



CITY OF SACRAMENTO

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DEPARTMENT OF PUBLIC WORKS

SOLID WASTE DIVISION

JOHN F. BOSS
Solid Waste Division Manager

March 26, 1986

Transportation and Community Development Committee
Sacramento, California

Honorable Members in Session:

SUBJECT: WATER QUALITY ISSUES ASSOCIATED WITH THE EXISTING LANDFILL -
QUARTERLY REPORT

SUMMARY

Three issues regarding the water quality at the City's existing landfill are currently being addressed by City staff and are discussed in this report. First, EPA has been asked to investigate the landfill site for possible inclusion into the federal "Superfund" program. Second, new State legislation (AB 3525-Calderon) requires the City to evaluate water quality at the landfill and to submit a technical report to the Central Valley Regional Water Quality Control Board (Regional Board) by January 1, 1987. Third, City staff has met with Regional Board staff and have agreed upon a long-term ground water and surface water monitoring program.

Regional Board staff's concurrence with the City's approach for addressing the water quality issues at the landfill now allows City staff to finalize the landfill's closure plan. Staff is proposing to submit the final closure plan for Transportation and Community Development review, on April 22, 1986 and City Council approval on April 29, 1986.

BACKGROUND

Disposal operations at the existing landfill site began in the 1960's. Water quality monitoring of surface and ground waters was initiated circa 1973. Up until January 1985, monitoring wells and two American River locations were sampled periodically for the conventional landfill leachate parameters (pH, E.C., Hardness, Chloride, COD, and Iron). During the first quarter of 1985 the Regional Board staff requested that the City expand their landfill monitoring program to conform with new State regulations (Subchapter 15, Chapter 3, Title 23, California Administrative Code) by installing additional monitoring wells and sampling for synthetic organic chemicals.

Monitoring wells have been installed at the landfill site on three different occasions since 1973 with the latest installation being in the fall of 1985 when seven wells with stainless steel casings were drilled. These wells were installed per Subchapter 15 requirements. The current monitoring wells at the site are shown on Attachment 1.

ANALYSIS

Based on the historical water quality data it is apparent that near surface ground water underlying the City's 28th Street landfill has been impacted to a certain extent. This alteration is attributed to the leaching of chemicals from the buried refuse from either percolating rain water or, to a lesser degree, from ground water intrusion into the lower waste cells. Increases in several of the monitoring wells for E.C., Hardness, Chloride, COD, and Iron have been noted. Also, vinyl chloride has been detected in seven of the existing ten monitoring wells in low concentrations, ranging from 1.5 to 5.8 parts per billion (ppb).

A major consideration in determining the extent and significance of the water quality deterioration beneath the landfill is a full understanding of the site's hydrology: specifically, ground water elevations, flow directions and velocities, and the interrelationships between the ground water and the adjacent American River. These hydrologic characteristics of the landfill site are extremely variable due to the influence the stage elevation of the American River has on each of them. For example, during last February's heavy rainfall, the American River was at record stage elevations and the hydrologic characteristics at the site were drastically different than what existed before the storms (see Attachment 2).

During recent discussions with representatives of the Regional Board it was agreed that existing water quality (both ground and surface waters) at the landfill site has not deteriorated to levels warranting immediate remedial activities. However, the Regional Board representatives did stress the importance of closing and capping the landfill in accordance with the previously submitted time schedule. Staff assured the Regional Board representatives that this schedule is being adhered to, and that the initial closure phase will be completed this summer.

Following, is a more detailed outline of the three water quality issues that were discussed with the Regional Board, and staff's on-going and projected activities to resolve them:

A. Federal "Superfund" Status

Congressman Robert Matsui, in a letter dated January 10, 1986 to Mr. Lee Thomas, Administrator of the EPA, requested that EPA assist the City and the State in assessing the extent of the ground water contamination at the landfill and determine if the site should be investigated under federal Superfund legislation. Staff contacted EPA regarding this request and was informed that EPA will do a desk top review of all data collected to date by the City and the Regional Board, sometime in May 1986. Staff intends to work closely with the EPA during this data review period. Staff is confident that the data review by EPA will show that the water quality issues are insignificant relative to criteria for federal Superfund involvement, and that the following two activities proposed by staff and coordinated with the State will adequately assess all water quality concerns at the landfill.

B. AB 3525 Calderon Legislation

The Calderon legislation was signed by the Governor on September 29, 1984. A major objective of this legislation is to inventory permitted non-hazardous solid waste disposal sites (similar to the City's 28th Street landfill) and to determine if hazardous wastes are present in quantities sufficient to impact water quality.

The City of Sacramento's 28th Street Landfill is included in the list of solid waste disposal sites that are required to submit technical reports to the Regional Board prior to January 1, 1987. These reports, called SWWQAT's, for Solid Waste Water Quality Assessment Tests must include an assessment of water quality at the landfill. Staff is currently developing an outline of this report, in concert with Regional Board representatives. Additional monitoring requirements, testing, and special evaluation is included in the proposed 1986/87 CIP budget. The report will also include an evaluation of seasonal water quality trends based on fluctuating river stage elevations.

C. Long-term Water Quality Monitoring Program

City staff and the Regional Board representatives agreed that the City should continue to monitor surface and ground waters at the landfill as follows:

- Quarterly analysis of all monitoring wells for vinyl chloride.
- Semi-annual priority pollutant scans on a monitoring well, to be selected by the City and the Regional Board, so as to reflect worst case conditions during low and high river stages.
- Weekly measurements of ground water elevations in all monitoring wells and American River stage elevation, with quarterly reporting to the Regional Board.
- Quarterly sampling of monitoring wells for leachate parameters, including pH, EC, Hardness, Chloride, COD, and Iron.
- Monthly sampling of an upstream and downstream location on the American River for Chloride and pH.

In addition to this long-term monitoring program, two additional monitoring wells will be installed this fall. These two monitoring wells will allow a clearer characterization of ground water quality and will enable staff to determine the effectiveness of the initial closure cap in reducing ground water degradation.

RECOMMENDATION

This report is for Committee information only.

Respectfully submitted,

John J. Tonko

for John F. Boss
Solid Waste Division Manager

For Committee Information:

Solon Wisham, Jr.
Solon Wisham, Jr.
Assistant City Manager

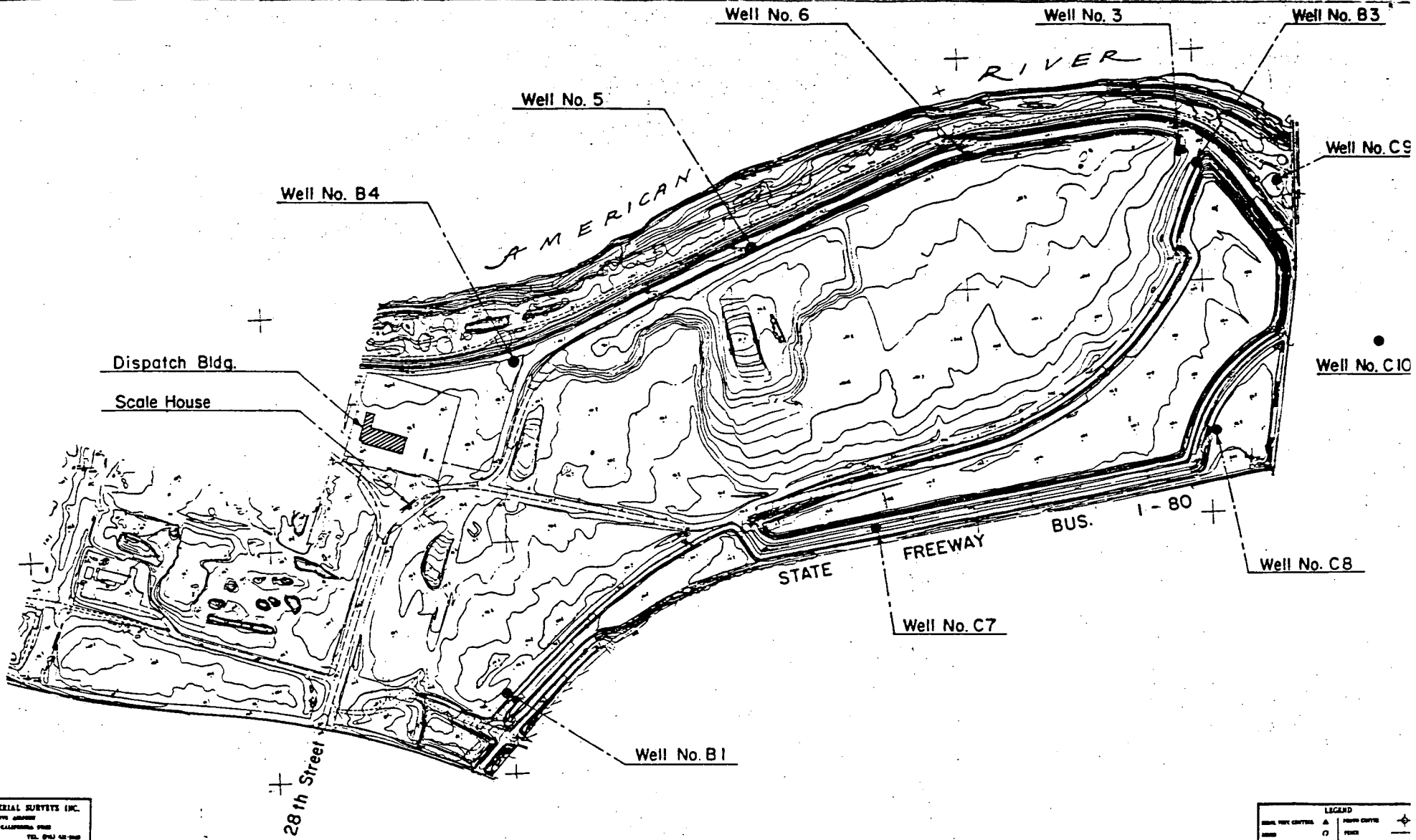
Approved:

Melvin H. Johnson
Melvin H. Johnson
Director of Public Works

JJT/JFB/myw

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CARTWRIGHT AERIAL SURVEYS INC.
 2800 17th Street
 SACRAMENTO CALIFORNIA 95811
 TEL. (916) 482-2800

CLIENT: CITY OF SACRAMENTO
 PROJECT: 28th & C STREET LANDFILL SITE
 DRAWN BY: J. J. JONES
 CHECKED BY: J. J. JONES
 DATE: JAN 1986

LEGEND	
ROAD, HIGH CENTERLINE	▲ POWER CENTERLINE
ROAD	○ FENCE
TRAIL	○ GRASS BANK
GRAVEL ROAD	○ DIRT ROAD
ASPHALT ROAD	○ PAVED ROAD
CREST LIGHT	+
CLAYLINE WALL	○ CITY AND COUNTY

REVISIONS			BENCH MARK		FIELD BOOK
NO.	DESCRIPTION	DATE	DESCRIPTION	ELV.	

CITY OF SACRAMENTO
 DEPARTMENT OF PUBLIC WORKS

SCALE: HORIZ. 1"=400'

DRAWN BY: J. J. JONES
 DATE: JAN. 1986

DESIGNED BY: _____
 R.C.E. DATE: _____

CHECKED BY: _____
 R.C.E. DATE: _____

CITY LANDFILL SITE
MONITORING WELL LOCATIONS

3 SHEET
 OF 3

ATTACHMENT 2

IMPACT OF THE FEBRUARY 1986 STORMS ON THE
GROUND WATER ELEVATIONS AND FLOW UNDERLYING THE LANDFILL SITE

DATE \ HYDROLOGIC CHARACTERISTIC	GROUND WATER LEVEL (FEET)		FLOW DIRECTION	FLOW VELOCITY (FT/DAY)
	WELL #5 * (AMSL)	WELL #7 * (AMSL)		
Before (12/23/85)	4.1	4.4	Northerly - towards the river	0.03
During (2/20/86)	27.8	10.2	Southerly - away from river	2.0
Difference	+ 23.7 FT	+ 5.8 FT	180° reversal	About 100 fold increase

* Above Mean Sea Level