04/30/90

RI/FS FIRST PHASE WORKPLAN
PROGRAM REVIEW

for

GORICK CONSTRUCTION AND DEBRIS LANDFILL
KIRKWOOD (T), BROOME COUNTY
I.D. # 704019
URS STANDBY CONSULTANT WORK ASSIGNMENT
D002340-5

by: David J. Curtis, P.E.
Project Manager
Central Remedial Projects Section
Bureau of Eastern Remedial Action

Robert Edwards
Project Geologist
Central Remedial Projects Section
Bureau of Eastern Remedial Action

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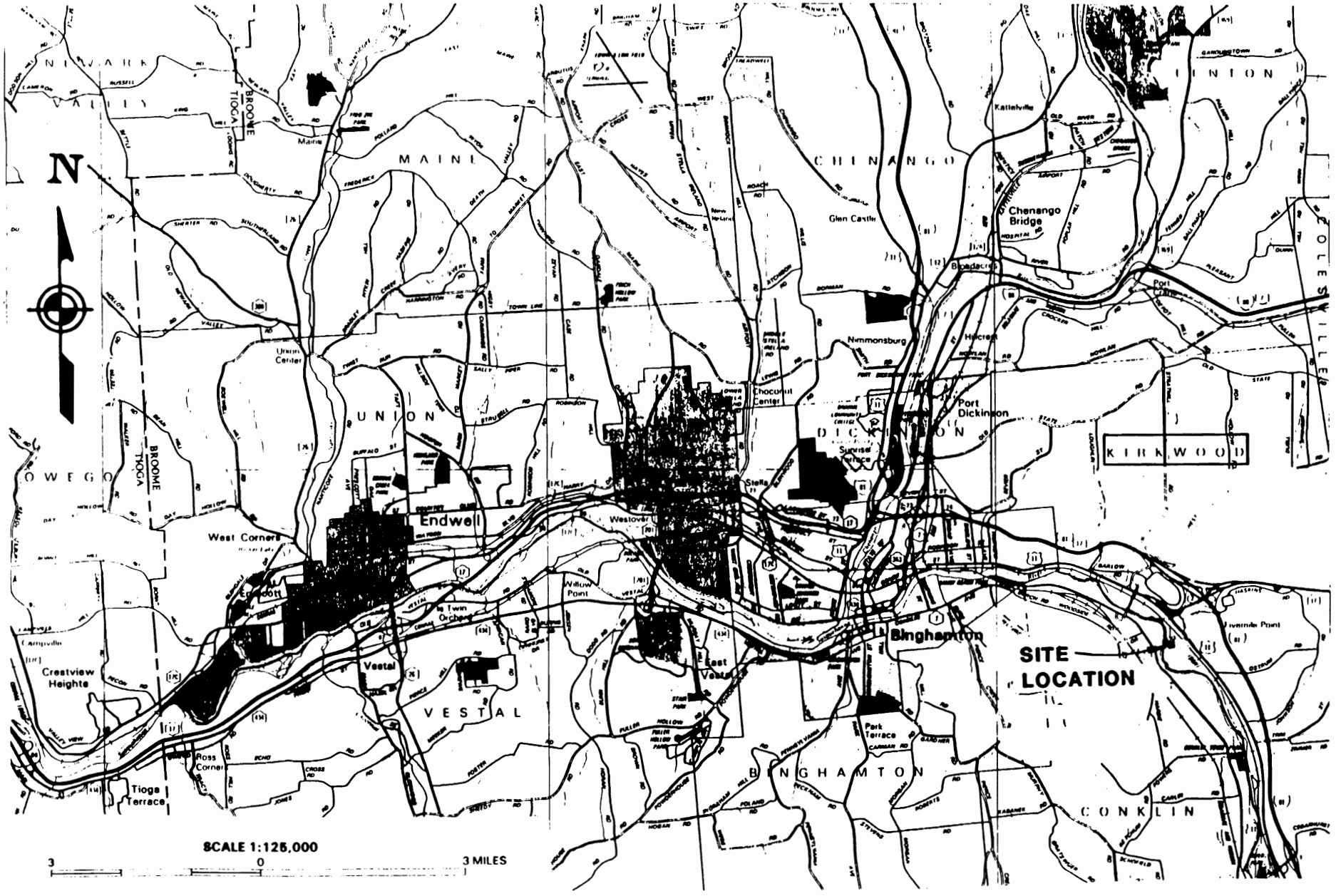
SITE DESCRIPTION

The Gorick Landfill is located within a moderately populated suburban portion of the Town of Kirkwood. The site occupies approximately thirty-five (35) acres to the west of Route 11 near Five Mile Point. This non-permitted construction and demolition debris landfill operated between 1959 through 1988. The site reportedly received debris consisting of wood, plastic, concrete, and other material obtained through building demolition. The site was ordered closed in 1988, however, some additional dumping has taken place. The landfill is presently listed as a Class 2 inactive hazardous waste site which poses a "significant threat to public health and/or the environment." The Town of Kirkwood water supply wells are located within 300 feet west of the landfill along the bank of the Susquehanna River. These wells draw from the glacial valley-fill sand and gravel aquifer and are thought to be impacted by contaminants leaving the site. Previous investigations at the site and nearby vicinity have detected contaminants including trichloroethylene and toluene within groundwater and surface water. In 1988, public water supply # 3 was closed down due to TCE contamination. URS is presently designing a 2000 gpm airstripper at the well head as an IRM for this project site. Monitoring wells installed during previous investigations will be utilized for the remedial investigation if the physical integrity of the wells is confirmed and useful information can be obtained. The nearest residences are located within 800 feet north and east of the landfill. Additionally, a PVC pipe factory and the Town of Kirkwood water treatment plant are located within 300 feet of the landfill. The Town of Kirkwood water supply well field is located along the Susquehanna River approximately 300 feet west of the site.

The landfill surface is soil covered and vegetated with tall grasses and shrubs. Surface topography is quite hummocky with mounded soil or fill found throughout the site area. The north and western edges of the fill are defined by steep slopes and the southern edge apparently terminates at the drainage ditch along the Kirkwood well field access road. The eastern boundary of the fill is not well defined. The lands surrounding the landfill are vegetated with grasses, shrubs, and trees, however, extensive north and south of the site appear to have been excavated. Overall slope of the site and surrounding land is to the west.

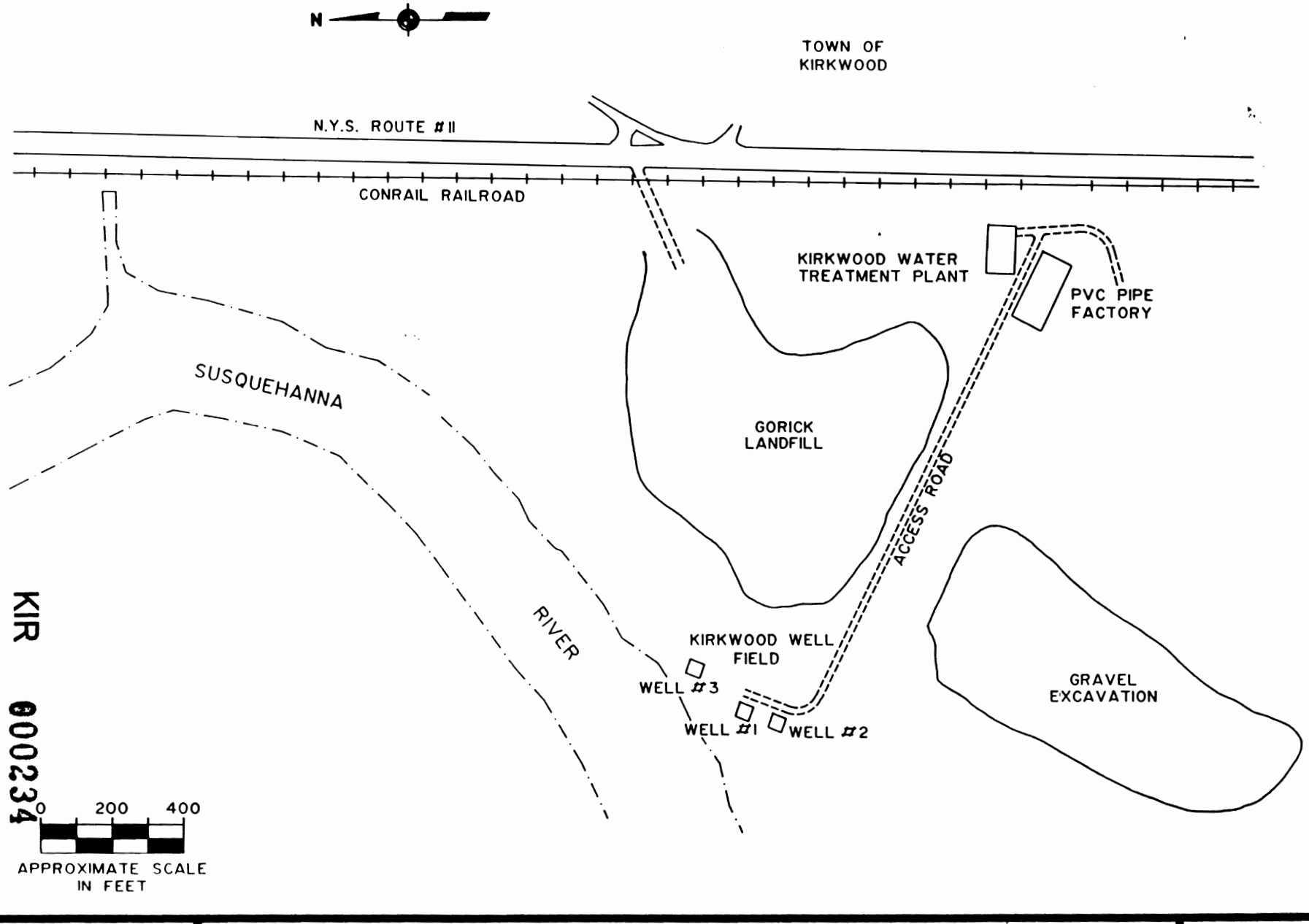
Metal debris can be found throughout much of the site. Large construction machinery is found abandoned within the southern portion of the landfill and large tanks are found along the east side of the landfill.

The landfill is located within the Susquehanna River valley of the Appalachian Plateau. The valley was deepened and widened by glacial erosion and subsequently partially filled with unconsolidated valley-fill deposits. Glacial till was overlain by lacustrine silts and sand which was in-turn overlain by outwash and ice contact sand and gravel. Recent floodplain sediments and peat form the surficial soils within the southern portion of the site area with till identified east of the site.



URS CONSULTANTS	LOCATION MAP	FIGURE A1-2

AC-3175\1"=100' 2/20/90



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SITE PLAN

FIGURE A1-3

GORICK CONSTRUCTION AND DEMOLITION DEBRIS LANDFILL
REMEDIAL INVESTIGATION
AND
FEASIBILITY STUDY

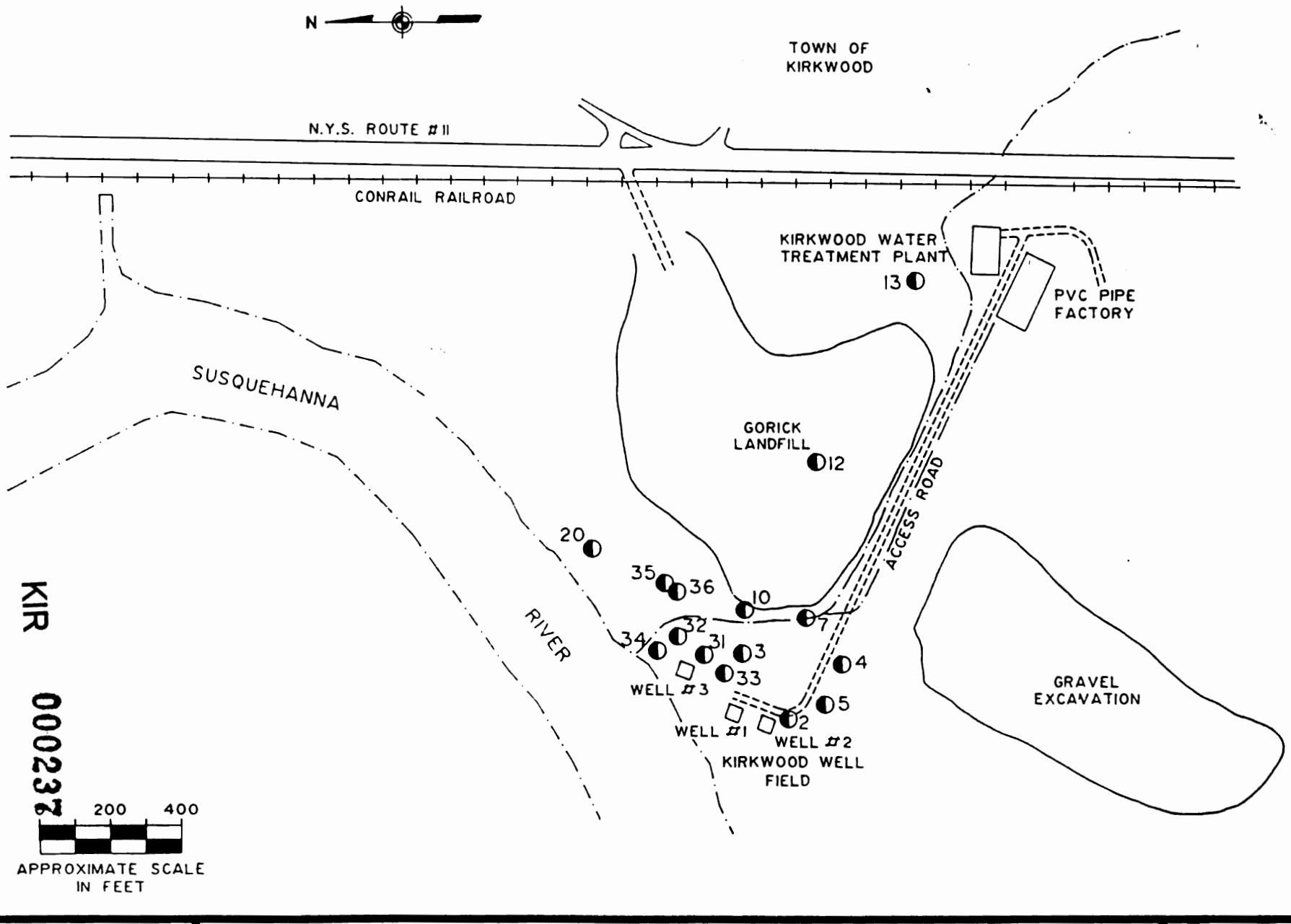
WORK TASK DESCRIPTIONS

A2.1 DESCRIPTION OF CURRENT SITUATION	URS to review NYSDEC Reports; site records; RTK; aerial photographs; climatology data; published/unpublished geology data, soil, hydrogeological, biology, and water supply reports; and USGS Studies.
A2.2 EXISTING MONITORING WELL SURVEY	URS to use six (6) existing monitoring wells for sampling and all existing wells for hydrogeological data.
A2.3 SURVEY AND MAPPING	URS to prepare a base map which is tied into the National Geodetic Vertical Datum of 1929.
A2.4 CONSTRUCTION SUPPORT FACILITIES	URS to provide a Command Trailer equipped with a cellular telephone, portable generator, water dispenser, port-o-let, equipment/vehicle decon pad, tank, sump, sump pump, and discharge line to above ground tank. Temporary fencing around active drilling areas and a steel fence around the decon pad and trailer will be provided.
A2.5 GEOPHYSICAL SURVEY	URS to provide 3-400 foot seismic refraction transects to determine the eastern boundary of fill.
A2.6 AIR AND SOIL GAS SURVEY	URS will conduct an initial air survey with a PID. A soil gas survey will then be provided with a field GC adjacent to and on the landfill to determine best locations for MW and boring locations.
A2.7 SUBSURFACE INVESTIGATION	Phase I investigation is identified in this workplan. Phase II will be defined once Phase I program is completed.

GORICK CONSTRUCTION AND DEBRIS LANDFILL
WORK TASK DESCRIPTIONS (Continued)

A2.7.1 DRILLING MONITORING WELL INSTALLATION	14 new borings with 10 locations; borehole depths range 25-75 feet; 3 shallow borings installed within fill determined by soil gas survey. Continuous split spoon using unified soil classification system. 5 shelby tube samples estimated for geotechnical testing. Project Duration: 6 wks.(30 days)
A2.7.2 MONITORING WELL INSTALLATION	see monitoring well diagram
A2.7.3 WELL DEVELOPMENT	URS to develop Wells to turbidity less than 50 Ntu.
A2.7.4 WATER LEVEL MONITORING	
A2.7.5 HYDRAULIC CONDUCTIVITY	Slug tests to be performed.
A2.8 WASTE MATERIAL SAMPLING	URS to collect up to 13 samples
A2.9 SHALLOW PROBE SOIL SAMPLES	URS to collect up to 10 samples
A2.10 ENVIRONMENTAL SAMPLING AND ANALYSIS	
A2.10.1 GROUNDWATER	URS to collect 22 groundwater samples. Six (6) collected from the existing monitoring wells, 14 collected from the proposed monitoring wells, and two (2) form the private wells.
A2.10.2 SURFACE WATER AND SEDIMENT SAMPLING	URS to collect stream samples from 10 locations.
A2.10.3 SOIL BORING SAMPLING	URS to collect up to (10) soil samples for chemical analysis, five (5) undisturbed samples collected for hydraulic conductivity testings, and 25 representative soil samples for geotechnical classification purposes.
A2.10.4 LEACHATE SEEP SAMPLES	URS to collect up to 4 leachate seep samples.
A3.0 ANALYSIS AND REPORTING	
A4.0 REFINEMENT OF SITE CHARACTERISTICS AND BOUNDARIES	
A5.0 LIST NYS STANDARDS AND CRITERIA (ARARs)	
A6.0 HEALTH AND ENVIRONMENTAL RISK ASSESSMENT (HRA)	

AC-3183\1"=100' 2/22/90



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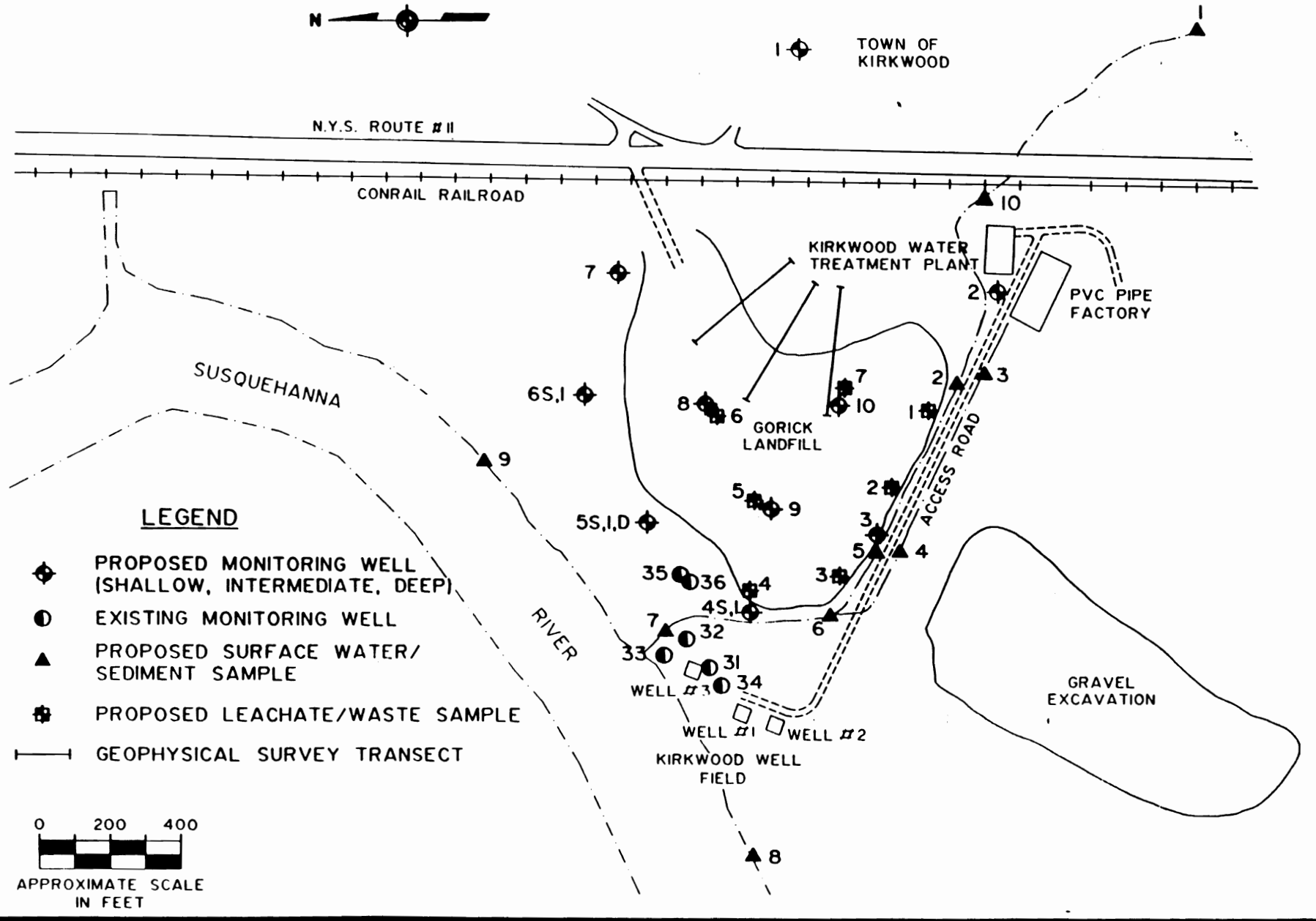
EXISTING WELL LOCATIONS
OBS SERIES LAKE ENGINEERING

FIGURE A2-1

AC-3176\1"=100' 2/23/90



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RI MONITORING WELL, SAMPLING AND GEOPHYSICAL SURVEY LOCATIONS

FIGURE A2-2

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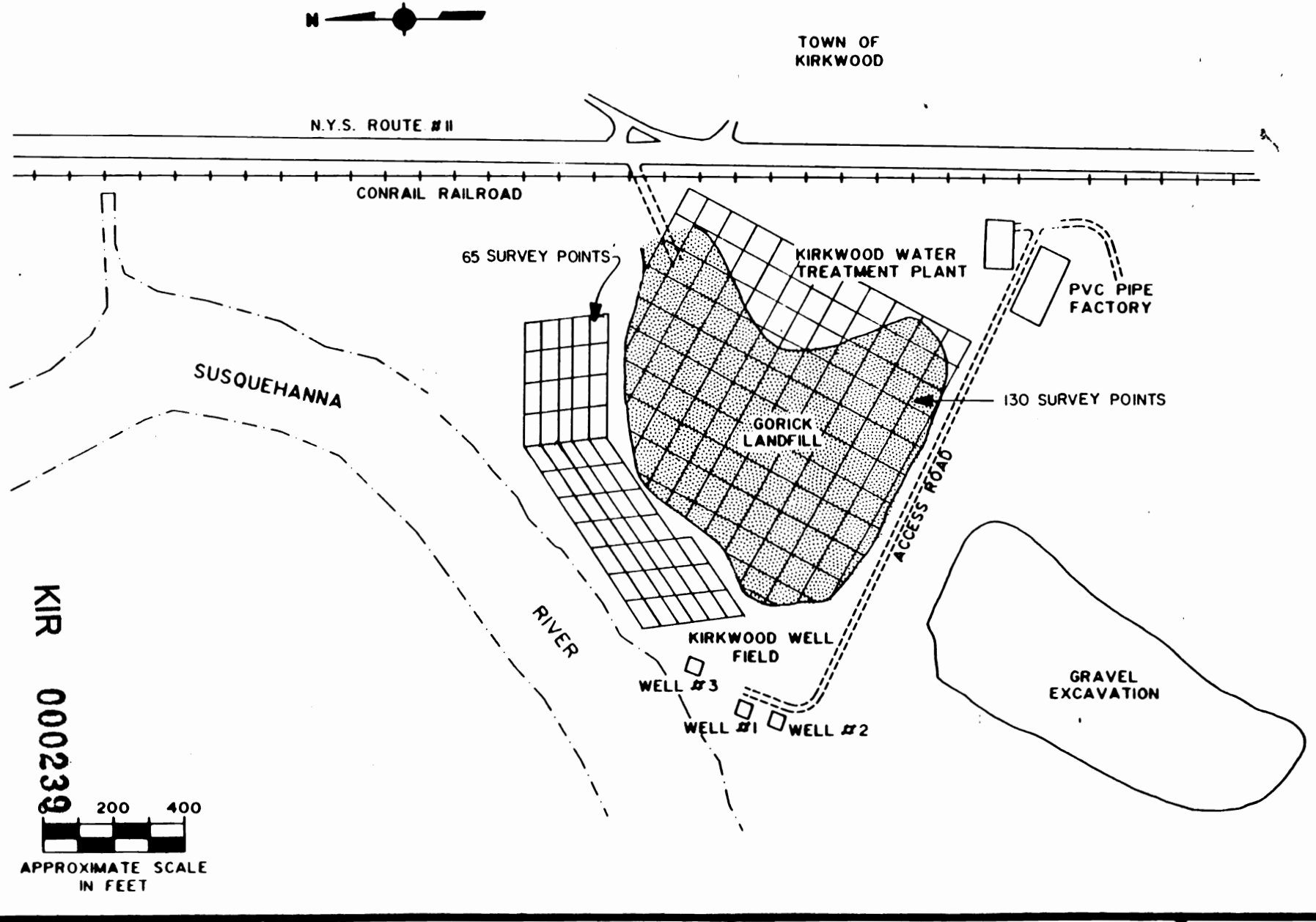

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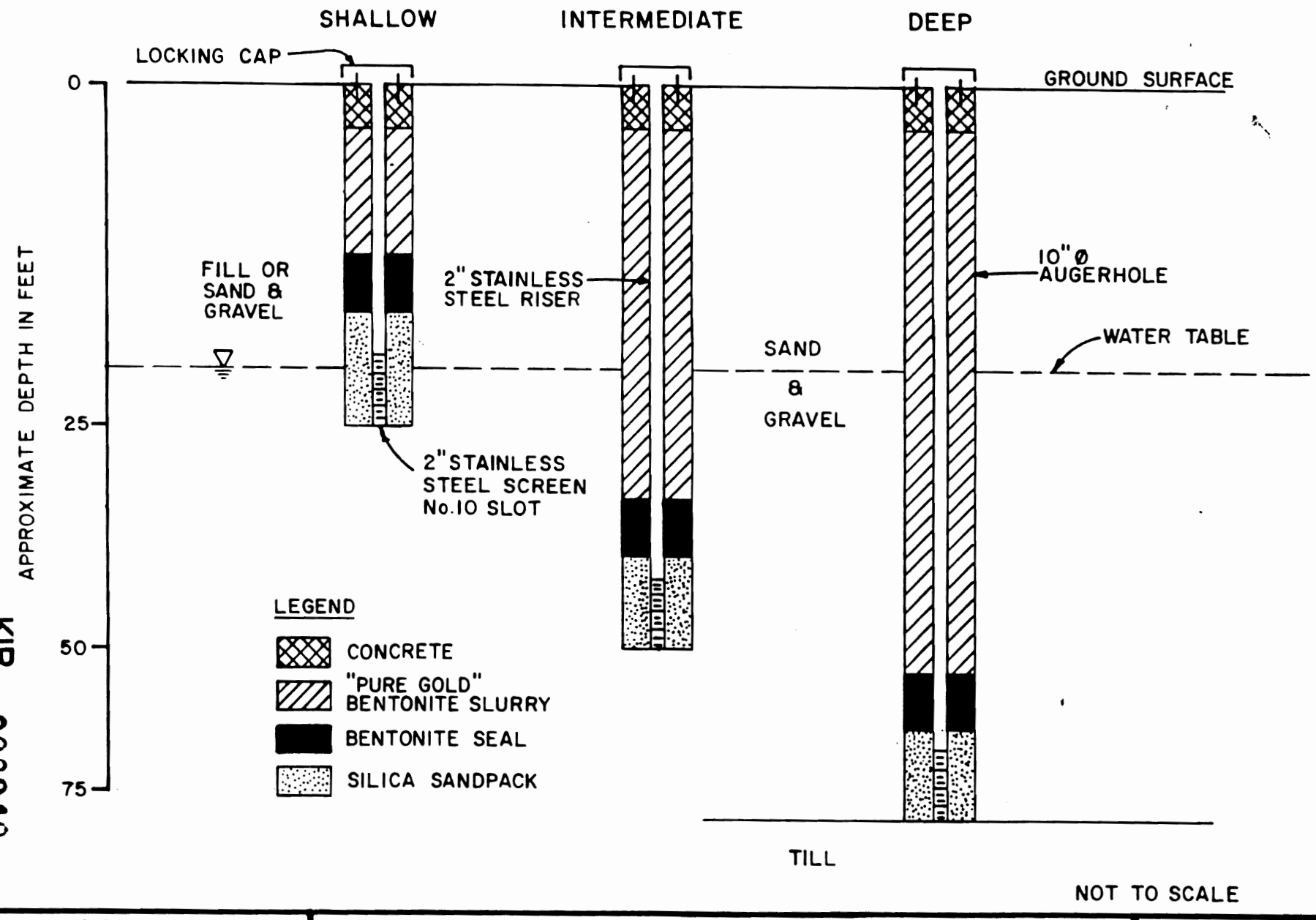
SOIL GAS SURVEY LOCATIONS

FIG. C3-1



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WELL CONSTRUCTION DETAILS

FIG. A2-3

TABLE A2-1
SAMPLES AND REQUIRED ANALYSIS

Type	Phase Number of Samples	Analytical Schedules (Table A2-2)
ENVIRONMENTAL SAMPLES		
Groundwater (Well)	22	A,B
Surface Water	10	A,B
Stream Sediments	10	A,C
Leachate Seep	4	A,B
Shallow Probe Soil	10	A,C
Soil Borings	10	A,C
Waste (Individual and composite)	13	A,D
Waste Characterization	5	E
FIELD QC SAMPLES		
Groundwater		
Rinse Blank	2	A
Trip Blank	5	A (VOA only)
Surface Water/Leachate Seep		
Trip Blank	1	A (VOA only)
Rinse Blank	1	A
Stream Sediments		
Rinse Blank	1	A
Shallow Probe Soil		
Rinse Blank	1	A
Soil Borings		
Rinse Blank	1	A
Drill Water Supply	1	A
LABORATORY QC		
Groundwater		
Matrix Spike	2	A
Matrix Spike Duplicate	2	A
Matrix Spike Blank	2	A

TABLE A2-1 - Cont.

Type	Phase I Number of Samples	Analytical Schedules (Table A2-2)
Surface Waters/Leachate Seep		
Matrix Spike	1	A
Matrix Spike Duplicate	1	A
Matrix Spike Blank	1	A
Shallow Probe Soil/Stream Sediments		
Matrix Spike	1	A
Matrix Spike Duplicate	1	A
Matrix Spike Blank	1	A
Soils Borings		
Matrix Spike	1	A
Matrix Spike Duplicate	1	A
Matrix Spike Blank	1	A
Waste Boring		
Matrix Spike	1	A
Matrix Spike Duplicate	1	A
Matrix Spike	1	A

* Matrix Spike/Matrix Spike Duplicate/Matrix Spike Blank frequency of analysis of similar matrix shall be designated based upon:

- o each batch of field samples, or
- o each 20 field samples in a batch, or
- o each group of samples of a similar concentration level (soils only), or
- o each 7 calendar day period during which samples in a batch were received (said period beginning with the receipt of the first sample in that batch),

whichever is most frequent.

Note: A batch is defined as a finite, usually predetermined number of samples collected over a given time period from a particular site. Samples in each batch are the same composition.

TABLE A2-2

ANALYTICAL SCHEDULES AND METHOD REFERENCES

Schedule A	NYSDEC ASP Method No.[1]
TCL Volatiles	89-1 All Volatile Analyses must be completed within 7 days of receipt of samples.
TCL Semi Volatiles	89-2
TCL Pesticides/PCBs	89-3

TCL Metals (24)

Aluminum	200.7	CLP-M	Magnesium	200.7	CLP-M	
Antimony	"	"	Manganese	"	"	
Arsenic	"	"	Mercury	245.1	"	= 245.5 CLP-M
Barium	"	"	Nickel	200.7	"	
Beryllium	"	"	Potassium	"	"	
Cadmium	"	"	Selenium	270.2	"	
Calcium	"	"	Silver	200.7	"	
Chromium	"	"	Sodium	"	"	
Cobalt	"	"	Thallium	279.2	"	
Copper	"	"	Vanadium	200.7	"	
Iron	"	"	Zinc	"	"	
Lead	239.2	"	Cyanide	335.2	"	

Total Phenols	9065
Schedule B (Waters)	
Bicarbonate	310.1
BOD	405.1
COD	410.1
Chloride	325.3
Hardness	130.2
Ammonia-Nitrogen	350.3
TKN	351.4
Alkalinity	310.1

TABLE A2-2 - Cont'd.

Schedule B (waters) - Continued	
Acidity	305.1
NO_3-Nitrogen	353.3
Phosphate	365.2
Oil & Grease	413.2
TOC	415.1
TSS	160.3
TDS	160.1
Sulfate	375.5
Sulfide	376.1
pH (Field)	150.2
Specific Conductance (Field)	120.1
Dissolved Oxygen (Field)	360.1
Schedule C (Soils)	
Ammonia-Nitrogen	350.3
Nitrate-Nitrogen	353.3
TKN	351.4
Moisture	NYSDEC ASP 1989 (p.D-V-184)
pH	9040
TOC	9060
Schedule D (Wastes)	
EP Toxicity Metals and Organics	1310
Ignitability	1010
Corrosivity	1110
Reactivity	9010, 9030
% Chlorine	D808[2]

TABLE A2-2 - Cont'd.

Schedule D (Wastes) - Cont.	
Heat of Combustion	D2382
Ash Weight	D482
% Sulfur	D1552
Compatibility Test	D3402
Schedule E (Waste Characterization)	
EP Toxicity Metals, Pesticides and Herbicides	1310
Ignitability	1010
Corrosivity	1110
Reactivity	9101,9030
Geotechnical Methods	
Moisture Content	D2216-80
Sieve and Hydrometer Grain Size	D422-63 (72)
Atterberg Limits	D4318-84
Triaxial Permeability	USACE EM 1110-2-1906(70)

References

(1) New York State Department of Environmental Conservation Analytical Services Protocols - September 1989 (or latest publication).
(2) all D-prefix numbers refer to American Society for Testing and Materials, 1989.

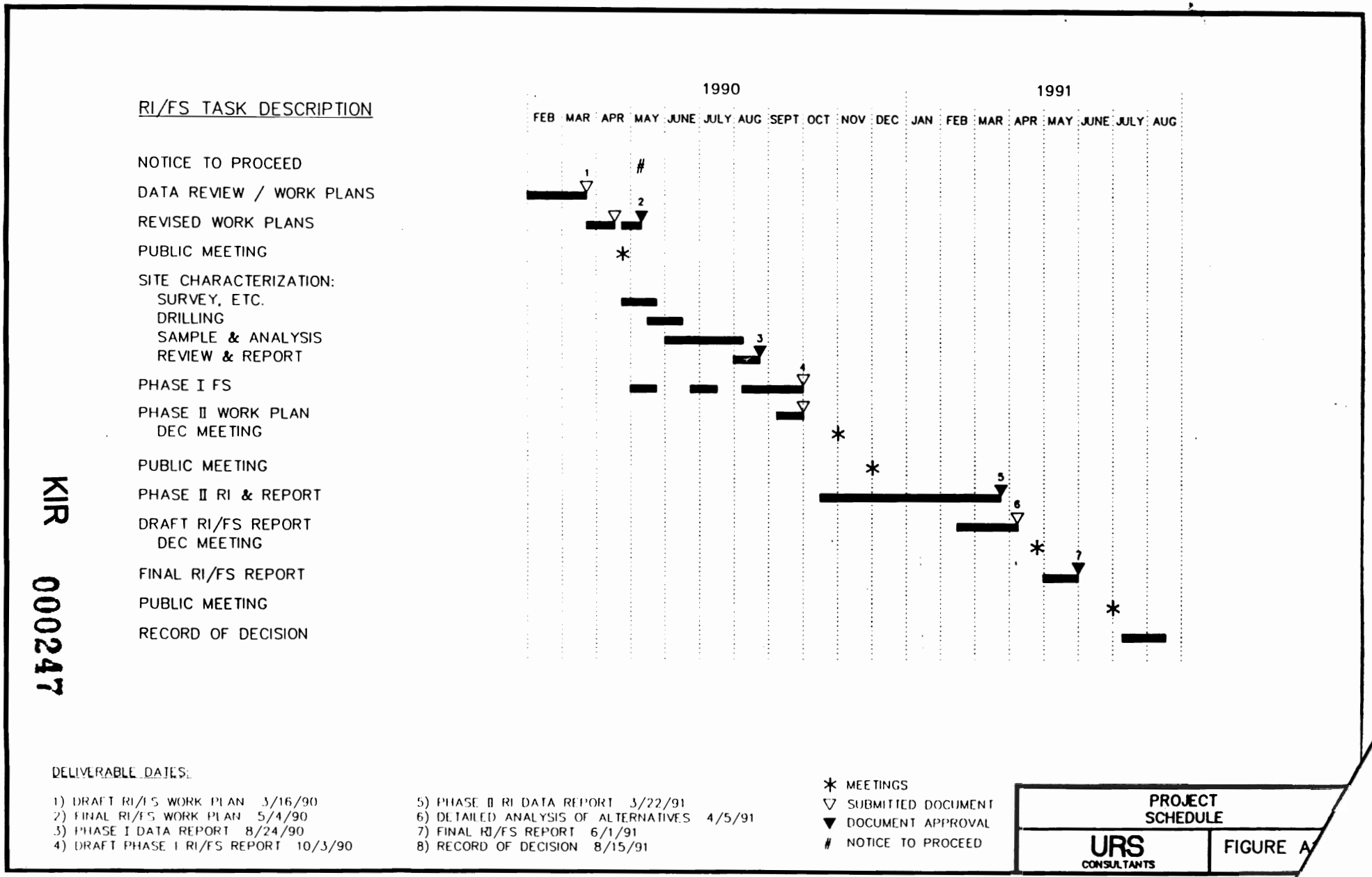
SCHEDULE AND MILESTONES

PROJECT SCHEDULE

(see Figure A1-1)

MILESTONES

	DELIVERABLE DATE	MILESTONES DESCRIPTION
M-1	03/16/90	Draft RI/FS Work Plan
M-2	05/04/90	Final RI/FS Work Plan (Notice to Proceed)
M-3	08/24/90	Phase I data Report submitted
M-4	10/03/90	Draft Phase I RI/FS
M-5	03/22/90	Phase II RI Data Report
M-6	04/05/91	Detailed Analysis of Alternatives
M-7	06/01/91	Final RI/FS Report
M-8	08/15/91	Record of Decision


RI/FS TASK DESCRIPTION
NOTICE TO PROCEED
DATA REVIEW / WORK PLANS
REVISED WORK PLANS
PUBLIC MEETING
SITE CHARACTERIZATION:
SURVEY, ETC.
DRILLING
SAMPLE & ANALYSIS
REVIEW & REPORT
PHASE I FS
PHASE II WORK PLAN
DEC MEETING
PUBLIC MEETING
PHASE II RI & REPORT
DRAFT RI/FS REPORT
DEC MEETING
FINAL RI/FS REPORT
PUBLIC MEETING
RECORD OF DECISION
1990
1991
FEB MAR APR MAY JUNE JULY AUG SEPT OCT NOV DEC JAN FEB MAR APR MAY JUNE JULY AUG
DELIVERABLE DATES:
1) DRAFT RI/FS WORK PLAN 3/16/90
2) FINAL RI/FS WORK PLAN 5/4/90
3) PHASE I DATA REPORT 8/24/90
4) DRAFT PHASE I RI/FS REPORT 10/3/90
5) PHASE II RI DATA REPORT 3/22/91
6) DETAILED ANALYSIS OF ALTERNATIVES 4/5/91
7) FINAL RI/FS REPORT 6/1/91
8) RECORD OF DECISION 8/15/91
* MEETINGS
▽ SUBMITTED DOCUMENT
▼ DOCUMENT APPROVAL
NOTICE TO PROCEED
PROJECT SCHEDULE
URS CONSULTANTS
FIGURE A

KIR 000247

ITEMS TO BE PURCHASED
UNDER
WORK ASSIGNMENT # D002340-5
FOR NYSDEC EVENTUAL OWNERSHIP

Oxygen Meter

Ph/Temperature Meter

Conductivity Meter

Nepthelometer (Turbidity Meter)

Water Level Indicator

Reason for Purchase: The estimates on Rental Costs were such that it was cost effective to purchase the equipment rather than reimbursing the Consultant for direct rental charges.