



Transmittal/Memorandum

To: Alameda County Environmental Health Service  
470 - 27th Street, Room 324  
Oakland, California 94612

Attention: Mr. Storm Goranson, P.E.

From: Daniel Louis/Norman Shopay *DL*  
Date: January 12, 1988  
Subject: City Blue Production Facility  
Job No.: 18106,004.04

Remarks: In regards to our telephone conversations on January 4, 1988, enclosed are the following documents:

1. "Subsurface Venting of Vapors Emanating from Hydrocarbon Product in Ground Water," from the winter 1987 issue of Ground Water Monitoring Review.
2. "Manipulation of Vadose Zone to Enhance Toxic Organic Chemical Removal," by Robert S. Bowman.
3. HLA soil permeability test results.

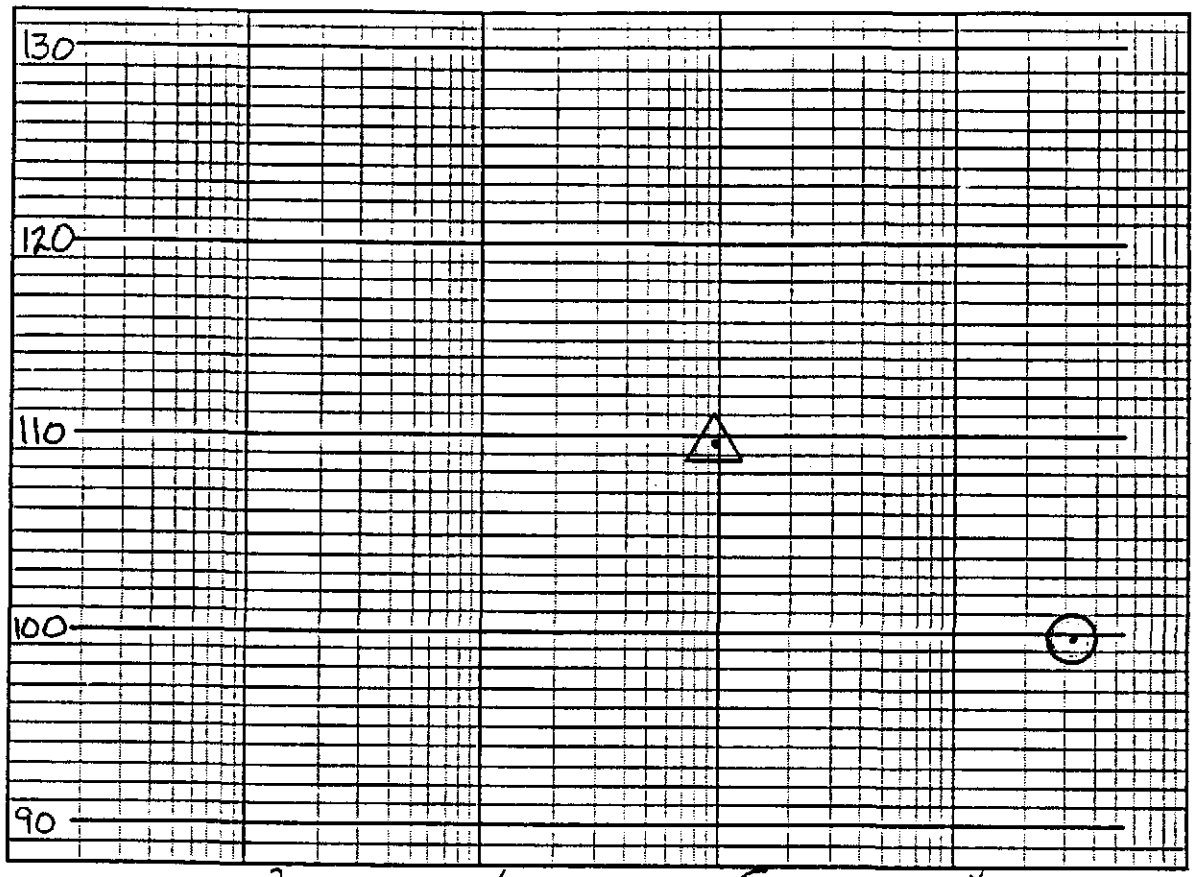
Underlined sections of both articles may be of particular interest to you regarding the City Blue project. More specific information and data regarding soil venting at the City Blue project will be hand delivered to you later in the week.

If you have any questions, please call.

RECEIVED  
JAN 21 1988  
ALAMEDA COUNTY ENVIRONMENTAL HEALTH SERVICE

cc: Blue Print Service Company - Attention: Mr. Paul Koze  
HLA, Novato - Attention: Mr. Bruce Sheibach

DRY DENSITY (pcf)



COEFFICIENT OF PERMEABILITY (K) AT 20°C (cm/sec)

PHYSICAL CONDITIONS		TEST NO		
		A ⊙	B Δ	C
INITIAL	Diameter (in)	2.43	2.43	
	Height (in)	1.50	1.50	
	Water Content (%)	15.8	15.6	
	Dry Density (pcf)	99.8	109.7	
	Void Ratio	0.681	0.541	
	Saturation (%)	62	78	
FINAL	Consolidation Pressure (psf)	576	576	
	Water Content (%)	23.6	19.5	
	Dry Density (pcf)	103.4	111.0	
	Void Ratio	0.620	0.523	
	Saturation (%)	100	100	
Permeability At 20°C (cm/sec)		$3.11 \times 10^{-4}$	$9.87 \times 10^{-6}$	1
Sample Source:				
A = BORING @ 24.5' B = BORING @ 11.0'				
Classification:				
A = BROWN CLAYEY SAND (SC) B = BROWN CLAYEY SAND (SC)				

TEST TYPE: FALLING HEAD  
 SATURATION METHOD: BACK PRESSURE

DRAFT



**Harding Lawson Associates**  
 Engineers, Geologists  
 & Geophysicists

**Permeability Test Report**  
 CITY BLUE FACILITY

PLATE  
 TMS



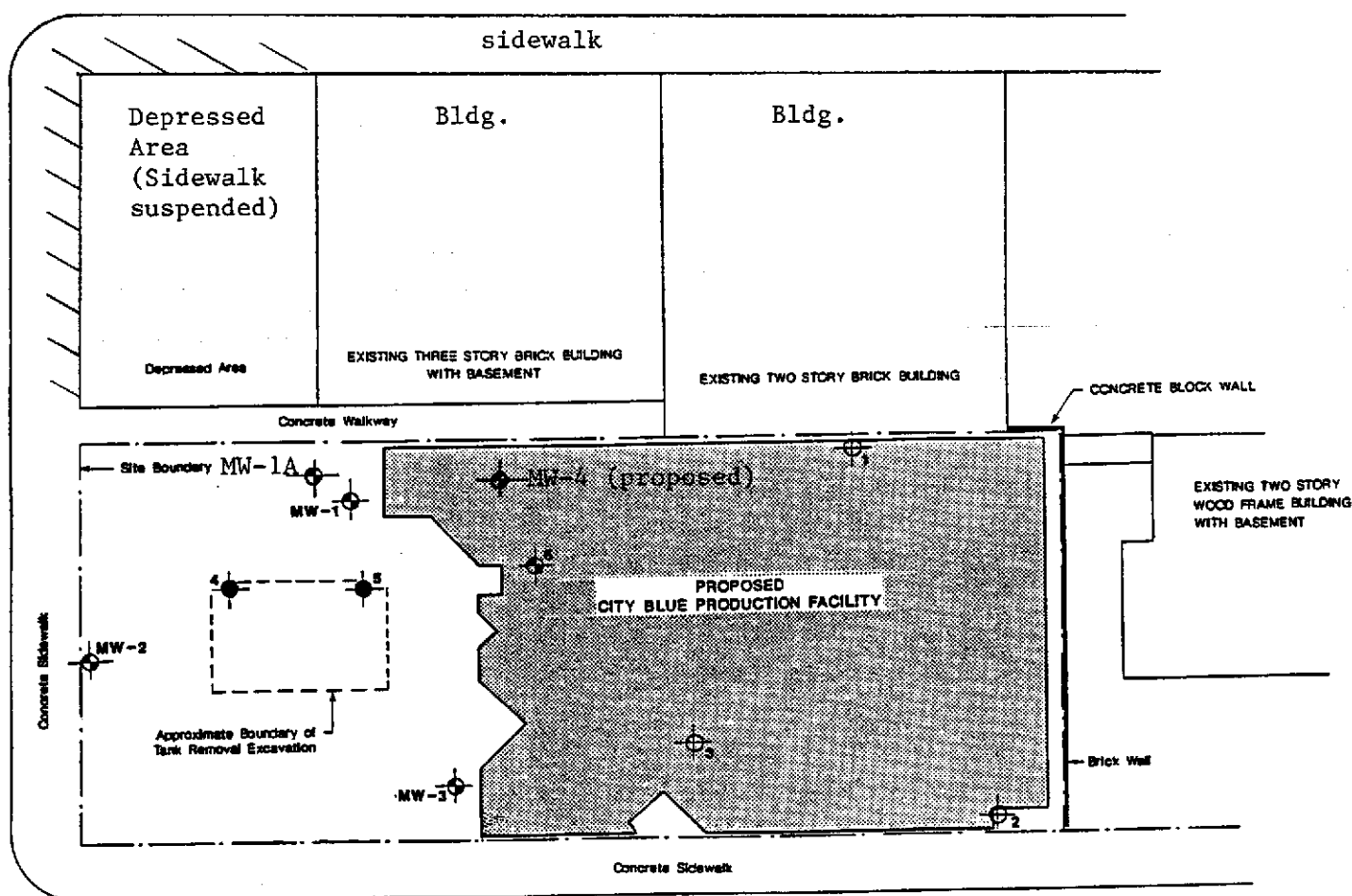
PROJECT City Blue Production Facility

SUBJECT Monitoring Well Location Sketch

Not to Scale

⊕ MW-5 (proposed)

Eighteenth Street



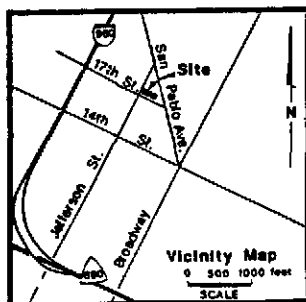
SEVENTEENTH STREET

**EXPLANATION**

- ⊕ Boring Location and Number, Preliminary Hazardous Waste Assessment
- ⊕ Boring Location and Number, Soil Investigation
- MW-1 ⊕ Approximate Monitoring Well or Boring Location.

**REFERENCES:**

1. Preliminary Site Plan, City Blue Production Facility, 1700 Jefferson Street, Oakland, California, by Garcia/Wagner and Associates, dated Feb. 17, 1987.
2. Untitled Survey (partial print), Seventeenth Street and Jefferson Street, Surveyor unknown.



Not to Scale

	Harding Lawson Associates Engineers & Geoscientists	<b>Site Plan</b>	
		City Blue Production Facility Oakland, California	
AG	18106,002.04	2/87	7/87