
POWER SCREEN
IWS
638-3800
289A

DATE 8/4/92 TIME 1000

WEATHER: Clear

LOCATION: Rinker/Screen mod. magnetic metal removal

PHOTO TAKEN BY NFM

DATE: 8/4/92 TIME: 1000
WEATHER: Clear
LOCATION: Rinker / Screen Cattlemade
PHOTO TAKEN BY: MSM

DATE: 8/4/92 TIME: 1000
WEATHER: clear
LOCATION: Rinker/Old soil storage fac.
PHOTO TAKEN BY: MM

DATE: 8/4/92 TIME: 1000

WEATHER: Clear

LOCATION: Rinker / Old soil storage area

PHOTO TAKEN BY: JWM


FTRZ
456543

DATE: 8/9/92 TIME: 1000

WEATHER: Clear

LOCATION: Rincon/Kiln mod. for tire burning

PHOTO TAKEN BY: MM

DATE: 8/4/92 TIME: 1000
WEATHER: Clear
LOCATION: Rinker/New soil storage fac.
PHOTO TAKEN BY: WM

Exterior wall NE corner

DATE: 8/4/92 TIME: 1000
WEATHER: Clear
LOCATION: Rinker / New soil storage fac.
PHOTO TAKEN BY: WKM

Exterior wall NE corner

DATE: 8/4/92 TIME: 1000
WEATHER: clear
LOCATION: Rinker/New soil storage loc.
PHOTO TAKEN BY: WM

standing water from rain previous day & night before

```
GMSNAM RINKER MATERIALS CORPORATION   GMS                    04/30/91  11:04:25
                                FACILITY NAME SEARCH

  SCREEN                                                                FACILITY
 NUMBER  GMS ID    ACTN  XMIT          FACILITY NAME                       TYPE

GMST 01 5013P03669  00     _     RINKER MATERIALS CORPORATION          HAZ-NON-IND
GMST 01 4029P20188  00     _     RINKER MATERIALS CORPORATION           INDUSTRIAL
GMST 01 3118P03101  00     _     RINKER MATERIALS CORPORATION           INDUSTRIAL
GMST 01 3048P00007  00     _     RINKER MATERIALS CORPORATION           INDUSTRIAL
GMST 01 5013P00556  00     _     RINKER MATERIALS SO MIAMI PLANT        INDUSTRIAL
GMST 01 5013P01280  00     _     RINKER MATERIALS SWEETWATER            INDUSTRIAL
GMST 01 5050P06105  00     _     RINKER MATERIALS-CORP-PAHOKEE          INDUSTRIAL
GMST 01 5013P05845  00     _     RINKER MATERIALS-LE JEUNE PLANT        INDUSTRIAL
GMST 01 3005P03080  00     _     RINKER MATERIALS/CITY POINT            INDUSTRIAL
GMST 01 5006P04639  00     _     RINKER MATERIALS/FT. LAUDERDALE        INDUSTRIAL
GMST 01 5006P04640  00     _     RINKER MATERIALS/FT. LAUDERDALE        INDUSTRIAL
GMST 01 5050P06106  00     _     RINKER MATERIALS/LAKE PARK             INDUSTRIAL
GMST 01 3005P02621  00     _     RINKER MATERIALS/MELBOURNE PLANT       INDUSTRIAL
GMST 01 3064P00006  00     _     RINKER MATERIALS/NEW SMYRNA BCH        INDUSTRIAL
GMST 01 3064P02617  00     _     RINKER MATERIALS/ORMOND BEACH PLANT    INDUSTRIAL
  67180363793  67179741197
ENTER SCREEN NUMBER OF 'MM' FOR MENU
                                          ENTER SCREEN ACTION (N,B) __
```

GMST01 5013P03669 00 4/30/91 11.05.21

FACILITY OVERVIEW - PAGE 1

FACILITY NAME: RINKER MATERIALS CORPORATION LAST UPDATED: 04/30/91
LOCATION: 1200 N.W. 137 AVENUE CITY: MIAMI STATE: FL
SITE SUPERVISOR: JAMES S. JENKINS III PHONE: (305)221-7645
RESP.AUTH./LANDOWNER: WM VOSHELL PHONE: (407)820-8348
ADDR: 1501 BELVEDERE, P.O.BOX 24635 CTY/ST/ZIP: W.PALM BEACH ,FL 33146-
COUNTRY (IF OTHER THAN THE U.S.):

FACILITY TYPE: 7 HAZ-NON-IND STATUS: A ACTIVE AS OF 4/91
CLASS: TYPE TREATMENT/PROCESS: STATIONARY-SOIL THERMAL TREATMENT-GP
(CONT.):
DER OFFICE:SOUTHEAST COUNTY:DADE SITE LAT/LON:25.46.48.01/80.25.10.00
SECT-TOWN-RANGE: 00-39S-35E SEGMENT: QUAD: 265C HIALEAH SW
POP.SERVED: DESIGN CAP: DRINK SYS TYPE: UNKNOWN

DISPOSAL METHOD(S):

| | | |
|---|---|---|
| ( ) SPILL,LEAK,DUMP,ETC. | ( ) IMPOUNDMENT | ( ) SURFACE WATER DISCHARGE |
| ( ) BURIAL | ( ) INJECTION WELL | ( ) VOL.REDUCT./RECOVERY |
| ( ) DRAINFIELD | ( ) LAND APPLICATION | (X) OTHER: STATIONARY SOIL |
| ( ) ENCAPSULATION | ( ) LANDSPREADING | ( ) REUSE OR DISPOSAL (R/D) |

GMST02 5013P03669 00 4/30/91 11.05.56

FACILITY OVERVIEW - PAGE 2

FACILITY NAME: RINKER MATERIALS CORPORATION LAST UPDATED: 04/30/91
LANDOWNER: RINKER MATERIALS CORPORATION ADDR: 1501 BELEVEDERE RD/BOX 24635
CTY/ST/ZIP: WEST PALM BEACH, FL 33146 COUNTRY:

TYPE(S) OF WASTE HANDLED:

A. SOLID,NON-HAZARDOUS
( ) AGRICULTURAL
( ) RESIDENTIAL
(X) COMMERCIAL
( ) HOSPITAL/CLINICAL
(X) MINING
( ) INDUSTRIAL

D. WASTEWATER
( ) DOMESTIC
( ) INDUSTRIAL
( ) REJECT WATER
( ) COOLING WATER

B. SLUDGE(S)
( ) WATER TREATMENT/LIME SOFTENING
( ) SEPTIC TANK
( ) AIR SCRUBBER
( ) INDUSTRIAL/COMMERCIAL
( ) DOMESTIC
( ) INCINERATOR RESIDUE
( ) ION EXCHANGE
( ) HAZARDOUS SLUDGE

SLUDGE GENERATED OR DISPOSED? (G/D/B)

C. HAZARDOUS SOLID/LIQUID
( ) CAUSTIC & ACID SOLUTIONS
( ) EXPLOSIVES
( ) HEAVY METAL SOLUTIONS
( ) INORGANIC CHEMICALS
( ) ORGANIC CHEMICALS
(X) ORGANIC SOLVENTS & OILS
( ) PAINT & INK WASTES
( ) PESTICIDES/FUNGICIDES
( ) PATHOLOGICAL/INFECTIOUS
( ) LOW-LEVEL RADIOACTIVE
( ) MINING

E. (X) OTHER (SEE COMMENTS)

FOR HARD COPY, TAB TO HERE :

GMST03 5013P03669 00 S013195017 05013P03669 4/30/91 11.06.19

FACILITY PERMITS

FACILITY NAME: RINKER MATERIALS CORPORATION LAST UPDATED: 04/17/91

| PERMIT NO. | TYPE | ISSUED | EXPIRES | STATUS | OUTFALL |
|---|---|---|---|---|---|
| S013-195017 | SOLID OPERATING | 04/17/91 | 04/04/96 | A ACTIVE | |

COPY OR TAB :

GMST50 5013P03669 00 001  05013P03669  4/30/91 11.06.57

FACILITY COMMENTS

FACILITY NAME: RINKER MATERIALS CORPORATION  LAST UPDATED: 04/16/91

| NARRATIVE | SEQ. |
|---|---|
| 3/8/91 GP NOTICE RECEIUVED (SEE PATS) | (001) |
| 3/11/91 INSPECTION CONDUCTED (DER/WPB) | (002) |
| 3/21/91 INSPECTION CONDUCTED(DER/WPB & DER/TALL) | (003) |
| 3/4/91 NEW NOTICE SUBMITTED (SEE PATS) | (004) |
| 3/4/91 ALTERNATIVE PROCEDURE GRANTED BY TALL. | (005) |
| 3/5/91 ORGINIAL NOTICE DENIED | (006) |

COPY OR TAB :

APPLICATION TRACKING SYSTEM 04/17/91

APPL NO:195017
APPL RECVD:04/04/91 TYPE CODE:SO SUBCODE:17 LAST UPDATE:04/17/91
DER OFFICE RECVD:WPB DER OFFICE TRANSFER TO:___ APPLICATION COMPLETE:04/04/91
DER PROCESSOR:WIERZBICKI, PAUL
APPL STATUS:GP DATE:04/17/91 (ACTIVE/DENIED/WITHDRAWN/EXEMPT/ISSUED/GENERAL)
RELIEF:__ (SSAC/EXEMPTIONS/VARIANCE)
(Y/N) N MANUAL TRACKING DISTRICT:50 COUNTY:13
(Y/N) N OGC HEARING REQUESTED LAT/LONG:25.46.48/80.25.10
(Y/N) N PUBLIC NOTICE REQD? BASIN-SEGMENT:__.___
(Y/N) N GOV BODY LOCAL APPROVAL REQD? COE #:_____
(Y/N) Y LETTER OF INTENT REQD? _ (I/ISSUE D/DENY) ALT#:GMS-5013P03669

PROJECT SOURCE NAME:RINKER MATERIALS SOIL THERMAL
STREET:1200 NW 137TH AVE. CITY:MIAMI
STATE:FL ZIP:33182 PHONE:305-221-7645
APPLICATION NAME:RINKER MATERIAL CORP
STREET:P.O.BOX 24635 CITY:WEST PALM BEACH
STATE:FL ZIP:33416 PHONE:___-___-____
AGENT NAME:DONALD BEERS
STREET:SAME CITY:_____
STATE:__ ZIP:_____ PHONE:407-833-5555
FEE #1 DATE PAID:04/04/91 AMOUNT PAID:00025 RECEIPT NUMBER:00170051

B DATE APPLICANT INFORMED OF NEED FOR PUBLIC NOTICE - - - __/__/__
C DATE DER SENT DNR APPLICATION/SENT DNR INTENT - - - - - __/__/__--__/__/__
D DATE DER REQ. COMMENTS FROM GOV. BODY FOR LOCAL APP. -. __/__/__
E DATE #1 ADDITIONAL INFO REQ--REC FROM APPLICANT - - - - __/__/__--__/__/__
E DATE #2 ADDITIONAL INFO REQ--REC FROM APPLICANT - - - - __/__/__--__/__/__
E DATE #3 ADDITIONAL INFO REQ--REC FROM APPLICANT - - - - __/__/__--__/__/__
E DATE #4 ADDITIONAL INFO REQ--REC FROM APPLICANT - - - - __/__/__--__/__/__
E DATE #5 ADDITIONAL INFO REQ--REC FROM APPLICANT - - - - __/__/__--__/__/__
E DATE #6 ADDITIONAL INFO REQ--REC FROM APPLICANT - - - - __/__/__--__/__/__
F DATE LAST 45 DAY LETTER WAS SENT - - - - - - - - - - - - __/__/__
G DATE FIELD REPORT WAS REQ--REC - - - - - - - - - - - - - __/__/__--__/__/__
H DATE DNR REVIEW WAS COMPLETED - - - - - - - - - - - - - __/__/__

I DATE APPLICATION WAS COMPLETE - - - - - - - - - - - - - 04/04/91
J DATE GOVERNING BODY PROVIDED COMMENTS OR OBJECTIONS - - __/__/__
K DATE NOTICE OF INTENT WAS SENT--REC TO APPLICANT - - - - __/__/__--__/__/__
L DATE PUBLIC NOTICE WAS SENT TO APPLICANT - - - - - - - - __/__/__
M DATE PROOF OF PUBLICATION OF PUBLIC NOTICE RECEIVED - - __/__/__
N WAIVER DATE BEGIN--END (DAY 90) - - - - - - - - - - - - __/__/__--__/__/__

COMMENTS:EXPIRATION DATE 4/4/96

# CHAPTER 17-775
# SOIL THERMAL TREATMENT FACILITIES

## PART I
## INTENT, DEFINITIONS AND GENERAL PROVISIONS



## PART II
## SPECIFIC CONDITIONS FOR STATIONARY FACILITIES



## PART III
## SPECIFIC CONDITIONS FOR MOBILE FACILITIES



## PART IV
## SOIL THERMAL TREATMENT FACILITY FORMS







## PART I
## INTENT, DEFINITIONS AND GENERAL PROVISIONS

**17-775.100 Intent**

(1) Rule 17-770, F.A.C., establishes petroleum or petroleum product contamination cleanup criteria and a cleanup process which must be undertaken at all petroleum contamination sites. As a result of this cleanup effort, contaminated soils may be removed for thermal treatment.

(2) The State of Florida Department of Environmental Regulation promulgates this rule in order to provide assurances that contaminated soils as defined in Rule 17-770.200, F.A.C., which are removed for thermal treatment, are properly handled and treated to levels that will prevent future contamination of other soils, ground water, and surface water.

(3) The Department recognizes that thermal treatment of contaminated soils in asphalt plants, cement kilns, rotary kilns, or their equivalents, is a viable method of remediating soils.

(4) The Department intends for this rule to apply only to thermal treatment facilities and the contaminated soils which will be treated therein.

**Specific Authority:** 376.303, 376.3071, 403.061, F.S.
**Law Implemented:** 376.3071, F.S.
**History:** New 12-10-90.

**17-775.200 Definitions**

All words and phrases defined in Section 376.301, F.S., shall have the same meaning when used in this Chapter unless the context clearly indicates otherwise. The following words and phrases when used in this Chapter shall, unless the context clearly indicates otherwise, have the following meanings:

(1) "Contamination" or "contaminated" means a discharge of petroleum or petroleum products into the surface waters, ground waters or upon the land, in quantities which may result in a violation of water quality standards set forth in Chapters 17-3 and 17-302, F.A.C.

(2) "Department" means the State of Florida Department of Environmental Regulation.

(3) "Environmental Protection Agency" or "EPA" means The United States Environmental Protection Agency.

(4) "Existing facility" shall mean a soil thermal treatment facility which is in operation prior to the effective date of this Chapter.

(5) "Hazardous waste" means a solid waste identified as a hazardous waste in 40 CFR 261.3.

(6) "Leachate" means liquid which percolates through or emerges from stockpiled soil and contains soluble, suspended or miscible materials.

(7) "Mobile facility" means a thermal treatment system which is transported to a soil contamination site and only treats soil from that specific site.

(8) "Stationary facility" means a thermal treatment system which thermally treats contaminated soil transported to the facility.

(9) "Thermal treatment" means to apply heat to increase soil temperatures sufficiently to volatilize or burn contaminants within the soil.

(10) "Thermal treatment facility" means either a stationary or mobile system designed, constructed, and permitted by the Department to handle, store, and thermally treat contaminated soils. "Thermal treatment facility" does not include electrical power plants in which thermal treatment of contaminated soils from their own property results in ash which is disposed of in accordance with Chapters 17-701 or 17-702, F.A.C.

(11) "Total Volatile Organic Aromatics" or "total VOA" means the sum of concentrations of benzene, toluene, total xylenes, and ethylbenzene as determined by EPA Method 602, 5030/8020, or 5030/8021.

(12) "Used oil" means any lubricant which has been refined from crude oil and, as a result of use, storage or handling, has become unsuitable for its original purpose due to the presence of impurities or loss of properties, but which may be suitable for further use as a fuel or may be economically recycled for use as a fuel. "Used oil" shall not include any oil which has been mixed with any material which is a hazardous waste, unless the material is a hazardous waste solely due to the characteristic of ignitability as defined in 40 CFR Section 261, Subpart C. Oil containing more than 1000 parts per million of total halogens is presumed to be mixed with a hazardous waste as defined in 40 CFR Section 261, Subpart D, unless a demonstration is made that the used oil does not contain a hazardous waste.

**Specific Authority:** 376.303, 376.3071, 403.061, F.S.
**Law Implemented:** 376.3071, 403.031, 403.061, 403.062, F.S.
**History:** New 12-10-90.

**17-775.210 Reference Standards**

(1) Reference standards are available for inspection at the Department's district and central offices.

(2) Specific references to documents or parts thereof are adopted and incorporated as standards only to the extent that the documents are specifically referenced in this Chapter.

(a) DER Guidelines for Preparing Quality Assurance Plans (DER-QA-001/90), Florida Department of Environmental Regulation, Quality Assurance Section.

(b) Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, EPA SW 846, Third Edition, Document No. 955-001-00000-1, as amended by update Package I (December, 1987).

17-775.200(7) - 17-775.210(2)(b)





(c) EPA Draft Method 9073 for Total Recoverable Petroleum Hydrocarbons.

(d) Federal Register; Volume 55, No. 61, pages 11798 to 11877; dated Thursday, March 29, 1990; on Hazardous Waste Management System; Identification and Listing of Hazardous Waste; Toxicity Characteristics Revisions; Final Rule.

**Specific Authority:** 376.303, 376.3071, 403.061, F.S.
**Law Implemented:** 376.3071, 403.061, 403.062, F.S.
**History:** New 12-10-90.

**17-775.300 General Permits**

(1) Soil thermal treatment facilities shall operate pursuant to a general permit, and shall meet the applicable general permit requirements in Rules 17-4.510 through 17-4.540, F.A.C., and the requirements of this Rule.

(2) Prior to operating under a general permit, the owners of a soil thermal treatment facility shall notify the Department on Form 17-775.900(1). For an existing soil thermal treatment facility, the notification must be submitted within 90 days after the effective date of this Rule. For a new soil thermal treatment facility or for renewal of a general permit, the notification must be submitted 30 days before the operation begins or the existing permit expires.

(3) The notice of intent to use the general permit to treat contaminated soils at a thermal treatment facility shall bear the signature, date and seal of a professional engineer licensed in the State of Florida.

(4) Soil thermal treatment facilities also must be permitted under Rule 17-2, F.A.C., prior to thermally treating contaminated soil.

(5) Soil thermal treatment facilities shall treat soils to the extent necessary to meet the criteria for clean soil in accordance with Rule 17-775.400, F.A.C. Soil sampling and analysis shall be in accordance with Rule 17-775.410, F.A.C.

(6) For stationary soil thermal treatment facilities, the specific conditions in Rules 17-775.600 through 17-775.620, F.A.C., shall apply. For mobile soil thermal treatment facilities, the specific conditions in Rule 17-775.700 and 17-775.710, F.A.C., shall apply.

(7) All soil thermal treatment facilities operating under a general permit shall maintain accurate records of operations. Operating report logs shall be maintained on a normal work day basis on Forms 17-775.900(2) and (3), F.A.C., and shall be maintained for a period of three years at the facility for a stationary facility, or, at an approved location for mobile facility. The Department shall have complete access to all records, field and laboratory chain-of-custody records, quality control records, raw data records, calibration records, and laboratory analyses.

17-775.210(2)(c) - 17-775.300(7)

(8) When treating contaminated soil, soil thermal treatment facilities shall have a minimum operating temperature and a maximum soil charging rate which provides treatment to meet the criteria in Rule 17-775.400, F.A.C.

(9) Soil must be screened, or otherwise processed in order to prevent soil particles greater than two inch mesh (diameter) from entering the thermal treatment unit. Soil thermal treatment facilities are allowed to treat debris, other than soil, such as concrete, rocks, and wood.

(10) Prior to conducting any sampling or analysis, a Comprehensive Quality Assurance Project Plan (formerly called a Generic Quality Assurance Plan) must be approved by the Department. For those persons who have an approved Comprehensive Quality Assurance Project Plan, a Short Form (site specific) Quality Assurance Project Plan or other appropriate quality assurance document approved by the Department will satisfy this requirement. The Short Form Quality Assurance Project Plan shall be prepared in accordance with the requirements of the Department's Guidelines for Preparing Quality Assurance Plans. If there is reasonable doubt as to the quality of data or methods used, the Department reserves the right to reject any or all data submitted prior to approval of the Short Form Quality Assurance Project Plan.

**Specific Authority:** 376.303, 376.3071, 403.0877, F.S.
**Law Implemented:** 376.3071, F.S.
**History:** New 12-10-90.

**17-775.400 Criteria for Clean Soil**

Soil which has been treated by a soil thermal treatment facility must meet the following cleanup levels to be classified as clean soil. Mixing of treated soils to achieve these standards is prohibited; however, if metal levels are exceeded without exceeding Toxicity Characteristic Leachate Procedure (TCLP) metals standards, blending of soil is allowed.

(1) Total Volatile Organic Aromatics shall not exceed 100 ug/kg (100 ppb) using the analysis identified in Rule 17-775.410(1)(a), F.A.C., and

(2) Total Recoverable Petroleum Hydrocarbons (TRPH) shall not exceed 10 mg/kg (10 ppm) using the analysis identified in Rule 17-775.410(1)(b), F.A.C., or

(3) Total Recoverable Petroleum Hydrocarbons (TRPH) shall not exceed 50 mg/kg (50 ppm) using the analysis identified in Rule 17-775.410(1)(b), F.A.C., provided the total of the Polynuclear Aromatic Hydrocarbons (PAH) does not exceed 6 mg/kg (6 ppm) using the analysis identified in Rule 17-775.410(1)(c), F.A.C., and the total of the Volatile Organic Halocarbons (VOH) does not exceed 50 ug/kg (50 ppb) using the analysis identified in Rule 17-775.410(1)(d), F.A.C., and





(4) Metals shall not exceed the following concentrations in Table I using the analyses identified in Rule 17-775.410(1)(e), F.A.C. Both preparation methods identified in Rule 17-775.410(2), F.A.C., shall be used prior to metal analysis.

TABLE I

| Metals | Maximum Concentration TCLP (mg/l) | Total (mg/kg) |
|---|---|---|
| Arsenic | 5.0 | 55 |
| Barium | 100.0 | 2750 |
| Cadmium | 1.0 | 55 |
| Chromium | 5.0 | 275 |
| Lead | 5.0 | 77 |
| Mercury | 0.2 | 17 |
| Selenium | 1.0 | 165 |
| Silver | 5.0 | 165 |

**Specific Authority:** 376.303, 376.3071, 403.087, F.S.
**Law Implemented:** 376.3071, 403.087, F.S.
**History:** New 12-10-90.

**17-775.410 Soil Sampling and Analysis**

(1) Soil samples shall be analyzed for the following parameters using the test methods indicated:

| | | |
|---|---|---|
| (a) | Total Volatile Organic Aromatics (VOA) | EPA Method 5030/8020 |
| (b) | Total Recoverable Petroleum Hydrocarbons | EPA Draft Method 9073 |
| (c) | Polynuclear Aromatic Hydrocarbons (PAH) | EPA Method 3540/8100, 3550/8100, 3540/8250, 3540/8270, 3550/8250, 3550/8270, 3540/8310 or 3550/8310 |
| (d) | Volatile Organic Halocarbons (VOH) | EPA Method 5030/8010 |
| (e) | Metals | |
| | Arsenic | EPA Method 7060, 7061 or 6010 |
| | Barium | EPA Method 7080 or 6010 |
| | Cadmium | EPA Method 7130,7131 or 6010 |
| | Chromium | EPA Method 7190, 7191 or 6010 |
| | Lead | EPA Method 7420, 7421 or 6010 |
| | Mercury | EPA Method 7471 |
| | Selenium | EPA Method 7040, 7041 or 6010 |
| | Silver | EPA Method 7760 or 6010 |

(2) The acid digestion procedure by EPA Method 3050 shall be used to prepare soil samples for total metal analyses, and the extraction procedure by EPA Method 1311 Toxicity Characteristic Leaching Procedure (TCLP) shall be used to determine leachability characteristic of metals.

(3) Pretreatment soil shall be analyzed for Volatile Organic Aromatics, Total Recoverable Petroleum Hydrocarbons, and total metals. From each contamination site, composite soil sampling frequency shall be in accordance with Table II. Each composite soil sample shall consist of soil samples taken from at least four locations. Each sample shall be collected from locations equally distributed throughout the soil surface area and from a depth of at least six inches below the surface.

TABLE II

| Amount of Soil by Volume (cubic yards) | Amount of Soil by Weight (tons) | Quantity of Composite Samples |
|---|---|---|
| Less than 100 | Less than 140 | 1 |
| 100 to 500 | 140 to 700 | 3 |
| 500 to 1000 | 700 to 1400 | 5 |
| For each additional 500 | For each additional 700 | 1 |

(4) The soil must not be thermally treated pursuant to this Chapter if classified as a hazardous waste. If any soil is suspected of containing a hazardous waste, then screening analyses for other contaminants may include, but are not limited to the following: volatile organic halogens; corrosivity; reactivity; toxicity characteristic constituents by the Toxicity Characteristic Leachate Procedure (TCLP), which includes metals, pesticides and additional organics; and polychlorinated biphenyls (PCB).

(5) Following thermal treatment, a soil sample shall be collected at a sampling port at least hourly and composited over an eight hour maximum time interval or at least once every 400 tons, whichever is less. Each composite sample shall be analyzed for the parameters identified in Rule 17-775.400(1),(2), and (4), F.A.C. If the clean soil criterion in Rule 17-775.400(2), F.A.C., is exceeded, the soil may be analyzed for PAH and VOH parameters identified in Rule 17-775.400(3), F.A.C.

**Specific Authority:** 376.303, 376.3071, 403.061, F.S.
**Law Implemented:** 376.3071, 403.061, 403.062, F.S.
**History:** New 12-10-90.





**17-775.500 Approval of Alternate Procedures**

(1) The owner or operator of a facility subject to the provisions of this Chapter may request in writing a determination from the Department that any requirement of this Chapter should not apply to such facility, and shall request approval of alternate procedures.

(2) The request shall set forth at a minimum the following information:

(a) The facility for which an exception is sought;

(b) The specific provision of Rule 17-775, F.A.C., from which an exception is sought;

(c) The basis for the exception;

(d) The alternate procedure or requirement for which approval is sought and a demonstration that the alternate procedure or requirement provides a substantially equivalent degree of protection for the lands, surface waters, or ground waters of the state as the established requirement; and

(e) A demonstration that the alternate procedure or requirement is at least as effective as the established procedure or requirement.

(3) The Secretary or his designee shall approve or deny each alternate procedure using the criteria in subsection (2) and shall provide written notice of such action.

**Specific Authority:** 376.303, 376.3071, F.S.
**Law Implemented:** 376.303, 376.3071, F.S.
**History:** 12-10-90.

## PART II
## SPECIFIC CONDITIONS FOR STATIONARY FACILITIES

**17-775.600 Security**

(1) All stationary thermal treatment facilities shall take appropriate measures to assure protection of the general public.

**Specific Authority:** 376.303, 376.3071, 403.061, F.S.
**Law Implemented:** 376.303, 376.3071, F.S.
**History:** 12-10-90.

**17-775.610 Ground Water Monitoring**

(1) A ground water monitoring program shall be developed for each facility which shall provide assurances tht ground water quality is maintained.

(2) A ground water monitoring plan shall be provided to the Department as an attachment to the general permit application. The ground water monitoring plan shall be signed, sealed, and dated by a professional geologist. The monitoring plan shall contain the follwing information:

(a) Location(s) of the proposed unaffected natural background and downgradient monitoring well(s) and construction details of the monitoring well(s).

(b) Hydrogeological, physical, and chemical data for the site, including:

1. Direction and rate of ground water flow;
2. Background ground water quality;
3. Porosity, horizontal and vertical permeability for the aquifer(s), and the depth to, and lithology of the first confining bed(s);
4. Vertical permeability, thickness, and extent of any confining beds;
5. Topography, soil information, and surface water drainage systems surrounding the site; and
6. Inventory depth, construction details (well drilling logs), and cones of depression of water supply wells located within a one mile radius of the site.

(3) Monitoring wells shall be constructed in accordance with the provisions of Rule 17-532 except as follows:

(a) The minimum inside diameter shall be two inches.

(b) Flush threaded couplings shall be used to join polyvinyl chloride (PVC) pipe.

(4) The ground water monitoring wells shall be sampled and analyzed on a quarterly basis for the following parameters using the designated test methods:

| | | |
|---|---|---|
| (a) | Volatile Organic Aromatics | |
| 1. | Benzene | EPA Method 602 |
| 2. | Toluene | EPA Method 602 |
| 3. | Ethylbenzene | EPA Method 602 |
| 4. | Total Xylenes | EPA Method 602 |
| (b) | Methyl Tert-Butyl Ether (MTBE) | EPA Method 602 |
| (c) | Polynuclear Aromatic Hydrocarbons | EPA Method 610 or 625 |
| (d) | Metals | |
| 1. | Arsenic | EPA Method 206.2, 206.3, 3010/7060 or 3020/7061 |
| 2. | Barium | EPA Method 208.1, 208.2, 3010/7080 or 3020/7081 |
| 3. | Cadmium | EPA Method 213.1, 213.2, 3010/7130 or 3020/7131 |
| 4. | Chromium | EPA Method 200.7, 218.2 or 3020/7191 |
| 5. | Lead | EPA Method 239.2 or 3020/7421 |
| 6. | Mercury | EPA Method 245.1 or 3010/7470 or 3020/7471 |
| 7. | Selenium | EPA Method 270.2, 270.3, 3010/7740 or 3020/7741 |
| 8. | Silver | EPA Method 271.1, 271.2, 3010/7760 or 3020/7761 |





(5) If sampling analyses indicate any levels of the above parameters exceeding the unaffected natural background levels, the permittee shall notify the Department in writing within seven days of receiving analytical results.

**Specific Authority:** 376.303, 376.3071, 403.061, 403.0877, F.S.
**Law Implemented:** 376.303, 376.3071, F.S.
**History:** New 12-10-90.

**17-775.620 Receiving, Handling, and Stockpiling**

(1) Each batch of contaminated soil shall be clearly identified by source and stockpiled separately until all sampling and analyses in accordance with Rule 17-775.410, F.A.C, are complete. Once the contaminated soil is determined to be acceptable for treatment, soil batches may be mixed with other soil batches found acceptable for thermal treatment. All contaminated soils shall be stored separately and apart from all treated soils.

(2) Contaminated soil shall be stored pursuant to this Chapter in such a manner to prevent contact with rainfall or release of leachate to ground water or surface water. The following pre-treatment storage measures shall be provided at each facility:

(a) All soil shall be stored under a permanent cover structure designed and constructed to prevent rainfall to either directly or indirectly come into contact with the stockpiled soil.

(b) The soil shall be stored on a permanent floor designed and constructed to prevent seepage, which will maintain a maximum hydraulic conductivity of no more than $10^{-7}$cm/sec through a minimum of four inches.

1. Plastic or synthetic liners as flooring shall not be considered as suitable alternates.
2. The floor structure shall be designed and constructed for leachate collection and control.

(3) No leachate shall be discharged to soils, ground water, or surface water prior to treatment. Prior to discharge, treated leachate shall meet the standards established in Rule 17-3, F.A.C. Applicable permits for discharges to either surface water or ground water must be obtained prior to any discharge.

(4) Leachate may be treated in the thermal treatment facility.

(5) Until soil analyses have verified that the soil meets the clean soil criteria identified in Rule 17-775.400, F.A.C., treated soil shall be stockpiled on a permanent floor structure, which meets the criteria in Rule 17-775.620(2)(b).

**Specific Authority:** 376.303, 376.3071, 403.061, F.S.
**Law Implemented:** 376.303, 376.3071, F.S.
**History:** New 12-10-90.

## PART III
## SPECIFIC CONDITIONS FOR MOBILE FACILITIES

**17-775.700 Notices and Security**

(1) Any mobile thermal treatment facility which intends to treat contaminated soil, shall notify the following entities by registered mail at least three days prior to initiating operation at a contaminant site:

(a) The local City and County governments and local environmental agency, and

(b) The appropriate District Office of the Department.

(2) Any permitted mobile thermal treatment facility shall take appropriate measures to assure protection of the general public including the following:

(a) A security fence shall surround all areas where contaminated soil is being processed, including stockpiling, handling and burning areas. The fence shall extend at least six feet above ground surface. In lieu of a security fence, surveillance personnel on site at all times is an acceptable alternative.

(b) Gate accesses shall be locked when no attendant is present.

(c) Appropriate warning notices shall be clearly posted.

**Specific Authority:** 376.303, 376.3071, 403.061, F.S.
**Law Implemented:** 376.303, 376.3071, F.S.
**History:** New 12-10-90.

**17-775.710 Excavating, Handling, and Stockpiling**

(1) Mobile facilities shall operate only at sites with confirmed contaminated soils and may treat only soil native to the site.

(2) Soil which is excavated shall remain on-site and within the area of suspected ground water contamination until soil has been treated, and cleanup levels identified in Rule 17-775.400, F.A.C., have been confirmed.

(3) Excavated soil shall be stockpiled on an impermeable surface or liner. The stockpile shall be covered by a secured plastic cover until treatment in the thermal treatment unit commences.

(4) To the greatest extent possible, soil treated by mobile facilities shall be returned to the original excavation pit.

(5) The stockpile area for untreated soil shall be graded to direct leachate flow to return to the original excavation pit.

**Specific Authority:** 376.303, 376.3071, 403.061, 403.0877, F.S.
**Law Implemented:** 376.303, 376.3071, F.S.
**History:** New 12-10-90.





## PART IV
## SOIL THERMAL TREATMENT FACILITY FORMS

**17-775.900 Forms**

The forms and instructions used by the Department in the general permitting of soil thermal treatment facilities are adopted and incorporated by reference in this section. The forms are listed by rule number, which is also the form number, and with the subject title and effective date. Copies of forms may be obtained by writing to the Director, Division of Waste Management, Department of Environmental Regulation, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.

(1) Notice of Intent to Use the General Permit to Construct/Operate a Soil Thermal Treatment Facility, 1990.

(2) Untreated Soil Reporting Form, 1990.

(3) Treated Soil Reporting Form, 1990.

**Specific Authority:** 376.303, 376.3071, 403.061, 403.087, F.S.
**Law Implemented:** 376.303, 376.3071, F.S.
**History:** New 12-10-90.

SOUTHEAST DISTRICT PERMIT PROCESSING WORKSHEET

LOGGING

NAME OF PROJECT Rinker Materials Soil Thermal

PROJECT LOG NO. SO13-195017 COUNTY Dade

DATE APPLICATION RECEIVED 4/4/91 30-DAY (HW 60-DAY) DATE 5/3/91

AMOUNT OF FEE PAID $ 25.00 COPIES OF PLANS _____

COPIES OF APPLICATION 1 COPIES OF SPECIFICATIONS _____

COPIES TO: CORPS __; LOCAL PROGRAM ✓ 4/5/91; TALLAHASSEE __; DNR __; OTHER __

PERMIT REVIEW

PERMIT ASSIGNED TO Wierzbicki, L. AMOUNT OF FEE REQ'D $ _____

DISCHARGE TO OR LOCATED IN AQUATIC PRESERVE: Yes __ No __ N/A ___

PERMIT STATUS AND CHRONOLOGY

| DATE | REVIEWER'S INITIALS | COMMENTS |
|---|---|---|
| 4/9/91 | PAW | Copy of Application sent to Dade/Tall. |
| 4/10/91 | PAW | Contacted Z. Kulakowski re: GW Stats |
| 4/5/91 | PAW | Spoke w/ Z. Kulakowski; GW not reviewed. |

( continue on reverse side )

FIELD INSPECTION BY: Wierzbicki DATE 3/21/91; N/A _____

WATER MANAGEMENT COMMENTS (DATE) _____; N/A _____

LOCAL PROGRAM APPROVAL (DATE) _____; N/A _____

GPSI, APIS, OR PWS UPDATE DRAFTED: Yes _____ ; N/A _____

PUBLIC NOTICE LETTER ISSUED/PUBLISHED (DATES) _____ ; N/A _____

APPLICATION COMPLETION DATE _____ > DEFAULT DATE _____

>> D.A.S. 90+ DAYS INACTIVITY AUTHORIZATION: _____OK _____DENY <<

COMMENTS: _____

PERMIT, EXEMPTION, DENIAL DRAFTED BY: Wierzbicki DATE: 4/17/91

INTENT: PROGRAM HEAD V. Kamath PROGRAM ADM. _____

FINAL DRAFT REVIEWED BY: AP DATE: 4-17-91

FINAL DRAFT APPROVED BY: _____ DATE: _____

**********

FINAL PROCESSING

DISTRIBUTION BY: Debra Miley DATE: 4/17/91

PATS UPDATED BY: Barb DATE: 4/17/91

GPSI, APIS OR PWS UPDATED BY: Barb DATE: 4/17/91

WORD PROCESSOR: _____

Continued

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
~~ENFORCEMENT~~ TRACKING RECORD

CASE NAME: Rinker

| CASE CRONOLOGY DATE | ACTIVITY | * DEO * CHECK |
|---|---|---|
| 4/16/91 | DER/Tall says GW monitoring plan is adequate, approval recommended. | |
| 4/16/91 | Dean (Poley) has no problem with this permit for Rinker | |
| 4/17/91 | Permit drafted + given to VIK KAMATH | |

SCREEN 1

SCREEN ID - GWSTO1

CHG-ID 5013P03669

BF 4/16/91

| | | CODE |
|---|---|---|
| ADD | | 01 |
| UPDATE | | 02 |
| DELETE | | 99 |

FACILITY OVERVIEW - PAGE 1

FACILITY NAME: RINKER MATERIALS CORPORATION STATE: FL

LOCATION: 1200 NW 137 AVENUE CITY: MIAMI

SITE SUPERVISOR: JAMES S JENKINS III PHONE: (305) 221-7645

RESP. AUTHORITY: WM VOSHELL PHONE: (407) 820-8348

ADDR: 1501 BELVEDERE PO BOX 24635 CTY/ST/ZIP: WEST PALM BEACH, FL 33146

COUNTRY (IF OTHER THAN THE U.S.): _____

FACILITY TYPE: SO STATUS: A AS OF / /

CLASS: ___ TYPE TREATMENT/PROCESS: STATIONARY-SOIL THERMAL TREATMENT-GP

Subtype 17 (CONT.): _____

SITE LAT/LONG: 25.46.48 / 80.25.10

SECT-TOWN-RANGE: 35 TS35 R39E SEGMENT: SE

POP. SERVED: ____ DESIGN CAP: _____ DRINKING WELL ON SITE? Y

DISPOSAL METHOD(S):

(_) ACC. SPILL, LEAK ETC.
(_) BURIAL
(_) DRAINFIELD
(_) ENCAPSULATION
(_) IMPOUNDMENT
(_) INJECTION
(_) LAND APPLICATION
(_) LANDSPREADING
(_) SURFACE WATER DISCHARGE
(_) VOL. REDUCT./RECOVERY
(X) OTHER: _____

CREEN ID - GMST02

MS-ID 5013P03669

SCREEN 2

| | | CODE |
|---|---|---|
| UPDATE | | 02 |
| DELETE | | 99 |

FACILITY OVERVIEW - PAGE 2

ANDOWNER: LINKER MATERIALS CORPORATION ADDR: 1501 BELVEDERE ROAD PO Box 24635

TY/ST/ZIP: WEST PALM BEACH, FL 33416 COUNTRY: _____

YPE(S) OF WASTE HANDLED:

. SOLID, NON-HAZARDOUS

(_) AGRICULTURAL
(_) RESIDENTIAL
(X) COMMERCIAL
(_) HOSPITAL
(X) MINING
(_) INDUSTRIAL

. WASTEWATER

(_) DOMESTIC
(_) INDUSTRIAL
(_) REJECT WATER
(_) COOLING WATER

B. SLUDGE(S)

(_) WATER TREATMENT/LINE SOFTENING
(_) SEPTIC TANK
(_) AIR SCRUBBER
(_) INDUSTRIAL/COMMERICAL
(_) DOMESTIC
(_) INCINERATOR RESIDUE
(_) ION EXCHANGE
(_) HAZARDOUS SLUDGE

SLUDGE GENERATED OR DISPOSED? (_) (G/D/B)

C. HAZARDOUS SOLID/LIQUID

(_) CAUSTIC & ACID SOLUTIONS
(_) EXPLOSIVES
(_) HEAVY METAL SOLUTIONS
(_) INORGANIC CHEMICALS
(_) ORGANIC CHEMICALS
(X) ORGANIC SOLVENTS & OILS
(_) PAINT & INK WASTES
(_) PATHOLOGICAL/INFECTIOUS
(_) LOW-LEVEL RADIOACTIVE
(_) MINING

E. OTHER

(X) SEE COMMENTS used oil

| | | CODE |
|---|---|---|
| ADD | | 01 |
| UPDATE | | 02 |

SCREEN ID - GMST50

GMS-ID 5013P03669

FACILITY COMMENTS

FACILITY NAME: LAST UPDATED:

| NARRATIVE | SEQ. |
|---|---|
| 03/08/91 GP Notice Received (See PATS) | ( ) |
| 03/11/91 Inspection Conducted (DER/WPB) | ( ) |
| 03/21/91 Inspection Conducted (DER/WPB + DER/TAll) | ( ) |
| 03/04/91 New ? Notice Submitted (See PATS) | ( ) |
| 03/05/91 Original Notice denied. | ( ) |
| 03/04/91 Alternative Procedure Granted by Tall. | ( ) |
| | ( ) |
| | ( ) |
| | ( ) |
| | ( ) |
| | ( ) |
| | ( ) |
| | ( ) |
| | ( ) |
| | ( ) |

PATP20 APPLICATION TRACKING SYSTEM

SO ACTIVE APPLICATION REPORT FOR WPB

| DAYS SINCE | APPLICATION NAME | PROJECT NAME | COUNTY | FILE # | RECEIVED | PROCESSOR NAME |
|---|---|---|---|---|---|---|
| 12 | RINKER MATERIAL CORP | RINKER MATERIALS SOIL THERMAL | 13 | 195017 | 04/04/91 | WIERZBICKI, PAUL |

TOTAL 1

PATP20 APPLICATION TRACKING SYSTEM

SO COMPLETENESS REVIEW WARNING REPORT FOR WPB

| DAYS SINCE | APPLICATION NAME | PROJECT NAME | COUNTY | FILE # | RECEIVED | PROCESSOR NAME |
|---|---|---|---|---|---|---|
| 12 | RINKER MATERIAL CORP | RINKER MATERIALS SOIL THERMAL | 13 | 195017 | 04/04/91 | WIERZBICKI, PAUL |

TOTAL 1

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

# INTEROFFICE MEMORANDUM

For Routing To District Offices And/Or To Other Than The Addressee

To _____ Location _____
To _____ Location _____
To _____ Location _____
From _____ Date _____
Route Options: Route Required: Info Only
Date Due _____ Date Due _____

TO: Broward County Environmental Quality Control Board
Broward County Health Department
Dade County Public Health Unit
Metropolitan Dade County Environmental Resources Management
Palm Beach County Public Health Unit

FROM: Alexander Padva, Ph.D, Waste Programs Administration

DATE: April 5, 1991

SUBJECT: Application

Application File No. SO 13-195017
Application Name Rinker Materials Soil Thermal

This office has received the following application for:

___ Air Pollution Source
___ Domestic Wastewater
___ Drainage Well
___ Hazardous Waste Facility
___ Industrial Wastewater
___ Injection Well
___ Public Water Well/Plant
X Solid Waste Facility

for

___ Construction Permit
X Operating Permit
___ Temporary Operating Permit
___ Closure

Your comments regarding completeness of the application are requested by 4/18/91.

A copy of the application has been provided to you by:

X The applicant or his engineer; or
Is attached

If you have any questions please call (407) 964-9668

DBW:bj

WTB 116P (Rev. [illegible])

```
PATS02 195017          APPLICATION TRACKING SYSTEM STANDARD INFORMATION1 04/05/91
 APPL RECVD:04/04/91  TYPE CODE:SO SUBCODE:17    195017     LAST UPDATE:04/05/91
 DER OFFICE RECVD:WPB DER OFFICE TRANSFER TO:___   APPLICATION COMPLETE:00/00/00
 DER PROCESSOR:WIERZBICKI, PAUL
 APPL STATUS:AC DATE:04/04/91 (ACTIVE/DENIED/WITHDRAWN/EXEMPT/ISSUED/GENERAL=GP)
                    RELIEF:__ (SSAC=SS/EXEMPTIONS=EX/VARIANCE=VA)
 (Y/N) N MANUAL TRACKING                                  DISTRICT:50 COUNTY:13
 (Y/N) N OGC HEARING REQUESTED                            LAT/LONG:25.46.48/80.25.10
 (Y/N) N PUBLIC NOTICE REQD?                              BASIN-SEGMENT:__.___
 (Y/N) N GOV BODY LOCAL APPROVAL REQD?                    COE #:__________
 (Y/N) Y LETTER OF INTENT REQD? _ (I/ISSUE D/DENY)        ALT#:___-__________

 PROJECT SOURCE NAME:RINKER MATERIALS SOIL THERMAL
              STREET:1200 NW 137TH AVE.              CITY:MIAMI
               STATE:FL       ZIP:33182       PHONE:305-221-7645
   APPLICATION NAME:RINKER MATERIAL CORP
              STREET:P.O.BOX 24635                   CITY:WEST PALM BEACH
               STATE:FL       ZIP:33416       PHONE:___-___-____
         AGENT NAME:DONALD BEERS
              STREET:SAME                            CITY:__________________
               STATE:__       ZIP:_____       PHONE:407-833-5555
 FEE #1 DATE PAID:04/04/91   AMOUNT PAID:00025  RECEIPT NUMBER:00170051

                   TAB TO HERE:_                                PATS14 195017_PRINT?
PATS03 195017       APPLICATION TRACKING SYSTEM CLOCK INFORMATION          04/05/91
APPLICATION NUMBER:195017          APPLICATION TYPE:SO
A DATE APPLICATION WAS RECEIVED  - - - - - - - - - - - - - - - 04/04/91

C DATE DER SENT DNR APPLICATION/SENT DNR INTENT  - - - - - - __/__/__--__/__/__

E DATE #1 ADDITIONAL INFO REQ--REC FROM APPLICANT  - - - - - __/__/__--__/__/__
E DATE #2 ADDITIONAL INFO REQ--REC FROM APPLICANT  - - - - - __/__/__--__/__/__
E DATE #3 ADDITIONAL INFO REQ--REC FROM APPLICANT  - - - - - __/__/__--__/__/__
E DATE #4 ADDITIONAL INFO REQ--REC FROM APPLICANT  - - - - - __/__/__--__/__/__
E DATE #5 ADDITIONAL INFO REQ--REC FROM APPLICANT  - - - - - __/__/__--__/__/__
E DATE #6 ADDITIONAL INFO REQ--REC FROM APPLICANT  - - - - - __/__/__--__/__/__
F DATE LAST 45 DAY LETTER WAS SENT    - - - - - - - - - - - - __/__/__
G DATE FIELD REPORT WAS REQ--REC - - - - - - - - - - - - - - __/__/__--__/__/__
H DATE DNR REVIEW WAS COMPLETED  - - - - - - - - - - - - - - __/__/__

I DATE APPLICATION WAS COMPLETE  - - - - - - - - - - - - - - __/__/__

K DATE NOTICE OF INTENT WAS SENT--REC TO APPLICANT - - - - - __/__/__--__/__/__


N WAIVER BEGIN DATE--END DATE (DAY 90) - - - - - - - - - - - __/__/__--__/__/__

                                                              TAB TO HERE:_
```

Florida Department of Environmental Regulation

# Permit Data Form

Project Source Name: Rinker Materials Soil Thermal

Type Code: SO Subcode 17 Check if: ☐ GP ☐ Exempt

Correct Fee _____

Amount Received _____

Amount Refund _____

Permit Processor's Initial: LW/LG Data Entry Operator's Initial: BK

Comments:

(Ref. 193578)

SO 13-195017

---

Barnett Bank

**Barnett Bank of South Florida, N.A.**

**No. MO 1892849**

63-398
670

Office West Tamiami Date 4-4- 19 91

Pay To The Order Of Florida Department of Environmental Regulation

The Amount Of: BARNETT BANK OF S. FLA. N.A. 25dol's00cts

077879 Aug 82

17-775 Submission

Rinker Materials Corp

Signature of Remitter

1200 NW 112 Ave

Address

Miami Fla 33182

**Money Order**

**NOT VALID OVER $500.00 U.S. DOLLARS**

-1-

GSI groundwater specialists, inc.

3003 South Congress Avenue, Suite 1C
Palm Springs, Florida 33461

TEL: 407/641-5355
FAX: 407/641-5282

August 28, 1991
RNK2003

Certified Mail P514 095 3[illegible]
Return Receipt Requested



Ms. Zoe Kulakowski
Florida DER
Bureau of Waste Cleanup
Twin Towers Office Bldg.
2600 Blair Stone Road
Tallahassee, FL 32339-2400

Re: Quarterly Report of Groundwater Monitoring for period May through July, 1991, Rinker Portland Cement Corp., 1200 NW 137th Ave., Miami, Florida.

Dear Ms. Kulakowski:

On behalf of the Rinker Portland Cement Corp., we herewith submit the referenced report. In the report, you will note that the most recent analyses (chromium and selenium) resolve previous concerns. Please call to discuss this report as needed.

Very truly yours,
GROUNDWATER SPECIALISTS, INC.

8-28-91

Paul G. Jakob, P.G.
President

PGJ/db
LZKAUG28.RNK

cc: Mr. Michael Vardeman, Rinker
Mr. Paul Wierzbicki, FDER, WPB

Department of Environmental Regulation

# Routing and Transmittal Slip

To: (Name, Office, Location)

1. PAUL
2.
3.
4.

Remarks:

HERE ARE COMPLETED RANGES AND ~~MEAN~~ MEDIAN VALUES FOR TOTAL METALS - TREATED AND UNTREATED. SOME OF THE VALUES FOR As, Cr, AND Ag ARE HIGHER IN THE TREATED SOIL THAN UNTREATED, HOWEVER ALL ARE WELL BELOW TOTAL METAL MCL'S FOR CLEAN SOIL CRITERIA. ARE YOU GOING TO WRITE UP INSPECTION REPORT OR DO YOU WANT ME OR LEE TO WRITE IT?

From Chen

Date 8/26/91

Phone

# QUARTERLY REPORT OF GROUNDWATER MONITORING

## (MAY, JUNE, JULY, 1991)

Rinker Portland Cement Corp.
1200 N.W. 137 Avenue
Miami, Florida

August 1991

prepared for:
Rinker Materials Corp.
P.O. Box 24635
West Palm Beach, Florida

prepared by:
Groundwater Specialists, Inc.
3003 South Congress Ave., Suite 1C
Palm Springs, FL 33461

# QUARTERLY REPORT OF GROUNDWATER MONITORING

(May, June, July, 1991)

Rinker Portland Cement Corp.
1200 NW 137th Avenue
Miami, Florida

## Introduction

This quarterly report is the second in a series to be submitted to the Florida DER as specified in Rinker Portland Cement Corp.'s General Permit Application to Construct/Operate a Soil Thermal Treatment Facility (per Chapter 17-775, FAC). It provides groundwater levels and the results of groundwater analysis of selected wells as outlined in Phase II of the GWMP (Groundwater Monitoring Plan) submitted by the Rinker Portland Cement Corp. to the Florida DER during April, 1991.

## Report of Monitoring

Groundwater and surface-water levels were measured on July 24, 1991 at all GWMP network points. The locations of all measuring points are shown on Exhibit 1. The top-of-casing elevations of all monitor wells in the GWMP network are shown on Exhibit 2; depth to water and water-level elevations are shown on Exhibits 2 and 3.

With the onset of the wet season, groundwater levels are significantly higher (greater than 2 feet) than during the previous quarter. The direction of groundwater flow across the site has shifted from the pattern of last quarter (north-northeast) to a more easterly direction. Exhibit 3 shows the groundwater elevations referenced to mean sea level and the east-northeastern direction of groundwater flow.

The GWMP network wells were sampled on July 24, 1991 according to conditions described in GSI's generic (comprehensive) QAP (#880557G). Groundwater samples were analyzed for parameters outlined in Chapter 17-775.610(4).

Prior to sampling, a minimum of five casing volumes were purged from each monitor well. Because the wells yield poorly, well-purging time was unnecessarily excessive. Measurements of specific conductivity, pH and temperature were made immediately before sampling; the results are listed in Appendix A.

aromatic hydrocarbons (EPA Method 602) and polynuclear aromatic hydrocarbons (EPA Method 610) were below laboratory detection limits in all wells. None of the groundwater concentrations of metals were detected at or above Florida Drinking Water Standards in any of the wells.

The next quarterly monitoring event will occur during the week of October 22, 1991.

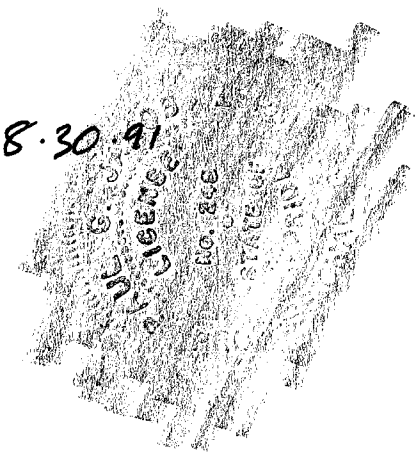
Respectively submitted,
GROUNDWATER SPECIALISTS, INC.

William Barfknecht

William Barfknecht
Hydrogeologist

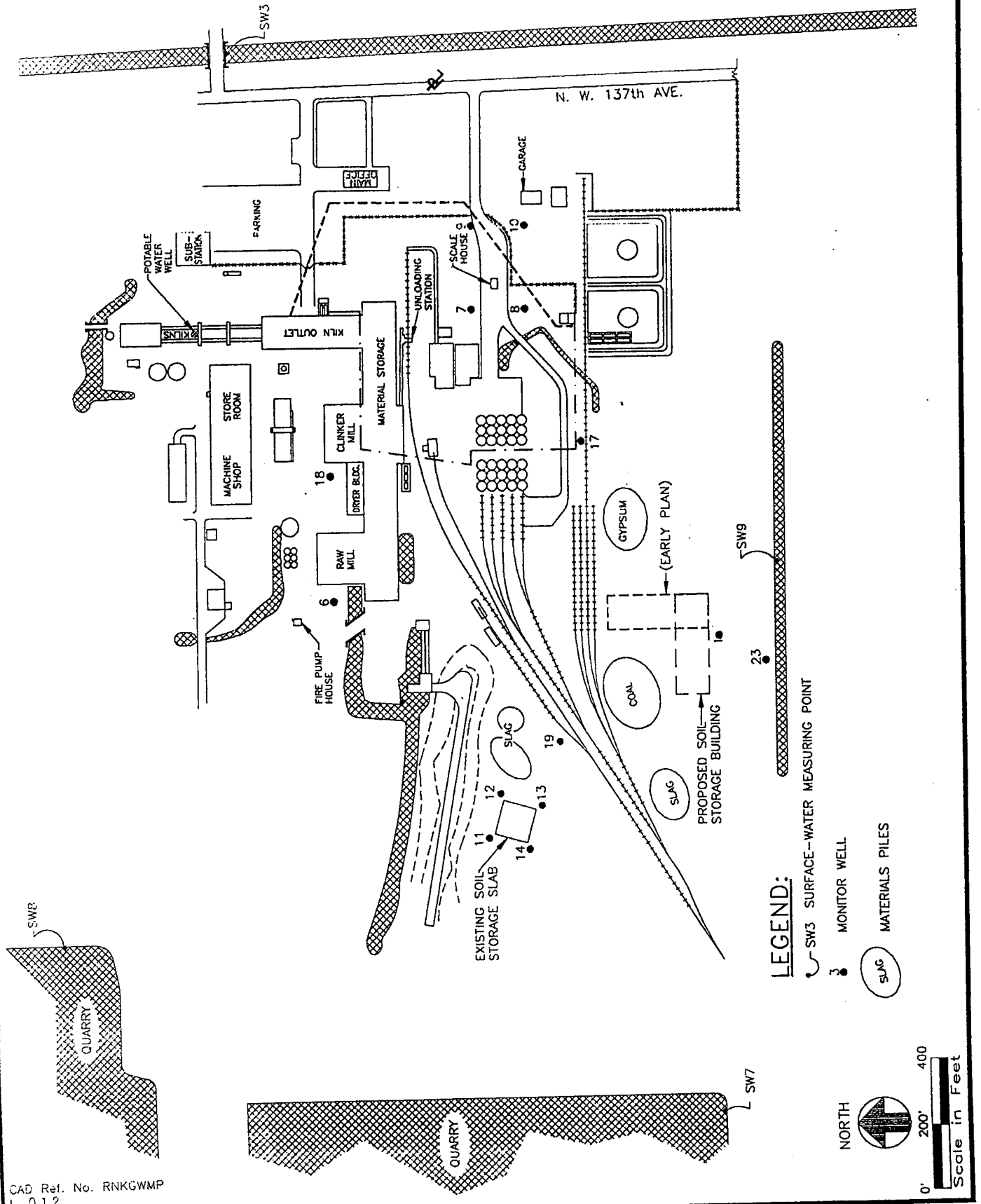
Paul G. Jakob 8.30.91

Paul G. Jakob, P.G.
President



| GSI | DATE: JUNE 1991 | FOR: RINKER PORTLAND CEMENT CORP. | SUBJECT: WELLS AND SW POINTS FOR GWMP | EXHIBIT: 1 |
|---|---|---|---|---|

LOCATION: 1200 N.W. 137th AVE., MIAMI, FLORIDA




CAD Ref. No. RNKGWMP
L. 0,1,2
L. 5 FRZTXT

EXHIBIT 2

MONITOR WELL AND
SURFACE-WATER ELEVATIONS

| Monitor Well | Top of Casing Elev. (feet) | Depth to Water (feet) | Water Elevation (feet) |
|---|---|---|---|
| 1 | 10.84 | 5.74 | 5.10 |
| 6 | 9.46 | 4.32 | 5.14 |
| 7 | 9.03 | 4.03 | 5.00 |
| 8 | 9.56 | 4.56 | 5.00 |
| 9 | 9.69 | 4.74 | 4.95 |
| 10 | 10.05 | 5.09 | 4.96 |
| 11 | 8.11 | 2.86 | 5.25 |
| 12 | 8.48 | 3.22 | 5.26 |
| 13 | 8.41 | 3.17 | 5.24 |
| 14 | 8.09 | 2.84 | 5.25 |
| 17 | 8.63 | 3.67 | 4.96 |
| 18 | 9.72 | 4.55 | 5.17 |
| 19 | 11.28 | 6.07 | 5.21 |
| 23 | 12.55 | 7.43 | 5.12 |

| Surface Water Measuring Point | Measuring Point Elevation (feet) | Depth to Water (feet) | Water Elevation (feet) |
|---|---|---|---|
| SW3 | 5.56 | 0.88 | 4.68 |
| SW7 | 9.20 | 3.51 | 5.69 |
| SW8 | 7.39 | 0.89 | 6.50 |
| SW9 | 6.00 | 0.87 | 5.13 |

Notes: The tops of casings are finished below grade. All elevations are referenced to mean sea level. The top of casing elevation of Well 23 was resurveyed during this second quarter monitoring event. Date of measurements was July 24, 1991.

| GSI | DATE: JUNE 1991 | FOR: RINKER PORTLAND CEMENT CORP. | SUBJECT: JULY 24, 1991 GROUNDWATER CONTOUR MAP | EXHIBIT: 3 |
|---|---|---|---|---|

LOCATION: 1200 N.W. 137th AVE., MIAMI, FLORIDA




CAD Ref. No. RNKGWMP
0,1,2
5 FRZTXT

# EXHIBIT 4

## SUMMARY OF GROUNDWATER ANALYSES

| Well Number | EPA Method 602 | EPA Method 610 |
|---|---|---|
| 6 | BDL | BDL |
| 7 | BDL | BDL |
| 8 | BDL | BDL |
| 9 | BDL | BDL |
| 10 | BDL | BDL |
| 11 | BDL | BDL |
| 12 | BDL | BDL |
| 13 | BDL | BDL |
| 14 | BDL | BDL |

### Metals (concentrations in ppm)

| Well Number | Arsenic | Barium | Cadmium | Chromium | Lead | Mercury | Selenium | Silver |
|---|---|---|---|---|---|---|---|---|
| 6 | 0.002 | 0.037 | BDL | BDL | BDL | BDL | BDL | BDL |
| 7 | 0.002 | 0.38 | BDL | BDL | 0.014 | BDL | BDL | 0.006 |
| 8 | 0.003 | 0.065 | BDL | 0.006 | BDL | BDL | BDL | BDL |
| 9 | 0.003 | 0.13 | BDL | 0.010 | BDL | BDL | BDL | BDL |
| 10 | BDL | 0.30 | BDL | 0.012 | 0.007 | BDL | BDL | 0.006 |
| 11 | 0.004 | 0.049 | BDL | 0.005 | 0.006 | BDL | BDL | BDL |
| 12 | BDL | 0.052 | BDL | BDL | BDL | BDL | BDL | BDL |
| 13 | 0.004 | 0.062 | BDL | 0.010 | BDL | BDL | BDL | BDL |
| 14 | 0.004 | 0.013 | BDL | BDL | BDL | BDL | BDL | BDL |

**Note:** BDL denotes "below laboratory detection limits". The detection limits by EPA Methods 602 and 610 are 6.0 ppb or less. All detection limits are shown in Appendix A.

EXHIBIT 5

SUMMARY OF GROUNDWATER CONCENTRATIONS
CHROMIUM AND SELENIUM

| | VOC Analytical | | Envirodyne | | ATI | |
|---|---|---|---|---|---|---|
| | (Cr) | (Se) | (Cr) | (Se) | (Cr) | (Se) |
| Well Number | | | | | | |
| 1 | NA | NA | 0.01 | NA | 0.02 | NA |
| 6 | BDL | BDL | NA | BDL | NA | BDL |
| 7 | BDL | BDL | NA | BDL | NA | BDL |
| 8 | BDL | BDL | NA | BDL | NA | BDL |
| 9 | 0.010 | BDL | NA | BDL | NA | BDL |
| 10 | 0.012 | BDL | NA | BDL | NA | BDL |
| 17 | NA | NA | NA | BDL | NA | BDL |
| 23 | NA | NA | BDL | NA | BDL | NA |

Note: BDL denotes "below laboratory detection limits". NA indicates not sampled or analyzed. Concentrations shown are in parts per million; all detection limits are shown in Appendix A.

# APPENDIX A

## MEASUREMENTS OF SPECIFIC CONDUCTIVITY, pH AND TEMPERATURE MADE DURING WELL PURGING

| Well Number | Specific Conductivity (UMHOS) | pH | Temperature (deg. C) |
|---|---|---|---|
| 1 | 830 | 7.1 | 30.0 |
| 6 | 520 | 7.4 | 30.0 |
| 7 | 740 | 7.1 | 30.0 |
| 8 | 700 | 7.0 | 29.0 |
| 9 | 1020 | 6.8 | 29.5 |
| 10 | 790 | 6.9 | 29.0 |
| 11 | 280 | 7.6 | 31.0 |
| 12 | 330 | 7.6 | 29.0 |
| 13 | 480 | 7.5 | 29.0 |
| 14 | 420 | 7.6 | 31.0 |
| 17 | 570 | 7.7 | 30.0 |
| 23 | 650 | 7.4 | 30.0 |

**Note:** Samples were collected on July 24, 1991, under the conditions specified in GSI's generic (comprehensive) QAP. Because the monitor wells yield poorly, well-purging time was necessarily excessive. The data presented above are from measurements made immediately prior to sampling.

V.O.C ANALYTICAL

Client #: 18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165


Date: 7/30/91
Log#: 581-1

Sample Description: GROUNDWATER ANALYSIS

Label:38-6J24
Date Sampled: 7/24/91
Date Received: 7/24/91
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Benzene | BDL | ug/l | 5030/8021 | 0.5 | N/A | 7/25/91 | GP |
| Toluene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| MTBE | BDL | ug/l | 5030/8021 | 0.5 | | | |
| Ethyl benzene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| Total Xylenes | BDL | ug/l | 5030/8021 | 0.5 | | | |
| VOA | | | | | | | |
| Naphthalene | BDL | ug/l | 3510/8270 | 2.0 | 7/27/91 | 7/29/91 | MF |
| Acenaphthene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Acenaphthylene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Anthracene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Benzo (A) Anthracene | BDL | ug/l | 3510/8270 | 3.0 | | | |
| Benzo (L) Fluoranthene | BDL | ug/l | 3510/8270 | 3.5 | | | |
| Benzo (K) Fluoranthene | BDL | ug/l | 3510/8270 | 3.5 | | | |
| Benzo (A) Pyrene | BDL | ug/l | 3510/8270 | 3.0 | | | |
| DiBenzo (G,H,I) Perylene | BDL | ug/l | 3510/8270 | 6.0 | | | |
| Chrysene | BDL | ug/l | 3510/8270 | 3.5 | | | |
| Dibenzo (A,H) Anthracene | BDL | ug/l | 3510/8270 | 4.0 | | | |
| Fluoranthene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Fluorene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Indeno-(1,2,3,-CD) Pyrene | BDL | ug/l | 3510/8270 | 4.0 | | | |
| Phenanthrene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Pyrene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| 1-Methyl Naphthalene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| 2-Methyl Naphthalene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| EPA 610 COMPOUNDS | | | | | | | |

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165

Page 2 of 20
Date: 7/30/91
Log#: 581-1

Sample Description: GROUNDWATER ANALYSIS

Label:38-6J24
Date Sampled: 7/24/91
Date Received: 7/24/91
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Total Cadmium | BDL | mg/l | 213.2 | 0.005 | N/A | 7/27/91 | JG |
| Total Lead | BDL | mg/l | 239.2 | 0.005 | N/A | 7/27/91 | JG |
| Total Selenium | BDL | mg/l | 270.3 | 0.002 | N/A | 7/28/91 | JG |
| Total Arsenic | 0.002 | mg/l | 206.3 | 0.002 | N/A | 7/25/91 | JG |
| Total Chromium | BDL | mg/l | 218.2 | 0.005 | N/A | 7/28/91 | JG |
| Total Mercury | BDL | mg/l | 245.1 | 0.001 | N/A | 7/26/91 | JG |
| Total Silver | BDL | mg/l | 272.2 | 0.005 | N/A | 7/28/91 | JG |
| Total Barium | 0.037 | mg/l | 208.2 | 0.01 | N/A | 7/27/91 | JG |

* BDL = Below Detection Limits
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.

Respectfully Submitted,

Jeffrey S. Glass
Laboratory Director
V.O.C. Analytical Inc.

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165


Date: 7/30/91
Log#: 581-2

Sample Description: GROUNDWATER ANALYSIS

Label:38-7J24
Date Sampled: 7/24/91
Date Received: 7/24/91
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Benzene | BDL | ug/l | 5030/8021 | 0.5 | N/A | 7/25/91 | GP |
| Toluene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| MTBE | BDL | ug/l | 5030/8021 | 0.5 | | | |
| Ethyl benzene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| Total Xylenes | BDL | ug/l | 5030/8021 | 0.5 | | | |
| VOA | | | | | | | |
| Naphthalene | BDL | ug/l | 3510/8270 | 2.0 | 7/27/91 | 7/29/91 | MF |
| Acenaphthene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Acenaphthylene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Anthracene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Benzo (A) Anthracene | BDL | ug/l | 3510/8270 | 3.0 | | | |
| Benzo (L) Fluoranthene | BDL | ug/l | 3510/8270 | 3.5 | | | |
| Benzo (K) Fluoranthene | BDL | ug/l | 3510/8270 | 3.5 | | | |
| Benzo (A) Pyrene | BDL | ug/l | 3510/8270 | 3.0 | | | |
| DiBenzo (G,H,I) Perylene | BDL | ug/l | 3510/8270 | 6.0 | | | |
| Chrysene | BDL | ug/l | 3510/8270 | 3.5 | | | |
| Dibenzo (A,H) Anthracene | BDL | ug/l | 3510/8270 | 4.0 | | | |
| Fluoranthene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Fluorene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Indeno-(1,2,3,-CD) Pyrene | BDL | ug/l | 3510/8270 | 4.0 | | | |
| Phenanthrene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Pyrene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| 1-Methyl Naphthalene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| 2-Methyl Naphthalene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| EPA 610 COMPOUNDS | | | | | | | |

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165


Date: 7/30/91
Log#: 581-2

Sample Description: GROUNDWATER ANALYSIS

Label:38-7J24
Date Sampled: 7/24/91
Date Received: 7/24/91
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Total Cadmium | BDL | mg/l | 213.2 | 0.005 | N/A | 7/27/91 | JG |
| Total Lead | 0.014 | mg/l | 239.2 | 0.005 | N/A | 7/27/91 | JG |
| Total Selenium | BDL | mg/l | 270.3 | 0.002 | N/A | 7/28/91 | JG |
| Total Arsenic | 0.002 | mg/l | 206.3 | 0.002 | N/A | 7/25/91 | JG |
| Total Chromium | BDL | mg/l | 218.2 | 0.005 | N/A | 7/28/91 | JG |
| Total Mercury | BDL | mg/l | 245.1 | 0.001 | N/A | 7/26/91 | JG |
| Total Silver | 0.006 | mg/l | 272.2 | 0.005 | N/A | 7/28/91 | JG |
| Total Barium | 0.38 | mg/l | 208.2 | 0.01 | N/A | 7/27/91 | JG |

* BDL = Below Detection Limits
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.

Respectfully Submitted,

Jeffrey S. Glass
Laboratory Director
V.O.C. Analytical Inc.

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165


Date: 7/30/91
Log#: 581-3

Sample Description: GROUNDWATER ANALYSIS

Label:38-8J24
Date Sampled: 7/24/91
Date Received: 7/24/91
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Benzene | BDL | ug/l | 5030/8021 | 0.5 | N/A | 7/25/91 | GP |
| Toluene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| MTBE | BDL | ug/l | 5030/8021 | 0.5 | | | |
| Ethyl benzene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| Total Xylenes | BDL | ug/l | 5030/8021 | 0.5 | | | |
| VOA | | | | | | | |
| Naphthalene | BDL | ug/l | 3510/8270 | 2.0 | 7/27/91 | 7/29/91 | MF |
| Acenaphthene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Acenaphthylene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Anthracene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Benzo (A) Anthracene | BDL | ug/l | 3510/8270 | 3.0 | | | |
| Benzo (L) Fluoranthene | BDL | ug/l | 3510/8270 | 3.5 | | | |
| Benzo (K) Fluoranthene | BDL | ug/l | 3510/8270 | 3.5 | | | |
| Benzo (A) Pyrene | BDL | ug/l | 3510/8270 | 3.0 | | | |
| DiBenzo (G,H,I) Perylene | BDL | ug/l | 3510/8270 | 6.0 | | | |
| Chrysene | BDL | ug/l | 3510/8270 | 3.5 | | | |
| Dibenzo (A,H) Anthracene | BDL | ug/l | 3510/8270 | 4.0 | | | |
| Fluoranthene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Fluorene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Indeno-(1,2,3,-CD) Pyrene | BDL | ug/l | 3510/8270 | 4.0 | | | |
| Phenanthrene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Pyrene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| 1-Methyl Naphthalene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| 2-Methyl Naphthalene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| EPA 610 COMPOUNDS | | | | | | | |

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165


Date: 5/06/91
Log#: 581-3

Sample Description: GROUNDWATER ANALYSIS

Label:38-8J24
Date Sampled: 7/24/91
Date Received: 7/24/91
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Total Cadmium | BDL | mg/l | 213.2 | 0.005 | N/A | 7/27/91 | JG |
| Total Lead | BDL | mg/l | 239.2 | 0.005 | N/A | 7/27/91 | JG |
| Total Selenium | BDL | mg/l | 270.3 | 0.002 | N/A | 7/28/91 | JG |
| Total Arsenic | 0.003 | mg/l | 206.3 | 0.002 | N/A | 7/25/91 | JG |
| Total Chromium | 0.006 | mg/l | 218.2 | 0.005 | N/A | 7/28/91 | JG |
| Total Mercury | BDL | mg/l | 245.1 | 0.001 | N/A | 7/26/91 | JG |
| Total Silver | BDL | mg/l | 272.2 | 0.005 | N/A | 7/28/91 | JG |
| Total Barium | 0.065 | mg/l | 208.2 | 0.01 | N/A | 7/27/91 | JG |

* BDL = Below Detection Limits
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.

Respectfully Submitted,

Jeffrey S. Glass
Laboratory Director
V.O.C. Analytical Inc.

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165

Sample Description: GROUNDWATER ANALYSIS


Date: 5/06/91
Log#: 581-4

Label:38-9J24
Date Sampled: 7/24/91
Date Received: 7/24/91
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Benzene | BDL | ug/l | 5030/8021 | 0.5 | N/A | 7/25/91 | GP |
| Toluene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| MTBE | BDL | ug/l | 5030/8021 | 0.5 | | | |
| Ethyl benzene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| Total Xylenes | BDL | ug/l | 5030/8021 | 0.5 | | | |
| VOA | | | | | | | |
| Naphthalene | BDL | ug/l | 3510/8270 | 2.0 | 7/27/91 | 7/29/91 | MF |
| Acenaphthene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Acenaphthylene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Anthracene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Benzo (A) Anthracene | BDL | ug/l | 3510/8270 | 3.0 | | | |
| Benzo (L) Fluoranthene | BDL | ug/l | 3510/8270 | 3.5 | | | |
| Benzo (K) Fluoranthene | BDL | ug/l | 3510/8270 | 3.5 | | | |
| Benzo (A) Pyrene | BDL | ug/l | 3510/8270 | 3.0 | | | |
| DiBenzo (G,H,I) Perylene | BDL | ug/l | 3510/8270 | 6.0 | | | |
| Chrysene | BDL | ug/l | 3510/8270 | 3.5 | | | |
| Dibenzo (A,H) Anthracene | BDL | ug/l | 3510/8270 | 4.0 | | | |
| Fluoranthene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Fluorene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Indeno-(1,2,3,-CD) Pyrene | BDL | ug/l | 3510/8270 | 4.0 | | | |
| Phenanthrene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Pyrene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| 1-Methyl Naphthalene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| 2-Methyl Naphthalene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| EPA 610 COMPOUNDS | | | | | | | |

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165


Date: 5/06/91
Log#: 581-4

Sample Description: GROUNDWATER ANALYSIS

Label:38-9J24
Date Sampled: 7/24/91
Date Received: 7/24/91
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Total Cadmium | BDL | mg/l | 213.2 | 0.005 | N/A | 7/27/91 | JG |
| Total Lead | BDL | mg/l | 239.2 | 0.005 | N/A | 7/27/91 | JG |
| Total Selenium | BDL | mg/l | 270.3 | 0.002 | N/A | 7/28/91 | JG |
| Total Arsenic | 0.003 | mg/l | 206.3 | 0.002 | N/A | 7/25/91 | JG |
| Total Chromium | 0.010 | mg/l | 218.2 | 0.005 | N/A | 7/28/91 | JG |
| Total Mercury | BDL | mg/l | 245.1 | 0.001 | N/A | 7/26/91 | JG |
| Total Silver | BDL | mg/l | 272.2 | 0.005 | N/A | 7/28/91 | JG |
| Total Barium | 0.13 | mg/l | 208.2 | 0.01 | N/A | 7/27/91 | JG |

* BDL = Below Detection Limits
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.

Respectfully Submitted,

Jeffrey S. Glass
Laboratory Director
V.O.C. Analytical Inc.

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165


Date: 7/30/91
Log#: 581-5

Sample Description: GROUNDWATER ANALYSIS

Label:38-10J24
Date Sampled: 7/24/91
Date Received: 7/24/91
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Benzene | BDL | ug/l | 5030/8021 | 0.5 | N/A | 7/25/91 | GP |
| Toluene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| MTBE | BDL | ug/l | 5030/8021 | 0.5 | | | |
| Ethyl benzene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| Total Xylenes | BDL | ug/l | 5030/8021 | 0.5 | | | |
| VOA | | | | | | | |
| Naphthalene | BDL | ug/l | 3510/8270 | 2.0 | 7/27/91 | 7/29/91 | MF |
| Acenaphthene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Acenaphthylene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Anthracene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Benzo (A) Anthracene | BDL | ug/l | 3510/8270 | 3.0 | | | |
| Benzo (L) Fluoranthene | BDL | ug/l | 3510/8270 | 3.5 | | | |
| Benzo (K) Fluoranthene | BDL | ug/l | 3510/8270 | 3.5 | | | |
| Benzo (A) Pyrene | BDL | ug/l | 3510/8270 | 3.0 | | | |
| DiBenzo (G,H,I) Perylene | BDL | ug/l | 3510/8270 | 6.0 | | | |
| Chrysene | BDL | ug/l | 3510/8270 | 3.5 | | | |
| Dibenzo (A,H) Anthracene | BDL | ug/l | 3510/8270 | 4.0 | | | |
| Fluoranthene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Fluorene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Indeno-(1,2,3,-CD) Pyrene | BDL | ug/l | 3510/8270 | 4.0 | | | |
| Phenanthrene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Pyrene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| 1-Methyl Naphthalene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| 2-Methyl Naphthalene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| EPA 610 COMPOUNDS | | | | | | | |

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165


Date: 5/06/91
Log#: 581-5

Sample Description: GROUNDWATER ANALYSIS

Label:38-10J24
Date Sampled: 4/24/91
Date Received: 4/24/91
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Total Cadmium | BDL | mg/l | 213.2 | 0.005 | N/A | 7/27/91 | JG |
| Total Lead | 0.007 | mg/l | 239.2 | 0.005 | N/A | 7/27/91 | JG |
| Total Selenium | BDL | mg/l | 270.3 | 0.002 | N/A | 7/28/91 | JG |
| Total Arsenic | BDL | mg/l | 206.3 | 0.002 | N/A | 7/25/91 | JG |
| Total Chromium | 0.012 | mg/l | 218.2 | 0.005 | N/A | 7/28/91 | JG |
| Total Mercury | BDL | mg/l | 245.1 | 0.001 | N/A | 7/26/91 | JG |
| Total Silver | 0.006 | mg/l | 272.2 | 0.005 | N/A | 7/28/91 | JG |
| Total Barium | 0.30 | mg/l | 208.2 | 0.01 | N/A | 7/27/91 | JG |

* BDL = Below Detection Limits
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.

Respectfully Submitted,

Jeffrey S. Glass
Laboratory Director
V.O.C. Analytical Inc.

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165

Sample Description: GROUNDWATER ANALYSIS


Date: 7/30/91
Log#: 581-6

Label:38-11J24
Date Sampled: 4/24/91
Date Received: 4/24/91
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Benzene | BDL | ug/l | 5030/8021 | 0.5 | N/A | 7/25/91 | GP |
| Toluene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| MTBE | BDL | ug/l | 5030/8021 | 0.5 | | | |
| Ethyl benzene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| Total Xylenes | BDL | ug/l | 5030/8021 | 0.5 | | | |
| VOA | | | | | | | |
| Naphthalene | BDL | ug/l | 3510/8270 | 2.0 | 7/27/91 | 7/29/91 | MF |
| Acenaphthene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Acenaphthylene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Anthracene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Benzo (A) Anthracene | BDL | ug/l | 3510/8270 | 3.0 | | | |
| Benzo (L) Fluoranthene | BDL | ug/l | 3510/8270 | 3.5 | | | |
| Benzo (K) Fluoranthene | BDL | ug/l | 3510/8270 | 3.5 | | | |
| Benzo (A) Pyrene | BDL | ug/l | 3510/8270 | 3.0 | | | |
| DiBenzo (G,H,I) Perylene | BDL | ug/l | 3510/8270 | 6.0 | | | |
| Chrysene | BDL | ug/l | 3510/8270 | 3.5 | | | |
| Dibenzo (A,H) Anthracene | BDL | ug/l | 3510/8270 | 4.0 | | | |
| Fluoranthene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Fluorene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Indeno-(1,2,3,-CD) Pyrene | BDL | ug/l | 3510/8270 | 4.0 | | | |
| Phenanthrene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Pyrene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| 1-Methyl Naphthalene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| 2-Methyl Naphthalene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| EPA 610 COMPOUNDS | | | | | | | |

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165

Sample Description: GROUNDWATER ANALYSIS


Date: 7/30/91
Log#: 581-6

Label:38-11J24
Date Sampled: 7/24/91
Date Received: 7/24/91
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Total Cadmium | BDL | mg/l | 213.2 | 0.005 | N/A | 7/27/91 | JG |
| Total Lead | 0.006 | mg/l | 239.2 | 0.005 | N/A | 7/27/91 | JG |
| Total Selenium | BDL | mg/l | 270.3 | 0.002 | N/A | 7/28/91 | JG |
| Total Arsenic | 0.004 | mg/l | 206.3 | 0.002 | N/A | 7/25/91 | JG |
| Total Chromium | 0.005 | mg/l | 218.2 | 0.005 | N/A | 7/28/91 | JG |
| Total Mercury | BDL | mg/l | 245.1 | 0.001 | N/A | 7/26/91 | JG |
| Total Silver | BDL | mg/l | 272.2 | 0.005 | N/A | 7/28/91 | JG |
| Total Barium | 0.049 | mg/l | 208.2 | 0.01 | N/A | 7/27/91 | JG |

* BDL = Below Detection Limits
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.

Respectfully Submitted,

Jeffrey S. Glass
Laboratory Director
V.O.C. Analytical Inc.

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165

Date: 7/30/91
Log#: 581-7

Sample Description: GROUNDWATER ANALYSIS

Label:38-12J24
Date Sampled: 7/24/91
Date Received: 7/24/91
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Benzene | BDL | ug/l | 5030/8021 | 0.5 | N/A | 7/25/91 | GP |
| Toluene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| MTBE | BDL | ug/l | 5030/8021 | 0.5 | | | |
| Ethyl benzene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| Total Xylenes | BDL | ug/l | 5030/8021 | 0.5 | | | |
| VOA | | | | | | | |
| Naphthalene | BDL | ug/l | 3510/8270 | 2.0 | 7/27/91 | 7/29/91 | MF |
| Acenaphthene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Acenaphthylene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Anthracene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Benzo (A) Anthracene | BDL | ug/l | 3510/8270 | 3.0 | | | |
| Benzo (L) Fluoranthene | BDL | ug/l | 3510/8270 | 3.5 | | | |
| Benzo (K) Fluoranthene | BDL | ug/l | 3510/8270 | 3.5 | | | |
| Benzo (A) Pyrene | BDL | ug/l | 3510/8270 | 3.0 | | | |
| DiBenzo (G,H,I) Perylene | BDL | ug/l | 3510/8270 | 6.0 | | | |
| Chrysene | BDL | ug/l | 3510/8270 | 3.5 | | | |
| Dibenzo (A,H) Anthracene | BDL | ug/l | 3510/8270 | 4.0 | | | |
| Fluoranthene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Fluorene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Indeno-(1,2,3,-CD) Pyrene | BDL | ug/l | 3510/8270 | 4.0 | | | |
| Phenanthrene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Pyrene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| 1-Methyl Naphthalene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| 2-Methyl Naphthalene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| EPA 610 COMPOUNDS | | | | | | | |

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165

Date: 7/30/91
Log#: 581-7

Sample Description: GROUNDWATER ANALYSIS

Label:38-12J24
Date Sampled: 7/24/91
Date Received: 7/24/91
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Total Cadmium | BDL | mg/l | 213.2 | 0.005 | N/A | 7/27/91 | JG |
| Total Lead | BDL | mg/l | 239.2 | 0.005 | N/A | 7/27/91 | JG |
| Total Selenium | BDL | mg/l | 270.3 | 0.002 | N/A | 7/28/91 | JG |
| Total Arsenic | BDL | mg/l | 206.3 | 0.002 | N/A | 7/25/91 | JG |
| Total Chromium | BDL | mg/l | 218.2 | 0.005 | N/A | 7/28/91 | JG |
| Total Mercury | BDL | mg/l | 245.1 | 0.001 | N/A | 7/26/91 | JG |
| Total Silver | BDL | mg/l | 272.2 | 0.005 | N/A | 7/28/91 | JG |
| Total Barium | 0.052 | mg/l | 208.2 | 0.01 | N/A | 7/27/91 | JG |

* BDL = Below Detection Limits
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.

Respectfully Submitted,

Jeffrey S. Glass
Laboratory Director
V.O.C. Analytical Inc.

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165

Sample Description: GROUNDWATER ANALYSIS


Date: 7/30/91
Log#: 581-8

Label:38-13J24
Date Sampled: 7/24/91
Date Received: 7/24/91
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Benzene | BDL | ug/l | 5030/8021 | 0.5 | N/A | 7/25/91 | GP |
| Toluene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| MTBE | BDL | ug/l | 5030/8021 | 0.5 | | | |
| Ethyl benzene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| Total Xylenes | BDL | ug/l | 5030/8021 | 0.5 | | | |
| VOA | | | | | | | |
| Naphthalene | BDL | ug/l | 3510/8270 | 2.0 | 7/27/91 | 7/29/91 | MF |
| Acenaphthene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Acenaphthylene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Anthracene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Benzo (A) Anthracene | BDL | ug/l | 3510/8270 | 3.0 | | | |
| Benzo (L) Fluoranthene | BDL | ug/l | 3510/8270 | 3.5 | | | |
| Benzo (K) Fluoranthene | BDL | ug/l | 3510/8270 | 3.5 | | | |
| Benzo (A) Pyrene | BDL | ug/l | 3510/8270 | 3.0 | | | |
| DiBenzo (G,H,I) Perylene | BDL | ug/l | 3510/8270 | 6.0 | | | |
| Chrysene | BDL | ug/l | 3510/8270 | 3.5 | | | |
| Dibenzo (A,H) Anthracene | BDL | ug/l | 3510/8270 | 4.0 | | | |
| Fluoranthene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Fluorene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Indeno-(1,2,3,-CD) Pyrene | BDL | ug/l | 3510/8270 | 4.0 | | | |
| Phenanthrene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Pyrene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| 1-Methyl Naphthalene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| 2-Methyl Naphthalene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| EPA 610 COMPOUNDS | | | | | | | |

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165


Date: 7/30/91
Log#: 581-8

Sample Description: GROUNDWATER ANALYSIS

Label:38-13J24
Date Sampled: 7/24/91
Date Received: 7/24/91
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Total Cadmium | BDL | mg/l | 213.2 | 0.005 | N/A | 7/27/91 | JG |
| Total Lead | BDL | mg/l | 239.2 | 0.005 | N/A | 7/27/91 | JG |
| Total Selenium | BDL | mg/l | 270.3 | 0.002 | N/A | 7/28/91 | JG |
| Total Arsenic | 0.004 | mg/l | 206.3 | 0.002 | N/A | 7/25/91 | JG |
| Total Chromium | 0.010 | mg/l | 218.2 | 0.005 | N/A | 7/28/91 | JG |
| Total Mercury | BDL | mg/l | 245.1 | 0.001 | N/A | 7/26/91 | JG |
| Total Silver | BDL | mg/l | 272.2 | 0.005 | N/A | 7/28/91 | JG |
| Total Barium | 0.062 | mg/l | 208.2 | 0.01 | N/A | 7/27/91 | JG |

* BDL = Below Detection Limits
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.

Respectfully Submitted,

Jeffrey S. Glass
Laboratory Director
V.O.C. Analytical Inc.

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165


Date: 7/30/91
Log#: 581-9

Sample Description: GROUNDWATER ANALYSIS

Label:38-14J24
Date Sampled: 4/24/91
Date Received: 4/24/91
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Benzene | BDL | ug/l | 5030/8021 | 0.5 | N/A | 7/25/91 | GP |
| Toluene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| MTBE | BDL | ug/l | 5030/8021 | 0.5 | | | |
| Ethyl benzene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| Total Xylenes | BDL | ug/l | 5030/8021 | 0.5 | | | |
| VOA | | | | | | | |
| Naphthalene | BDL | ug/l | 3510/8270 | 2.0 | 7/27/91 | 7/29/91 | MF |
| Acenaphthene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Acenaphthylene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Anthracene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Benzo (A) Anthracene | BDL | ug/l | 3510/8270 | 3.0 | | | |
| Benzo (L) Fluoranthene | BDL | ug/l | 3510/8270 | 3.5 | | | |
| Benzo (K) Fluoranthene | BDL | ug/l | 3510/8270 | 3.5 | | | |
| Benzo (A) Pyrene | BDL | ug/l | 3510/8270 | 3.0 | | | |
| DiBenzo (G,H,I) Perylene | BDL | ug/l | 3510/8270 | 6.0 | | | |
| Chrysene | BDL | ug/l | 3510/8270 | 3.5 | | | |
| Dibenzo (A,H) Anthracene | BDL | ug/l | 3510/8270 | 4.0 | | | |
| Fluoranthene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Fluorene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Indeno-(1,2,3,-CD) Pyrene | BDL | ug/l | 3510/8270 | 4.0 | | | |
| Phenanthrene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Pyrene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| 1-Methyl Naphthalene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| 2-Methyl Naphthalene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| EPA 610 COMPOUNDS | | | | | | | |

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165

Sample Description: GROUNDWATER ANALYSIS


Date: 7/30/91
Log#: 581-9

Label:38-14J24
Date Sampled: 4/24/91
Date Received: 4/24/91
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Total Cadmium | BDL | mg/l | 213.2 | 0.005 | N/A | 7/27/91 | JG |
| Total Lead | BDL | mg/l | 239.2 | 0.005 | N/A | 7/27/91 | JG |
| Total Selenium | BDL | mg/l | 270.3 | 0.002 | N/A | 7/28/91 | JG |
| Total Arsenic | 0.004 | mg/l | 206.3 | 0.002 | N/A | 7/25/91 | JG |
| Total Chromium | BDL | mg/l | 218.2 | 0.005 | N/A | 7/28/91 | JG |
| Total Mercury | BDL | mg/l | 245.1 | 0.001 | N/A | 7/26/91 | JG |
| Total Silver | BDL | mg/l | 272.2 | 0.005 | N/A | 7/28/91 | JG |
| Total Barium | 0.013 | mg/l | 208.2 | 0.01 | N/A | 7/27/91 | JG |

* BDL = Below Detection Limits
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.

Respectfully Submitted,

Jeffrey S. Glass
Laboratory Director
V.O.C. Analytical Inc.

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165

Date: 7/30/91
Log#: 581-10

Sample Description: GROUNDWATER ANALYSIS

Label:38-RJ24
Date Sampled: 7/24/91
Date Received: 7/24/91
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Benzene | BDL | ug/l | 5030/8021 | 0.5 | N/A | 7/25/91 | GP |
| Toluene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| MTBE | BDL | ug/l | 5030/8021 | 0.5 | | | |
| Ethyl benzene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| Total Xylenes | BDL | ug/l | 5030/8021 | 0.5 | | | |
| VOA | | | | | | | |
| Naphthalene | BDL | ug/l | 3510/8270 | 2.0 | 7/27/91 | 7/29/91 | MF |
| Acenaphthene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Acenaphthylene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Anthracene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Benzo (A) Anthracene | BDL | ug/l | 3510/8270 | 3.0 | | | |
| Benzo (L) Fluoranthene | BDL | ug/l | 3510/8270 | 3.5 | | | |
| Benzo (K) Fluoranthene | BDL | ug/l | 3510/8270 | 3.5 | | | |
| Benzo (A) Pyrene | BDL | ug/l | 3510/8270 | 3.0 | | | |
| DiBenzo (G,H,I) Perylene | BDL | ug/l | 3510/8270 | 6.0 | | | |
| Chrysene | BDL | ug/l | 3510/8270 | 3.5 | | | |
| Dibenzo (A,H) Anthracene | BDL | ug/l | 3510/8270 | 4.0 | | | |
| Fluoranthene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Fluorene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Indeno-(1,2,3,-CD) Pyrene | BDL | ug/l | 3510/8270 | 4.0 | | | |
| Phenanthrene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| Pyrene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| 1-Methyl Naphthalene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| 2-Methyl Naphthalene | BDL | ug/l | 3510/8270 | 2.0 | | | |
| EPA 610 COMPOUNDS | | | | | | | |

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165

Date: 7/30/91
Log#: 581-10

Sample Description: GROUNDWATER ANALYSIS

Label:38-RJ24
Date Sampled: 7/24/91
Date Received: 7/24/91
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Total Cadmium | BDL | mg/l | 213.2 | 0.005 | N/A | 7/27/91 | JG |
| Total Lead | BDL | mg/l | 239.2 | 0.005 | N/A | 7/27/91 | JG |
| Total Selenium | BDL | mg/l | 270.3 | 0.002 | N/A | 7/28/91 | JG |
| Total Arsenic | BDL | mg/l | 206.3 | 0.002 | N/A | 7/25/91 | JG |
| Total Chromium | BDL | mg/l | 218.2 | 0.005 | N/A | 7/28/91 | JG |
| Total Mercury | BDL | mg/l | 245.1 | 0.001 | N/A | 7/26/91 | JG |
| Total Silver | BDL | mg/l | 272.2 | 0.005 | N/A | 7/28/91 | JG |
| Total Barium | BDL | mg/l | 208.2 | 0.01 | N/A | 7/27/91 | JG |

* BDL = Below Detection Limits
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.

Respectfully Submitted,

Jeffrey S. Glass
Laboratory Director
V.O.C. Analytical Inc.

V.O.C ANALYTICAL

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165

Sample Description: GROUNDWATER ANALYSIS

Page 1 of 1
Date: 8/02/91
Log#: 581-QC

Label: QUALITY CONTROL
Date Sampled: 7/24/91
Date Received: 7/24/91
Collected By: Your Rep

| Parameter | % RECOVERY | % RSD |
|---|---|---|
| Benzene | 100 | 1.0 |
| Toluene | 102 | 1.9 |
| MTBE | N/A | N/A |
| Ethyl benzene | 105 | 1.2 |
| Total Xylenes | 104 | 1.6 |
| VOA | -- | -- |
| Naphthalene | 57 | 0 |
| Acenaphthene | 67 | 2.2 |
| Acenaphthylene | 79 | 3.2 |
| Anthracene | 64 | 1.0 |
| Benzo (A) Anthracene | -- | -- |
| Benzo (B) Fluoranthene | 18 | 85 |
| Benzo (K) Fluoranthene | 119 | 13 |
| Benzo (A) Pyrene | 98 | 22 |
| Dibenzo (G,H,I) Perylene | 987 | 12 |
| Chrysene | 127 | 6.7 |
| Dibenzo (A,H) Anthracene | 137 | 6.6 |
| Fluoranthene | 122 | 3.7 |
| Fluorene | 76.5 | 0 |
| Indeno-(1,2,3,-CD) Pyrene | -- | -- |
| Phenanthrene | 80 | 2.5 |
| Pyrene | 121 | 12.4 |
| 1-Methyl Naphthalene | 65 | 3.1 |
| 2-Methyl Naphthalene | 65 | 3.1 |
| EPA 610 COMPOUNDS | | |
| Total Cadmium | 103 | 0.9 |
| Total Lead | 101 | 2.5 |
| Total Selenium | 103 | 22.8 |
| Total Arsenic | 104 | 0.4 |
| Total Chromium | 97 | 4.4 |
| Total Mercury | 92 | 6.9 |
| Total Silver | 80 | 1.3 |
| Total Barium | 105 | 2.1 |

877 Northwest 61st Street, Suite 202, Fort Lauderdale, FL 33309 (305) 938-8823

VOC ANALYTICAL, INC.
877 N.W. 61 Street, Suite 202
Ft. Lauderdale, FL 33309
(305) 938-8823 - Fax (305) 938-8900

# CHAIN OF CUSTODY RECORD

LOG #5581A

VOC ANALYTICAL

| Project Name or Number | Project Location |
|---|---|
| RNK 2003 | RINKER PORTLAND CEMENT MILL |

Client Name: GROUNDWATER SPECIALISTS INC.

| Item Number | Sample Number | Date | Time | Sample Description (CHECK ONE) Ground Water | Surface Water | Soil | Other (specify) | Number of Containers | Laboratory Analysis: Arsenic (206.3) | Barium (208.2) | Cadmium (213.2) | Chromium (218.2) | Lead (239.2) | Mercury (245.1) | Selenium (270.3) | Silver (272.2) | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 38-6J24 | 7.24.91 | 1430 | ✓ | | | | 1 | X | X | X | X | X | X | X | X | |
| | 38-7J24 | | ~~0840~~ 1410 | ✓ | | | | 1 | | | | | | | | | |
| | 38-8J24 | | ~~0915~~ 1430 | ✓ | | | | 1 | | | | | | | | | |
| | 38-9J24 | | ~~0745~~ 1345 | ✓ | | | | 1 | | | | | | | | | |
| | 38-10J24 | | 1445 | ✓ | | | | 1 | | | | | | | | | |
| | 38-11J24 | | 1225 | ✓ | | | | 1 | | | | | | | | | |
| | 38-12J24 | | 1245 | ✓ | | | | 1 | | | | | | | | | |
| | 38-13J24 | | 1200 | ✓ | | | | 1 | | | | | | | | | |
| | 38-14J24 | | 1130 | ✓ | | | | 1 | | | | | | | | | |
| | 38-RJ24 | | 1450 | ✓ | | | | 1 | | | | | | | | | |
| | | | | | | | | 10 | | | | | | | | | |

| Person Responsible for Sample | Transfer Number | Item Number | Transfers Relinquished by: | Accepted by: | Date | Time |
|---|---|---|---|---|---|---|
| | 1 | | W. Bonfanedt (7.24 | Denise Rodriguez | 7/24/91 | 1750 |
| Remarks: | 2 | | | | | |
| | 3 | | | | | |
| | 4 | | | | | |

VOC ANALYTICAL INC.
877 N.W. 61 Street, Suite 202
Ft. Lauderdale, FL 33309
(305) 938-8823 - Fax (305) 938-8900

# CHAIN OF CUSTODY RECORD

LOG #5831B

VOC ANALYTICAL

| Project Name or Number | Project Location |
|---|---|
| RNK2003 | RINKER PORTLAND CEMENT MILL |
| Client Name: GROUNDWATER SPECIALISTS INC. | |

| Item Number | Sample Number | Date | Time | Sample Description (CHECK ONE): Ground Water | Surface Water | Soil | Other (specify) | Number of Containers | Laboratory Analysis: BETX+MTBE by 602 | EPA 610 + 1+2 METHYLNAPHTHALENE | COMMENTS |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 38-6J24 | 7.24.91 | 1430 | ✓ | | | | (2) 1 | X | X | |
| | 38-7J24 | | 0840 | ✓ | | | | | | | |
| | 38-8J24 | | 0915 | ✓ | | | | | | | |
| | 38-9J24 | | 0745 | ✓ | | | | | | | |
| | 38-10J24 | | 945 | ✓ | | | | | | | |
| | 38-11J24 | | 1225 | ✓ | | | | | | | |
| | 38-12J24 | | 1245 | ✓ | | | | | | | |
| | 38-13J24 | | 1200 | ✓ | | | | | | | |
| | 38-14J24 | | 1130 | ✓ | | | | | | | |
| | 38-RJ24 | | 1450 | ✓ | | | | | | | |
| | ~~FIELD BLANK~~ | | | X | | | | (20) (10) | X | | |

| Transfer Number | Item Number | Transfers Relinquished by: | Accepted by: | Date | Time |
|---|---|---|---|---|---|
| 1 | | W. Bonfenechi 7.24 | Denise Rodriguez | 7/24/91 | 1745 |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | | | | |

Person Responsible for Sample

Remarks:

Envirodyne Inc.

4301 Oak Circle Drive #21
Boca Raton, Fl 33431
407-368-7737

GROUNDWATER SPECIALISTS, INC.
3003 S. CONGRESS AVENUE
SUITE 1C
PALM SPRINGS, FL. 33406

ATT : WILLIAM M. BARFKNECHT


JULY 26, 1991
REPORT # 2638
CERT # E86188



SAMPLE COLLECTED: 07/24/91
SAMPLE RECEIVED : 07/24/91

COLLECTED BY: JAMES RAHRIG

SAMPLE DESCRIPTION: RNK2003 RINKER PORTLAND CEMENT MILL MIAMI, FL.

METHOD 218.2

| REPORT OF ANALYSIS : CHROMIUM | | UNITS | DL | DATE |
|---|---|---|---|---|
| 38-1J24 | 0.01 | MG/L | 0.01 | 07/26/91 |
| 38-23J24 | BDL | MG/L | 0.01 | 07/26/91 |

ANALYSIS PERFORMED IN ACCORDANCE WITH E.P.A. METHODS.

RESPECTFULLY SUBMITTED,

Michael Rentoumis

MICHAEL RENTOUMIS
PRESIDENT

BDL = BELOW DETECTION LIMIT
DL = DETECTION LIMIT

Envirodyne Inc.

4301 Oak Circle Drive #21
Boca Raton, Fl 33431
407-368-7737

GROUNDWATER SPECIALISTS, INC.
3003 S. CONGRESS AVENUE
SUITE 1C
PALM SPRINGS, FL. 33406


JULY 26, 1991
REPORT # 2638
CERT # E86188

ATT : WILLIAM M. BARFKNECHT

SAMPLE COLLECTED: 07/24/91
SAMPLE RECEIVED : 07/24/91

COLLECTED BY: JAMES RAHRIG

SAMPLE DESCRIPTION: RNK2003 RINKER PORTLAND CEMENT MILL MIAMI, FL.

METHOD 270.3

| REPORT OF ANALYSIS : SELENIUM | | UNITS | DL | DATE |
|---|---|---|---|---|
| 38-6J24 | BDL | MG/L | 0.01 | 07/26/91 |
| 38-7J24 | BDL | MG/L | 0.01 | 07/26/91 |
| 38-8J24 | BDL | MG/L | 0.01 | 07/26/91 |
| 38-9J24 | BDL | MG/L | 0.01 | 07/26/91 |
| 38-9J24 | BDL | MG/L | 0.01 | 07/26/91 |
| 38-10J24 | BDL | MG/L | 0.01 | 07/26/91 |
| 38-17J24 | BDL | MG/L | 0.01 | 07/26/91 |

ANALYSIS PERFORMED IN ACCORDANCE WITH E.P.A. METHODS.

RESPECTFULLY SUBMITTED,

Michael Rentoumis

MICHAEL RENTOUMIS
PRESIDENT

BDL = BELOW DETECTION LIMIT
DL = DETECTION LIMIT

# CHAIN OF CUSTODY RECORD


Envirodyne Inc.

4301 Oak Circle Drive #21
Boca Raton, FL 33431
(407) 368-7737


| Project Name or Number | Project Location |
|---|---|
| RNK2005 | RINKER PORTLAND CEMENT MILL |

| Client Name |
|---|
| GROUNDWATER SPECIALISTS INC. |

| Item Number | Sample Number | Date | Time | Sample Description (Check One) Ground Water | Surface Water | Soil | Other (specify) | Number of Containers | Laboratory Analysis: Chromium by 218.2 | Selenium by 270.3 | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 38-1J24 | 7-24-91 | [illegible] | | | | | 1 | X | | |
| | 38-23J24 | | 1215 | ✓ | | | | 1 | X | | |
| | 38-6J24 | | 1430 | ✓ | | | | 1 | | X | |
| | 38-7J24 | | 1340 | ✓ | | | | 1 | | X | |
| | 38-8J24 | | 1415 | ✓ | | | | 1 | | X | |
| | 38-9J24 | | 1345 | ✓ | | | | 1 | | X | |
| | 38-10J24 | | 1345 | ✓ | | | | 1 | | X | |
| | 38-17J24 | | 1230 | ✓ | | | | 1 | | X | |
| | | | | | | | | — | | | |
| | | | | | | | | 8 | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

| Log Number | Transfer Number | Item Number | Transfers Relinquished by: | Accepted by: | Date | Time |
|---|---|---|---|---|---|---|
| 2638 | 1 | 1-8 | Jeff H | Michael Pontbriand | 7/24/91 | 1830 |
| Person Responsible for Sample | 2 | | | | | |
| | 3 | | | | | |

Remarks:

Analytical Technologies, Inc.
11 EAST OLIVE ROAD PHONE (904) 474-1001
PENSACOLA, FLORIDA 32514

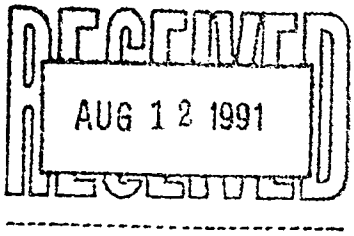
GROUNDWATER SPECIALIST
3003 SOUTH CONGRESS AVE.
SUITE 1C
PALM SPRINGS FL 33461-0000

Lab I.D.#: 91-5223A
Order Number: P46168
Order Date: 07/25/91
Client: 07058
Sampled By: BB/GS/JR
Sample Date: 07/24/91
Sample Time: VARIOUS

N/S = Not Submitted

Project Number: RNK2003
Project Name: RINKER PORTLAND CEMENT MILL
Sample Site: RINKER
Sample Type: GROUNDWATER

| Lab ID | Sample ID | Parameter | Units | Results | Detection Limit |
|---|---|---|---|---|---|
| 5223A-1 | 38-6J24 | SELENIUM | PPM | BDL | 0.003 |
| 5223A-2 | 38-7J24 | SELENIUM | PPM | BDL | 0.003 |
| 5223A-3 | 38-8J24 | SELENIUM | PPM | BDL | 0.003 |
| 5223A-4 | 38-9J24 | SELENIUM | PPM | BDL | 0.003 |
| 5223A-5 | 38-10J24 | SELENIUM | PPM | BDL | 0.003 |
| 5223A-6 | 38-17J24 | SELENIUM | PPM | BDL | 0.003 |




Comments: PPM = Parts Per Million, mg/l; BDL = Below Detection Limit.
Method Reference: EPA 600/4-79-020, Revised March 1983.

Approved By :



end of report

Analytical Technologies, Inc.
11 EAST OLIVE ROAD
PHONE (904) 474-1001
PENSACOLA, FLORIDA 32514



# QUALITY CONTROL DATA

Analytical**Technologies,** Inc.
11 EAST OLIVE ROAD PHONE (904) 474-1001
PENSACOLA, FLORIDA 32514

CLIENT NAME: GROUNDWATER SPECIALISTS

PROJECT: RNK2003

LAB ID: 91-5223A

QC LEVEL: I

PAGE 1 OF 1

| LAB ID | CLIENT ID |
|---|---|
| 91-5223A-1 | 38-6J24 |
| 91-5223A-2 | 38-7J24 |
| 91-5223A-3 | 38-8J24 |
| 91-5223A-4 | 38-9J24 |
| 91-5223A-5 | 38-10J24 |
| 91-5223A-6 | 38-17J24 |

| PARAMETER | PREPARATION DATE | ANALYSIS DATE | BATCH # | METHOD | DETECTION LIMIT | BLANK RESULT | SAMPLE RESULT | DUPLIC RESULT | RPD SAMPLE | MAX RPD | MATRIX SPIKE RESULT | TRUE MS RESULT | %REC MS | %REC CONTROL LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SELENIUM | 07-29-91 | 08-02-91 | Se72991B | 270.2 | 0.003 | BDL | BDL | BDL | N/C | 20 | 0.019 | 0.020 | 95 | 75-125 |
| | | | | | | | | | | | | | | |
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Notes: PPM = Parts Per Million, mg/l.
BDL = Below Detection Limit.
Control limits are from ATI's internal quality assurance program and the referenced method.
N/C = SAMPLE AND DUPLICATE RESULT ARE AT OR BELOW ATI METHOD DETECTION LIMIT; THEREFORE, THE RPD IS "NOT CALCULABLE" AND NO CONTROL LIMITS APPLY.

Reference: EPA 600/4-79-020, Revised March 1983.

Analytical Technologies, Inc.
11 EAST OLIVE ROAD PHONE (904) 474-1001
PENSACOLA, FLORIDA 32514

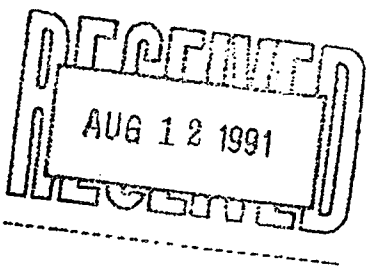
GROUNDWATER SPECIALIST
3003 SOUTH CONGRESS AVE.
SUITE 1C
PALM SPRINGS FL 33461-0000

Lab I.D.#: 91-5223B
Order Number: P46169
Order Date: 07/25/91
Client: 07058
Sampled By: BB/GS/JR
Sample Date: 07/24/91
Sample Time: VARIOUS

Project Number: RNK2003
Project Name: RINKER PORTLAND CEMENT MILL
Sample Site: RINKER
Sample Type: GROUNDWATER

N/S = Not Submitted

| Lab ID | Sample ID | Parameter | Units | Results | Detection Limit |
|---|---|---|---|---|---|
| 5223B-1 | 38-1J24 | CHROMIUM | PPM | 0.02 | 0.01 |
| 5223B-2 | 38-23J24 | CHROMIUM | PPM | BDL | 0.01 |




Comments: PPM = Parts Per Million, mg/l; BDL = Below Detection Limit.
Method Reference: EPA 600/4-79-020, Revised March 1983.

Approved By: Lisa Lambert



end of report

Analytical Technologies, Inc.
11 EAST OLIVE ROAD
PENSACOLA, FLORIDA 32514
PHONE (904) 474-1001

# QUALITY CONTROL DATA

Analytical**Technologies,** Inc.
11 EAST OLIVE ROAD PHONE (904) 474-1001
PENSACOLA, FLORIDA 32514

CLIENT NAME: GROUNDWATER SPECIALISTS

PROJECT: RNK2003

LAB ID: 91-5223B

QC LEVEL: I

| LAB ID | CLIENT ID |
|---|---|
| 91-5223B-1 | 38-1J24 |
| 91-5223B-2 | 38-23J24 |

PAGE 1 OF 1

| PARAMETER | PREPARATION DATE | ANALYSIS DATE | BATCH # | METHOD | DETECTION LIMIT | BLANK RESULT | SAMPLE RESULT | DUPLIC RESULT | RPD SAMPLE | MAX RPD | MATRIX SPIKE RESULT | TRUE MS RESULT | %REC MS | %REC CONTROL LIMITS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CHROMIUM | 07-31-91 | 08-02-91 | CrW-158 | 200.7 | 0.01 | BDL | BDL | BDL | N/C | 20 | 0.20 | 0.20 | 100 | 75-125 |
| | | | | | | | | | | | | | | |
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Notes: PPM = Parts Per Million, mg/l.
BDL = Below Detection Limit.
Control limits are from ATI's internal quality assurance program and the referenced method.
N/C = SAMPLE AND DUPLICATE RESULTS ARE AT OR BELOW ATI METHOD DETECTION LIMIT;
THEREFORE, THE RPD IS "NOT CALCULABLE" AND NO CONTROL LIMITS APPLY.

Reference: EPA 600/4-79-020, Revised March 1983.

PO2

AnalyticalTechnologies, Inc.
11 EAST OLIVE ROAD
PENSACOLA, FLORIDA 32514
PHONE (904) 474-1001

SAMPLE INSPECTION AND IDENTIFICATION SHEET/OUT OF CONTROL EVENTS

Client: Groundwater Specialists

Method of Shipment Fed-Ex

Date Received: 7-25-91

Sample Type: Groundwater

| | | |
|---|---|---|
| Is there a chain of custody? | (Y) | N |
| Is the chain of custody signed? | (Y) | N |
| Were samples received cold? | (Y) | N |
| Were any containers broken? | Y | (N) |
| Were samples preserved correctly? | (Y) | N |
| Were samples received within holding time? | (Y) | N |
| Were samples received in proper containers? | (Y) | N |
| Were air bubbles present in volatile bottles? N/A | Y | N |

PROJECT NUMBER RNK 2003

PURCHASE ORDER NUMBER

Q.C. LEVEL 2 1 2 3 4

OUT OF CONTROL EVENTS:

ATI Lab I.D.# 91-5223 A/B

| | | |
|---|---|---|
| Sample 1 | | 38-6J24 |
| A | 2 | 38-7J24 |
| | 3 | 38-8J24 |
| | 4 | 38-9J24 |
| | 5 | 38-10J24 |
| | 6 | 38-17J24 |
| | 7 | |
| | 8 | |
| | 9 | |
| | 10 | |
| | 11 | |
| | 12 | |
| B | 13 | 38-1J24 |
| | 14 | 38-23J24 |
| | 15 | |
| | 16 | |
| | 17 | |
| | 18 | |
| | 19 | |
| | 20 | |

RECEIVED
AUG 12 1991
ACCOUNTING

LIMIT OF LIABILITY

ATI WILL PERFORM THE SERVICES IN ACCORDANCE WITH NORMAL PROFESSIONAL STANDARDS FOR THE INDUSTRY. THE TOTAL LIABILITY OF ATI, ITS OFFICERS, AGENTS, EMPLOYEES OR SUCCESSORS, TO CLIENTS, ARISING OUT OF OR IN CONNECTION WITH THE SERVICES TO BE PROVIDED HEREIN, SHALL NOT EXCEED THE INVOICE AMOUNT FOR SAID SERVICES. CLIENT ACCEPTANCE OF A PROPOSAL RELEASES ATI FROM ANY LIABILITY IN EXCESS THEREOF, NOT WITHSTANDING ANY PROVISION TO THE CONTRARY IN ANY CLIENT PURCHASE ORDER OR CONTRACT.

IF NOTIFIED TIME: YES ( ) NO (✓)

INSPECTED BY: TIM DENNIS

DATE INSPECTED: 7-25-91

Analytical**Technologies**, Inc.

11 EAST OLIVE ROAD PHONE (904) 474-1001
PENSACOLA, FLORIDA 32514

LAB. I.D. # 91-5223

CLIENT Groundwater Specialists

ADDRESS 3003 S. Congress #1C

CITY Palm Springs

STATE FL ZIP 33461

PHONE NO. (407) 641-5355

PROJECT NUMBER RNK2003

PROJECT NAME Rinker Portland Cement Mill

SAMPLED BY BB, GS, JR

SAMPLE SITE Rinker

PURCHASE ORDER NUMBER RNK2003

PROJECT MANAGER (person to receive data)

REQUEST FAX DATA TO _____ (FAX #)

REQUEST VERBAL RESULTS BY _____ (DATE)

NEED DATA PACKAGE BY _____ (DATE)

QUALITY CONTROL REPORTING LEVEL

0 1 2 3 4 (circle one)

NEED _____ EXTRA COPIES OF REPORT

**SAMPLE MATRIX**

DW DRINKING WATER
WW WASTEWATER
GW GROUNDWATER
SW SURFACE WATER
SO SOIL
OL OIL
AR AIR
SL SLUDGE
HZ HAZARDOUS

| SAMPLE I.D. | DATE | TIME | MATRIX | Selenium (270.2) | Chromium (200.7) | TOTAL | LAB USE ONLY |
|---|---|---|---|---|---|---|---|
| 38-6J24 | 7.24.91 | 1430 | GW | X | | 1 | A1 |
| 38-7J24 | | 840 | " | X | | 1 | A2 |
| 38-8J24 | | 915 | " | X | | 1 | A3 |
| 38-9J24 | | 745 | " | X | | 1 | A4 |
| 38-10J24 | | 945 | " | X | | 1 | A5 |
| 38-17J24 | | 1230 | | X | | 1 | A6 |
| 38-1J24 | | 1300 | GW | | X | 1 | B1 |
| 38-23J24 | | 1315 | " | | X | 1 | P2 |
| | | | | | | | |
| | | | | | | | |
| | | 7/25 | Cl2 method per B. Barfknecht SR | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | TOTAL NUMBER OF BOTTLES/CONTAINERS | 8 |

RECEIVED AUG 12 1991

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE |
|---|---|---|---|---|
| W. Barfknecht | 7.24 | 1700 | Tim Hennin | 7.25.91 10:03 |
| | | | | |

**PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS**

TURN AROUND TIME
(NORMAL) ☒ 2 WEEKS
RUSH: ☐ 24 HOURS ☐ 48 HOURS ☐ 72 HOURS ☐ 1 WEEK

**SAMPLE DISPOSAL INSTRUCTIONS**

☐ ATI Disposal @ $5.00 each ☐ Return

SPECIAL INSTRUCTIONS:

WHITE - LAB CANARY - CLIENT PINK - REPORT

# GROUNDWATER MONITORING PLAN

## ADDENDUM A

Rinker Portland Cement Corp.
1200 NW 137th Avenue
Miami, Florida

April 1991

Prepared for:

Rinker Portland Cement Corp.
1200 NW 137th Avenue
Miami, Florida

Prepared by:

Groundwater Specialists, Inc.
3003 S. Congress Avenue
Suite 1C
Palm Springs, Florida 33461

## TABLE OF CONTENTS



## EXHIBITS



## APPENDICES

# ADDENDUM A

# GROUNDWATER MONITORING PLAN

Rinker Portland Cement Corp.
1200 NW 137th Avenue
Miami, Florida

## Introduction

This Addendum supplements information in the Groundwater Monitoring Plan (GWMP) of January 1991, submitted to the Florida DER as part of the General Permit Application to Construct/Operate a Soil Thermal Treatment Facility as per Chapter 17-775, FAC. It provides information as recommended in a letter from Ms. Zoe Kulakowski (Florida DER), to Mr. Michael Vardeman (Rinker Portland Cement Corp.), dated January 22, 1991, and new and revised proposals relating to schedules of data collection and submittal.

## Supplemental Information As Recommended

Ms. Kulakowski's letter recommends that certain information be provided in the application for a general permit to construct/operate the soil thermal treatment facility. The letter enumerates Items 1 through 17; in this Addendum, these are referred to as requests for information. A copy of Ms. Kulakowski's letter is included herewith as Appendix AA.

As consultants to Rinker, GSI (Groundwater Specialists, Inc.) has prepared Responses 1 through 17, that correspond to the requests for information. A restatement of the requests and responses follow:

**Request 1.** Install a sufficient number of piezometers/wells screened in the water table zone only to establish site groundwater flow patterns and to use for selecting monitor well locations. Incorporate surface water features into the elevation network. If the site flow directions are seasonally variable and nonuniform as believed by Dames and Moore, this entire network may also be needed for quarterly water elevation data. Provide construction details for the piezometers/wells.

**Response 1.** During the week of March 18, 1991, 22 piezometers were installed on the subject property. In the subsurface, all of these structures were constructed as permanent monitor wells. The wellhead configuration varied depending on their locations relative to on-site traffic. Of the piezometers, 19 are "shallow", with wellscreens set within sediments between depths from 2 to 11 feet. The remaining three piezometers are "deep", with wellscreens set within the upper portion of the Fort Thompson formation, the Biscayne Aquifer. The locations of the piezometers are shown on

Exhibit A1. The dimensions and top-of-casing elevations of all piezometers are shown on Exhibit A2. Typical well construction diagrams are shown in Appendix AB.

In addition to the piezometers, water-level measuring points were established at all significant surface-water bodies within and surrounding the property. The locations of the measuring points and the identity of each surface-water body are shown on Exhibits A1 and A3, respectively.

On March 25, 1991, when the two process wells (Wells PN and PS) were operating as they do on a continuous basis, water-level elevations in all piezometers and surface-water bodies were measured. These are summarized on Exhibit A2. The configuration of the water table in the shallow zone is shown on Exhibit A4. The configuration of water-levels in the deep zone is shown on Exhibit A5. As shown on the exhibits, the shallow-zone flow direction is predominantly eastward to the regional canal, with considerable influence to the north caused by returned cooling water on the Rinker property. The only discernable deep-zone flow direction is toward Rinker's process wells, Wells PN and PS.

**Request 2.** Establish background groundwater quality for the GWMP. Any existing chemical data may be used from other permitted sites nearby or the ambient groundwater monitoring network.

**Response 2.** On March 22, 1991, Piezometer 1 was sampled according to conditions described in GSI's generic QAP (#880557G). Piezometer 1 is located on the southern edge of the property and the southern edge of the proposed soil storage area. It is intended to represent an upgradient, background location. The sample was analyzed for parameters outlined in Chapter 17-775.610(4), (FAC), for monitoring during implementation of the GWMP. The results of analysis are summarized on Exhibit A6. The laboratory reports are presented in Appendix AC.

**Request 3.** On Figure 2, show all surface water features that are shown on Plate 1 (Dames and Moore 12/9/87) and Exhibit 1. How deep are the little lakes and the canal? Do they breach the dense limestone?

**Response 3.** All significant surface-water features are shown on Exhibit A1. The pits excavated by Dames & Moore have been backfilled with materials excavated from the pits. The "pond-like area" and "lake" on Dames & Moore's Plate 1 correlate with surface-water bodies connected to SW1 and SW5, respectively. Please note that Dames & Moore's Plate 1 is conceptual in nature, not to scale.

A description of the ponds, canals and quarries is shown on Exhibit A3. These are referenced by measuring points on each of these surface-water bodies (SW1 through SW9). The only known breaches of the hard, dense limestone layer on the property are the

two quarries and the fire well (within the fire house) and process wells (Wells PN and PS). Stratigraphic data show that the dense limestone lies generally between 14 and 19 feet below grade in the filled areas of the property. The filled areas are approximately as shown on Exhibit A7. A stratigraphic cross section is shown on Exhibit A8 [Piezometer 22 apparently is placed on higher land, partially filled to construct a road.].

**Request 4.** Identify the locations of Well #100, Well #200, the fire protection well (is it at the fire pump house?), and the plant cooling water discharge pipe release point.

**Response 4.** Well #100 is the potable water well; its location is beneath the kiln. Well #200 is inside the fire pump house. There are three points at which cooling water is released to surface water bodies. These points are described on Exhibits A1 and A3.

**Request 5.** Provide at least three lithologic logs to establish the site stratigraphy.

**Response 5.** Three lithologic logs represented on a stratigraphic cross section are shown on Exhibit A8. The section shows the lithology determined by spilt-spoon borings at the locations of Piezometers 20 and 22, and Soil Boring 1 (SB1).

**Request 6.** Provide well construction details (example: annulus completion), lithologic logs and measured cones of depression for the process water wells.

**Response 6.** The process water "wells" (Wells PN and PS) were constructed as open pits with a total depth that penetrates the uppermost part of the high-permeability Fort Thompson formation - the Biscayne Aquifer. The pits occupy an area of approximately 10 by 20 feet at land surface. There are no available lithologic logs derived during the excavation of the pits. However, a lithologic log is available from Piezometer 20, located about 123 feet from both pits; this log is shown on the stratigraphic cross section, Exhibit A8. A cross section showing the pit's relationship to the lithology is included in Appendix AD.

The measured cones of depressions in the shallow and deep zones created by the process wells (Wells PN and PS) are depicted on Exhibits A4 and A5. These cones of depression represent a steady-state condition as they are based on measurements made during a time when the continuously-operating process wells were operating.

In order to determine the drawdown and recovery caused by operating Wells PN and PS, Well PN was shut down for a 1/2-hour period on March 26, 1991, during which time water-level recovery then drawdown were measured in Piezometers 15, 16, and 20, as well as in Wells PN and PS. These piezometers lie equidistant from

Wells PN and PS. [Due to continuous demand for water by the cement manufacturing process, it is not possible to shut down either of the wells for a longer period] Exhibit A9 is a summary of data derived from the recovery test. Further discussion and conclusions of the test are contained in Appendix AD.

**Request 7.** Detail every movement and the onsite process of remediating the contaminated soils brought onsite. Address unloading/loading, storage of treated/untreated soils, weighing, and specific locations of all activities.

**Response 7.** The present soil handling practice is that incoming soils are dropped, screened and reloaded onto trucks, on the existing soil storage slab. This soil storage slab is now covered with a canvass roof. The soil storage slab drains within a bermed area; collected water is pumped into a dedicated tank. A lisenced waste-water hauler empties the tank and discharges the water into the wastewater feed system from which it is piped to the kilns.

Contaminated soils that arrive at the plant for thermal treatment are first weighed on the incoming trucks at the scale house. Any truck noted to be dripping water is turned away at that point. After weighing, the incoming trucks are directed to the soil-storage building where they dump their loads under the roof and on the concrete floor of the building. The trucks leave the property with a stop at the scale after their loads are dropped. The contaminated soils within the building are then screened to eliminate metals, plastics and other materials potentially damaging to later processing. [These miscellaneous materials are collected in a designated dumpster for subsequent delivery to a sanitary landfill.] After screening, the soils are loaded within the soil-storage building onto a designated truck. A dedicated front-end loader is used. The loaded truck delivers the soil into the west entrance of the Raw Material Feed Building where the soils are dropped on a concrete slab under roof. The concrete slab is bermed and has a contained leachate collection system. Water from the system is delivered to the wastewater feed system then into the kilns. The delivery truck circulates between the two under-roof locations. From the Raw Materials Feed Building, the process slurry is routed to the kilns through an above-ground piping system. After treatment in the kilns, the resulting clinker is crushed, sampled and analyzed.

**Request 8.** Is any response of the water table zone observed in the immediate vicinity of each process water well? Establish whether flow in the water table zone is totally independent of pumping the Biscayne process wells.

**Response 8.** A significant response in the water-table zone was noted during the test on Well PN. This is because the water-table (shallow) zone is well connected hydraulically to Well PN and provides a substantial flow of water to Wells PN and PS. However,

the water-table zone is concluded to be isolated from the deep zone on the basis of several observations. These include: (1) the hard, dense nature of the limestone between 14 and 19 feet (no evidence of cracks or solution holes in this limestone are known to exist), (2) the water level in the shallow zone is 0.12 feet lower than in the deep zone at well pairs, Well 16 and Well 20, (3) the degree of response to the recovery test was significantly different in the two zones, and (4) the notable lack of response to pumping in the shallow zone, due to pumping deep-zone wells at the Sweetwater Ready Mix Plant (see Appendix AE). Waters of the shallow and deep zones are known to intermingle at the locations of the quarries and Wells PN and PS because the confining layer is breached. Thus, the water-table zone is not independent of the deep zone in the near vicinity of the quarries and Wells PN and PS, but it is at other locations on the site. Please refer also to Response 6 and Appendix AD.

**Request 9.** How deep did the trench extend for the underground pipeline and the W. I. pipe? Was the dense limestone unit breached during construction?

**Response 9.** The trench for the underground oil pipeline is only 5 to 6 feet below grade. This is not deep enough to breach the dense limestone.

**Request 10.** Did Dames & Moore excavate a pit around both process wells during the December 1987 study? If so, how was well construction integrity restored? Please explain what was meant by "no cascading water into the well pits". Was the pit water elevation compared to the pumping well water elevation?

**Response 10.** Dames & Moore did not excavate the pits around Wells PN and PS. They did, however, construct other pits that were subsequently backfilled with the same materials excavated. These later pits did not breach the dense limestone.

The statement regarding "no cascading water" referred to the visible lack of water cascading from the water-table zone, over the inner wall of the well pits, and down to the water level in the pits. This is not surprising as the actual depth of the dense limestone is beneath the normal water level in the pit; thus, any tendency to "cascade" would be underwater and not observable. The present author believes that Dames & Moore mistook the level of the dense limestone layer in the area of Wells PN and PS, to be about five feet higher than its actual level. In short, the "no cascading water" statement is insignificant.

**Request 11.** Propose an unaffected natural background well. Wells 1, 4, 6, and 7 are too close to potential sources to be used for this purpose.

**Response 11.** Under existing conditions, Piezometer 1 is selected to be an unaffected background well. Piezometer 1 was sampled/analyzed as noted on Exhibit A6. Proposed Well 23, discussed below, will be installed as a natural background well.

**Request 12.** Without the site specific flow information, review cannot be competed of the proposed monitor well locations. I concur with the proposed shallow construction (water table zone) for the potential source areas. Since the objective of this GWMP is to detect any discharge to groundwater, the proposed monitor wells will need to be located as close to the unit as possible on the downgradient side. Examples of potential sources are the truck scale, truck unloading pad, the proposed soils storage area(s), the oil line to the kiln (to increase BTUs?), the inlet and outlet and the pressure cleaning facility (to wash out trucks?).

**Response 12.** As noted on the cited exhibits, the groundwater flow direction in the areas of concern have been determined to be generally northward in the water-table and in the areas where contaminated soils are and will be handled. The areas of concern include the truck scale, the existing soil storage slab (covered), proposed soil storage building and the Raw Materials Feed Building entrance. The active oil line to the kiln is unrelated to the Chapter 17-775 features of this GWMP. Likewise, the pressure cleaning facility is a wholly enclosed facility with no release of water. The previously indicated monitor well in this cleaning facility is a sump in an enclosed vault, not a monitor well. The second truck cleaning facility near the scale house is used to clean dust from outgoing cement haulers; water from that facility drains into the ditch referred to as measuring point SW4. No trucks that contained contaminated soils are cleaned at either of the two cleaning facilities. There are no other points on the property, not previously described, that are potential contamination source areas as related to the handling of incoming contaminated soils.

**Request 13.** Identify the specific analytical methods for metals to be used for every sampling event.

**Response 13.** The analytical methods to be used in the GWMP are prescribed in Chapter 17-775.610(4), FAC. The metals and respective EPA Methods that will be used are: arsenic, 206.3; barium, 208.2; cadmium, 213.2; chromium, 218.2; lead, 239.2; mercury, 245.1; selenium, 270.3; and silver, 271.2. Sampling conducted within the GWMP will be under GSI's generic QAP (#880557G); the FDER approval notice of this document is shown in Appendix AF. Samples will be analyzed by V.O.C. Analytical, Inc. under its approved generic QAP (#900376G); approval notice also is shown in Appendix AF.

**Request 14.** Describe well purging procedures. Will pH, specific conductivity, and temperature be monitored until stabilized to

document sufficient purging? Field parameters should be reported with the data.

**Response 14.** Pre-sampling well purging will be accomplished by pumping from the wells using clean stainless steel tubes and under the conditions of GSI's generic QAP. Measurements of pH, specific conductivity, and temperature will be made from well-purge water until these parameters have stabilized. The results of these measurements will be reported in quarterly data reports.

**Request 15.** Include provisions to establish the flow direction quarterly using a network of piezometers and monitor wells.

**Response 15.** Provisions to determine quarterly the groundwater flow directions are described below.

**Request 16.** Provide a schedule for well installation, the first quarterly data collection event, and subsequent events.

**Response 16.** A schedule of well completions and sampling events is provided below.

**Request 17.** Include provisions to submit the quarterly water quality and groundwater elevation to the Bureau of Waste Cleanup.

**Response 17.** A schedule of data submittals to the Bureau of Waste Cleanup is provided below.

Additional Information

In addition to the information responding to Ms. Kulakowski's letter, the following is provided to supplement the GWMP.

Rinker Materials Corp. operates the Sweetwater Ready Mix Plant to the northeast and adjacent to the Rinker Portland Cement Corp.'s Cement Mill. The Ready Mix Plant was the subject of a Contamination Assessment Report, dated January 1989, prepared by Jammal & Associates, Inc. A plume of dissolved hydrocarbons resides in the shallow zone on the Plant property. The plume enters the northeast corner of the Rinker Portland Cement Corp. property. The groundwater flow direction, however, indicates that hydrocarbons will tend to migrate to the southeast and not toward the Cement Mill. There are two water wells on the site; these tap the deep-zone (the Biscayne Aquifer), and have no apparent effect on groundwater in the shallow zone. One of these wells (the 10-inch well) continuously pumps about 50 gpm from the deep zone. The other well is used for fire protection. The exact depths of these wells could not be ascertained. The location of the Plant, the two water wells, the groundwater flow direction and the location of the plume are shown in Appendix AE.

As part of the cement manufacturing process, piles of coal, gypsum and slag are stored on site for use in the product. Piezometer 19 was installed among these piles for possible future use in determining the local direction of groundwater flow and whether minerals dissolved from these piles affect groundwater quality. The direction of groundwater flow at Piezometer 19 was determined to be generally north-northeast.

Revised Proposal

The following are proposals regarding well construction, sampling events, analyses, groundwater flow determinations and schedules. These are revisions to the GWMP submitted in January 1991 and pertain only to the application to construct/operate a Soil Thermal Treatment Facility.

Rinker currently operates a soil thermal treatment facility at the Cement Mill. Incoming soils are trucked to the existing soil storage slab indicated on Exhibit A1. This soil storage slab will be used until the proposed soil storage building can be completed. The existing soil storage slab is now covered with a canvass roof to aid in the prevention of runoff until the proposed building is completed.

Under this GWMP, groundwater monitoring will begin in the vicinity of the existing soil storage slab and shift to the new facility upon its completion. Existing Piezometers 6, 7, 8, 9, 10, 11, 12, 13, 14, 17, 18 and 19 and proposed Well 23 will be monitored while the current facility operates; these are located at the scale house, the existing soil storage slab, the entrance to the Raw Mill, upgradient of the proposed soil storage building, and three intermediate points. Where not presently protected, the wellheads of these piezometers will be sealed and secured against runoff and traffic; the piezometers will be converted to monitor wells. Also, SW3, 7, 8 and 9 will be monitored for water levels. These points exert considerable control over the onsite groundwater-flow direction. The proposed monitoring schedule is as follows:

Phase I
Week of April 15, 1991 - Convert Piezometers 2, 5 through 14, 17, 18 and 19 to permanent monitor wells with the same numbers. Construct Well 23 (monitor well) as an unaffected natural background well. Abandon Piezometers 1, 3, and 4. Piezometer 15, 16, 20, 21 and 22 will be maintained for other purposes.

Phase II
Week of April 22, 1991 - Begin Monitoring as outlined in the following:

**Groundwater Levels:** Groundwater levels in Wells 6 through 14, 17, 18, 19 and 23 will be measured quarterly and a contour map will be prepared representing the shallow groundwater zone.

**Groundwater Quality:** Groundwater samples will be collected quarterly from Wells 6 through 14 for analyses by EPA Methods selected from those listed in Chapter 17-775.610 (4)(a), (b), (c) and (d), FAC.

**Reporting:** A groundwater contour map and the results of analyses will be reported to the FDER within five weeks of the quarterly sampling event and in accordance with Chapter 17-775.610(5), FAC.

Phase III

Before, but within two weeks of completion of the proposed soil storage building, Monitor Wells 24 and 25 will be constructed. The completion of this building is anticipated during late 1991. Following use/operation of the proposed soil storage building, monitoring will continue for two quarters (6 months) as listed under "Phase II" above. Also during that time, Wells 2, 5, 24, and 25 will be incorporated in the monitoring schedule as outlined in "Phase II" above, and will remain on the schedule. After the two quarters cited, Wells 11, 12, 13 and 14 will be deleted from the schedule of sampling/analyses and groundwater level measurement, with the exception of Well 11, which will continue to be monitored quarterly for groundwater levels. A summary of the monitoring schedule and a map showing monitoring points are provided on Exhibits A10 and A11, respectively.

During implementation of the GWMP, wells located on the upgradient side of any of the identified potential source areas will be deleted from the sampling schedule but only upon written notification to and written approval from the FDER. The wells that could be deleted from the schedule will be determined following additional rounds of water-level measurements to amply demonstrate the direction of groundwater flow, but could include Wells 2, 8, 10, 13, 14 and 24.

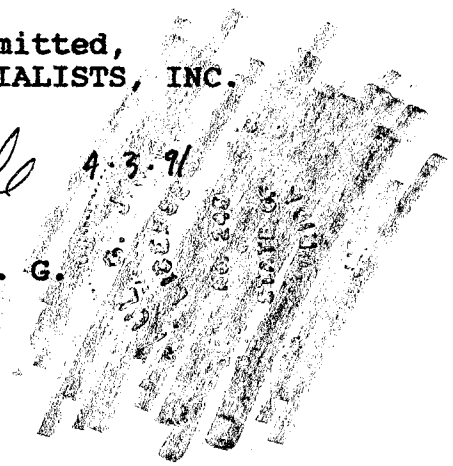
During the course of implementing the GWMP, three additional wells will be constructed; these will be Wells 23, 24 and 25 as discussed above. These will be constructed with the use of a hollow-stem auger to a total depth of 11 feet and as depicted on Exhibit A11 and in Appendix AB. This construction methodology also was used to construct the piezometers in their subsurface extents. The conversion of the piezometers to monitor wells will include only the rebuilding of wellheads to make them secure and leakproof.

All measurements of groundwater (and surface-water) levels and all groundwater sampling will be completed by Groundwater Specialists, Inc. in accordance with its approved Generic Quality Assurance Plan (Appendix AF). Likewise, analyses will be performed by V.O.C. Analytical, Inc. in accordance with its approved Quality Assurance Plan (Appendix AF).

Respectively submitted,
GROUNDWATER SPECIALISTS, INC.

4-3-91

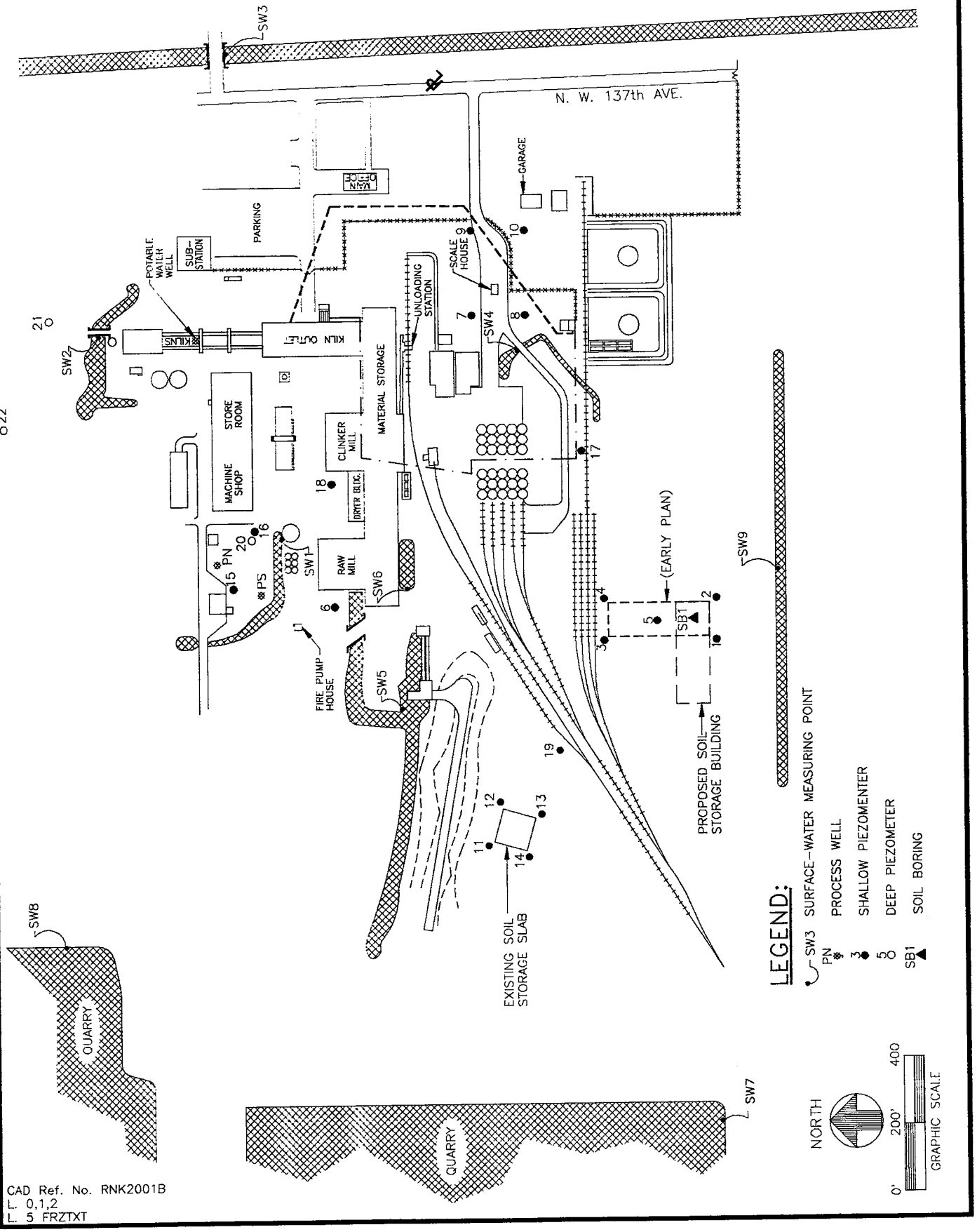
Paul G. Jakob, P. G.
President



EXHIBITS

| GSI | DATE: MARCH 1991 | FOR: RINKER PORTLAND CEMENT CORP. | SUBJECT: SITE PLAN | EXHIBIT: A1 |
|---|---|---|---|---|

LOCATION: 1200 N.W. 137th AVE., MIAMI, FLORIDA




CAD Ref. No. RNK2001B
L. 0,1,2
L. 5 FRZTXT

EXHIBIT A2

PIEZOMETER DIMENSIONS, GROUNDWATER AND SURFACE-WATER ELEVATIONS

| Piezometer | Total Depth (feet) | Screen Zone (feet) | Top of Casing Elev. (feet) | Depth to Water (feet) | Water Elevation (feet) |
|---|---|---|---|---|---|
| 1 | 11.3 | 3.3-11.3 | 10.84 | 7.85 | 2.99 |
| 2 | 11.5 | 3.5-11.5 | 11.02 | 8.02 | 3.00 |
| 3 | 9.7 | 4.7- 9.7 | 9.86 | 6.86 | 3.00 |
| 4 | 11.4 | 3.4-11.4 | 10.04 | 6.85 | 3.19 |
| 5 | 11.2 | 3.2-11.2 | 10.65 | 7.64 | 3.01 |
| 6 | 8.0 | 3.0- 8.0 | 11.79 | 8.87 | 2.92 |
| 7 | 8.0 | 3.0- 8.0 | 9.03 | 6.06 | 2.97 |
| 8 | 7.9 | 2.9- 7.9 | 9.56 | 6.59 | 2.97 |
| 9 | 8.0 | 3.0- 8.0 | 9.69 | 6.74 | 2.95 |
| 10 | 8.0 | 3.0- 8.0 | 10.05 | 7.10 | 2.95 |
| 11 | 6.6 | 1.6- 6.6 | 8.11 | 5.06 | 3.05 |
| 12 | 7.0 | 2.0- 7.0 | 8.48 | 5.46 | 3.02 |
| 13 | 7.0 | 2.0- 7.0 | 8.41 | 5.38 | 3.03 |
| 14 | 7.0 | 2.0- 7.0 | 8.09 | 5.07 | 3.02 |
| 15 | 8.0 | 3.0- 8.0 | 11.93 | 9.31 | 2.62 |
| 16 | 8.0 | 3.0- 8.0 | 11.51 | 8.76 | 2.75 |
| 17 | 7.2 | 2.2- 7.2 | 12.13 | 9.17 | 2.96 |
| 18 | 11.0 | 3.0-11.0 | 12.43 | 9.44 | 2.99 |
| 19 | 8.0 | 3.0- 8.0 | 11.28 | 8.26 | 3.02 |
| 20 | 28.0 | 20.0-28.0 | 11.79 | 8.87 | 2.92 |
| 21 | 27.0 | 17.0-27.0 | 15.03 | 12.06 | 2.97 |
| 22 | 28.0 | 18.0-28.0 | 12.85 | 9.87 | 2.98 |

| Surface Water Measuring Point | Measuring Point Elevation (feet) | Depth to Water (feet) | Water Elevation (feet) |
|---|---|---|---|
| SW1 | 9.29 | 0.13 | 9.16 |
| SW2 | 10.11 | 1.60 | 8.51 |
| SW3 | 5.56 | 2.67 | 2.89 |
| SW4 | 9.68 | 0.87 | 8.81 |
| SW5 | 9.20 | 1.72 | 7.48 |
| SW6 | 11.95 | 1.34 | 10.61 |
| SW7 | 9.20 | 6.03 | 3.17 |
| SW8 | 7.39 | 4.38 | 3.01 |
| SW9 | 6.00 | 2.88 | 3.12 |

Notes: The tops of casings range from 0.0 to 3.0 feet above grade. All elevations are referenced to mean sea level. The total depths and screen zones are referenced to grade. All piezometers are constructed of 2-inch diameter PVC. Date of measurements was March 25, 1991.

## EXHIBIT A3

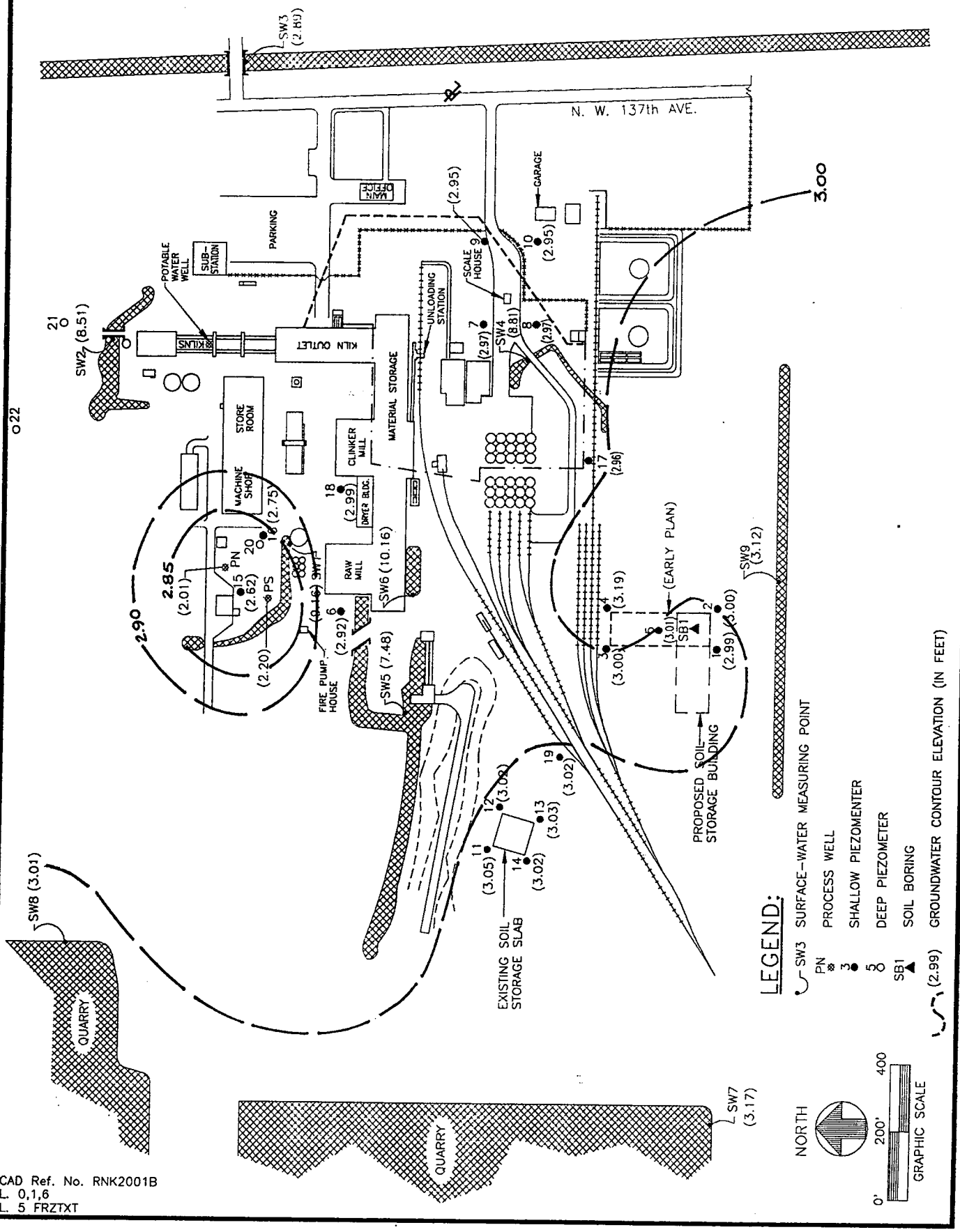
## SURFACE-WATER MEASUREMENT POINTS AND DESCRIPTION OF SURFACE-WATER BODIES

Rinker Portland Cement Corp.

| Number | Description |
|---|---|
| SW1 | A soakage pond having a depth of about three feet in its southern reach and seven feet at the northern end. This pond receives about 0.5 million gallons per day of cooling water from the mills. |
| SW2 | A soakage pond having a depth of three to six feet. This pond receives about 0.7 million gallons per day of cooling water from the kilns. |
| SW3 | A regional, unnamed drainage canal, connected to the Tamiami Canal about two miles to the south, canal ranges in depth from three to probably ten feet. |
| SW4 | A shallow soakage ditch, less than one foot in depth. This ditch contains exterior washing of cement dust from the exterior washing of outgoing cement-hauling trucks, not contaminated soils-hauling trucks. |
| SW5 | A soakage pond having a depth from one to six feet. This pond receives about 0.5 million gallons per day of cooling water from the raw mill and crusher. |
| SW6 | A holding pond about two feet deep. This empties to the water body described under SW5. |
| SW7 | A quarry having an area of about 70 acres and a depth of 45 feet. This quarry is hydraulically connected to the water-table zone and the deep zone. |
| SW8 | An active quarry having an area of about 200 acres and a depth of 50 feet. This quarry is hydraulically connected to the water-table zone and the deep zone. |
| SW9 | An isolated canal having a maximum depth of about seven feet. This canal serves a drainage purpose only and by its apparent depth, does not penetrate the dense limestone. |

| GSI | DATE: MARCH 1991 | FOR: RINKER PORTLAND CEMENT CORP. | SUBJECT: SHALLOW-ZONE GROUNDWATER CONTOURS | EXHIBIT: A4 |
|---|---|---|---|---|

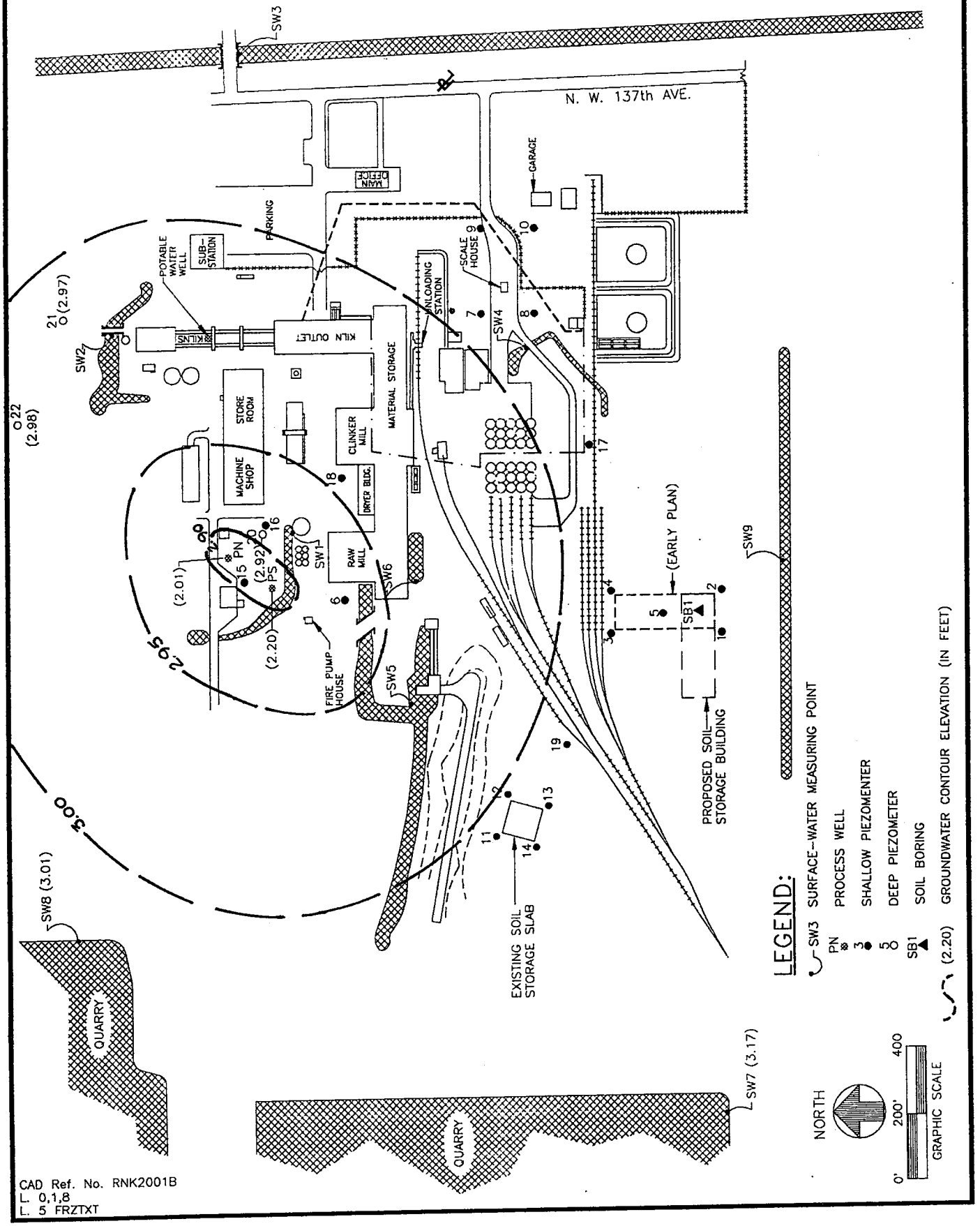
LOCATION: 1200 N.W. 137th AVE., MIAMI, FLORIDA




CAD Ref. No. RNK2001B
L. 0,1,6
L. 5 FRZTXT

| GSI | DATE: MARCH 1991 | FOR: RINKER PORTLAND CEMENT CORP. | SUBJECT: DEEP-ZONE GROUNDWATER CONTOURS | EXHIBIT: A5 |
|---|---|---|---|---|

LOCATION: 1200 N.W. 137th AVE., MIAMI, FLORIDA




CAD Ref. No. RNK2001B
L. 0,1,8
L. 5 FRZTXT

EXHIBIT A6

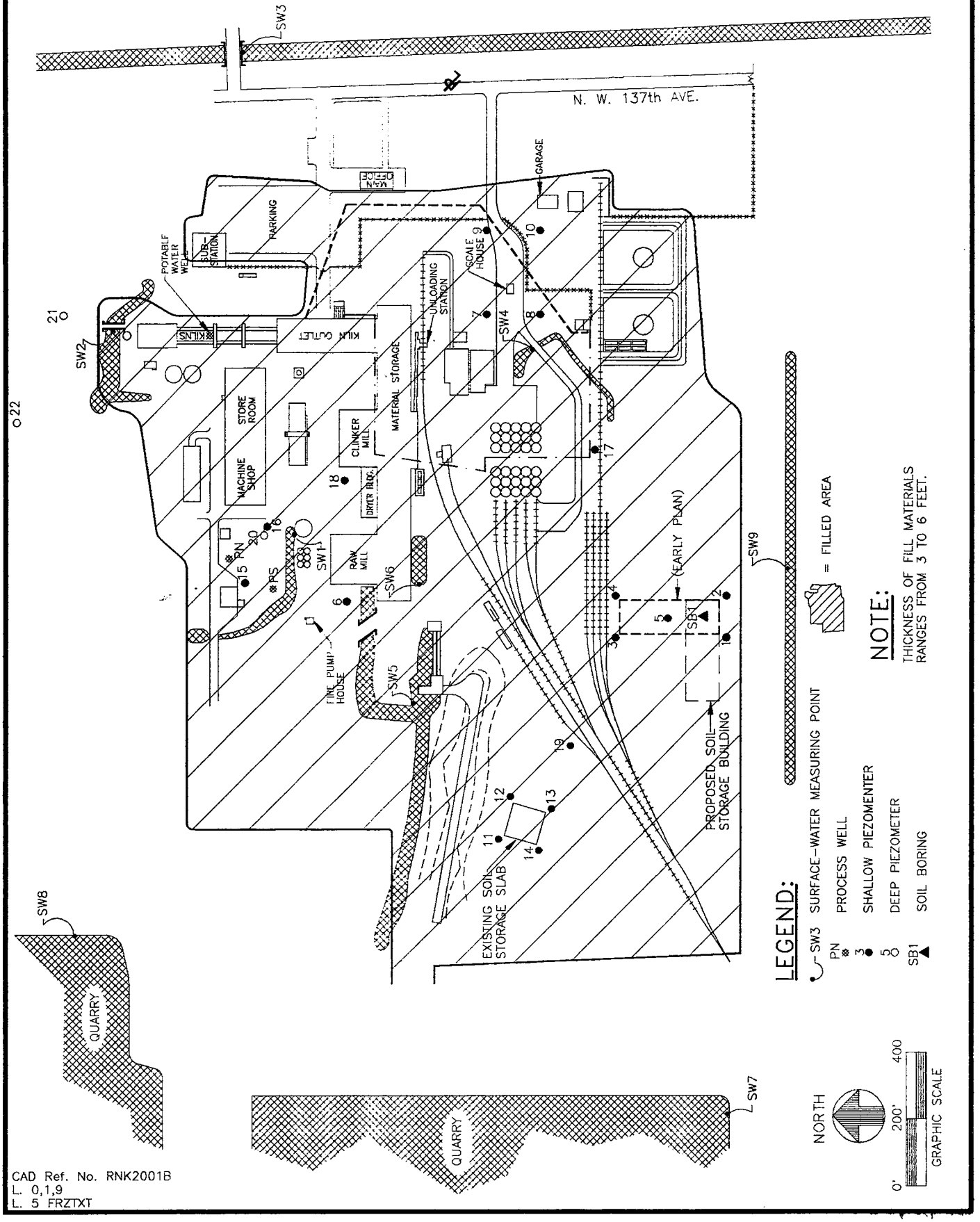
SUMMARY OF ANALYSES - WELL 1

| Parameter | | Detection limit | Concentration |
|---|---|---|---|
| **EPA Method 602 (in ppb)** | | | |
| benzene | | 1 | BDL |
| ethylbenzene | | 1 | BDL |
| toluene | | 5 | BDL |
| xylene | | 2 | BDL |
| methyl-tertbutyl ether | | 5 | BDL |
| **EPA Method 610 (in ppb)** | | | |
| acenaphthene | | 1 | BDL |
| acenaphthylene | | 1 | BDL |
| anthracene | | 1 | BDL |
| benzo(A)anthracene | | 1 | BDL |
| benzo(A)pyrene | | 1 | BDL |
| benzo(B)fluoranthene | | 1 | BDL |
| benzo(G,H,I)perylene | | 1 | BDL |
| benzo(K)fluoranthene | | 1 | BDL |
| chrysene | | 1 | BDL |
| dibenzo(A,H)anthracene | | 1 | BDL |
| fluoranthene | | 1 | BDL |
| fluorene | | 1 | BDL |
| indeno(1,2,3-CD)pyrene | | 1 | BDL |
| naphthalene | | 1 | BDL |
| phenanthrene | | 1 | BDL |
| pyrene | | 1 | BDL |
| 1,methylnaphthalene | | 1 | BDL |
| 2,methylnaphthalene | | 1 | BDL |
| **TOTAL METALS (in ppm)** | | | |
| arsenic | EPA 206.2 | 0.003 | BDL |
| barium | EPA 200.7 | 0.10 | BDL |
| cadmium | EPA 213.2 | 0.0002 | BDL |
| chromium | EPA 200.7 | 0.01 | 0.06 |
| lead | EPA 239.2 | 0.002 | 0.009 |
| mercury | EPA 245.2 | 0.0002 | 0.0005 |
| selenium | EPA 270.2 | 0.003 | BDL |
| silver | EPA 271.2 | 0.0002 | BDL |

Note: BDL denotes below detection limit.

| GSI | DATE: MARCH 1991 | FOR: RINKER PORTLAND CEMENT CORP. | SUBJECT: FILLED AREA | EXHIBIT: A7 |
|---|---|---|---|---|

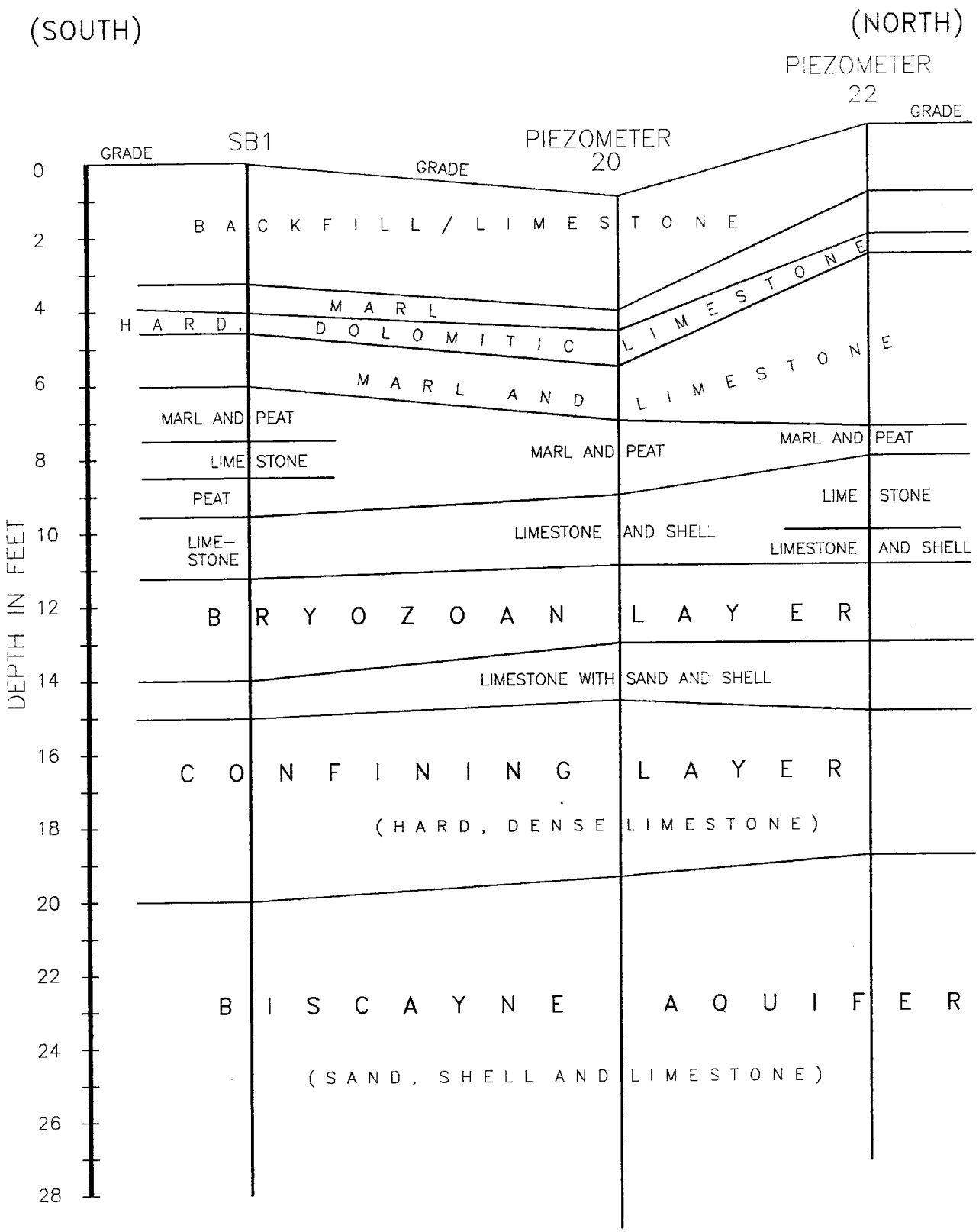
LOCATION: 1200 N.W. 137th AVE., MIAMI, FLORIDA




CAD Ref. No. RNK2001B
L. 0,1,9
L. 5 FRZTXT

| GSI | DATE: MARCH 1991 | FOR: RINKER PORTLAND CEMENT CORP. | SUBJECT: STRATIGRAPHIC CROSS-SECTION | A8 |
|---|---|---|---|---|

LOCATION: 1200 N.W. 137th AVE., MIAMI, FLORIDA




NOTE: DEPTHS ARE REFERENCED TO A COMMON DATUM.

CAD Ref. No. RNKSECTN
L. 0,1,8

## EXHIBIT A9

## SUMMARY OF PUMPING/RECOVERY TEST DATA

| Well/Piezometer Number | Distance from Well PN (feet) | Pumping Water Level (feet MSL) | Recovered Water Level (feet MSL) | Maximum Recovery (feet) |
|---|---|---|---|---|
| PN | 0 | 2.01 | 2.93 | 0.92 |
| PS | 130 | 1.98 | 2.20 | 0.22 |
| 15 | 73 | 2.68 | 2.78 | 0.10 |
| 16 | 123 | 2.79 | 2.87 | 0.08 |
| 20 | 117 | 2.91 | 2.94 | 0.03 |

**Note:** The "pumping/recovery" test was conducted by shutting off Well PN for a period of 0.5 hours and measuring the groundwater level recovery in the wells listed above. Wells PN and PS run continuously at about 694 gpm each to provide process water to the Mill. The 0.5 hour period is about the maximum possible test period because of the demand for water in the Mill. Raw data from the test are provided in Appendix AD.

## EXHIBIT A10

## SUMMARY OF MONITORING SCHEDULE

### Phase II - With Existing Soil Storage Slab

| Monitoring Point | Analyses | Water Levels |
|---|---|---|
| Well 6 | X | X |
| Well 7 | X | X |
| Well 8 | X | X |
| Well 9 | X | X |
| Well 10 | X | X |
| Well 11 | X | X |
| Well 12 | X | X |
| Well 13 | X | X |
| Well 14 | X | X |
| Well 17 | X | X |
| Well 18 | X | X |
| Well 19 | X | X |
| Well 23 | X | X |
| SW 3 | | X |
| SW 7 | | X |
| SW 8 | | X |
| SW 9 | | X |

should be / Doesn't match narrative

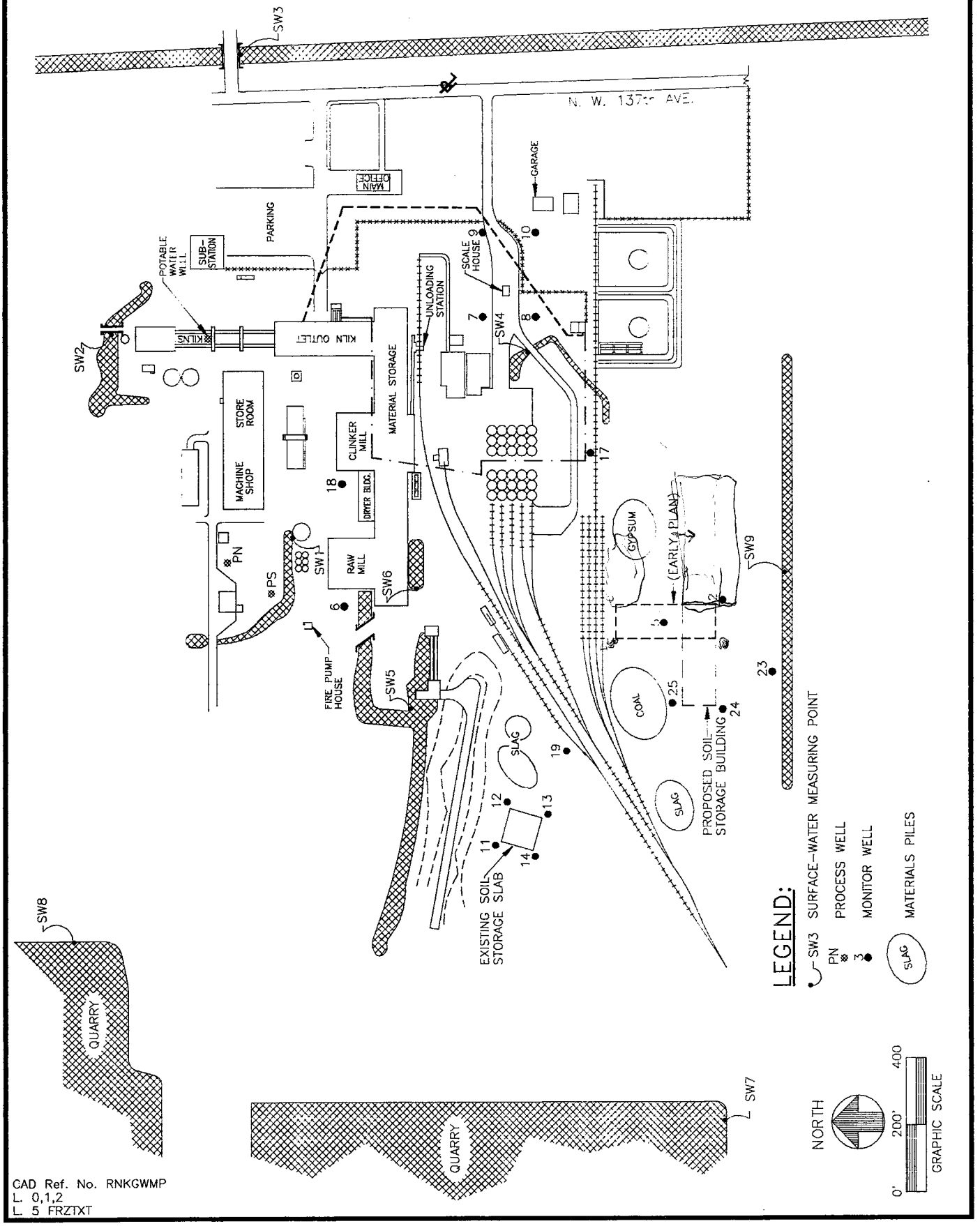
### Phase III - Upon Operation of Proposed Soil Storage Building

| Monitoring Point | Analyses | Water Levels |
|---|---|---|
| Well 2 | X | X |
| Well 5 | X | X |
| Well 6 | X | X |
| Well 7 | X | X |
| Well 8 | X | X |
| Well 9 | X | X |
| Well 10 | X | X |
| Well 11 | | X |
| Well 17 | | X |
| Well 18 | | X |
| Well 19 | | X |
| Well 23 | | X |
| Well 24 | X | X |
| Well 25 | X | X |
| SW 3 | | X |
| SW 7 | | X |
| SW 8 | | X |
| SW 9 | | X |

**Note:** The transition from use of the existing to the proposed facilities is described in the text.

| GSI | DATE: MARCH 1991 | FOR: RINKER PORTLAND CEMENT CORP. | SUBJECT: WELLS AND SW POINTS FOR GWMP | EXHIBIT: A11 |
|---|---|---|---|---|

LOCATION: 1200 N.W. 137th AVE., MIAMI, FLORIDA




CAD Ref. No. RNKGWMP
L. 0,1,2
L. 5 FRZTXT

**APPENDIX AA**

**FDER Letter of January 22, 1991**

Florida Department of Environmental Regulation
Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400
Lawton Chiles, Governor

January 22, 1991

Mr. Michael Vardeman
Rinker Portland Cement Corporation
1200 Northwest 137 Avenue
Miami, Florida 33182

Dear Mr. Vardeman:

The Bureau of Waste Cleanup has reviewed the Ground Water Monitoring Plan (GWMP) dated January 1991 (received January 17, 1992) for your stationary soil thermal treatment facility. We consider this to be a draft document because it was submitted prior to the submission of the NOTICE OF INTENT TO USE THE GENERAL PERMIT TO CONSTRUCT/OPERATE A SOIL THERMAL THREATMENT FACILITY (NOTICE). The following review comments should be addressed before submitting the notice and attachments to meet the requirements of Chapter 17-775.610, F.A.C.

This GWMP has been reviewed for compliance with only Chapter 17-775, F.A.C. While the desire to comply with Chapters 17-775 F.A.C., 17-762 , the IW-2 status, and the Dade County Northwest Wellfield Protection Plan requirements via one GWMP is understood, coordinating reviews between the State and local governments would be extremely difficult. Within FDER alone, Chapter 17-775, F.A.C. reviews will be conducted in Tallahassee, Chapter 17-762, F.A.C. reviews will probably be delegated to Dade County and the IW-2 status reviews will be done by the South East Florida District. When resubmitting with the NOTICE, please revise the plan to comply with Chapter 17-775, F.A.C. exclusively.

1) Install a sufficient number of piezometers/wells screened in the water table zone only to establish site groundwater flow patterns and to use for selecting monitor well locations. Incorporate surface water features into the elevation network. If the site flow directions are seasonally variable and nonuniform as believed by Dames and Moore, this entire network may also be needed for quarterly water elevation data. Provide construction details for the piezometers/wells.

2) Establish background groundwater quality for the GWMP. Any existing chemical data may be used from other permitted sites nearby or the ambient groundwater monitoring network.

3) On Figure 2, show all surface water features that are shown on Plate 1 (Dames & Moore 12/9/87) and Exhibit 1. How deep are the little lakes and the canal? Do they breach the dense limestone?

4) Identify the locations of well #100, well #200, the fire protection well (Is it at the fire pump house?), and the plant cooling water discharge pipe release point.

5) Provide at least three lithologic logs to establish the site stratigraphy.

6) Provide well construction details (example: annulus completion), lithologic logs and measured cones of depression for the process water wells.

7) Detail every movement and the onsite process of remediating the contaminated soils brought onsite. Address unloading/loading, storage of treated/untreated soils, weighing, and specific locations of all activities.

8) Is any response of the water table zone observed in the immediate vicinity of each process water well? Establish whether flow in the water table zone is totally independant of pumping the Biscayne process wells.

9) How deep did the trench extend for the underground pipeline and the W.I. pipe? Was the dense limestone unit breached during construction?

10) Did Dames & Moore excavate a pit around both process wells during the December 1987 Study? If so, how was well construction integrity restored? Please explain what was meant by "no cascading water into the well pits". Was the pit water elevation compared to the pumping well water elevation?

11) Propose an unaffected natural background well. Wells 1, 4, 6 and 7 are too close to potential sources to be used for this purpose.

12) Without the site specific flow information, review cannot be completed of the proposed monitor well locations. I concur with the proposed shallow construction (water table zone) for the potential source areas. Since the objective of this GWMP is to detect any discharge to groundwater, the proposed monitor wells will need to be located as close to the unit as possible on the downgradient side. Examples of potential sources are the truck scale, truck unloading pad, the proposed soils storage area(s), the oil line to the kiln (to increase BTUs?), the inlet and outlet and the pressure cleaning facility (to wash out trucks?).

13) Identify the specific analytical methods for metals to be used for every sampling event.

14) Describe well purging procedures. Will pH, specific conductivity, and temperature be monitored until stablized to document sufficient purging? Field parameters should be reported with the data.

15) Include provisions to establish the flow direction quarterly using a network of piezometers and monitor wells.

16) Provide a schedule for well installation, the first quarterly data collection event, and subsequent events.

17) Include provisions to submit the quarterly water quality and groundwater elevation to the Bureau of Waste Cleanup.

If you have any questions concerning this review or the soil thermal treatment rule, please contact me at (904) 488-0190.

Sincerely,

Zoe P. Kulakowski

Zoe P. Kulakowski, P.G.
Technical Review Section
Bureau of Waste Cleanup

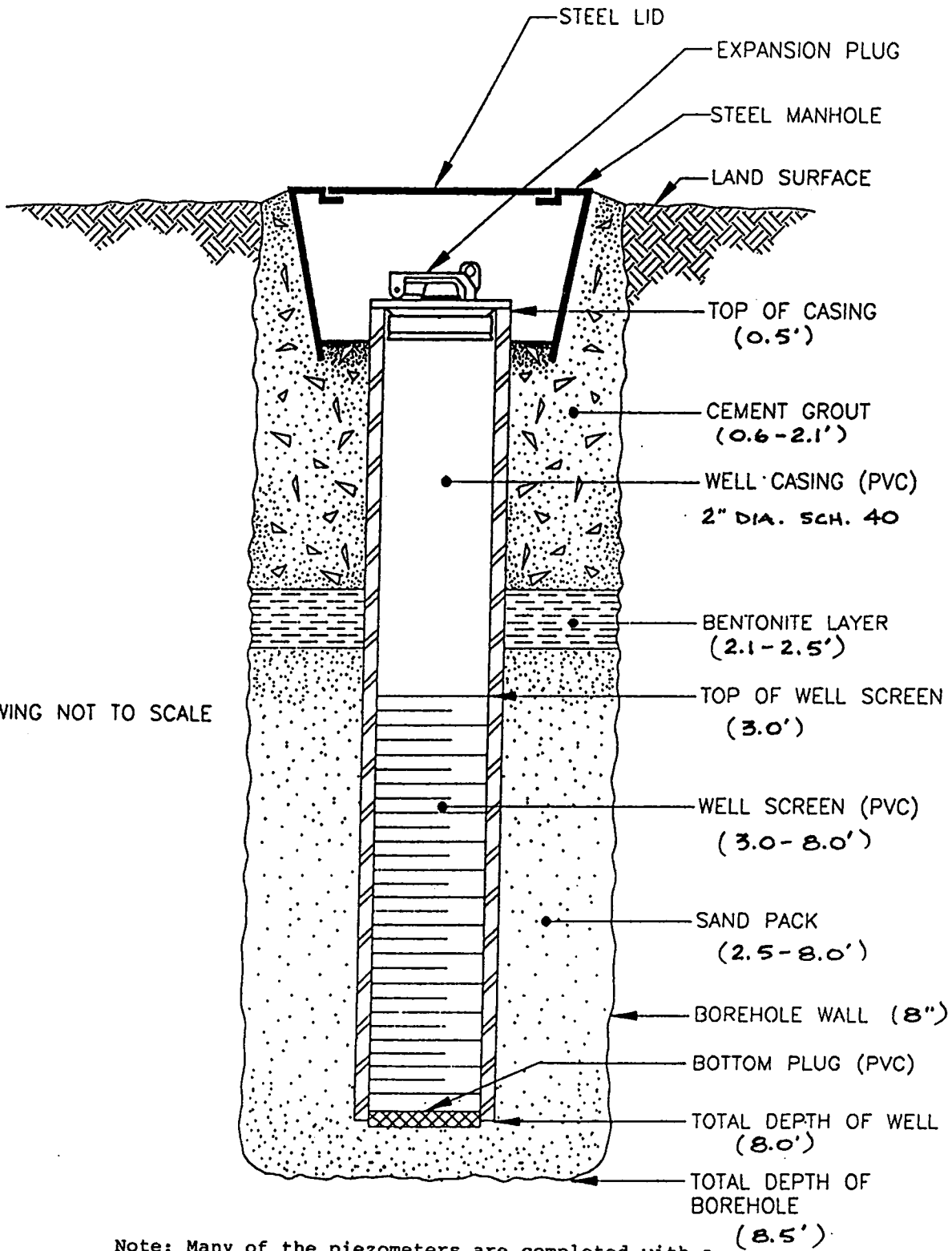
ZPK/sr

xc: Paul Wierzbicki, Southeast Florida District

# APPENDIX AB

## Typical Piezometer Diagrams

| GSI | DATE: MARCH 1991 | FOR: RINKER PORTLAND CEMENT CORP. | SUBJECT: **TYPICAL SHALLOW-ZONE PIEZOMETER** | AB |
|---|---|---|---|---|
| LOCATION: 1200 N.W. 137th AVE., MIAMI, FLORIDA | | | FACILITY: | |

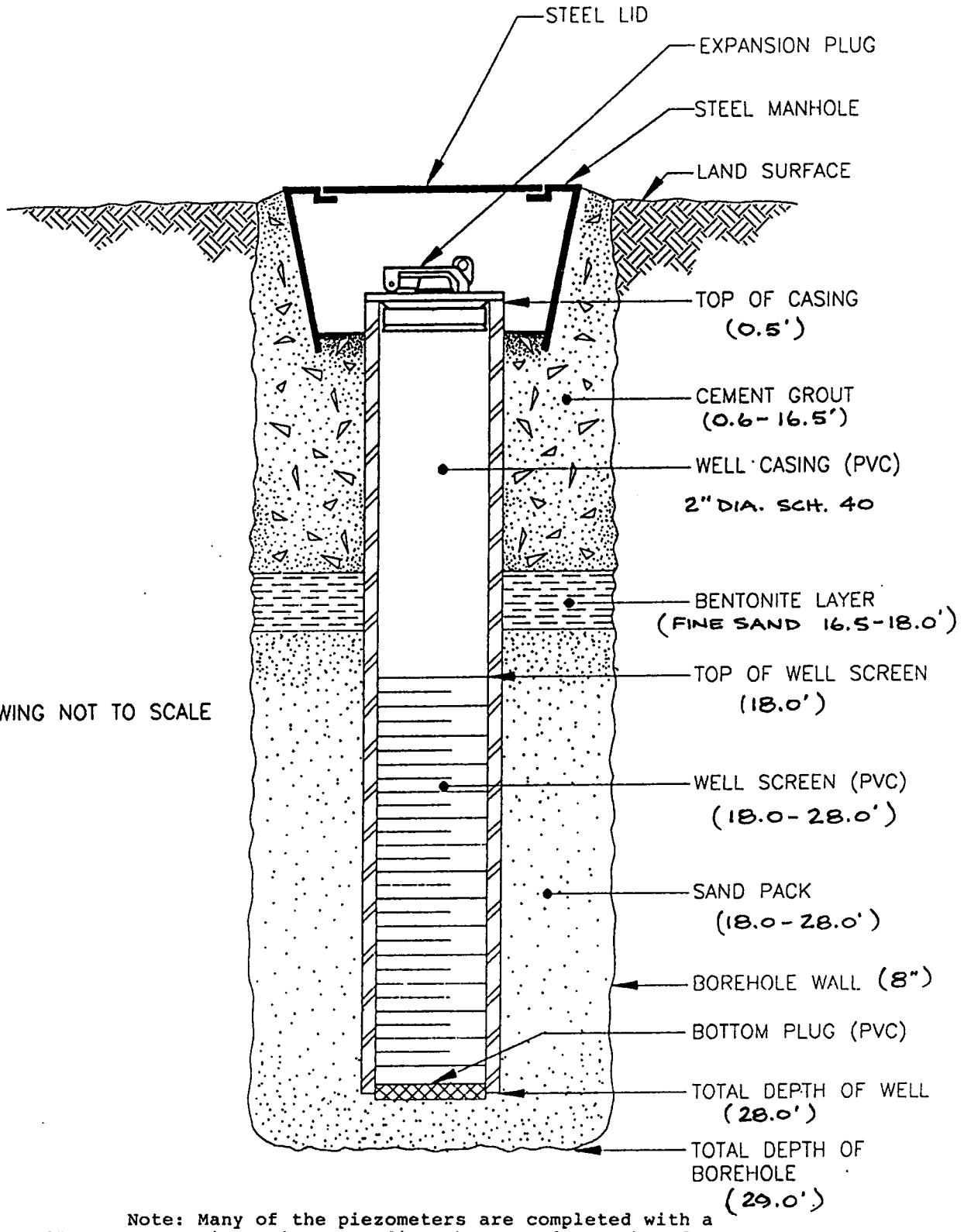



DRAWING NOT TO SCALE

Note: Many of the piezometers are completed with a riser pipe extending above grade. Subsurface portions were completed as shown.

CAD Ref. = GSITMW
L. 0, 1
Plotting Scale: 1 = 1

| GSI | DATE: MARCH 1991 | FOR: RINKER PORTLAND CEMENT CORP. | SUBJECT: **TYPICAL DEEP-ZONE PIEZOMETER** | AB |
|---|---|---|---|---|
| LOCATION: 1200 N.W. 137th AVE., MIAMI, FLORIDA | | | FACILITY: | |




DRAWING NOT TO SCALE

Note: Many of the piezometers are completed with a riser pipe extending above grade. Subsurface portions were completed as shown.

CAD Ref. = GSITMW
L. O. 1
Plotting Scale: 1 = 1

# APPENDIX AC

## Reports of Analyses

**Note:** The concentration of chromium on the analysis that follows (0.06 ppm) may have resulted from the natural background content of the limestone (aquifer). Natural concentrations of chromium in the limestone matrix have been detected near 10 ppm by Rinker's lab and other laboratories in the past. In order to establish the validity of the analysis reported herein, another sample will be drawn from Piezometer 1 during the week of April 15, 1991. The result will be submitted to the FDER within three weeks of sampling.

Analytical Technologies Inc.
11 EAST OLIVE ROAD
PENSACOLA, FLORIDA 32514
PHONE (904) 474-1001

GROUNDWATER SPECIALIST
3003 SOUTH CONGRESS AVE.
SUITE 1C
PALM SPRINGS FL 33461-0000

Lab I.D.#: 91-2054
Order Number: P41115
Order Date: 03/23/91
Client: 07058
Sampled By: GREG SOUCY
Sample Date: 03/22/91
Sample Time: VARIOUS

Project Number: RNK2002
Project Name: RINKER CEMENT MILL
Sample Site: MIAMI, FL
Sample Type: GROUNDWATER

N/S = Not Submitted

| Lab ID | Sample ID | Parameter | | Units | Results | Detection Limit |
|---|---|---|---|---|---|---|
| 2054-1 | 38-AC22 | SILVER | 272.2 | PPM | BDL | 0.0002 |
| 2054-1 | 38-AC22 | ARSENIC | 206.2 | PPM | BDL | 0.003 |
| 2054-1 | 38-AC22 | BARIUM | 200.7 | PPM | BDL | 0.10 |
| 2054-1 | 38-AC22 | CADMIUM | 213.2 | PPM | BDL | 0.0002 |
| 2054-1 | 38-AC22 | CHROMIUM | 200.7 | PPM | 0.06 | 0.01 |
| 2054-1 | 38-AC22 | MERCURY | 245.2 | PPM | 0.0005 | 0.0002 |
| 2054-1 | 38-AC22 | LEAD | 239.2 | PPM | 0.009 | 0.002 |
| 2054-1 | 38-AC22 | SELENIUM | 270.2 | PPM | BDL | 0.003 |

Comments: PPM = Parts Per Million, mg/l. PPB = Parts Per Billion, ug/l.
Method References: EPA 600/4-79-020, Revised March 1983 and Federal Register 40 CFR Part 136, July 1, 1988. BDL = Below Detection Limits.

Approved By : Susan Lambert

Analytical Technologies, Inc.
11 EAST OLIVE ROAD PHONE (904) 474-1001
PENSACOLA, FLORIDA 32514

Client: GROUNDWATER SPECIALIST

Project Number: RNK2002
Project Name: RINKER CEMENT MILL
Sample Site: MIAMI, FL
Sample Type: GROUNDWATER

Lab I.D.#: 91-2054-1
Order Date: 03/23/91
Sampled By: GREG SOUCY

Sample ID.: 38-AC22 Sample Date: 03/22/91 Time: VARIOUS

BETX+MTBE BETX + MTBE

| Parameter | Units | Result | Detection Limit |
|---|---|---|---|
| BENZENE | PPB | BDL | 1 |
| ETHYL BENZENE | PPB | BDL | 1 |
| METHYL TERT-BUTYL ETHER | PPB | BDL | 5 |
| TOLUENE | PPB | BDL | 5 |
| XYLENE | PPB | BDL | 2 |
| TRIF-TOLUENE *SURR* LIMITS (70-130) | % REC | 113 | |

Analytical Technologies, Inc.
11 EAST OLIVE ROAD
PENSACOLA, FLORIDA 32514
PHONE (904) 474-1001

Client: GROUNDWATER SPECIALIST

Project Number: RNK2002
Project Name: RINKER CEMENT MILL
Sample Site: MIAMI, FL
Sample Type: GROUNDWATER

Lab I.D.#: 91-2054-2
Order Date: 03/23/91
Sampled By: GREG SOUCY

Sample ID.: 38-RC22 Sample Date: 03/22/91 Time: VARIOUS

BETX+MTBE BETX + MTBE

| Parameter | Units | Result | Detection Limit |
|---|---|---|---|
| BENZENE | PPB | BDL | 1 |
| ETHYL BENZENE | PPB | BDL | 1 |
| METHYL TERT-BUTYL ETHER | PPB | BDL | 5 |
| TOLUENE | PPB | BDL | 5 |
| XYLENE | PPB | BDL | 2 |
| TRIF-TOLUENE *SURR* LIMITS (70-130) | % REC | 108 | |

Analytical Technologies, Inc.
11 EAST OLIVE ROAD PHONE (904) 474-1001
PENSACOLA, FLORIDA 32514

Client: GROUNDWATER SPECIALIST

Project Number: RNK2002
Project Name: RINKER CEMENT MILL
Sample Site: MIAMI, FL
Sample Type: GROUNDWATER

Lab I.D.#: 91-2054-1
Order Date: 03/23/91
Sampled By: GREG SOUCY

Sample ID.: 38-AC22 Sample Date: 03/22/91 Time: VARIOUS

1770/BASE/610 1770/BASE NEUTRALS/610

| Parameter | Units | Result | Detection Limit |
|---|---|---|---|
| ACENAPHTHENE | PPB | BDL | 1 |
| ACENAPHTHYLENE | PPB | BDL | 1 |
| ANTHRACENE | PPB | BDL | 1 |
| BENZO(A)ANTHRACENE | PPB | BDL | 1 |
| BENZO(A)PYRENE | PPB | BDL | 1 |
| BENZO(B)FLUORANTHENE | PPB | BDL | 1 |
| BENZO(GHI)PERYLENE | PPB | BDL | 1 |
| BENZO(K)FLUORANTHENE | PPB | BDL | 1 |
| CHRYSENE | PPB | BDL | 1 |
| DIBENZO(A,H)ANTHRACENE | PPB | BDL | 1 |
| FLUORANTHENE | PPB | BDL | 1 |
| FLUORENE | PPB | BDL | 1 |
| INDENO(1,2,3-CD)PYRENE | PPB | BDL | 1 |
| NAPHTHALENE | PPB | BDL | 1 |
| PHENANTHRENE | PPB | BDL | 1 |
| PYRENE | PPB | BDL | 1 |
| 1,METHYLNAPHTHALENE | PPB | BDL | 1 |
| 2,METHYLNAPHTHALENE | PPB | BDL | 1 |



end of report

# APPENDIX AD

## Results of Aquifer Tests

# RESULTS OF PUMPING/RECOVERY TEST AND SLUG TESTS

On March 26, 1991, a 0.5 hour shut-down of Well PN (northern of two process wells) was effected. Water levels in Wells PN, PS, and Piezometers (also called wells) 15, 16 and 20 were measured during recovery and then drawdown as Well PN was restarted. Wells PN and PS pump 694 gpm each, on a continuous basis. A plan showing the well locations is included on page ADA in this appendix. An analysis of the data and conclusions on aquifer characteristics follow.

Time-recovery data from Wells PN, 15, 16 and 20 are shown on page ADB; plots are shown on page ADC. Based on recoveries measured in Wells 15 and 16 (shallow) and Well 20 (deep), it is clear that the shallow and deep zones are affected by pumping/recovery of Well PN (and PS). A cross section showing the depths of penetration of these wells is included on page ADD (Well PS is identical to Well PN). This diagram shows Wells 15, 16 and 20 as if they were in the same direction from Well PN. Well PN is shown to penetrate about six feet of saturated shallow zone and less than two feet of the deep zone. As determined during the construction of Well 20, about four feet of the saturated shallow zone (between depths of 10 and 14 feet) consists of the bryozoan layer and sandy, shelly limestone of the Miami formation; this lies immediately above the hard, dense limestone confining bed, and is known to be a permeable horizon.

Using the recovery data from the test, the total transmissivity of both zones was determined, then the transmissivity of each zone was estimated. The total transmissivity was determined using the Theis Equation (Walton, 1970, Groundwater Resource Evaluation, McGraw Hill), where:

(1) $s = 114.6\ QW(u)/T$ and
(2) $u = 1.87\ rrS/Tt$

The known (or estimated) parameters are:

s = drawdown/recovery (at t=25 minutes) = 0.92 feet
Q = total pumping rate yielding the recovery = 694 gpm
r = well radius, taken to be 10 feet
S = storage coefficient = 0.20
t = time of recovery = 0.0173 days = 25 minutes

The unknown parameters are T, W(u) and u. The two equations (1 and 2) were subtracted to eliminate T and the unique points in the well function where W(u) and u fit the equation were determined. The results were:

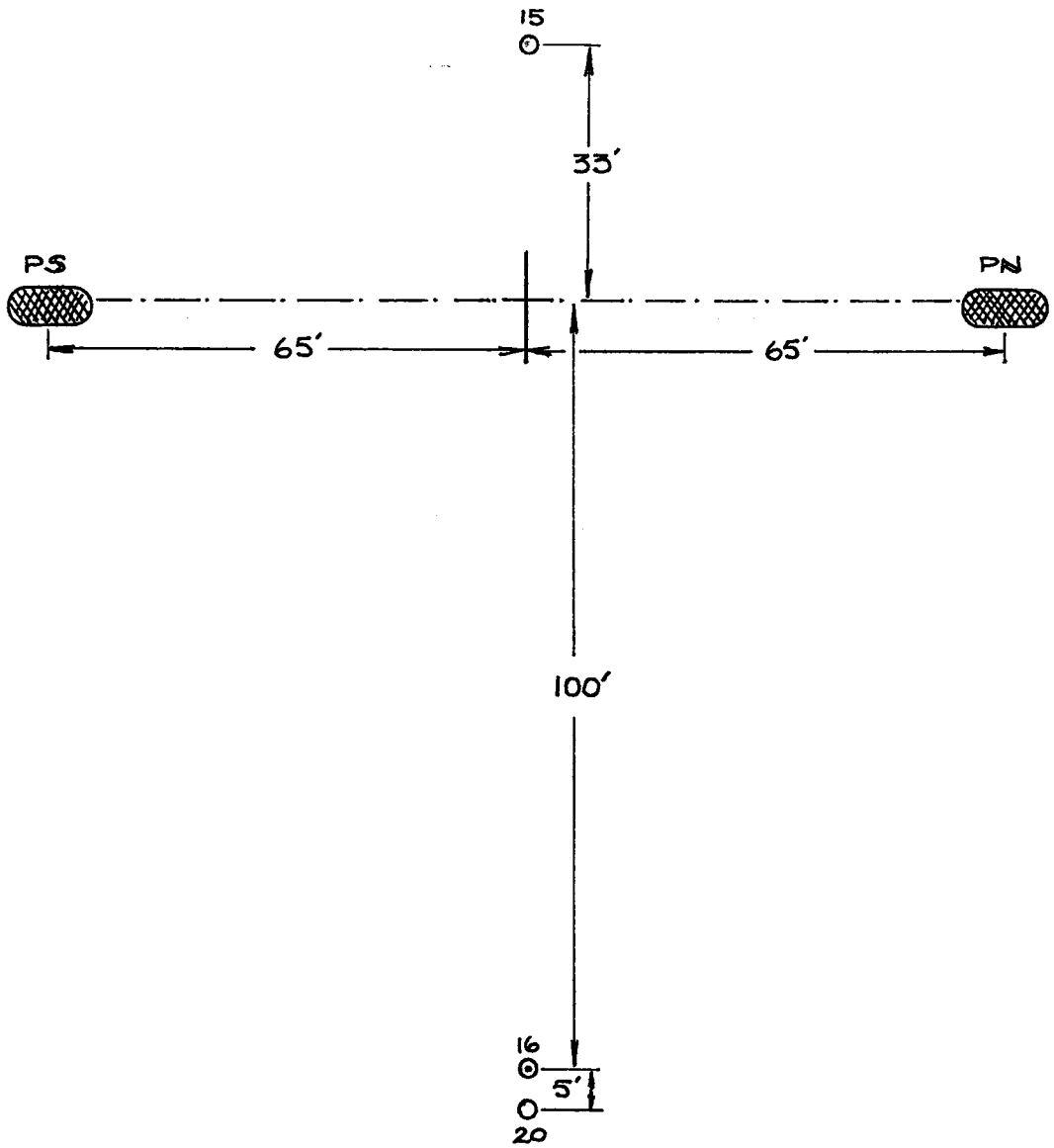
W(u) = 7.41
u = 3.4 X 10EE-4

T was then solved to be 646,000 gpd/ft. This figure matches well with that reported by Dames and Moore in the GWMP of January, 1991. The transmissivity of the shallow and deep zones were then estimated on the basis of the time-recovery drawdowns. At the end of 30 minutes of recovery, the total recoveries in Wells 16 and 20 (equidistant from Well PN) were 0.080 and 0.027 feet. As the transmissivity of each zone is inversely proportional to the drawdown, and transmissivities are additive, the ratio of the shallow zone transmissivity to the total transmissivity is 0.027/(0.027+0.080), or 0.252. Thus the transmissivity of the shallow zone is estimated to be 163,000 gpd/ft and that of the deep zone is 483,000 gpd/ft. These estimates are quite reasonable in light of the small penetration of the deep zone by Well PN and the known high permeability of the bryozoan layer of the shallow zone in more eastern parts of Dade County. The relative flatness of the shallow water levels also indicates the relatively high permeability of the bryozoan layer.

In addition to the test conducted on Well PN, six slug tests were conducted on shallow piezometers. The results of four of the tests are shown on pages ADE through ADL. The tests yielding the highest and lowest hydraulic conductivities were rejected as anomalous. The average of the hydraulic conductivities determined was 12.5 gpd/sq.ft. The average transmissivity determined was 87.5 gpd/ft. These values are very much lower than determined during the recovery test of Well PN because the piezometers tap only the sediments above the bryozoan facies where the hydraulic conductivity is much lower than the bryozoan layer. Thus, the shallow zone is subdivided into two hydraulic units, one of very low permeability above a depth of about 10 feet and another of high permeability approximately between 10 and 14 feet in depth in the area of Piezometer 20.

It is evident from the shallow groundwater levels and surface-water levels that the cooling water ponds have little effect on groundwater levels. Water seeped from these ponds is theorized to enter the bryozoan layer and then flow laterally to the process wells and/or the canal on the east of the property. Because of the high permeability of the bryozoan layer, water entering this layer would not show a significant mounding effect.

# LOCATIONS OF WELLS USED IN RECOVERY TEST




LEGEND:

- O SHALLOW-ZONE PIEZOMETER
- ⊙ DEEP-ZONE PIEZOMETER
- PROCESS WELL

N

GSI PUMPING TEST FORM — HYDROCARBON CA PROJECTS

PROJECT RINKER 2002 PUMPING WELL _____ DATE ____ PAGE 1 OF 2

3-26-91

| WELL NUMBER PN | | | | | | WELL NUMBER PS | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TIME | HELD | WET | DTW | S | Q AND COMMENTS | TIME | HELD | WET | DTW | S | Q AND COMMENTS |
| 7:33 | 8.5 | .55 | 7.95 | | STATIC | 7:38 | 9.0 | .72 | 8.28 | | STATIC |
| 800 | START TEST | | | | PN TURNED OFF | 800 | START TEST | | | | ↑ |
| 8:01 | 8.5 | 1.15 | 7.35 | 0.6 | ↑ | 8:00 | 9.0 | .52 | 8.48 | .20 | ↑ |
| 8:02 | 8.5 | 1.31 | 7.19 | .76 | ↑ | 8:14 | 9.0 | .51 | 8.49 | .21 | RECOVERY |
| 8:03 | 8.0 | .88 | 7.12 | .83 | ↑ | 8:19 | 9.0 | .51 | 8.49 | .21 | ↓ |
| 8:05 | 8.0 | .95 | 7.05 | .90 | ↑ | 8:25 | 9.0 | .50 | 8.50 | .22 | ↓ |
| 8:06 | 8.0 | .97 | 7.03 | .92 | ↑ | 8:30 | PUMP TURNED BACK ON | | | | ↓ |
| 8:07 | 8.0 | .97 | 7.03 | .92 | RECOVERY | 8:38 | 9.5 | 1.39 | 8.11 | .17 | ↑ |
| 8:11 | 8.0 | .97 | 7.03 | .92 | ↓ | 8:43 | 9.5 | 1.37 | 8.13 | .15 | ↑ |
| 8:16 | 8.0 | .97 | 7.03 | .92 | ↓ | 8:48 | 9.5 | 1.33 | 8.17 | .11 | ↑ |
| 8:21 | 8.0 | .97 | 7.03 | .92 | ↓ | 8:54 | 9.5 | 1.23 | 8.27 | .01 | DRAWDOWN |
| 8:29 | 8.0 | .97 | 7.03 | .92 | ↓ | 8:59 | 9.5 | 1.21 | 8.29 | .0 | ↓ |
| 8:30 | PUMP TURNED BACK ON "PN" | | | | ↑ | | | | | | END TEST |
| 8:31 | 8.5 | 1.42 | 7.08 | .87 | ↑ | | | | | | |
| 8:32 | 8.5 | 1.32 | 7.08 | .87 | ↑ | | | | | | |
| 8:33 | 8.5 | 1.25 | 7.25 | .70 | ↑ | | | | | | |
| 8.33 | 8.5 | 1.19 | 7.31 | .64 | ↑ | | | | | | |
| 8:34 | 8.5 | 1.15 | 7.35 | .60 | ↑ | | | | | | |
| 8.35 | 8.5 | 1.12 | 7.38 | .57 | ↑ | | | | | | |
| 8.36 | 8.6 | 1.10 | 7.40 | .55 | DRAWDOWN | | | | | | |
| 8:37 | 8.5 | 1.08 | 7.42 | .53 | ↓ | | | | | | |
| 8:41 | 8.5 | 1.01 | 7.49 | .46 | ↓ | | | | | | |
| 8:46 | 8.5 | .93 | 7.57 | .38 | ↓ | | | | | | |
| 8:51 | 8.5 | .82 | 7.68 | .27 | ↓ | WELL # 15 (0) | | | | | |
| 8:56 | 8.5 | .69 | 7.81 | .14 | ↓ | 7:35 | 10 | .76 | 9.25 | | STATIC |
| 9:02 | 8.6 | .68 | 7.82 | .13 | ↓ | 8:00 | START TEST | | | | ↑ |
| | | | | | END TEST | 8:03 | 10 | .82 | 9.18 | .07 | ↑ |
| | | | | | | 8:08 | 10 | .83 | 9.17 | .08 | ↑ |
| | | | | | | 8:13 | 10 | .84 | 9.16 | .09 | RECOVERY |
| | | | | | | 8:18 | 10 | .85 | 9.15 | .10 | ↓ |
| | | | | | | 8:23 | 10 | .85 | 9.15 | .10 | ↓ |
| | | | | | | 8:30 | TURN PUMP | | | | BACK ON |
| | | | | | | 830 | 10 | .86 | 9.14 | .11 | ↑ |
| | | | | | | 835 | 10.5 | 1.36 | 9.14 | .11 | ↑ |
| | | | | | | 8:40 | 10 | .85 | 9.15 | .10 | ↑ |
| | | | | | | 8:47 | 10 | .84 | 9.16 | .09 | ↑ |
| | | | | | | 8:52 | 10 | .82 | 9.18 | .07 | DRAWDOWN |
| | | | | | | 8:58 | 10 | .80 | 9.20 | .05 | ↓ |
| | | | | | | 9:04 | 10 | .79 | 9.21 | .04 | ↓ |
| | | | | | | 9:10 | 10 | .77 | 9.23 | .02 | ↓ |

# GSI

PUMPING TEST FORM — HYDROCARBON CA PROJECTS

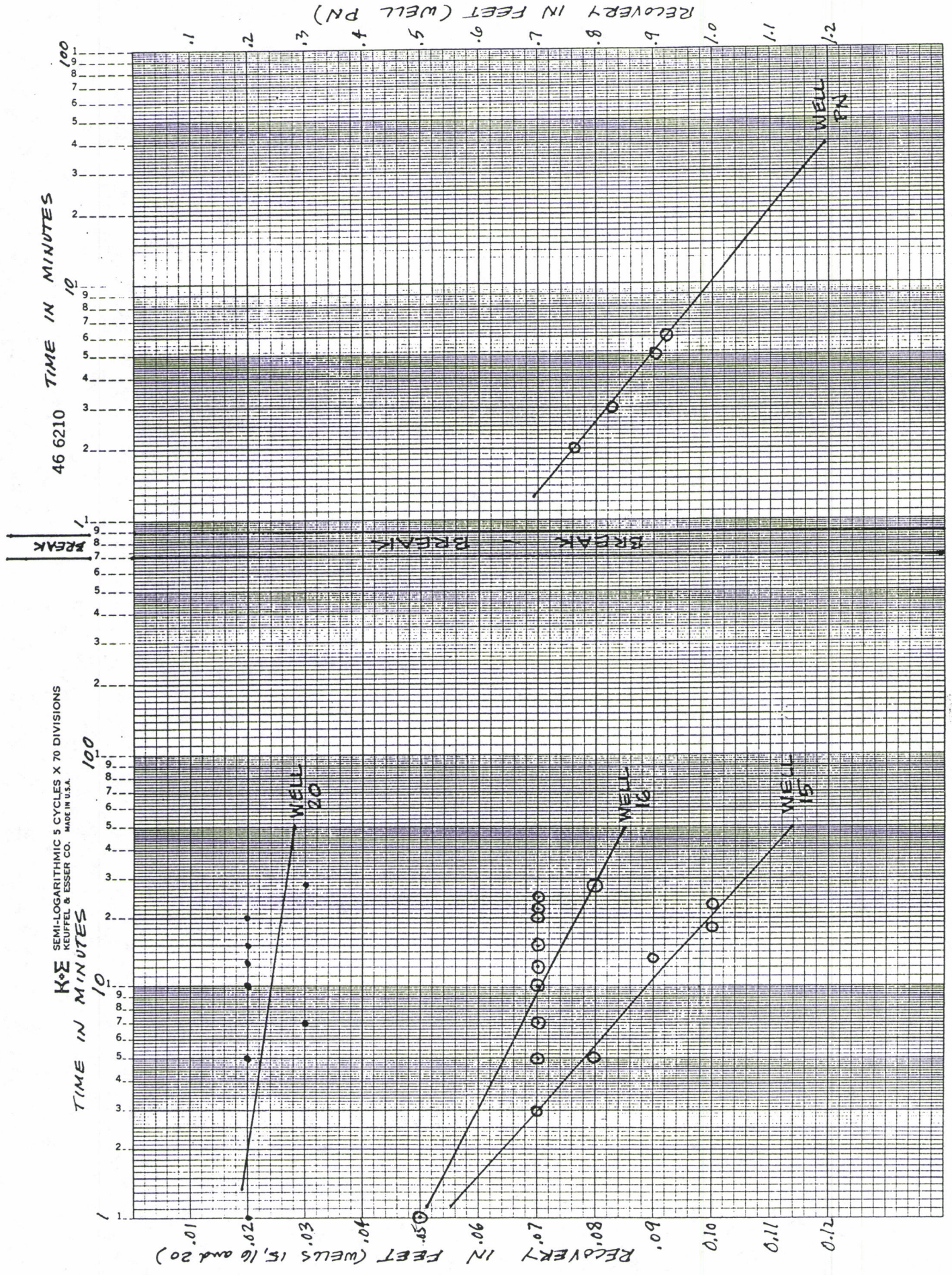
PROJECT RNK 2002 PUMPING WELL PS DATE 3.26.91 PAGE 2 OF 2

MEASURED w/"M" SCOPE

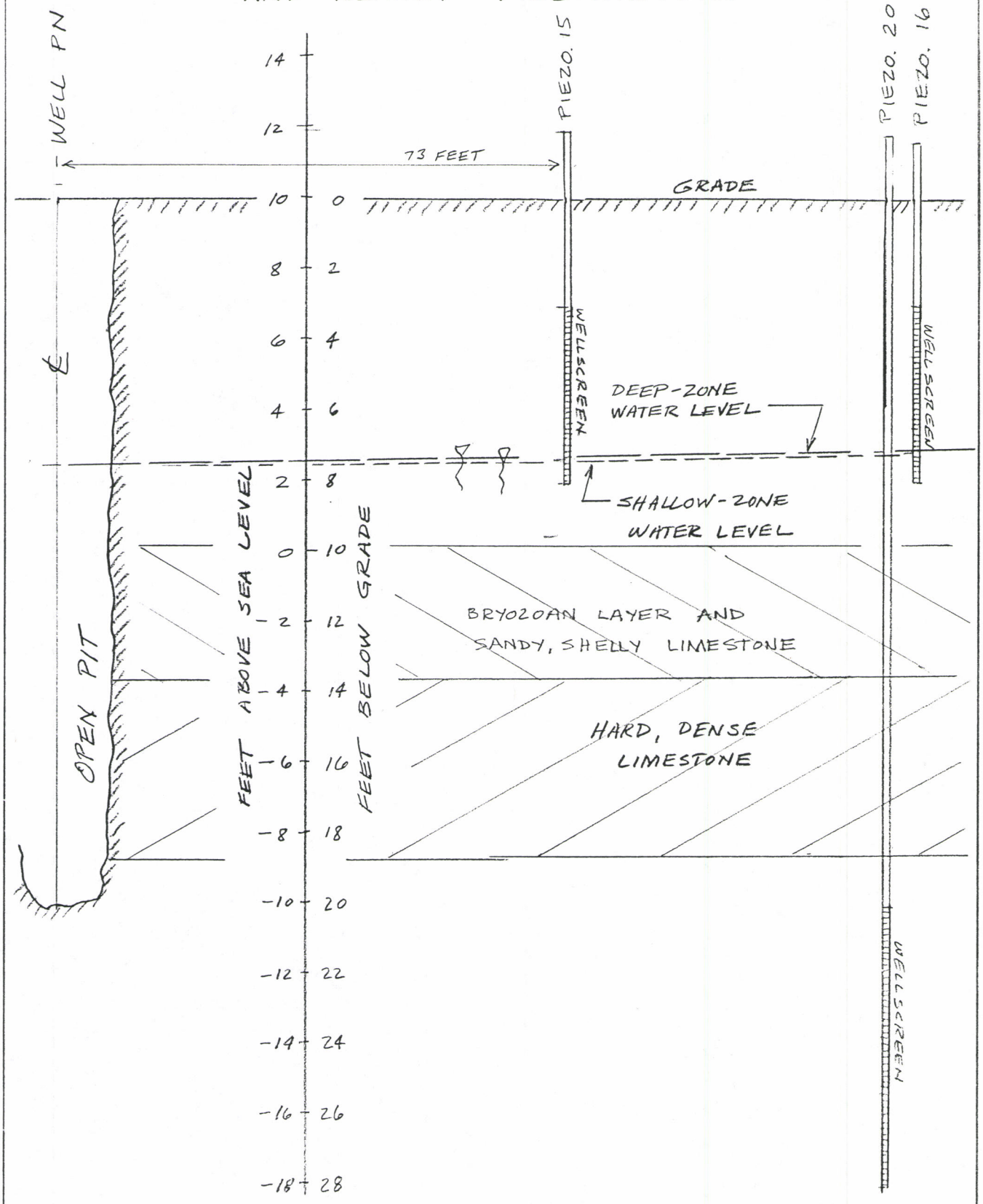
| WELL NUMBER 20 (T) (DEEP) | | | | | | WELL NUMBER 16 (TP) (SHALLOW) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TIME | HELD | WET | DTW | S | Q AND COMMENTS | TIME | HELD | WET | DTW | S | Q AND COMMENTS |
| 0741 | | | 8.88 | | BACKGROUND W.L.'s | 0741 | | | 8.72 | | BACKGROUND W.L.'s |
| 745 | | | 8.88 | | " " | 0745 | | | 8.71 | | " " |
| | | | | | | | | | | | |
| 0800 | START TEST → | | | | PN TURNED OFF | 0800 | START TEST | | | | |
| 801 | | | 8.86 | 0.02 | | 801 | | | 8.67 | 0.05 | |
| 805 | | | 8.86 | 0.02 | | 805 | | | 8.65 | .07 | |
| 807 | | | 8.85 | 0.03 | RECOVERY | 807 | | | 8.65 | .07 | RECOVERY |
| 810 | | | 8.86 | 0.02 | | 810 | | | 8.65 | .07 | |
| 8:12:30 | | | 8.86 | 0.02 | | 8:12:30 | | | 8.65 | .07 | |
| 815 | | | 8.86 | 0.02 | | 815 | | | 8.65 | .07 | |
| 820 | | | 8.86 | 0.02 | | 820 | | | 8.65 | .07 | |
| 822:30 | | | 8.86 | 0.02 | | 8:22:30 | | | 8.65 | .07 | |
| 825 | | | 8.86 | 0.02 | | 825 | | | 8.65 | .07 | |
| 828 | | | 8.85 | 0.03 | | 828 | | | 8.64 | .08 | |
| 830 | PUMP "PN" TURNED BACK ON | | | | | 830 | PN TURNED ON | | | | |
| 831 | | | 8.87 | 0.01 | | 831 | | | 8.68 | .04 | |
| 835 | | | 8.87 | 0.01 | | 835 | | | 8.68 | .04 | |
| 840 | | | 8.87 | 0.01 | DRAWDOWN | 840 | | | 8.69 | .03 | DRAWDOWN |
| 845 | | | 8.87 | 0.01 | | 845 | | | 8.69 | .03 | |
| 850 | | | 8.88 | 0 | | 850 | | | 8.71 | .01 | |
| 855 | | | 8.88 | 0 | | 855 | | | 8.72 | 0 | |
| 900 AM | | | 8.88 | 0 | | 900 | | | 8.72 | 0 | |
| | TEST COMPLETED | | | | | | TEST COMPLETED | | | | |

NOTE: LINEAR DISTANCES MEASURED BETWEEN THE NORTH PROCESS WELL (PN) AND THE PIEZOMETERS USED IN THE PUMP TEST:

PN to #15 ≅ 73'
PN to #16 ≅ 123'
PN to #20 ≅ 119'


RECOVERY IN FEET (WELL PN)
TIME IN MINUTES
46 6210
BREAK
BREAK
WELL PN
WELL 20
WELL 16
WELL 15
RECOVERY IN FEET (WELLS 15, 16 and 20)
TIME IN MINUTES
K+E SEMI-LOGARITHMIC 5 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO. MADE IN U.S.A.

# CROSS SECTION SHOWING PUMPING WELL PN AND NEARBY PIEZOMETERS




NOTE: THIS CROSS SECTION SHOWS THE RELATIONSHIP AMOUNG WATER LEVELS IN THE SHALLOW AND DEEP ZONES, THE HARD, DENSE LIMESTONE, AND WELL PN - THE OPEN PIT. WATER LEVES REFLECT PUMPING.

SLUG TEST ANALYSIS (by Bouwer, 1978, Groundwater Hydrology, McGraw-Hill)

WELL "R" (#18) RNK2002 DATE: MARCH 27, 1991

DEFINITIONS:

| | | | | |
|---|---|---|---|---|
| D | = | 2 | = | well diameter (inches) |
| BH | = | 8 | = | borehole diameter (inches) |
| Rl | = | 0.08 | = | radius of well (feet) |
| Rc | = | 0.20833 | = | radius of well section where water level is rising (feet) |
| Re | = | | = | effective radial distance over which head difference (y) is dissipated (feet) |
| Rw | = | 0.33 | = | borehole radius (feet) |
| Le | = | 7.20 | = | length of saturated screen (feet) |
| yo | = | 12.00 | = | y intercept at time 0 (feet) |
| yt | = | 0.62 | = | y intercept at time t (feet) |
| t | = | 605.00 | = | time in seconds after start of test (seconds) |
| H | = | 7.00 | = | saturated thickness of aquifer (feet) |
| Lw | = | 6.20 | = | length from water table to bottom of wellscreen (feet) |
| A | = | 2.00 | = | dimensionless coefficient |
| B | = | 0.60 | = | dimensionless coefficient |
| C | = | 1.40 | = | dimensionless coefficient |

EQUATIONS:

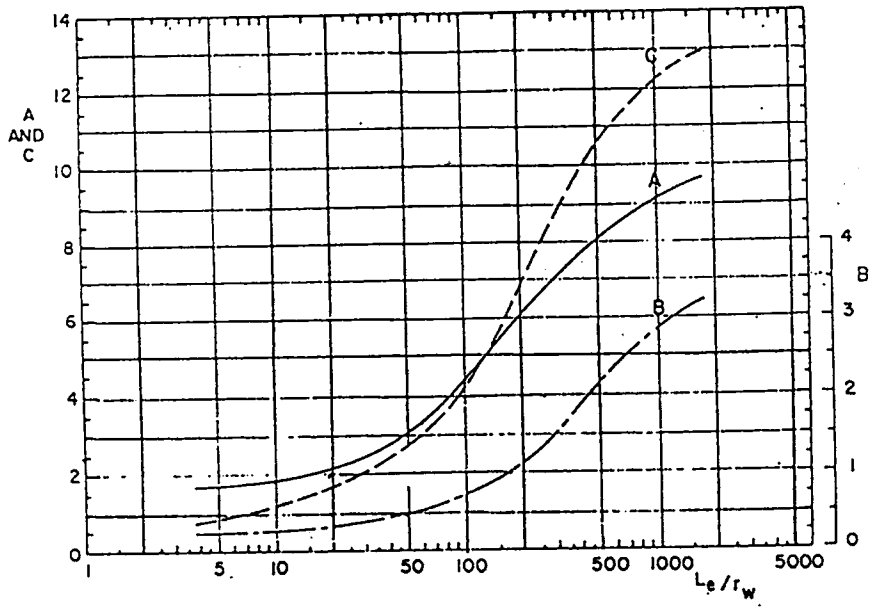
$$\ln(Re/Rw) = \frac{1}{\frac{1.1}{\ln(Lw/Rw)} + \frac{A + B \times \ln[(H-Lw)/Rw]}{(Le/Rw)}}$$

$$K = \frac{Rc \times Rc \times \ln(Re/Rw) \times (1/t) \times \ln(yo/yt)}{2 \times Le}$$

SOLUTIONS:

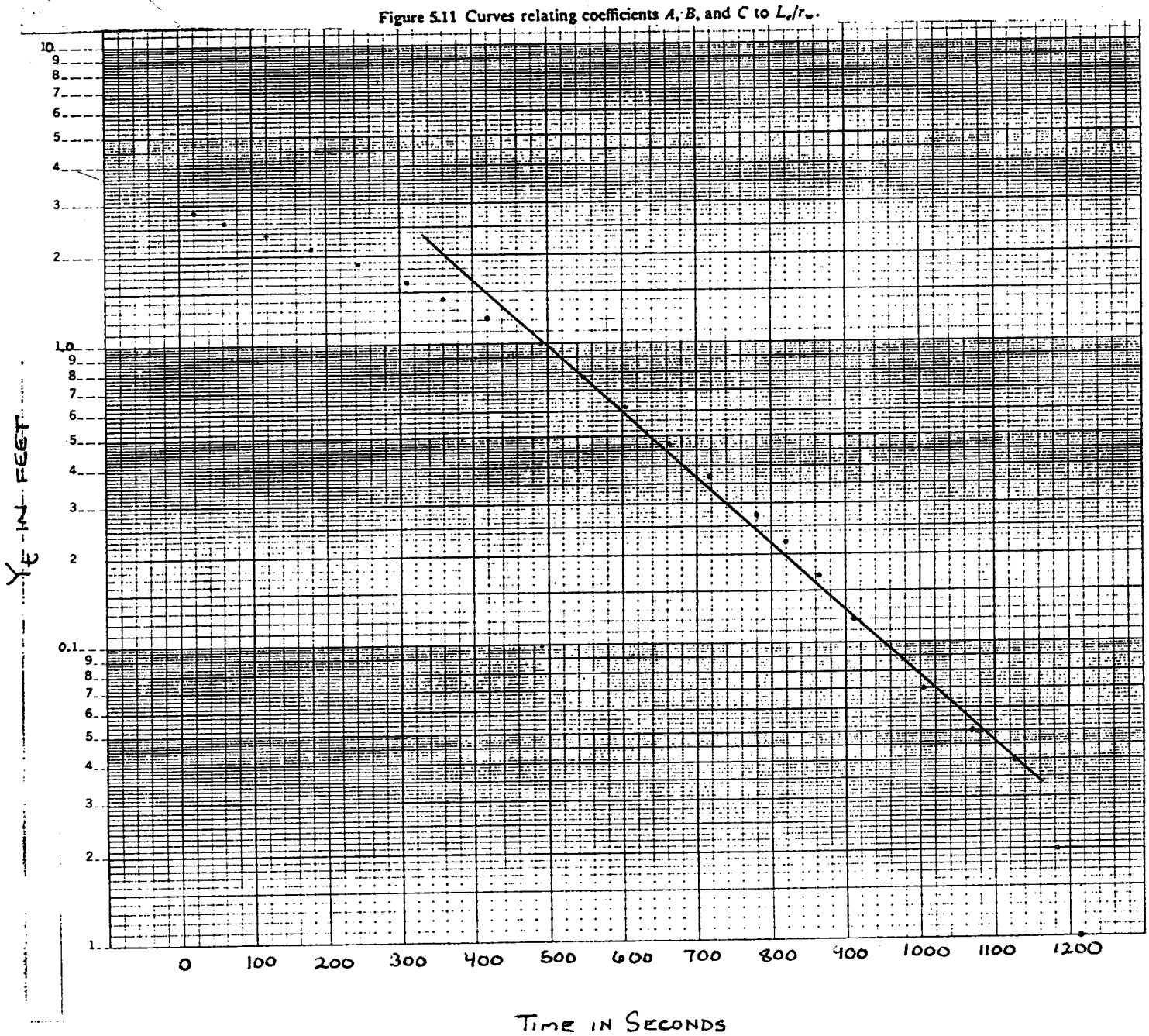
| | | | |
|---|---|---|---|
| Le/Rw = | 21.6 | | |
| Lw/Rw = | 18.6 | | |
| H-Lw = | 0.80 | | |
| Rc*Rc = | 0.043 | | |
| 2*Le = | 14.4 | | |
| 1/t = | 0.002 | | |
| ln (yo/yt) = | 3.0 | | |
| ln (Re/Rw) = | 2.0 | | |
| ln [(H-Lw)/Rw] = | 0.8 | (if >6, then 6 is used in equation) | |

| | | | | |
|---|---|---|---|---|
| K | = | 0.00003 | = | hydraulic conductivity (ft/second) |
| K | = | 19 | = | hydraulic conductivity (gpd/sq ft) |
| T | = | 135 | = | transmissivity (gpd/ft) |




WELL 18

Figure 5.11 Curves relating coefficients $A$, $B$, and $C$ to $L_e/r_w$.



GROUNDWATER SPECIALISTS, INC

pg. ADG

SLUG TEST ANALYSIS (by Bouwer, 1978, Groundwater Hydrology, McGraw-Hill)

WELL "F" (#6) RNK2002 DATE: MARCH 27, 1991

DEFINITIONS:

| | | | | |
|---|---|---|---|---|
| D | = | 2 | = | well diameter (inches) |
| BH | = | 8 | = | borehole diameter (inches) |
| RI | = | 0.08 | = | radius of well (feet) |
| Rc | = | 0.20833 | = | radius of well section where water level is rising (feet) |
| Re | = | | = | effective radial distance over which head difference (y) is dissipated (feet) |
| Rw | = | 0.33 | = | borehole radius (feet) |
| Le | = | 2.80 | = | length of saturated screen (feet) |
| yo | = | 1.05 | = | y intercept at time 0 (feet) |
| yt | = | 0.60 | = | y intercept at time t (feet) |
| t | = | 180.00 | = | time in seconds after start of test (seconds) |
| H | = | 7.00 | = | saturated thickness of aquifer (feet) |
| Lw | = | 2.80 | = | length from water table to bottom of wellscreen (feet) |
| A | = | 1.80 | = | dimensionless coefficient |
| B | = | 0.50 | = | dimensionless coefficient |
| C | = | 0.80 | = | dimensionless coefficient |

EQUATIONS:

$$\ln(Re/Rw) = \frac{1}{\frac{1.1}{\ln(Lw/Rw)} + \frac{A + B \times \ln[(H-Lw)/Rw]}{(Le/Rw)}}$$

$$K = \frac{Rc \times Rc \times \ln(Re/Rw) \times (1/t) \times \ln(yo/yt)}{2 \times Le}$$

SOLUTIONS:

| | | |
|---|---|---|
| Le/Rw = | 8.4 | |
| Lw/Rw = | 8.4 | |
| H-Lw = | 4.20 | |
| Rc*Rc = | 0.043 | |
| 2*Le = | 5.6 | |
| 1/t = | 0.006 | |
| ln (yo/yt) = | 0.6 | |
| ln (Re/Rw) = | 1.1 | |
| ln [(H-Lw)/Rw]= | 2.5 | (if >6, then 6 is used in equation) |

| | | | | |
|---|---|---|---|---|
| K | = | 0.00003 | = | hydraulic conductivity (ft/second) |
| K | = | 18 | = | hydraulic conductivity (gpd/sq ft) |
| T | = | 124 | = | transmissivity (gpd/ft) |

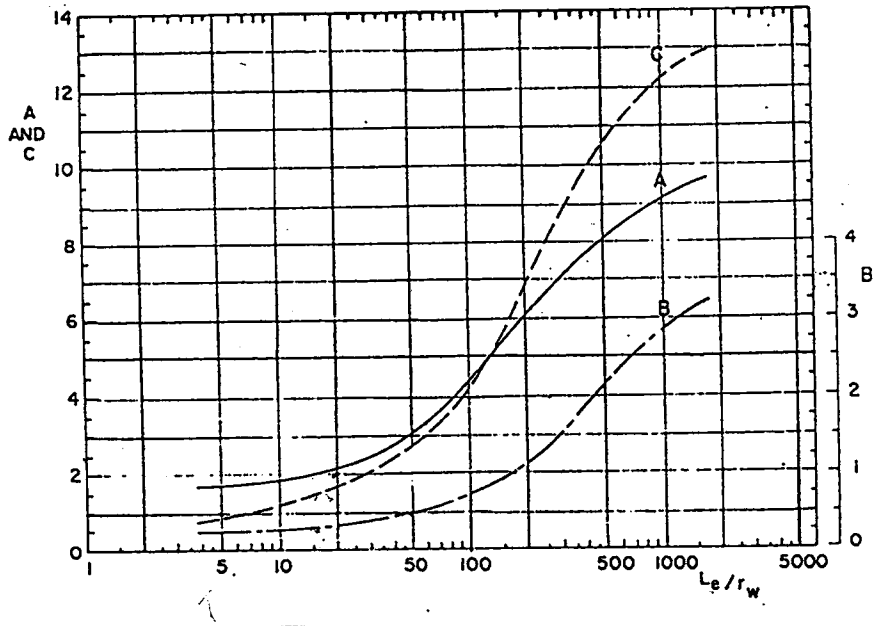
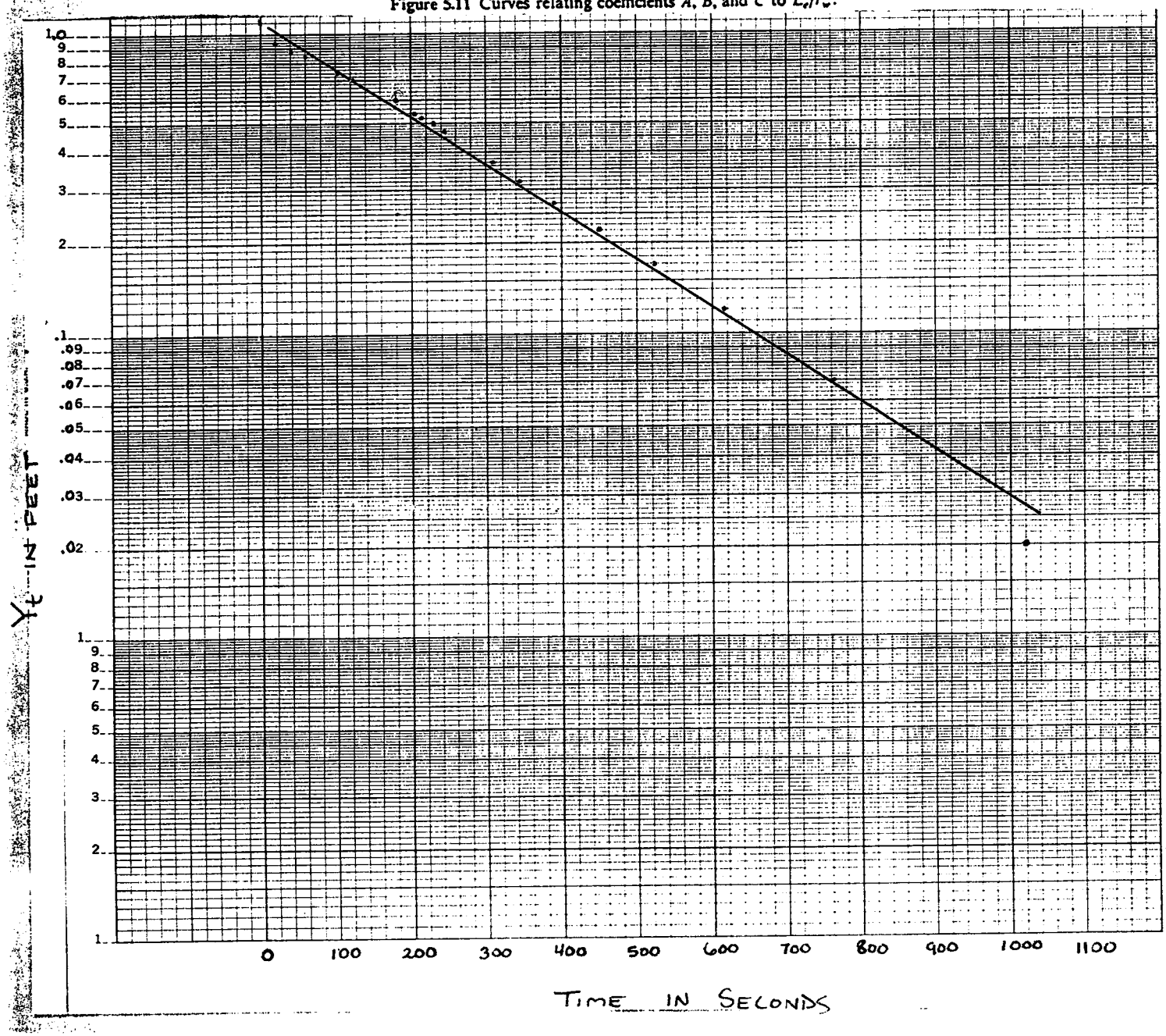



Figure 5.11 Curves relating coefficients $A$, $B$, and $C$ to $L_e/r_w$.



GROUNDWATER SPECIALISTS, INC

SLUG TEST ANALYSIS (by Bouwer, 1978, Groundwater Hydrology, McGraw-Hill)

WELL "Q" (#17) RNK2002 DATE: MARCH 27, 1991

DEFINITIONS:

| | | | | |
|---|---|---|---|---|
| D | = | 2 | = | well diameter (inches) |
| BH | = | 8 | = | borehole diameter (inches) |
| RI | = | 0.08 | = | radius of well (feet) |
| Rc | = | 0.20833 | = | radius of well section where water level is rising (feet) |
| Re | = | | = | effective radial distance over which head difference (y) is dissipated (feet) |
| Rw | = | 0.33 | = | borehole radius (feet) |
| Le | = | 2.80 | = | length of saturated screen (feet) |
| yo | = | 2.21 | = | y intercept at time 0 (feet) |
| yt | = | 2.00 | = | y intercept at time t (feet) |
| t | = | 100.00 | = | time in seconds after start of test (seconds) |
| H | = | 9.20 | = | saturated thickness of aquifer (feet) |
| Lw | = | 2.80 | = | length from water table to bottom of wellscreen (feet) |
| A | = | 1.80 | = | dimensionless coefficient |
| B | = | 0.50 | = | dimensionless coefficient |
| C | = | 1.00 | = | dimensionless coefficient |

EQUATIONS:

$$\ln(Re/Rw) = \frac{1}{\frac{1.1}{\ln(Lw/Rw)} + \frac{A + B \times \ln[(H-Lw)/Rw]}{(Le/Rw)}}$$

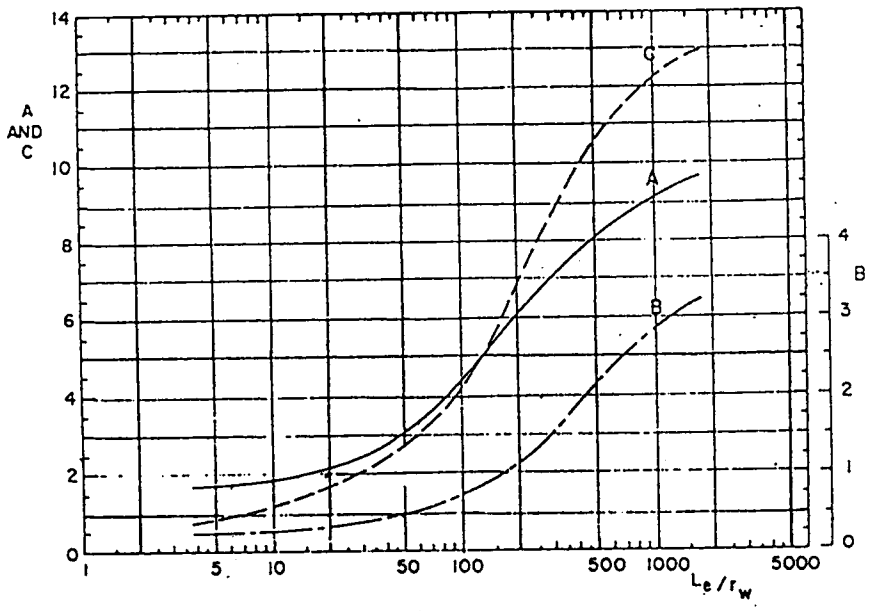
$$K = \frac{Rc \times Rc \times \ln(Re/Rw) \times (1/t) \times \ln(yo/yt)}{2 \times Le}$$

SOLUTIONS:

| | | | |
|---|---|---|---|
| Le/Rw = | 8.4 | | |
| Lw/Rw = | 8.4 | | |
| H-Lw = | 6.40 | | |
| Rc*Rc = | 0.043 | | |
| 2*Le = | 5.6 | | |
| 1/t = | 0.010 | | |
| ln (yo/yt) = | 0.1 | | |
| ln (Re/Rw) = | 1.1 | | |
| ln [(H-Lw)/Rw] = | 2.9 | (if >6, then 6 is used in equation) | |

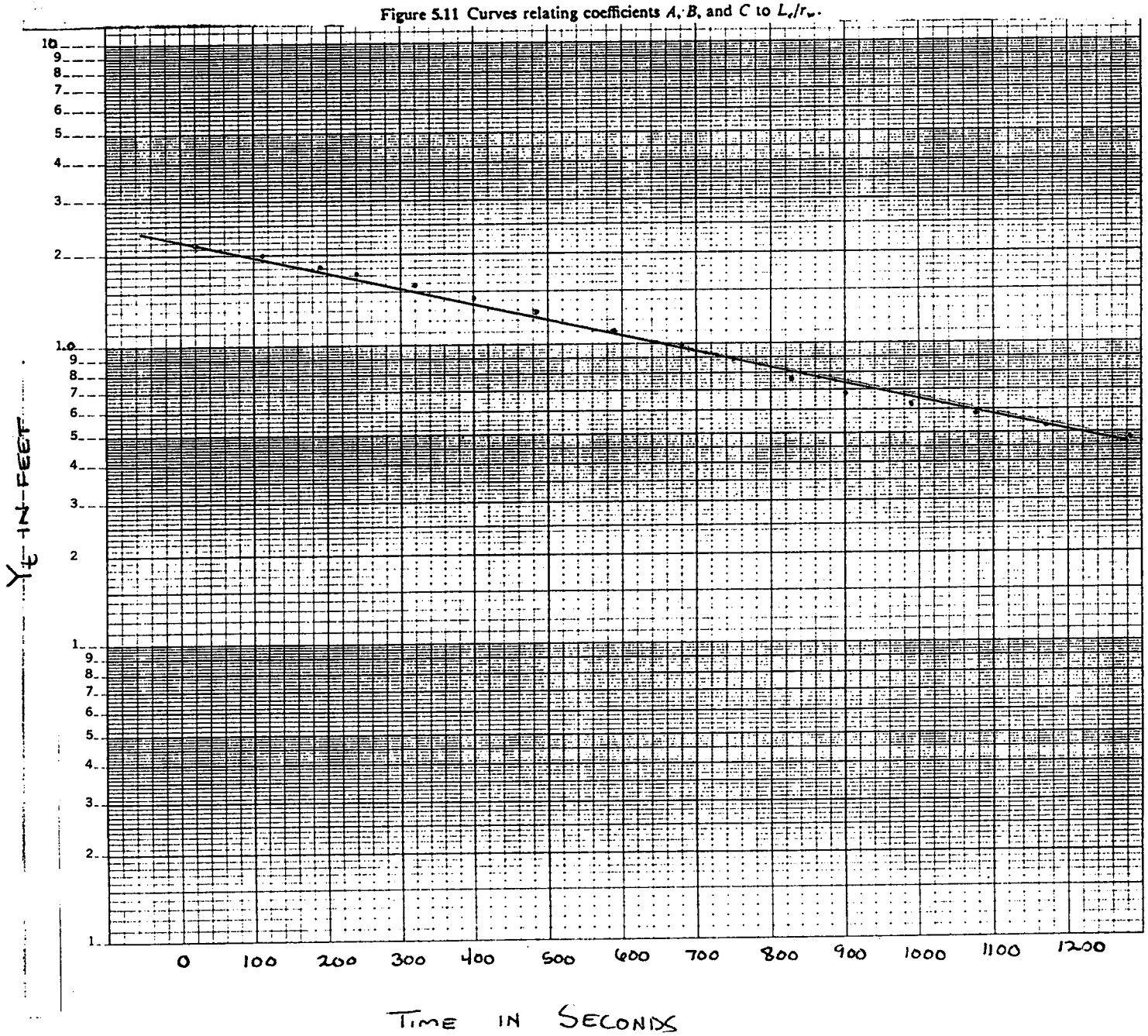
| | | | | |
|---|---|---|---|---|
| K | = | 0.00001 | = | hydraulic conductivity (ft/second) |
| K | = | 6 | = | hydraulic conductivity (gpd/sq ft) |
| T | = | 51 | = | transmissivity (gpd/ft) |

pg. ADJ




WELL 17

Figure 5.11 Curves relating coefficients $A$, $B$, and $C$ to $L_e/r_w$.



SLUG TEST ANALYSIS (by Bouwer, 1978, Groundwater Hydrology, McGraw-Hill)

WELL "E" RNK2002 DATE: MARCH 27, 1991

DEFINITIONS:

| | | | | |
|---|---|---|---|---|
| D | = | 2 | = | well diameter (inches) |
| BH | = | 8 | = | borehole diameter (inches) |
| RI | = | 0.08 | = | radius of well (feet) |
| Rc | = | 0.20833 | = | radius of well section where water level is rising (feet) |
| Re | = | | = | effective radial distance over which head difference (y) is dissipated (feet) |
| Rw | = | 0.33 | = | borehole radius (feet) |
| Le | = | 6.80 | = | length of saturated screen (feet) |
| yo | = | 0.07 | = | y intercept at time 0 (feet) |
| yt | = | 0.06 | = | y intercept at time t (feet) |
| t | = | 122.00 | = | time in seconds after start of test (seconds) |
| H | = | 7.20 | = | saturated thickness of aquifer (feet) |
| Lw | = | 6.80 | = | length from water table to bottom of wellscreen (feet) |
| A | = | 2.00 | = | dimensionless coefficient |
| B | = | 0.60 | = | dimensionless coefficient |
| C | = | 1.40 | = | dimensionless coefficient |

EQUATIONS:

$$\ln(Re/Rw) = \frac{1}{\frac{1.1}{\ln(Lw/Rw)} + \frac{A + B \times \ln[(H-Lw)/Rw]}{(Le/Rw)}}$$

$$K = \frac{Rc \times Rc \times \ln(Re/Rw) \times (1/t) \times \ln(yo/yt)}{2 \times Le}$$

SOLUTIONS:

| | | | |
|---|---|---|---|
| Le/Rw = | 20.4 | | |
| Lw/Rw = | 20.4 | | |
| H-Lw = | 0.40 | | |
| Rc*Rc = | 0.043 | | |
| 2*Le = | 13.6 | | |
| 1/t = | 0.008 | | |
| ln (yo/yt) = | 0.2 | | |
| ln (Re/Rw) = | 2.1 | | |
| ln [(H-Lw)/Rw] = | 0.1 | (if >6, then 6 is used in equation) | |

| | | | | |
|---|---|---|---|---|
| K | = | 0.00001 | = | hydraulic conductivity (ft/second) |
| K | = | 6 | = | hydraulic conductivity (gpd/sq ft) |
| T | = | 40 | = | transmissivity (gpd/ft) |

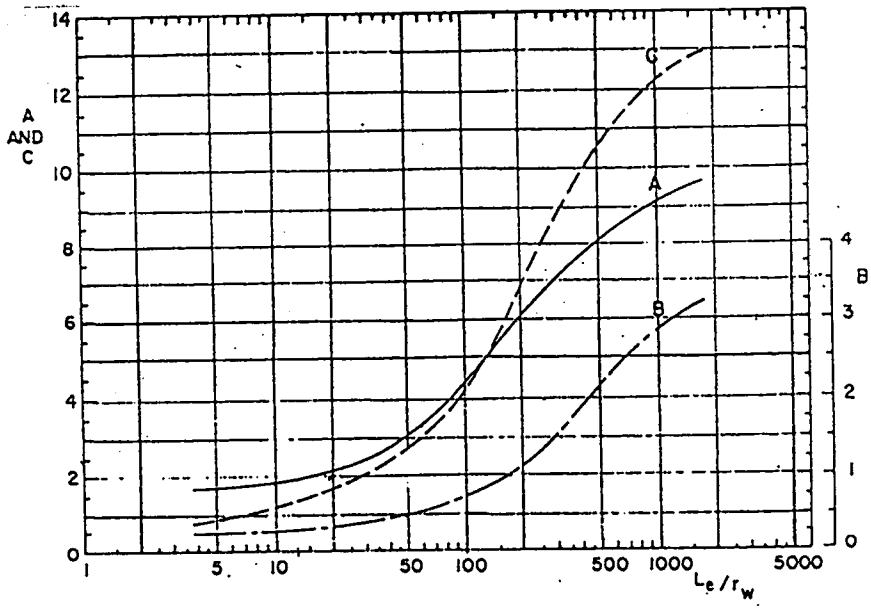
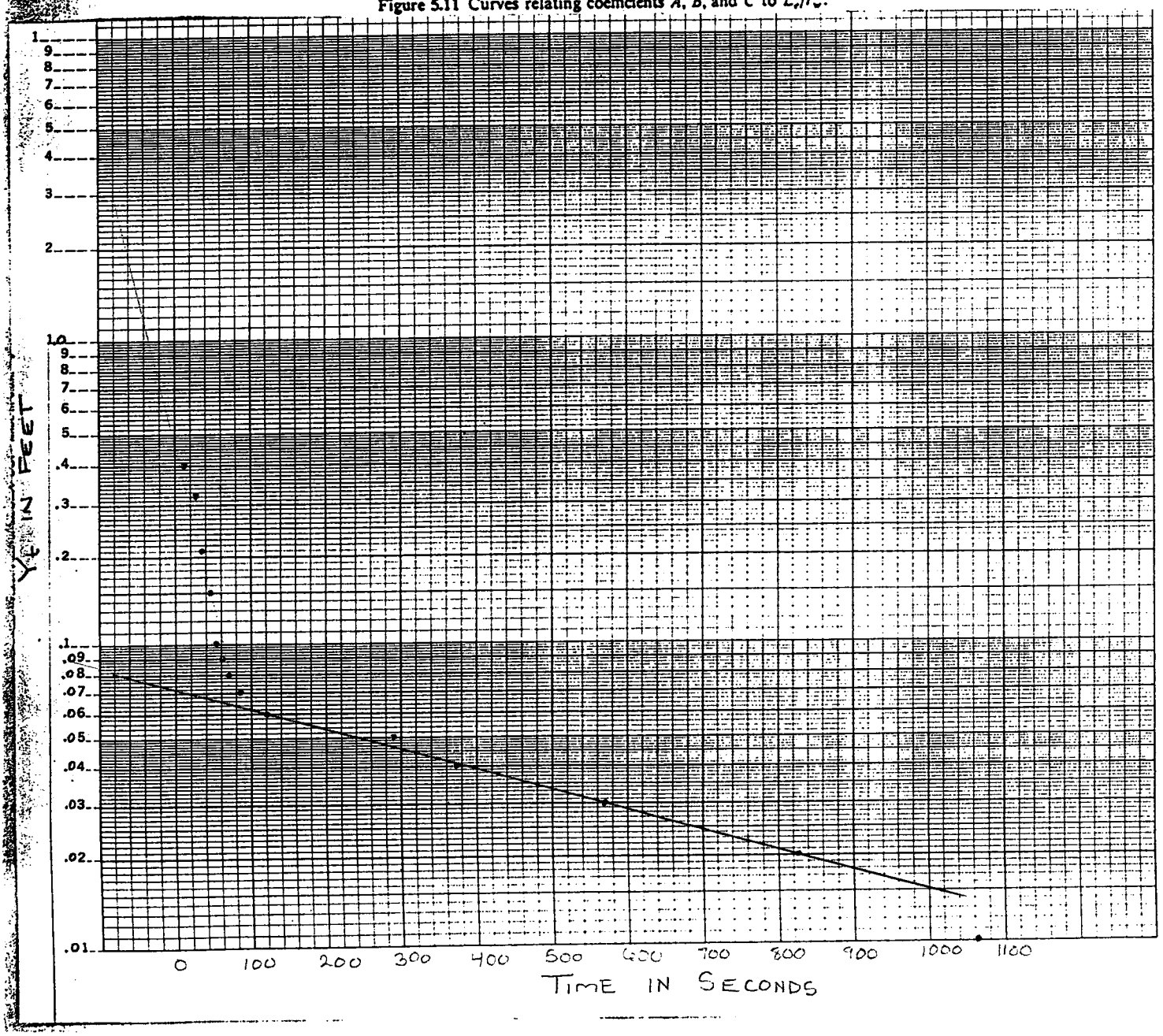



Figure 5.11 Curves relating coefficients $A$, $B$, and $C$ to $L_e/r_w$.

WELL "E"

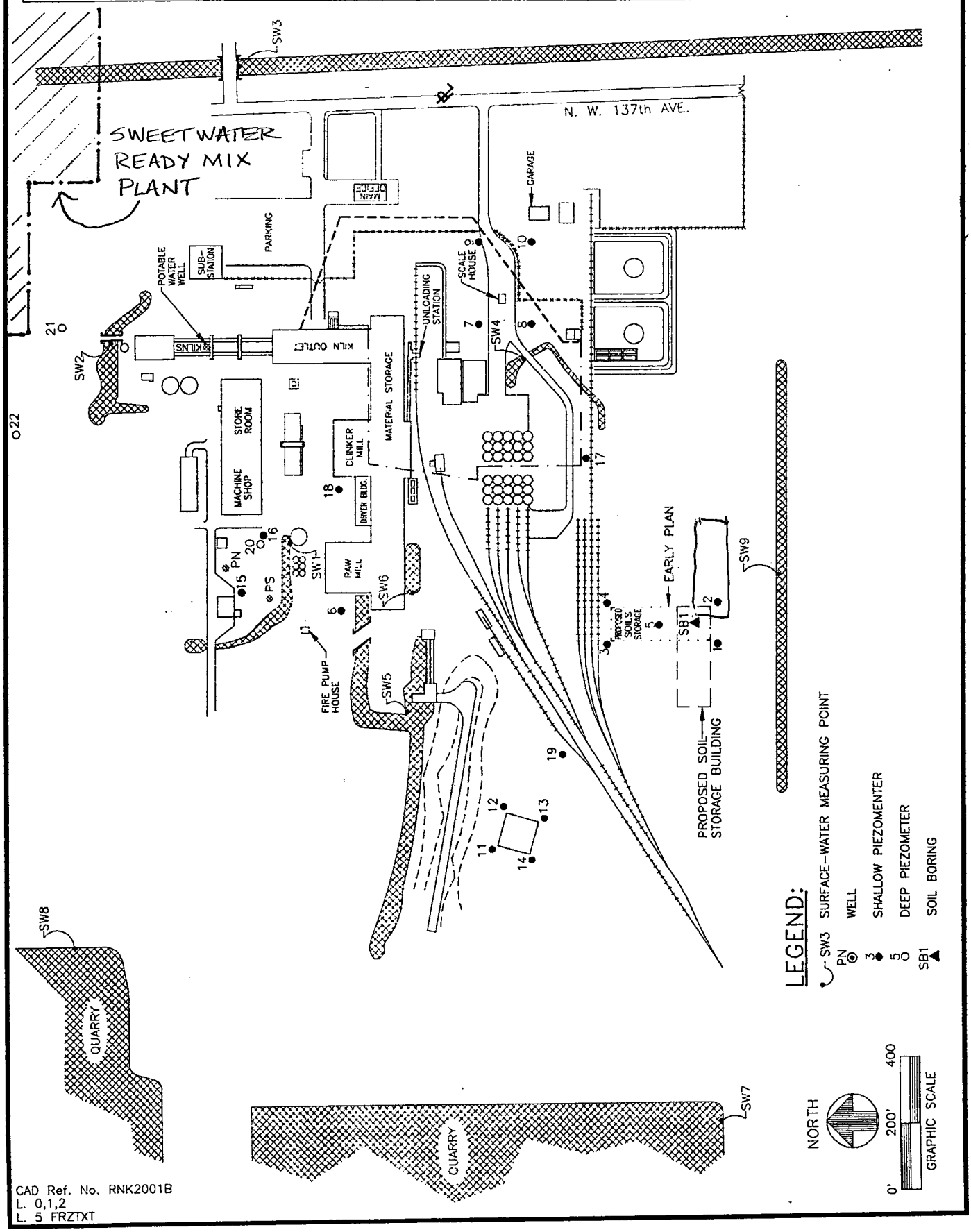


# APPENDIX AE

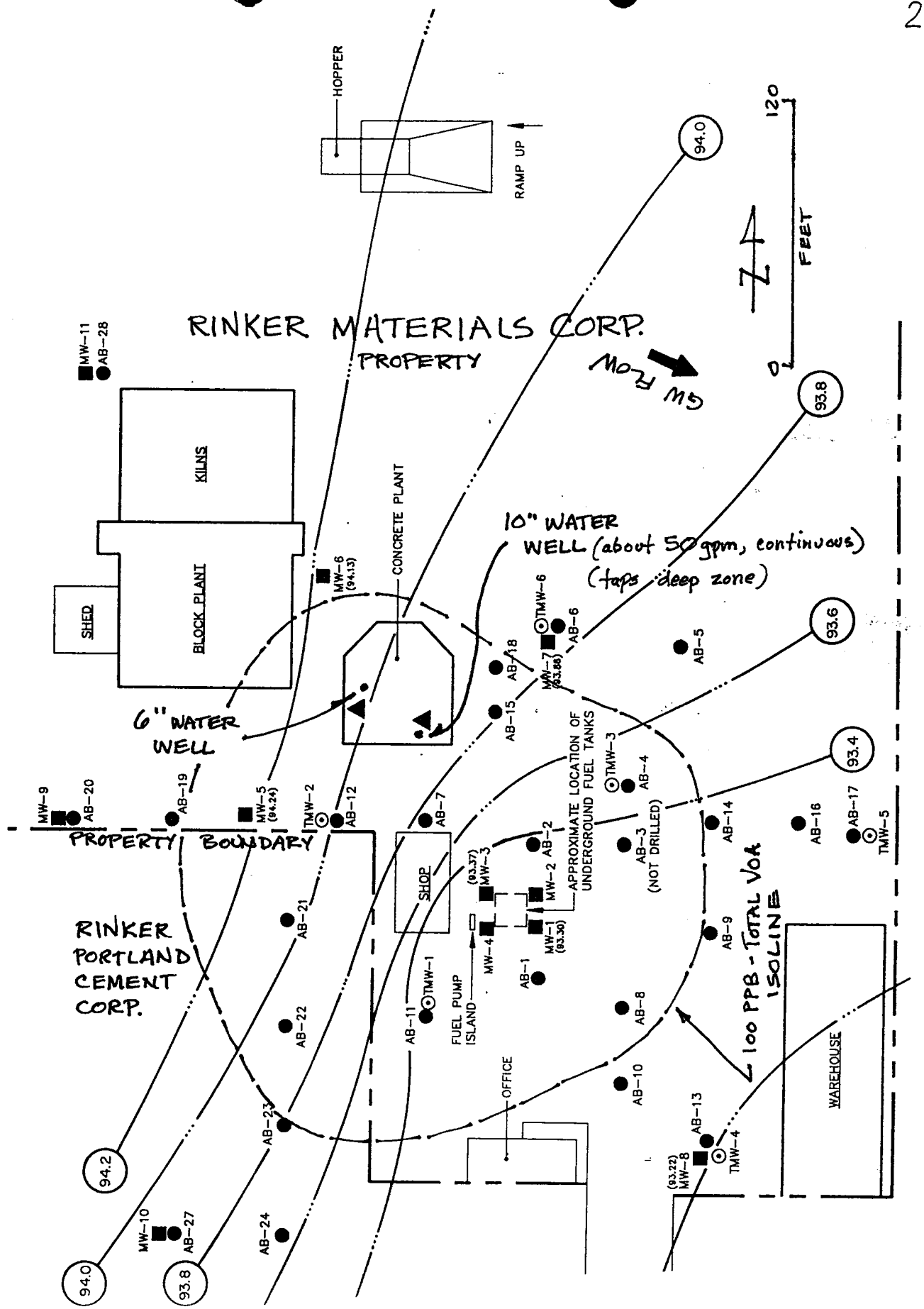
Data from Rinker's Sweetwater Ready Mix Plant

| GSI | DATE: MARCH 1991 | FOR: RINKER PORTLAND CEMENT CORP. | SUBJECT: LOCATION OF SWEETWATER READY MIX PLANT | 1 of 2 |
|---|---|---|---|---|

LOCATION: 1200 N.W. 137th AVE., MIAMI, FLORIDA




CAD Ref. No. RNK2001B
L. 0,1,2
L. 5 FRZTXT




SWEETWATER READY MIX PLANT - SHOWING WELL LOCATIONS, GROUNDWATER CONTOURS (SHALLOW ZONE), HYDROCARBON PLUME, AND RELATIONSHIP TO RINKER PORTLAND CEMENT CORP.

# APPENDIX AF

## FDER Letters of QAP Approvals

# Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Bob Martinez, Governor | Dale Twachtmann, Secretary | John Shearer, Assistant Secretary


October 29, 1990



William Kelly
Groundwater Specialists, Inc.
3003 South Congress Ave.
Suite 1C
Palm Springs, FL 33461

SUBJECT: Quality Assurance Review;880557G-Groundwater Specialists, Inc. Generic C QA Plan; Revision 10 to Approved Document;

Dear Mr. Kelly:

The amendments to your approved Generic QA Plan, received on September 26, 1990, have been reviewed and approved. The amendments have been incorporated into the document.

Your Generic (Comprehensive) QA Plan will need to be revised to comply with required information as outlined in the new Manual for Preparing QA Plans (DER-QA-001/90, sent under separate cover). These revisions need to be submitted as soon as possible after January 1, 1990. Although the new format is not required yet, it may be easier to revise your Generic (Comprehensive) QA Plan in the new format, since the required information is organized differently. We strongly suggest following the new format to allow for a smooth transition to current QA policies.

Your cooperation is appreciated in maintaining your QA Plan to reflect current field sampling operations and our QA requirements.

Sincerely,

Sylvia S. Labie, QA Officer
Quality Assurance Section

SSL/KNS/kns

cc: Kent Smith

Florida Department of Environmental Regulation
Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-240
Lawton Chiles, Governor
Carol M. Browner, Secretar

January 22, 1991

Larry Korn
V.O.C. Analytical, Inc.
877 N.W. 61st Street
Ft. Lauderdale, Fl 33309

SUBJECT: Quality Assurance Review: V.O.C. Analytical, Inc.
Generic A QA Plan #900376G
Revision 1;

Dear Mr. Korn:

The subject document, received on January 11, 1991, has been reviewed and is approved-pending minor revisions for analytical work only. Before sampling activities, including field analytical work, can be performed appropriate revisions will have to be submitted and approved. Further detail on the status of this plan is explained in the enclosed guidance document (DER QAS #90-03) and enclosed review comments.

As further revisions are necessary, the revised pages must be resubmitted. If you have any questions concerning this matter, please call (904) 488-2796.

Sincerely,

for Sylvia S. Labie, QA Officer
Quality Assurance Section

SSL/ART/art

Attachments (8): DER QAS #90-03 (Explanation of Status)
annotated QAP pages
review sheets
Section 6 of Rev 0 review comments
DER QAS #89-04, 89-06, 90-04 and 90-05

cc: Andrew R. Tintle

VOC
ANALYTICAL

March 27, 1991

Dave Marple
Rinker Materials Corp.
P.O. Box 650679
Miami, Florida 33165

RE: V.O.C. Analytical Q.A. Plan # 900376G

Dear Mr. Marple:

Pursuant to our phone conversation the other day, I am enclosing a copy of the approval letter sent by the FDER.

V.O.C. Analytical's QA Plan was submitted in August of 1990 as a generic plan per Sylvia Labie's instructions. Since that time the requirements have changed in the QA department of the FDER. Therefore V.O.C. Analytical is revising section six which addresses sampling of different matrices and decontamination. This section will be approved officially within the next couple of weeks and we will forward a complete copy to you at that time.

In December of 1990 I spoke to Sylvia Labie about sampling prior to the official approval, and she told me that with documentation ( EPA Region IV Sampling Protocol ) V.O.C. Analytical can indeed sample all matrices.

Field personnel at V.O.C. Analytical have over five years of sampling experience and have in the past trained county employees in this discipline. All sampling protocol is followed to the letter and documented in field notebooks for regulatory review and admissible in a court of law. We would welcome an inspection of our facility in Fort Lauderdale by the State or County Regulatory Agencies at their convenience.

If you have any questions or need any additional information please call me at (305) 938-8823.

Sincerely,
V.O.C. ANALYTICAL, INC.

Lawrence J. Korn

rinkerqa

877 N.W. 61 Street, Suite 202 - Ft. Lauderdale, FL 33309 - (305) 938-8823 - Fax (305) 938-8900

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

For Routing To Other Than The Addressee

| | | | |
|---|---|---|---|
| | | Location: | |
| To: | | Location: | |
| To: | | Location: | |
| From: | | Date: | |

# Interoffice Memorandum

TO: Paul Wierzbicki, Southeast District Office

THROUGH: Jim Crane, Bureau of Waste Cleanup JC for JC

FROM: Zoe Kulakowski, Bureau of Waste Cleanup ZK

DATE: September 10, 1991

SUBJECT: Rinker Portland Cement Corporation, 1200 Northwest 137th Avenue, Miami, Dade County

---

Review of the July, 1991 Ground Water Monitoring Report for the referenced facility indicates that all ground water samples are in compliance with the approved Ground Water Monitoring Plan.

This report satisfactorily resolves previous concerns regarding violations of the chromium and selenium standards at numberous site wells. However, I have requested further discussion of lab efforts (spiking to confirm interference) to support the conclusions. Paul Jakob will provide this information within two weeks.

ZK/slh

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

345 COURTLAND STREET, N.E.
ATLANTA, GEORGIA 30365

4WD-RCRA&FFB

Mr. Barry Swihart, Chief
Bureau of Waste Planning and Regulation
Florida Department of Environmental
Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400



Dear Mr. Swihart:

Ten facilities in Florida have submitted Part A's under the Toxicity Characteristic (TC) Rule, effective date September 25, 1991. Enclosed please find copies of the Part A's for these facilities, as follows:

| | | |
|---|---|---|
| Northeast District | | |
| Anderson Columbia Environmental, Inc. | FLD 984 175 265 | Lake City |
| Envirotech Southeast, Inc. | FLD 101 877 876 | Jacksonville |
| Industrial Waters, Inc. | FLD 981 928 484 | Jacksonville |
| Southwest District | | |
| Howco Environmental Services, LTD | FLD 152 764 767 | St. Petersburg |
| Diversified Environmental Services, Inc. | Pending | Tampa |
| Central Florida Pipeline Corporation | FLD 078 319 308 | Tampa |
| International Petroleum Corporation | FLD 065 680 613 | Plant City |
| Southeast District | | |
| Integrated Resource Recovery | FLD 981 018 773 | Davie |
| Cliff Berry, Inc. | FLD 000 831 156 | Ft. Lauderdale |
| Rinker Materials Corporation | FLD 981 758 485 | Miami |

Each of these facilities submitted timely Part A's and the required Notifications of Hazardous Waste Activity and have therefore been granted interim status.

As Florida has not yet been authorized to implement the TC Rule, EPA will maintain the lead for compliance and enforcement at these facilities. Copies of all correspondence between EPA and these facilities will be forwarded to your office.

Should you have any questions regarding these facilities please contact Betty Willis or Lisa Perras at (404) 347-7603.

Sincerely yours,

John E. Dickinson, P.E., Chief
Waste Compliance Section
RCRA & Federal Facilities Branch

Enclosure

cc: Mr. Ernest E. Frey, FDER
Mr. Alex Alexander, FDER
Mr. Scott Benyon, FDER
Mr. Phillip Edwards, FDER
Dr. Richard Garrity, FDER
Mr. Robert Kreigel, FDER

GSI groundwater specialists, inc.

3003 South Congress Avenue, Suite 1C
Palm Springs, Florida 33461

TEL: 407/641-5355
FAX: 407/641-5282

Bureau of Waste Cleanup

JUN 17 1991

Technical Review Section

June 13, 1991
RNK2003

**Certified Mail P 514 095 325**
**Return Reciept Requested**

Ms. Zoe Kulakowski, P.G.
Technical Review Section
Florida DER
Bureau of Waste Cleanup
Twin Towers Office Bldg.
2600 Blair Stone Road
Tallahassee, FL 32399-2400

RECEIVED
JUL 18 1991
DEPT. OF ENVIRONMENTAL REG.
WEST PALM BEACH

Re: Quarterly Report of Groundwater Monitoring, Rinker Portland Cement Corp., Miami, Florida.

Dear Ms. Kulakowski:

Enclosed with this letter is the first Quarterly Report of Groundwater Monitoring as specified in the GWMP (Groundwater Monitoring Plan), Addendum A, for the Rinker Portland Cement Corp. facility in Miami. This document is submitted for your record. It covers the months of February through April, 1991.

On behalf of Rinker, I would like to thank you for your attention to this item.

Very truly yours,
GROUNDWATER SPECIALISTS, INC.

Paul G. Jakob, P. G.
President

PGJ/db

cc: Mr. Michael Vardeman, Rinker Portland Cement

# QUARTERLY REPORT OF GROUNDWATER MONITORING

(February, March, April, 1991)



Rinker Portland Cement Corp.
1200 NW 137th Avenue
Miami, Florida



## Introduction

This quarterly report is the first in a series to be submitted to the Florida DER as specified in Rinker Portland Cement Corp.'s General Permit Application to Construct/Operate a Soil Thermal Treatment Facility (per Chapter 17-775, FAC). It provides groundwater levels and the results of groundwater analysis of selected wells as outlined in the GWMP (Groundwater Monitoring Plan) submitted by the Rinker Portland Cement Corp. to the Florida DER during April, 1991.

## New Monitor Well Construction

On April 19, 1991, Monitor Well 23 was installed as proposed in the GWMP, to provide upgradient background data near the proposed soils storage facility. The location of Well 23 and the other monitor wells are shown on Exhibit 1. The top-of-casing elevations of all monitor wells in the GWMP network are shown on Exhibit 2.

## Report of Monitoring

Groundwater and surface-water levels were measured on April 24, 1991 at all GWMP network points. The locations of all measuring points are shown on Exhibit 1. The water-level elevations are shown on Exhibits 2 and 3.

The direction of groundwater flow across the site is generally to the north-northeast. Exhibit 3 shows the groundwater elevations referenced to mean sea level and the pattern of groundwater-level contours. No significant differences were noted in the groundwater-flow pattern between measurements made in March 1991 (GWMP - Addendum A) and those measured this quarter.

The GWMP network wells were sampled on April 24, 1991 according to conditions described in GSI's generic (comprehensive) QAP (#880557G). Groundwater samples were analyzed for parameters outlined in Chapter 17-775.610(4).

Prior to sampling, a minimum of five casing volumes were purged from each monitor well. Measurements of specific conductivity, pH and temperature were made immediately before sampling; the results are listed in Appendix A.

The analytical methods prescribed for use in the GWMP include EPA Methods 602 and 610, and metals. The individual metals and their respective EPA Method numbers include: arsenic, 206.3; barium, 208.2; cadmium, 213.2; chromium, 218.2; lead, 239.2; mercury, 245.1; selenium, 270.3; and silver, 272.2. Samples were analyzed by V.O.C. Analytical, Inc., under its approved generic QAP (#900376G). The results of analyses are summarized on Exhibit 4. The laboratory reports and chain-of-custody documentation are presented in Appendix A.

The groundwater concentrations of purgeable aromatic hydrocarbons (EPA Method 602) and polynuclear aromatic hydrocarbons (EPA Method 610) were below laboratory detection limits in all wells. The groundwater concentrations of metals indicated selenium at or above Florida Drinking Water Standards in Wells 6, 7, 8, 9 and 10. The source of selenium is unknown at present. Further investigations, including laboratory analyses, are being undertaken to determine the source of selenium. The concentration of chromium in Well 23 (0.24 ppm) was previously reported, with evidence that chromium occurs naturally in limestone of the subject area.

The next quarterly monitoring event will occur during the week of July 22, 1991.

Respectively submitted,
GROUNDWATER SPECIALISTS, INC.

William Barfknecht

William Barfknecht
Hydrogeologist

(Note: The EPA Methods specified for the analysis for silver in Chapter 17-775 (4), (pg. 16), contain typographical errors; they should read 272.1 or 272.2)

6.12.91

PAUL G. JAKOB, P.G.
PRESIDENT, GSI

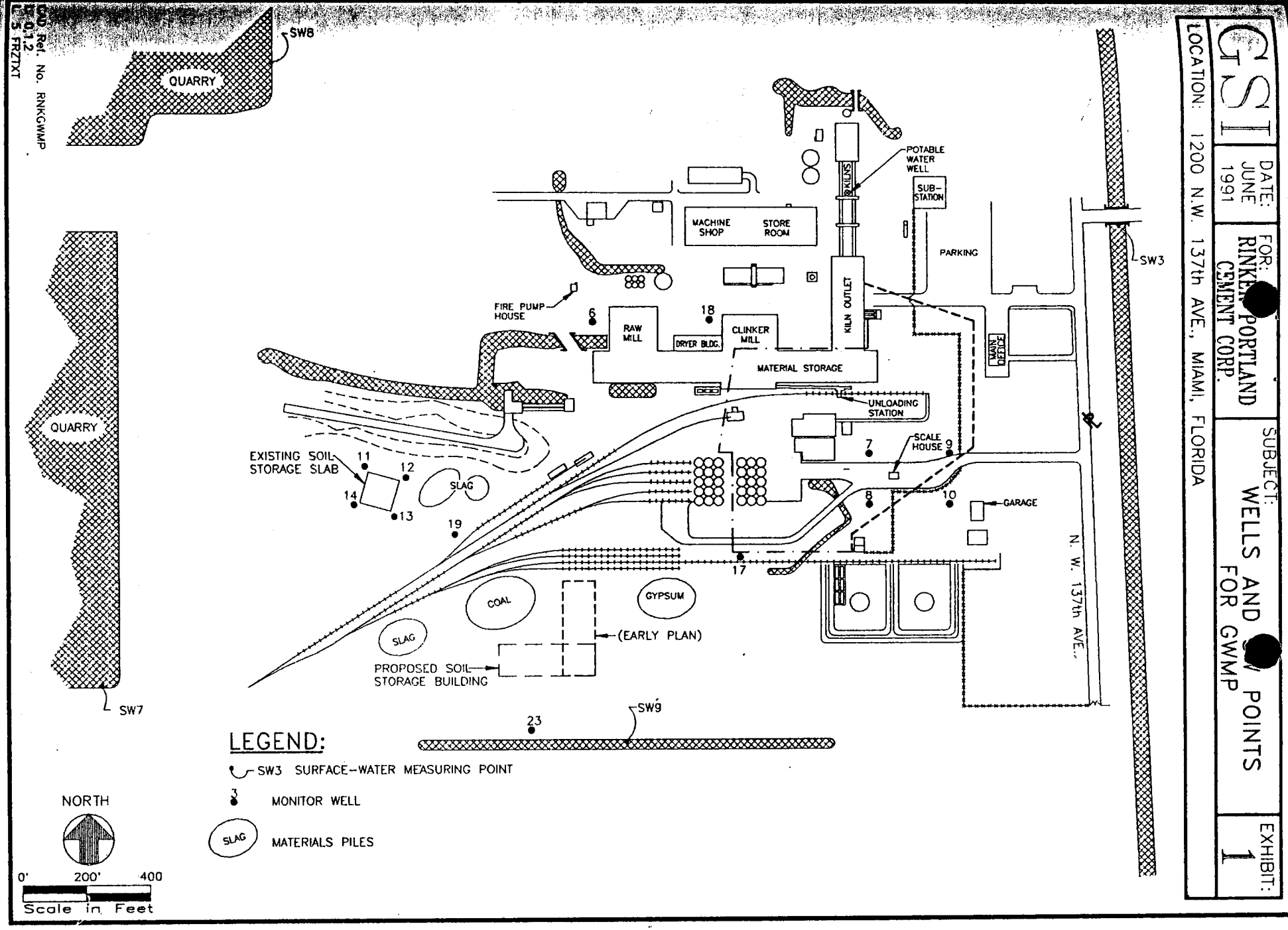

CAD Ref. No. RNKGWMP
L-3 FRZTXT
SW8
QUARRY
POTABLE WATER WELL
SUB-STATION
MACHINE SHOP
STORE ROOM
PARKING
SW3
FIRE PUMP HOUSE
RAW MILL
DRYER BLDG.
CLINKER MILL
KILN OUTLET
MATERIAL STORAGE
MAIN OFFICE
UNLOADING STATION
SCALE HOUSE
GARAGE
EXISTING SOIL STORAGE SLAB
SLAG
COAL
GYPSUM
(EARLY PLAN)
PROPOSED SOIL STORAGE BUILDING
N. W. 137th AVE.
SW7
SW9
LEGEND:
SW3 SURFACE-WATER MEASURING POINT
MONITOR WELL
MATERIALS PILES
NORTH
0' 200' 400
Scale in Feet
GSI
DATE: JUNE 1991
FOR: RINKER PORTLAND CEMENT CORP.
SUBJECT: WELLS AND POINTS FOR GWMP
EXHIBIT: 1
LOCATION: 1200 N.W. 137th AVE., MIAMI, FLORIDA

EXHIBIT 2

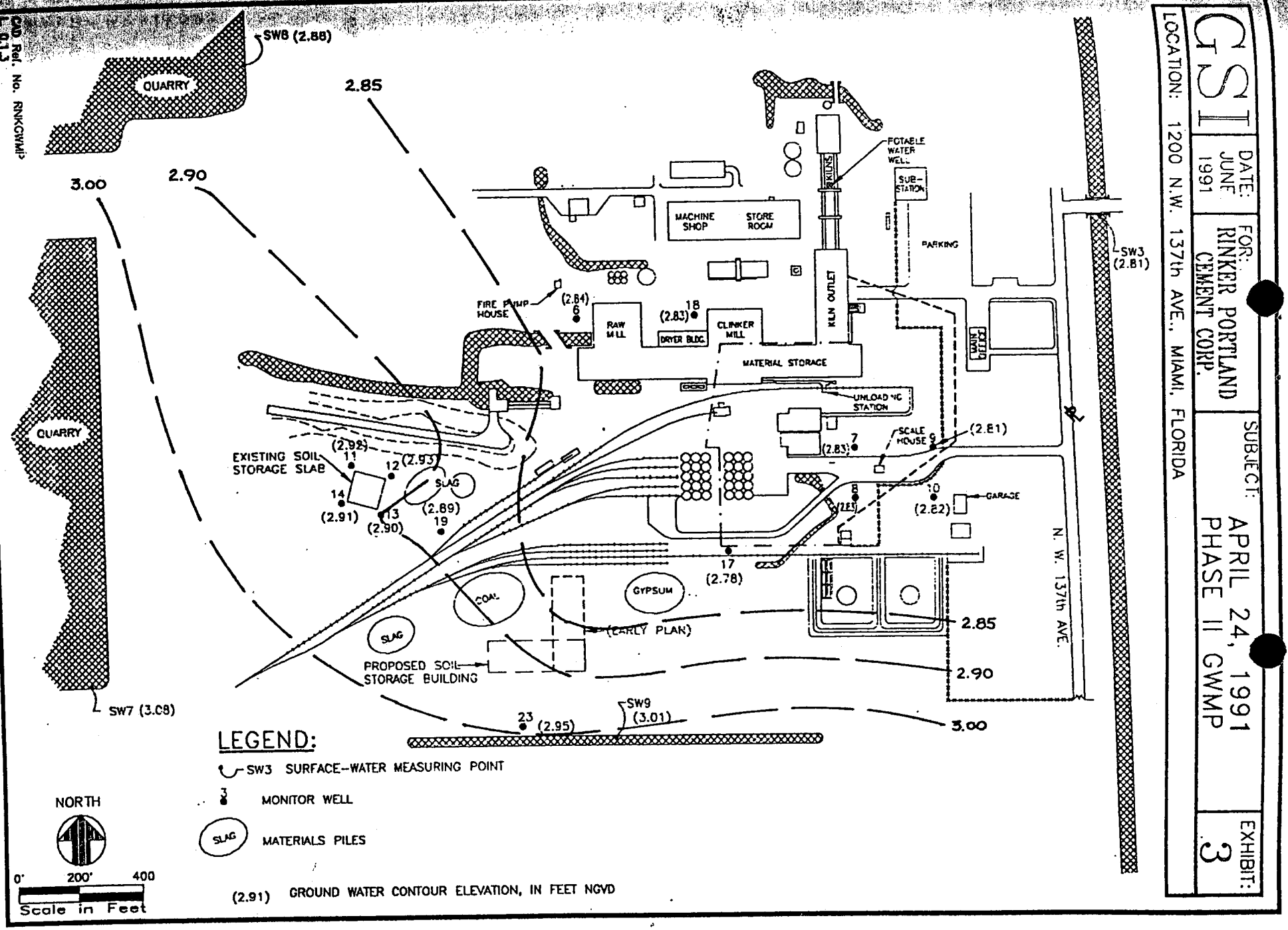
MONITOR WELL AND
SURFACE-WATER ELEVATIONS

| Monitor Well | Top of Casing Elev. (feet) | Depth to Water (feet) | Water Elevation (feet) |
|---|---|---|---|
| 6 | 9.46 | 6.62 | 2.84 |
| 7 | 9.03 | 6.20 | 2.83 |
| 8 | 9.56 | 6.73 | 2.83 |
| 9 | 9.69 | 6.88 | 2.81 |
| 10 | 10.05 | 7.23 | 2.82 |
| 11 | 8.11 | 5.19 | 2.92 |
| 12 | 8.48 | 5.55 | 2.93 |
| 13 | 8.41 | 5.50 | 2.90 |
| 14 | 8.09 | 5.18 | 2.91 |
| 17 | 8.63 | 5.85 | 2.78 |
| 18 | 9.72 | 6.89 | 2.83 |
| 19 | 11.28 | 8.39 | 2.89 |
| 23* | 12.63 | 9.68 | 2.95 |

| Surface Water Measuring Point | Measuring Point Elevation (feet) | Depth to Water (feet) | Water Elevation (feet) |
|---|---|---|---|
| SW3 | 5.56 | 2.75 | 2.81 |
| SW7 | 9.20 | 6.12 | 3.08 |
| SW8 | 7.39 | 4.51 | 2.88 |
| SW9 | 6.00 | 2.99 | 3.01 |

**Notes:** The tops of casings are finished below grade. All elevations are referenced to mean sea level. Date of measurements was April 24, 1991.

* Well 23 was constructed on April 19, 1991. Its total depth is 15.0 feet and its wellscreen is set between 5.0 and 15.0 feet in depth. The top of casing elevation was independently surveyed at that time. The top of casing elevation (12.63) is suspect; it will be resurveyed during the second quarterly monitoring event.




GSI

DATE: JUNE 1991

FOR: RINKER PORTLAND CEMENT CORP.

SUBJECT: APRIL 24, 1991 PHASE II GWMP

EXHIBIT: 3

LOCATION: 1200 N.W. 137th AVE., MIAMI, FLORIDA

EXHIBIT 4

SUMMARY OF GROUNDWATER ANALYSES

| Well Number | EPA Method 602 | EPA Method 610 |
|---|---|---|
| 6 | BDL | BDL |
| 7 | BDL | BDL |
| 8 | BDL | BDL |
| 9 | BDL | BDL |
| 10 | BDL | BDL |
| 11 | BDL | BDL |
| 12 | BDL | BDL |
| 13 | BDL | BDL |
| 14 | BDL | BDL |
| 23 | BDL | BDL |

Metals (concentrations in ppm)

| Well Number | Arsenic | Barium | Cadmium | Chromium | Lead | Mercury | Selenium | Silver |
|---|---|---|---|---|---|---|---|---|
| 6 | BDL | 0.102 | BDL | 0.017 | BDL | BDL | 0.178 | BDL |
| 7 | 0.003 | 0.28 | BDL | 0.014 | BDL | BDL | 0.065 | 0.006 |
| 8 | 0.006 | 0.078 | BDL | 0.014 | BDL | BDL | 0.125 | BDL |
| 9 | 0.004 | 0.192 | BDL | 0.025 | 0.006 | BDL | 0.010 | 0.006 |
| 10 | 0.005 | 0.39 | BDL | 0.012 | BDL | BDL | 0.038 | 0.008 |
| 11 | 0.004 | 0.058 | BDL | 0.013 | BDL | BDL | BDL | BDL |
| 12 | 0.003 | 0.27 | BDL | 0.035 | 0.005 | BDL | BDL | BDL |
| 13 | BDL | 0.15 | BDL | 0.045 | BDL | BDL | BDL | BDL |
| 14 | 0.003 | 0.52 | BDL | 0.015 | BDL | BDL | BDL | BDL |
| 23 | BDL | 0.092 | BDL | 0.24 | BDL | BDL | BDL | BDL |

Note: BDL denotes "below laboratory detection limits". The detection limits by EPA Methods 602 and 610 are 2.5 ppb or less. All detection limits are shown in Appendix A.

# APPENDIX A

## APPENDIX A

### MEASUREMENTS OF SPECIFIC CONDUCTIVITY, pH AND TEMPERATURE MADE DURING WELL PURGING

| Well Number | Specific Conductivity (UMHOS) | pH | Temperature (deg. C) |
|---|---|---|---|
| 6 | 510 | 7.3 | 30.0 |
| 7 | 630 | 7.1 | 29.9 |
| 8 | 730 | 7.0 | 30.0 |
| 9 | 500 | 7.0 | 30.0 |
| 10 | 800 | 6.7 | 30.0 |
| 11 | 610 | 7.4 | 30.0 |
| 12 | 650 | 7.2 | 30.0 |
| 13 | 540 | 8.0 | 30.0 |
| 14 | 410 | 8.2 | 30.0 |
| 23 | 630 | 7.7 | 30.0 |

**Note:** Samples were collected on April 24, 1991, under the conditions specified in GSI's generic (comprehensive) QAP. Because the monitor wells yield poorly, well-purging time was necessarily excessive. The data presented above are from measurements made immediately prior to sampling.

VOC
ANALYTICAL

RECEIVED
MAY 13 1991

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165

Page 1 of 22
Date: 5/06/91
Log#: 349-1

Sample Description: GROUNDWATER ANALYSIS

Label:38-6H24
Date Sampled: 4/24/91
Date Received: 4/25/91
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Benzene | BDL | ug/l | 5030/8021 | 0.5 | N/A | 5/01/91 | GP |
| Toluene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| MTBE | BDL | ug/l | 5030/8021 | 0.5 | | | |
| Ethyl benzene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| Total Xylenes | BDL | ug/l | 5030/8021 | 0.5 | | | |
| VOA | | | | | | | |
| Naphthalene | BDL | ug/l | 3510/610 | 0.5 | 4/29/91 | 5/01/91 | SP |
| Acenaphthene | BDL | ug/l | 3510/610 | 0.5 | | | |
| Acenaphthylene | BDL | ug/l | 3510/610 | 0.5 | | | |
| Anthracene | BDL | ug/l | 3510/610 | 1.0 | | | |
| Benzo (A) Anthracene | BDL | ug/l | 3510/610 | 1.0 | | | |
| Benzo (B) Fluoranthene | BDL | ug/l | 3510/610 | 1.25 | | | |
| Benzo (K) Fluoranthene | BDL | ug/l | 3510/610 | 1.25 | | | |
| Benzo (A) Pyrene | BDL | ug/l | 3510/610 | 2.0 | | | |
| Benzo (G,H,I) Perylene | BDL | ug/l | 3510/610 | 2.5 | | | |
| Chrysene | BDL | ug/l | 3510/610 | 2.5 | | | |
| Dibenzo (A,H) Anthracene | BDL | ug/l | 3510/610 | 1.0 | | | |
| Fluoranthene | BDL | ug/l | 3510/610 | 1.0 | | | |
| Fluorene | BDL | ug/l | 3510/610 | 0.5 | | | |
| Indendo-(1,2,3,-CD) Pyrene | BDL | ug/l | 3510/610 | 0.5 | | | |
| Phenanthrene | BDL | ug/l | 3510/610 | 1.0 | | | |
| Pyrene | BDL | ug/l | 3510/610 | 1.0 | | | |
| 1-Methyl Naphthalene | BDL | ug/l | 3510/610 | 0.5 | | | |
| 2-Methyl Naphthalene | BDL | ug/l | 3510/610 | 0.5 | | | |
| EPA 610 COMPOUNDS | | | | | | | |

* BDL = Below Detection Limits
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.

Respectfully Submitted,

Jeffrey S. Glass
Laboratory Director
W.O.C. Analytical Inc.

Date: 5/06/91
Log#: 349-1

lient #:18
·lient Name:Rinker Materials
ddress: P.O. BOX 650679
MIAMI, FL 33165

Label:38-6H24
Date Sampled: 4/24/91
Date Received: 4/25/91
Collected By: Your Rep

Sample Description: GROUNDWATER ANALYSIS

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Total Cadmium | BDL | mg/l | 213.2 | 0.005 | N/A | 4/25/91 | JG |
| Total Lead | BDL | mg/l | 239.2 | 0.005 | N/A | 4/26/91 | JG |
| Total Selenium | 0.178 | mg/l | 270.3 | 0.01 | N/A | 4/28/91 | JG |
| Total Arsenic | BDL | mg/l | 206.3 | 0.02 | N/A | 4/28/91 | JG |
| Total Chromium | 0.017 | mg/l | 218.2 | 0.005 | N/A | 4/25/91 | JG |
| Total Mercury | BDL | mg/l | 245.1 | 0.001 | N/A | 4/28/91 | JG |
| Total Silver | BDL | mg/l | 272.2 | 0.005 | N/A | 4/28/91 | JG |
| Total Barium | 0.102 | mg/l | 208.2 | 0.01 | N/A | 4/26/91 | JG |

* BDL = Below Detection Limits
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.

Respectfully Submitted,

Jeffrey S. Glass
Laboratory Director
V.O.C. Analytical Inc.

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165

Page_3 of _22
Date: 5/06/91
Log#: 349-2

Label:38-7H24
Sample Description: GROUNDWATER ANALYSIS
Date Sampled: 4/24/91
Date Received: 4/25/91
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Benzene | BDL | ug/l | 5030/8021 | 0.5 | N/A | 5/01/91 | GP |
| Toluene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| MTBE | BDL | ug/l | 5030/8021 | 0.5 | | | |
| Ethyl benzene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| Total Xylenes | BDL | ug/l | 5030/8021 | 0.5 | | | |
| VOA | | | | | | | |
| Naphthalene | BDL | ug/l | 3510/610 | 0.5 | 4/29/91 | 5/01/91 | SP |
| Acenaphthene | BDL | ug/l | 3510/610 | 0.5 | | | |
| Acenaphthylene | BDL | ug/l | 3510/610 | 0.5 | | | |
| Anthracene | BDL | ug/l | 3510/610 | 1.0 | | | |
| Benzo (A) Anthracene | BDL | ug/l | 3510/610 | 1.0 | | | |
| Benzo (B) Fluoranthene | BDL | ug/l | 3510/610 | 1.25 | | | |
| Benzo (K) Fluoranthene | BDL | ug/l | 3510/610 | 1.25 | | | |
| Benzo (A) Pyrene | BDL | ug/l | 3510/610 | 2.0 | | | |
| Benzo (G,H,I) Perylene | BDL | ug/l | 3510/610 | 2.5 | | | |
| Chrysene | BDL | ug/l | 3510/610 | 2.5 | | | |
| Dibenzo (A,H) Anthracene | BDL | ug/l | 3510/610 | 1.0 | | | |
| Fluoranthene | BDL | ug/l | 3510/610 | 1.0 | | | |
| Fluorene | BDL | ug/l | 3510/610 | 0.5 | | | |
| Indendo-(1,2,3,-CD) Pyrene | BDL | ug/l | 3510/610 | 0.5 | | | |
| Phenanthrene | BDL | ug/l | 3510/610 | 1.0 | | | |
| Pyrene | BDL | ug/l | 3510/610 | 1.0 | | | |
| 1-Methyl Naphthalene | BDL | ug/l | 3510/610 | 0.5 | | | |
| 2-Methyl Naphthalene | BDL | ug/l | 3510/610 | 0.5 | | | |
| EPA 610 COMPOUNDS | | | | | | | |

* BDL = Below Detection Limits
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.

Respectfully Submitted,

Jeffrey S. Glass
Laboratory Director
V.O.C. Analytical Inc.

lient #:18
lient Name:Rinker Materials
ddress: P.O. BOX 650679
MIAMI, FL 33165

ample Description: GROUNDWATER ANALYSIS


Date: 5/06/91
Log#: 349-2

Label:38-7H24
Date Sampled: 4/24/91
Date Received: 4/25/91
Collected By: Your Rep

| arameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| otal Cadmium | BDL | mg/l | 213.2 | 0.005 | N/A | 4/25/91 | JG |
| otal Lead | BDL | mg/l | 239.2 | 0.005 | N/A | 4/26/91 | JG |
| otal Selenium | 0.065 | mg/l | 270.3 | 0.01 | N/A | 4/28/91 | JG |
| otal Arsenic | 0.003 | mg/l | 206.3 | 0.02 | N/A | 4/28/91 | JG |
| otal Chromium | 0.014 | mg/l | 218.2 | 0.005 | N/A | 4/25/91 | JG |
| otal Mercury | BDL | mg/l | 245.1 | 0.001 | N/A | 4/28/91 | JG |
| otal Silver | 0.006 | mg/l | 272.2 | 0.005 | N/A | 4/28/91 | JG |
| otal Barium | 0.28 | mg/l | 208.2 | 0.01 | N/A | 4/26/91 | JG |

* BDL = Below Detection Limits
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.

Respectfully Submitted,

Jeffrey S. Glass
Laboratory Director
W.C. Analytical Inc.

lient #:18
lient Name:Rinker Materials
ddress: P.O. BOX 650679
MIAMI, FL 33165

ample Description: GROUNDWATER ANALYSIS


Date: 5/06/91
Log#: 349-3

Label:38-8H24
Date Sampled: 4/24/91
Date Received: 4/25/91
Collected By: Your Rep

| arameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| enzene | BDL | ug/l | 5030/8021 | 0.5 | N/A | 5/01/91 | GP |
| oluene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| TBE | BDL | ug/l | 5030/8021 | 0.5 | | | |
| thyl benzene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| otal Xylenes | BDL | ug/l | 5030/8021 | 0.5 | | | |
| OA | | | | | | | |
| aphthalene | BDL | ug/l | 3510/610 | 0.5 | 4/29/91 | 5/01/91 | SP |
| cenaphthene | BDL | ug/l | 3510/610 | 0.5 | | | |
| cenaphthylene | BDL | ug/l | 3510/610 | 0.5 | | | |
| nthracene | BDL | ug/l | 3510/610 | 1.0 | | | |
| enzo (A) Anthracene | BDL | ug/l | 3510/610 | 1.0 | | | |
| enzo (B) Fluoranthene | BDL | ug/l | 3510/610 | 1.25 | | | |
| enzo (K) Fluoranthene | BDL | ug/l | 3510/610 | 1.25 | | | |
| enzo (A) Pyrene | BDL | ug/l | 3510/610 | 2.0 | | | |
| enzo (G,H,I) Perylene | BDL | ug/l | 3510/610 | 2.5 | | | |
| hrysene | BDL | ug/l | 3510/610 | 2.5 | | | |
| ibenzo (A,H) Anthracene | BDL | ug/l | 3510/610 | 1.0 | | | |
| luoranthene | BDL | ug/l | 3510/610 | 1.0 | | | |
| luorene | BDL | ug/l | 3510/610 | 0.5 | | | |
| ndendo-(1,2,3,-CD) Pyrene | BDL | ug/l | 3510/610 | 0.5 | | | |
| henanthrene | BDL | ug/l | 3510/610 | 1.0 | | | |
| yrene | BDL | ug/l | 3510/610 | 1.0 | | | |
| -Methyl Naphthalene | BDL | ug/l | 3510/610 | 0.5 | | | |
| -Methyl Naphthalene | BDL | ug/l | 3510/610 | 0.5 | | | |
| PA 610 COMPOUNDS | | | | | | | |

* BDL = Below Detection Limits
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.

Respectfully Submitted,

Jeffrey S. Glass
Laboratory Director
V.O.C. Analytical Inc.

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165


Date: 5/06/91
Log#: 349-3

Sample Description: GROUNDWATER ANALYSIS

Label:38-9H24
Date Sampled: 4/24/91
Date Received: 4/25/91
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Total Cadmium | BDL | mg/l | 213.2 | 0.005 | N/A | 4/25/91 | JG |
| Total Lead | BDL | mg/l | 239.2 | 0.005 | N/A | 4/26/91 | JG |
| Total Selenium | 0.125 | mg/l | 270.3 | 0.01 | N/A | 4/28/91 | JG |
| Total Arsenic | 0.006 | mg/l | 206.3 | 0.02 | N/A | 4/28/91 | JG |
| Total Chromium | 0.014 | mg/l | 218.2 | 0.005 | N/A | 4/25/91 | JG |
| Total Mercury | BDL | mg/l | 245.1 | 0.001 | N/A | 4/28/91 | JG |
| Total Silver | BDL | mg/l | 272.2 | 0.005 | N/A | 4/28/91 | JG |
| Total Barium | 0.078 | mg/l | 208.2 | 0.01 | N/A | 4/26/91 | JG |

* BDL = Below Detection Limits
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.

Respectfully Submitted,

Jeffrey S. Glass
Laboratory Director
V.O.C. Analytical Inc.

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165

Date: 5/06/91
Log#: 349-4

Sample Description: GROUNDWATER ANALYSIS

Label:38-9M24
Date Sampled: 4/24/91
Date Received: 4/25/91
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Benzene | BDL | ug/l | 5030/8021 | 0.5 | N/A | 5/01/91 | GP |
| Toluene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| MTBE | BDL | ug/l | 5030/8021 | 0.5 | | | |
| Ethyl benzene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| Total Xylenes | BDL | ug/l | 5030/8021 | 0.5 | | | |
| VOA | | | | | | | |
| Naphthalene | BDL | ug/l | 3510/610 | 0.5 | 4/29/91 | 5/01/91 | SP |
| Acenaphthene | BDL | ug/l | 3510/610 | 0.5 | | | |
| Acenaphthylene | BDL | ug/l | 3510/610 | 0.5 | | | |
| Anthracene | BDL | ug/l | 3510/610 | 1.0 | | | |
| Benzo (A) Anthracene | BDL | ug/l | 3510/610 | 1.0 | | | |
| Benzo (B) Fluoranthene | BDL | ug/l | 3510/610 | 1.25 | | | |
| Benzo (K) Fluoranthene | BDL | ug/l | 3510/610 | 1.25 | | | |
| Benzo (A) Pyrene | BDL | ug/l | 3510/610 | 2.0 | | | |
| Benzo (G,H,I) Perylene | BDL | ug/l | 3510/610 | 2.5 | | | |
| Chrysene | BDL | ug/l | 3510/610 | 2.5 | | | |
| Dibenzo (A,H) Anthracene | BDL | ug/l | 3510/610 | 1.0 | | | |
| Fluoranthene | BDL | ug/l | 3510/610 | 1.0 | | | |
| Fluorene | BDL | ug/l | 3510/610 | 0.5 | | | |
| Indendo-(1,2,3,-CD) Pyrene | BDL | ug/l | 3510/610 | 0.5 | | | |
| Phenanthrene | BDL | ug/l | 3510/610 | 1.0 | | | |
| Pyrene | BDL | ug/l | 3510/610 | 1.0 | | | |
| 1-Methyl Naphthalene | BDL | ug/l | 3510/610 | 0.5 | | | |
| 2-Methyl Naphthalene | BDL | ug/l | 3510/610 | 0.5 | | | |
| EPA 610 COMPOUNDS | | | | | | | |

* BDL = Below Detection Limits
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.

Respectfully Submitted,

Jeffrey S. Glass
Laboratory Director
V.O.C. Analytical Inc.

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165

Page 8 of 22
Date: 5/06/91
Log#: 349-4

Sample Description: GROUNDWATER ANALYSIS

Label:38(9)H24
Date Sampled: 4/24/91
Date Received: 4/25/91
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Total Cadmium | BDL | mg/l | 213.2 | 0.005 | N/A | 4/25/91 | JG |
| Total Lead | 0.006 | mg/l | 239.2 | 0.005 | N/A | 4/26/91 | JG |
| Total Selenium | 0.010 | mg/l | 270.3 | 0.01 | N/A | 4/28/91 | JG |
| Total Arsenic | 0.004 | mg/l | 206.3 | 0.02 | N/A | 4/28/91 | JG |
| Total Chromium | 0.025 | mg/l | 218.2 | 0.005 | N/A | 4/25/91 | JG |
| Total Mercury | BDL | mg/l | 245.1 | 0.001 | N/A | 4/28/91 | JG |
| Total Silver | 0.006 | mg/l | 272.2 | 0.005 | N/A | 4/28/91 | JG |
| Total Barium | 0.192 | mg/l | 208.2 | 0.01 | N/A | 4/26/91 | JG |

* BDL = Below Detection Limits
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.

Respectfully Submitted,

Jeffrey S. Glass
Laboratory Director
D.C. Analytical Inc.

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165

Page_9 of _22
Date: 5/06/91
Log#: 349-5

Sample Description: GROUNDWATER ANALYSIS

Label:38-10H24
Date Sampled: 4/24/91
Date Received: 4/25/91
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Benzene | BDL | ug/l | 5030/8021 | 0.5 | N/A | 5/01/91 | GP |
| Toluene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| MTBE | BDL | ug/l | 5030/8021 | 0.5 | | | |
| Ethyl benzene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| Total Xylenes | BDL | ug/l | 5030/8021 | 0.5 | | | |
| VOA | | | | | | | |
| Naphthalene | BDL | ug/l | 3510/610 | 0.5 | 4/29/91 | 5/01/91 | SP |
| Acenaphthene | BDL | ug/l | 3510/610 | 0.5 | | | |
| Acenaphthylene | BDL | ug/l | 3510/610 | 0.5 | | | |
| Anthracene | BDL | ug/l | 3510/610 | 1.0 | | | |
| Benzo (A) Anthracene | BDL | ug/l | 3510/610 | 1.0 | | | |
| Benzo (B) Fluoranthene | BDL | ug/l | 3510/610 | 1.25 | | | |
| Benzo (K) Fluoranthene | BDL | ug/l | 3510/610 | 1.25 | | | |
| Benzo (A) Pyrene | BDL | ug/l | 3510/610 | 2.0 | | | |
| Benzo (G,H,I) Perylene | BDL | ug/l | 3510/610 | 2.5 | | | |
| Chrysene | BDL | ug/l | 3510/610 | 2.5 | | | |
| Dibenzo (A,H) Anthracene | BDL | ug/l | 3510/610 | 1.0 | | | |
| Fluoranthene | BDL | ug/l | 3510/610 | 1.0 | | | |
| Fluorene | BDL | ug/l | 3510/610 | 0.5 | | | |
| Indendo-(1,2,3,-CD) Pyrene | BDL | ug/l | 3510/610 | 0.5 | | | |
| Phenanthrene | BDL | ug/l | 3510/610 | 1.0 | | | |
| Pyrene | BDL | ug/l | 3510/610 | 1.0 | | | |
| 1-Methyl Naphthalene | BDL | ug/l | 3510/610 | 0.5 | | | |
| 2-Methyl Naphthalene | BDL | ug/l | 3510/610 | 0.5 | | | |
| EPA 610 COMPOUNDS | | | | | | | |

* BDL = Below Detection Limits
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.

Respectfully Submitted,

Jeffrey S. Glass
Laboratory Director
V.O.C. Analytical Inc.

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165

Page 10 of 22
Date: 5/06/91
Log#: 349-5

Sample Description: GROUNDWATER ANALYSIS

Label:38-10H24
Date Sampled: 4/24/91
Date Received: 4/25/91
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Total Cadmium | BDL | mg/l | 213.2 | 0.005 | N/A | 4/25/91 | JG |
| Total Lead | BDL | mg/l | 239.2 | 0.005 | N/A | 4/26/91 | JG |
| Total Selenium | 0.038 | mg/l | 270.3 | 0.01 | N/A | 4/28/91 | JG |
| Total Arsenic | 0.005 | mg/l | 206.3 | 0.02 | N/A | 4/28/91 | JG |
| Total Chromium | 0.012 | mg/l | 218.2 | 0.005 | N/A | 4/25/91 | JG |
| Total Mercury | BDL | mg/l | 245.1 | 0.001 | N/A | 4/28/91 | JG |
| Total Silver | 0.008 | mg/l | 272.2 | 0.005 | N/A | 4/28/91 | JG |
| Total Barium | 0.39 | mg/l | 208.2 | 0.01 | N/A | 4/26/91 | JG |

* BDL = Below Detection Limits
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.

Respectfully Submitted,

Jeffrey S. Glass
Laboratory Director
T.C.C. Analytical Inc.

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165

Page_11 of _22
Date: 5/06/91
Log#: 349-6

Sample Description: GROUNDWATER ANALYSIS

Label:38-11H24
Date Sampled: 4/24/91
Date Received: 4/25/91
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Benzene | BDL | ug/l | 5030/8021 | 0.5 | N/A | 5/01/91 | GP |
| Toluene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| MTBE | BDL | ug/l | 5030/8021 | 0.5 | | | |
| Ethyl benzene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| Total Xylenes | BDL | ug/l | 5030/8021 | 0.5 | | | |
| VOA | | | | | | | |
| Naphthalene | BDL | ug/l | 3510/610 | 0.5 | 4/29/91 | 5/01/91 | SP |
| Acenaphthene | BDL | ug/l | 3510/610 | 0.5 | | | |
| Acenaphthylene | BDL | ug/l | 3510/610 | 0.5 | | | |
| Anthracene | BDL | ug/l | 3510/610 | 1.0 | | | |
| Benzo (A) Anthracene | BDL | ug/l | 3510/610 | 1.0 | | | |
| Benzo (B) Fluoranthene | BDL | ug/l | 3510/610 | 1.25 | | | |
| Benzo (K) Fluoranthene | BDL | ug/l | 3510/610 | 1.25 | | | |
| Benzo (A) Pyrene | BDL | ug/l | 3510/610 | 2.0 | | | |
| Benzo (G,H,I) Perylene | BDL | ug/l | 3510/610 | 2.5 | | | |
| Chrysene | BDL | ug/l | 3510/610 | 2.5 | | | |
| Dibenzo (A,H) Anthracene | BDL | ug/l | 3510/610 | 1.0 | | | |
| Fluoranthene | BDL | ug/l | 3510/610 | 1.0 | | | |
| Fluorene | BDL | ug/l | 3510/610 | 0.5 | | | |
| Indendo-(1,2,3,-CD) Pyrene | BDL | ug/l | 3510/610 | 0.5 | | | |
| Phenanthrene | BDL | ug/l | 3510/610 | 1.0 | | | |
| Pyrene | BDL | ug/l | 3510/610 | 1.0 | | | |
| 1-Methyl Naphthalene | BDL | ug/l | 3510/610 | 0.5 | | | |
| 2-Methyl Naphthalene | BDL | ug/l | 3510/610 | 0.5 | | | |
| EPA 610 COMPOUNDS | | | | | | | |

* BDL = Below Detection Limits
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.

Respectfully Submitted,

Jeffrey S. Glass
Laboratory Director
W.O.C. Analytical Inc.

ient #:1G
ient Name:Rinker Materials
dress: P.O. BOX 650679
MIAMI, FL 33165

Date: 5/06/91
Log#: 349-6

ample Description: GROUNDWATER ANALYSIS

Label:38-11H24
Date Sampled: 4/24/91
Date Received: 4/25/91
Collected By: Your Rep

| arameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| otal Cadmium | BDL | mg/l | 213.2 | 0.005 | N/A | 4/25/91 | JG |
| otal Lead | BDL | mg/l | 239.2 | 0.005 | N/A | 4/26/91 | JG |
| otal Selenium | BDL | mg/l | 270.3 | 0.01 | N/A | 4/28/91 | JG |
| otal Arsenic | 0.004 | mg/l | 206.3 | 0.02 | N/A | 4/28/91 | JG |
| otal Chromium | 0.013 | mg/l | 218.2 | 0.005 | N/A | 4/25/91 | JG |
| otal Mercury | BDL | mg/l | 245.1 | 0.001 | N/A | 4/28/91 | JG |
| otal Silver | BDL | mg/l | 272.2 | 0.005 | N/A | 4/28/91 | JG |
| otal Barium | 0.058 | mg/l | 208.2 | 0.01 | N/A | 4/26/91 | JG |

* BDL = Below Detection Limits
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.

Respectfully Submitted,

Jeffrey S. Glass
Laboratory Director
V.O.C. Analytical Inc.

ient #:18
ient Name:Rinker Materials
idress: P.O. BOX 650679
MIAMI, FL 33165

ample Description: GROUNDWATER ANALYSIS


Date: 5/06/91
Log#: 349-7

Label:38-12H24
Date Sampled: 4/24/91
Date Received: 4/25/91
Collected By: Your Rep

| arameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| enzene | BDL | ug/l | 5030/8021 | 0.5 | N/A | 5/02/91 | GP |
| oluene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| TBE | BDL | ug/l | 5030/8021 | 0.5 | | | |
| thyl benzene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| otal Xylenes | BDL | ug/l | 5030/8021 | 0.5 | | | |
| DA | | | | | | | |
| aphthalene | BDL | ug/l | 3510/610 | 0.5 | 4/29/91 | 5/01/91 | SP |
| cenaphthene | BDL | ug/l | 3510/610 | 0.5 | | | |
| cenaphthylene | BDL | ug/l | 3510/610 | 0.5 | | | |
| nthracene | BDL | ug/l | 3510/610 | 1.0 | | | |
| enzo (A) Anthracene | BDL | ug/l | 3510/610 | 1.0 | | | |
| enzo (B) Fluoranthene | BDL | ug/l | 3510/610 | 1.25 | | | |
| enzo (K) Fluoranthene | BDL | ug/l | 3510/610 | 1.25 | | | |
| enzo (A) Pyrene | BDL | ug/l | 3510/610 | 2.0 | | | |
| enzo (G,H,I) Perylene | BDL | ug/l | 3510/610 | 2.5 | | | |
| hrysene | BDL | ug/l | 3510/610 | 2.5 | | | |
| ibenzo (A,H) Anthracene | BDL | ug/l | 3510/610 | 1.0 | | | |
| luoranthene | BDL | ug/l | 3510/610 | 1.0 | | | |
| luorene | BDL | ug/l | 3510/610 | 0.5 | | | |
| ndendo-(1,2,3,-CD) Pyrene | BDL | ug/l | 3510/610 | 0.5 | | | |
| henanthrene | BDL | ug/l | 3510/610 | 1.0 | | | |
| yrene | BDL | ug/l | 3510/610 | 1.0 | | | |
| -Methyl Naphthalene | BDL | ug/l | 3510/610 | 0.5 | | | |
| -Methyl Naphthalene | BDL | ug/l | 3510/610 | 0.5 | | | |
| PA 610 COMPOUNDS | | | | | | | |

* BDL = Below Detection Limits
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.

Respectfully Submitted,

Jeffrey S. Glass
Laboratory Director
V.O.C. Analytical Inc.

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165

Date: 5/06/91
Log#: 349-7

Sample Description: GROUNDWATER ANALYSIS

Label:38-12H24
Date Sampled: 4/24/91
Date Received: 4/25/91
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Total Cadmium | BDL | mg/l | 213.2 | 0.005 | N/A | 4/25/91 | JG |
| Total Lead | 0.005 | mg/l | 239.2 | 0.005 | N/A | 4/26/91 | JG |
| Total Selenium | BDL | mg/l | 270.3 | 0.01 | N/A | 4/28/91 | JG |
| Total Arsenic | 0.003 | mg/l | 206.3 | 0.02 | N/A | 4/28/91 | JG |
| Total Chromium | 0.035 | mg/l | 218.2 | 0.005 | N/A | 4/25/91 | JG |
| Total Mercury | BDL | mg/l | 245.1 | 0.001 | N/A | 4/28/91 | JG |
| Total Silver | BDL | mg/l | 272.2 | 0.005 | N/A | 4/28/91 | JG |
| Total Barium | 0.27 | mg/l | 208.2 | 0.01 | N/A | 4/26/91 | JG |

* BDL = Below Detection Limits
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.

Respectfully Submitted,

Jeffrey S. Glass
Laboratory Director
U.C. Analytical ~~Inc~~

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165

Page 16 of 22
Date: 5/06/91
Log#: 349-8

Sample Description: GROUNDWATER ANALYSIS

Label:38-13H24
Date Sampled: 4/24/91
Date Received: 4/25/91
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Total Cadmium | BDL | mg/l | 213.2 | 0.005 | N/A | 4/25/91 | JG |
| Total Lead | BDL | mg/l | 239.2 | 0.005 | N/A | 4/26/91 | JG |
| Total Selenium | BDL | mg/l | 270.3 | 0.01 | N/A | 4/28/91 | JG |
| Total Arsenic | BDL | mg/l | 206.3 | 0.02 | N/A | 4/28/91 | JG |
| Total Chromium | 0.045 | mg/l | 218.2 | 0.005 | N/A | 4/25/91 | JG |
| Total Mercury | BDL | mg/l | 245.1 | 0.001 | N/A | 4/28/91 | JG |
| Total Silver | 0.005 | mg/l | 272.2 | 0.005 | N/A | 4/28/91 | JG |
| Total Barium | 0.15 | mg/l | 208.2 | 0.01 | N/A | 4/26/91 | JG |

* BDL = Below Detection Limits
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.

Respectfully Submitted,

Jeffrey S. Glass
Laboratory Director
U.C. Analytical Inc.

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165

Sample Description: GROUNDWATER ANALYSIS


Date: 5/06/91
Log#: 349-9

Label:38-14H24
Date Sampled: 4/24/91
Date Received: 4/25/91
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Benzene | BDL | ug/l | 5030/8021 | 0.5 | N/A | 5/01/91 | GP |
| Toluene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| MTBE | BDL | ug/l | 5030/8021 | 0.5 | | | |
| Ethyl benzene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| Total Xylenes | BDL | ug/l | 5030/8021 | 0.5 | | | |
| VOA | | | | | | | |
| Naphthalene | BDL | ug/l | 3510/610 | 0.5 | 4/29/91 | 5/01/91 | SP |
| Acenaphthene | BDL | ug/l | 3510/610 | 0.5 | | | |
| Acenaphthylene | BDL | ug/l | 3510/610 | 0.5 | | | |
| Anthracene | BDL | ug/l | 3510/610 | 1.0 | | | |
| Benzo (A) Anthracene | BDL | ug/l | 3510/610 | 1.0 | | | |
| Benzo (B) Fluoranthene | BDL | ug/l | 3510/610 | 1.25 | | | |
| Benzo (K) Fluoranthene | BDL | ug/l | 3510/610 | 1.25 | | | |
| Benzo (A) Pyrene | BDL | ug/l | 3510/610 | 2.0 | | | |
| Benzo (G,H,I) Perylene | BDL | ug/l | 3510/610 | 2.5 | | | |
| Chrysene | BDL | ug/l | 3510/610 | 2.5 | | | |
| Dibenzo (A,H) Anthracene | BDL | ug/l | 3510/610 | 1.0 | | | |
| Fluoranthene | BDL | ug/l | 3510/610 | 1.0 | | | |
| Fluorene | BDL | ug/l | 3510/610 | 0.5 | | | |
| Indendo-(1,2,3,-CD) Pyrene | BDL | ug/l | 3510/610 | 0.5 | | | |
| Phenanthrene | BDL | ug/l | 3510/610 | 1.0 | | | |
| Pyrene | BDL | ug/l | 3510/610 | 1.0 | | | |
| 1-Methyl Naphthalene | BDL | ug/l | 3510/610 | 0.5 | | | |
| 2-Methyl Naphthalene | BDL | ug/l | 3510/610 | 0.5 | | | |
| EPA 610 COMPOUNDS | | | | | | | |

* BDL = Below Detection Limits
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.

Respectfully Submitted,

Jeffrey S. Glass
Laboratory Director
V.O.C. Analytical Inc.

lient #:18
lient Name:Rinker Materials
ddress: P.O. BOX 650679
MIAMI, FL 33165

Date: 5/06/91
Log#: 349-9

Label:38-14-24
Date Sampled: 4/24/91
Date Received: 4/25/91
Collected By: Your Rep

ample Description: GROUNDWATER ANALYSIS

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Total Cadmium | BDL | mg/l | 213.2 | 0.005 | N/A | 4/25/91 | JG |
| Total Lead | BDL | mg/l | 239.2 | 0.005 | N/A | 4/26/91 | JG |
| Total Selenium | BDL | mg/l | 270.3 | 0.01 | N/A | 4/28/91 | JG |
| Total Arsenic | 0.003 | mg/l | 206.3 | 0.02 | N/A | 4/28/91 | JG |
| Total Chromium | 0.015 | mg/l | 218.2 | 0.005 | N/A | 4/29/91 | JG |
| Total Mercury | BDL. | mg/l | 245.1 | 0.001 | N/A | 4/28/91 | JG |
| Total Silver | 0.009 | mg/l | 272.2 | 0.005 | N/A | 4/28/91 | JG |
| Total Barium | 0.52 | mg/l | 208.2 | 0.01 | N/A | 4/26/91 | JG |

* BDL = Below Detection Limits
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.

Respectfully Submitted,

Jeffrey S. Glass
Laboratory Director
V.D.C. Analytical Inc.

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165

Date: 5/06/91
Log#: 349-10

Sample Description: GROUNDWATER ANALYSIS

Label:38-23H24
Date Sampled: 4/24/91
Date Received: 4/25/91
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Benzene | BDL | ug/l | 5030/8021 | 0.5 | N/A | 4/30/91 | GP |
| Toluene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| MTBE | BDL | ug/l | 5030/8021 | 0.5 | | | |
| Ethyl benzene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| Total Xylenes | BDL | ug/l | 5030/8021 | 0.5 | | | |
| VOA | | | | | | | |
| Naphthalene | BDL | ug/l | 3510/610 | 0.5 | 4/29/91 | 5/01/91 | SP |
| Acenaphthene | BDL | ug/l | 3510/610 | 0.5 | | | |
| Acenaphthylene | BDL | ug/l | 3510/610 | 0.5 | | | |
| Anthracene | BDL | ug/l | 3510/610 | 1.0 | | | |
| Benzo (A) Anthracene | BDL | ug/l | 3510/610 | 1.0 | | | |
| Benzo (B) Fluoranthene | BDL | ug/l | 3510/610 | 1.25 | | | |
| Benzo (K) Fluoranthene | BDL | ug/l | 3510/610 | 1.25 | | | |
| Benzo (A) Pyrene | BDL | ug/l | 3510/610 | 2.0 | | | |
| Benzo (G,H,I) Perylene | BDL | ug/l | 3510/610 | 2.5 | | | |
| Chrysene | BDL | ug/l | 3510/610 | 2.5 | | | |
| Dibenzo (A,H) Anthracene | BDL | ug/l | 3510/610 | 1.0 | | | |
| Fluoranthene | BDL | ug/l | 3510/610 | 1.0 | | | |
| Fluorene | BDL | ug/l | 3510/610 | 0.5 | | | |
| Indendo-(1,2,3,-CD) Pyrene | BDL | ug/l | 3510/610 | 0.5 | | | |
| Phenanthrene | BDL | ug/l | 3510/610 | 1.0 | | | |
| Pyrene | BDL | ug/l | 3510/610 | 1.0 | | | |
| 1-Methyl Naphthalene | BDL | ug/l | 3510/610 | 0.5 | | | |
| 2-Methyl Naphthalene | BDL | ug/l | 3510/610 | 0.5 | | | |
| EPA 610 COMPOUNDS | | | | | | | |

* BDL = Below Detection Limits
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.

Respectfully Submitted,

Jeffrey S. Glass
Laboratory Director
Y.O.C. Analytical Inc.

ient #:19
ient Name:Rinker Materials
dress: P.O. BOX 650679
MIAMI, FL 33165

mple Description: GROUNDWATER ANALYSIS


Date: 5/06/91
Log#: 349-10

Label:38-23H24
Date Sampled: 4/24/91
Date Received: 4/25/91
Collected By: Your Rep

| rameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| otal Cadmium | BDL | mg/l | 213.2 | 0.005 | N/A | 4/25/91 | JG |
| otal Lead | BDL | mg/l | 239.2 | 0.005 | N/A | 4/26/91 | JG |
| otal Selenium | BDL | mg/l | 270.3 | 0.01 | N/A | 4/28/91 | JG |
| otal Arsenic | BDL | mg/l | 206.3 | 0.02 | N/A | 4/28/91 | JG |
| otal Chromium | 0.24 | mg/l | 218.2 | 0.005 | N/A | 4/25/91 | JG |
| otal Mercury | BDL | mg/l | 245.1 | 0.001 | N/A | 4/28/91 | JG |
| otal Silver | BDL | mg/l | 272.2 | 0.005 | N/A | 4/28/91 | JG |
| otal Barium | 0.092 | mg/l | 208.2 | 0.01 | N/A | 4/26/91 | JG |

* BDL = Below Detection Limits
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.

Respectfully Submitted,

Jeffrey S. Glass
Laboratory Director
V.D.C. Analytical Inc.

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165


Date: 5/06/91
Log#: 349-11

Sample Description: GROUNDWATER ANALYSIS

Label:38-RBH24
Date Sampled: 4/24/91
Date Received: 4/25/91
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Benzene | BDL | ug/l | 5030/8021 | 0.5 | N/A | 4/30/91 | GP |
| Toluene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| MTBE | BDL | ug/l | 5030/8021 | 0.5 | | | |
| Ethyl benzene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| Total Xylenes | BDL | ug/l | 5030/8021 | 0.5 | | | |
| VOA | | | | | | | |

* BDL = Below Detection Limits
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.

Respectfully Submitted,

Jeffrey S. Glass
Laboratory Director
V.O.C. Analytical Inc.

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165


Date: 5/06/91
Log#: 349-12

Sample Description: GROUNDWATER ANALYSIS

Label:TRIP BLANK
Date Sampled: 4/24/91
Date Received: 4/25/91
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Benzene | BDL | ug/l | 5030/8021 | 0.5 | N/A | 4/30/91 | GP |
| Toluene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| MTBE | BDL | ug/l | 5030/8021 | 0.5 | | | |
| Ethyl benzene | BDL | ug/l | 5030/8021 | 0.5 | | | |
| Total Xylenes | BDL | ug/l | 5030/8021 | 0.5 | | | |
| VOA | | | | | | | |

* BDL = Below Detection Limits
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.

Respectfully Submitted,

Jeffrey S. Glass
Laboratory Director
V.O.C. Analytical Inc.

# VOC LABS CHAIN OF CUSTODY

Analytical Technologies, Inc.
EAST OLIVE ROAD PHONE (904) 474-1001
PENSACOLA, FLORIDA 32514

B. I.D. # _____

CLIENT GROUNDWATER SPECIALISTS, INC.

ADDRESS 3003 S. CONGRESS AVENUE, 1C

CITY PALM SPRINGS

STATE FLORIDA ZIP 33461

PHONE NO. ( 407 ) 641-5355

PROJECT NUMBER RNK2002

PROJECT NAME RINKER CEMENT MILL

SAMPLED BY GREG SOUCY

SAMPLE SITE MIAMI, FLA

PURCHASE ORDER NUMBER

PROJECT MANAGER (person to receive data)
BILL KELLY

REQUEST FAX DATA TO _____ (FAX #)

REQUEST VERBAL RESULTS BY _____ (DATE)

NEED DATA PACKAGE BY _____ (DATE)

QUALITY CONTROL REPORTING LEVEL
(1) 2 3 4 (circle one)

**SAMPLE MATRIX**

DW DRINKING WATER
WW WASTEWATER
(GW) GROUNDWATER
SW SURFACE WATER
SO SOIL
OL OIL
AR AIR
SL SLUDGE
HZ HAZARDOUS

PARAMETERS/ SAMPLE BOTTLE/ CONTAINER DESCRIPTION/ PRESERVATIVES

| SAMPLE I.D. | DATE | TIME | MATRIX | BETX AND MTBE (602) | EPA 601 | EPA 601 & 602 + X + MTBE | EPA 239.2 - PB | EPA 504.1 - EDB | EPA 610 + 1 + 2 METHYLNAPHTHALENE | EPA 418.1 | | | TOTAL | LAB USE ONLY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 38-6H24 | 4-24-91 | 1730 | GW | X | | | | X | | | | | 3 | |
| 38-7H24 | | 1400 | | | | | | | | | | | 3 | |
| 38-8H24 | | 1645 | | | | | | | | | | | 3 | |
| 38-9H24 | | 1445 | | | | | | | | | | | 3 | |
| 38-10HZ4 | | 530 | | | | | | | | | | | 3 | |
| 38-11H24 | | 1000 | | | | | | | | | | | 3 | |
| 38-12HZ4 | | 1145 | | | | | | | | | | | 3 | |
| 38-13HZ4 | | 900 | | | | | | | | | | | 3 | |
| 38-14HZ4 | | 930 | | | | | | | | | | | 3 | |
| 38-23HZ4 | | 1815 | | | | | | | | | | | 3 | |
| 38-22HZ4 | | 1845 | | | | | | | | | | | 2 | |
| TRIP BLANK | | | | | | | | | | | | | 2 | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

NO RINSE OR T.B. FOR GW

TOTAL NUMBER OF BOTTLES/CONTAINERS 34

| RELINQUISHED BY: | DATE | TIME | RECEIVED BY: | DATE | TIME |
|---|---|---|---|---|---|
| William M. Bonfanti | 4.25 | 0800 | | | |
| | | | | | |

**PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS**

TURN AROUND TIME
(NORMAL) ☐ 2 WEEKS
RUSH: ☐ 24 HOURS ☐ 48 HOURS ☐ 72 HOURS ☐ 1 WEEK

**SAMPLE DISPOSAL INSTRUCTIONS**

☐ Return

SPECIAL INSTRUCTIONS:

DO NOT LOG IN TRIP BLANKS. ANALYZE TRIP BLANK(S) ONLY IF SAMPLE _____ SHOWS DETECTABLES.

— VOC LABS —

# CHAIN OF CUSTODY

Analytical Technologies, Inc.
1 EAST OLIVE ROAD PHONE (904) 474-1001
PENSACOLA, FLORIDA 32514

LAB. I.D. # _____

CLIENT GROUNDWATER SPECIALISTS INC

ADDRESS 3003 S. CONGRESS AVE, IC

CITY PALM SPRINGS

STATE FLA ZIP 33461

PHONE NO. (407) 641-5355

PROJECT NUMBER RNK 2002

PROJECT NAME RINKER CEMENT MILL

SAMPLED BY GREG SOUCY

SAMPLE SITE MIAMI, FLA

PURCHASE ORDER NUMBER

PROJECT MANAGER (person to receive data)

REQUEST FAX DATA TO _____ (FAX #)

REQUEST VERBAL RESULTS BY _____ (DATE)

NEED DATA PACKAGE BY _____ (DATE)

QUALITY CONTROL REPORTING LEVEL

0 1 2 3 4 (circle one)

**SAMPLE MATRIX**

DW DRINKING WATER
WW WASTEWATER
(GW) GROUNDWATER
SW SURFACE WATER
SO SOIL
OL OIL
AR AIR
SL SLUDGE
HZ HAZARDOUS

PARAMETERS / METHOD

| SAMPLE I.D. | DATE | TIME | MATRIX | ARSENIC (206.3) | BARIUM (208.2) | CADMIUM (213.2) | CHROMIUM (218.2) | LEAD (239.2) | MERCURY (245.1) | SELENIUM (270.3) | SILVER (272.2) | TOTAL | LAB USE ONLY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 38-6H24 | 4-24-91 | 1730 | GW | X | X | X | X | X | X | X | X | 1 | |
| 38-7H24 | | 1400 | | | | | | | | | | 1 | |
| 38-8H24 | | 1645 | | | | | | | | | | 1 | |
| 38-9H24 | | 1445 | | | | | | | | | | 1 | |
| 38-10H24 | | 1530 | | | | | | | | | | 1 | |
| 38-11H24 | | 1000 | | | | | | | | | | 1 | |
| 38-12H24 | | 1145 | | | | | | | | | | 1 | |
| 38-13H24 | | 900 | | | | | | | | | | 1 | |
| 38-14H24 | | 930 | | | | | | | | | | 1 | |
| 38-23H24 | | 1815 | | | | | | | | | | 1 | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

TOTAL NUMBER OF BOTTLES/CONTAINERS 10

| RELINQUISHED BY: | DATE | TIME |
|---|---|---|
| William Burkhead | 4.25 | 0800 |
| | | |

| RECEIVED BY: | DATE | TIME |
|---|---|---|
| | | |
| | | |

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH PROJECTS

TURN AROUND TIME
(NORMAL) ☐ 2 WEEKS
RUSH: ☐ 24 HOURS ☐ 48 HOURS ☐ 72 HOURS ☐ 1 WEEK

SAMPLE DISPOSAL INSTRUCTIONS

☐ ATI Disposal @ $5.00 each ☐ Return

SPECIAL INSTRUCTIONS:

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

ENFORCEMENT TELEPHONE LOG

CASE NAME: Rinker Soil facility DATE: 7/15/91 TIME: 1:00 P

CONTACT: Zoe Kulakowski OF: BWC CALLED / WAS CALLED

PHONE: SC 278-0190

**********

DISCUSSION: 6/13/91

- Metal cont detected in gw wells, Chromium .24 mg/l. Cr .15 mg/l.
- Also, Selenium violations detected in area surrounding scale house. .178 + .125
- may be an areawide problem, or well development problem. drilling muds were used.
- Paul Jacob may do add work to asses. add samples. To be collected next week.
- She will send me the data.

PREPARED BY: Paul W.

permit

STATE OF FLORIDA

# DEPARTMENT OF ENVIRONMENTAL REGULATION

File Copy

SOUTHEAST FLORIDA
DISTRICT

P.O. BOX 3858
3301 GUN CLUB ROAD
WEST PALM BEACH, FLORIDA 33402-3858



February 9, 1987

Dade County
AP-Rinker Portland Cement Corporation
Used Oil Fuel Modification

Mr. William E. Voshell
Environmental Specialist
Rinker Materials Corporation
Post Office Box 24635
West Palm Beach, Florida 33416-4635

7/19/91
from
Tom

Dear Mr. Voshell:

MODIFICATION OF CONDITIONS
Permit No. AO 13-074101

We are in receipt of your request for a modification of the permit conditions. The conditions are changed as follows:

CONDITION #10

FROM

Fuel used shall be virgin oil, gas, coal or used oil fuel meeting EPA used oil fuel specifications.

TO

Fuel used shall be virgin oil, gas, coal or used oil fuel meeting EPA used oil fuel specifications except that lead concentrations will be limited to 500 ppm maximum. For used oil fuel, the following shall be recorded on the delivery receipt: the use of tamper proof seals on the delivery truck; the volume of fuel delivered; a cross reference to the analyses which established that the used oil meets EPA used oil fuel specifications; the results of the screening analyses; the name of the person performing the test; the specific test kit used; the amount of oil sampled, and the amount and name of the solution used to dilute the oil. Used oil fuel that is delivered without a delivery receipt containing all the above information, or which is not properly sealed, or for which the delivery receipt does not contain all the necessary information, is not to be accepted and the Department of Environmental Regulation - Southeast Florida District office, is to be notified by phone immediately (with written confirmation to follow), if such a delivery is attempted. Verification by signature on the delivery receipt shall be provided by plant personnel that the delivery truck arrived on site with all seals intact. As delivered samples of all used oil fuel received shall be accumulated throughout each quarter for each suplier. Analyses by EPA Recommended Analytical Procedures for used oil fuel shall be performed on each composited sample (identified as to supplier) for lead, arsenic, cadminum,

chrominum, total halogens, and flashpoint. Analyses by ASTM methods, or other methods with prior DER-SEFD approval, shall be performed on each coposited sample (identified as to supplier) for sulfur, ash, BTU content and PCB's. The results of the analyses (on the laboratory's letterhead) hall be submitted to the DER-SEFD no later than 30 days after the end of each quarter. The unused portion of the used oil fuel sample shall be retained for six months following the submittal of the analyses in case further testing is required. All records, reports, and data collected shall be maintained as specified in General Condition 14, Part B.

This letter must be attached to your permit and become a part of that permit.

DEPARTMENT OF ENVIRONMENTAL REGULATION
SOUTHEAST FLORIDA DISTRICT

Alexander Padva

ALEXANDER PADVA, Ph.D. Assist. Dist. Mgr. Date: February 6th, 1987

J. Scott Benyon
District Manager

JSB:fa:/8

5/20/91 12:15p

Kim Cooper
4112 NW 78th Ave
or
2440 SW 15th St.
Deerfield Bch, FL. 33441
407-241-8202
1800628-2831

Reviewed the
Rinker Files.

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

For Routing To Other Than The Addressee

To: _____ Location: _____

To: _____ Location: _____

To: _____ Location: _____

From: _____ Date: _____

# Interoffice Memorandum

TO: Paul Wierzbicki, Southeast Districst Office

THROUGH: Jim Crane, Bureau of Waste Cleanup JJC

FROM: Zoe Kulakowski, Bureau of Waste Cleanup ZPK

DATE: April 16, 1991

RECEIVED
APR 22 1991
Dept. of Environmental Reg.
West Palm Beach

SUBJECT: Rinker Portland Cement Corporation, 1200 Northwest 19th Avenue, Miami, Dade County, Florida

---

The January 1991 Ground Water Monitoring Plan (GWMP), the April 1991 GWMP Addendum A, and the April 12, 1991 Supplements/Revisions to Addendum A have been reviewed for the referenced facility. These items satisfy the requirements of Chapter 17-775.610, F.A.C., and are acceptable for issuance of the general permit.

/sr

# MEMORANDUM

TO: Paul Wierzbicki
DER, WPB

DATE: 4/18/91

SUBJECT: Rinker Kiln

FROM: Mike Graham MBG
DERM

Sorry we haven't been able to connect on the phone the last couple of days. Thought I'd fax you this note FYI.

Talibah Adisa told me the other day you were calling in re the Rinker Dade County kiln soil thermal treatment application. I assume you were referring to the large notebook-size application that I saw in your office several weeks ago. Unless somehow I didn't find out that another Section in DERM has it, which shouldn't be, at least not for this long, we never received a copy of it for review. Obviously we'd still like to see it.

What we did receive from Rinker however was a set of plans (actual blueprint size) for the construction of the temporary soil storage area, with concrete pad and roof. That plan went thru the normal B+Z and DERM routing and our Hazardous Facilities Section received it and has just approved it. Roberto Abrahante is the HazFac Section Chief and Mo Taha is the engineer who reviewed it. Will send you a copy of the approval as soon as I get one.

The Rinker kiln remains a subject of review and debate within DERM since it is located within the Northwest Wellfield and the Wellfield Protection Ordinance restricts hazardous materials and bans hazardous waste within the wellfield.

Hopefully this answers some of your question as I understood it - will still try to call.

Department of Environmental Regulation

# Routing and Transmittal Slip

To: (Name, Office, Location)

1. Mike Graham
2. Metro Dade Environmental Resources Management
3.
4.

Remarks:

Re: Rinker - Miami 17-775, FAC

From: Paul Wierzbicki

Date 4/23/91

Phone SC 232-2450

# M E M O R A N D U M

TO: Paul Wierzbicki
DER, WPB

DATE: 4/18/91

SUBJECT: Rinker Kiln

FROM: Mike Graham MJG
DERM

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# M E M O R A N D U M

TO: Paul Wierzbicki
DER, WPB

DATE: 4/18/91

SUBJECT: Rinker Kiln

FROM: Mike Graham MJG
DERM

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Talibah Adisa told me the other day you were calling in re the Rinker Dade County kiln soil thermal treatment application. I assume you were referring to the large notebook-size application that I saw in your office several weeks ago. Unless somehow I didn't find out that another Section in DERM has it, which shouldn't be, at least not for this long, we never received a copy of it for review. Obviously we'd still like to see it.

What we did receive from Rinker however was a set of plans (actual blueprint size) for the construction of the temporary soil storage area, with concrete pad and roof. That plan went thru the normal B+Z and DERM routing and our Hazardous Facilities Section received it and has just approved it. Roberto Abrahante is the HazFac Section Chief and Mo Taha is the engineer who reviewed it. Will send you a copy of the approval as soon as I get one.

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Hopefully this answers some of your question as I understood it - will still try to call.

Post-it™ brand fax transmittal memo 7671 | # of pages ▸ -1-

| | |
|---|---|
| To Paul Wierzbicki | From Mike Graham |
| Co. DER WPB | Co. DERM |
| Dept. | Phone # 375-3321 |
| Fax # 407 433 2666 | Fax # 375-3360 |

UNITED STATES POSTAL SERVICE

OFFICIAL BUSINESS

**SENDER INSTRUCTIONS**

Print your name, address and ZIP Code in the space below.

- Complete items 1, 2, 3, and 4 on the reverse.
- Attach to front of article if space permits, otherwise affix to back of article.
- Endorse article "Return Receipt Requested" adjacent to number.

RECEIVED

APR 2 2 1991

Dept. of Environmental Reg.
West Palm Beach

U.S.MAIL

PENALTY FOR PRIVATE USE, $300

RETURN TO

Print Sender's name, address, and ZIP Code in the space below.

MR. Paul Wierzbicki (DERIORA)

~~STATE OF FLORIDA~~

DEPARTMENT OF ENVIRONMENTAL REGULATION

~~1900 SOUTH CONGRESS AVE., SUITE A~~

WEST PALM BEACH, FL 33406

**SENDER:** Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.

Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☐ Show to whom delivered, date, and addressee's address. *(Extra charge)*
2. ☐ Restricted Delivery *(Extra charge)*

3. Article Addressed to:

Mr. James S. Jenkins, III
Vice President, Cement Oper.
Rinker Materials Corporation
P.O. Box 24635
West Palm Beach, FL 33416

4. Article Number

P-645-678-901

Type of Service:

- ☐ Registered
- ☑ Certified
- ☐ Express Mail
- ☐ Insured
- ☐ COD
- ☐ Return Receipt for Merchandise

Always obtain signature of addressee or agent and DATE DELIVERED.

5. Signature — Addressee

X

6. Signature — Agent

X Mary Mon

7. Date of Delivery

8. Addressee's Address *(ONLY if requested and fee paid)*

WEST PALM BEACH, FL
APR
18
1991
USPS

PS Form **3811**, Apr. 1989 ★U.S.G.P.O. 1989-238-815 **DOMESTIC RETURN RECEIPT**

# *Florida Department of Environmental Regulation*

**Southeast District** • 1900 S. Congress Ave., Suite A • West Palm Beach, Florida 33406

Lawton Chiles, Governor

Carol M. Browner, Secretary


APR 17 1991

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Mr. James S. Jenkins, III
Vice President, Cement Operations
Rinker Materials Corporation
Post Office Box 24635
West Palm Beach, FL 33416

GMS I.D. No.: 5013P03669
General Permit No.: SO13-195017
County: Dade
Project: To Construct/Operate a Soil Thermal Treatment facility
Expiration Date: April 4, 1996

Dear Mr. Jenkins:

This letter acknowledges receipt of your notice requesting the use of a General Permit. Based upon the representation submitted to the Department, this project appears to qualify for the operation of a soil thermal treatment facility located at 1200 Northwest 137th Avenue, Miami, Dade County, Florida 33182.

This facility shall be operated in accordance with the applicable paragraphs set forth in Florida Administrative Code Rules 17-775.

This General Permit is subject to the General Conditions of Florida Administrative Code Rules 17-4.510 through 17-4.540, F.A.C. (see backside).

If you need further information, please call Mr. Paul Wierzbicki, P.G., at telephone number 407/433-2650 or after hours 904/488-1320 for an emergency.

Sincerely,

J. Scott Benyon
Deputy Assistant Secretary

JSB:paw/28
cc: Mr. John Ruddell, Bureau of Waste Cleanup, DER, Tallahassee
Mr. Don Ehlenbeck, P.E., Bureau of Waste Cleanup, DER, Tallahassee
Mr. Chris McGuire, Esq., Office of General Counsel, DER, Tallahassee
Ms. Zoe Kulakowski, P.G., Bureau of Waste Cleanup, DER, Tallahassee
Mr. William E. Voshell, Rinker Materials Corporation
Mr. I. Goldman, P.E., Air Section, DER, West Palm Beach
Mara Austin, Metro-Dade Environmental Resources Management
West Palm Beach DER files

17-4.540 General Conditions for All General Permits.

(1) The terms, conditions, requirements, limitations, and restrictions set forth in this Part are "general permit conditions" and are binding upon the permittee. The conditions are enforceable under Chapter 403, F.S.

(2) The general permit is valid only for the specific activity indicated. Any deviation from the specified activity and the conditions for undertaking that activity shall constitute a violation of the permit. The permittee is placed on notice that violation of the permit may result in suspension or revocation of the permittee's use of the general permit and may cause the Department to begin legal proceedings.

(3) The general permit does not convey any vested rights or any exclusive privileges. It does not authorize any injury to public or private property nor any invasion of personal rights. It does not authorize any infringement of federal, state or local laws or regulations. It does not eliminate the necessity for obtaining any other federal, state or local permits that may be required, or allow the permittee to violate any more stringent standards established by federal or local law.

(4) The general permit does not relieve the permittee from liability and penalties when the construction or operation of the permitted activity causes harm or injury to human health or welfare; causes harm or injury to animal, plant or aquatic life; or causes harm or injury to property. It does not allow the permittee to cause pollution in contravention of Florida Statutes and Department rules.

(5) The general permit conveys no title to land or water, nor does it constitute State recognition or acknowledgement of title. It does not constitute authority for reclamation of submerged lands. Only the Board of Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

(6) No general permit shall authorize the use of state owned land without the prior consent of the Board of Trustees of the Internal Improvement Trust Fund pursuant to Section 253.77, F.S.

(7) The general permit may be modified, suspended or revoked in accordance with Chapter 120, Florida Statutes, if the Secretary determines that there has been a violation of any of the terms or conditions of the permit, there has been a violation of state water quality standards or state air quality standards, or the permittee has submitted false, incomplete or inaccurate data or information.

(8) The general permit shall not be transferred to a third party except pursuant to Fla. Admin. Code Rule 17-4.120.

(9) The general permit authorizes construction and where applicable operation of the permitted facility.

(10) The permittee agrees in using the general permit to make every reasonable effort to conduct the specific activity or construction authorized by the general permit in a manner that will minimize any adverse effects on adjacent property or on public use of the adjacent property, where applicable, and on the environment, including fish, wildlife, natural resources of the area, water quality or air quality.

(11) The permittee agrees in using the general permit to allow a duly authorized representative of the Department access to the permitted facility or activity at reasonable times to inspect and test upon presentation of credentials or other documents as may be required by law to determine compliance with the permit and the Department rules.

(12) The permittee agrees to maintain any permitted facility, or activity in good condition and in accordance with the plans submitted to the department under Rule 17-4.530(1).

(13) A permittee's use of a general permit is limited to five years. However, the permittee may request continued use of the general permit by notifying the Department pursuant to Rule 17-4.530(1). However, the permittee shall give notice of continued use of a general permit thirty days before it expires.

Specific Authority: 403.814(1), F.S.
Law Implemented: 253.123, 253.124, 403.061, 403.087, 403.088, 403.702-403.73, 403.814, 403.851-403.864, F.S.
History: New 7-8-82. Amended 8-31-88. Previously numbered as 17-5.54.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

ENFORCEMENT TELEPHONE LOG

CASE NAME: Rinker DATE: 4/16/91 TIME: Am

CONTACT: Mike Vardeman OF: Rinker CALLED / WAS CALLED

PHONE: 305/221-7645

**********

DISCUSSION:

- Status of permit (Notice):
- I explained I thought it was complete, but I am awaiting Tall approval
- QA may have to be revised in the next several months.
- He is receptive to changes in the QA.

PREPARED BY: Paul W

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

ENFORCEMENT TELEPHONE LOG

CASE NAME: RWW DATE: 4/16/91 TIME: Am

CONTACT: Zoe Kulakowski OF: BWC CALLED / WAS CALLED

PHONE: SC 278-0190

**********

DISCUSSION:

- Rinker permit notice's gw monitoring plan is adequate.
- Accordy to Z.K., she is recommending approval.
- D. Ehlenbeck will recommend approval, accordy to Z.K.

PREPARED BY:

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

ENFORCEMENT TELEPHONE LOG

CASE NAME: Rinker DATE: 4/16/91 TIME: Am

CONTACT: Rick Poley OF: DERM CALLED / WAS CALLED

PHONE: SC 445-3317

**********

DISCUSSION:

re: Rinker

- He has a concern re wastewaters + non-dade cty material to the Rinker Plant
- these issues not related to the GP issue for 17-775
- I discussed the Notice + alternate procedure - FAXed to Rick Poley

PREPARED BY: Paul W.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

ENFORCEMENT TELEPHONE LOG

CASE NAME: Rinker DATE: 4/15/91 TIME: 1000

CONTACT: Talibah Adisah OF: Dren CALLED / WAS CALLED

PHONE: SC 445-3376

**********

DISCUSSION:

- Talibah will check to see who is handling the Rinker site + get back w/me on it.
- I explained it was only for the 17-775, FAC soils

PREPARED BY: Rinker

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
ENFORCEMENT TELEPHONE LOG

CASE NAME: Rinker DATE: 4/12/91 TIME: pm

CONTACT: Wm Voshell OF: Rinker CALLED/ WAS CALLED

**********

DISCUSSION: - Rinker wants to know the status of their permit.
- I told them my Review was near Completion however, the dump is pending Z. Kolakowski's review.

PREPARED BY: Paul Weyforth

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION

ENFORCEMENT TELEPHONE LOG

CASE NAME: Rinker DATE: 4/12/91 TIME: 11:05

CONTACT: Z. Kuldkowski OF: BWC CALLED / WAS CALLED

PHONE: SC 278-0190

**********

DISCUSSION:

- She is expecting add. gw info from P. Jacob.
- She will have review by Tue. of next wk.

PREPARED BY: Paul W

State of Florida
Department of Environmental Regulation

# District Routing Slip

To: Paul Wierzbicki Date: 4/4/91

C.C. To:

| | | | |
|---|---|---|---|
| | **Pensacola** | **Northwest District** | |
| | Panama City | Northwest District Branch Office | |
| | Tallahassee | Northwest District Branch Office | |
| | Apalachicola | Northwest District Satellite Office | |
| | **Tampa** | **Southwest District** | |
| | Bartow | Southwest District Satellite Office | |
| | Venice | Southwest District Satellite Office | |
| | **Orlando** | **Central District** | |
| | Melbourne | Central District Satellite Office | |
| | **Jacksonville** | **Northeast District** | |
| | Gainesville | Northeast District Branch Office | |
| | **Fort Myers** | **South District** | |
| | Punta Gorda | South District Branch Office | |
| | Marathon | South District Branch Office | |
| X | **West Palm Beach** | **Southeast District** | |
| | Port St. Lucie | Southeast District Branch Office | |

Reply Optional ☐ Reply Required ☐ Info Only ☐

Date Due _____ Date Due: _____

Comments:

Corrected pg 3 of Ruiken Order

From: [signature] Tel.: 278-0190

Department's identification number and the county in which the subject matter or activity is located; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by petitioner, if any; (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the subject agency proposed action have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 21 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only

by the Secretary or her designee of alternate procedures and requirements concerning the regulation of soil thermal treatment facilities.

The Department concludes that the applicant has adequately demonstrated that the proposed alternate procedure provides a substantially equivalent degree of protection for the lands, surface waters, and ground waters of the State as the established requirement and that the alternate procedure is at least as effective as the established requirements.

Upon consideration of the foregoing it is therefore ORDERED that Rinker Materials Corporation's request for an alternate procedure and requirement is GRANTED.

Persons whose substantial interests are affected by the above proposed action have a right, pursuant to Section 120.57, F.S., to petition for an administrative determination (hearing) on the proposed action. The petition must contain the information set forth below and must be filed (received) in the Department's Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within 21 days of publication of this notice. A copy of the Petition must also be mailed at the time of filing to Rinker Materials Corporation at the address indicated above. Failure to file a petition within the 21 days constitutes a waiver of any right such person has to an administrative determination (hearing) pursuant to Section 120.57, F.S.

The petition shall contain the following information: (a) The name, address, and telephone number of each petitioner; the

# Florida Department of Environmental Regulation

Twin Towers Office Bldg. ● 2600 Blair Stone Road ● Tallahassee, Florida 32399-2400

Lawton Chiles, Governor

Carol M. Browner, Secretary


April 4, 1991

Mr. Michael D. Vardeman
Rinker Materials Corporation
Portland Cement Corporation
P.O. Box 650679
Miami, FL 33265-0679

Re: Approval of Alternate Procedures
Rinker Materials Corporation
File No. AP-STTF001

Dear Mr. Vardeman:

The Department has reviewed your March 8, 1991, request for approval of alternate procedures for the Rinker facility located at 1200 N.W. 137th Avenue, Miami. Enclosed is the executed copy of the Approval of Alternate Procedures. If you have any questions regarding this approval, please contact me at 904/488-0190.

Sincerely,

Donald R. Ehlenbeck, P.E.
Bureau of Waste Cleanup

DRE/wb

enclosure

cc: Alex Padva - DER/West Palm Beach
Paul Wierzbicki - DER/West Palm Beach

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

IN RE: File No. AP-STTF001
Rinker Materials Corporation )
Request Pursuant to Florida )
Administrative Code Rule 17-775.500 )

APPROVAL OF ALTERNATE PROCEDURES

This cause comes before me upon receipt of a request by Rinker Materials Corporation for the approval of alternate procedures and requirements for the Rinker facility located at 1200 N.W. 137th Avenue, Miami, pursuant to Florida Administrative Code (F.A.C.) Rule 17-775.500. A Copy of the request is attached as Exhibit A.

FINDINGS OF FACT

1. The applicant requests that exceptions be granted for compliance with F.A.C. Rule 17-775.400(1),(2),(3),(4) that requires soil which has been treated by a soil thermal treatment facility to meet certain cleanup levels to be classified as clean soil, and F.A.C. Rule 17-775.410(5) which requires sampling and analysis of soil following thermal treatment for every eight hours of operation or each 400 tons of soil.

2. The applicant does not process contaminated soil into "clean soil", rather the contaminated soils are used entirely as raw materials for the production of clinker/portland cement, and the applicant proposes to do the following:

a. In the process of clinker production, use contaminated soil as raw material which is processed through direct fired rotary kilns for three to three and a half hours and is

converted to clinker with a kiln exit temperature of approximately 2750 °F.

b. Use the contaminated soil as approximately 12 percent of the total raw materials consumed in the production of clinker and approximately 10 percent of the portland cement produced.

c. Limit the maximum concentrations of metals in contaminated soil entering the raw materials feed process to the clean soil criteria of F.A.C. Rule 17-775.400(4).

d. As an alternate procedure for F.A.C. Rule 17-775.410(5), sample clinker production every 400 tons or every eight hours whichever is less and composite these samples on a weekly basis (7 days), and sample the clinker for the parameters and levels identified in F.A.C. Rule 17-775.400.

3. The applicant contends that this request satisfies the criteria for approval of an alternate procedure and requirements as set forth in F.A.C. Rule 17-775.500, and has provided laboratory analysis as Exhibit A to its request to demonstrate that clinker meets the criteria for clean soil.

Based on the information provided by the applicant, the Department finds that the applicant's plan will provide environmental protection substantially equivalent to that provided by compliance with the requirements established in Florida Administrative Code Rule 17-775.400(1),(2),(3),(4) and 17-775.410(5).

## CONCLUSIONS OF LAW

Florida Administrative Rule 17-775.500 authorizes the approval

by the Secretary or her designee of alternate procedures and requirements concerning the regulation of soil thermal treatment facilities.

The Department concludes that the applicant has adequately demonstrated that the proposed alternate procedure provides a substantially equivalent degree of protection for the lands, surface waters, and ground waters of the State as the established requirement and that the alternate procedure is at least as effective as the established requirements.

Upon consideration of the foregoing it is therefore ORDERED that Rinker Materials Corporation's request for an alternate procedure and requirement is GRANTED.

Persons whose substantial interests are affected by the above proposed action have a right, pursuant to Section 120.57, F.S., to petition for an administrative determination (hearing) on the proposed action. The petition must contain the information set forth below and must be filed (received) in the Department's Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within 21 days of publication of this notice. A copy of the Petition must also be mailed at the time of filing to Naval Facilities Engineering Command, Southern Division, above at the address indicated. Failure to file a petition within the 21 days constitutes a waiver of any right such person has to an administrative determination (hearing) pursuant to Section 120.57, F.S.

The petition shall contain the following information: (a) The name, address, and telephone number of each petitioner; the

Department's identification number and the county in which the subject matter or activity is located; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by petitioner, if any; (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the subject agency proposed action have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 21 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only

be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

When the Order is final, any party to the Order has the right to seek judicial review of the Order pursuant to Section 120.68, Florida Statutes by filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the clerk of the Department in the Office of General Counsel, 2600 Blair Stone Road. Tallahassee, Florida 32399-2400; and by filing a copy of the Notice of Appeal, accompanied by the applicable filing fees, with the appropriate District Court of Appeal. The Notice of Appeal must be file within 30 days from the date the Final Order is filed with the clerk of the Department.

DONE AND ORDERED this 1ST day of April, 1991 in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

R G Wilkins

Richard G. Wilkins, Director
Division of Waste Management
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Bureau of Waste Cleanup

MAR 14 1991

**Rinker Materials**

EXHIBIT A

March 8, 1991

Engineering Support Section

**Rinker Materials Corporation**
Portland Cement Corporation
1200 N.W. 137th Avenue
Miami, FL 33182

P.O. Box 650679
Miami, FL 33265-0679

Facsimile (305) 223-5403
Telephone (305) 221-7645

Mr. John M. Ruddell, Bureau Chief
Bureau of Waste Cleanup
Florida Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32301

RE: Alternate Procedure To Chapter 17-775 FAC
"Soil Thermal Treatment Facilities"

Dear Mr. Ruddell:

This letter is to present a request to the Department for approval of alternate procedures as outlined under Chapter 17-775.500 Florida Administrative Code (FAC) Approval of Alternate Procedure. Approval of the alternate procedures would allow Rinker Materials Corporation (RMC) to fully comply with the intent of the "clean fill" requirement of Chapter 17-775 FAC while maintaining optimum cement production, quality products, and the protection of the environment.

To provide some background, Rinker Materials Corporation (RMC) located at 1200 NW 137 Avenue, Miami, Florida manufacturers various types of portland cement at the Miami location for sales and distribution throughout the State of Florida.

The production process begins with the quantitative and qualitative processing of raw materials (limestone, rock, sand, bottom ash, slag etc.) into a high solids slurry. This slurry is then introduced into two 475 foot rotary kilns. The slurry remains in the kilns for 3 to 3-1/2 hours where it is heated, dried and calcined at a material temperature of approximately 2750 degrees F.

At this temperature of fusion a mineralogical product called clinker is produced. The resulting clinker (approximately 1700 tons per day) is cooled and ground with gypsum and other special property admixtures to produce the product known as portland cement (approximately 1900 tons per day).

All petroleum contaminated soils that are received by Rinker are consumed completely into our production operation as "substitute" for a portion of the like raw materials (ie: limerock, sand) and is subject to the same raw material processing at the onset of the production process.

On the average petroleum contaminated soils represent only about 12% of the raw material feed stock when compared to the yearly production of portland cement.

Due to the specific nature of our manufacturing process we are seeking relief from the criteria set forth in 17-775.400 FAC "Criteria For Clean Soil" all Sections and 17-775.410 FAC "Soil Sampling And Analysis" Section (5). We believe that this relief is justified due to the manner in which petroleum contaminated soils are incorporated as production raw materials and due to the fact that Rinker does not treat soils for utilization as "clean fill."

I have enclosed RMC's alternate proposal in the same format outlined in Chapter 17-775.500 FAC. If necessary, we welcome the opportunity to meet with you to discuss RMC's alternate request. Otherwise, should you have any questions, call me at (305) 221-7645.

Sincerely,

Michael D. Vardeman
Manager, Material Substitution

MDV:lg

cc: Mr. Paul Wiersbicki, Waste Cleanup Supervisor
DER - West Palm Beach
Mr. Don Ellenbeck
DER - Tallahassee

## REQUEST FOR APPROVAL OF ALTERNATE PROCEDURES

## UNDER CHAPTER 17-775.500 FAC

Chapter 17-775.500 FAC

(2) (a) - Rinker Materials Corporation 1200 NW 137 Avenue
Miami, Florida 33182

(2) (b) - Rinker Materials Corporation is requesting exemption from Chapter 17-775.400 FAC "Criteria For Clean Soils" Section (1)(2)(3)(4) and Chapter 17-775.410 FAC "Soil Sampling and Analysis" Section (5).

(2) (c) - The basis for the exemption to 17-775.400 FAC (1)(2)(3)(4) are as follows:

1. Rinker Materials does not process petroleum contaminated soils into "clean fill." All petroleum contaminated soils are used entirely as raw materials for the production of clinker/portland cement.

2. In the process of clinker production, all raw materials (slurried) are processed through direct fired rotary kilns for 3 to 3-1/2 hours and are converted to clinker with a kiln exit temperature of approx. 2750°F.

3. The testing of composite sampling from clinker production (Exhibit A) demonstrates that clinker composition does not approach the upper values set for "clean soils." In fact, all sample reports document levels of concerned contaminants to be below 25% of the maximum values set for classification as "clean soil."

The basis for the exemption to 17-775.410 FAC (5) are as follows:

1. Rinker Materials does not process petroleum contaminated soils into "clean fill." All petroleum contaminated soils are used entirely as raw materials for the production of clinker/portland cement.

2. In the process of clinker production, all raw materials (slurried) are processed through direct fired rotary kilns for 3 to 3-1/2 hours and are converted to clinker with a kiln exit temperature of approx. 2750°F.

3. The testing of composite sampling from clinker production (Exhibit A) demonstrate that clinker composition does not approach the upper values set for "clean soils." In fact, all sample reports document levels of concerned contaminants to be below 25% of the maximum values set for classification as "clean soil."

4. Clinker production at Rinker is a continuous, 7 days per week, 24 hours per day and is maintained at a rate of approximately 1700 tons per day (24 hr.).

5. Contaminated soils represent only about 12% of the total raw materials consumed to make clinker and only about 10% of the portland cement produced.

(2) (d) - As an alternate procedure for 17-775.400 FAC "Criteria For Clean Soils" Section (1)(2)(3)(4), Rinker proposes the use of the maximum concentration (not to exceed) as stated in Table I of 17-775.400 FAC as the maximum concentration allowed for soils entering the raw materials feed process.

As an alternate procedure for 17-775.410 FAC "Soil Sampling and Analysis" Section (5), Rinker proposes sampling clinker production every 400 tons or every eight hours whichever is less and composite these samples on a weekly basis (7 days). Each weekly composite sample would then be analyzed for parameters identified in Rule 17-775.400 FAC (1)(2) and (4) and reported accordingly.

(2) (e) - As it relates to the alternate procedure for 17-775.400 FAC (1)(2)(3)(4), we feel that by limiting soils entering the cement manufacturing proces to the maximum allowable concentration for "clean soil" (Table I) clinker production incorporating contaminated soils as raw material can not exceed those same "clean soil" standards.

This alternate procedure would comply with the intent of Chapter 17-775 FAC to safeguard against added environmental contamination and or the spread of environmental contamination. (See Exhibit A)

As it relates to the alternate procedure for 17-775.410 FAC (5), Rinker feels that due to the high volume of clinker production and the relatively small percentage of raw material feed represented by contaminated soils, the sampling called for in 17-775.410 FAC (5) would be excessive based upon the actual analytical influences that contaminated soils could have on overall clinker analysis (See Exhibit A).

EXHIBIT A

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165

Page_2 of _2
Date:01/10/91
Log#: 1262

Sample Description: Clinkers/CLK-12/25/90

Label:CLK-12/25/90
Date Sampled: 12/27/90
Date Received:12/27/90
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Total VOA | BDL ✓ | mg/kg | 5030/8021 | 0.125 | 12/28/90 | 12/31/90 | GP |
| TRPH | BDL / | mg/kg | 9073 | 0.2 | 01/08/91 | 01/09/91 | EP |
| Total Cadmium | 2.2 55 | mg/kg | 3050/7090 | 1.0 | 12/28/90 | 12/31/90 | JG |
| Total Lead | BDL 77 | mg/kg | 3050/7420 | 1.0 | 12/28/90 | 01/05/91 | JG |
| Total Selenium | 7.1 165 | mg/kg | 3050/7741 | 1.0 | 12/28/90 | 01/10/91 | GW |
| Total Arsenic | 4.9 55 | mg/kg | 3050/7061 | 1.0 | 12/28/90 | 01/10/91 | GW |
| Total Chromium | 68 275 | mg/kg | 3050/7190 | 1.0 | 12/28/90 | 01/05/91 | JG |
| Total Mercury | BDL 17 | mg/kg | 3050/7471 | 0.1 | 12/28/90 | 01/02/91 | GW |
| Total Silver | 4.0 165 | mg/kg | 3050/7760 | 1.0 | 12/28/90 | 01/10/91 | JG |
| Total Barium | 9.2 2750 | mg/kg | 3050/7080 | 1.0 | 12/28/90 | 01/02/91 | GW |
| TCLP Cadmium | BDL 1 | mg/l | 1311/7090 | 0.005 | 12/28/90 | 12/31/90 | JG |
| TCLP Lead | BDL 5 | mg/l | 1311/7420 | 0.005 | 12/28/90 | 01/05/91 | JG |
| TCLP Selenium 1/100 | 0.07 1 | mg/l | 1311/7741 | 0.002 | 12/28/90 | 01/10/91 | GW |
| TCLP Arsenic 1/100 | 0.05 5 | mg/l | 1311/7061 | 0.002 | 12/28/90 | 01/10/91 | GW |
| TCLP Chromium | 0.53 5 | mg/l | 1311/7190 | 0.005 | 12/28/90 | 01/05/91 | JG |
| TCLP Mercury | BDL .2 | mg/l | 1311/7471 | 0.001 | 12/28/90 | 01/02/91 | GW |
| TCLP Silver | BDL 5 | mg/l | 1311/7760 | 0.005 | 12/28/90 | 01/10/91 | JG |
| TCLP Barium 1/20 | 0.5 100 | mg/l | 1311/7080 | 0.01 | 12/28/90 | 01/02/91 | GW |

* BDL = Below Detection Limits
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.

Respectfully Submitted,

Jeffrey S. Glass
Laboratory Director
V.O.C. Analytical Inc.

EXHIBIT A

VOC ANALYTICAL

Page_1 of _3

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165

Date:2/06/91
Log#: 164-1

Sample Description: Clinkers/CLK-1/9/91

Label:CLK-1/9/91
Date Sampled: 1/9/91
Date Received:1/18/91
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Total VOA | BDL | mg/kg | 5030/8021 | 0.125 | 1/19/91 | 1/19/91 | GP |
| TRPH | BDL | mg/kg | 9073 | 0.2 | 1/23/91 | 1/25/91 | AC |
| Total Cadmium | BDL | mg/kg | 3050/7090 | 1.0 | 1/19/91 | 1/24/91 | JG |
| Total Lead | 1.9 | mg/kg | 3050/7420 | 1.0 | 1/19/91 | 1/23/91 | JG |
| Total Selenium | BDL | mg/kg | 3050/7741 | 1.0 | 1/19/91 | 1/27/91 | JG |
| Total Arsenic | BDL | mg/kg | 3050/7061 | 1.0 | 1/19/91 | 1/27/91 | JG |
| Total Chromium | 23 | mg/kg | 3050/7190 | 1.0 | 1/19/91 | 1/26/91 | JG |
| Total Mercury | BDL | mg/kg | 3050/7471 | 0.1 | 1/19/91 | 1/27/91 | JG |
| Total Silver | 3.0 | mg/kg | 3050/7760 | 1.0 | 1/19/91 | 1/26/91 | JG |
| Total Barium | 59.7 | mg/kg | 3050/7080 | 1.0 | 1/19/91 | 1/26/91 | JG |
| TCLP Cadmium | BDL | mg/l | 1311/7090 | 0.1 | 1/19/91 | 1/24/91 | JG |
| TCLP Lead | BDL | mg/l | 1311/7420 | 0.1 | 1/19/91 | 1/23/91 | JG |
| TCLP Selenium | BDL | mg/l | 1311/7741 | 0.002 | 1/19/91 | 1/27/91 | JG |
| TCLP Arsenic | BDL | mg/l | 1311/7061 | 0.002 | 1/19/91 | 1/27/91 | JG |
| TCLP Chromium | BDL | mg/l | 1311/7190 | 0.1 | 1/19/91 | 1/26/91 | JG |
| TCLP Mercury | BDL | mg/l | 1311/7471 | 0.001 | 1/19/91 | 1/27/91 | JG |
| TCLP Silver | BDL | mg/l | 1311/7760 | 0.1 | 1/19/91 | 1/26/91 | JG |
| TCLP Barium | 0.85 | mg/l | 1311/7080 | 0.1 | 1/19/91 | 1/26/91 | JG |

* BDL = Below Detection Limits
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.

Respectfully Submitted,

Jeffrey S. Glass
Laboratory Director
V.O.C. Analytical Inc.

877 N.W. 61 Str... 2 - Ft. Lauderdale, FL 33309 - (305) 938-8823 - Fax (305) 938-8900

EXHIBIT A

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165

Page_2 of _3
Date:2/06/91
Log#: 164-2

Sample Description: Clinkers/CLK-1/14/91

Label:CLK-1/14/91
Date Sampled: 1/14/91
Date Received:1/18/91
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Total VOA | BDL | mg/kg | 5030/8021 | 0.125 | 1/19/91 | 1/19/91 | GP |
| TRPH | BDL | mg/kg | 9073 | 0.2 | 1/23/91 | 1/25/91 | AC |
| Total Cadmium | BDL | mg/kg | 3050/7090 | 1.0 | 1/19/91 | 1/24/91 | JG |
| Total Lead | 1.2 | mg/kg | 3050/7420 | 1.0 | 1/19/91 | 1/23/91 | JG |
| Total Selenium | BDL | mg/kg | 3050/7741 | 1.0 | 1/19/91 | 1/27/91 | JG |
| Total Arsenic | BDL | mg/kg | 3050/7061 | 1.0 | 1/19/91 | 1/27/91 | JG |
| Total Chromium | 29 | mg/kg | 3050/7190 | 1.0 | 1/19/91 | 1/26/91 | JG |
| Total Mercury | BDL | mg/kg | 3050/7471 | 0.1 | 1/19/91 | 1/27/91 | JG |
| Total Silver | 4.0 | mg/kg | 3050/7760 | 1.0 | 1/19/91 | 1/26/91 | JG |
| Total Barium | 72.1 | mg/kg | 3050/7080 | 1.0 | 1/19/91 | 1/26/91 | JG |
| TCLP Cadmium | BDL | mg/l | 1311/7090 | 0.1 | 1/19/91 | 1/24/91 | JG |
| TCLP Lead | BDL | mg/l | 1311/7420 | 0.1 | 1/19/91 | 1/23/91 | JG |
| TCLP Selenium | BDL | mg/l | 1311/7741 | 0.002 | 1/19/91 | 1/27/91 | JG |
| TCLP Arsenic | BDL | mg/l | 1311/7061 | 0.002 | 1/19/91 | 1/27/91 | JG |
| TCLP Chromium | BDL | mg/l | 1311/7190 | 0.1 | 1/19/91 | 1/26/91 | JG |
| TCLP Mercury | BDL | mg/l | 1311/7471 | 0.001 | 1/19/91 | 1/27/91 | JG |
| TCLP Silver | BDL | mg/l | 1311/7760 | 0.1 | 1/19/91 | 1/26/91 | JG |
| TCLP Barium | 1.75 | mg/l | 1311/7080 | 0.1 | 1/19/91 | 1/26/91 | JG |

* BDL = Below Detection Limits
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.

Respectfully Submitted,

Jeffrey S. Glass
Laboratory Director
V.O.C. Analytical Inc.

EXHIBIT A

VOC ANALYTICAL

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165

Page 1 of 3
Date: 2/26/91
Log#: 217-01

Sample Description: Clinkers CLK 1/23/91

Label:CLK 1/23/91
Date Sampled: 1/23/91
Date Received: 2/22/91
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Total VOA | BDL | mg/kg | 5030/8021 | 0.125 | 2/22/91 | 2/24/91 | GP |
| TRPH | BDL | mg/kg | 9073 | 0.2 | 2/23/91 | 2/25/91 | AC |
| Total Cadmium | BDL | mg/kg | 3050/7090 | 1.0 | 2/22/91 | 2/23/91 | JG |
| Total Lead | BDL | mg/kg | 3050/7420 | 1.0 | 2/22/91 | 2/23/91 | JG |
| Total Selenium | BDL | mg/kg | 3050/7741 | 0.1 | 2/22/91 | 2/23/91 | JG |
| Total Arsenic | 4.5 | mg/kg | 3050/7061 | 1.0 | 2/22/91 | 2/23/91 | JG |
| Total Chromium | 19.0 | mg/kg | 3050/7190 | 1.0 | 2/22/91 | 2/23/91 | JG |
| Total Mercury | BDL | mg/kg | 3050/7471 | 0.1 | 2/22/91 | 2/23/91 | JG |
| Total Silver | 6.9 | mg/kg | 3050/7760 | 1.0 | 2/22/91 | 2/23/91 | JG |
| tal Barium | 139 | mg/kg | 3050/7080 | 1.0 | 2/22/91 | 2/23/91 | JG |
| TCLP Cadmium | BDL | mg/l | 1311/7090 | 0.1 | 2/22/91 | 2/23/91 | JG |
| TCLP Lead | BDL | mg/l | 1311/7420 | 0.1 | 2/22/91 | 2/23/91 | JG |
| TCLP Selenium | BDL | mg/l | 1311/7741 | 0.1 | 2/22/91 | 2/23/91 | JG |
| TCLP Arsenic | BDL | mg/l | 1311/7061 | 0.1 | 2/22/91 | 2/23/91 | JG |
| TCLP Chromium | 0.10 | mg/l | 1311/7190 | 0.1 | 2/22/91 | 2/23/91 | JG |
| TCLP Mercury | BDL | mg/l | 1311/7471 | 0.001 | 2/22/91 | 2/23/91 | JG |
| TCLP Silver | BDL | mg/l | 1311/7760 | 0.1 | 2/22/91 | 2/23/91 | JG |
| TCLP Barium | 1.37 | mg/l | 1311/7080 | 0.1 | 2/22/91 | 2/23/91 | JG |

* BDL = Below Detection Limits
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.

Respectfully Submitted,

Jeffrey S. Glass
Laboratory Director
V.O.C. Analytical Inc.

877 N.W. 61 Ft. Lauderdale, FL 33309 - (305) 938-8823 - Fax (305) 938-8900

EXHIBIT A

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165


Date: 2/26/91
Log#: 217-02

Sample Description: Clinkers CLK 2/7/91

Label:CLK 2/7/91
Date Sampled: 2/7/91
Date Received: 2/22/91
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Total VOA | BDL | mg/kg | 5030/8021 | 0.125 | 2/22/91 | 2/24/91 | GP |
| TRPH | BDL | mg/kg | 9073 | 0.2 | 2/23/91 | 2/25/91 | AC |
| Total Cadmium | BDL | mg/kg | 3050/7090 | 1.0 | 2/22/91 | 2/23/91 | JG |
| Total Lead | 1.0 | mg/kg | 3050/7420 | 1.0 | 2/22/91 | 2/23/91 | JG |
| Total Selenium | BDL | mg/kg | 3050/7741 | 0.1 | 2/22/91 | 2/23/91 | JG |
| Total Arsenic | 4.6 | mg/kg | 3050/7061 | 1.0 | 2/22/91 | 2/23/91 | JG |
| Total Chromium | 25.0 | mg/kg | 3050/7190 | 1.0 | 2/22/91 | 2/23/91 | JG |
| Total Mercury | BDL | mg/kg | 3050/7471 | 0.1 | 2/22/91 | 2/23/91 | JG |
| Total Silver | 6.5 | mg/kg | 3050/7760 | 1.0 | 2/22/91 | 2/23/91 | JG |
| Total Barium | 118 | mg/kg | 3050/7080 | 1.0 | 2/22/91 | 2/23/91 | JG |
| TCLP Cadmium | BDL | mg/l | 1311/7090 | 0.1 | 2/22/91 | 2/23/91 | JG |
| TCLP Lead | BDL | mg/l | 1311/7420 | 0.1 | 2/22/91 | 2/23/91 | JG |
| TCLP Selenium | BDL | mg/l | 1311/7741 | 0.1 | 2/22/91 | 2/23/91 | JG |
| TCLP Arsenic | BDL | mg/l | 1311/7061 | 0.1 | 2/22/91 | 2/23/91 | JG |
| TCLP Chromium | BDL | mg/l | 1311/7190 | 0.1 | 2/22/91 | 2/23/91 | JG |
| TCLP Mercury | BDL | mg/l | 1311/7471 | 0.001 | 2/22/91 | 2/23/91 | JG |
| TCLP Silver | BDL | mg/l | 1311/7760 | 0.1 | 2/22/91 | 2/23/91 | JG |
| TCLP Barium | 1.27 | mg/l | 1311/7080 | 0.1 | 2/22/91 | 2/23/91 | JG |

* BDL = Below Detection Limits
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.

Respectfully Submitted,

Jeffrey S. Glass
Laboratory Director
W.O.C. Analytical Inc.

Client #:18
Client Name:Rinker Materials
Address: P.O. BOX 650679
MIAMI, FL 33165


Date: 2/26/91
Log#: 217-03

Sample Description: Clinkers CLK 2/13/91

Label:CLK 2/13/91
Date Sampled: 2/13/91
Date Received: 2/22/91
Collected By: Your Rep

| Parameter | Result | Units | Method | Detection Limit | Extr. Date | Anal. Date | Analyst |
|---|---|---|---|---|---|---|---|
| Total VOA | BDL | mg/kg | 5030/8021 | 0.125 | 2/22/91 | 2/24/91 | GP |
| TRPH | BDL | mg/kg | 9073 | 0.2 | 2/23/91 | 2/25/91 | AC |
| Total Cadmium | BDL | mg/kg | 3050/7090 | 1.0 | 2/22/91 | 2/23/91 | JG |
| Total Lead | 3.1 | mg/kg | 3050/7420 | 1.0 | 2/22/91 | 2/23/91 | JG |
| Total Selenium | BDL | mg/kg | 3050/7741 | 0.1 | 2/22/91 | 2/23/91 | JG |
| Total Arsenic | 5.3 | mg/kg | 3050/7061 | 1.0 | 2/22/91 | 2/23/91 | JG |
| Total Chromium | 27.0 | mg/kg | 3050/7190 | 1.0 | 2/22/91 | 2/23/91 | JG |
| Total Mercury | BDL | mg/kg | 3050/7471 | 0.1 | 2/22/91 | 2/23/91 | JG |
| Total Silver | 6.2 | mg/kg | 3050/7760 | 1.0 | 2/22/91 | 2/23/91 | JG |
| Total Barium | 132 | mg/kg | 3050/7080 | 1.0 | 2/22/91 | 2/23/91 | JG |
| TCLP Cadmium | BDL | mg/l | 1311/7090 | 0.1 | 2/22/91 | 2/23/91 | JG |
| TCLP Lead | BDL | mg/l | 1311/7420 | 0.1 | 2/22/91 | 2/23/91 | JG |
| TCLP Selenium | BDL | mg/l | 1311/7741 | 0.1 | 2/22/91 | 2/23/91 | JG |
| TCLP Arsenic | BDL | mg/l | 1311/7061 | 0.1 | 2/22/91 | 2/23/91 | JG |
| TCLP Chromium | 0.10 | mg/l | 1311/7190 | 0.1 | 2/22/91 | 2/23/91 | JG |
| TCLP Mercury | BDL | mg/l | 1311/7471 | 0.001 | 2/22/91 | 2/23/91 | JG |
| TCLP Silver | BDL | mg/l | 1311/7760 | 0.1 | 2/22/91 | 2/23/91 | JG |
| TCLP Barium | 1.27 | mg/l | 1311/7080 | 0.1 | 2/22/91 | 2/23/91 | JG |

* BDL = Below Detection Limits
All analyses were performed using EPA, ASTM, USGS, or Standard Methods.

Respectfully Submitted,

Jeffrey S. Glass
Laboratory Director
V.O.C. Analytical Inc.

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

IN RE: File No. AP-STTF001
Rinker Materials Corporation )
Request Pursuant to Florida )
Administrative Code Rule 17-775.500 )

APPROVAL OF ALTERNATE PROCEDURES

This cause comes before me upon receipt of a request by Rinker Materials Corporation for the approval of alternate procedures and requirements for the Rinker facility located at 1200 N.W. 137th Avenue, Miami, pursuant to Florida Administrative Code (F.A.C.) Rule 17-775.500. A Copy of the request is attached as Exhibit A.

FINDINGS OF FACT

1. The applicant requests that exceptions be granted for compliance with F.A.C. Rule 17-775.400(1),(2),(3),(4) that requires soil which has been treated by a soil thermal treatment facility to meet certain cleanup levels to be classified as clean soil, and F.A.C. Rule 17-775.410(5) which requires sampling and analysis of soil following thermal treatment for every eight hours of operation or each 400 tons of soil.

2. The applicant does not process contaminated soil into "clean soil", rather the contaminated soils are used entirely as raw materials for the production of clinker/portland cement, and the applicant proposes to do the following:

a. In the process of clinker production, use contaminated soil as raw material which is processed through direct fired rotary kilns for three to three and a half hours and is

converted to clinker with a kiln exit temperature of approximately 2750 °F.

b. Use the contaminated soil as approximately 12 percent of the total raw materials consumed in the production of clinker and approximately 10 percent of the portland cement produced.

c. Limit the maximum concentrations of metals in contaminated soil entering the raw materials feed process to the clean soil criteria of F.A.C. Rule 17-775.400(4).

d. As an alternate procedure for F.A.C. Rule 17-775.410(5), sample clinker production every 400 tons or every eight hours whichever is less and composite these samples on a weekly basis (7 days), and sample the clinker for the parameters and levels identified in F.A.C. Rule 17-775.400.

3. The applicant contends that this request satisfies the criteria for approval of an alternate procedure and requirements as set forth in F.A.C. Rule 17-775.500, and has provided laboratory analysis as Exhibit A to its request to demonstrate that clinker meets the criteria for clean soil.

Based on the information provided by the applicant, the Department finds that the applicant's plan will provide environmental protection substantially equivalent to that provided by compliance with the requirements established in Florida Administrative Code Rule 17-775.400(1),(2),(3),(4) and 17-775.410(5).

## CONCLUSIONS OF LAW

Florida Administrative Rule 17-775.500 authorizes the approval

by the Secretary or her designee of alternate procedures and requirements concerning the regulation of soil thermal treatment facilities.

The Department concludes that the applicant has adequately demonstrated that the proposed alternate procedure provides a substantially equivalent degree of protection for the lands, surface waters, and ground waters of the State as the established requirement and that the alternate procedure is at least as effective as the established requirements.

Upon consideration of the foregoing it is therefore ORDERED that Rinker Materials Corporation's request for an alternate procedure and requirement is GRANTED.

Persons whose substantial interests are affected by the above proposed action have a right, pursuant to Section 120.57, F.S., to petition for an administrative determination (hearing) on the proposed action. The petition must contain the information set forth below and must be filed (received) in the Department's Office of General Counsel, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400, within 21 days of publication of this notice. A copy of the Petition must also be mailed at the time of filing to Naval Facilities Engineering Command, Southern Division, above at the address indicated. Failure to file a petition within the 21 days constitutes a waiver of any right such person has to an administrative determination (hearing) pursuant to Section 120.57, F.S.

The petition shall contain the following information: (a) The name, address, and telephone number of each petitioner; the

Department's identification number and the county in which the subject matter or activity is located; (b) A statement of how and when each petitioner received notice of the Department's action or proposed action; (c) A statement of how each petitioner's substantial interests are affected by the Department's action or proposed action; (d) A statement of the material facts disputed by petitioner, if any; (e) A statement of facts which petitioner contends warrant reversal or modification of the Department's action or proposed action; (f) A statement of which rules or statutes petitioner contends require reversal or modification of the Department's action or proposed action; (g) A statement of the relief sought by petitioner, stating precisely the action petitioner wants the Department to take with respect to the Department's action or proposed action.

If a petition is filed, the administrative hearing process is designed to formulate agency action. Accordingly, the Department's final action may be different from the position taken by it in this Notice. Persons whose substantial interests will be affected by any decision of the Department with regard to the subject agency proposed action have the right to petition to become a party to the proceeding. The petition must conform to the requirements specified above and be filed (received) within 21 days of publication of this notice in the Office of General Counsel at the above address of the Department. Failure to petition within the allowed frame constitutes a waiver of any right such person has to request a hearing under Section 120.57, F.S., and to participate as a party to this proceeding. Any subsequent intervention will only

be at the approval of the presiding officer upon motion filed pursuant to Rule 28-5.207, F.A.C.

When the Order is final, any party to the Order has the right to seek judicial review of the Order pursuant to Section 120.68, Florida Statutes by filing of a Notice of Appeal pursuant to Rule 9.110, Florida Rules of Appellate Procedure, with the clerk of the Department in the Office of General Counsel, 2600 Blair Stone Road. Tallahassee, Florida 32399-2400; and by filing a copy of the Notice of Appeal, accompanied by the applicable filing fees, with the appropriate District Court of Appeal. The Notice of Appeal must be file within 30 days from the date the Final Order is filed with the clerk of the Department.

DONE AND ORDERED this 1ST day of April, 1991 in Tallahassee, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL REGULATION

R G Wilkins

Richard G. Wilkins, Director
Division of Waste Management
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

FILING AND ACKNOWLEDGEMENT
FILED, on this date, pursuant to S120.52 Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Carmella Buyber 4/6/91
Clerk Date

# Instructions for Completing Untreated Soil Reporting Form

Samples from both untreated and treated soil must be collected and analyzed. Pretreatment sampling is based on the volume of soil from each source, and post treatment sampling is determined by the hours of operation. Each composite sample must be made up of several representative samples. For all analytical results showing below detection limits, BDL should be shown in the proper space. When results indicate contaminants above detectable limits, the concentrations should be shown. Copies of lab reports must be attached to form.

Column

1. Date soil received.

2. Identification number of specific batch of soil.

3. Sample number. The required number of samples is based upon the volume of soil before treatment and is based upon hours of operation after treatment.

4. Total volume of soil being processed through heat treatment facility, $yd^3$ or tons.

5. Metals concentrations of Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium and Silver in the untreated soil in ppm (mg/kg) by extraction procedure EPA Method 3050.

6. Total benzene, toluene, ethylbenzene and xylene concentration in untreated soils in ppb (ug/kg). EPA Method 5030/8020. There are no maximum allowable concentrations.

7. Total recoverable petroleum hydrocarbons in untreated soils. EPA Draft Method 9073.

8. Other parameters that are monitored by the facility should be indicated but not quantified. Attach lab results only.

Florida Department of Environmental Regulation
Soil Thermal Treatment Facility
Untreated Soil Reporting Form

Name of Facility: _____
Air Permit No.: _____
Soil Treatment Permit No.: _____
Stationary ____ or Mobile Facility: ____

Month: ____ Year: ____

| 1 | 2 | 3 | 4 | 5 | | | | | | | | 6 | 7 | 8 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Day of Mo. | Soil Batch ID# | Sample Number | Amount, Volume or Weight cy/tn | Analytical Results | | | | | | | | | | | | |
| | | | | Metals | | | | | | | | Totals | | Indicate Other Analyses | | |
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DER Form 775.900(2)

See reverse side for instructions

Samples must be collected and analyzed at least once each day that the thermal treatment facility is processing contaminated soil. Samples from both untreated and treated soil must be collected and analyzed. Pretreatment sampling is based on the volume of soil from each source, and post treatment sampling is determined by the hours of operation. Each composite sample must be made up of several representative samples. For all analytical results showing below detection limits, BDL should be shown in the proper space. When results indicate contaminants above detectable limits, the concentrations should be shown. Copies of lab reports must be attached to form.

Column

1. Date soil processed.

2. Identification number of specific batch of soil.

3. Sample number. The required number of samples is based upon the volume of soil before treatment and is based upon hours of operation during treatment.

4. Number of hours required of treat specific batch of soil.

5. Amount of soil that was processed through thermal treatment facility, $yd^3$ or tons.

6. Total metals concentrations of Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium and Silver in the treated soil in ppm (mg/kg) by digestion procedure EPA Method 3050.

7. TCLP metals concentrations of Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium and Silver in the treated soil in ppm (mg/l) by extraction procedure EPA Method 1311.

8. Total benzene, toluene, ethylbenzene and xylene in treated soil in ppb. (Maximum allowable to dispose of as clean fill-100 ppb).

9. Total recoverable petroleum hydrocarbons in treated soil in ppm. Maximum allowable to dispose of as clean fill-10 ppm, or 50 ppm if PAHs less than 6 ppm and VOH less than 50 ppb. EPA Draft Method 9073.

10. PAH concentrations in the treated soil consisting of (Benzo(a)pyrene, Benzo(a)antracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(g,h,i)perylene, Chrysene, Dibenzo(a,h)anthracene, Ideno(1,2,3-c,d)pyrene), in ppm (mg/kg) by EPA Methods 3510/8250, 3510/8270, 3540/8250, 3540/8270, 3550/8250, 3550/8270, 3540/8310 or 3550/8310.

11. Total volatile organic halogen concentrations in treated soils in ppb by EPA Method 5030/8010.

Florida Department of Environmental Regulation
Soil Thermal Treatment Facility
Treated Soil Reporting Form

Name of Facility: _____
Air Permit No.: _____
Soil Treatment Permit No.: _____
Stationary:_____ or Mobile Facility: _____

Month: _____ Year: ____

| 1 | 2 | 3 | 4 | 5 | 6 | | | | | | | | 7 | | | | | | | | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Day of Mo. | Soil Batch ID# | Sample Number | Length of Run, Hours | Amount, Volume or Weight cy/tn | Analytical Results | | | | | | | | | | | | | | | | | | | |
| | | | | | Total Metals | | | | | | | | TCLP Metals | | | | | | | | Totals | | | |
| | | | | | As | Ba | Cd | Cr | Pb | Hg | Se | Ag | As | Ba | Cd | Cr | Pb | Hg | Se | Ag | VOA | RPH | PAH | VOH |
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DER Form 17-775.900(3)

See reverse side for instructions

For Routing To Other Than The Addressee

To: _____ Location: _____

To: _____ Location: _____

To: _____ Location: _____

From: _____ Date: _____

State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION

# Interoffice Memorandum

**MEMORANDUM**

TO: Don Ehlenbeck, P.E, Bureau of Waste Cleanup, DER, Tallahassee
Zoe Kulakowski, P.G., Bureau of Waste Cleanup, DER, Tallahassee

DATE: April 9, 1991

FROM: Paul Alan Wierzbicki, P.G., SE District Waste Cleanup Section

SUBJECT: Rinker Materials Soil Thermal Treatment Facility
General Permit Notice (# SO13-195017)

---

Enclosed is a copy of the Rinker's GP Notice we received on Thursday, April 9. One original and four copies were received in this office.

Since the air issue has apparently been resolved and the alternate procedure was approved, it appears that the only outstanding issue is the ground water monitoring plan. We hope to have our review of the Notice complete this week or early next. Please note that the PATS project log number for this Notice is SO13-195017. The District has notified Rinker that the March 8, 1991 Notice (# SO13-193578) does not qualify for the general permit and the denial letter was sent on Friday, April 5.

Should you have questions, please call me at SunCom 232-2650.

cc: West Palm Beach DER files

# GROUNDWATER MONITORING PLAN

## ADDENDUM A

Rinker Portland Cement Corp.
1200 NW 137th Avenue
Miami, Florida

April 1991

Prepared for:

Rinker Portland Cement Corp.
1200 NW 137th Avenue
Miami, Florida



Prepared by:

Groundwater Specialists, Inc.
3003 S. Congress Avenue
Suite 1C
Palm Springs, Florida 33461

This was submitted in a preapplication mtg. on 4/3/91 + was refered to by the applicant as a Draft PAW

## TABLE OF CONTENTS



## EXHIBITS



## APPENDICES

# ADDENDUM A

# GROUNDWATER MONITORING PLAN

Rinker Portland Cement Corp.
1200 NW 137th Avenue
Miami, Florida

## Introduction

This Addendum supplements information in the Groundwater Monitoring Plan (GWMP) of January 1991, submitted to the Florida DER as part of the General Permit Application to Construct/Operate a Soil Thermal Treatment Facility as per Chapter 17-775, FAC. It provides information as recommended in a letter from Ms. Zoe Kulakowski (Florida DER), to Mr. Michael Vardeman (Rinker Portland Cement Corp.), dated January 22, 1991, and new and revised proposals relating to schedules of data collection and submittal.

## Supplemental Information As Recommended

Ms. Kulakowski's letter recommends that certain information be provided in the application for a general permit to construct/operate the soil thermal treatment facility. The letter enumerates Items 1 through 17; in this Addendum, these are referred to as requests for information. A copy of Ms. Kulakowski's letter is included herewith as Appendix AA.

As consultants to Rinker, GSI (Groundwater Specialists, Inc.) has prepared Responses 1 through 17, that correspond to the requests for information. A restatement of the requests and responses follow:

**Request 1.** Install a sufficient number of piezometers/wells screened in the water table zone only to establish site groundwater flow patterns and to use for selecting monitor well locations. Incorporate surface water features into the elevation network. If the site flow directions are seasonally variable and nonuniform as believed by Dames and Moore, this entire network may also be needed for quarterly water elevation data. Provide construction details for the piezometers/wells.

**Response 1.** During the week of March 18, 1991, 22 piezometers were installed on the subject property. In the subsurface, all of these structures were constructed as permanent monitor wells. The wellhead configuration varied depending on their locations relative to on-site traffic. Of the piezometers, 19 are "shallow", with wellscreens set within sediments between depths from 2 to 11 feet. The remaining three piezometers are "deep", with wellscreens set within the upper portion of the Fort Thompson formation, the Biscayne Aquifer. The locations of the piezometers are shown on

Exhibit A1. The dimensions and top-of-casing elevations of all piezometers are shown on Exhibit A2. Typical well construction diagrams are shown in Appendix AB.

In addition to the piezometers, water-level measuring points were established at all significant surface-water bodies within and surrounding the property. The locations of the measuring points and the identity of each surface-water body are shown on Exhibits A1 and A3, respectively.

On March 25, 1991, when the two process wells (Wells PN and PS) were operating as they do on a continuous basis, water-level elevations in all piezometers and surface-water bodies were measured. These are summarized on Exhibit A2. The configuration of the water table in the shallow zone is shown on Exhibit A4. The configuration of water-levels in the deep zone is shown on Exhibit A5. As shown on the exhibits, the shallow-zone flow direction is predominantly eastward to the regional canal, with considerable influence to the north caused by returned cooling water on the Rinker property. The only discernable deep-zone flow direction is toward Rinker's process wells, Wells PN and PS.

**Request 2.** Establish background groundwater quality for the GWMP. Any existing chemical data may be used from other permitted sites nearby or the ambient groundwater monitoring network.

**Response 2.** On March 22, 1991, Piezometer 1 was sampled according to conditions described in GSI's generic QAP (#880557G). Piezometer 1 is located on the southern edge of the property and the southern edge of the proposed soil storage area. It is intended to represent an upgradient, background location. The sample was analyzed for parameters outlined in Chapter 17-775.610(4), (FAC), for monitoring during implementation of the GWMP. The results of analysis are summarized on Exhibit A6. The laboratory reports are presented in Appendix AC.

**Request 3.** On Figure 2, show all surface water features that are shown on Plate 1 (Dames and Moore 12/9/87) and Exhibit 1. How deep are the little lakes and the canal? Do they breach the dense limestone?

**Response 3.** All significant surface-water features are shown on Exhibit A1. The pits excavated by Dames & Moore have been backfilled with materials excavated from the pits. The "pond-like area" and "lake" on Dames & Moore's Plate 1 correlate with surface-water bodies connected to SW1 and SW5, respectively. Please note that Dames & Moore's Plate 1 is conceptual in nature, not to scale.

A description of the ponds, canals and quarries is shown on Exhibit A3. These are referenced by measuring points on each of these surface-water bodies (SW1 through SW9). The only known breaches of the hard, dense limestone layer on the property are the

two quarries and the fire well (within the fire house) and process wells (Wells PN and PS). Stratigraphic data show that the dense limestone lies generally between 14 and 19 feet below grade in the filled areas of the property. The filled areas are approximately as shown on Exhibit A7. A stratigraphic cross section is shown on Exhibit A8 [Piezometer 22 apparently is placed on higher land, partially filled to construct a road.].

**Request 4.** Identify the locations of Well #100, Well #200, the fire protection well (is it at the fire pump house?), and the plant cooling water discharge pipe release point.

**Response 4.** Well #100 is the potable water well; its location is beneath the kiln. Well #200 is inside the fire pump house. There are three points at which cooling water is released to surface water bodies. These points are described on Exhibits A1 and A3.

**Request 5.** Provide at least three lithologic logs to establish the site stratigraphy.

**Response 5.** Three lithologic logs represented on a stratigraphic cross section are shown on Exhibit A8. The section shows the lithology determined by spilt-spoon borings at the locations of Piezometers 20 and 22, and Soil Boring 1 (SB1).

**Request 6.** Provide well construction details (example: annulus completion), lithologic logs and measured cones of depression for the process water wells.

**Response 6.** The process water "wells" (Wells PN and PS) were constructed as open pits with a total depth that penetrates the uppermost part of the high-permeability Fort Thompson formation - the Biscayne Aquifer. The pits occupy an area of approximately 10 by 20 feet at land surface. There are no available lithologic logs derived during the excavation of the pits. However, a lithologic log is available from Piezometer 20, located about 123 feet from both pits; this log is shown on the stratigraphic cross section, Exhibit A8. A cross section showing the pit's relationship to the lithology is included in Appendix AD.

The measured cones of depressions in the shallow and deep zones created by the process wells (Wells PN and PS) are depicted on Exhibits A4 and A5. These cones of depression represent a steady-state condition as they are based on measurements made during a time when the continuously-operating process wells were operating.

In order to determine the drawdown and recovery caused by operating Wells PN and PS, Well PN was shut down for a 1/2-hour period on March 26, 1991, during which time water-level recovery then drawdown were measured in Piezometers 15, 16, and 20, as well as in Wells PN and PS. These piezometers lie equidistant from

Wells PN and PS. [Due to continuous demand for water by the cement manufacturing process, it is not possible to shut down either of the wells for a longer period] Exhibit A9 is a summary of data derived from the recovery test. Further discussion and conclusions of the test are contained in Appendix AD.

**Request 7.** Detail every movement and the onsite process of remediating the contaminated soils brought onsite. Address unloading/loading, storage of treated/untreated soils, weighing, and specific locations of all activities.

**Response 7.** The present soil handling practice is that incoming soils are dropped, screened and reloaded onto trucks, on the existing soil storage slab. This soil storage slab is now covered with a canvass roof. The soil storage slab drains within a bermed area; collected water is pumped into a dedicated tank. A lisenced waste-water hauler empties the tank and discharges the water into the wastewater feed system from which it is piped to the kilns.

Contaminated soils that arrive at the plant for thermal treatment are first weighed on the incoming trucks at the scale house. Any truck noted to be dripping water is turned away at that point. After weighing, the incoming trucks are directed to the soil-storage building where they dump their loads under the roof and on the concrete floor of the building. The trucks leave the property with a stop at the scale after their loads are dropped. The contaminated soils within the building are then screened to eliminate metals, plastics and other materials potentially damaging to later processing. [These miscellaneous materials are collected in a designated dumpster for subsequent delivery to a sanitary landfill.] After screening, the soils are loaded within the soil-storage building onto a designated truck. A dedicated front-end loader is used. The loaded truck delivers the soil into the west entrance of the Raw Material Feed Building where the soils are dropped on a concrete slab under roof. The concrete slab is bermed and has a contained leachate collection system. Water from the system is delivered to the wastewater feed system then into the kilns. The delivery truck circulates between the two under-roof locations. From the Raw Materials Feed Building, the process slurry is routed to the kilns through an above-ground piping system. After treatment in the kilns, the resulting clinker is crushed, sampled and analyzed.

**Request 8.** Is any response of the water table zone observed in the immediate vicinity of each process water well? Establish whether flow in the water table zone is totally independent of pumping the Biscayne process wells.

**Response 8.** A significant response in the water-table zone was noted during the test on Well PN. This is because the water-table (shallow) zone is well connected hydraulically to Well PN and provides a substantial flow of water to Wells PN and PS. However,

the water-table zone is concluded to be isolated from the deep zone on the basis of several observations. These include: (1) the hard, dense nature of the limestone between 14 and 19 feet (no evidence of cracks or solution holes in this limestone are known to exist), (2) the water level in the shallow zone is 0.12 feet lower than in the deep zone at well pairs, Well 16 and Well 20, (3) the degree of response to the recovery test was significantly different in the two zones, and (4) the notable lack of response to pumping in the shallow zone, due to pumping deep-zone wells at the Sweetwater Ready Mix Plant (see Appendix AE). Waters of the shallow and deep zones are known to intermingle at the locations of the quarries and Wells PN and PS because the confining layer is breached. Thus, the water-table zone is not independent of the deep zone in the near vicinity of the quarries and Wells PN and PS, but it is at other locations on the site. Please refer also to Response 6 and Appendix AD.

**Request 9.** How deep did the trench extend for the underground pipeline and the W. I. pipe? Was the dense limestone unit breached during construction?

**Response 9.** The trench for the underground oil pipeline is only 5 to 6 feet below grade. This is not deep enough to breach the dense limestone.

**Request 10.** Did Dames & Moore excavate a pit around both process wells during the December 1987 study? If so, how was well construction integrity restored? Please explain what was meant by "no cascading water into the well pits". Was the pit water elevation compared to the pumping well water elevation?

**Response 10.** Dames & Moore did not excavate the pits around Wells PN and PS. They did, however, construct other pits that were subsequently backfilled with the same materials excavated. These later pits did not breach the dense limestone.

The statement regarding "no cascading water" referred to the visible lack of water cascading from the water-table zone, over the inner wall of the well pits, and down to the water level in the pits. This is not surprising as the actual depth of the dense limestone is beneath the normal water level in the pit; thus, any tendency to "cascade" would be underwater and not observable. The present author believes that Dames & Moore mistook the level of the dense limestone layer in the area of Wells PN and PS, to be about five feet higher than its actual level. In short, the "no cascading water" statement is insignificant.

**Request 11.** Propose an unaffected natural background well. Wells 1, 4, 6, and 7 are too close to potential sources to be used for this purpose.

**Response 11.** Under existing conditions, Piezometer 1 is selected to be an unaffected background well. Piezometer 1 was sampled/analyzed as noted on Exhibit A6. Proposed Well 23, discussed below, will be installed as a natural background well.

**Request 12.** Without the site specific flow information, review cannot be competed of the proposed monitor well locations. I concur with the proposed shallow construction (water table zone) for the potential source areas. Since the objective of this GWMP is to detect <u>any</u> discharge to groundwater, the proposed monitor wells will need to be located as close to the unit as possible on the downgradient side. Examples of potential sources are the truck scale, truck unloading pad, the proposed soils storage area(s), the oil line to the kiln (to increase BTUs?), the inlet and outlet and the pressure cleaning facility (to wash out trucks?).

**Response 12.** As noted on the cited exhibits, the groundwater flow direction in the areas of concern have been determined to be generally northward in the water-table and in the areas where contaminated soils are and will be handled. The areas of concern include the truck scale, the existing soil storage slab (covered), proposed soil storage building and the Raw Materials Feed Building entrance. The active oil line to the kiln is unrelated to the Chapter 17-775 features of this GWMP. Likewise, the pressure cleaning facility is a wholly enclosed facility with no release of water. The previously indicated monitor well in this cleaning facility is a sump in an enclosed vault, not a monitor well. The second truck cleaning facility near the scale house is used to clean dust from outgoing cement haulers; water from that facility drains into the ditch referred to as measuring point SW4. No trucks that contained contaminated soils are cleaned at either of the two cleaning facilities. There are no other points on the property, not previously described, that are potential contamination source areas as related to the handling of incoming contaminated soils.

**Request 13.** Identify the specific analytical methods for metals to be used for every sampling event.

**Response 13.** The analytical methods to be used in the GWMP are prescribed in Chapter 17-775.610(4), FAC. The metals and respective EPA Methods that will be used are: arsenic, 206.3; barium, 208.2; cadmium, 213.2; chromium, 218.2; lead, 239.2; mercury, 245.1; selenium, 270.3; and silver, 271.2. Sampling conducted within the GWMP will be under GSI's generic QAP (#880557G); the FDER approval notice of this document is shown in Appendix AF. Samples will be analyzed by V.O.C. Analytical, Inc. under its approved generic QAP (#900376G); approval notice also is shown in Appendix AF.

**Request 14.** Describe well purging procedures. Will pH, specific conductivity, and temperature be monitored until stabilized to

document sufficient purging? Field parameters should be reported with the data.

**Response 14.** Pre-sampling well purging will be accomplished by pumping from the wells using clean stainless steel tubes and under the conditions of GSI's generic QAP. Measurements of pH, specific conductivity, and temperature will be made from well-purge water until these parameters have stabilized. The results of these measurements will be reported in quarterly data reports.

**Request 15.** Include provisions to establish the flow direction quarterly using a network of piezometers and monitor wells.

**Response 15.** Provisions to determine quarterly the groundwater flow directions are described below.

**Request 16.** Provide a schedule for well installation, the first quarterly data collection event, and subsequent events.

**Response 16.** A schedule of well completions and sampling events is provided below.

**Request 17.** Include provisions to submit the quarterly water quality and groundwater elevation to the Bureau of Waste Cleanup.

**Response 17.** A schedule of data submittals to the Bureau of Waste Cleanup is provided below.

<u>Additional Information</u>

In addition to the information responding to Ms. Kulakowski's letter, the following is provided to supplement the GWMP.

Rinker Materials Corp. operates the Sweetwater Ready Mix Plant to the northeast and adjacent to the Rinker Portland Cement Corp.'s Cement Mill. The Ready Mix Plant was the subject of a Contamination Assessment Report, dated January 1989, prepared by Jammal & Associates, Inc. A plume of dissolved hydrocarbons resides in the shallow zone on the Plant property. The plume enters the northeast corner of the Rinker Portland Cement Corp. property. The groundwater flow direction, however, indicates that hydrocarbons will tend to migrate to the southeast and not toward the Cement Mill. There are two water wells on the site; these tap the deep-zone (the Biscayne Aquifer), and have no apparent effect on groundwater in the shallow zone. One of these wells (the 10-inch well) continuously pumps about 50 gpm from the deep zone. The other well is used for fire protection. The exact depths of these wells could not be ascertained. The location of the Plant, the two water wells, the groundwater flow direction and the location of the plume are shown in Appendix AE.

As part of the cement manufacturing process, piles of coal, gypsum and slag are stored on site for use in the product. Piezometer 19 was installed among these piles for possible future use in determining the local direction of groundwater flow and whether minerals dissolved from these piles affect groundwater quality. The direction of groundwater flow at Piezometer 19 was determined to be generally north-northeast.

Revised Proposal

The following are proposals regarding well construction, sampling events, analyses, groundwater flow determinations and schedules. These are revisions to the GWMP submitted in January 1991 and pertain only to the application to construct/operate a Soil Thermal Treatment Facility.

Rinker currently operates a soil thermal treatment facility at the Cement Mill. Incoming soils are trucked to the existing soil storage slab indicated on Exhibit A1. This soil storage slab will be used until the proposed soil storage building can be completed. The existing soil storage slab is now covered with a canvass roof to aid in the prevention of runoff until the proposed building is completed.

Under this GWMP, groundwater monitoring will begin in the vicinity of the existing soil storage slab and shift to the new facility upon its completion. Existing Piezometers 6, 7, 8, 9, 10, 11, 12, 13, 14, 17, 18 and 19 and proposed Well 23 will be monitored while the current facility operates; these are located at the scale house, the existing soil storage slab, the entrance to the Raw Mill, upgradient of the proposed soil storage building, and three intermediate points. Where not presently protected, the wellheads of these piezometers will be sealed and secured against runoff and traffic; the piezometers will be converted to monitor wells. Also, SW3, 7, 8 and 9 will be monitored for water levels. These points exert considerable control over the onsite groundwater-flow direction. The proposed monitoring schedule is as follows:

Phase I
Week of April 15, 1991 - Convert Piezometers 2, 5 through 14, 17, 18 and 19 to permanent monitor wells with the same numbers. Construct Well 23 (monitor well) as an unaffected natural background well. Abandon Piezometers 1, 3, and 4. Piezometer 15, 16, 20, 21 and 22 will be maintained for other purposes.

Phase II
Week of April 22, 1991 - Begin Monitoring as outlined in the following:

**Groundwater Levels:** Groundwater levels in Wells 6 through 14, 17, 18, 19 and 23 will be measured quarterly and a contour map will be prepared representing the shallow groundwater zone.

**Groundwater Quality:** Groundwater samples will be collected quarterly from Wells 6 through 14 for analyses by EPA Methods selected from those listed in Chapter 17-775.610 (4)(a), (b), (c) and (d), FAC.

**Reporting:** A groundwater contour map and the results of analyses will be reported to the FDER within five weeks of the quarterly sampling event and in accordance with Chapter 17-775.610(5), FAC.

Phase III

Before, but within two weeks of completion of the proposed soil storage building, Monitor Wells 24 and 25 will be constructed. The completion of this building is anticipated during late 1991. Following use/operation of the proposed soil storage building, monitoring will continue for two quarters (6 months) as listed under "Phase II" above. Also during that time, Wells 2, 5, 24, and 25 will be incorporated in the monitoring schedule as outlined in "Phase II" above, and will remain on the schedule. After the two quarters cited, Wells 11, 12, 13 and 14 will be deleted from the schedule of sampling/analyses and groundwater level measurement, with the exception of Well 11, which will continue to be monitored quarterly for groundwater levels. A summary of the monitoring schedule and a map showing monitoring points are provided on Exhibits A10 and A11, respectively.

During implementation of the GWMP, wells located on the upgradient side of any of the identified potential source areas will be deleted from the sampling schedule but only upon written notification to and written approval from the FDER. The wells that could be deleted from the schedule will be determined following additional rounds of water-level measurements to amply demonstrate the direction of groundwater flow, but could include Wells 2, 8, 10, 13, 14 and 24.

During the course of implementing the GWMP, three additional wells will be constructed; these will be Wells 23, 24 and 25 as discussed above. These will be constructed with the use of a hollow-stem auger to a total depth of 11 feet and as depicted on Exhibit A11 and in Appendix AB. This construction methodology also was used to construct the piezometers in their subsurface extents. The conversion of the piezometers to monitor wells will include only the rebuilding of wellheads to make them secure and leakproof.

All measurements of groundwater (and surface-water) levels and all groundwater sampling will be completed by Groundwater Specialists, Inc. in accordance with its approved Generic Quality Assurance Plan (Appendix AF). Likewise, analyses will be performed by V.O.C. Analytical, Inc. in accordance with its approved Quality Assurance Plan (Appendix AF).

Respectively submitted,
GROUNDWATER SPECIALISTS, INC.

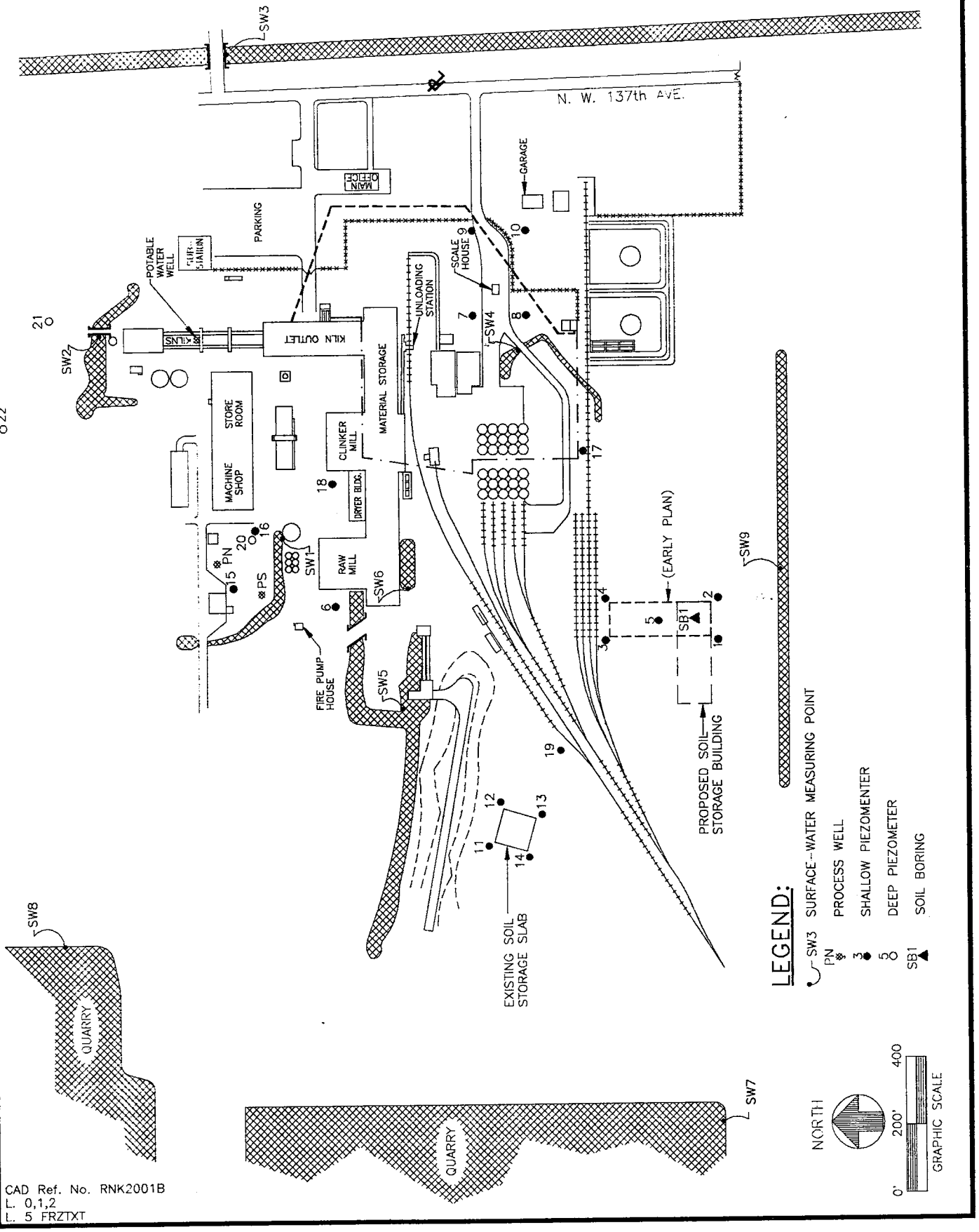
4/3/91

Paul G. Jakob, P. G.
President

EXHIBITS

| GSI | DATE: MARCH 199 | FOR: RINKER PORTLAND CEMENT CORP. | SUBJECT: SITE PLAN | EXHIBIT: A1 |
|---|---|---|---|---|

LOCATION: 1200 N.W. 137th AVE., MIAMI, FLORIDA




CAD Ref. No. RNK2001B
L. 0,1,2
L. 5 FRZTXT

EXHIBIT A2

PIEZOMETER DIMENSIONS, GROUNDWATER AND SURFACE-WATER ELEVATIONS

| Piezometer | Total Depth (feet) | Screen Zone (feet) | Top of Casing Elev. (feet) | Depth to Water (feet) | Water Elevation (feet) |
|---|---|---|---|---|---|
| 1 | 11.3 | 3.3-11.3 | 10.84 | 7.85 | 2.99 |
| 2 | 11.5 | 3.5-11.5 | 11.02 | 8.02 | 3.00 |
| 3 | 9.7 | 4.7- 9.7 | 9.86 | 6.86 | 3.00 |
| 4 | 11.4 | 3.4-11.4 | 10.04 | 6.85 | 3.19 |
| 5 | 11.2 | 3.2-11.2 | 10.65 | 7.64 | 3.01 |
| 6 | 8.0 | 3.0- 8.0 | 11.79 | 8.87 | 2.92 |
| 7 | 8.0 | 3.0- 8.0 | 9.03 | 6.06 | 2.97 |
| 8 | 7.9 | 2.9- 7.9 | 9.56 | 6.59 | 2.97 |
| 9 | 8.0 | 3.0- 8.0 | 9.69 | 6.74 | 2.95 |
| 10 | 8.0 | 3.0- 8.0 | 10.05 | 7.10 | 2.95 |
| 11 | 6.6 | 1.6- 6.6 | 8.11 | 5.06 | 3.05 |
| 12 | 7.0 | 2.0- 7.0 | 8.48 | 5.46 | 3.02 |
| 13 | 7.0 | 2.0- 7.0 | 8.41 | 5.38 | 3.03 |
| 14 | 7.0 | 2.0- 7.0 | 8.09 | 5.07 | 3.02 |
| 15 | 8.0 | 3.0- 8.0 | 11.93 | 9.31 | 2.62 |
| 16 | 8.0 | 3.0- 8.0 | 11.51 | 8.76 | 2.75 |
| 17 | 7.2 | 2.2- 7.2 | 12.13 | 9.17 | 2.96 |
| 18 | 11.0 | 3.0-11.0 | 12.43 | 9.44 | 2.99 |
| 19 | 8.0 | 3.0- 8.0 | 11.28 | 8.26 | 3.02 |
| 20 | 28.0 | 20.0-28.0 | 11.79 | 8.87 | 2.92 |
| 21 | 27.0 | 17.0-27.0 | 15.03 | 12.06 | 2.97 |
| 22 | 28.0 | 18.0-28.0 | 12.85 | 9.87 | 2.98 |

| Surface Water Measuring Point | Measuring Point Elevation (feet) | Depth to Water (feet) | Water Elevation (feet) |
|---|---|---|---|
| SW1 | 9.29 | 0.13 | 9.16 |
| SW2 | 10.11 | 1.60 | 8.51 |
| SW3 | 5.56 | 2.67 | 2.89 |
| SW4 | 9.68 | 0.87 | 8.81 |
| SW5 | 9.20 | 1.72 | 7.48 |
| SW6 | 11.95 | 1.34 | 10.61 |
| SW7 | 9.20 | 6.03 | 3.17 |
| SW8 | 7.39 | 4.38 | 3.01 |
| SW9 | 6.00 | 2.88 | 3.12 |

Notes: The tops of casings range from 0.0 to 3.0 feet above grade. All elevations are referenced to mean sea level. The total depths and screen zones are referenced to grade. All piezometers are constructed of 2-inch diameter PVC. Date of measurements was March 25, 1991.

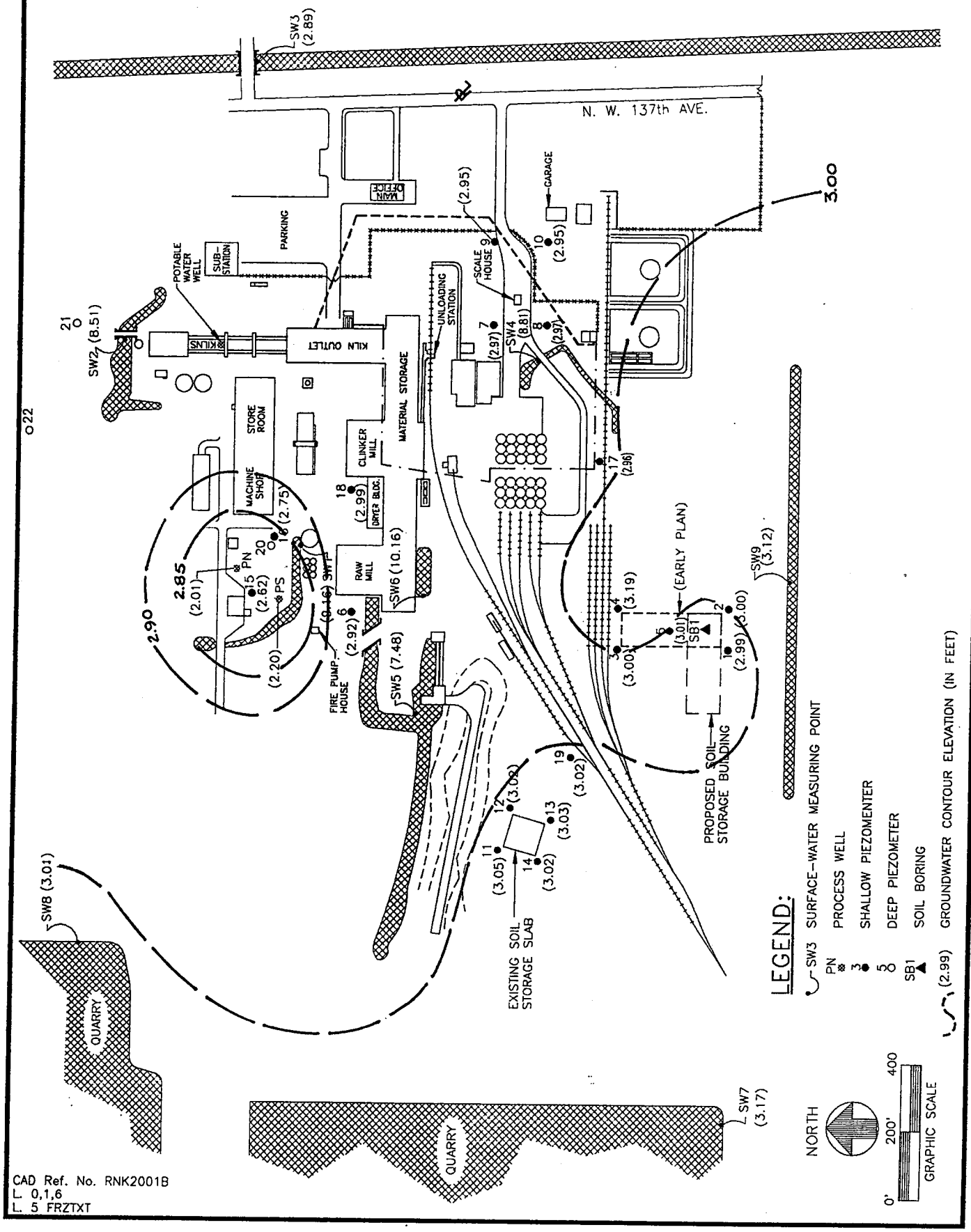
## EXHIBIT A3

## SURFACE-WATER MEASUREMENT POINTS AND DESCRIPTION OF SURFACE-WATER BODIES

Rinker Portland Cement Corp.

| Number | Description |
|---|---|
| SW1 | A soakage pond having a depth of about three feet in its southern reach and seven feet at the northern end. This pond receives about 0.5 million gallons per day of cooling water from the mills. |
| SW2 | A soakage pond having a depth of three to six feet. This pond receives about 0.7 million gallons per day of cooling water from the kilns. |
| SW3 | A regional, unnamed drainage canal, connected to the Tamiami Canal about two miles to the south, canal ranges in depth from three to probably ten feet. |
| SW4 | A shallow soakage ditch, less than one foot in depth. This ditch contains exterior washing of cement dust from the exterior washing of outgoing cement-hauling trucks, not contaminated soils-hauling trucks. |
| SW5 | A soakage pond having a depth from one to six feet. This pond receives about 0.5 million gallons per day of cooling water from the raw mill and crusher. |
| SW6 | A holding pond about two feet deep. This empties to the water body described under SW5. |
| SW7 | A quarry having an area of about 70 acres and a depth of 45 feet. This quarry is hydraulically connected to the water-table zone and the deep zone. |
| SW8 | An active quarry having an area of about 200 acres and a depth of 50 feet. This quarry is hydraulically connected to the water-table zone and the deep zone. |
| SW9 | An isolated canal having a maximum depth of about seven feet. This canal serves a drainage purpose only and by its apparent depth, does not penetrate the dense limestone. |

| GSI | DATE: MARCH 1991 | FI RINKER PORTLAND CEMENT CORP. | SUBJECT: SHALLOW-ZONE GROUNDWATER CONTOURS | EXHIBIT: A4 |
|---|---|---|---|---|
| LOCATION: 1200 N.W. 137th AVE., MIAMI, FLORIDA | | | | |

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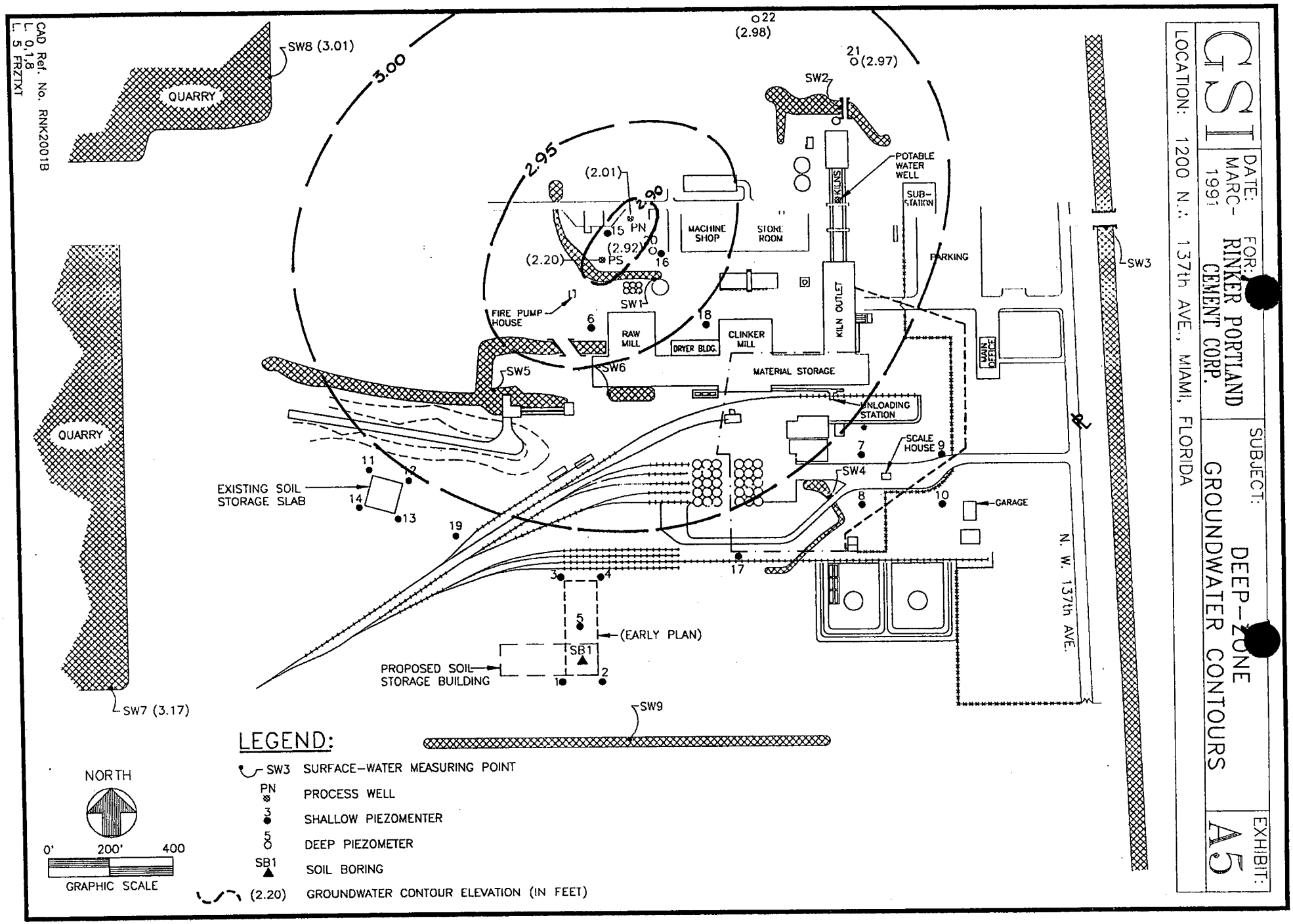



GSI

DATE: MARC- 1991

FOR: RINKER PORTLAND CEMENT CORP.

SUBJECT: DEEP-ZONE GROUNDWATER CONTOURS

EXHIBIT: A5

LOCATION: 1200 N.W. 137th AVE., MIAMI, FLORIDA

EXHIBIT A6

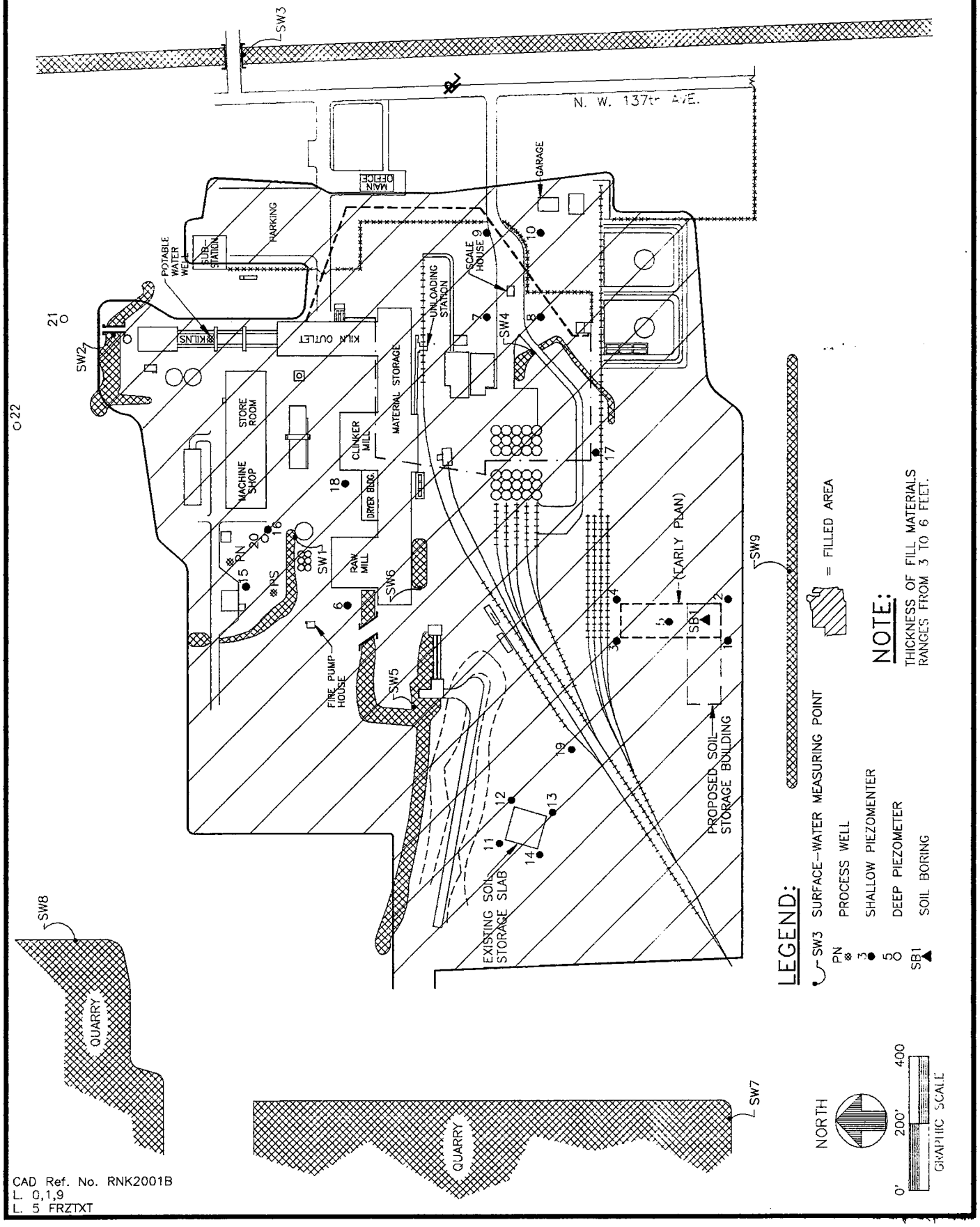
SUMMARY OF ANALYSES - WELL 1

| Parameter | | Detection limit | Concentration |
|---|---|---|---|
| **EPA Method 602 (in ppb)** | | | |
| benzene | | 1 | BDL |
| ethylbenzene | | 1 | BDL |
| toluene | | 5 | BDL |
| xylene | | 2 | BDL |
| methyl-tertbutyl ether | | 5 | BDL |
| **EPA Method 610 (in ppb)** | | | |
| acenaphthene | | 1 | BDL |
| acenaphthylene | | 1 | BDL |
| anthracene | | 1 | BDL |
| benzo(A)anthracene | | 1 | BDL |
| benzo(A)pyrene | | 1 | BDL |
| benzo(B)fluoranthene | | 1 | BDL |
| benzo(G,H,I)perylene | | 1 | BDL |
| benzo(K)fluoranthene | | 1 | BDL |
| chrysene | | 1 | BDL |
| dibenzo(A,H)anthracene | | 1 | BDL |
| fluoranthene | | 1 | BDL |
| fluorene | | 1 | BDL |
| indeno(1,2,3-CD)pyrene | | 1 | BDL |
| naphthalene | | 1 | BDL |
| phenanthrene | | 1 | BDL |
| pyrene | | 1 | BDL |
| 1,methylnaphthalene | | 1 | BDL |
| 2,methylnaphthalene | | 1 | BDL |
| **TOTAL METALS (in ppm)** | | | |
| arsenic | EPA 206.2 | 0.003 | BDL |
| barium | EPA 200.7 | 0.10 | BDL |
| cadmium | EPA 213.2 | 0.0002 | BDL |
| chromium | EPA 200.7 | 0.01 | 0.06 |
| lead | EPA 239.2 | 0.002 | 0.009 |
| mercury | EPA 245.2 | 0.0002 | 0.0005 |
| selenium | EPA 270.2 | 0.003 | BDL |
| silver | EPA 271.2 | 0.0002 | BDL |

Note: BDL denotes below detection limit.

| GSI | DATE: MARCH 1991 | RINKER PORTLAND CEMENT CORP. | SUBJECT: FILLED AREA | EXHIBIT: A7 |
|---|---|---|---|---|

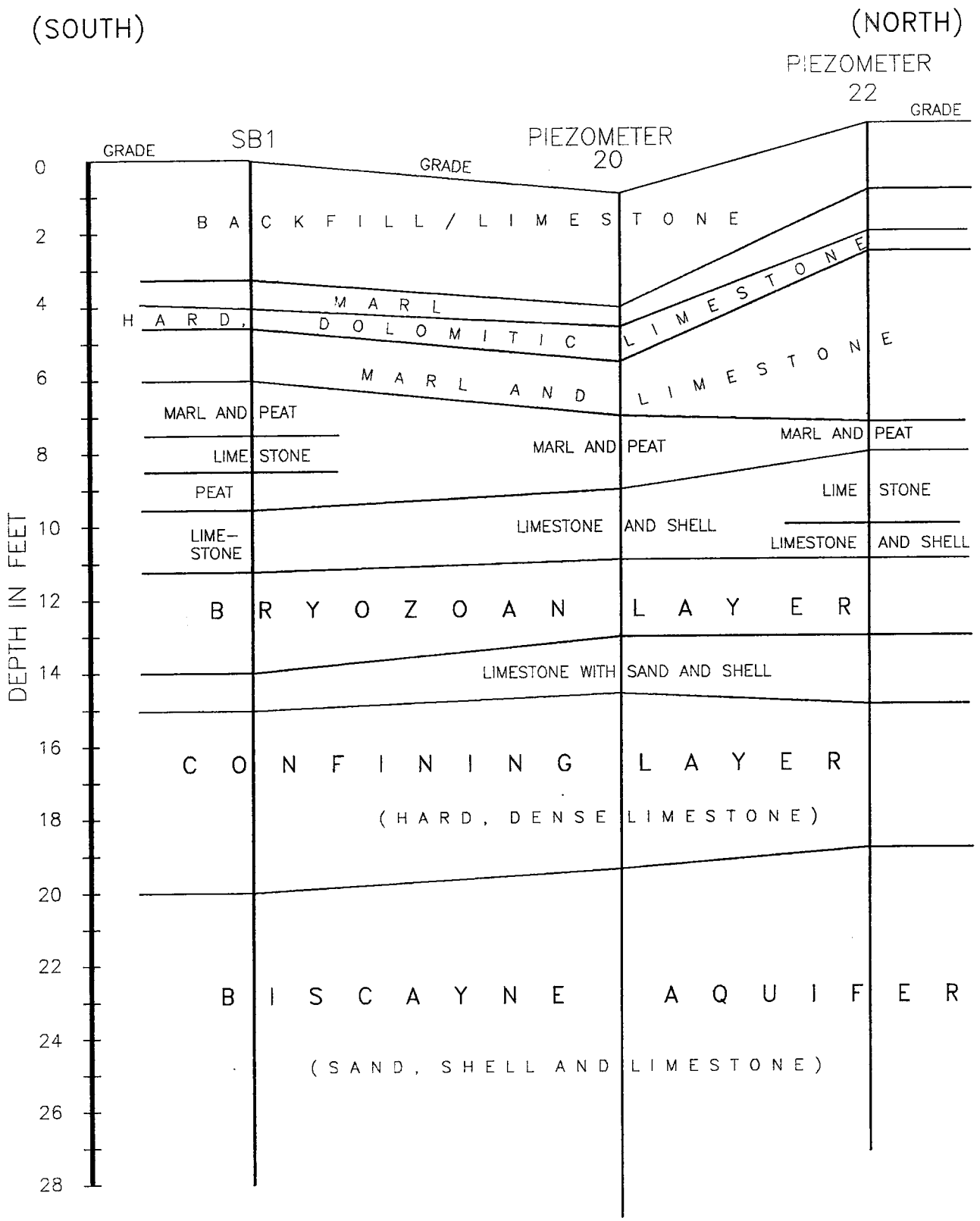
LOCATION: 1200 N.W. 137th AVE., MIAMI, FLORIDA




CAD Ref. No. RNK2001B
L. 0,1,9
L. 5 FRZTXT

| GSI | DATE: MARCH 1991 | FOR: RINKER PORTLAND CEMENT CORP. | SUBJECT: STRATIGRAPHIC CROSS-SECTION | A8 |
|---|---|---|---|---|

LOCATION: 1200 N.W. 137th AVE., MIAMI, FLORIDA




CAD Ref. No. RNKSECTN
L. 0,1,8

NOTE: DEPTHS ARE REFERENCED TO A COMMON DATUM.

EXHIBIT A9

SUMMARY OF PUMPING/RECOVERY
TEST DATA

| Well/Piezometer Number | Distance from Well PN (feet) | Pumping Water Level (feet MSL) | Recovered Water Level (feet MSL) | Maximum Recovery (feet) |
|---|---|---|---|---|
| PN | 0 | 2.01 | 2.93 | 0.92 |
| PS | 130 | 1.98 | 2.20 | 0.22 |
| 15 | 73 | 2.68 | 2.78 | 0.10 |
| 16 | 123 | 2.79 | 2.87 | 0.08 |
| 20 | 117 | 2.91 | 2.94 | 0.03 |

Note: The "pumping/recovery" test was conducted by shutting off Well PN for a period of 0.5 hours and measuring the groundwater level recovery in the wells listed above. Wells PN and PS run continuously at about 694 gpm each to provide process water to the Mill. The 0.5 hour period is about the maximum possible test period because of the demand for water in the Mill. Raw data from the test are provided in Appendix AD.

## EXHIBIT A10

## SUMMARY OF MONITORING SCHEDULE

### Phase II - With Existing Soil Storage Slab

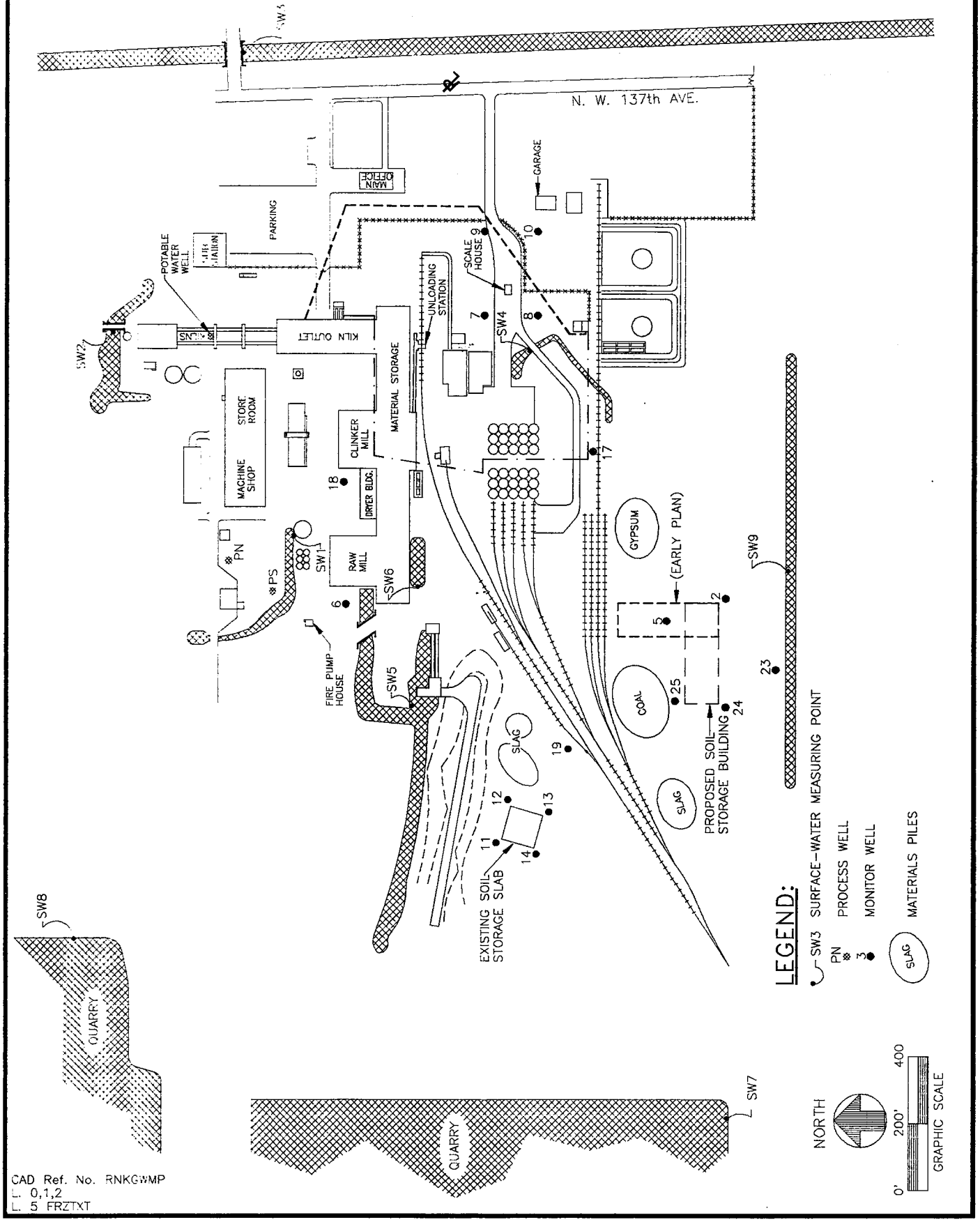
| Monitoring Point | Analyses | Water Levels |
|---|---|---|
| Well 6 | X | X |
| Well 7 | X | X |
| Well 8 | X | X |
| Well 9 | X | X |
| Well 10 | X | X |
| Well 11 | X | X |
| Well 12 | X | X |
| Well 13 | X | X |
| Well 14 | X | X |
| Well 17 | | X |
| Well 18 | | X |
| Well 19 | | X |
| Well 23 | | X |
| SW 3 | | X |
| SW 7 | | X |
| SW 8 | | X |
| SW 9 | | X |

### Phase III - Upon Operation of Proposed Soil Storage Building

| Monitoring Point | Analyses | Water Levels |
|---|---|---|
| Well 2 | X | X |
| Well 5 | X | X |
| Well 6 | X | X |
| Well 7 | X | X |
| Well 8 | X | X |
| Well 9 | X | X |
| Well 10 | X | X |
| Well 11 | | X |
| Well 17 | | X |
| Well 18 | | X |
| Well 19 | | X |
| Well 23 | | X |
| Well 24 | X | X |
| Well 25 | X | X |
| SW 3 | | X |
| SW 7 | | X |
| SW 8 | | X |
| SW 9 | | X |

Note: The transition from use of the existing to the proposed facilities is described in the text.

| GSI | DATE: MARCH 199 | FIRM: RINKER PORTLAND CEMENT CORP. | SUBJECT: WELLS AND SW POINTS FOR GWMP | EXHIBIT: A11 |
|---|---|---|---|---|
| LOCATION: 200 N.W. 137th AVE., MIAMI, FLORIDA | | | | |




CAD Ref. No. RNKGWMP
L. 0,1,2
L. 5 FRZTXT

**APPENDIX AA**

**FDER Letter of January 22, 1991**

Florida Department of Environmental Regulation
Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400
Lawton Chiles, Governor

January 22, 1991

Mr. Michael Vardeman
Rinker Portland Cement Corporation
1200 Northwest 137 Avenue
Miami, Florida 33182

Dear Mr. Vardeman:

The Bureau of Waste Cleanup has reviewed the Ground Water Monitoring Plan (GWMP) dated January 1991 (received January 17, 1992) for your stationary soil thermal treatment facility. We consider this to be a draft document because it was submitted prior to the submission of the NOTICE OF INTENT TO USE THE GENERAL PERMIT TO CONSTRUCT/OPERATE A SOIL THERMAL THREATMENT FACILITY (NOTICE). The following review comments should be addressed before submitting the notice and attachments to meet the requirements of Chapter 17-775.610, F.A.C.

This GWMP has been reviewed for compliance with only Chapter 17-775, F.A.C. While the desire to comply with Chapters 17-775 F.A.C., 17-762, the IW-2 status, and the Dade County Northwest Wellfield Protection Plan requirements via one GWMP is understood, coordinating reviews between the State and local governments would be extremely difficult. Within FDER alone, Chapter 17-775, F.A.C. reviews will be conducted in Tallahassee, Chapter 17-762, F.A.C. reviews will probably be delegated to Dade County and the IW-2 status reviews will be done by the South East Florida District. When resubmitting with the NOTICE, please revise the plan to comply with Chapter 17-775, F.A.C. exclusively.

1) Install a sufficient number of piezometers/wells screened in the water table zone only to establish site groundwater flow patterns and to use for selecting monitor well locations. Incorporate surface water features into the elevation network. If the site flow directions are seasonally variable and nonuniform as believed by Dames and Moore, this entire network may also be needed for quarterly water elevation data. Provide construction details for the piezometers/wells.

2) Establish background groundwater quality for the GWMP. Any existing chemical data may be used from other permitted sites nearby or the ambient groundwater monitoring network.

3) On Figure 2, show all surface water features that are shown on Plate 1 (Dames & Moore 12/9/87) and Exhibit 1. How deep are the little lakes and the canal? Do they breach the dense limestone?

4) Identify the locations of well #100, well #200, the fire protection well (Is it at the fire pump house?), and the plant cooling water discharge pipe release point.

5) Provide at least three lithologic logs to establish the site stratigraphy.

6) Provide well construction details (example: annulus completion), lithologic logs and measured cones of depression for the process water wells.

7) Detail every movement and the onsite process of remediating the contaminated soils brought onsite. Address unloading/loading, storage of treated/untreated soils, weighing, and specific locations of all activities.

8) Is any response of the water table zone observed in the immediate vicinity of each process water well? Establish whether flow in the water table zone is totally independant of pumping the Biscayne process wells.

9) How deep did the trench extend for the underground pipeline and the W.I. pipe? Was the dense limestone unit breached during construction?

10) Did Dames & Moore excavate a pit around both process wells during the December 1987 Study? If so, how was well construction integrity restored? Please explain what was meant by "no cascading water into the well pits". Was the pit water elevation compared to the pumping well water elevation?

11) Propose an unaffected natural background well. Wells 1, 4, 6 and 7 are too close to potential sources to be used for this purpose.

12) Without the site specific flow information, review cannot be completed of the proposed monitor well locations. I concur with the proposed shallow construction (water table zone) for the potential source areas. Since the objective of this GWMP is to detect any discharge to groundwater, the proposed monitor wells will need to be located as close to the unit as possible on the downgradient side. Examples of potential sources are the truck scale, truck unloading pad, the proposed soils storage area(s), the oil line to the kiln (to increase BTUs?), the inlet and outlet and the pressure cleaning facility (to wash out trucks?).

13) Identify the specific analytical methods for metals to be used for every sampling event.

14) Describe well purging procedures. Will pH, specific conductivity, and temperature be monitored until stablized to document sufficient purging? Field parameters should be reported with the data.

15) Include provisions to establish the flow direction quarterly using a network of piezometers and monitor wells.

16) Provide a schedule for well installation, the first quarterly data collection event, and subsequent events.

17) Include provisions to submit the quarterly water quality and groundwater elevation to the Bureau of Waste Cleanup.

If you have any questions concerning this review or the soil thermal treatment rule, please contact me at (904) 488-0190.

Sincerely,

Zoe P. Kulakowski

Zoe P. Kulakowski, P.G.
Technical Review Section
Bureau of Waste Cleanup

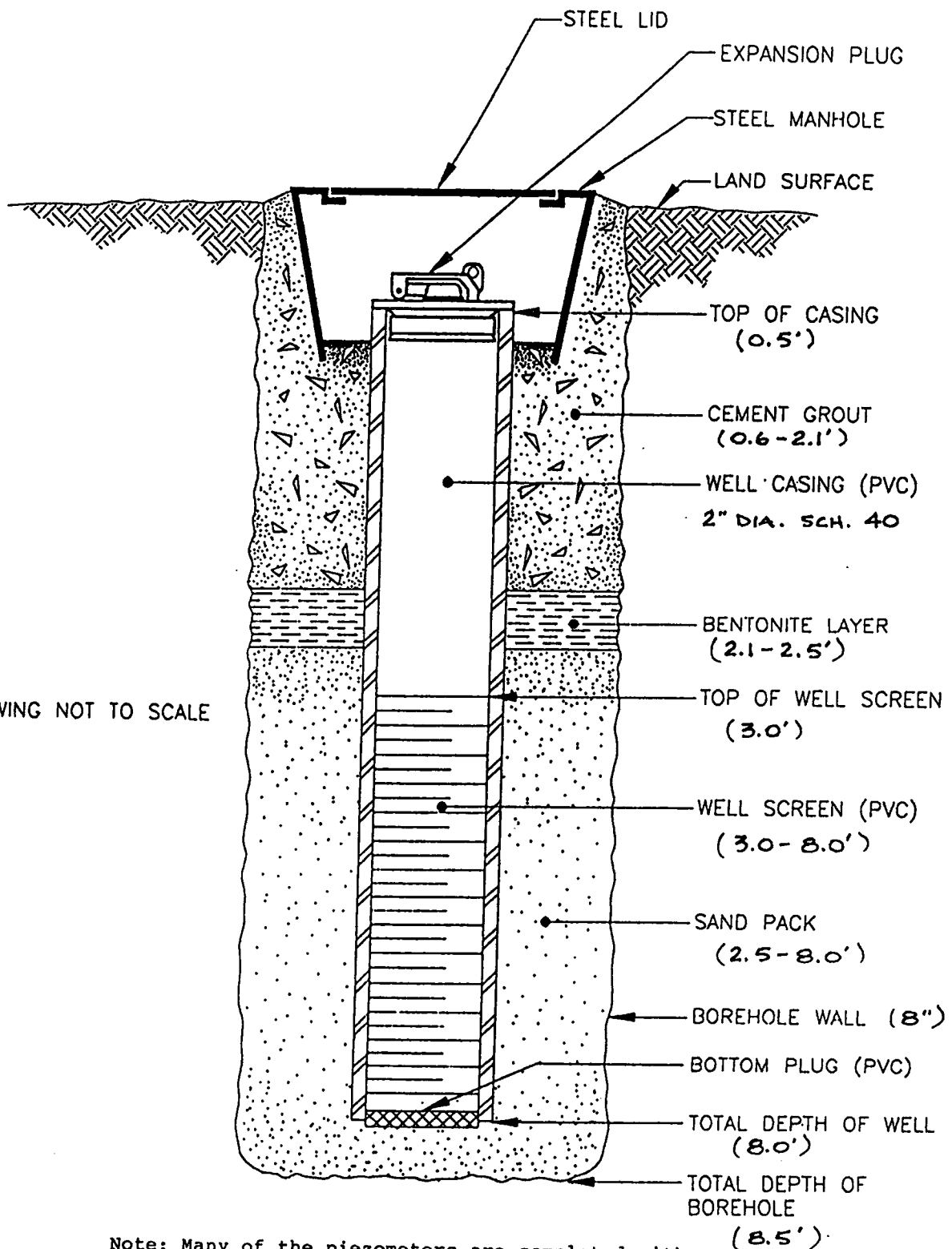
ZPK/sr

xc: Paul Wierzbicki, Southeast Florida District

# APPENDIX AB

## Typical Piezometer Diagrams

| GSI | DATE: MARCH 1991 | FOR: RINKER PORTLAND CEMENT CORP. | SUBJECT: **TYPICAL SHALLOW-ZONE PIEZOMETER** | AB |
|---|---|---|---|---|
| LOCATION: 1200 N.W. 137th AVE., MIAMI, FLORIDA | | | FACILITY: | |

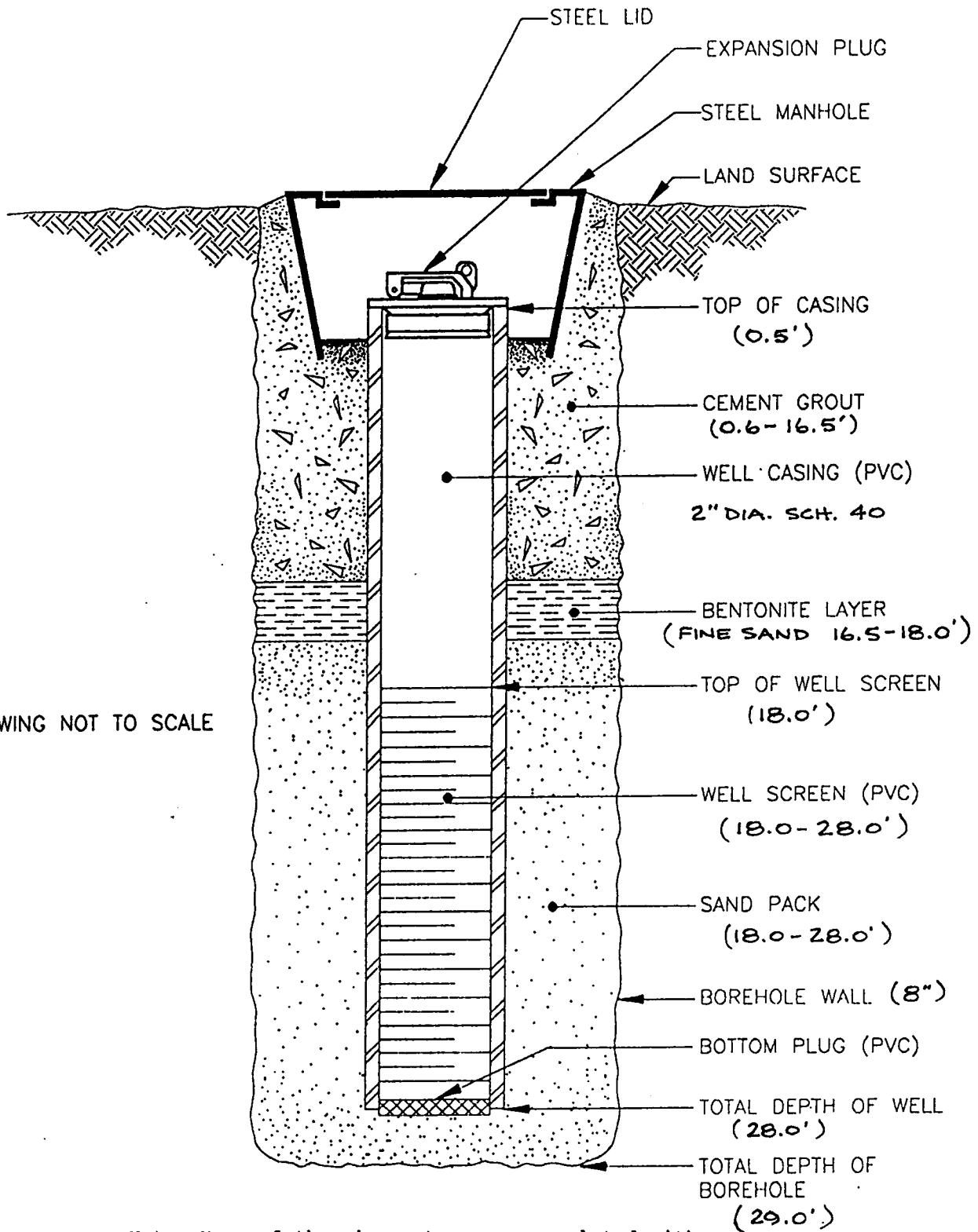



DRAWING NOT TO SCALE

Note: Many of the piezometers are completed with a riser pipe extending above grade. Subsurface portions were completed as shown.

CAD Ref. = GSITMW
L. 0, 1
Plotting Scale: 1 = 1

| GSI | DATE: MARCH 1991 | FOR: RINKER PORTLAND CEMENT CORP. | SUBJECT: **TYPICAL DEEP-ZONE PIEZOMETER** | AB |
|---|---|---|---|---|
| LOCATION: 1200 N.W. 137th AVE., MIAMI, FLORIDA | | | FACILITY: | |




DRAWING NOT TO SCALE

Note: Many of the piezometers are completed with a riser pipe extending above grade. Subsurface portions were completed as shown.

CAD Ref. = GSITMW
L. 0, 1
Plotting Scale: 1 = 1

# APPENDIX AC

## Reports of Analyses

Note: The concentration of chromium on the analysis that follows (0.06 ppm) may have resulted from the natural background content of the limestone (aquifer). Natural concentrations of chromium in the limestone matrix have been detected near 10 ppm by Rinker's lab and other laboratories in the past. In order to establish the validity of the analysis reported herein, another sample will be drawn from Piezometer 1 during the week of April 15, 1991. The result will be submitted to the FDER within three weeks of sampling.

Analytical Technologies Inc.
11 EAST OLIVE ROAD PHONE (904) 474-1001
PENSACOLA, FLORIDA 32514

GROUNDWATER SPECIALIST
3003 SOUTH CONGRESS AVE.
SUITE 1C
PALM SPRINGS FL 33461-0000

Lab I.D.#: 91-2054
Order Number: P41115
Order Date: 03/23/91
Client: 07058
Sampled By: GREG SOUCY
Sample Date: 03/22/91
Sample Time: VARIOUS

Project Number: RNK2002
Project Name: RINKER CEMENT MILL
Sample Site: MIAMI, FL
Sample Type: GROUNDWATER

N/S = Not Submitted

| Lab ID | Sample ID | Parameter | | Units | Results | Detection Limit |
|---|---|---|---|---|---|---|
| 2054-1 | 38-AC22 | SILVER | 272.2 | PPM | BDL | 0.0002 |
| 2054-1 | 38-AC22 | ARSENIC | 206.2 | PPM | BDL | 0.003 |
| 2054-1 | 38-AC22 | BARIUM | 200.7 | PPM | BDL | 0.10 |
| 2054-1 | 38-AC22 | CADMIUM | 213.2 | PPM | BDL | 0.0002 |
| 2054-1 | 38-AC22 | CHROMIUM | 200.7 | PPM | 0.06 | 0.01 |
| 2054-1 | 38-AC22 | MERCURY | 245.2 | PPM | 0.0005 | 0.0002 |
| 2054-1 | 38-AC22 | LEAD | 239.2 | PPM | 0.009 | 0.002 |
| 2054-1 | 38-AC22 | SELENIUM | 270.2 | PPM | BDL | 0.003 |

Comments: PPM = Parts Per Million, mg/l. PPB = Parts Per Billion, ug/l.
Method References: EPA 600/4-79-020, Revised March 1983 and Federal Register 40 CFR Part 136, July 1, 1988. BDL = Below Detection Limits.

Approved By : Susan Lambert

Analytical Technologies Inc.
11 EAST OLIVE ROAD PHONE (904) 474-1001
PENSACOLA, FLORIDA 32514

Client: GROUNDWATER SPECIALIST

Project Number: RNK2002
Project Name: RINKER CEMENT MILL
Sample Site: MIAMI, FL
Sample Type: GROUNDWATER

Lab I.D.#: 91-2054-1
Order Date: 03/23/91
Sampled By: GREG SOUCY

Sample ID.: 38-AC22 Sample Date: 03/22/91 Time: VARIOUS

BETX+MTBE BETX + MTBE

| Parameter | Units | Result | Detection Limit |
|---|---|---|---|
| BENZENE | PPB | BDL | 1 |
| ETHYL BENZENE | PPB | BDL | 1 |
| METHYL TERT-BUTYL ETHER | PPB | BDL | 5 |
| TOLUENE | PPB | BDL | 5 |
| XYLENE | PPB | BDL | 2 |
| TRIF-TOLUENE *SURR* LIMITS (70-130) | % REC | 113 | |

Analytical Technologies Inc.
11 EAST OLIVE ROAD PHONE (904) 474-1001
PENSACOLA, FLORIDA 32514

Client: GROUNDWATER SPECIALIST

Project Number: RNK2002
Project Name: RINKER CEMENT MILL
Sample Site: MIAMI, FL
Sample Type: GROUNDWATER

Lab I.D.#: 91-2054-2
Order Date: 03/23/91
Sampled By: GREG SOUCY

Sample ID.: 38-RC22 Sample Date: 03/22/91 Time: VARIOUS

BETX+MTBE BETX + MTBE

| Parameter | Units | Result | Detection Limit |
|---|---|---|---|
| BENZENE | PPB | BDL | 1 |
| ETHYL BENZENE | PPB | BDL | 1 |
| METHYL TERT-BUTYL ETHER | PPB | BDL | 5 |
| TOLUENE | PPB | BDL | 5 |
| XYLENE | PPB | BDL | 2 |
| TRIF-TOLUENE *SURR* LIMITS (70-130) | % REC | 108 | |

Analytical Technologies Inc.
11 EAST OLIVE ROAD PHONE (904) 474-1001
PENSACOLA, FLORIDA 32514

Client: GROUNDWATER SPECIALIST

Project Number: RNK2002
Project Name: RINKER CEMENT MILL
Sample Site: MIAMI, FL
Sample Type: GROUNDWATER

Lab I.D.#: 91-2054-1
Order Date: 03/23/91
Sampled By: GREG SOUCY

Sample ID.: 38-AC22 Sample Date: 03/22/91 Time: VARIOUS

1770/BASE/610 1770/BASE NEUTRALS/610

| Parameter | Units | Result | Detection Limit |
|---|---|---|---|
| ACENAPHTHENE | PPB | BDL | 1 |
| ACENAPHTHYLENE | PPB | BDL | 1 |
| ANTHRACENE | PPB | BDL | 1 |
| BENZO(A)ANTHRACENE | PPB | BDL | 1 |
| BENZO(A)PYRENE | PPB | BDL | 1 |
| BENZO(B)FLUORANTHENE | PPB | BDL | 1 |
| BENZO(GHI)PERYLENE | PPB | BDL | 1 |
| BENZO(K)FLUORANTHENE | PPB | BDL | 1 |
| CHRYSENE | PPB | BDL | 1 |
| DIBENZO(A,H)ANTHRACENE | PPB | BDL | 1 |
| FLUORANTHENE | PPB | BDL | 1 |
| FLUORENE | PPB | BDL | 1 |
| INDENO(1,2,3-CD)PYRENE | PPB | BDL | 1 |
| NAPHTHALENE | PPB | BDL | 1 |
| PHENANTHRENE | PPB | BDL | 1 |
| PYRENE | PPB | BDL | 1 |
| 1,METHYLNAPHTHALENE | PPB | BDL | 1 |
| 2,METHYLNAPHTHALENE | PPB | BDL | 1 |



end of report

# APPENDIX AD

## Results of Aquifer Tests

# RESULTS OF PUMPING/RECOVERY TEST AND SLUG TESTS

On March 26, 1991, a 0.5 hour shut-down of Well PN (northern of two process wells) was effected. Water levels in Wells PN, PS, and Piezometers (also called wells) 15, 16 and 20 were measured during recovery and then drawdown as Well PN was restarted. Wells PN and PS pump 694 gpm each, on a continuous basis. A plan showing the well locations is included on page ADA in this appendix. An analysis of the data and conclusions on aquifer characteristics follow.

Time-recovery data from Wells PN, 15, 16 and 20 are shown on page ADB; plots are shown on page ADC. Based on recoveries measured in Wells 15 and 16 (shallow) and Well 20 (deep), it is clear that the shallow and deep zones are affected by pumping/recovery of Well PN (and PS). A cross section showing the depths of penetration of these wells is included on page ADD (Well PS is identical to Well PN). This diagram shows Wells 15, 16 and 20 as if they were in the same direction from Well PN. Well PN is shown to penetrate about six feet of saturated shallow zone and less than two feet of the deep zone. As determined during the construction of Well 20, about four feet of the saturated shallow zone (between depths of 10 and 14 feet) consists of the bryozoan layer and sandy, shelly limestone of the Miami formation; this lies immediately above the hard, dense limestone confining bed, and is known to be a permeable horizon.

Using the recovery data from the test, the total transmissivity of both zones was determined, then the transmissivity of each zone was estimated. The total transmissivity was determined using the Theis Equation (Walton, 1970, Groundwater Resource Evaluation, McGraw Hill), where:

(1) $s = 114.6\ QW(u)/T$ and
(2) $u = 1.87\ rrS/Tt$

The known (or estimated) parameters are:

s = drawdown/recovery (at t=25 minutes) = 0.92 feet
Q = total pumping rate yielding the recovery = 694 gpm
r = well radius, taken to be 10 feet
S = storage coefficient = 0.20
t = time of recovery = 0.0173 days = 25 minutes

The unknown parameters are T, W(u) and u. The two equations (1 and 2) were subtracted to eliminate T and the unique points in the well function where W(u) and u fit the equation were determined. The results were:

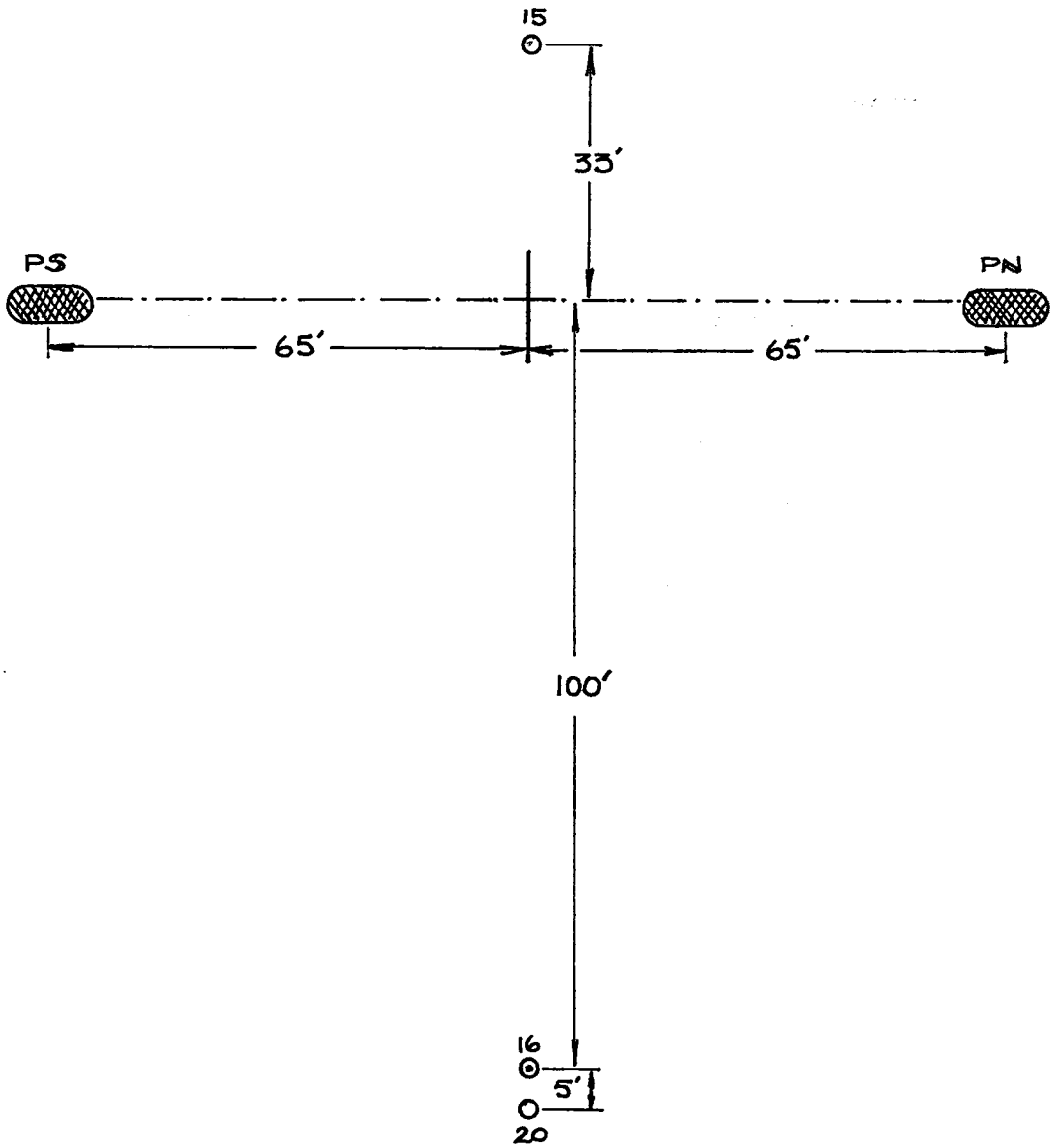
W(u) = 7.41
u = 3.4 X 10EE-4

T was then solved to be 646,000 gpd/ft. This figure matches well with that reported by Dames and Moore in the GWMP of January, 1991. The transmissivity of the shallow and deep zones were then estimated on the basis of the time-recovery drawdowns. At the end of 30 minutes of recovery, the total recoveries in Wells 16 and 20 (equidistant from Well PN) were 0.080 and 0.027 feet. As the transmissivity of each zone is inversely proportional to the drawdown, and transmissivities are additive, the ratio of the shallow zone transmissivity to the total transmissivity is 0.027/(0.027+0.080), or 0.252. Thus the transmissivity of the shallow zone is estimated to be 163,000 gpd/ft and that of the deep zone is 483,000 gpd/ft. These estimates are quite reasonable in light of the small penetration of the deep zone by Well PN and the known high permeability of the bryozoan layer of the shallow zone in more eastern parts of Dade County. The relative flatness of the shallow water levels also indicates the relatively high permeability of the bryozoan layer.

In addition to the test conducted on Well PN, six slug tests were conducted on shallow piezometers. The results of four of the tests are shown on pages ADE through ADL. The tests yielding the highest and lowest hydraulic conductivities were rejected as anomalous. The average of the hydraulic conductivities determined was 12.5 gpd/sq.ft. The average transmissivity determined was 87.5 gpd/ft. These values are very much lower than determined during the recovery test of Well PN because the piezometers tap only the sediments above the bryozoan facies where the hydraulic conductivity is much lower than the bryozoan layer. Thus, the shallow zone is subdivided into two hydraulic units, one of very low permeability above a depth of about 10 feet and another of high permeability approximately between 10 and 14 feet in depth in the area of Piezometer 20.

It is evident from the shallow groundwater levels and surface-water levels that the cooling water ponds have little effect on groundwater levels. Water seeped from these ponds is theorized to enter the bryozoan layer and then flow laterally to the process wells and/or the canal on the east of the property. Because of the high permeability of the bryozoan layer, water entering this layer would not show a significant mounding effect.

# LOCATIONS OF WELLS USED IN RECOVERY TEST




LEGEND:

- ○ SHALLOW-ZONE PIEZOMETER
- ⊙ DEEP-ZONE PIEZOMETER
- PROCESS WELL

N

# GSI

PUMPING TEST FORM — HYDROCARBON CA PROJECTS

PROJECT RINKER 2002 PUMPING WELL _____ DATE ____ PAGE 1 OF 2

3-26-91

| WELL NUMBER PN | | | | | | WELL NUMBER PS | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| TIME | HELD | WET | DTW | S | Q AND COMMENTS | TIME | HELD | WET | DTW | S | Q AND COMMENTS |
| 7:33 | 8.5 | .55 | 7.95 | | STATIC | 7:38 | 9.0 | .72 | 8.28 | | STATIC |
| 800 | START TEST | | | | PN TURNED OFF | 800 | START TEST | | | | |
| 8:01 | 8.5 | 1.15 | 7.35 | 0.6 | ↑ | 8:00 | 8.9 | .52 | 8.48 | .20 | ↑ |
| 8:02 | 8.5 | 1.31 | 7.19 | .76 | | 8:14 | 9.0 | .51 | 8.49 | .21 | RECOVERY |
| 8:03 | 8.0 | .88 | 7.12 | .83 | | 8:19 | 9.0 | .51 | 8.49 | .21 | ↓ |
| 8:05 | 8.0 | .95 | 7.05 | .90 | | 8:25 | 9.0 | .50 | 8.50 | .22 | |
| 8:06 | 8.0 | .97 | 7.03 | .92 | | 8:30 | PUMP | TURNED | BACK ON | | |
| 8:07 | 8.0 | .97 | 7.03 | .92 | RECOVERY | 8:38 | 9.5 | 1.39 | 8.11 | .17 | ↑ |
| 8:11 | 8.0 | .97 | 7.03 | .92 | | 8:43 | 9.5 | 1.37 | 8.13 | .15 | |
| 8:16 | 8.0 | .97 | 7.03 | .92 | | 8:48 | 9.5 | 1.33 | 8.17 | .11 | |
| 8:21 | 8.0 | .97 | 7.03 | .92 | | 8:54 | 9.5 | 1.23 | 8.27 | .01 | DRAWDOWN |
| 8:29 | 8.0 | .97 | 7.03 | .92 | ↓ | 8:59 | 9.5 | 1.21 | 8.29 | .0 | ↓ |
| 8:30 | PUMP | TURNED | BACK ON | "PN" | | | | | | | END TEST |
| 8:31 | 8.5 | 1.42 | 7.08 | .87 | ↑ | | | | | | |
| 8:32 | 8.5 | 1.32 | 7.08 | .87 | | | | | | | |
| 8:33 | 8.5 | 1.25 | 7.25 | .70 | | | | | | | |
| 8.33 | 8.5 | 1.19 | 7.31 | .64 | | | | | | | |
| 8:34 | 8.5 | 1.15 | 7.35 | .60 | | | | | | | |
| 8.35 | 8.5 | 1.12 | 7.38 | .57 | | | | | | | |
| 836 | 8.6 | 1.10 | 7.40 | .55 | DRAWDOWN | | | | | | |
| 8:37 | 8.5 | 1.08 | 7.42 | .53 | | | | | | | |
| 8:41 | 8.5 | 1.01 | 7.49 | .46 | | | | | | | |
| 8:46 | 8.5 | .93 | 7.57 | .38 | | | | | | | |
| 8:51 | 8.5 | .82 | 7.68 | .27 | | | | | | | |
| 8:56 | 8.5 | .69 | 7.81 | .14 | | | | | | | |
| 9:02 | 8.6 | .68 | 7.82 | .13 | ↓ | | | | | | |
| | | | | | END TEST | | | | | | |
| | | | | | | WELL # 15 (0) | | | | | |
| | | | | | | 7:35 | 10 | .75 | 9.25 | | STATIC |
| | | | | | | 8:00 | START TEST | | | | |
| | | | | | | 8:03 | 10 | .82 | 9.18 | .07 | ↑ |
| | | | | | | 8:08 | 10 | .83 | 9.17 | .08 | |
| | | | | | | 8:13 | 10 | .84 | 9.16 | .09 | RECOVERY |
| | | | | | | 8:18 | 10 | .85 | 9.15 | .10 | ↓ |
| | | | | | | 8:23 | 10 | .85 | 9.15 | .10 | |
| | | | | | | 8:30 | TURN | PUMP | BACK ON | | |
| | | | | | | 830 | 10 | .86 | 9.14 | .11 | ↑ |
| | | | | | | 835 | 10.5 | 1.36 | 9.14 | .11 | |
| | | | | | | 8:40 | 10 | .85 | 9.15 | .10 | |
| | | | | | | 8:47 | 10 | .84 | 9.16 | .09 | |
| | | | | | | 8:52 | 10 | .82 | 9.18 | .07 | DRAWDOWN |
| | | | | | | 8:58 | 10 | 80 | 9.20 | .05 | ↓ |
| | | | | | | 9:04 | 10 | .79 | 9.21 | .04 | |
| | | | | | | 9:10 | 10 | .77 | 9.23 | .02 | |

# GSI

PUMPING TEST FORM — HYDROCARBON CA PROJECTS

PROJECT RNK 2002 PUMPING WELL PS DATE ___ PAGE 2 OF 2

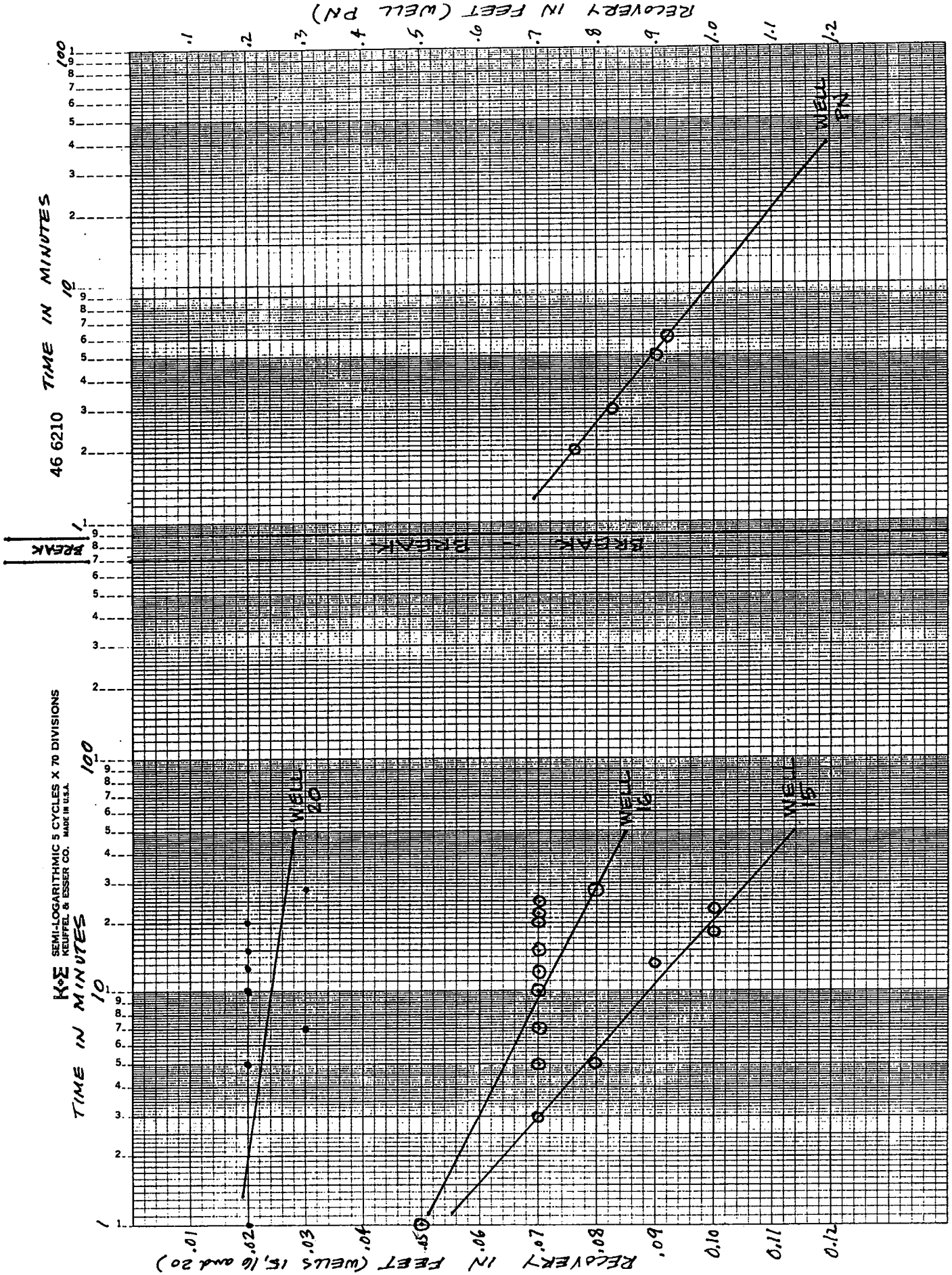
MEASURED w/ "M" SCOPE 3.26.91

| WELL NUMBER 20 (T) (DEEP) | | | | | |
|---|---|---|---|---|---|
| TIME | HELD | WET | DTW | S | Q AND COMMENTS |
| 0741 | | | 8.88 | | BACKGROUND W.L.'s |
| 745 | | | 8.88 | | " " |
| | | | | | |
| 0800 | START TEST → | | | | PN TURNED OFF |
| 801 | | | 8.86 | 0.02 | |
| 805 | | | 8.86 | 0.02 | |
| 807 | | | 8.85 | 0.03 | RECOVERY |
| 810 | | | 8.86 | 0.02 | |
| 8:12:30 | | | 8.86 | 0.02 | |
| 815 | | | 8.86 | 0.02 | |
| 820 | | | 8.86 | 0.02 | |
| 822:30 | | | 8.86 | 0.02 | |
| 825 | | | 8.86 | 0.02 | |
| 828 | | | 8.85 | 0.03 | |
| 830 | PUMP "PN" TURNED BACK ON | | | | |
| 831 | | | 8.87 | 0.01 | |
| 835 | | | 8.87 | 0.01 | |
| 840 | | | 8.87 | 0.01 | DRAWDOWN |
| 845 | | | 8.87 | 0.01 | |
| 850 | | | 8.88 | 0 | |
| 855 | | | 8.88 | 0 | |
| 900 AM | | | 8.88 | 0 | |
| | TEST COMPLETED | | | | |

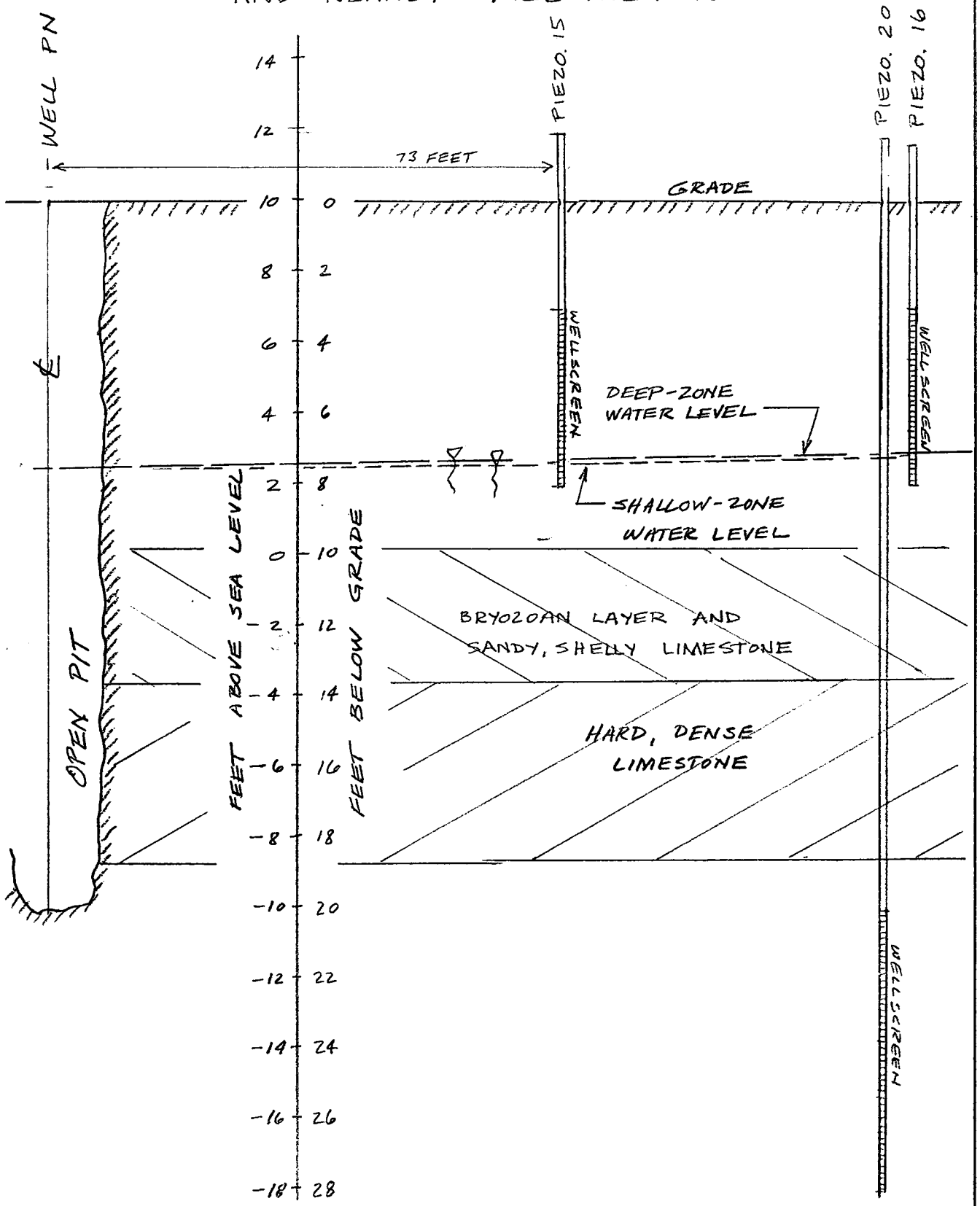
| WELL NUMBER 16 (P) (SHALLOW) | | | | | |
|---|---|---|---|---|---|
| TIME | HELD | WET | DTW | S | Q AND COMMENTS |
| 0741 | | | 8.72 | | BACKGROUND W.L.'s |
| 0745 | | | 8.71 | | " " |
| | | | | | |
| 0800 | START TEST | | | | |
| 801 | | | 8.67 | 0.05 | |
| 805 | | | 8.65 | .07 | |
| 807 | | | 8.65 | .07 | RECOVERY |
| 810 | | | 8.65 | .07 | |
| 8:12:30 | | | 8.65 | .07 | |
| 815 | | | 8.65 | .07 | |
| 820 | | | 8.65 | .07 | |
| 8:22:30 | | | 8.65 | .07 | |
| 825 | | | 8.65 | .07 | |
| 828 | | | 8.64 | .08 | |
| 830 | PN TURNED ON | | | | |
| 831 | | | 8.68 | .04 | |
| 835 | | | 8.68 | .04 | |
| 840 | | | 8.69 | .03 | DRAWDOWN |
| 845 | | | 8.69 | .03 | |
| 850 | | | 8.71 | .01 | |
| 855 | | | 8.72 | 0 | |
| 900 | | | 8.72 | 0 | |
| | TEST COMPLETED | | | | |

NOTE: LINEAR DISTANCES MEASURED BETWEEN THE NORTH PROCESS WELL (PN) AND THE PIEZOMETERS USED IN THE PUMP TEST:

PN to #15 ≅ 73'
PN to #16 ≅ 123'
PN to #20 ≅ 119'


RECOVERY IN FEET (WELL PN)
.1
.2
.3
.4
.5
.6
.7
.8
.9
1.0
1.1
1.2
TIME IN MINUTES
100
10
1
46 6210
BREAK
WELL 21
WELL 20
WELL 15
WELL 19
K+E SEMI-LOGARITHMIC 5 CYCLES X 70 DIVISIONS
KEUFFEL & ESSER CO. MADE IN U.S.A.
RECOVERY IN FEET (WELLS 15, 19 and 20)
.01
.02
.03
.04
.05
.06
.07
.08
.09
0.10
0.11
0.12

# CROSS SECTION SHOWING PUMPING WELL PN AND NEARBY PIEZOMETERS




NOTE: THIS CROSS SECTION SHOWS THE RELATIONSHIP AMOUNG WATER LEVELS IN THE SHALLOW AND DEEP ZONES, THE HARD, DENSE LIMESTONE, AND WELL PN - THE OPEN PIT. WATER LEVES REFLECT PUMPING.

GROUNDWATER SPECIALISTS, INC

SLUG TEST ANALYSIS (by Bouwer, 1978, Groundwater Hydrology, McGraw-Hill)

WELL "R" (#18) RNK2002 DATE: MARCH 27, 1991

DEFINITIONS:

| | | | | |
|---|---|---|---|---|
| D | = | 2 | = | well diameter (inches) |
| BH | = | 8 | = | borehole diameter (inches) |
| Rl | = | 0.08 | = | radius of well (feet) |
| Rc | = | 0.20833 | = | radius of well section where water level is rising (feet) |
| Re | = | | = | effective radial distance over which head difference (y) is dissipated (feet) |
| Rw | = | 0.33 | = | borehole radius (feet) |
| Le | = | 7.20 | = | length of saturated screen (feet) |
| yo | = | 12.00 | = | y intercept at time 0 (feet) |
| yt | = | 0.62 | = | y intercept at time t (feet) |
| t | = | 605.00 | = | time in seconds after start of test (seconds) |
| H | = | 7.00 | = | saturated thickness of aquifer (feet) |
| Lw | = | 6.20 | = | length from water table to bottom of wellscreen (feet) |
| A | = | 2.00 | = | dimensionless coefficient |
| B | = | 0.60 | = | dimensionless coefficient |
| C | = | 1.40 | = | dimensionless coefficient |

EQUATIONS:

$$\ln(Re/Rw) = \frac{1}{\frac{1.1}{\ln(Lw/Rw)} + \frac{A + B \times \ln[(H-Lw)/Rw]}{(Le/Rw)}}$$

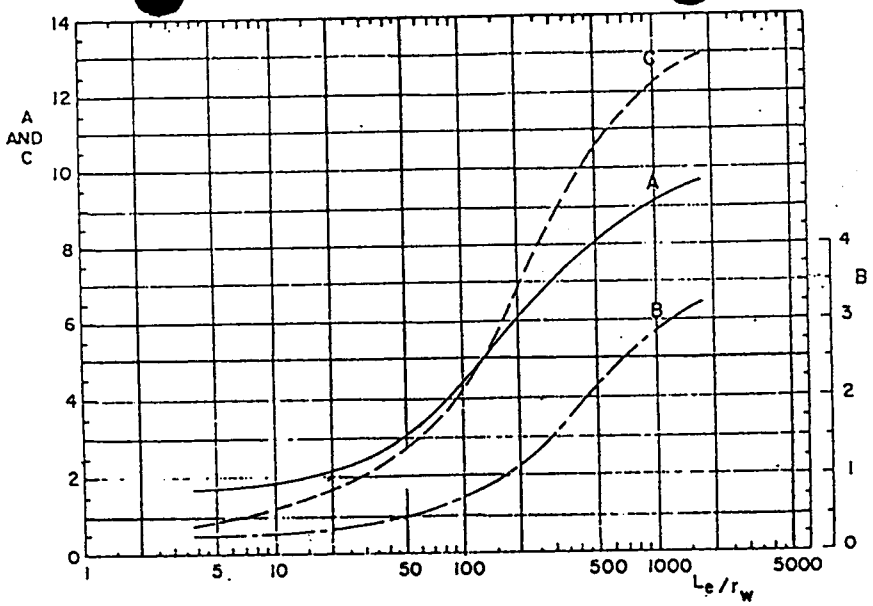
$$K = \frac{Rc \times Rc \times \ln(Re/Rw) \times (1/t) \times \ln(yo/yt)}{2 \times Le}$$

SOLUTIONS:

| | | |
|---|---|---|
| Le/Rw = | 21.6 | |
| Lw/Rw = | 18.6 | |
| H-Lw = | 0.80 | |
| Rc*Rc = | 0.043 | |
| 2*Le = | 14.4 | |
| 1/t = | 0.002 | |
| ln (yo/yt) = | 3.0 | |
| ln (Re/Rw) = | 2.0 | |
| ln [(H-Lw)/Rw] = | 0.8 | (if >6, then 6 is used in equation) |

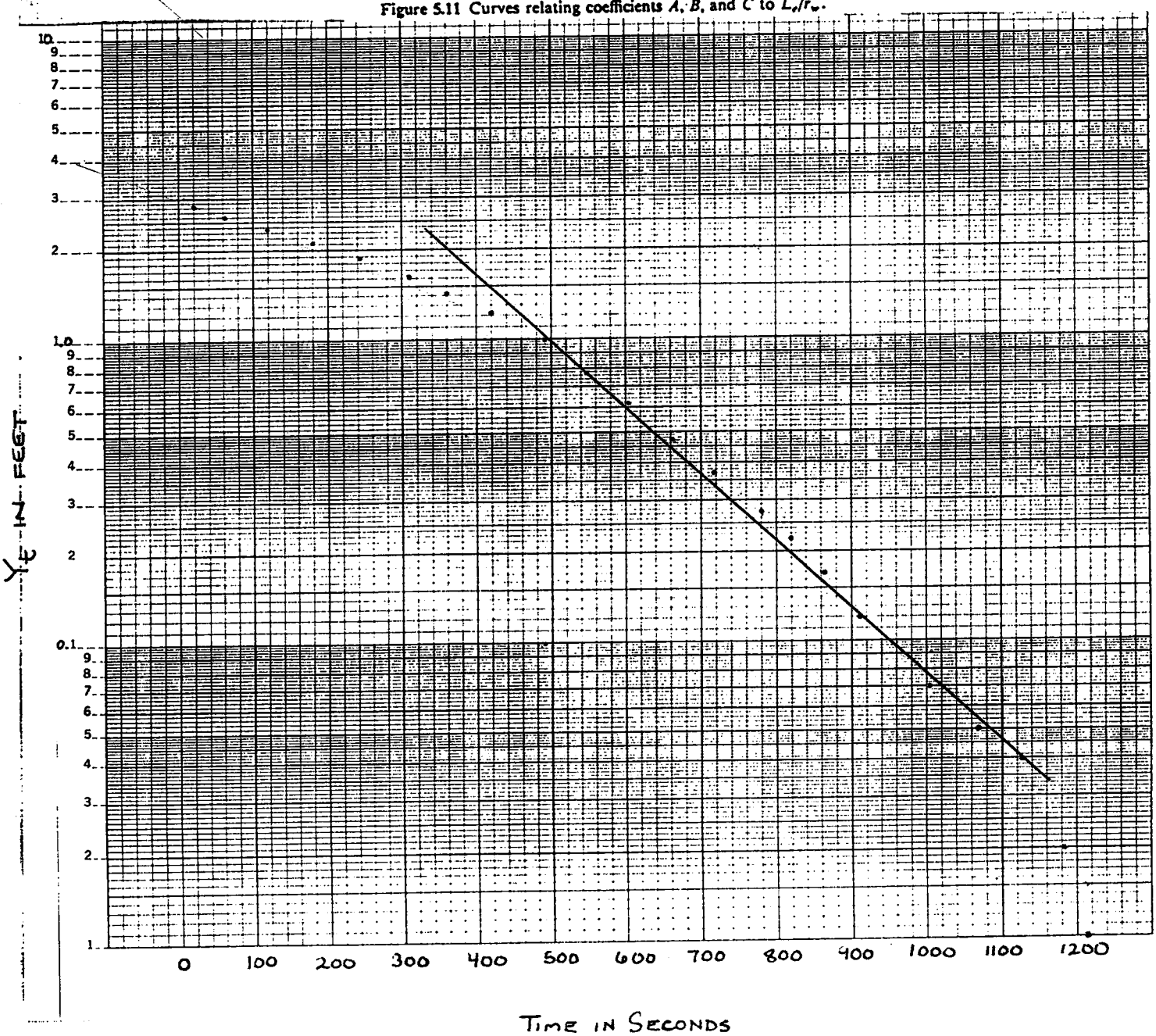
| | | | | |
|---|---|---|---|---|
| K | = | 0.00003 | = | hydraulic conductivity (ft/second) |
| K | = | 19 | = | hydraulic conductivity (gpd/sq ft) |
| T | = | 135 | = | transmissivity (gpd/ft) |

Pg. ADF




WELL 18

Figure 5.11 Curves relating coefficients $A$, $B$, and $C$ to $L_e/r_w$.



GROUNDWATER SPECIALISTS, INC

pg. ADG

SLUG TEST ANALYSIS (by Bouwer, 1978, Groundwater Hydrology, McGraw-Hill)

WELL "F" (#6) RNK2002 DATE: MARCH 27, 1991

DEFINITIONS:

| | | | | |
|---|---|---|---|---|
| D | = | 2 | = | well diameter (inches) |
| BH | = | 8 | = | borehole diameter (inches) |
| RI | = | 0.08 | = | radius of well (feet) |
| Rc | = | 0.20833 | = | radius of well section where water level is rising (feet) |
| Re | = | | = | effective radial distance over which head difference (y) is dissipated (feet) |
| Rw | = | 0.33 | = | borehole radius (feet) |
| Le | = | 2.80 | = | length of saturated screen (feet) |
| yo | = | 1.05 | = | y intercept at time 0 (feet) |
| yt | = | 0.60 | = | y intercept at time t (feet) |
| t | = | 180.00 | = | time in seconds after start of test (seconds) |
| H | = | 7.00 | = | saturated thickness of aquifer (feet) |
| Lw | = | 2.80 | = | length from water table to bottom of wellscreen (feet) |
| A | = | 1.80 | = | dimensionless coefficient |
| B | = | 0.50 | = | dimensionless coefficient |
| C | = | 0.80 | = | dimensionless coefficient |

EQUATIONS:

$$\ln(Re/Rw) = \frac{1}{\frac{1.1}{\ln(Lw/Rw)} + \frac{A + B \times \ln[(H-Lw)/Rw]}{(Le/Rw)}}$$

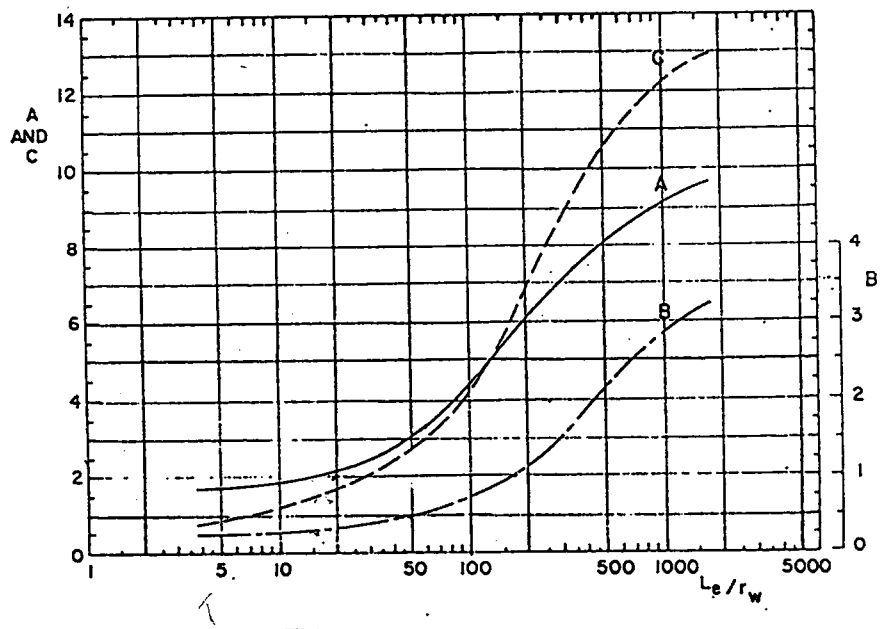
$$K = \frac{Rc \times Rc \times \ln(Re/Rw) \times (1/t) \times \ln(yo/yt)}{2 \times Le}$$

SOLUTIONS:

| | | |
|---|---|---|
| Le/Rw = | 8.4 | |
| Lw/Rw = | 8.4 | |
| H-Lw = | 4.20 | |
| Rc*Rc = | 0.043 | |
| 2*Le = | 5.6 | |
| 1/t = | 0.006 | |
| ln (yo/yt) = | 0.6 | |
| ln (Re/Rw) = | 1.1 | |
| ln [(H-Lw)/Rw] = | 2.5 | (if >6, then 6 is used in equation) |

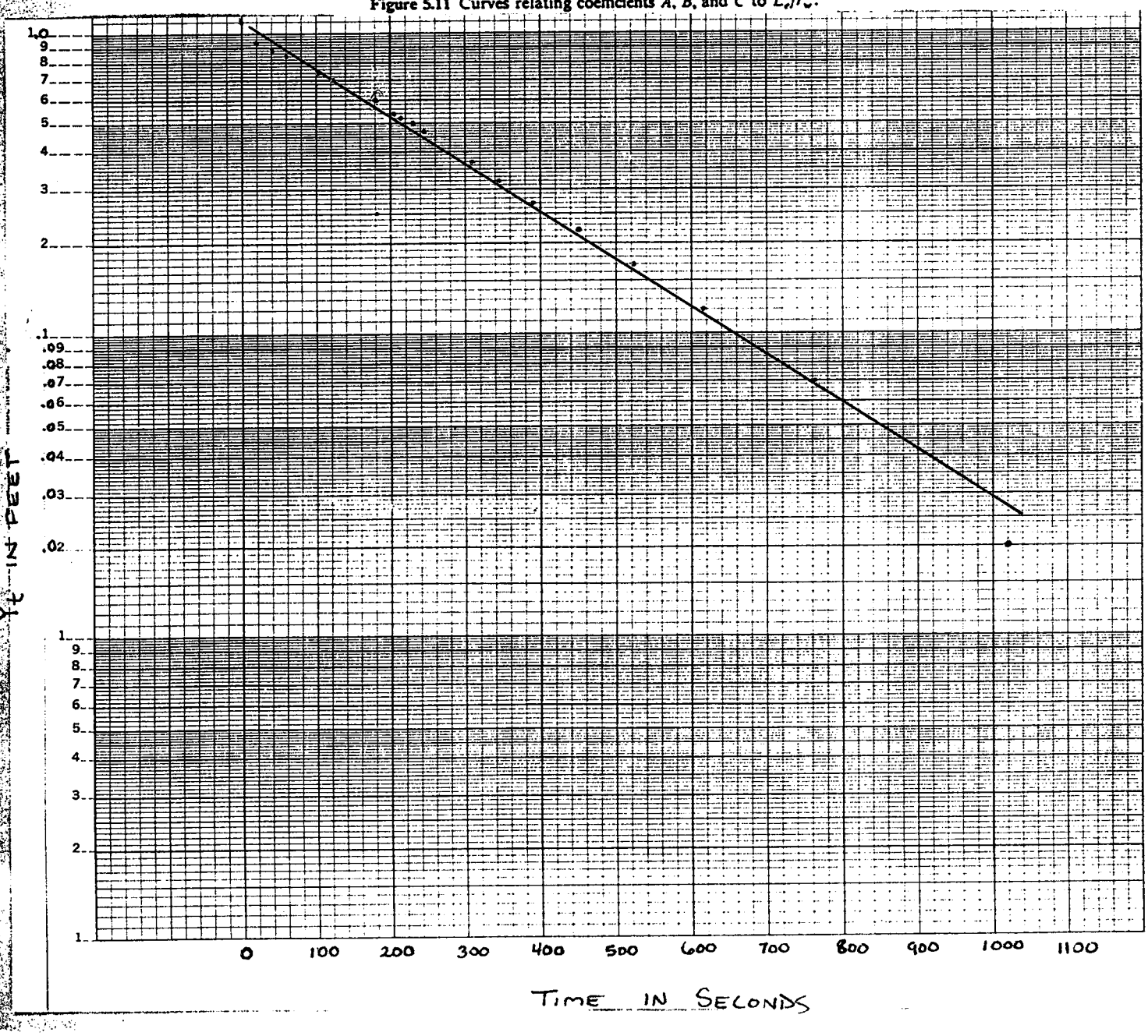
| | | | | |
|---|---|---|---|---|
| K | = | 0.00003 | = | hydraulic conductivity (ft/second) |
| K | = | 18 | = | hydraulic conductivity (gpd/sq ft) |
| T | = | 124 | = | transmissivity (gpd/ft) |

pg. ADH




WELL "B"

Figure 5.11 Curves relating coefficients $A$, $B$, and $C$ to $L_e/r_w$.



GROUNDWATER SPECIALISTS, INC

SLUG TEST ANALYSIS (by Bouwer, 1978, Groundwater Hydrology, McGraw-Hill)

WELL "Q" (#17) RNK2002 DATE: MARCH 27, 1991

DEFINITIONS:

| | | | | |
|---|---|---|---|---|
| D | = | 2 | = | well diameter (inches) |
| BH | = | 8 | = | borehole diameter (inches) |
| RI | = | 0.08 | = | radius of well (feet) |
| Rc | = | 0.20833 | = | radius of well section where water level is rising (feet) |
| Re | = | | = | effective radial distance over which head difference (y) is dissipated (feet) |
| Rw | = | 0.33 | = | borehole radius (feet) |
| Le | = | 2.80 | = | length of saturated screen (feet) |
| yo | = | 2.21 | = | y intercept at time 0 (feet) |
| yt | = | 2.00 | = | y intercept at time t (feet) |
| t | = | 100.00 | = | time in seconds after start of test (seconds) |
| H | = | 9.20 | = | saturated thickness of aquifer (feet) |
| Lw | = | 2.80 | = | length from water table to bottom of wellscreen (feet) |
| A | = | 1.80 | = | dimensionless coefficient |
| B | = | 0.50 | = | dimensionless coefficient |
| C | = | 1.00 | = | dimensionless coefficient |

EQUATIONS:

$$\ln(Re/Rw) = \frac{1}{\frac{1.1}{\ln(Lw/Rw)} + \frac{A + B \times \ln[(H-Lw)/Rw]}{(Le/Rw)}}$$

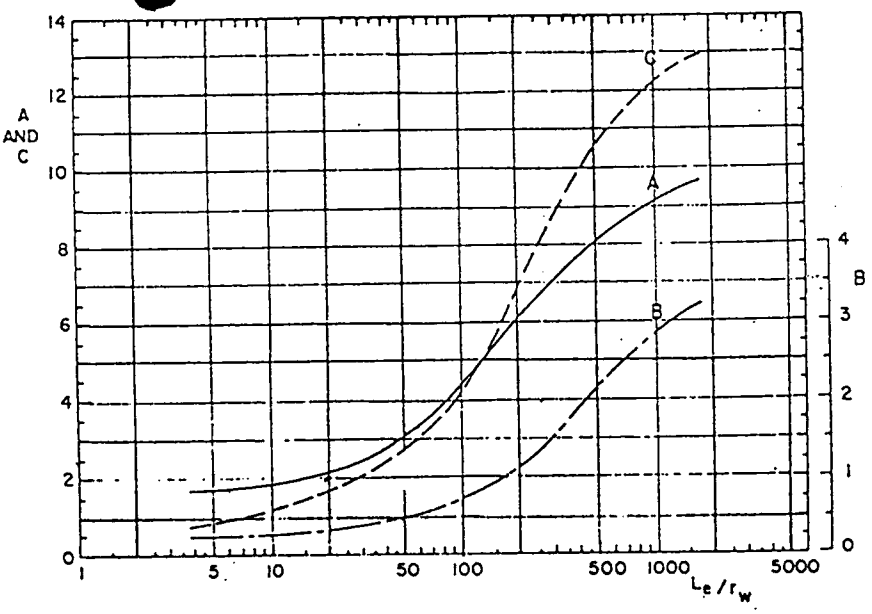
$$K = \frac{Rc \times Rc \times \ln(Re/Rw) \times (1/t) \times \ln(yo/yt)}{2 \times Le}$$

SOLUTIONS:

| | | |
|---|---|---|
| Le/Rw = | 8.4 | |
| Lw/Rw = | 8.4 | |
| H-Lw = | 6.40 | |
| Rc*Rc = | 0.043 | |
| 2*Le = | 5.6 | |
| 1/t = | 0.010 | |
| ln (yo/yt) = | 0.1 | |
| ln (Re/Rw) = | 1.1 | |
| ln [(H-Lw)/Rw] = | 2.9 | (if >6, then 6 is used in equation) |

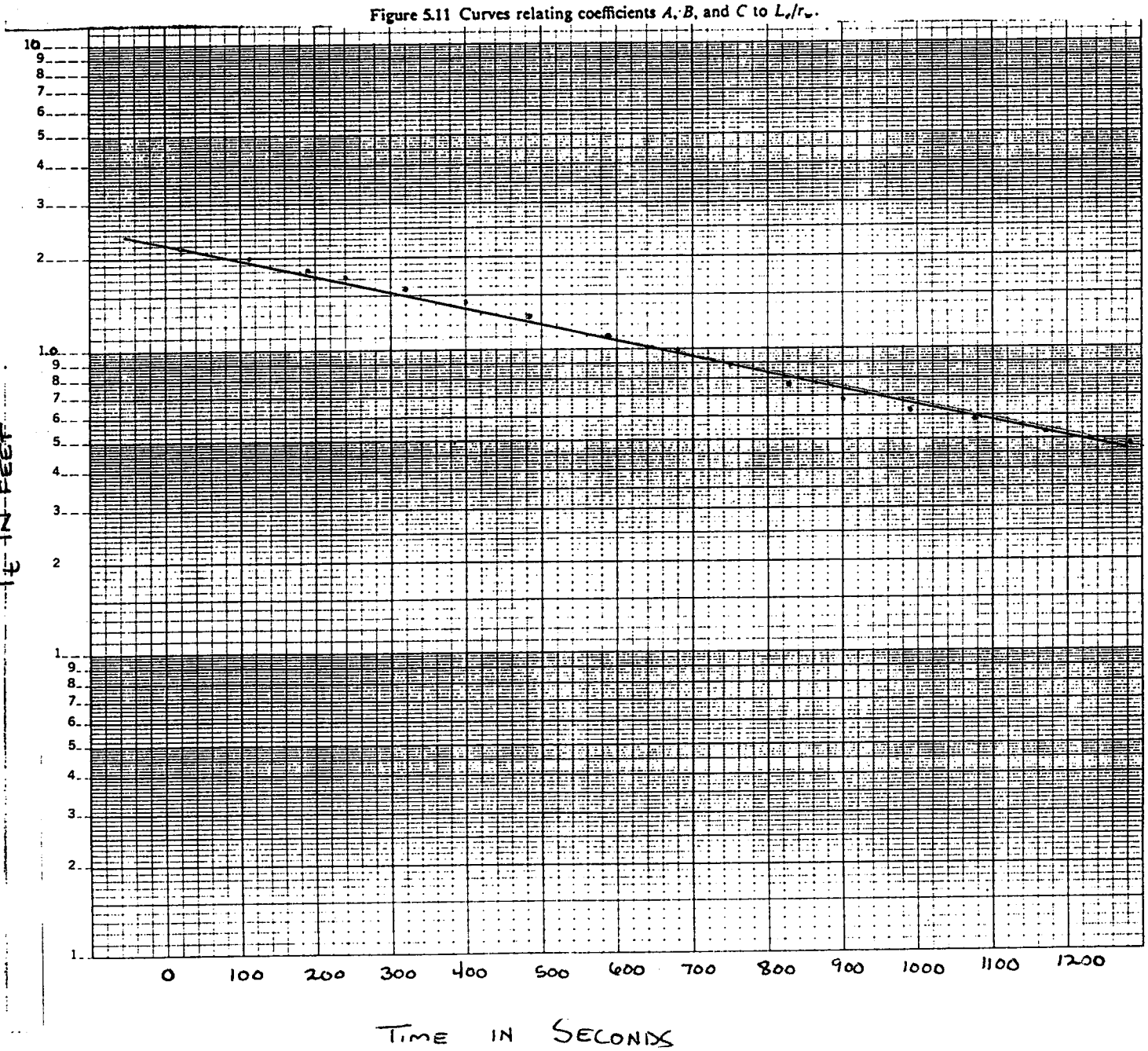
| | | | | |
|---|---|---|---|---|
| K | = | 0.00001 | = | hydraulic conductivity (ft/second) |
| K | = | 6 | = | hydraulic conductivity (gpd/sq ft) |
| T | = | 51 | = | transmissivity (gpd/ft) |

pg. ADJ




WELL 17

Figure 5.11 Curves relating coefficients $A$, $B$, and $C$ to $L_e/r_w$.



SLUG TEST ANALYSIS (by Bouwer, 1978, Groundwater Hydrology, McGraw-Hill)

WELL "E" RNK2002 DATE: MARCH 27, 1991

DEFINITIONS:

| | | | | |
|---|---|---|---|---|
| D | = | 2 | = | well diameter (inches) |
| BH | = | 8 | = | borehole diameter (inches) |
| Rl | = | 0.08 | = | radius of well (feet) |
| Rc | = | 0.20833 | = | radius of well section where water level is rising (feet) |
| Re | = | | = | effective radial distance over which head difference (y) is dissipated (feet) |
| Rw | = | 0.33 | = | borehole radius (feet) |
| Le | = | 6.80 | = | length of saturated screen (feet) |
| yo | = | 0.07 | = | y intercept at time 0 (feet) |
| yt | = | 0.06 | = | y intercept at time t (feet) |
| t | = | 122.00 | = | time in seconds after start of test (seconds) |
| H | = | 7.20 | = | saturated thickness of aquifer (feet) |
| Lw | = | 6.80 | = | length from water table to bottom of wellscreen (feet) |
| A | = | 2.00 | = | dimensionless coefficient |
| B | = | 0.60 | = | dimensionless coefficient |
| C | = | 1.40 | = | dimensionless coefficient |

EQUATIONS:

$$\ln(Re/Rw) = \frac{1}{\frac{1.1}{\ln(Lw/Rw)} + \frac{A + B \times \ln[(H-Lw)/Rw]}{(Le/Rw)}}$$

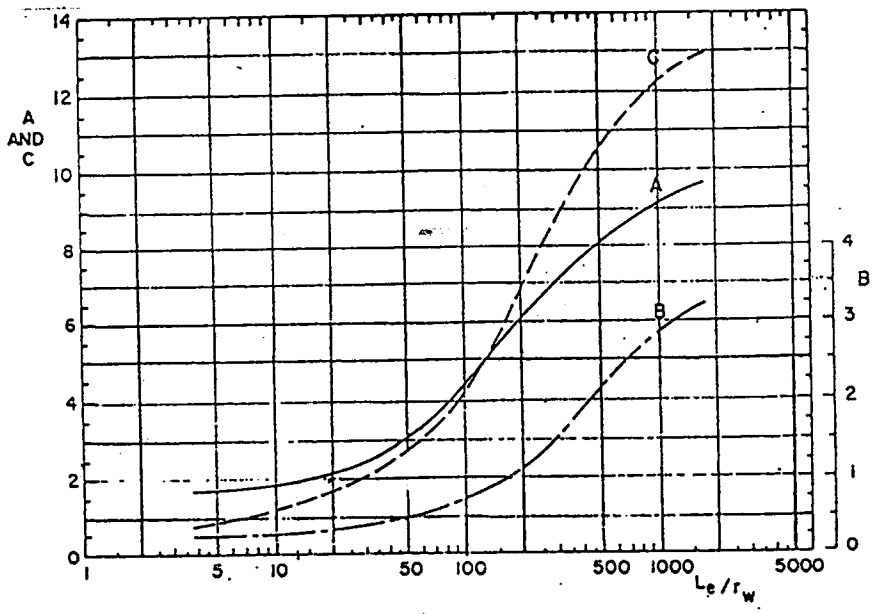
$$K = \frac{Rc \times Rc \times \ln(Re/Rw) \times (1/t) \times \ln(yo/yt)}{2 \times Le}$$

SOLUTIONS:

| | | | |
|---|---|---|---|
| Le/Rw | = | 20.4 | |
| Lw/Rw | = | 20.4 | |
| H-Lw | = | 0.40 | |
| Rc*Rc | = | 0.043 | |
| 2*Le | = | 13.6 | |
| 1/t | = | 0.008 | |
| ln (yo/yt) | = | 0.2 | |
| ln (Re/Rw) | = | 2.1 | |
| ln [(H-Lw)/Rw] | = | 0.1 | (if >6, then 6 is used in equation) |

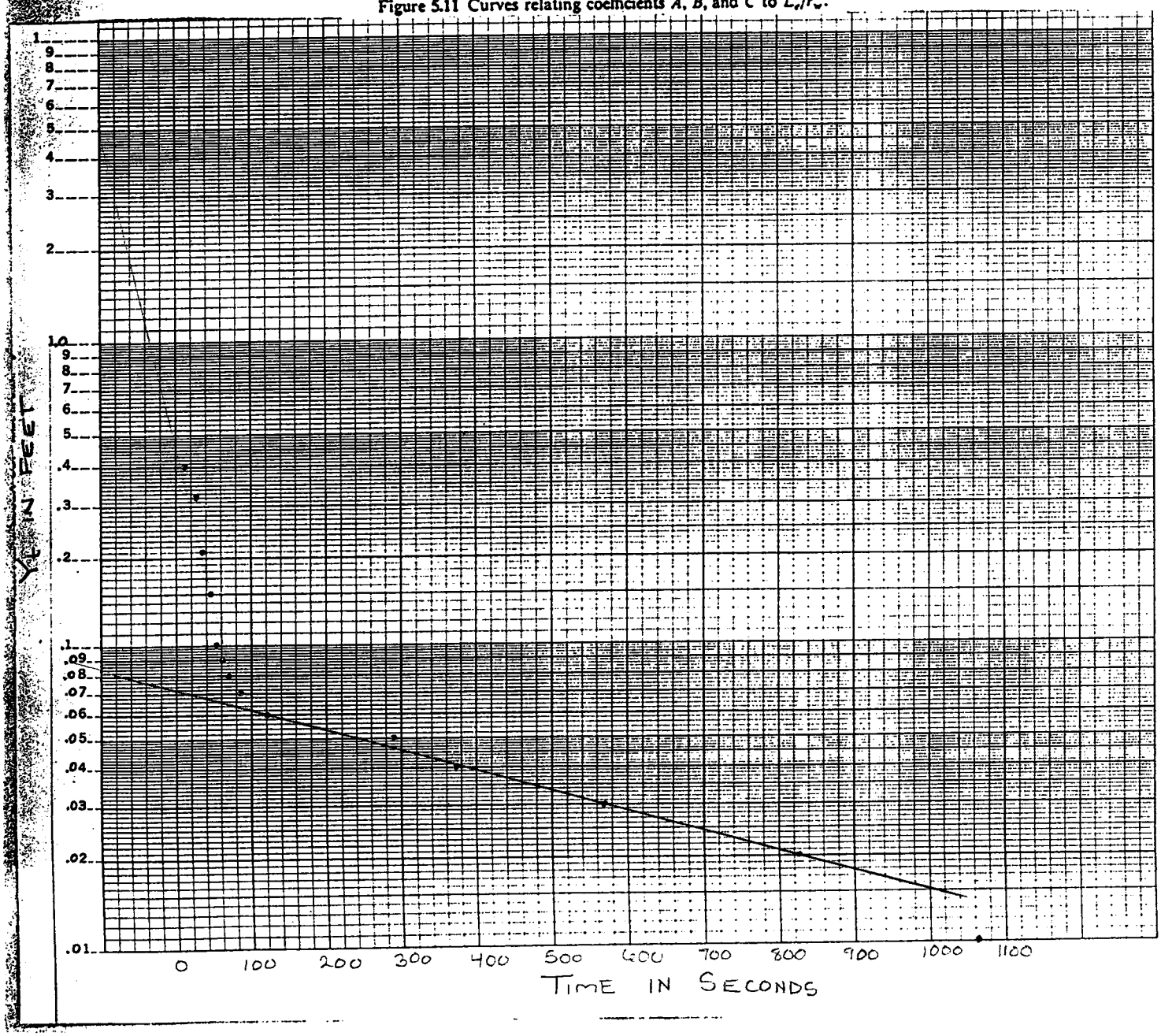
| | | | | |
|---|---|---|---|---|
| K | = | 0.00001 | = | hydraulic conductivity (ft/second) |
| K | = | 6 | = | hydraulic conductivity (gpd/sq ft) |
| T | = | 40 | = | transmissivity (gpd/ft) |

pg. ADL




WELL "E"

Figure 5.11 Curves relating coefficients $A$, $B$, and $C$ to $L_e/r_w$.

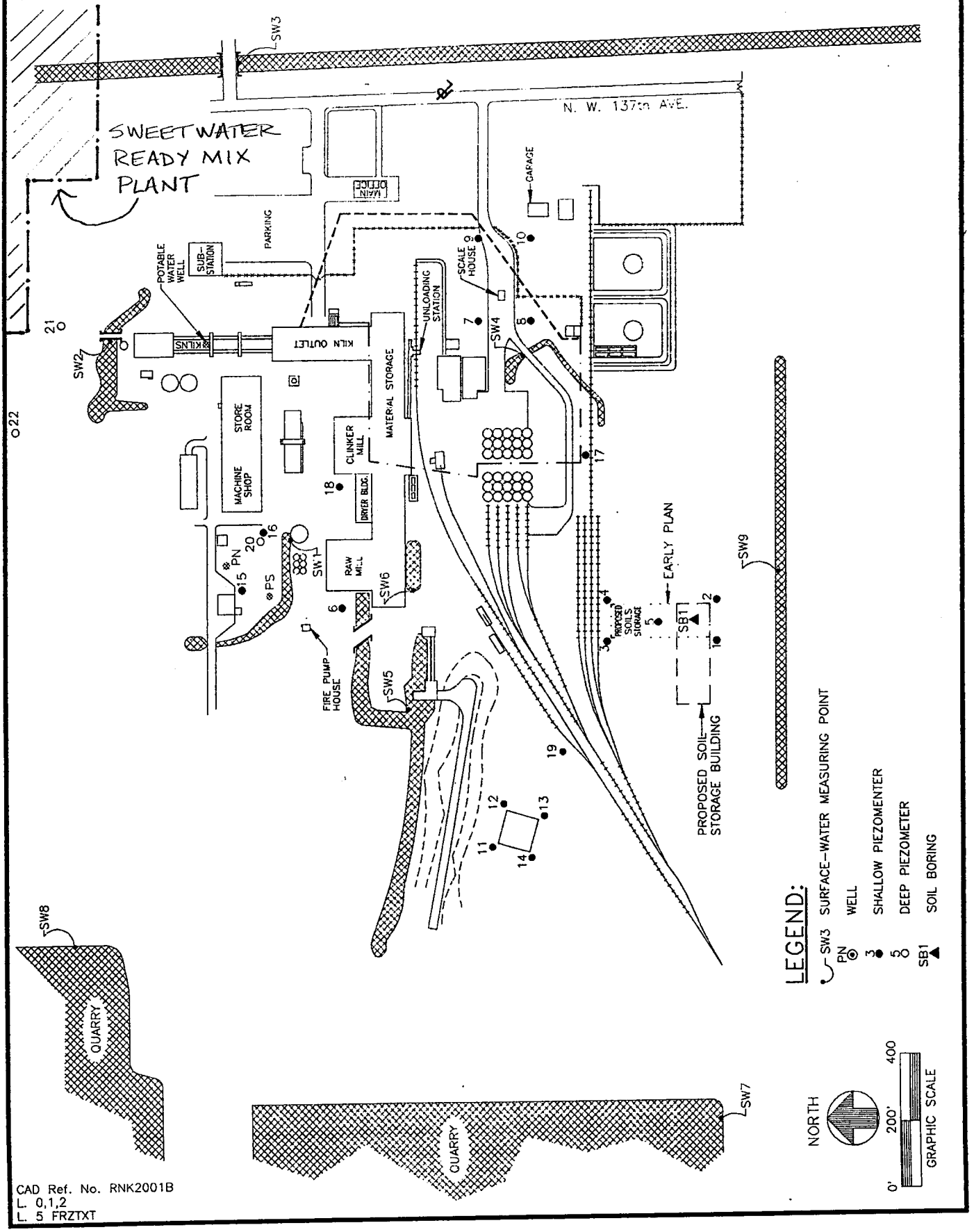


# APPENDIX AE

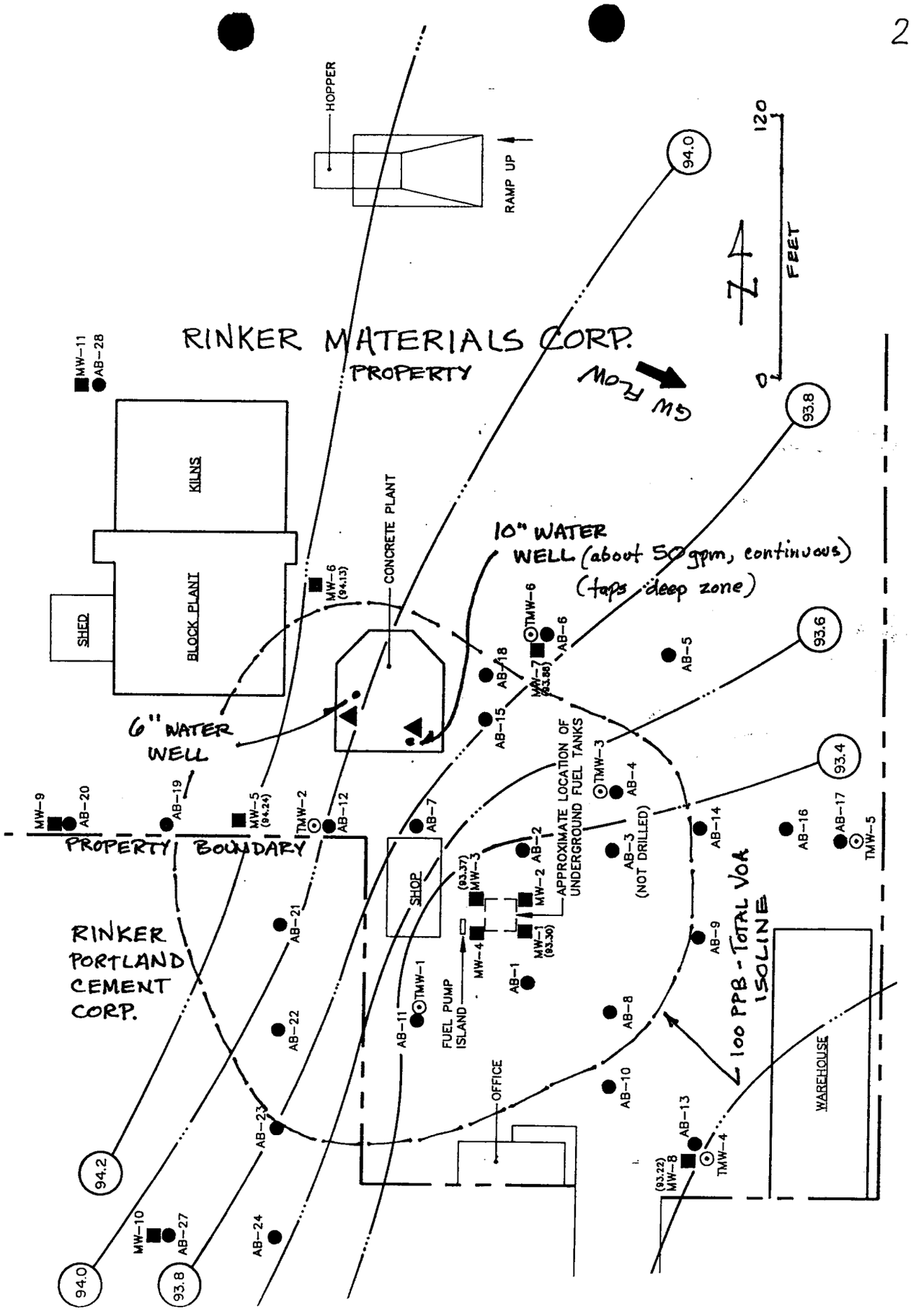
## Data from Rinker's Sweetwater Ready Mix Plant

| GSI | DATE: MARCH 1991 | [redacted]NKER PORTLAND CEMENT CORP. | SUBJECT: LOCATION OF SWEETWATER READY MIX PLANT | 1 of 2 |
|---|---|---|---|---|

LOCATION: 1200 N.W. 137th AVE., MIAMI, FLORIDA




CAD Ref. No. RNK2001B
L. 0,1,2
L. 5 FRZTXT




SWEETWATER READY MIX PLANT - SHOWING WELL LOCATIONS, GROUNDWATER CONTOURS (SHALLOW ZONE), HYDROCARBON PLUME, AND RELATIONSHIP TO RINKER PORTLAND CEMENT CORP.

# APPENDIX AF

## FDER Letters of QAP Approvals

# Florida Department of Environmental Regulation

Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-2400

Bob Martinez, Governor | Dale Twachtmann, Secretary | John Shearer, Assistant Secretary


October 29, 1990



William Kelly
Groundwater Specialists, Inc.
3003 South Congress Ave.
Suite 1C
Palm Springs, FL 33461

SUBJECT: Quality Assurance Review;880557G-Groundwater Specialists, Inc. Generic C QA Plan; Revision 10 to Approved Document;

Dear Mr. Kelly:

The amendments to your approved Generic QA Plan, received on September 26, 1990, have been reviewed and approved. The amendments have been incorporated into the document.

Your Generic (Comprehensive) QA Plan will need to be revised to comply with required information as outlined in the new Manual for Preparing QA Plans (DER-QA-001/90, sent under separate cover). These revisions need to be submitted as soon as possible after January 1, 1990. Although the new format is not required yet, it may be easier to revise your Generic (Comprehensive) QA Plan in the new format, since the required information is organized differently. We strongly suggest following the new format to allow for a smooth transition to current QA policies.

Your cooperation is appreciated in maintaining your QA Plan to reflect current field sampling operations and our QA requirements.

Sincerely,

Sylvia S. Labie, QA Officer
Quality Assurance Section

SSL/KNS/kns

cc: Kent Smith

Florida Department of Environmental Regulation
Twin Towers Office Bldg. • 2600 Blair Stone Road • Tallahassee, Florida 32399-240
Lawton Chiles, Governor
Carol M. Browner, Secretar

January 22, 1991

Larry Korn
V.O.C. Analytical, Inc.
877 N.W. 61st Street
Ft. Lauderdale, Fl 33309

SUBJECT: Quality Assurance Review; V.O.C. Analytical, Inc.
Generic A QA Plan #900376G
Revision 1;

Dear Mr. Korn:

The subject document, received on January 11, 1991, has been reviewed and is approved-pending minor revisions for analytical work only. Before sampling activities, including field analytical work, can be performed appropriate revisions will have to be submitted and approved. Further detail on the status of this plan is explained in the enclosed guidance document (DER QAS #90-03) and enclosed review comments.

As further revisions are necessary, the revised pages must be resubmitted. If you have any questions concerning this matter, please call (904) 488-2796.

Sincerely,

for Sylvia S. Labie, QA Officer
Quality Assurance Section

SSL/ART/art

Attachments (8): DER QAS #90-03 (Explanation of Status)
annotated QAP pages
review sheets
Section 6 of Rev 0 review comments
DER QAS #89-04, 89-06, 90-04 and 90-05

cc: Andrew R. Tintle



TOTAL P.02

VOC
ANALYTICAL

March 27, 1991

Dave Marple
Rinker Materials Corp.
P.O. Box 650679
Miami, Florida 33165

RE: V.O.C. Analytical Q.A. Plan # 900376G

Dear Mr. Marple:

Pursuant to our phone conversation the other day, I am enclosing a copy of the approval letter sent by the FDER.

V.O.C. Analytical's QA Plan was submitted in August of 1990 as a generic plan per Sylvia Labie's instructions. Since that time the requirements have changed in the QA department of the FDER. Therefore V.O.C. Analytical is revising section six which addresses sampling of different matrices and decontamination. This section will be approved officially within the next couple of weeks and we will forward a complete copy to you at that time.

In December of 1990 I spoke to Sylvia Labie about sampling prior to the official approval, and she told me that with documentation ( EPA Region IV Sampling Protocol ) V.O.C. Analytical can indeed sample all matrices.

Field personnel at V.O.C. Analytical have over five years of sampling experience and have in the past trained county employees in this discipline. All sampling protocol is followed to the letter and documented in field notebooks for regulatory review and admissible in a court of law. We would welcome an inspection of our facility in Fort Lauderdale by the State or County Regulatory Agencies at their convenience.

If you have any questions or need any additional information please call me at (305) 938-8823.

Sincerely,
V.O.C. ANALYTICAL, INC.

Lawrence J. Korn

rinkerqa

877 N.W. 61 Street, Suite 202 - Ft. Lauderdale, FL 33309 - (305) 938-8823 - Fax (305) 938-8900