TWC Reg. No. 31479

TECHNICAL REVIEW
Comprehensive Ground Water Monitoring Evaluation

I. Introduction

A. Company - Nalco Chemical Company

1. Process description: oilfield chemical warehouse and transport facility

2. Plant site has been in operation since: 1976

B. Physiography and Climate

1. Site Topography - Attachment I (indicate site location directly on map or reproduction)

2. Average Annual:

a. Rainfall - 12-14"
b. Temperature - 64-65°F
c. Evaporation - 80-81"

3. Was an annual water balance budget submitted by the company (yes/no)? No.

4. Surficial Soils Map - Attachment II

a. Soil type - Arvana fine sandy loam, 1-3% slopes, Amarillo fine sandy loam, 1-3% slopes (northern quarter of site)
b. Soil properties, including permeability, texture, etc. - friable, moderately permeable, well drained, erosion hazard is moderate. The Arvana soils, approximately 32" thick, develop over indurated caliche. The Amarillo soils are generally 60+" thick and develop over less consolidated calcareous sediments.

5. Proximity to surface water bodies and other recharge/discharge features: Several small playa lakes are near the site, the closest being less than 1/4 of a mile to the southwest of the site.

6. Proximity to water supply wells: There are at least 8 water supply wells within a one mile radius of the facility (TDWR Report 235).

C. Waste Management Units:

1. Indicate units on Site Diagram (Attachment IV)

2. Indicate waste management area (WMA) boundaries on Site Diagram (Attachment IV)

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3. Waste management units (complete this section for each waste management unit):

Unit name	- Pollution Control Pond
Size	- 80' x 75' x 8'
Year in service	- 1976
Status*	- inactive, TWC required modifications to the closure plan
Construction	- gunnite lined below grade surface impoundment
Type of waste	- various oilfield related chemicals from drum and truck washings, includes scale inhibitors, corrosion inhibitors and emulsion breakers.
Total volume of waste received	- unknown

* active, closed, inactive, regulated unit, nonhazardous

4. If a unit is closing or closed, complete the closure checklist and include as Attachment III

II. Technical Review

A. Hydrogeology

1. Regional Geology (Pecos Sheet, Geologic Atlas of Texas)

a. Physiographic province: Edwards Plateau, Southern High Plains

b. Formation(s): Windblown cover sand overlying the Antlers sand of the Trinity Group.

1) lithology - fine to coarse grained friable sandstone
2) regional dip and gradient - southeast at 8 to 10 ft/mile

c. Usable quality (<10,000 TDS) ground water

1) depth to top/bottom - usable quality water occurs under confined conditions in the Antlers sand, which is encountered at approximately 50 to 75 feet below grade. The potentiometric surface of the ground water is located at approximately 30 to 35 feet below grade.

2) reference - TDWR Report 235

d. Regional ground water flow:

1) direction - southeast at 20 ft/mile
2) reference - TDWR Report 235

e. Is the site located on the recharge area of a major/minor named aquifer (yes/no)? Yes. Aquifer name: Edwards/Trinity Aquifer

2. Site Hydrology

a. Site Diagram - Attachment IV (include locations of waste management area(s), borings, wells, lines of cross-sections)

b. Depth to water - 30 to 35 feet below grade
As determined by - TDWR Report 235

c. Site stratigraphy to depth of investigation - No stratigraphic data is available for this site.

3. Site Ground Water Movement - No site hydrologic data is available for this site.

III. Response

A. Include a copy of the waiver demonstration. No waiver demonstration has been submitted.

B. Has a facility site investigation been conducted (yes/no)? No.

C. List, in chronological order, activities, events and correspondence relating to groundwater activities in Attachment V.

IV. Conclusions and Comments

The Nalco Pollution Control Pond is a gunnite lined surface impoundment. Based on a limited soils investigation, conducted in the northern quadrant of the pond, no organic contamination of the soils underlying the pond had occurred. No monitor wells have been installed. All pond contents have been removed. The pond will be used as secondary containment for two above-ground fully inspectable tanks.

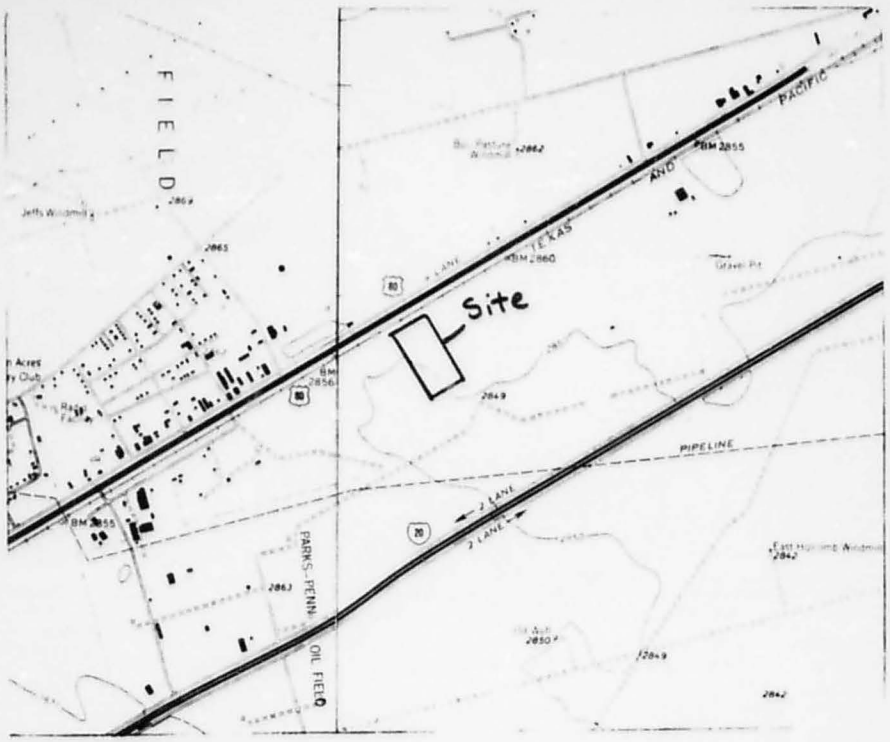
The approved closure plan included the following provisions:

1. Subsurface soil samples shall be taken from the assessable sides of the impoundment. The facility explained that if samples were obtained from immediately beneath the gunnite liner, the integrity of the liner might be destroyed. The facility has approval from the EPA (as stated in the Consent Agreement of 5/30/86) to utilize the gunnite liner as secondary containment for the above-ground tanks;

2. One boring shall be advanced to first encountered ground water, and a soil sample obtained from the soil immediately overlying the ground water surface; and,

3. The soil samples shall be analyzed for naphthalene, ancenapthene, fluorene, phenanthrene, di-n-butyl phthalate, toluene and ethylbenzene (those organics that had been analyzed in the pond contents).

If no contamination is detected in these soil samples, no further actions regarding the pond will be undertaken by the facility. The results of the sampling, per the schedule included in the closure plan, should be submitted to the TWC in April, 1987.



SCALE 1:24 000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETRE

CONTOUR INTERVAL 5 FEET

NATIONAL GEODETIC VERTICAL DATUM OF 1929

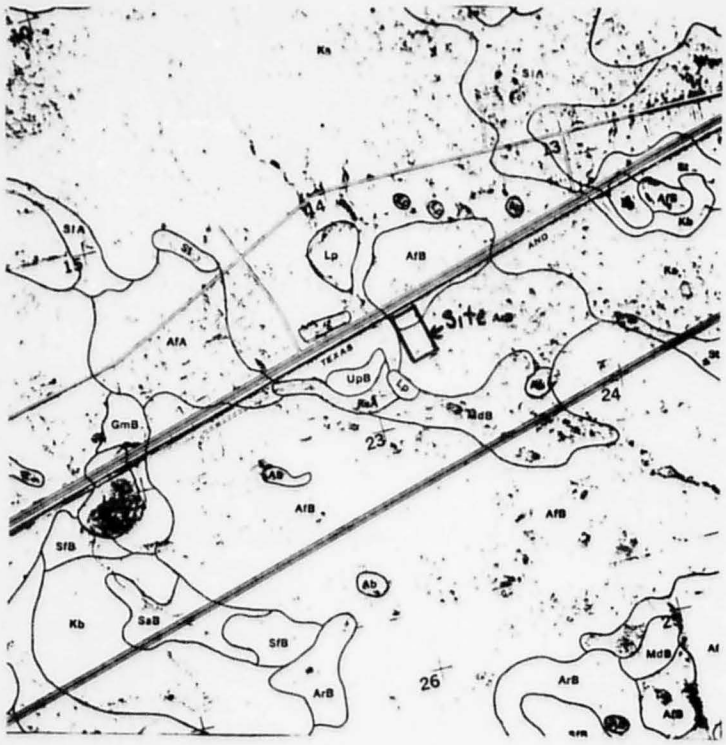
TEXAS WATER COMMISSION

District No. Central Office

ATTACHMENT I

Site Topography

TWC-0636 (Rev. 09-01-85)



TEXAS WATER COMMISSION
District No. Central Office

ATTACHMENT II

Surficial Soils Map

TWC 0636 (Rev. 09-01-85)

9. ATTACHMENT III

TWC Solid Waste Inspection Report

CLOSURE-in-PROGRESS CHECKLIST

TWC Reg. No. 31479

Reg. Facility No. NA

Type of facility component: Surface Impoundment

1. Is the facility component being closed a RCRA unit? YES ✓ NO___

2. Type of closure: Full-Facility Closure ✓ Partial Closure___ ***

3. Has **closure plan** received TWC approval or final modification? N/A___ YES ✓ NO___
   Date of approval: 11/5/86

4. Is this the last on-site facility to be closed which requires RCRA groundwater monitoring? N/A___ YES ✓ NO___

5. Has an approved **public notice** of closure been published? N/A___ YES___ NO ✓ *
   Date published:_____

6. Is a **public hearing** required? YES___ NO___
   Date of hearing:_____

7. Has on-site closure work started? YES ✓ NO___
   Date work initiated: 11/86

8. Is closure work proceeding according to the work schedule in the approved closure plan? N/A___ YES ✓ NO___

9. Have 180 days elapsed since TWC approval of the closure plan? N/A___ YES___ NO ✓

   a. If Yes, Has TWC approved an extension period? N/A___ YES___ NO___

10. Was District Office notified of sampling event when complete removal (i.e., clean closure) of a Land Disposal facility was to have been accomplished? N/A___ YES ✓ NO___

11. Were **TWC samples** taken to verify completion of closure? YES___ NO ✓

    NOTE: List chain-of-custody sample tag numbers in comments.

12. Is the closure work **completed**? YES___ NO ✓
    Date of completion:_____

13. Has the closure **certification** been submitted to TWC? N/A___ YES___ NO ✓
    Attach copy or explain.
    Date of certification:_____

* Notice of the requirement to publish public notice generated to the facility as a consequence of this CME.

*** An entry in this column indicates explanation/response is needed.

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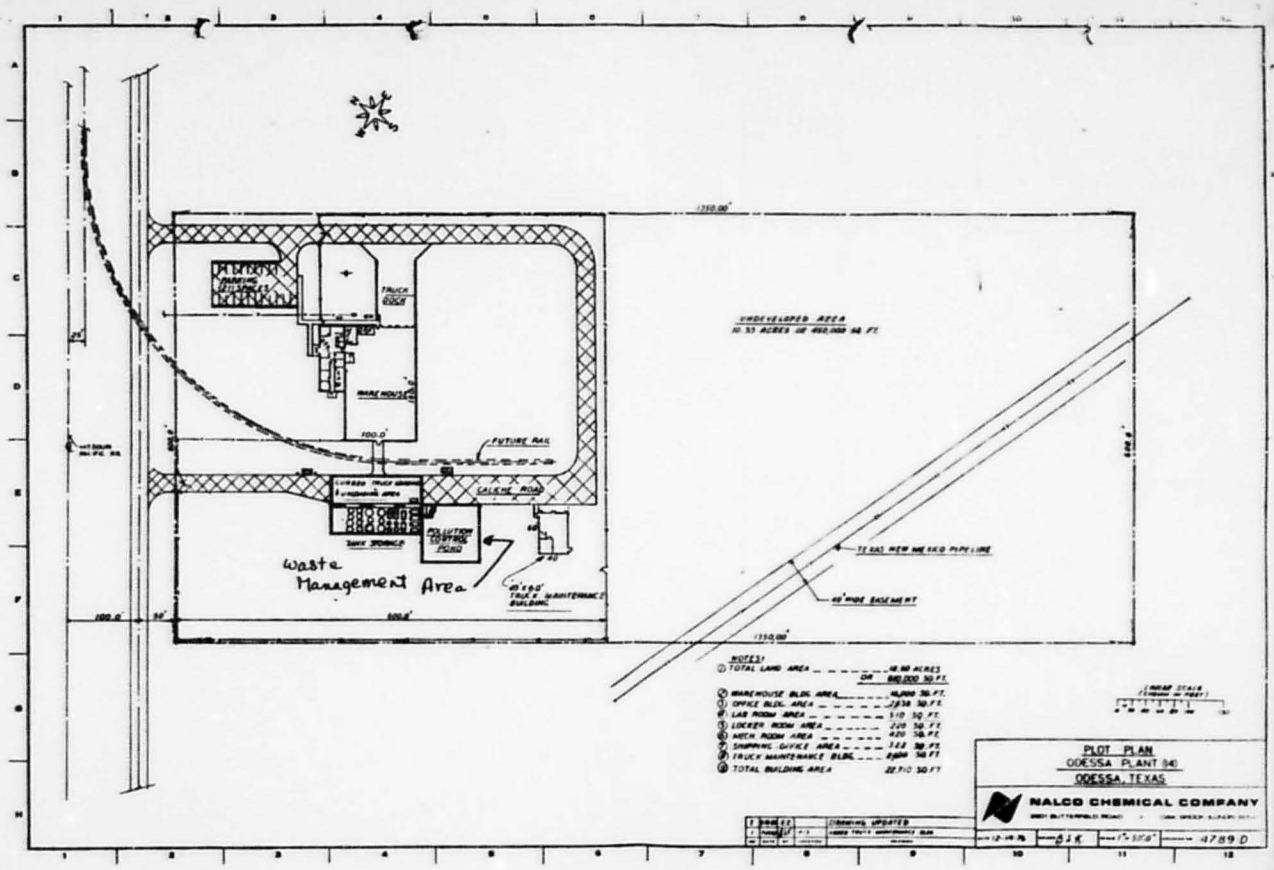

ATTACHMENT IV
Site Diagram

ATTACHMENT V

Response

3/15/85 District-10 sent an IOM to the Central office (TDWR) requesting enforcement action based on on-going violations observed during a 2/22/85 industrial solid waste compliance inspection.

5/8/85 TDWR Central office referred the facility to the EPA for enforcement action.

5/14/85 EPA conducted RCRA Compliance Monitoring Inspection

10/1/85 EPA issued Complaint against Nalco

10/31/85 Nalco responded to the Complaint, stating that the material stored in the Pollution Control Pond was beneficially reused as flush water in the treatment of oil wells, and was not a waste.

11/8/85 EPA sent copy of Nalco closure plans for the Pollution Control Pond to TDWR

5/30/86 EPA filed Consent Agreement and Final Order against Nalco.

Violations included:

1. 31 TAC 335.43(b)/40 CFR 270.10(e) - late Part A permit application
2. 31 TAC 335.287/40 CFR 265.229(a) - ignitable or reactive waste placed in pond
3. 31 TAC 335.118(a)/40 CFR 265.17 - "No Smoking" signs not posted
4. 31 TAC 335.118(b)/40 CFR 265.17 - co-mingling of reactive wastes
5. 31 TAC 335.114(a)(1)/40 CFR 265.13(a) - no waste analysis
6. 31 TAC 335.114(b)/40 CFR 265.13(b) - no waste analysis plan

Compliance schedule included:

1. Amend RCRA notification to reflect RCRA status,
2. Submit RCRA Part A permit application,
3. Submit closure plans for pond in accordance with 40 CFR 265 subparts G and K by 11/23/85,
4. Sample and report analysis of sludge\sediment in pond bottom and soils underlying liner,
5. Submit closure certification upon completion of closure, and
6. Post necessary "No Smoking" signs.

ATTACHMENT V (cont'd)

7/9/86 TWC required modifications to the Nalco closure plan recieved on 11/8/85. The modifications included a more comprehensive soils boring program with at least one soil boring being terminated at first encountered ground water.

10/21/86 Nalco submitted amendments to their closure plan.

11/5/86 TWC approved the Nalco closure plan.