ENVIRONMENTAL
SERVICES
DEPARTMENT

# Landfill Maintenance & Monitoring

February 24, 2010

NR&C FEB 2 4 2010 #4

# Our Mission: Regulatory Compliance

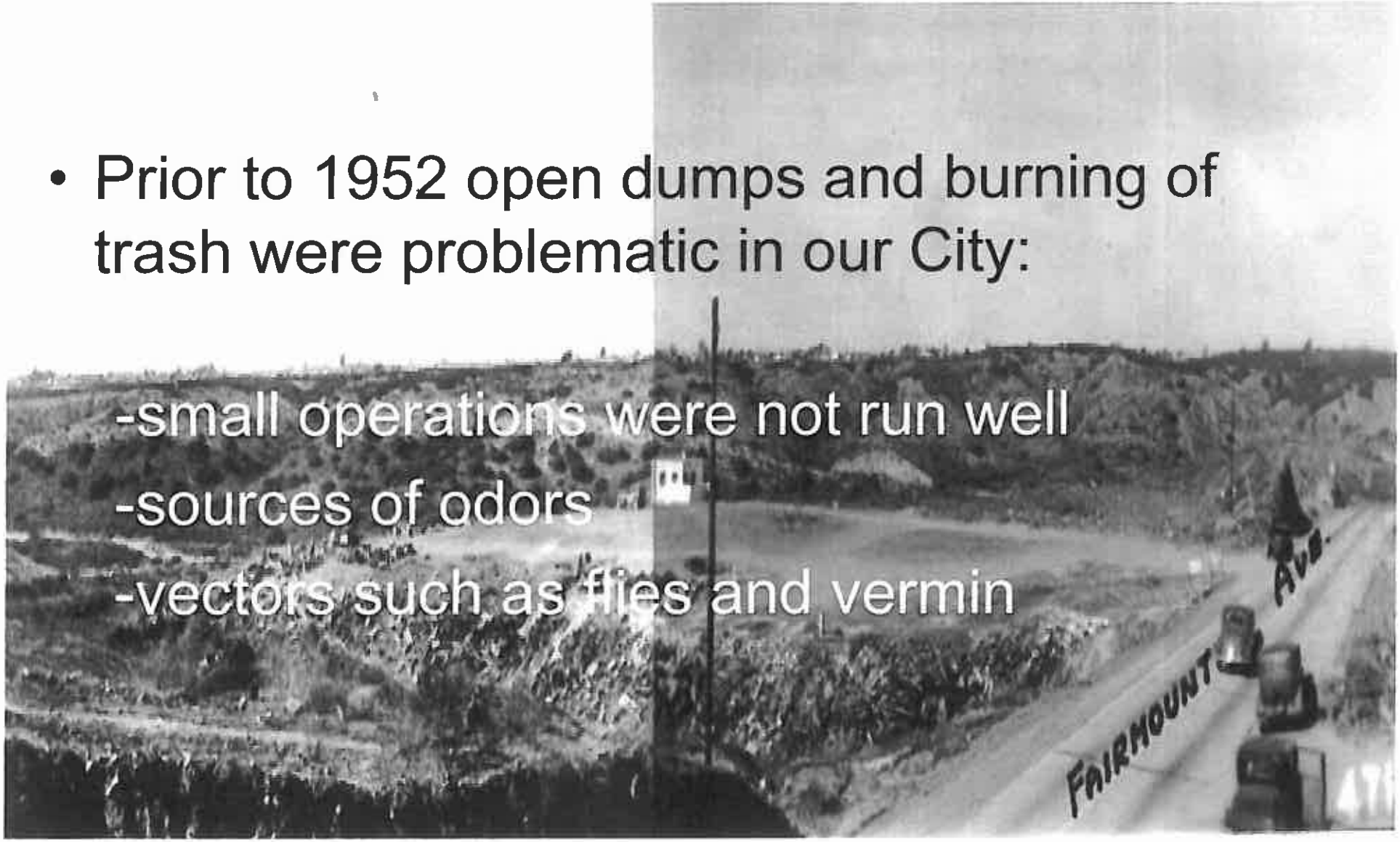
- To protect the health and safety of the public, and the environment.
- Manage the Closed Landfill and Burn Sites through a multi- disciplinary engineering and project management team.

# Why does LM&M exist?

# Regulatory Oversight

- US EPA; US Fish and Wildlife Service; Army Corps of Engineers; NEPA
- California Integrated Waste Management Board; State Water Resources Control Board; California Department of Fish & Game; CEQA; NPDES
- Local Enforcement Agent (LEA); Regional Water Quality Control Board; San Diego Air Pollution Control District; City of San Diego NPDES, Zoning and Permitting requirements

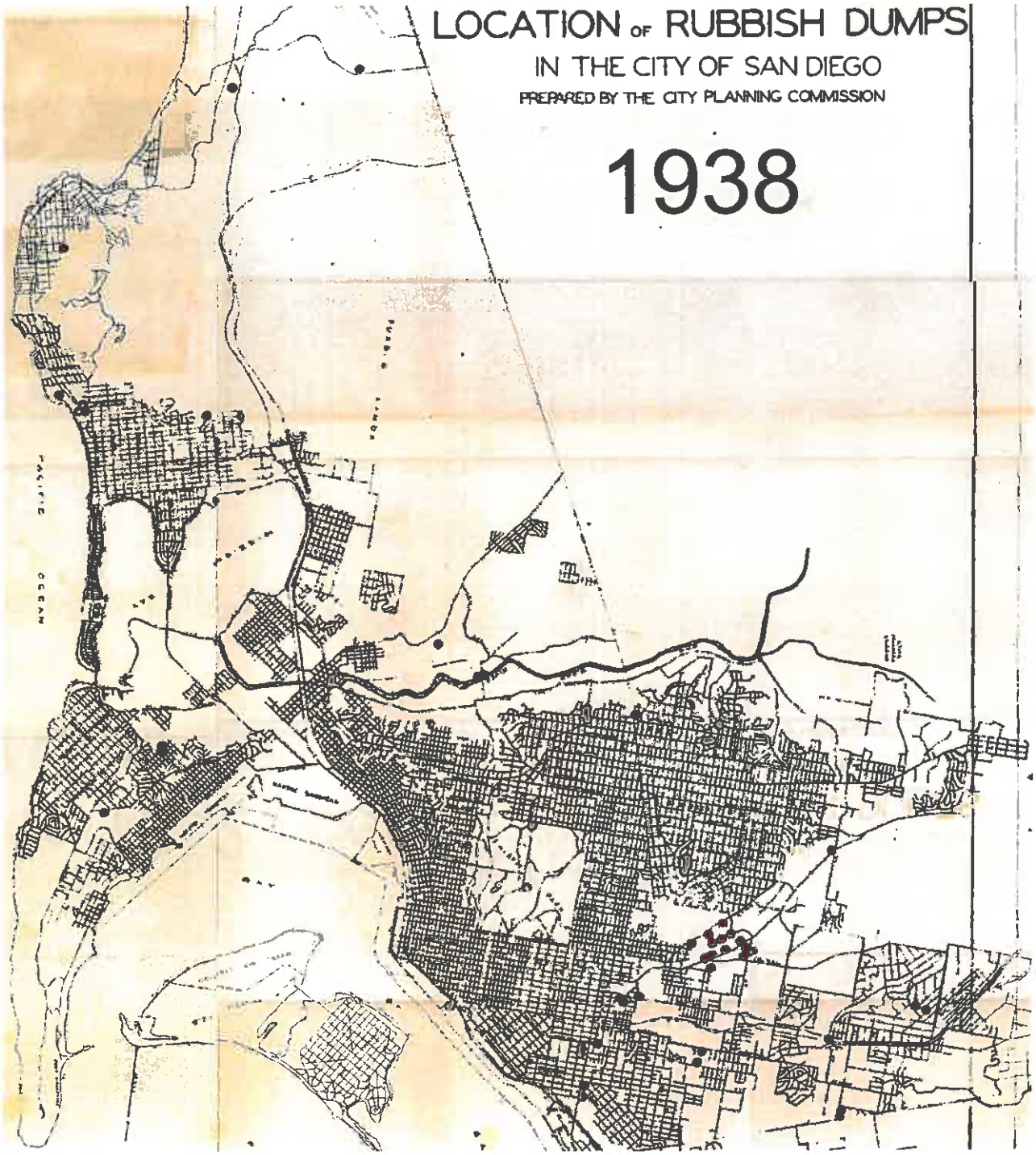
- Prior to 1952 open dumps and burning of trash were problematic in our City:



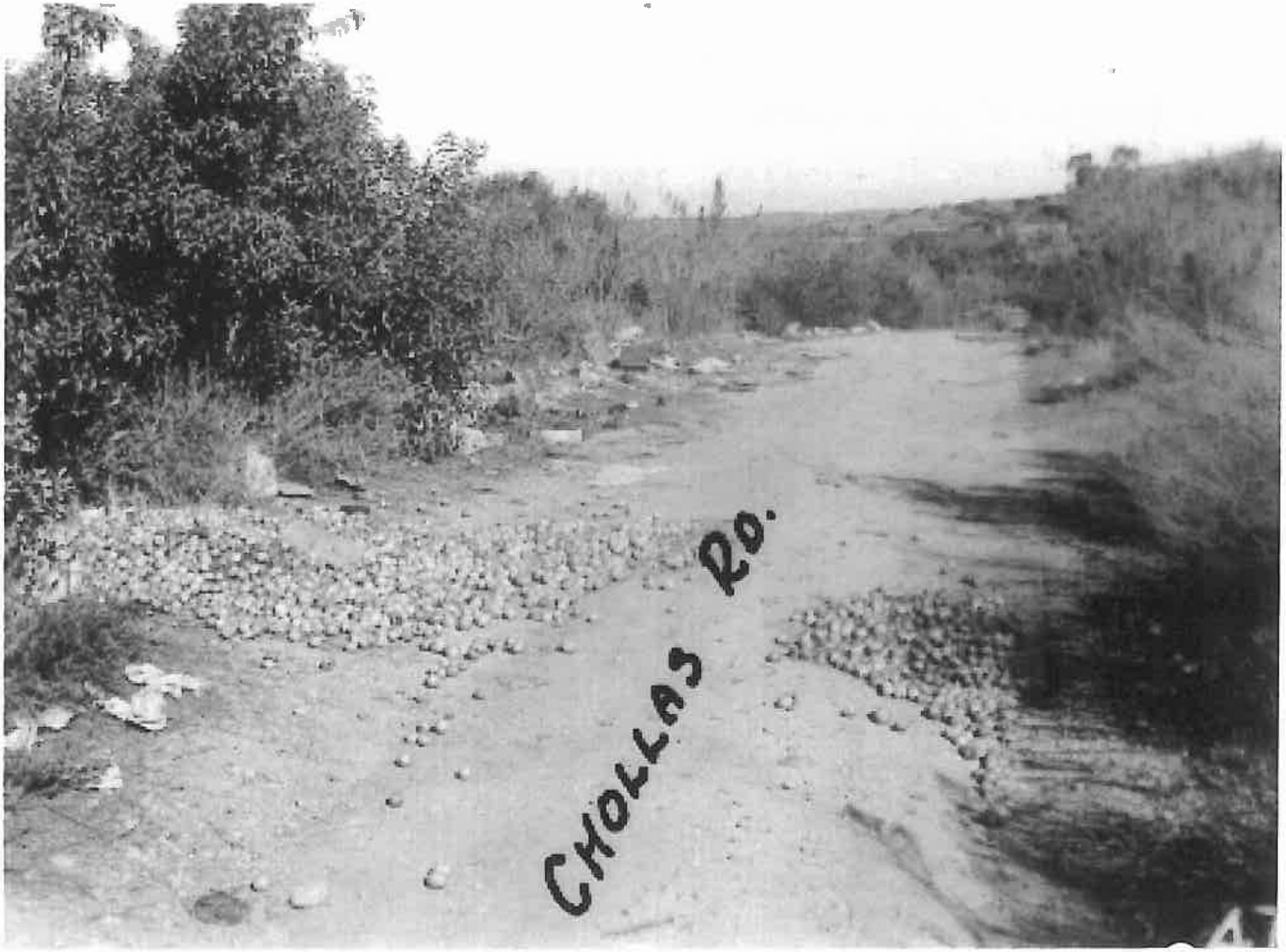

-small operations were not run well

-sources of odors

-vectors such as flies and vermin


LOCATION OF RUBBISH DUMPS
IN THE CITY OF SAN DIEGO
PREPARED BY THE CITY PLANNING COMMISSION
1938

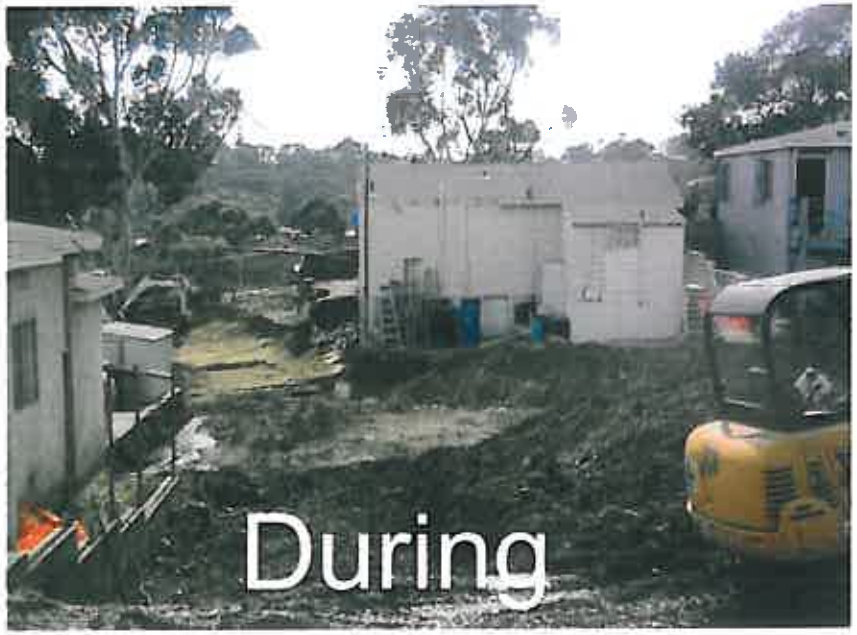
FAIRMOUNT AVE.


CHOLLAS RD.

30th St.
Redwood St.

# Burn Sites

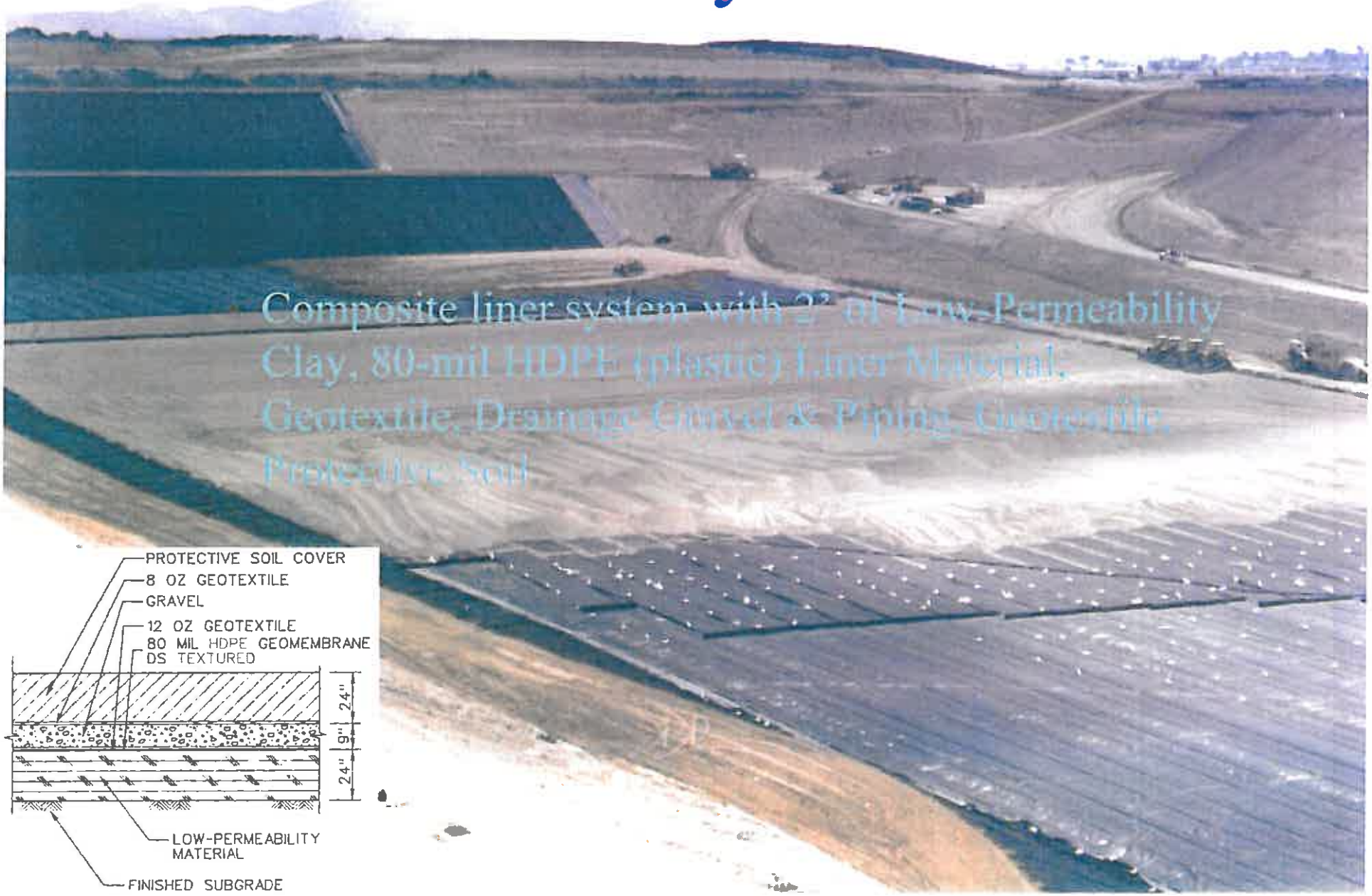
**Trash was commonly burned and the location where the residue and ashes remain is referred to as a "burn site". Burn ash is often found to contain potentially hazardous levels of metals such as lead, copper and zinc.**



Appendix 1 : Solid Waste Sites
(Landfill Maintenance & Monitoring - Site Locations)
Legend
Solid Waste Facilities
Major Roads
Freeways
1 inch equals 1.25 miles

- In 1952 the City embarked on an ambitious plan to open three "sanitary" landfills:

# Modern Day Landfill



# Mission Bay Landfill
# 1952 - Before

# Mission Bay Landfill
# 1953

| Revisions | By | Date |
|---|---|---|
| | | |

ESD

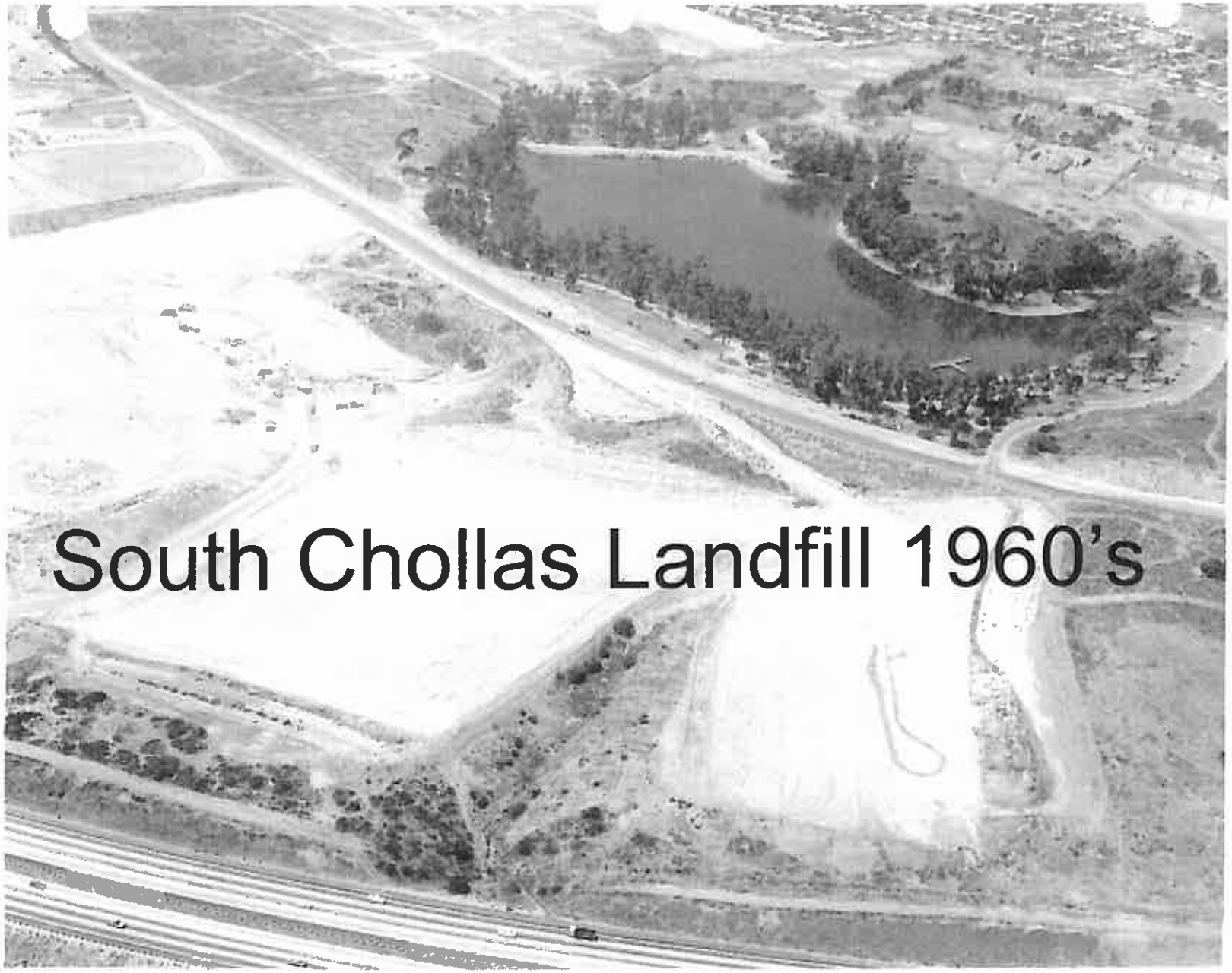
IF SHEET SIZE IS LESS THAN 24"x36" IT IS A REDUCED

MISSION BAY LANDFILL

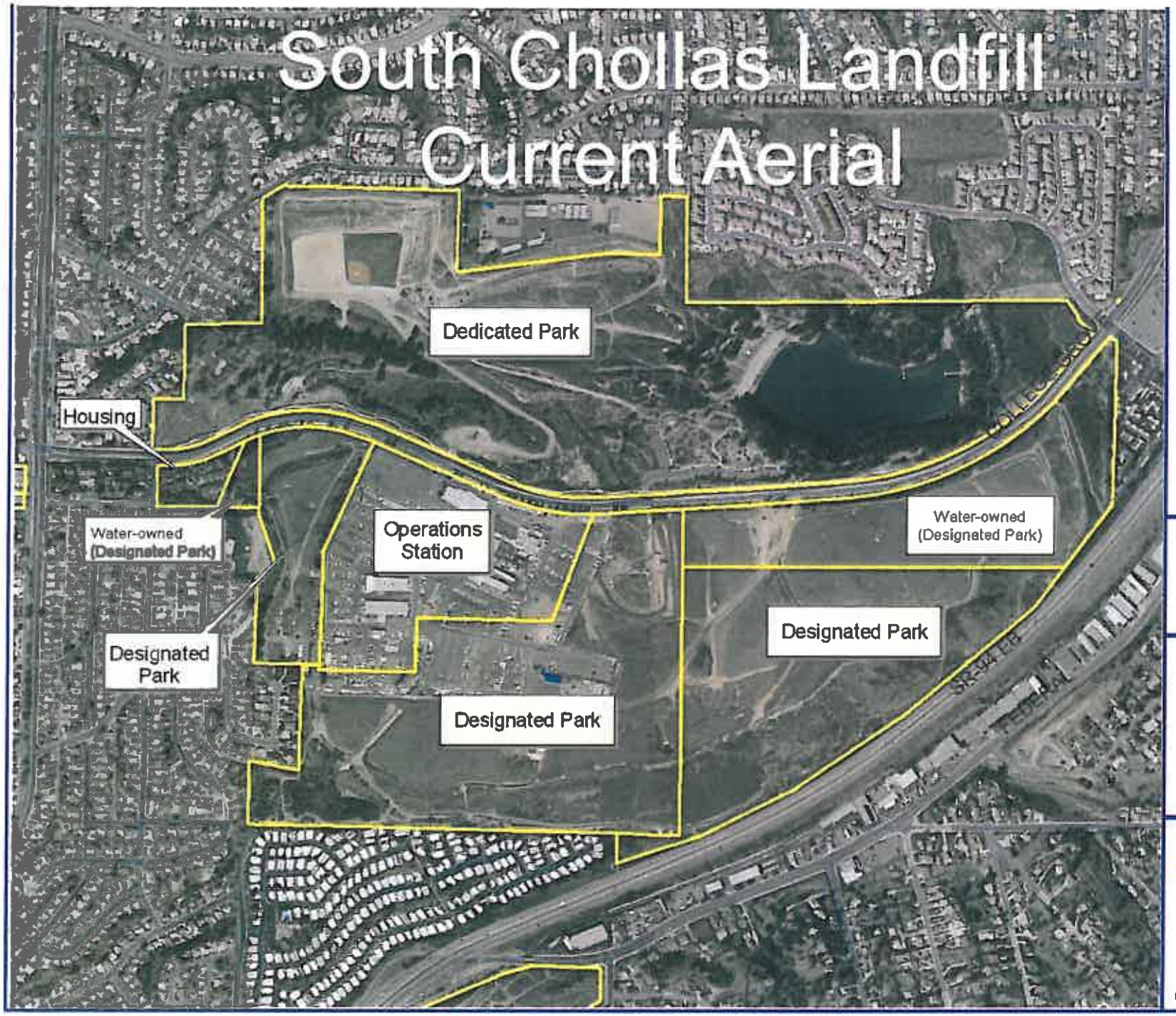
City of San Diego, California
Environmental Services Department
Refuse Disposal Division

Mission Bay Landf L_2035 Photo.dgn 03/20/2006 04:03:23 PM

South Chollas Landfill 1952
RUBBISH
DISPOSAL
(CHOLLAS SANITARY
FILL SITE)


South Chollas Landfill 1960's

# South Chollas Landfill Current Aerial




Legend

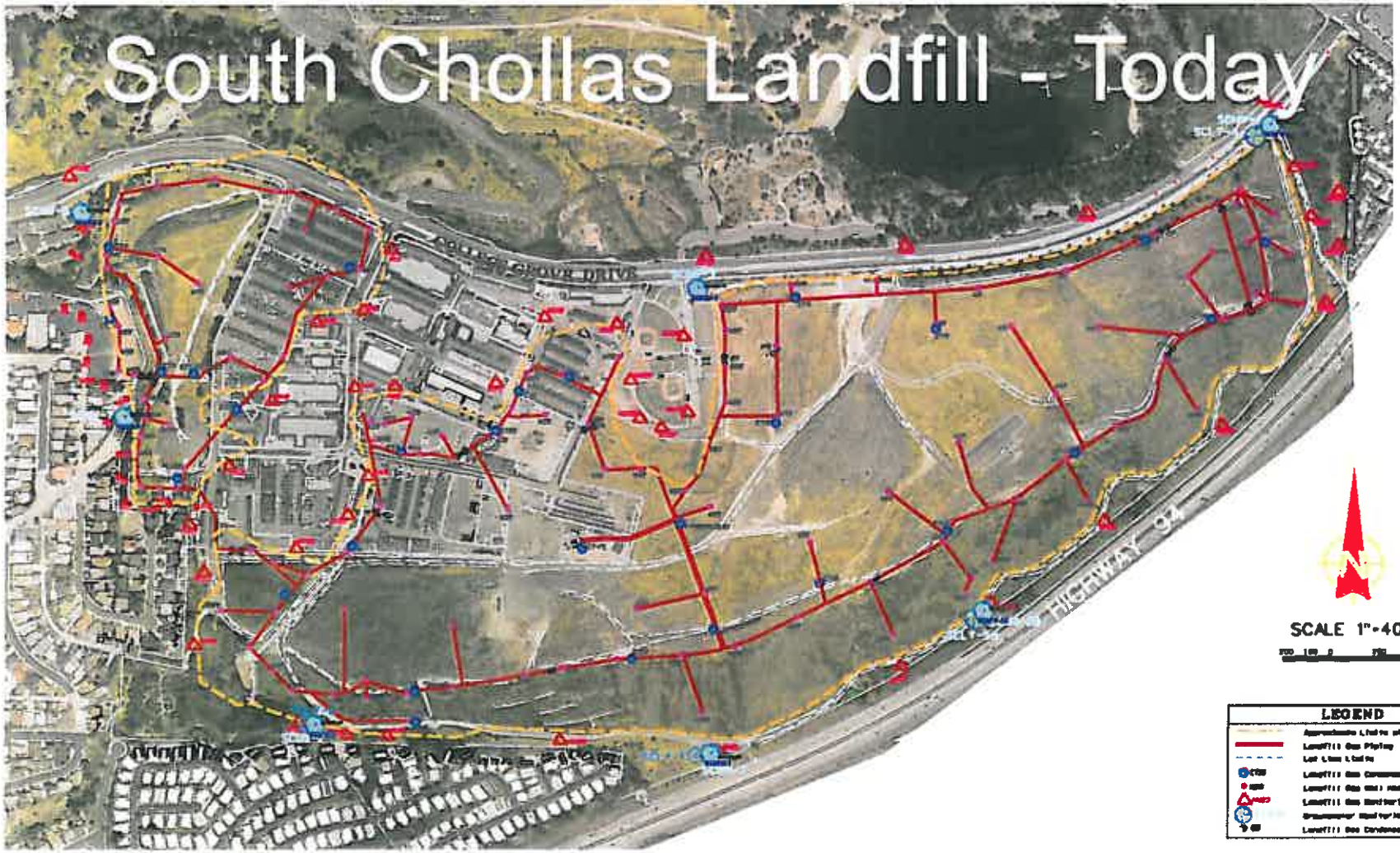
N

1:9211

Vicinity Map

SanGIS

Plot Date: 04/19/04




| Revisions | By | Date |
|---|---|---|
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| [illegible] | [illegible] | [illegible] |
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| [illegible] | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] |

...\southchollas1999.dgn 11/13/2006 9:31:20 AM Scale: 1" = 400' If 11x17

**SOUTH CHOLLAS LANDFILL**

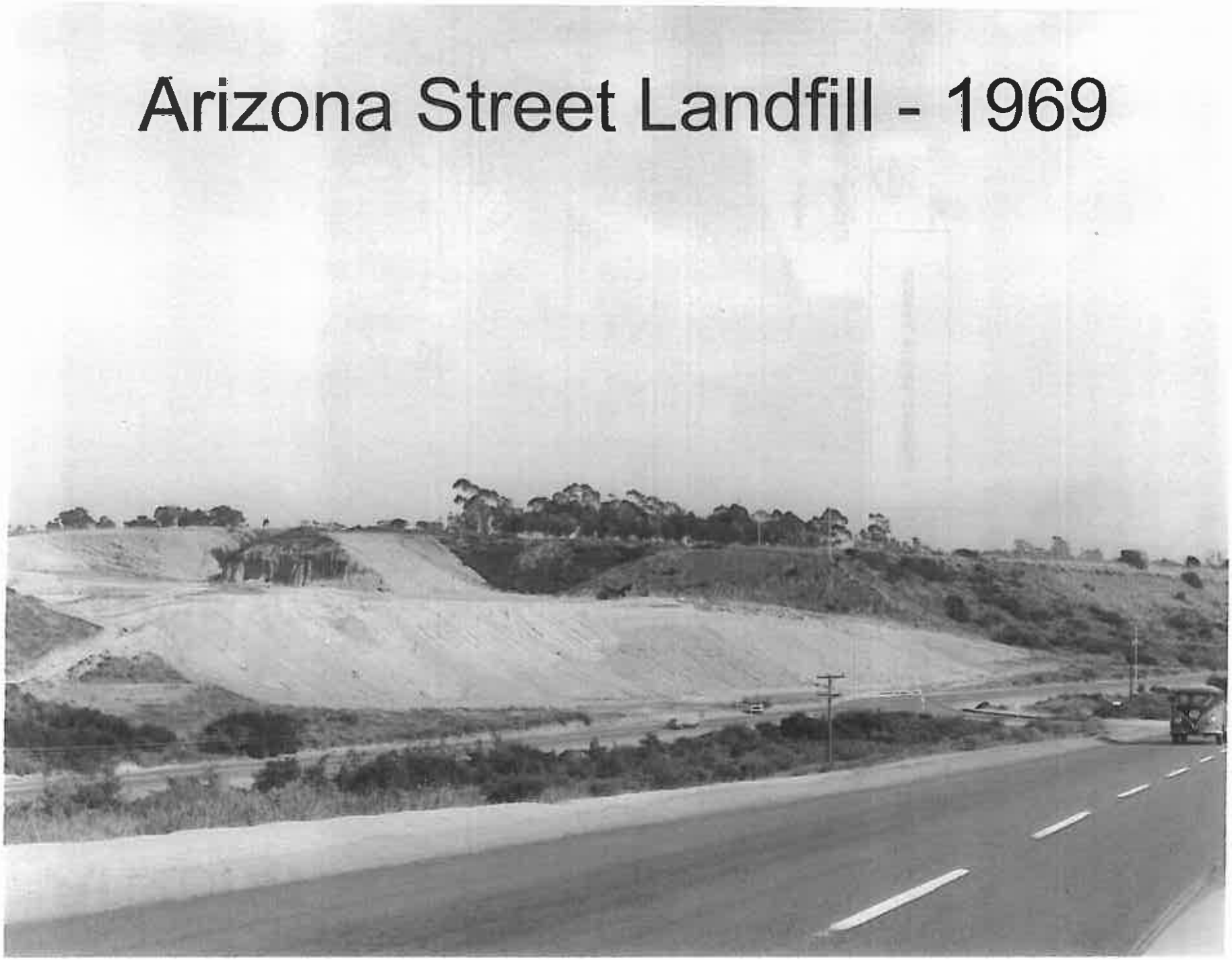
City of San Diego, California
Environmental Services Department
Refuse Disposal Division

South Chollas Landfill

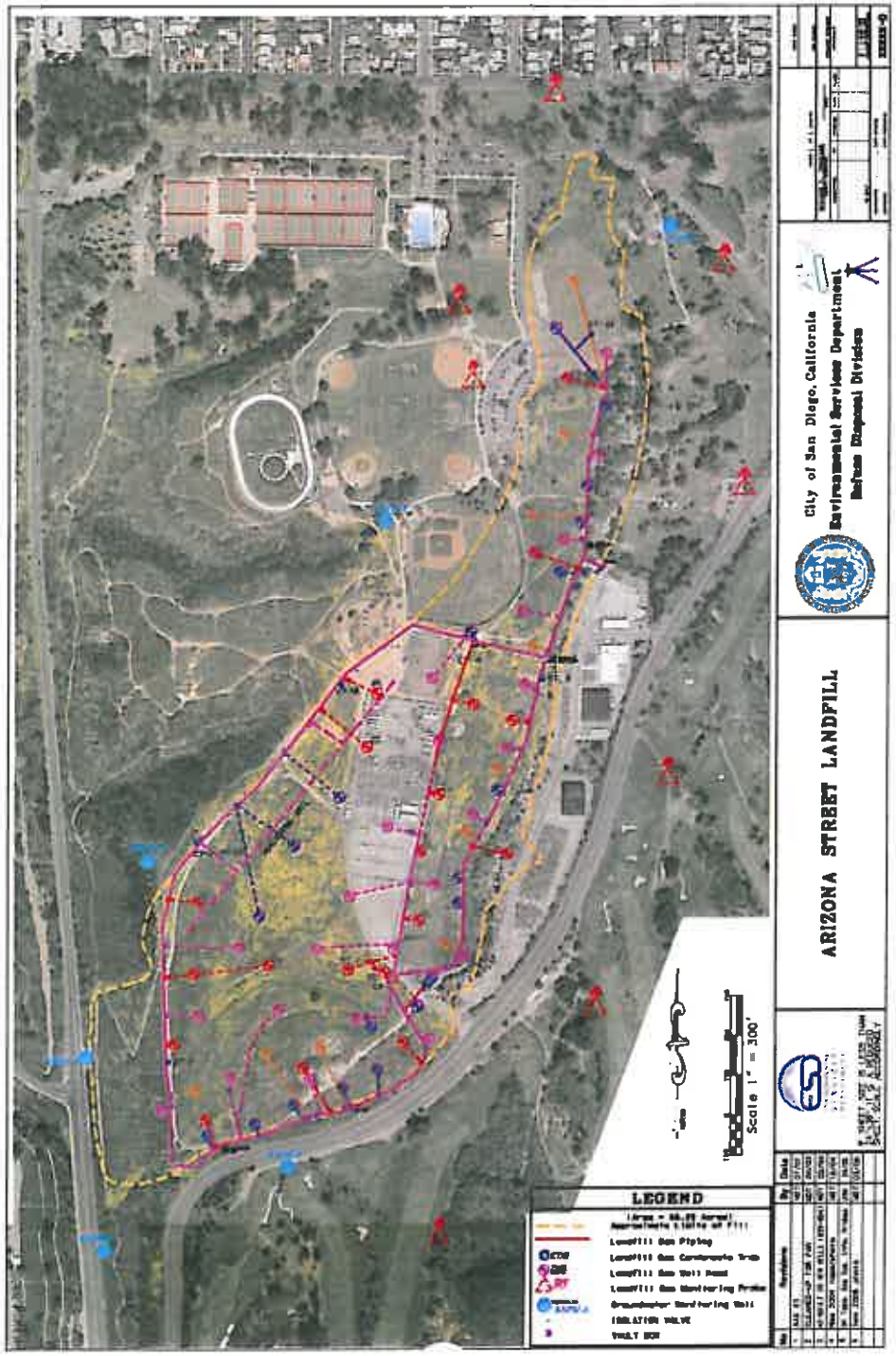
# Arizona Street Landfill - 1953

Arizona Street Landfill -
1956

# Arizona Street Landfill - 1969



# Arizona Street Landfill Today



# LM&M's OTHER SITES

26th Street Bale Site ~1972
(Balboa Park)

South Miramar 1959-1974

North Miramar 1973-1983

Paradise Hills Park 1965-1966

Montgomery Demolition Fill
1974-1991

Active Miramar Landfill
LFG/GW Monitoring

8 Burn Sites

# Regulatory Compliance

(Most Sites are inspected on a quarterly basis)

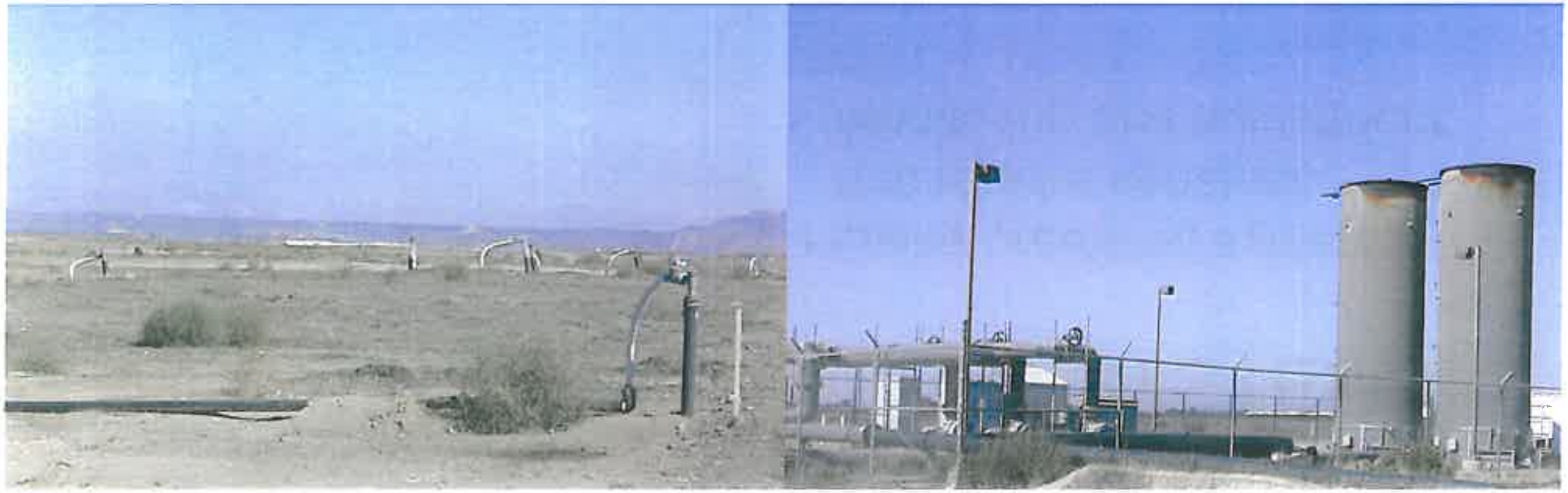
- State and Federal Regulations require:
  - -Control of landfill gas migration
  - -Controls for runoff (NPDES)
  - -Control of groundwater contamination

- LM&M complies with above by:
  - -Monitoring and controlling gas emissions
  - -Performing cover grading and drainage work
  - -Monitoring groundwater

# Gas Collection and Flaring Facilities

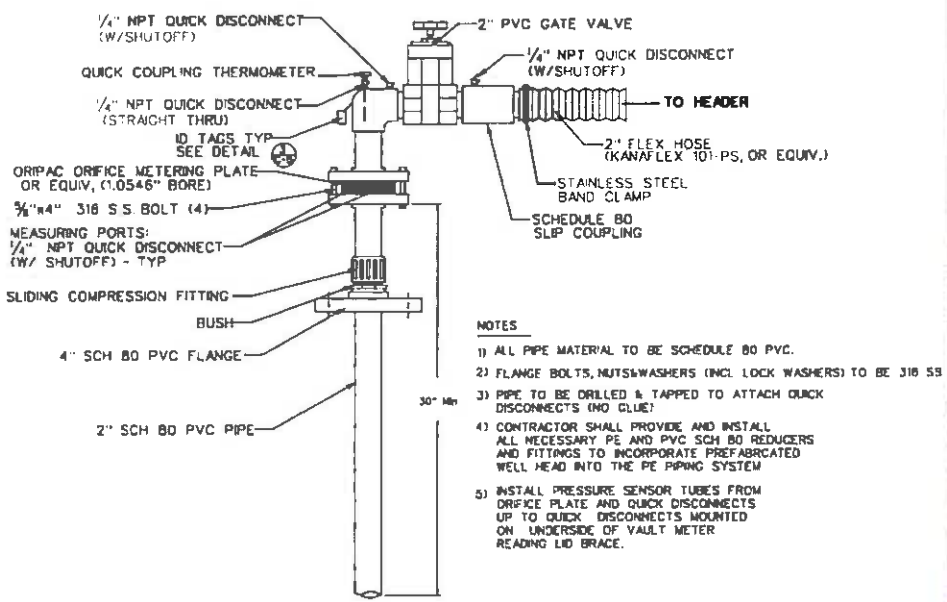
- Anaerobic bacteria feeding on landfilled wastes produces methane, carbon dioxide, and trace gases. These gasses are collected and routed to a flare or cogen engine for destruction.

- Methane Gas is explosive between 5 & 15% and must be controlled to prevent offsite migration.



# LFG SYSTEMS

- Living breathing systems that require constant monitoring and adjustment.



AF 18

# GROUNDWATER MONITORING

Sample wells for evidence of liquid or gas release from landfill.

# Grading

- Improper grading and runoff increases erosion.
- Regrade frequently to restore runoff grades.
- Install engineered controls for runoff.

Using Mulch From Miramar Greenery
for Erosion Control

- Ponding on a landill allows water to infiltrate into the trash which could impact groundwater quality.

- It is difficult to maintain positive drainage over such large, relatively flat areas when they are constantly settling.

# SETTLEMENT

- As landfilled wastes decompose, settlement upsets site grading necessary for water runoff. Regrade frequently to restore runoff grades and to restore any facilities located over landfill.

**Ball Park Gate Settlement at Arizona Street LF**

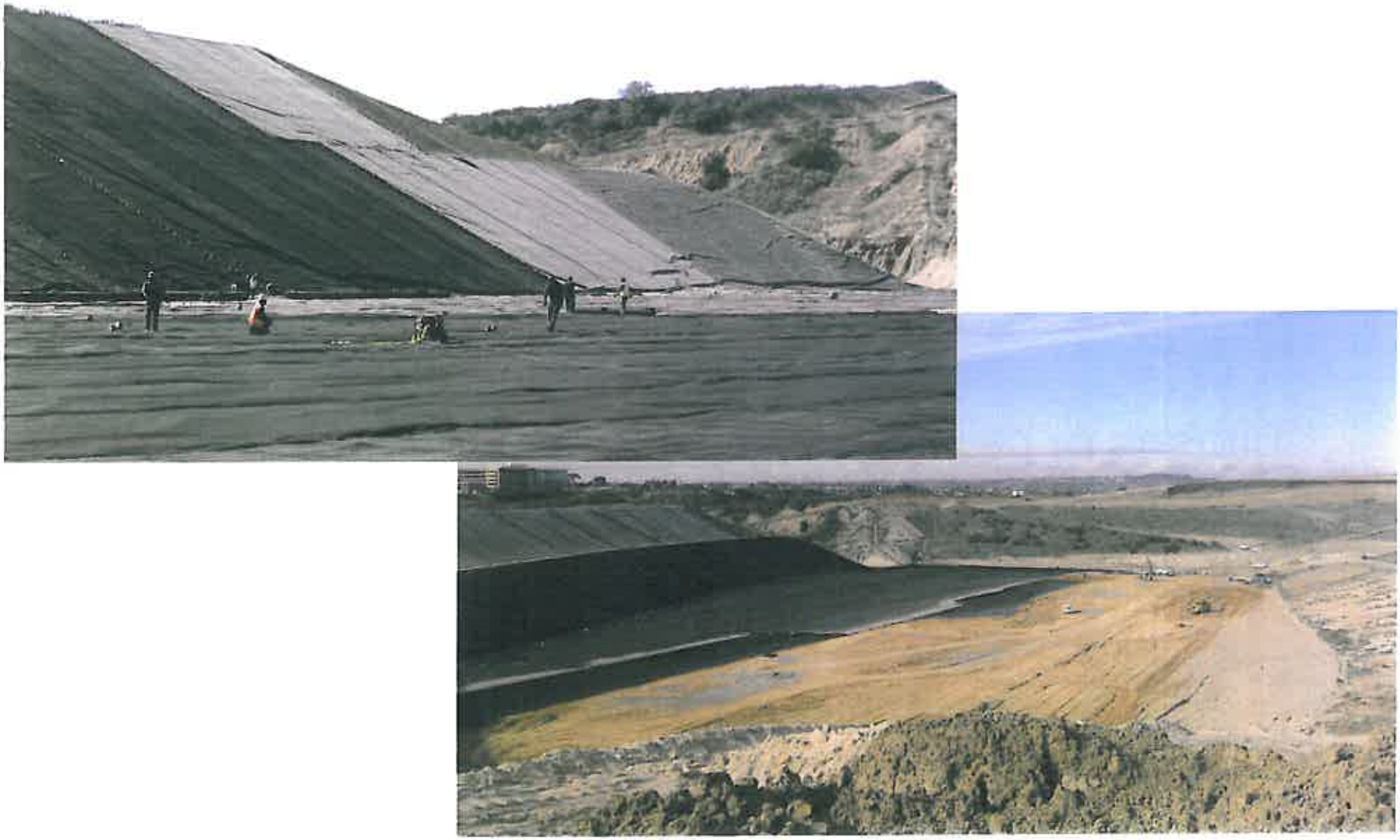
- Settlement cracks can spew LFG and are a pathway for water to enter the trash.

- Settlement cracks can also concentrate run off leading to more erosion, possibly exposing the trash.

- Development on landfills can lead to serious safety issues if not designed and maintained properly.

# Major ESD CIP PROJECTS

- LM&M also oversees and manages many of ESD's biggest CIP projects required to sustain regulatory compliance.



**Module E Landfill Liner at West Miramar**

October 04, 2007

October 15, 2007

October 22, 2007

November 14, 2007

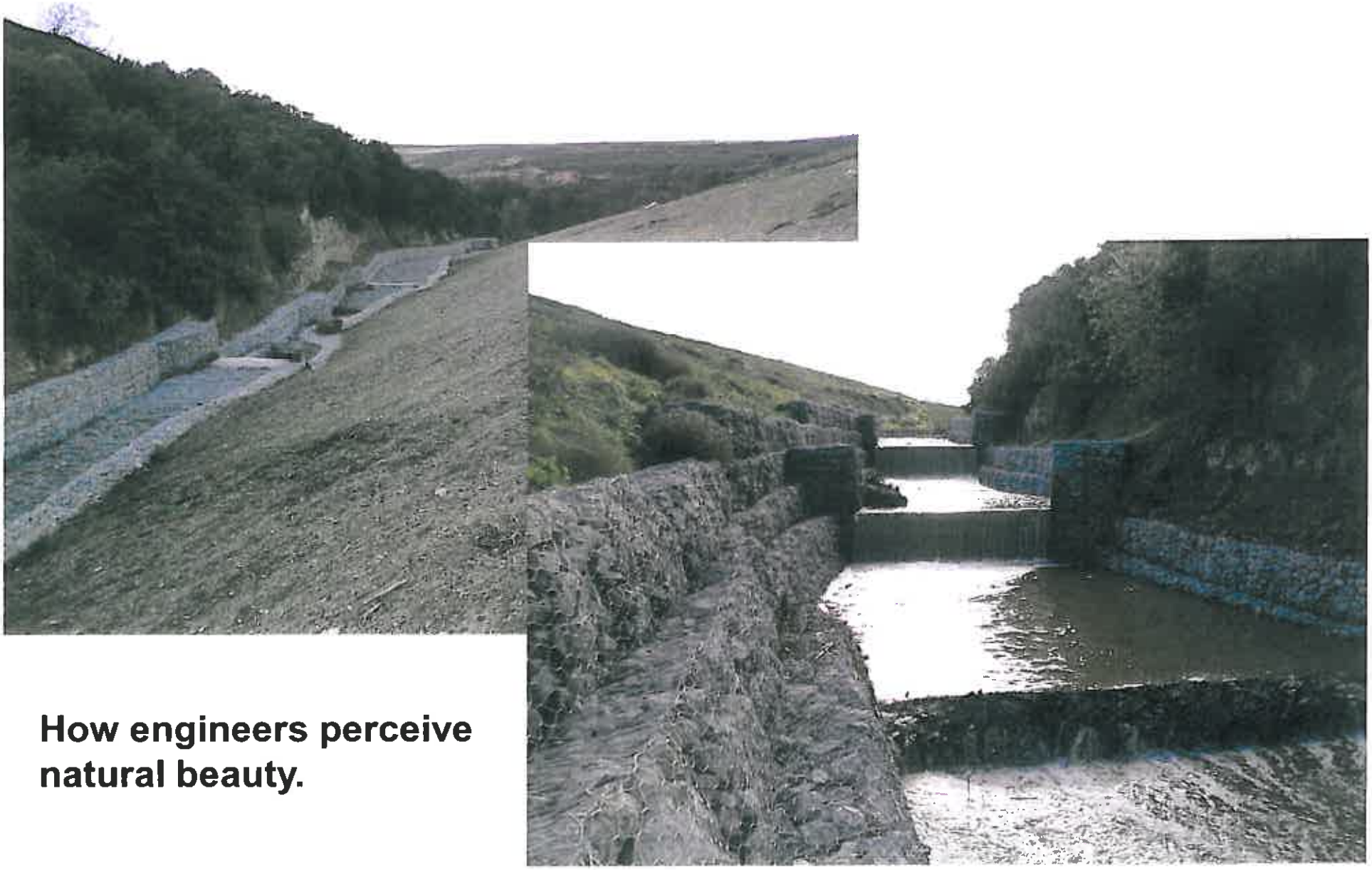
December 03, 2007

March 18, 2008

# South Chollas Slope Stabilization Project

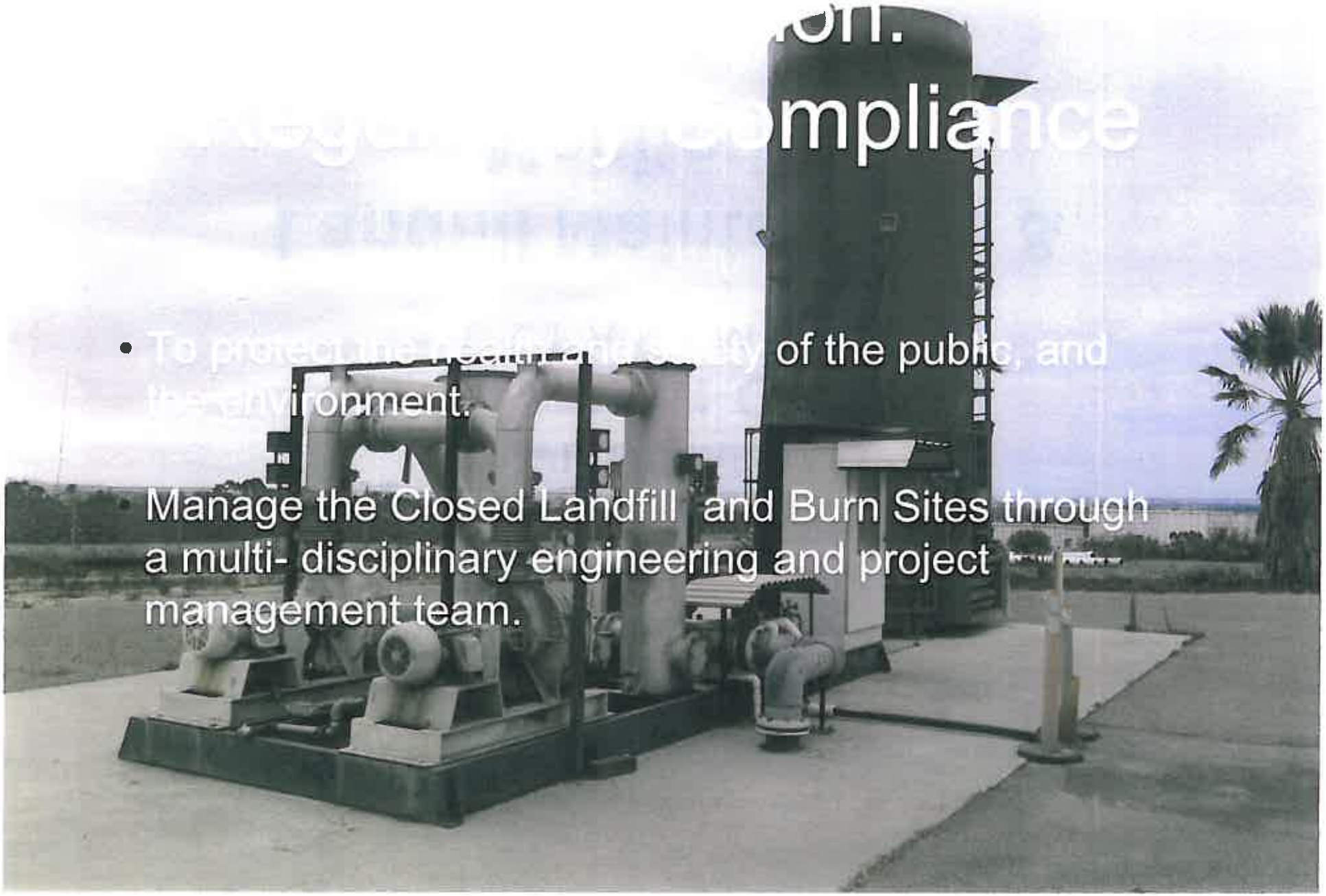
Contractor: 3-D Enterprises, Inc. 92.765.595
Mulch from Mirasar Greenery
Hydroseeded by City Forces

\CADD\Mike Tamanda office.dgn 6/5/2008 2:32:30 PM



How engineers perceive natural beauty.

# South Miramar LF Rock Channel



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