicals of concern at the Pomona Oaks site are very low and are not likely to pose adverse health risk to residents of the area (no environmental analysis was presented). The RI recommends that no remedial action be implemented at the site and that selected residential wells in the area be sampled periodically to assure that current water quality objectives are maintained.

Comments

Zinc is the primary contaminant of concern to NOAA. Concentrations were relatively high (up to an order of magnitude above EPA AWQC) and widespread on-site. High concentrations were also observed in a monitoring well located upgradient of the site, but chromium and copper levels similar to the levels in downgradient samples were also observed, indicating that the upgradient wells may not be representative of true "background" conditions.

Whether or not zinc concentrations originated from upgradient sources cannot be determined from the data presented. It is possible that field or laboratory procedures contaminated the samples. Field blanks, trip blanks and samples of deionized water used as equipment rinse showed traces of standard laboratory contaminants (e.g., methylene chloride, phthalate esters). One sample of water used for equipment rinse showed elevated levels of several metals including 70.6 $\mu\text{g/l}$ of zinc. Although these data indicate that some handling error occurred during field and laboratory procedures, it is not clear that such problems are responsible for the high levels of zinc observed in the groundwater samples. Potential introduction of contaminants during monitoring well construction was not investigated and probably needs to be ruled out.

Soil samples collected in the area did not show zinc concentrations above levels naturally occurring in New Jersey.

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The RI did not positively identify any of the sources of organic or inorganic contaminants present in the groundwater. Organic contamination (and inorganic other than zinc) was observed at low concentrations and are therefore not a concern to NOAA. The concentrations and distribution of zinc and the lack of source characterization for this metal, however, does warrant additional consideration. If the data are found to be reliable, or errors in sample collection or analyses cannot be proven, it is advisable that further evaluation of the extent of zinc contamination in the area be made, including identification of the source of this contamination. Although the zinc contamination that has been reported would be diluted upon discharge into North Branch or the Atlantic City Reservoir before reaching NOAA Trust resources, it is clear that the present studies have not determined how extensive the zinc contamination may be and/or whether other areas exist which have much greater concentrations of zinc than those measured to date.

If you have any questions concerning NOAA's comments or would like to discuss our recommendations please contact me at X-6785. Thank you for the opportunity to comment on the subject document. Please keep NOAA informed as to the status of the site.

Sincerely,



Frank G. Csulak
Coastal Resource Coordinator

cc: Matthew Westgate, NJRAB
Robert Hargrove, EIB
Ray Basso, NJCB
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RCRA Review of Pomona Oaks Well Contamination Site Draft Remedial Investigation (RI)

Andrew Bellina, Chief
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Ronald Borsellino, Chief
New Jersey Remedial Action Branch (ERRD-NJRAB)

The Hazardous Waste Facilities Branch (HWFB) has reviewed the draft RI for the above site. The RI covers the groundwater and associated contamination in the study area. Benzene, trichloroethane, and 1,2 dichloroethane were detected in one of twenty monitoring well samples above New Jersey Safe Drinking Water Act MCLs. Barium was detected above state MCLs in most wells including background. Contaminants of concern include 1,2-dichloroethene, trichloroethene, 1,1,1-trichloroethane, chloroform, arsenic, barium, lead and mercury. Potential sources of the contamination have been identified as local gas stations, a commercial septic tank, residential septic systems, and local spills. Based upon risk analyses, it is recommended in the RI that no remedial action be implemented due to very low concentrations of chemicals of concern in the groundwater. Further groundwater monitoring is recommended to assure that current water quality at the site is maintained.

While RCRA listed waste constituents are present in the groundwater, the source of the constituents has not been identified. RCRA standards are relevant to any activity undertaken at the site. The appropriateness of RCRA standards to activities undertaken at the site depends upon a number of factors. These include the purpose of the requirement, the physical characteristics of the site and contamination, the character and circumstances of the release, the substances covered by the requirement, the duration of the activity, and the basis for a waiver or exemption. Because New Jersey MCLs are exceeded in certain instances, RCRA groundwater monitoring standards identified in 40 CFR 264, Subpart F are relevant and appropriate to monitoring the groundwater plume. If based on further data, other activities are necessary to remediate the site, RCRA standards may apply. Please contact HWFB for further input if this is the case.

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