Oakland
All-America City
1993

4457

CITY OF OAKLAND

DALZIEL BUILDING • 250 FRANK H. OGAWA PLAZA, SUITE 5301 • OAKLAND, CALIFORNIA 94612

Public Works Agency
Environmental Services

(510) 238-6688
FAX (510) 238-7286
TDD (510) 238-7644

September 22, 1998

Mr. Barney Chan
Alameda County Health Care Services- Environmental Health
1131 Harbor Bay Parkway
Alameda, California

Re: Groundwater Remediation Workplan
2662 Fruitvale Avenue, Oakland, California 94621
St.ID No.: 4457

Dear Mr. Chan:

The City of Oakland Environmental Services Division (ESD) is pleased to submit the following document titled, Workplan for Treatment of Groundwater Impacted with Petroleum Hydrocarbons Using Enhanced Natural Bioremediation; 2662 Fruitvale Avenue Oakland, California. The proposed method of groundwater remediation at the above-referenced site is consistent with the remedial approach you requested in your May 27, 1998 letter. Groundwater remediation will begin at the site upon your approval of this workplan.

Based on existing information, the City has decided that limited soil excavation at the site is currently not necessary. However, if more specific information regarding the proposed building footprint is provided to the City, limited soil excavation may be considered. Should you have any questions or require additional information, please contact me at 238-6259.

Sincerely,

Joseph A. Cotton
Environmental Program Specialist

encl.

2662fv.gwr.wpd
9/22/98

INNOVATIVE TECHNICAL SOLUTIONS, Inc.

ITSI

September 18, 1998

Mr. Joseph Cotton
City of Oakland
Environmental Services
1333 Broadway, Suite 330
Oakland, CA 94612

Workplan
Treatment of Groundwater Impacted with Petroleum Hydrocarbons
Using Enhanced Natural Bioremediation
2662 Fruitvale Avenue
Oakland, California

Dear Mr. Cotton:

Innovative Technical Solutions, Inc. (ITSI) is pleased to provide this Workplan for treatment of groundwater impacted with petroleum hydrocarbons using enhanced natural bioremediation for the site at 2662 Fruitvale Avenue in Oakland, California, and is consistent with the approach outlined in our July 22, 1998 *Conceptual Approach and Cost Estimate.*

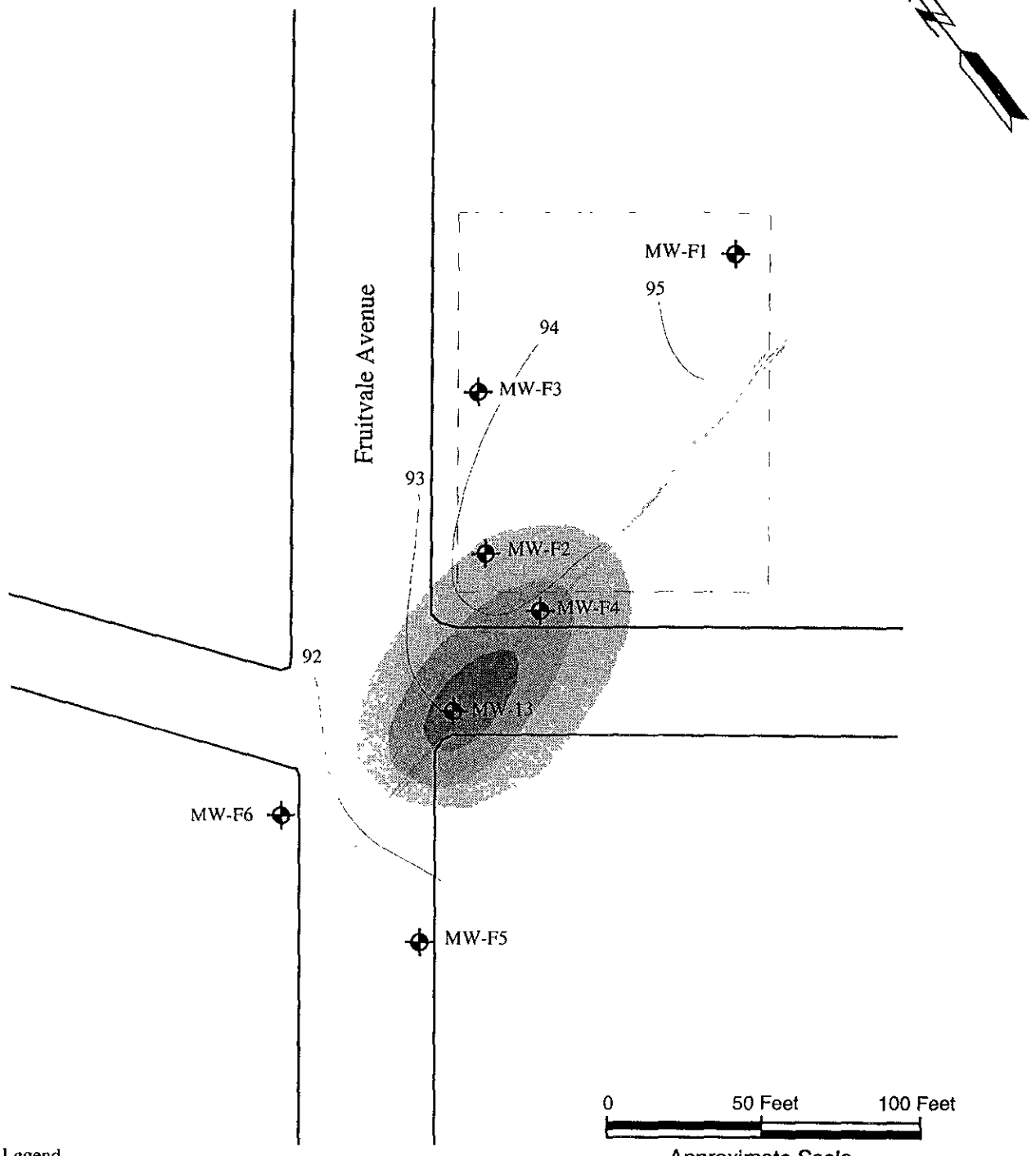
The Workplan outlines the placement of oxygen releasing compounds (ORC®) into the saturated zone, providing a rich source of oxygen to promote the natural biodegradation of the petroleum hydrocarbons in groundwater beneath the site.

Introduction

Enhanced natural biodegradation involves taking advantage of nature's own detoxifying process through the use of naturally occurring bacteria to degrade petroleum hydrocarbons. This natural process is often limited at many sites by, among other things, a limited supply of oxygen in the groundwater, an essential component to aerobic bacterial activity. The growth and activity of bacteria which degrade petroleum hydrocarbons is controlled by many factors, including the amount of available oxygen in the groundwater, the presence and concentration of essential nutrients, the presence of compounds toxic to bacteria, and the presence of competitive bacteria which could consume the beneficial bacteria.

1330 Broadway, Suite 1625, Oakland, CA 94612 (510) 286-8888 (510) 286-8889 fax

97-037 02/F.1-Bonngs



Legend

Approximate Location of Monitoring Wells

TPHg ≥ 0.1 mg/L

TPHg ≥ 1 mg/L

TPHg ≥ 10 mg/L

Source: Modified from Figure 3, Groundwater Elevation Contour Map, 13 December 1996, BASELINE.

FIGURE 1

PROPOSED LOCATIONS OF SOIL BORINGS FOR ORC PLACEMENT

2662 Fruitvale Avenue
Oakland, California

CITY OF OAKLAND

ITSI

INNOVATIVE TECHNICAL SOLUTIONS, INC.

Project No._____

INNOVATIVE TECHNICAL SOLUTIONS, Inc.

ITSI

FAX TRANSMITTAL COVER SHEET

To: Barney Chan Company: Alameda Co.

Fax: (510) 337-9335 Telephone: _____

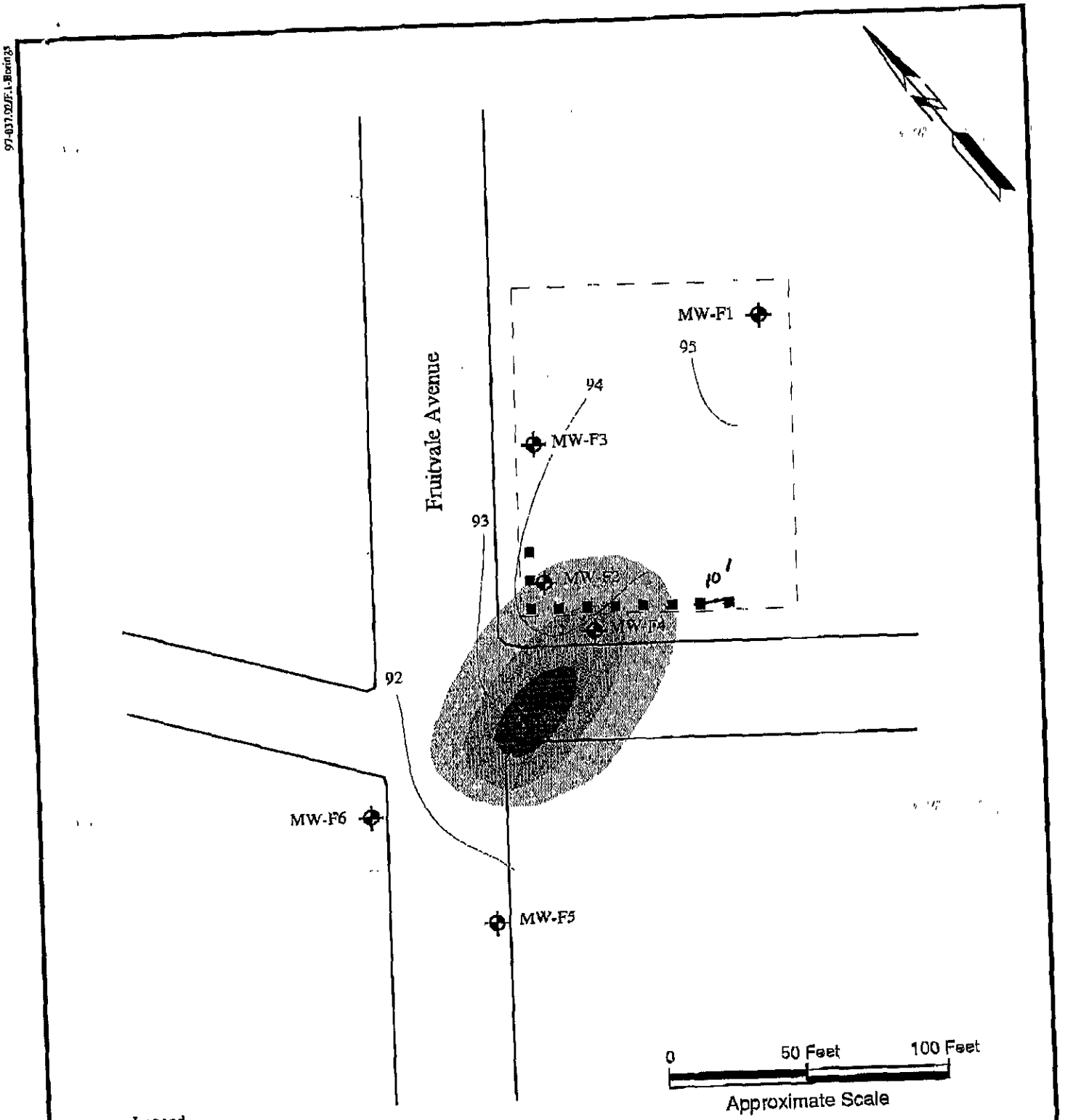
From: Jeff Hess Subject: _____

Date: _____

No. of Pages: 2 (including cover sheet)

Notes: Here is the figure w/ the borings!

2855 Mitchell Drive, Suite 111, Walnut Creek, CA 94598
Phone: (925) 256-8898 Fax: (925) 256-8998



Legend

- Approximate Location of Monitoring Wells
- Proposed Location of Soil Borings for ORC Placement
- TPHg ≥ 0.1 mg/L
- TPHg ≥ 1 mg/L
- TPHg ≥ 10 mg/L
- Groundwater Contours from March 11, 1998 Quarterly Monitoring

Source: Modified from Figure 3, Groundwater Elevation Contour Map, 13 December 1996, BASELINE.

FIGURE 1

PROPOSED LOCATIONS OF SOIL BORINGS FOR ORC PLACEMENT

2662 Fruitvale Avenue
Oakland, California

ITSI CITY OF OAKLAND

INNOVATIVE TECHNICAL SOLUTIONS, INC.