Meeting Minutes Transmittal/Approval
Unit Manager's Meeting: 200 Aggregate Area/200 Area Operable Units
3350 George Washington Way, Room 2C58, Richland, Washington
March, 1996

FROM/APPROVAL: Donna Wanek Date 4/11/96
Donna Wanek, 200 Aggregate Area Unit Manager, RL (H4-83)

APPROVAL: N/A per telecon w/ PEB Date _____
Paul R. Beaver, 200 Aggregate Area Unit Manager, EPA (B5-01)

APPROVAL: Date 4/18/96
Dib Goswami, 200 Aggregate Area Unit Manager, WA Dept. of Ecology

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Meeting Minutes are attached. Minutes are comprised of the following:

Attachment #1 - Attendance Sheet
Attachment #2 - Agenda
Attachment #3 - Meeting Summary
Attachment #4 - 200-UP-1 Presentation
Attachment #5 - Modeling Presentation
Attachment #6 - 200-PO-1 Presentation

Prepared by: Dawn M. Cooley Date: 4-10-96

Concurrence by: Date: 4/9/96
George Henckel, BHI Project Manager - 200 Areas (H4-80)

Attachment #1

Attendee List
Unit Manager's Meeting: 200 Aggregate Area/200 Area Operable Units
March, 1996

Chiaramonte, Jerry	ERC	372-9283
Cooley, Lisa	ERC	372-9161
Dahl, Suzanne	Ecology	736-5705
Flyckt, Don	WHC	372-3142
Furman, Marv	RL	373-9630
Goswami, Dib	Ecology	736-3104
Henckel, George	ERC	372-9381
Julian, Robert	Ecology	736-5702
Mohan, Shri	Ecology	736-5704
Myers, David	ERC	372-9337
Porter, Ken	ERC	372-9277
Sinton, Greg	RL	373-7939
Thompson, Mike	RL	373-0750
Todd, Mary	ERC	372-9678
Vinson, Ro	ERC	372-9727

Attachment #2

Agenda
Unit Manager's Meeting: 200 Aggregate Area/200 Area Operable Units
March, 1996

1. Limited Field Investigation Report - Curt Wittreich
2. Pump and Treat Performance - Curt Wittreich
3. Modeling - Dave Myers
4. Proposed Phase II Scope - Curt Wittreich
5. Risk Assessment - Jerry Chiaramonte
6. Interim Record of Decision - Ro Vinson
7. 200-PO-1 - Mary Todd

Attachment #3

Meeting Summary
Unit Manager's Meeting: 200 Area Groundwater Operable Units
March, 1996

Limited Field Investigation Report:
A general status of progress for developing the report was presented. Topics included the FY-95 Data Validation, Report Outline, and risk assessment.

Pump and Treat Performance:
An overview of the data from the quarterly performance report was discussed. Topics included volume treated, contaminants removed, availability of system, system efficiency, and revised capture zone analysis. The original predictions model results and the results from the first 90 days of operation are nearly identical and that operations of the current system should meet IRM objectives in approximately two years.

Additional discussions on the use of ETF occurred, with RL indicating that this was not of the preferred option based in current system performance and projected performance.

Modeling:
An overview of a number of different capture zone scenarios for both treatment with or without reinjection were discussed. The various capture zone analysis intake the current system with minor upgrades would meet proposed IRM objectives.

Proposed Phase II Scope:
A brief review of the original scope planned for FY-96 was presented. Using the current system performance, the options of performing minor upgrades and possibly bringing well 19-38 on-line as an extraction well were discussed.

Risk Assessment:
The discussion centered on the LFI Plumes stating that Ecological risk is not applicable and that the assessment would consider contaminants, single details, plume maps, risk contours, migration and include a table of risk versus time for each contaminant looking at migration.

Interim Record of Decision:
A general discussion of items relevant to be included in the UP-1 ROD was held. But of the main points was that the ROD should include wording to allow waste generated during characterization, treatability testing, and remediation to go to ERDF. Recommended looking at the proposed wording in the 100-HR/KR ROD.

200-PO-1
The major topic for the March Unit Managers' meeting for the 200-PO-1 Operable Unit was the Corrective Measures Study. The modeling results prepared as part of the groundwater strategy are a significant basis for the CMS report. Modeling was conducted for current conditions and for the years 2005, 2015, 2045, 2095, and 2195. These dates do not directly correspond to the dates identified in the DQO process for 200-

PO-1. An agreement from the Unit Managers' meeting was to deviate from the DQO dates and use the modeling dates for the risk evaluation. The risk will be estimated for current conditions, 2015, 2095, and 2195. Risks under an industrial exposure scenario will be evaluated for current conditions and for the year 2015. Risks under a residential scenario will be evaluated for 2015, 2095, and 2195. Cumulative risks will be calculated for the operable unit, including effects from the 200 West Area contaminants. Risk contours, based on the modeling results and HASRAM risk formulas, will be generated for the carcinogens. Risks associated with noncarcinogens will be evaluated against regulatory standards.

A second issue was the RCRA treatment, storage, and disposal units associated with the 200-PO-1 contamination. An agreement from the DQO process was that the major contaminants associated with the operable unit were nitrate, iodine-129, and tritium. However, the participants felt that other contamination may be associated with individual TSDs. Therefore, the TSDs were evaluated in the RFI report for spot contamination. The DQO agreement did not include an analysis of vadose contamination that might pose a future threat to groundwater; this was reserved for the source operable units.

The Unit Managers agreed to have additional meetings to discuss comment resolution on the RFI report and additional discussions on the CMS.

200-UP-1 GROUNDWATER OPERABLE UNIT

Unit Managers Meeting

March 12, 1996

Agenda

- Limited Field Investigation Status -- Curtis Wittreich
- Pump and Treat Performance -- Curtis Wittreich
- Modeling -- Dave Myers
- Proposed Phase II Scope -- Curtis Wittreich
- Risk Assessment -- Jerry Chiaramonte
- Interim Record of Decision -- Ro Vinson

Limited Field Investigation (LFI) Status

- Completed Data Validation of FY 95 LFI Sampling Program
- LFI Report and Supporting Risk Assessment under Preparation
  - Addresses 26 LFI Designated Groundwater Contaminants
  - Draft Scheduled to be Submitted for Regulatory Review July 31, 1996

200-UP-1 Pump and Treat Status

- Public Review of IRM Proposed Plan Completed in 10/95
- Revised EECP based on IRM Proposed Plan Public Review Comments
- Interim Record of Decision being Drafted by the Regulators
- Treated ~57,000,000 Liters (~15,000,000 Gallons) of Groundwater Since 3/94
  - ~42,000,000 Liters (~11,000,000 Gallons) under Phase I
- Removed Approximately 21 Kg of U, 19 g of Tc-99 and 2 Kg of CCl_4 Since 3/94

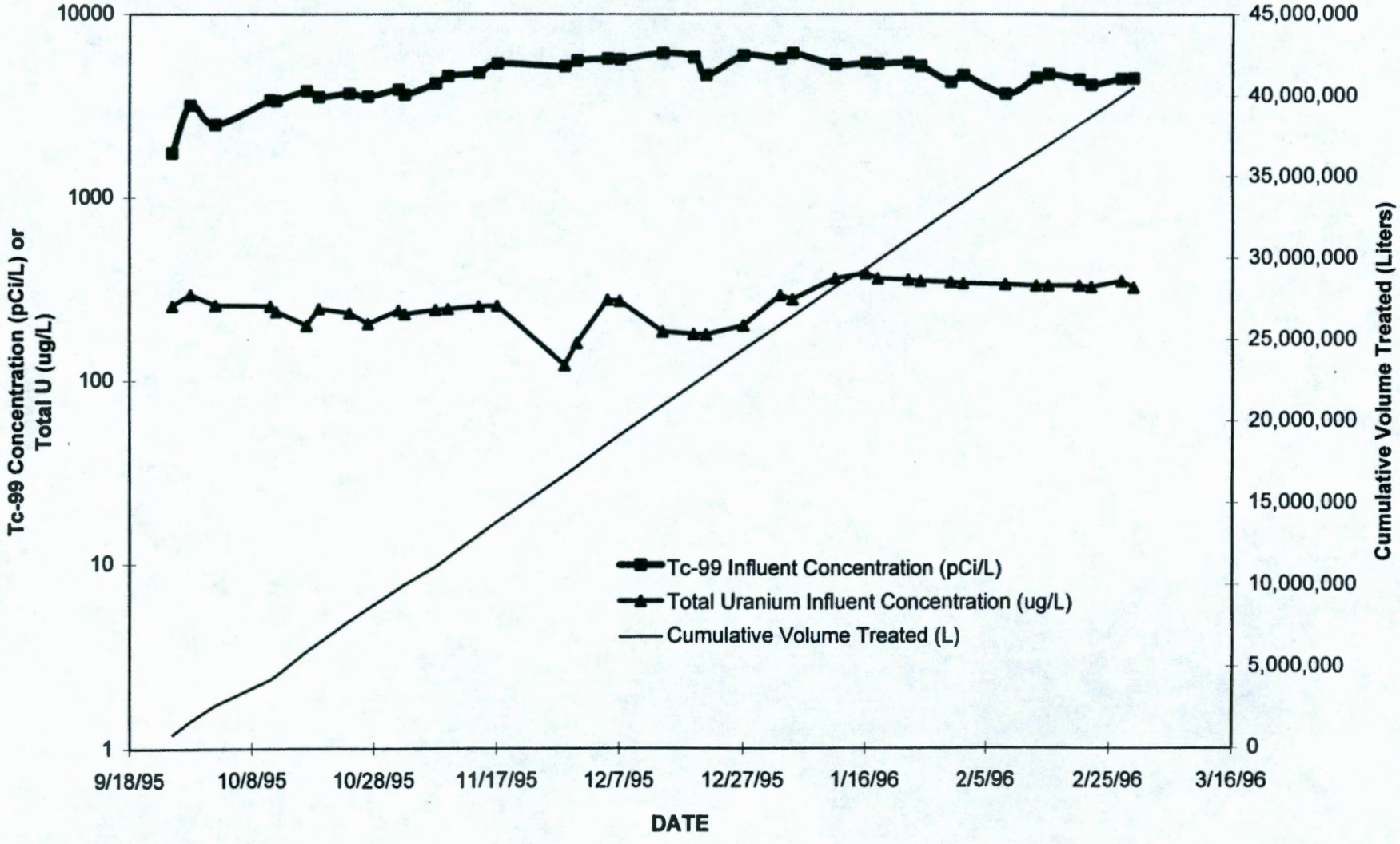
200-UP-1 Pump and Treat Status (continued)

- **Operating Continuously Around the Clock > 90% of the Time Since Start of Phase I**

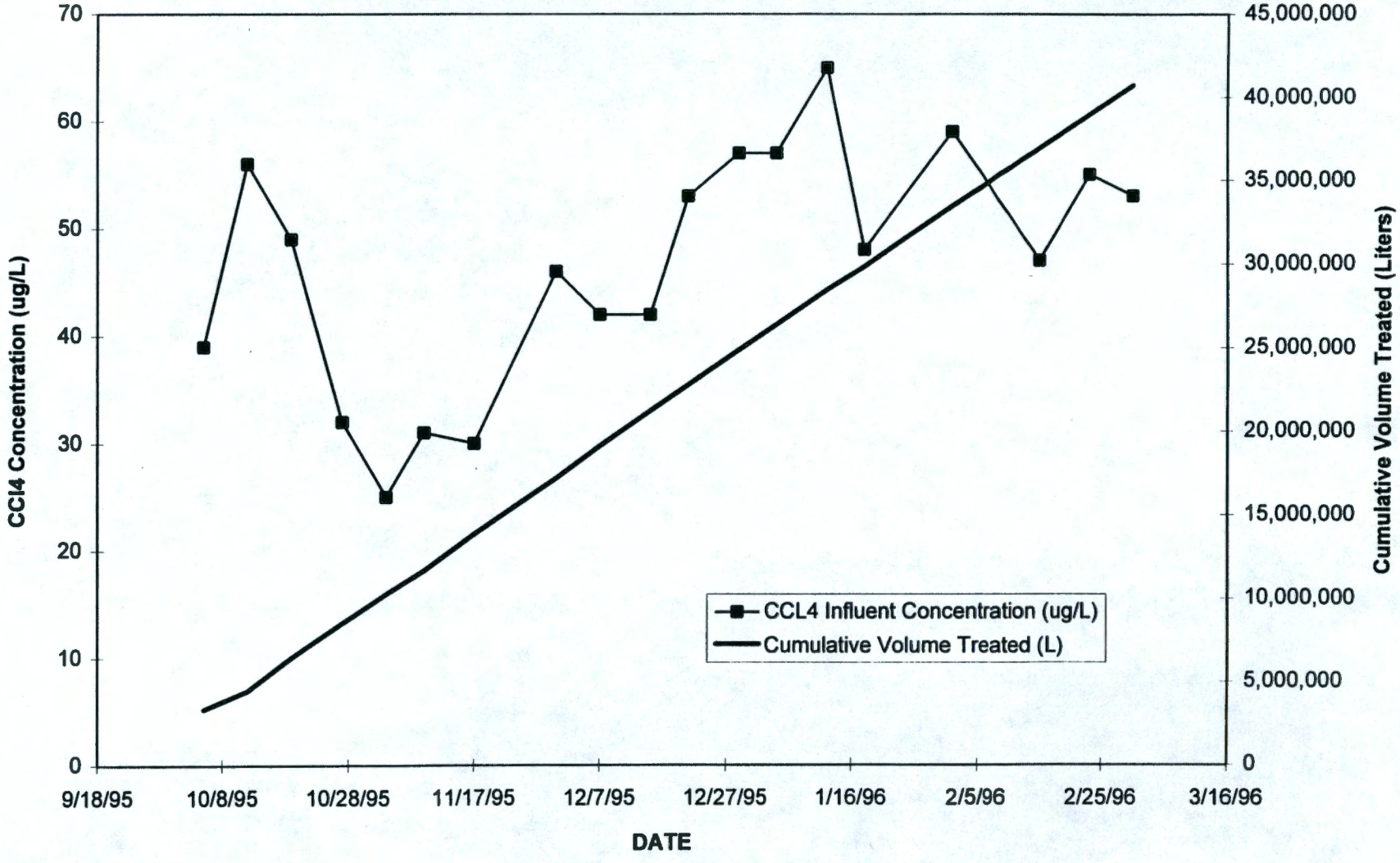
- **Comprehensive Monitoring of Aquifer Response for Phase I**
  - **12+ Well Monitoring Network**
  - **Monitor Water Levels Continuously**
  - **Taken Five Rounds of Groundwater Samples**

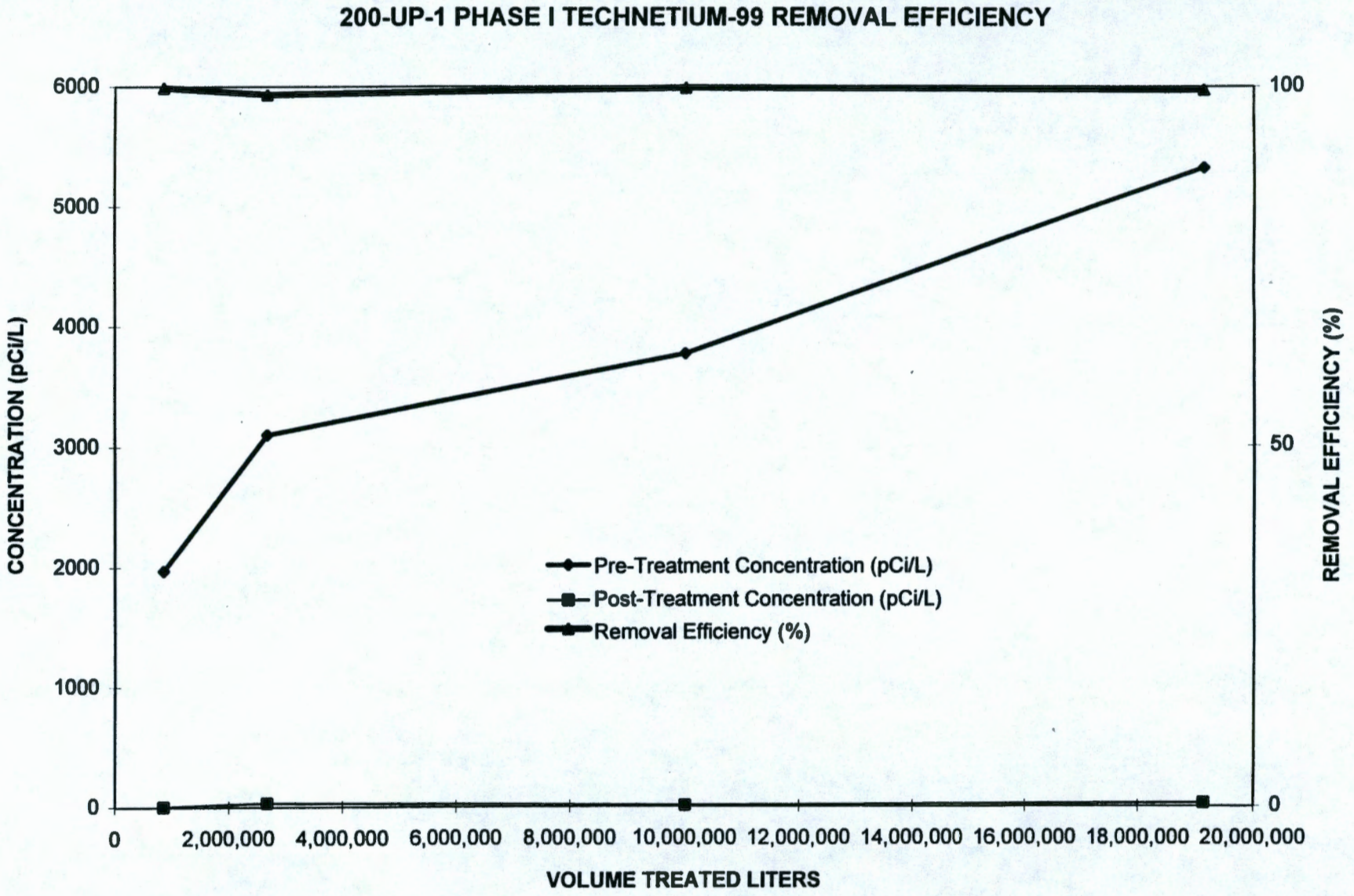
- **Completed First Quarterly Report**
  - **Treatment System Performance**
  - **Aquifer Response**

200-UP-1 PHASE I CONTAMINANT CONCENTRATIONS AND VOLUME OF GROUNDWATER TREATED VERSUS TIME

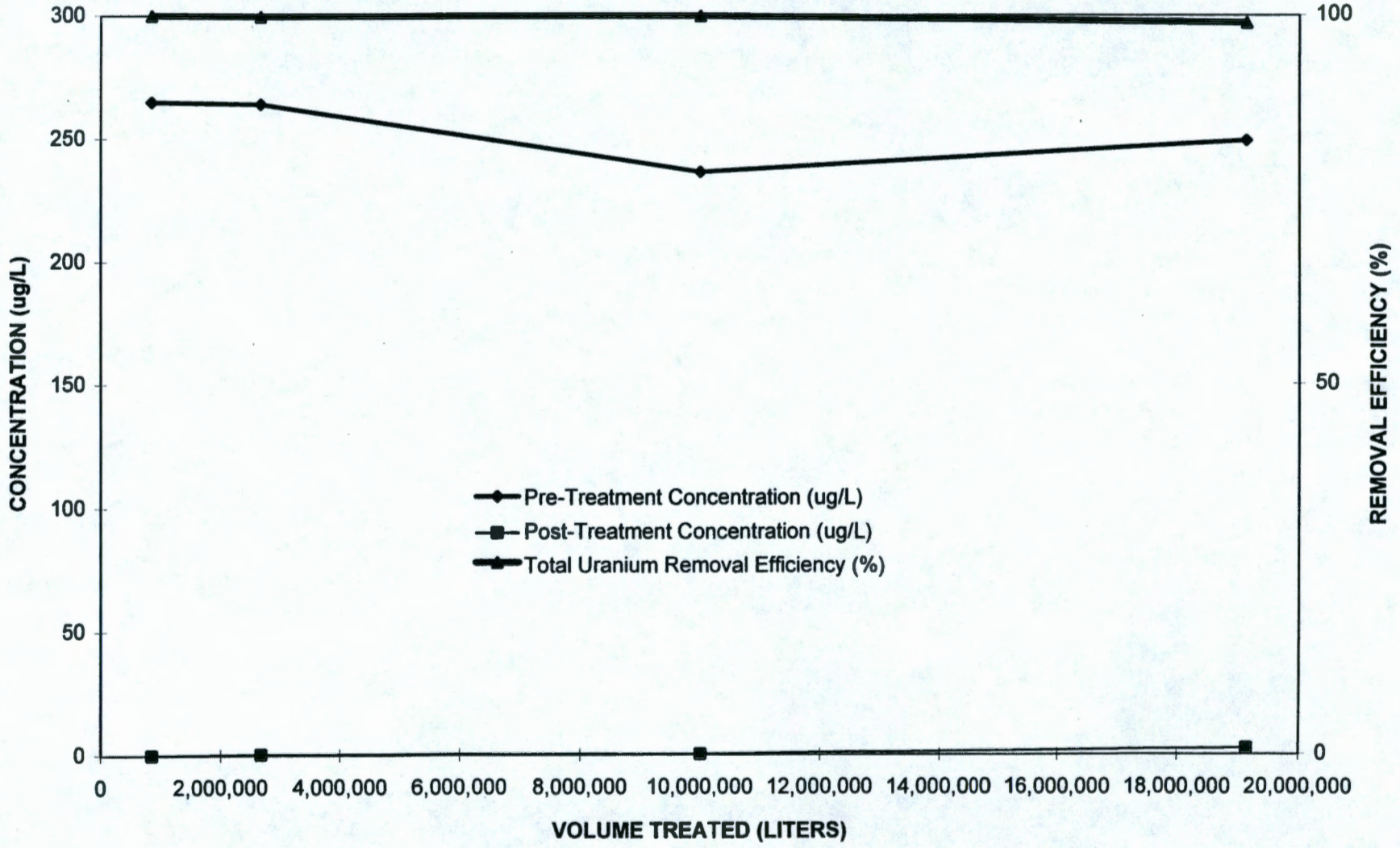


200-UP-1 PHASE I CARBON TETRACHLORIDE CONCENTRATIONS AND VOLUME OF GROUNDWATER TREATED VERSUS TIME

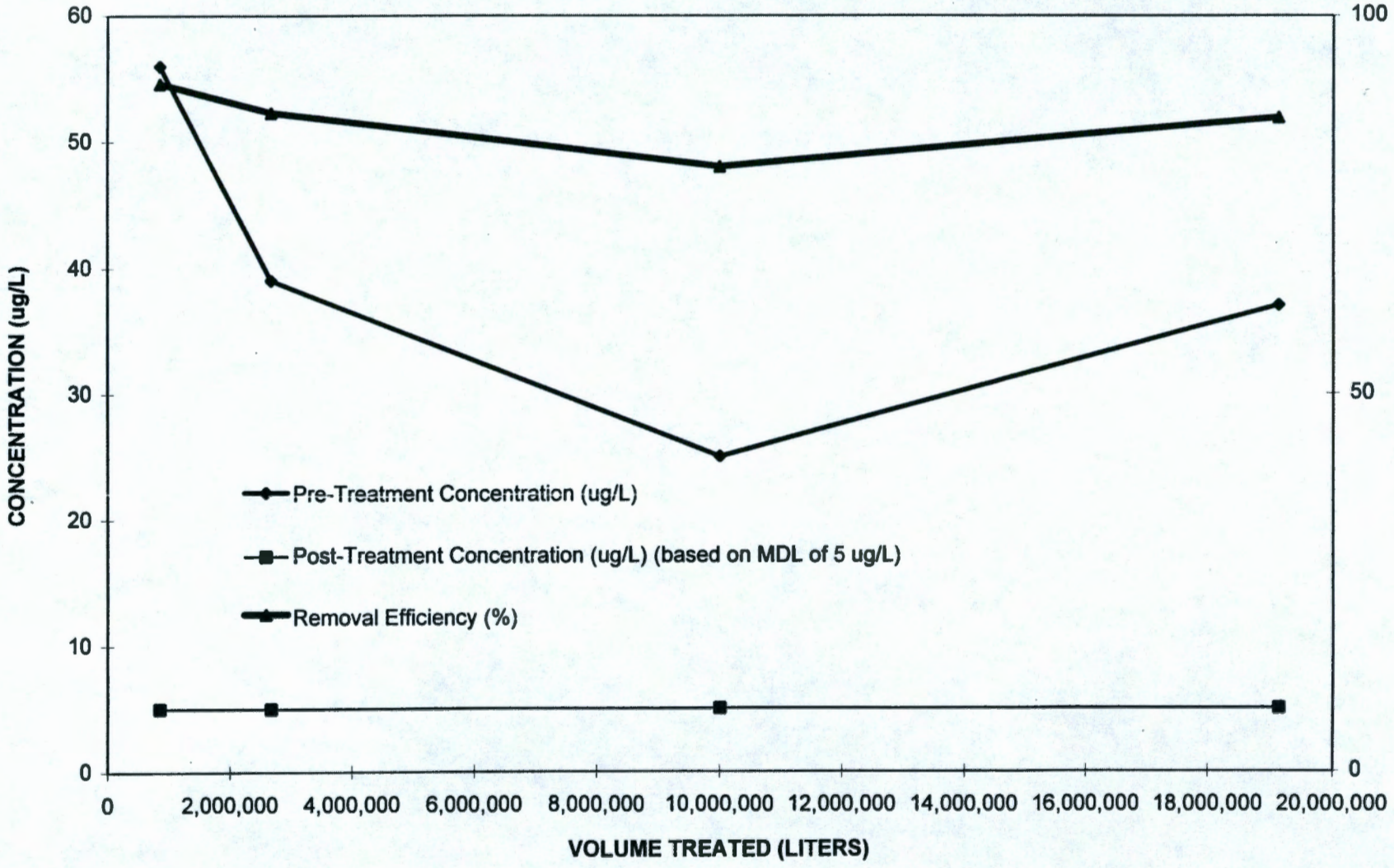



200-UP-1 PHASE I TECHNETIUM-99 REMOVAL EFFICIENCY
CONCENTRATION (pCi/L)
REMOVAL EFFICIENCY (%)
6000
5000
4000
3000
2000
1000
0
100
50
0
0
2,000,000
4,000,000
6,000,000
8,000,000
10,000,000
12,000,000
14,000,000
16,000,000
18,000,000
20,000,000
VOLUME TREATED LITERS
Pre-Treatment Concentration (pCi/L)
Post-Treatment Concentration (pCi/L)
Removal Efficiency (%)

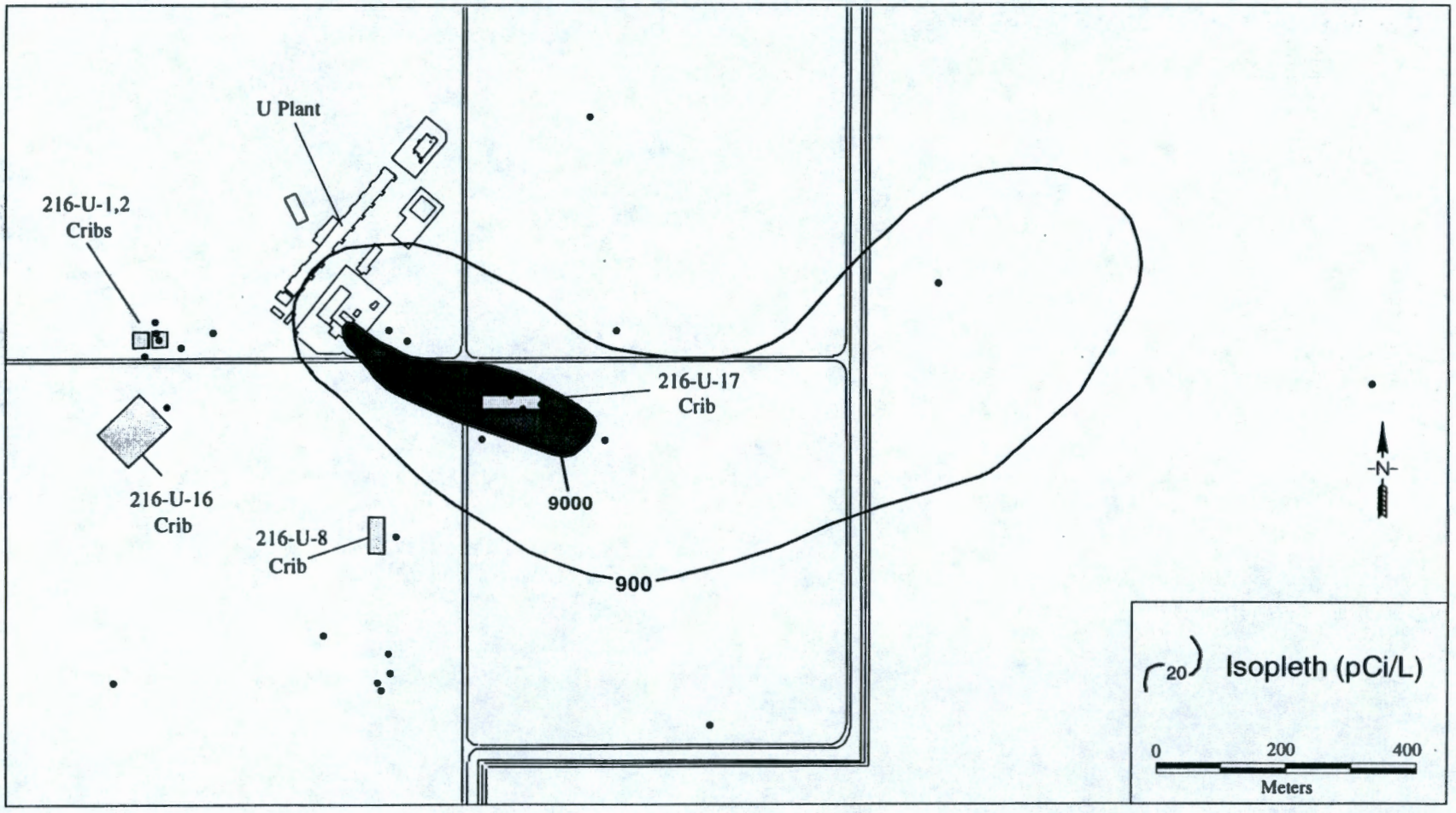
200-UP-1 PHASE I TOTAL URANIUM REMOVAL EFFICIENCY



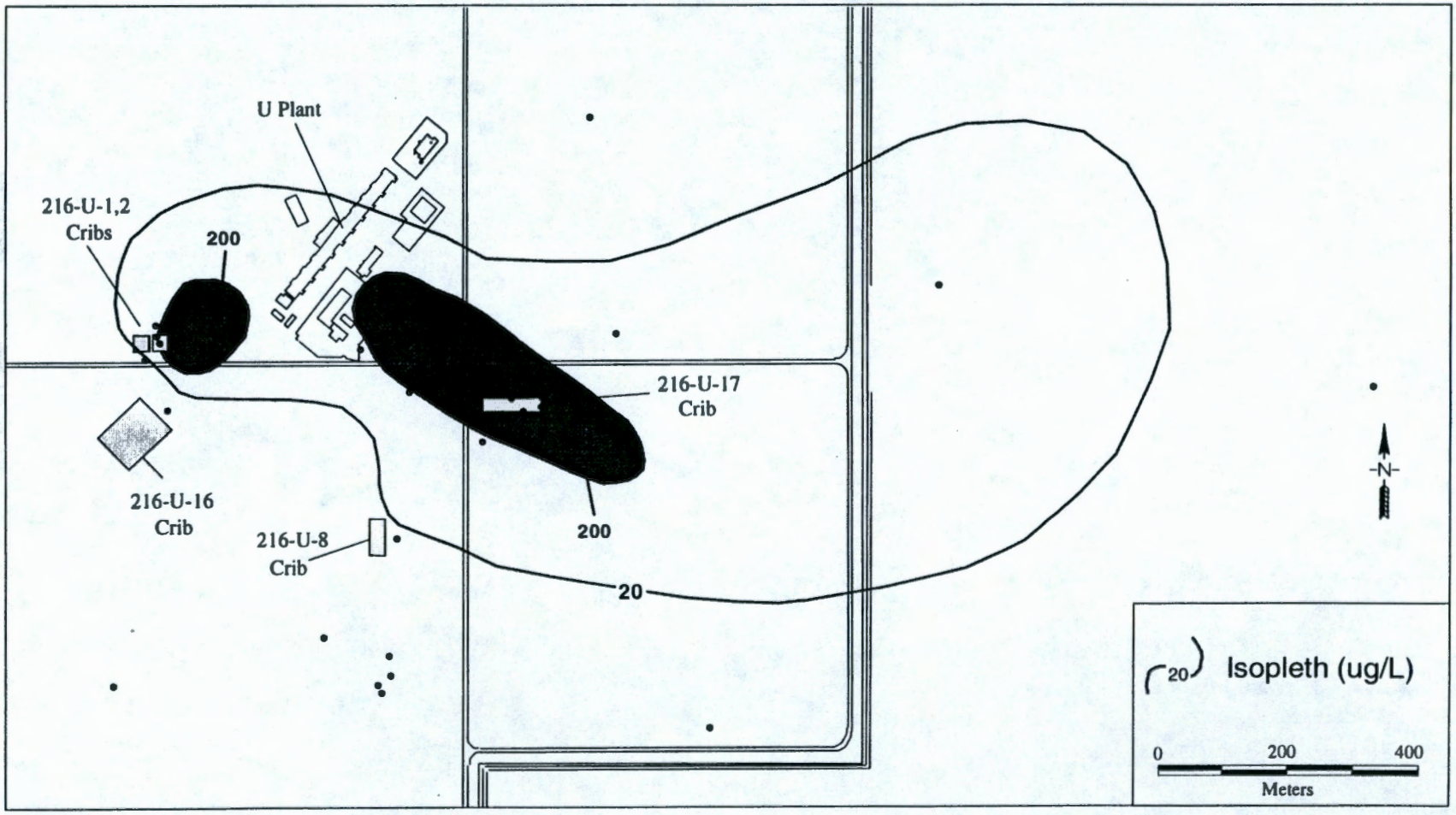
200-UP-1 PHASE I CARBON TETRACHLORIDE REMOVAL EFFICIENCY



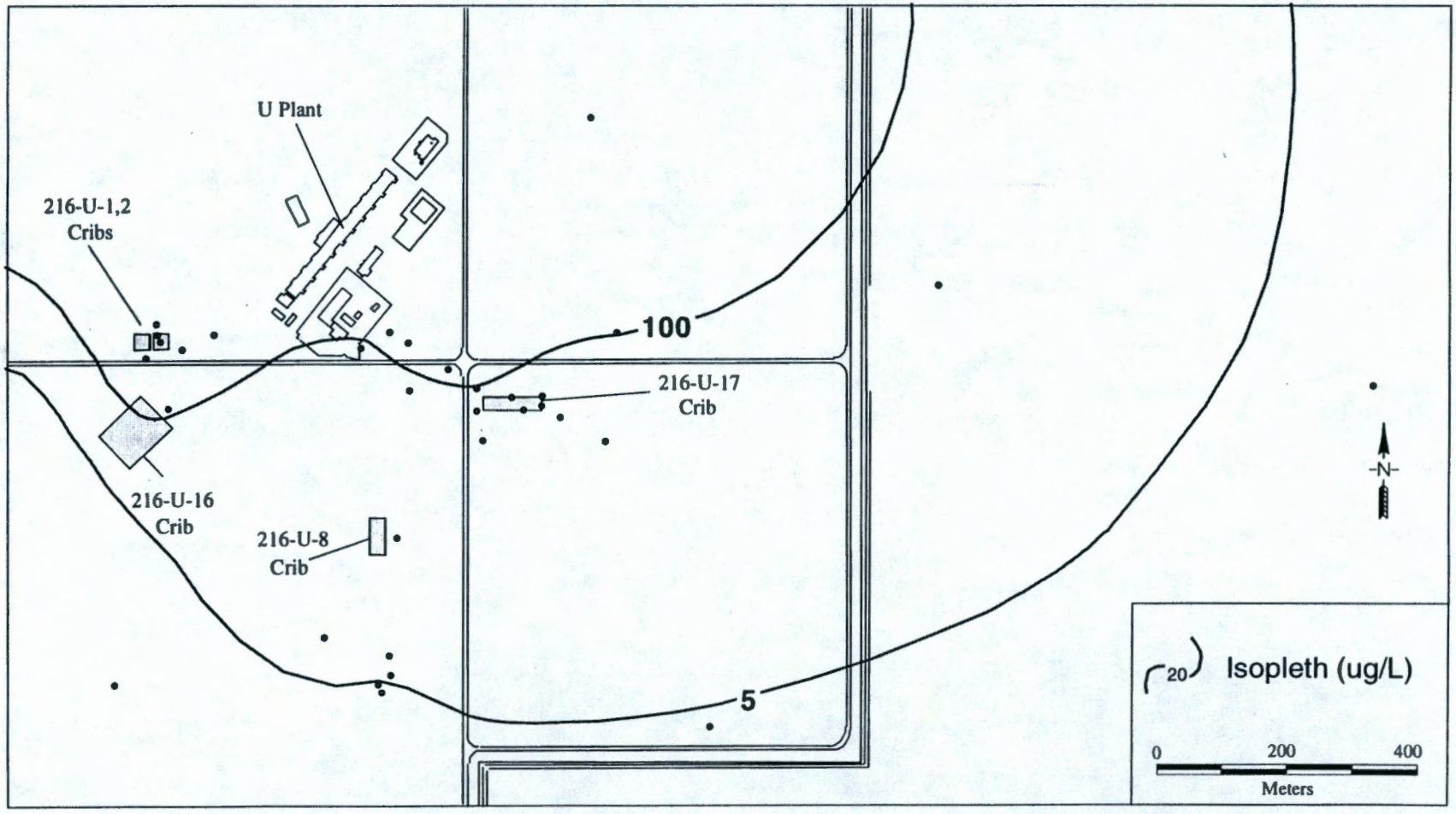
200-UP-1
Technetium-99 Groundwater Contamination

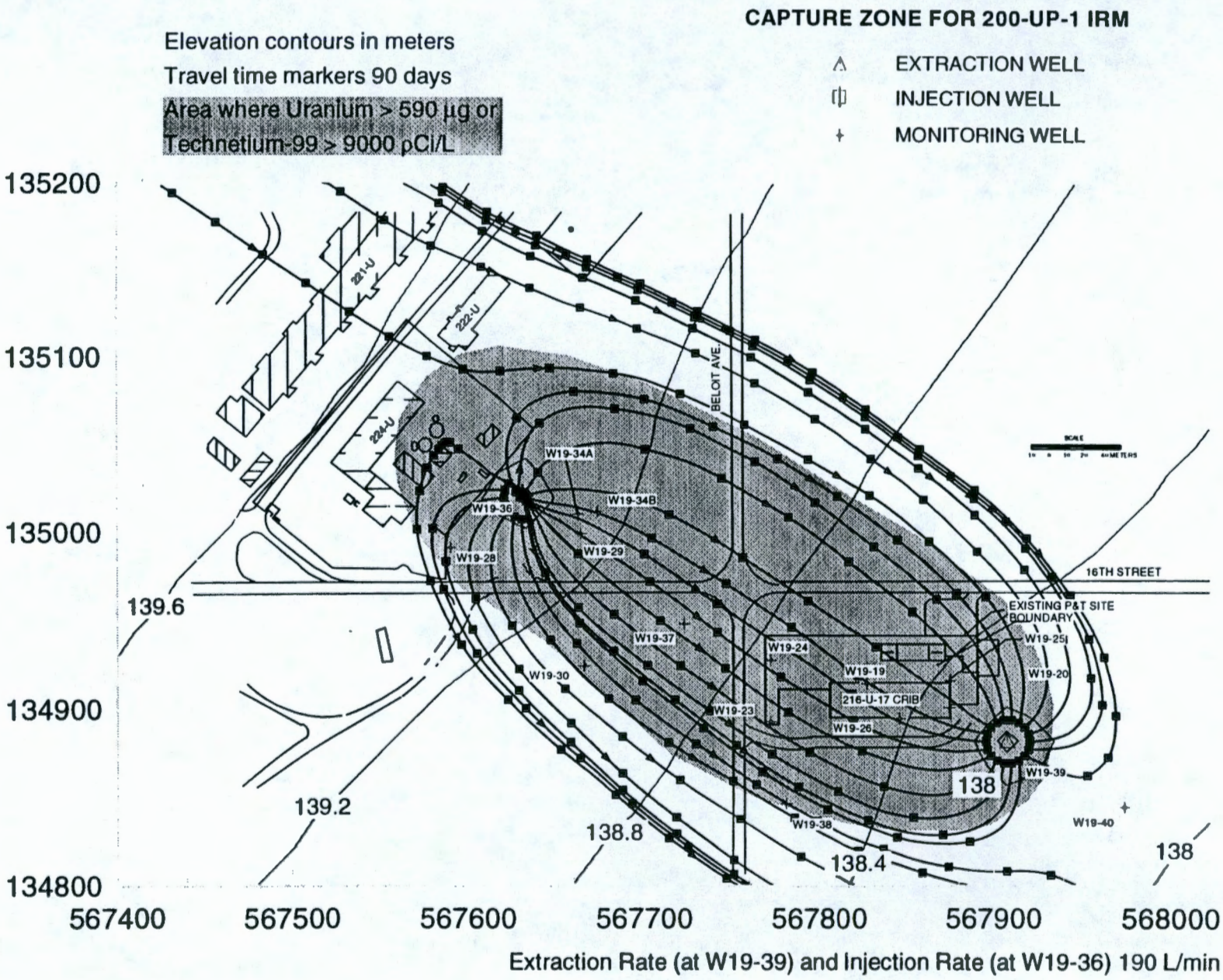


200-UP-1
Uranium Groundwater Contamination

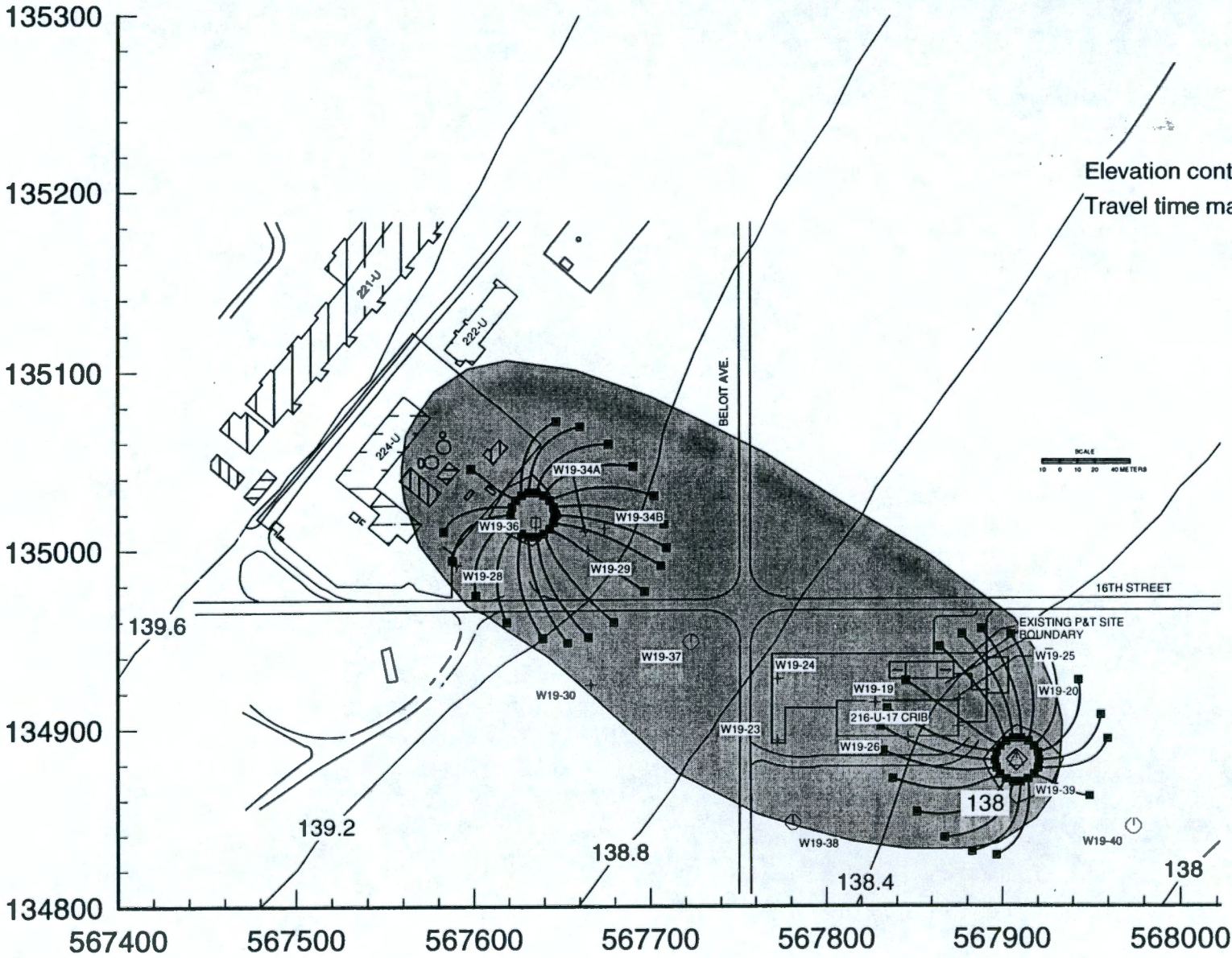


200-UP-1
Carbon Tetrachloride Groundwater Contamination

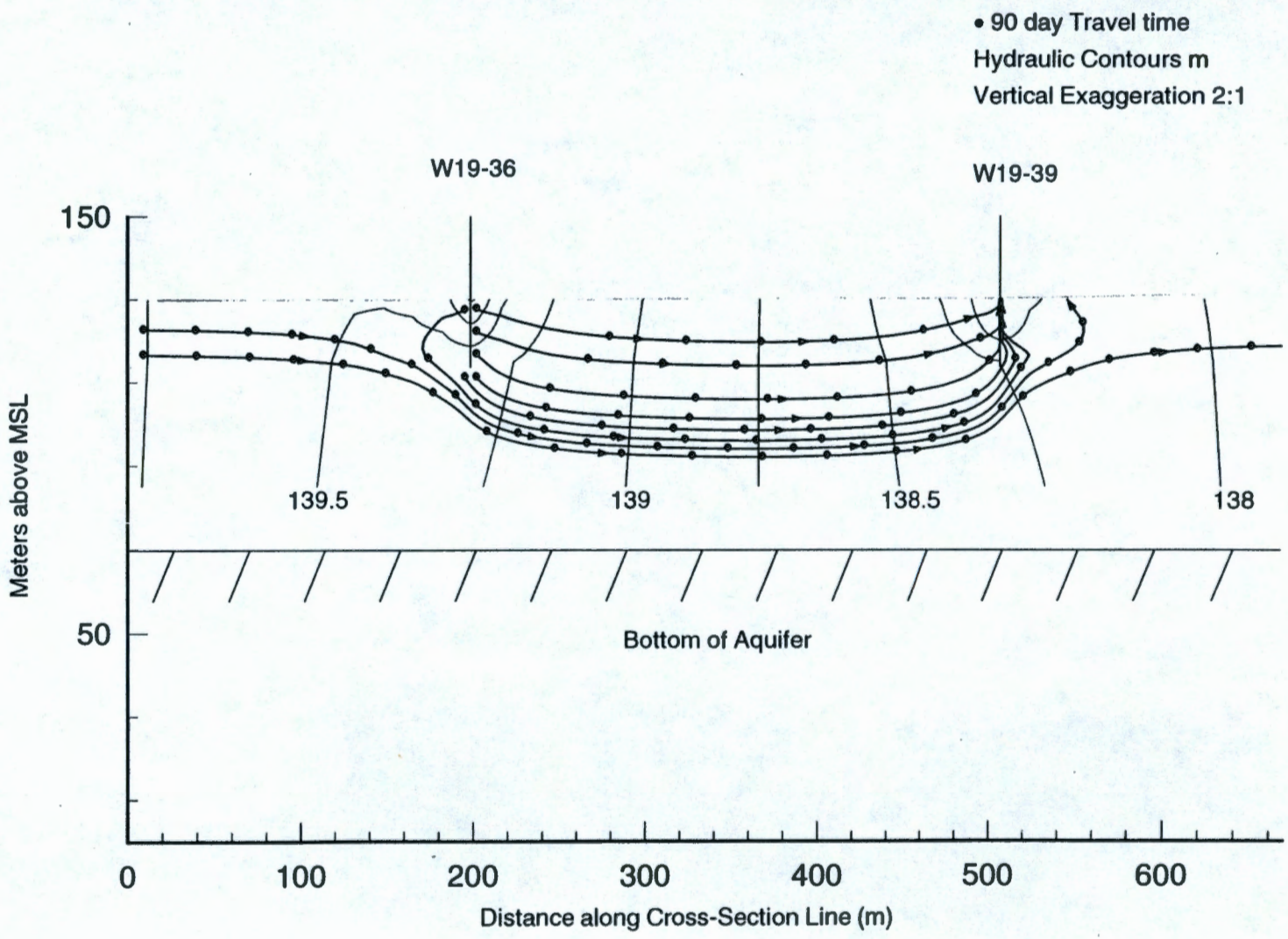




CAPTURE ZONE FOR 200-UP-1 IRM



Extraction Rate (at W19-39) and Injection Rate (at W19-36) 50 gpm



200-UP-1 First Quarterly Report Conclusion

- **Performance Monitoring of Existing Phase I Pump and Treat System Indicates IRM Objectives Will Be Met In 2 Years.**

200-UP-1 IRM Modeling

Dave Myers

Phase II Work Scope

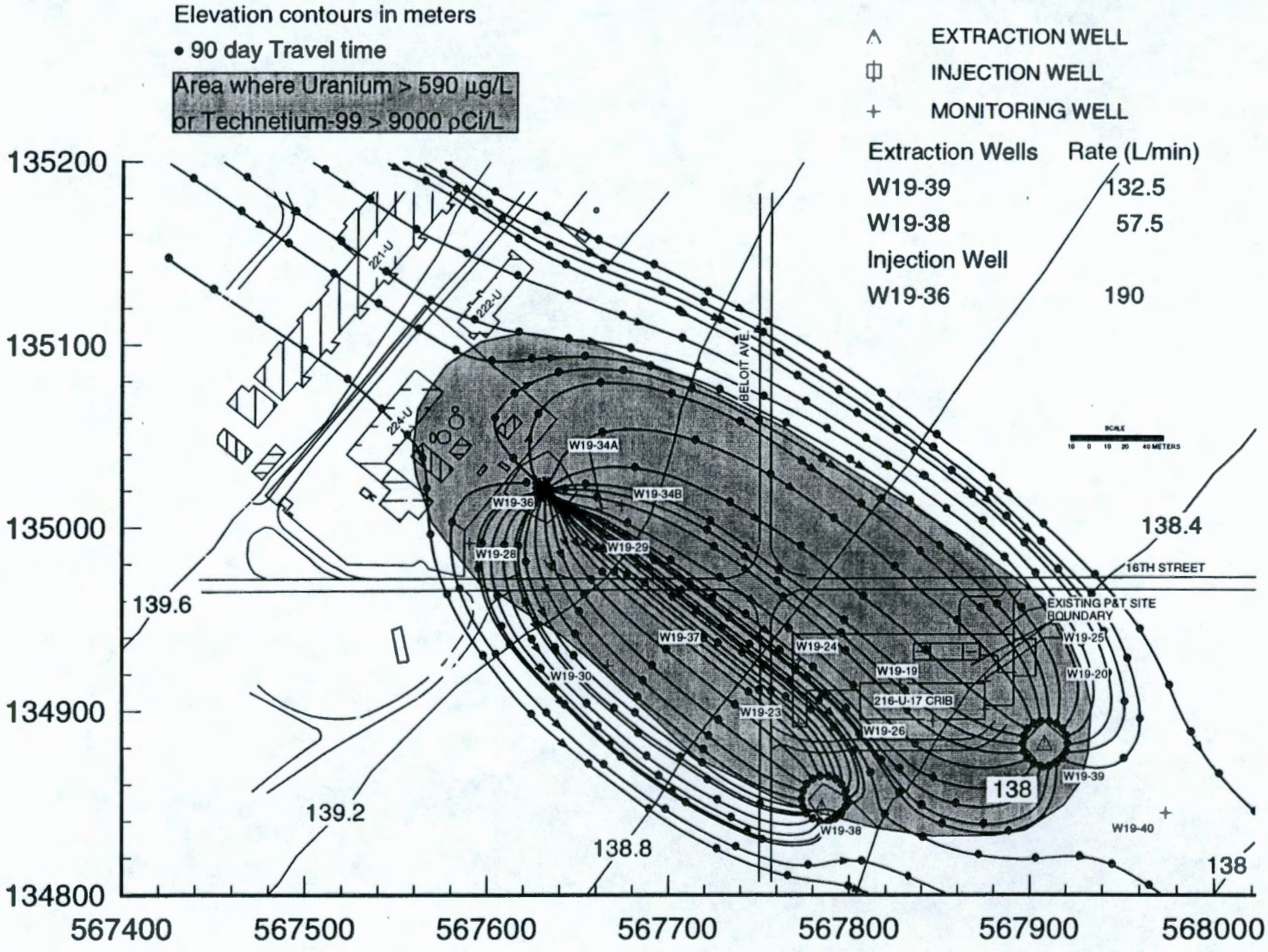
Current Scope: Double-Walled Underground Pipelines, Process Building, Three Wells, Misc System Upgrades

Current Schedule: ~12 Month Duration for Design, Procurement, Construction, Tie-In, Shakedown Testing for Phase II Upgrades

Assuming ROD Approved 8/96, Phase II Operations Would Start ~8/97

Proposed Revisions to Phase II Work Scope

- **If the Onsite System is Used, Recommend Only Minor Phase I System Upgrades to Improve Operational Efficiency.**
- **Utilize Well 299-W19-38 as a Second Extraction Well to Optimize Target Plume Capture.**



200-UP-1 Risk Based Decision Analyses

- **IRM Plume**
- **LFI Plumes**

Jerry Chiaramonte

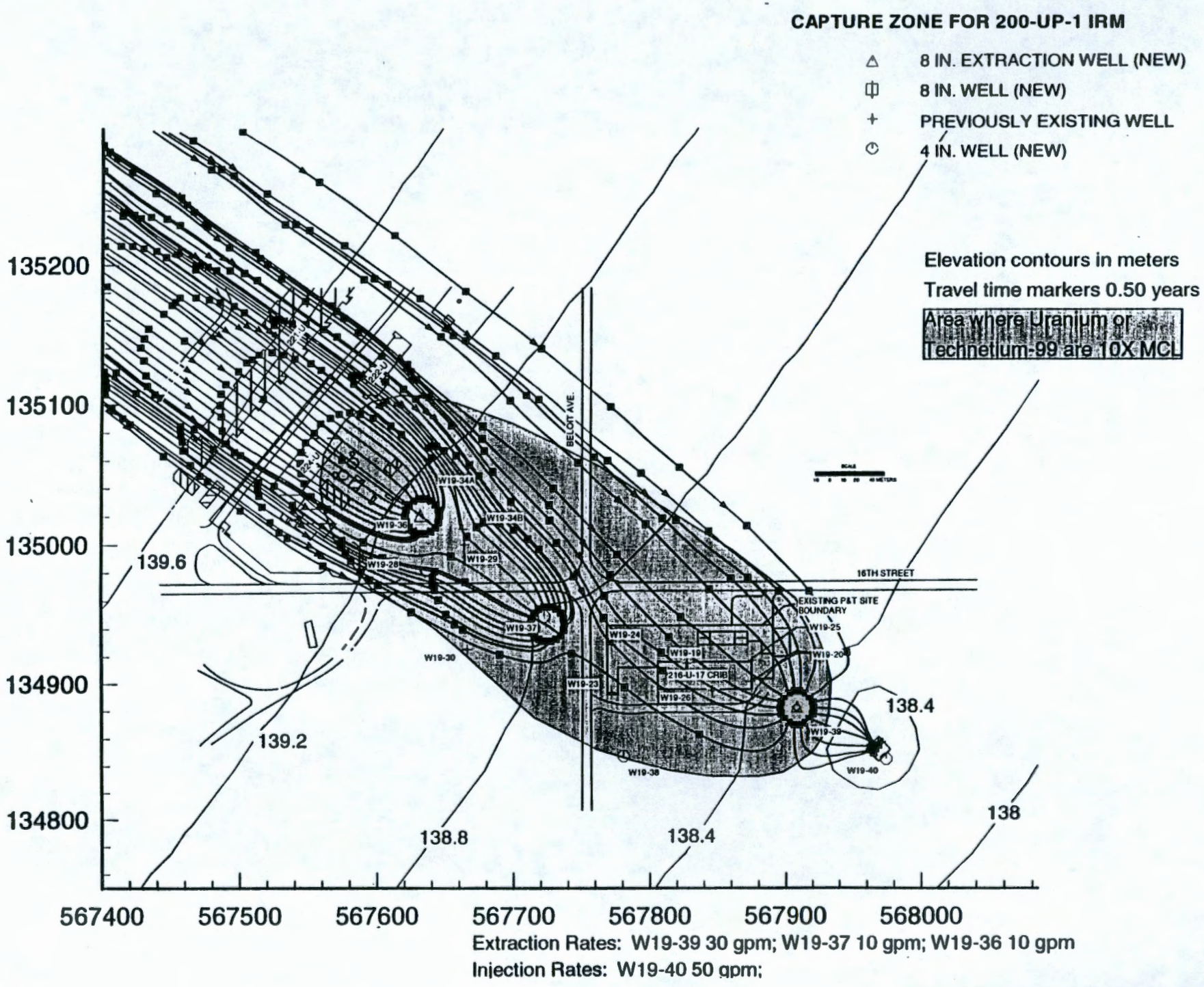
200-UP-1 Interim Record of Decision

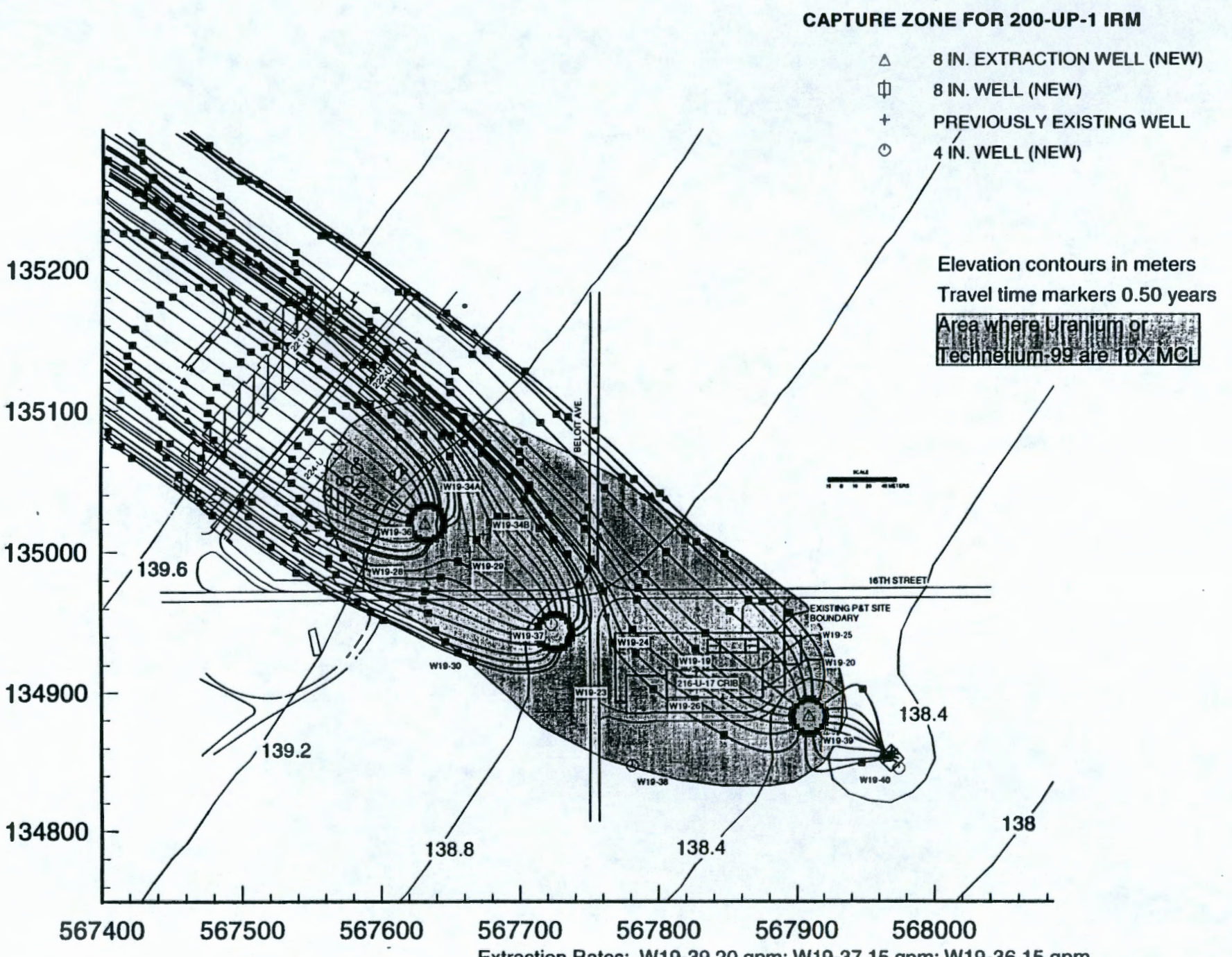
- **Waivers**
- **Waste Disposal**

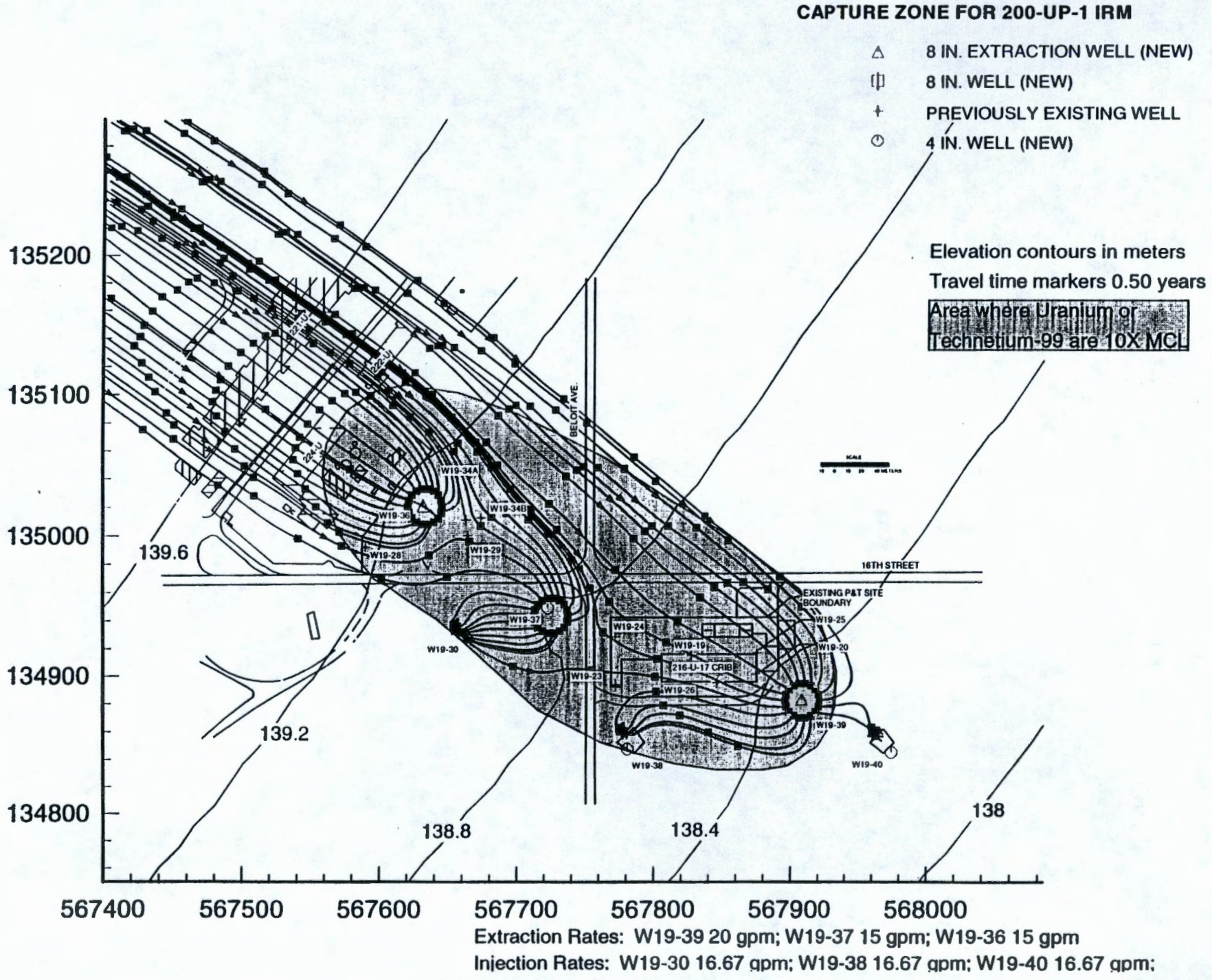
Ro Vinson

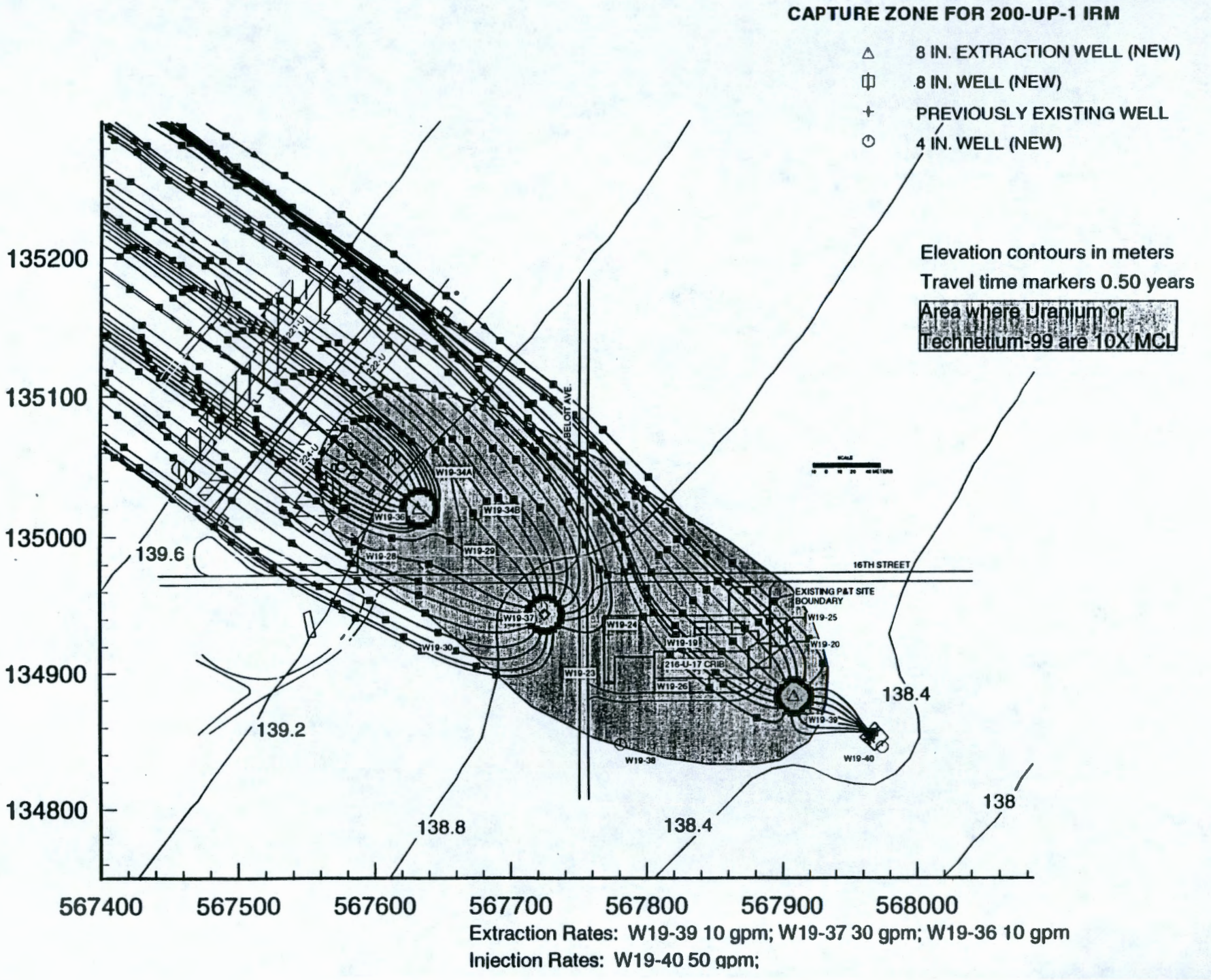
Table 1. Pumping with Reinjection Scenarios

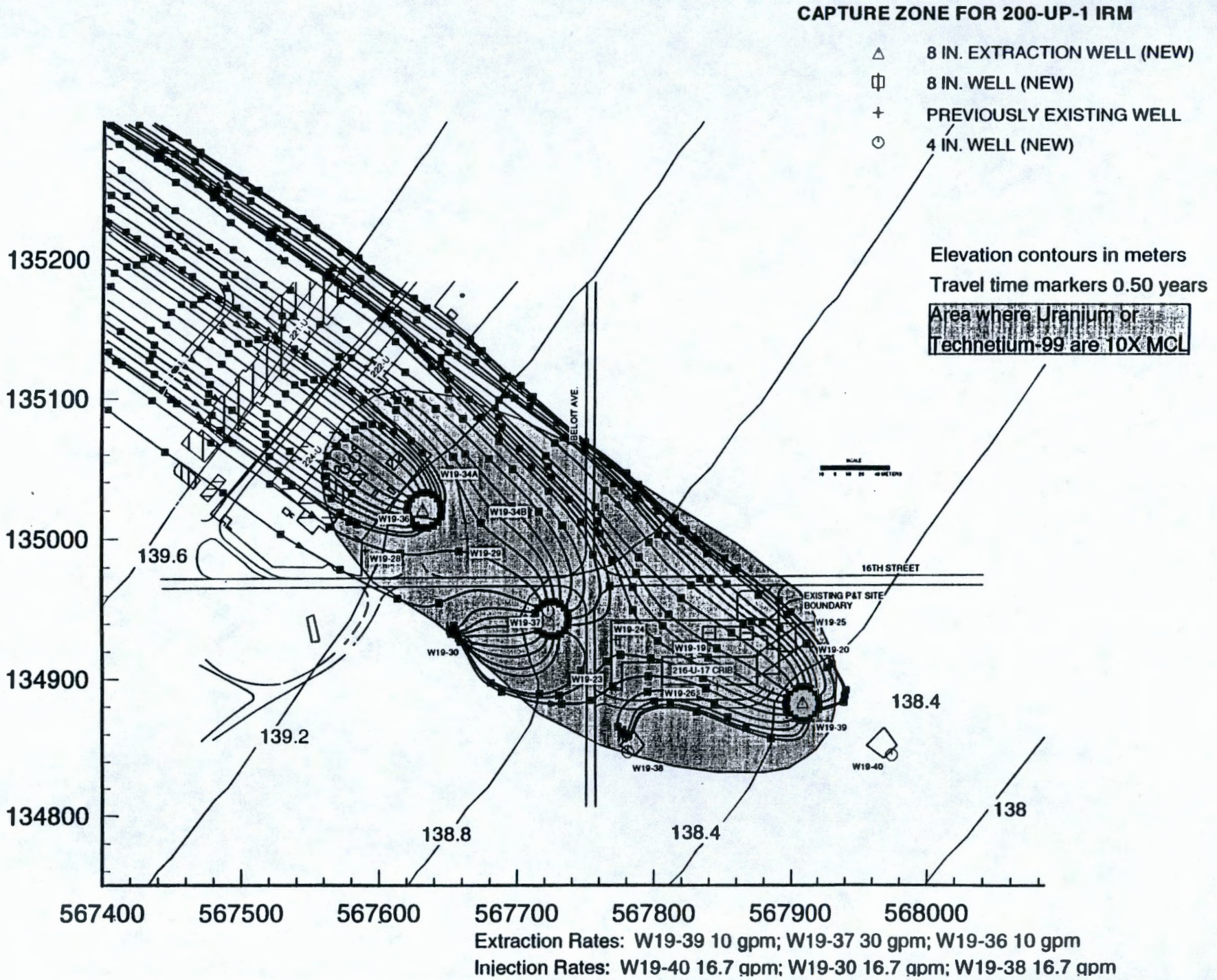
Scenario	Wells Pumped	Wells Injected	Pumping Rate
1	W19-39	W19-36	50
2	W19-36 W19-37 W19-39	W19-40	10 10 30
3	W19-36 W19-37 W19-39	W19-40	15 15 20
4	W19-36 W19-37 W19-39	W19-30 W19-38 W19-40	15 15 20
5	W19-36 W19-37 W19-39	W19-40	10 30 10
6	W19-36 W19-37 W19-39	W19-30 W19-38 W19-40	10 30 10
7	W19-39 New Well	W19-36	25 25
8	W19-39 New Well	New Well	25 25
9	W19-39 W19-38	W19-36	35 15





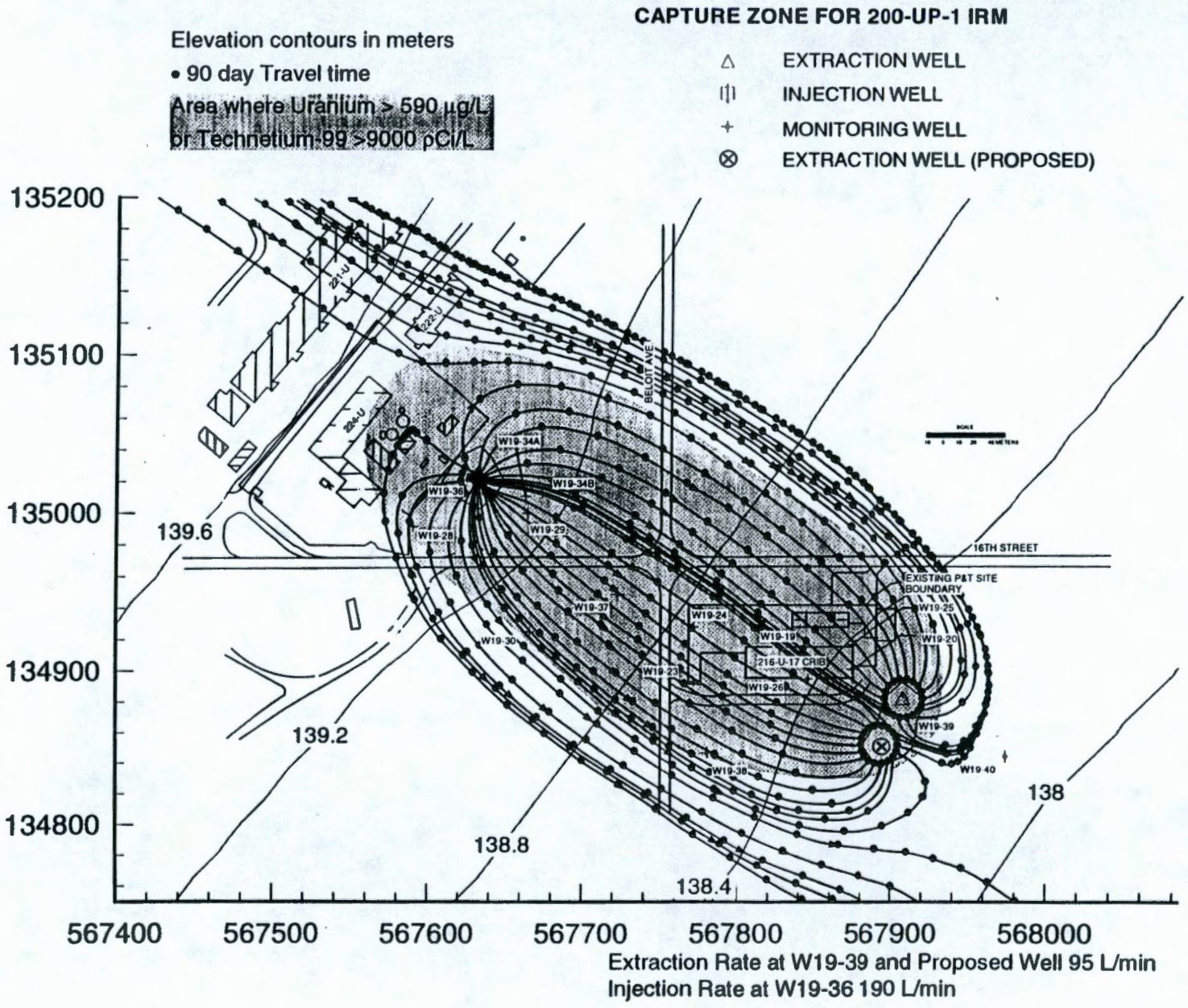


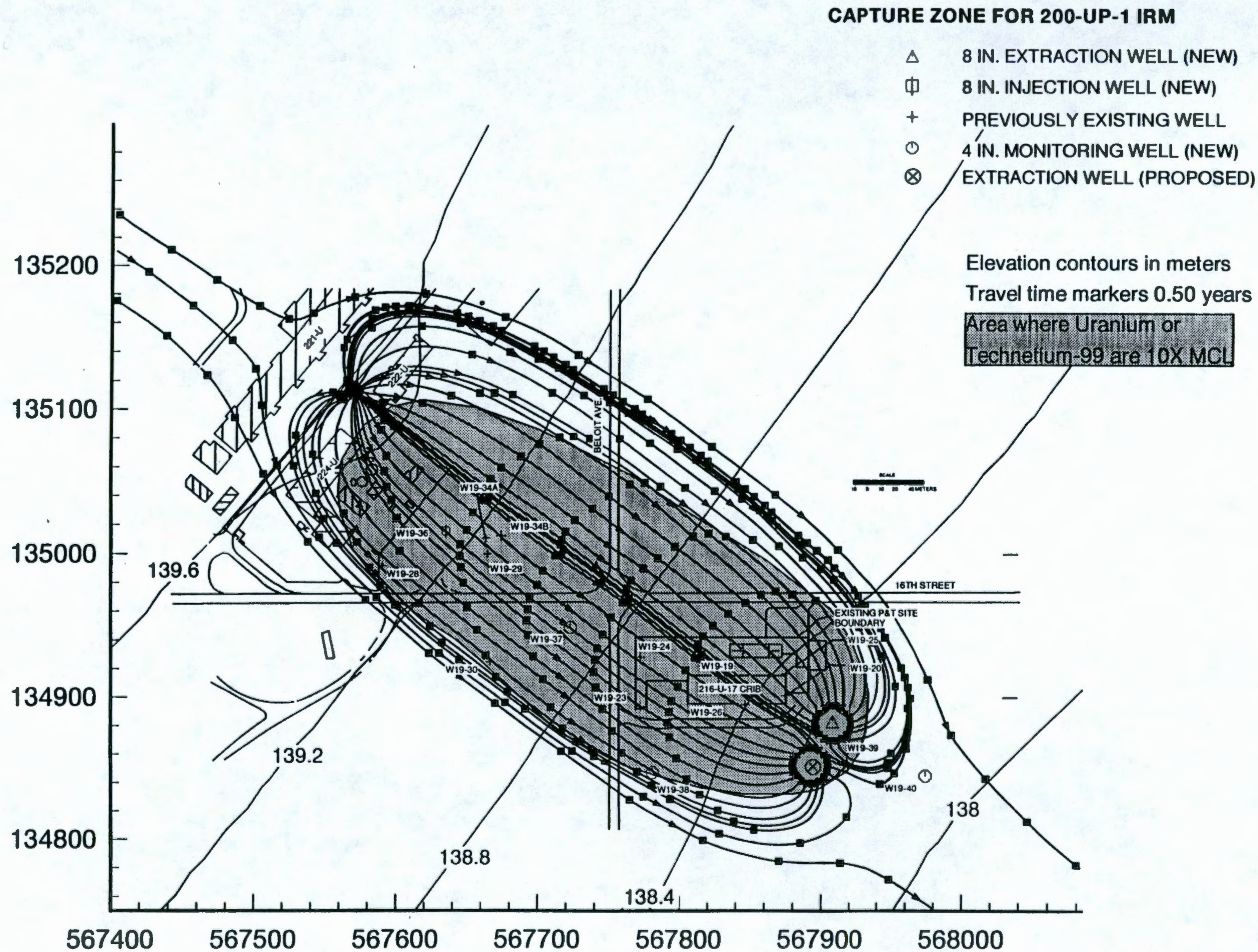




Extraction Rates: W19-39 10 gpm; W19-37 30 gpm; W19-36 10 gpm

Injection Rates: W19-40 16.7 gpm; W19-30 16.7 gpm; W19-38 16.7 gpm

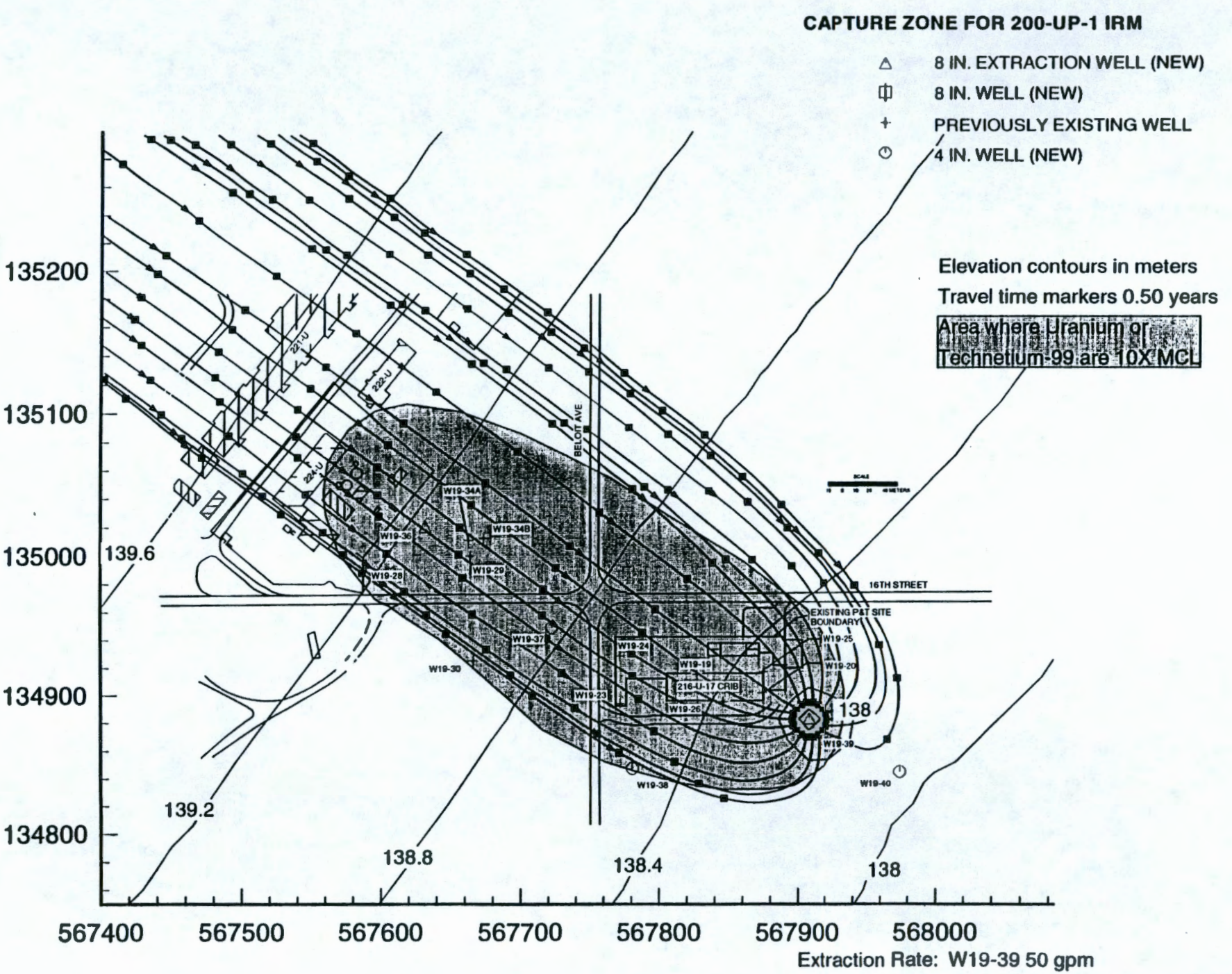


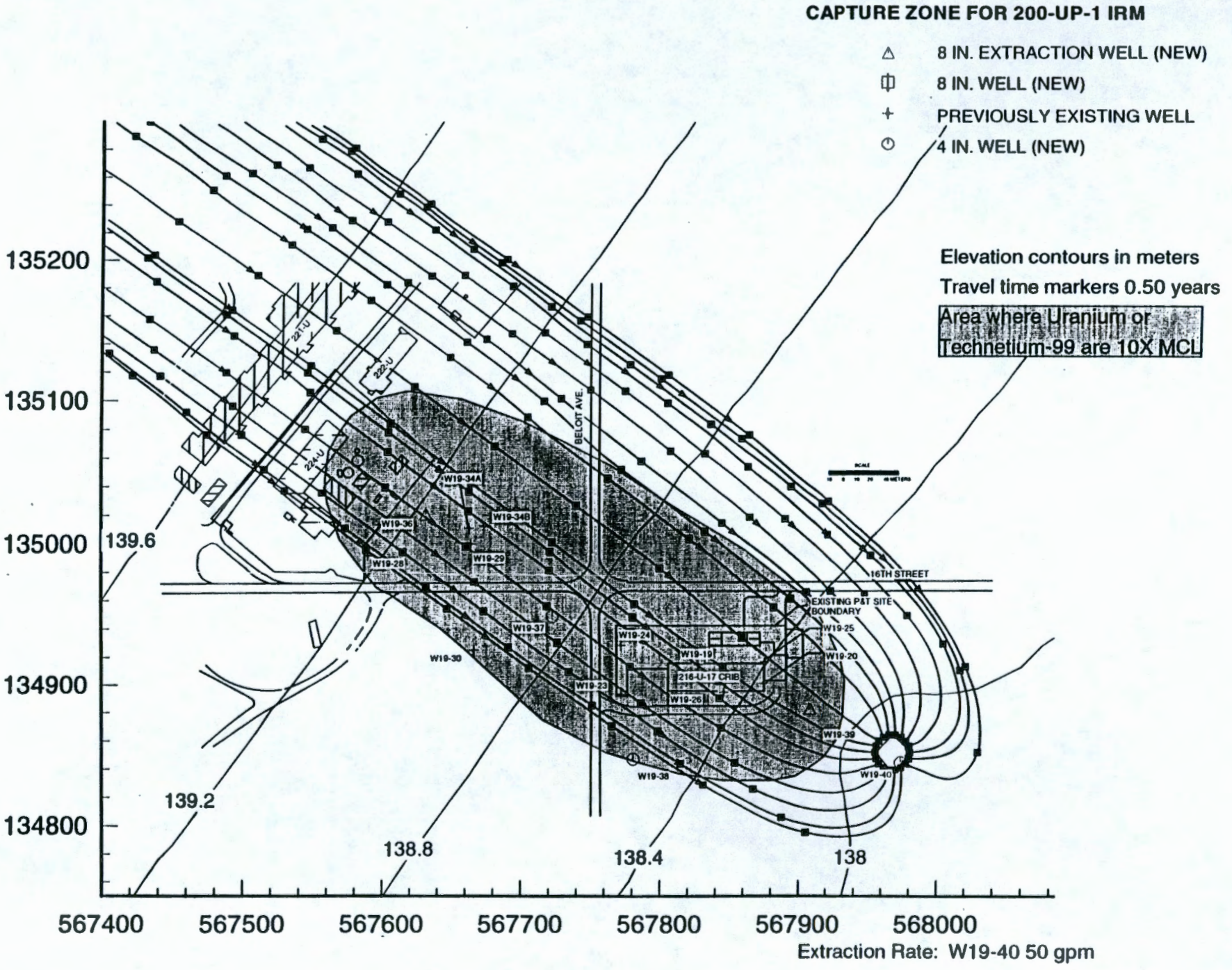


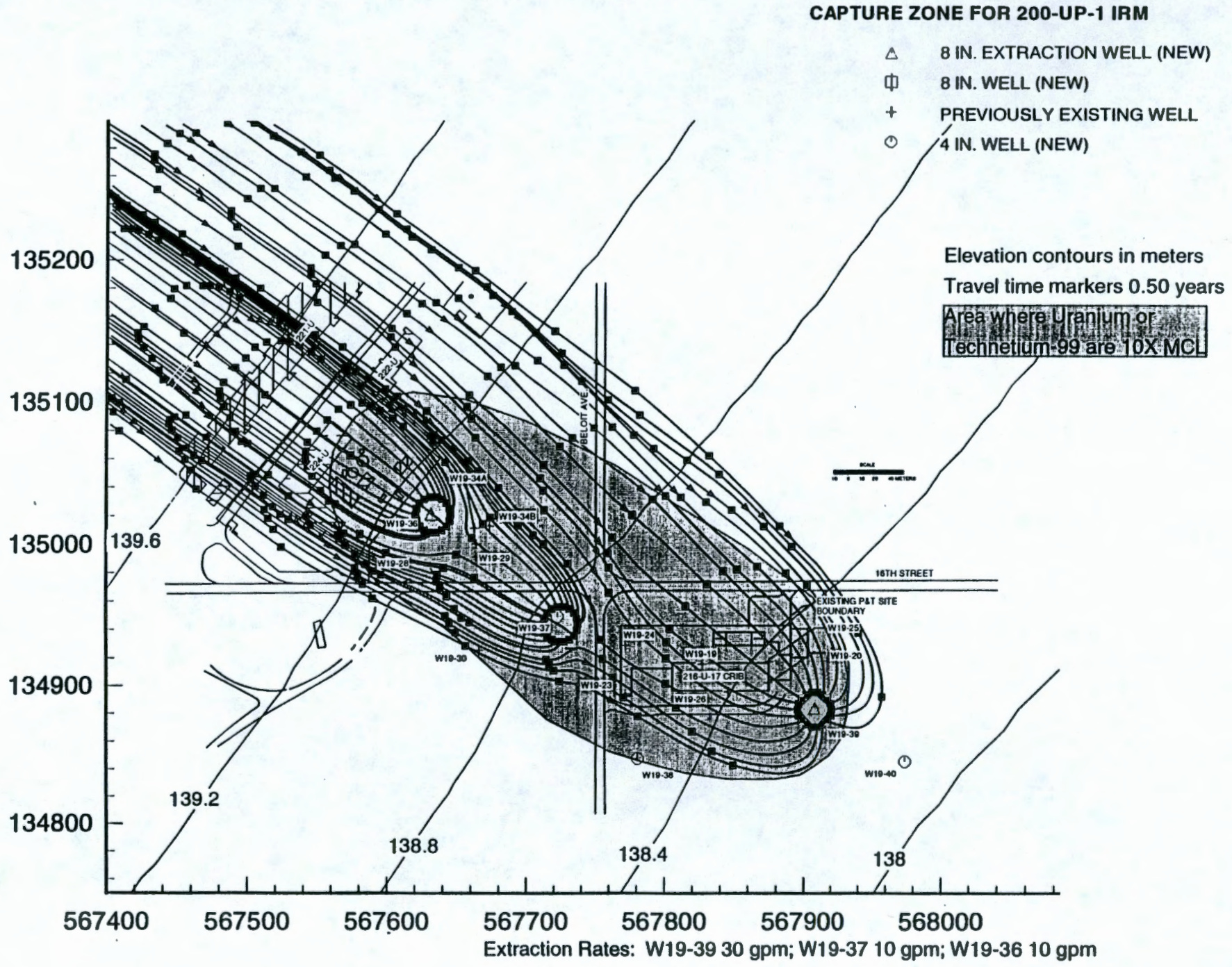
Extraction Rate at W19-39 and Proposed Well 25 gpm
Injection Rate at Proposed Well 50 gpm

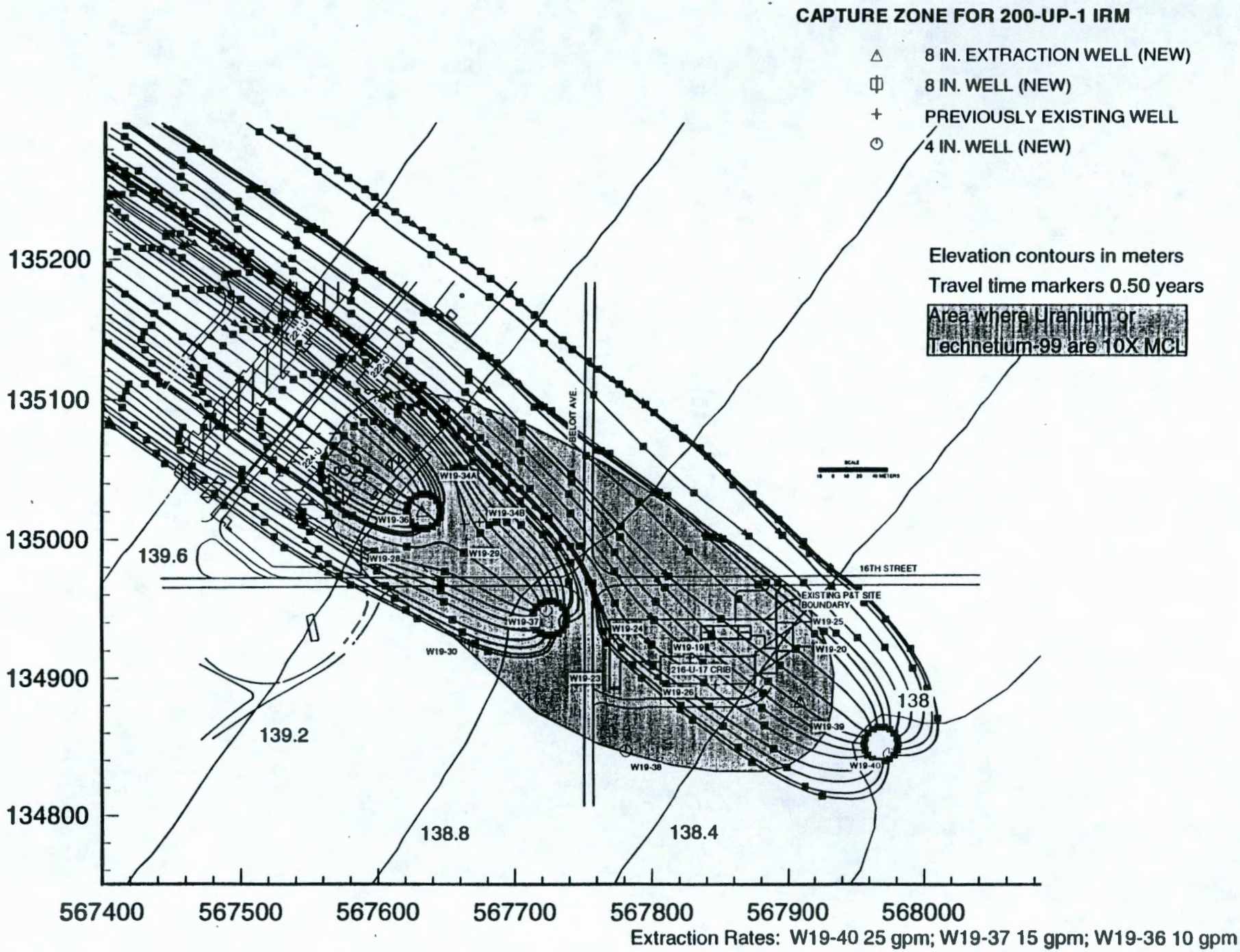
Table 2. Pumping without Reinjection (ETF Treatment)

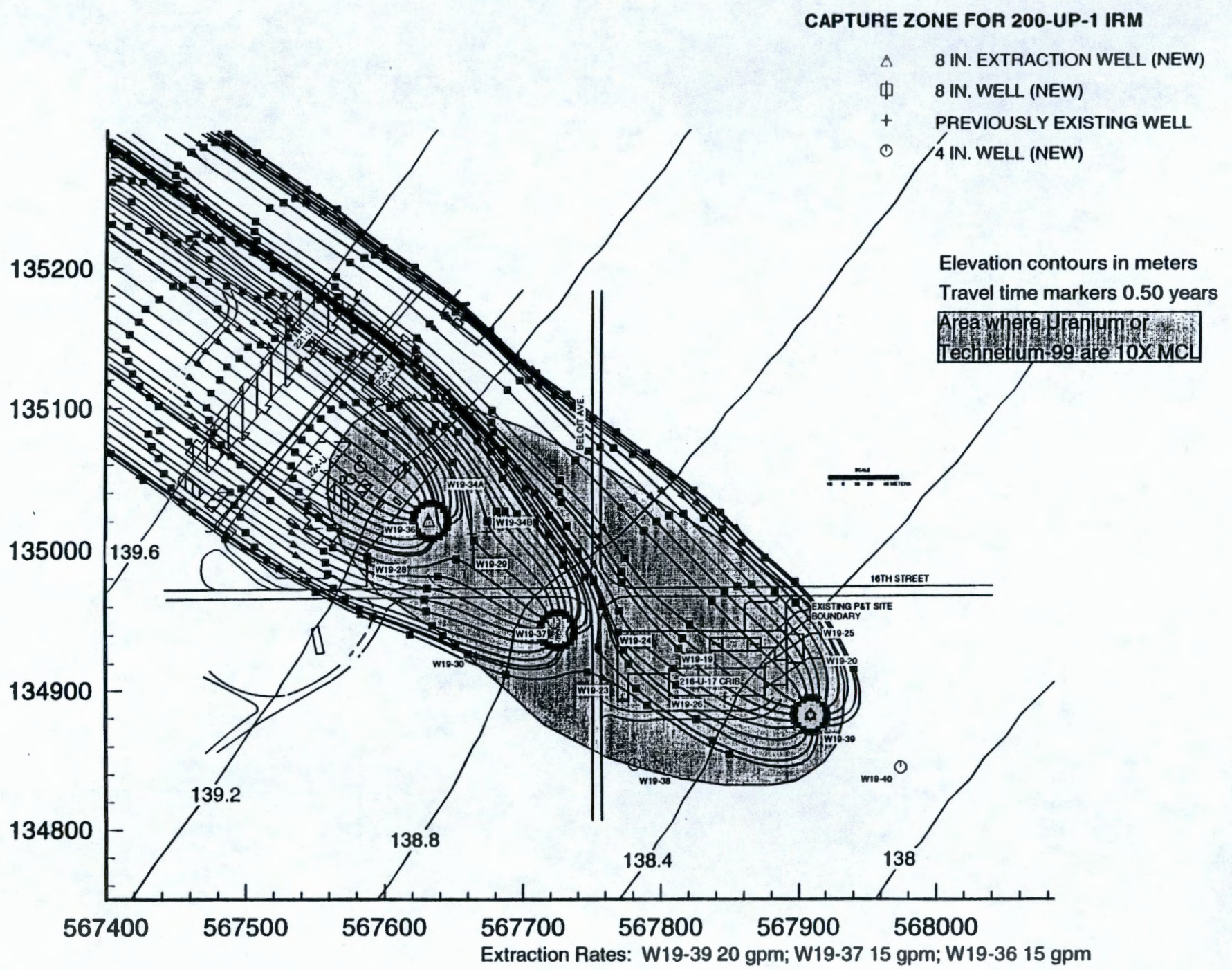
Scenario	Wells Pumped	Pumping Rate
1	W19-39	50
2	W19-40	50
3	W19-36 W19-37 W19-39	10 10 30
4	W19-36 W19-37 W19-40	10 15 25
5	W19-36 W19-37 W19-39	15 15 20
6	W19-36 W19-37 W19-39	10 30 10
7	W19-39 New Well	25 25

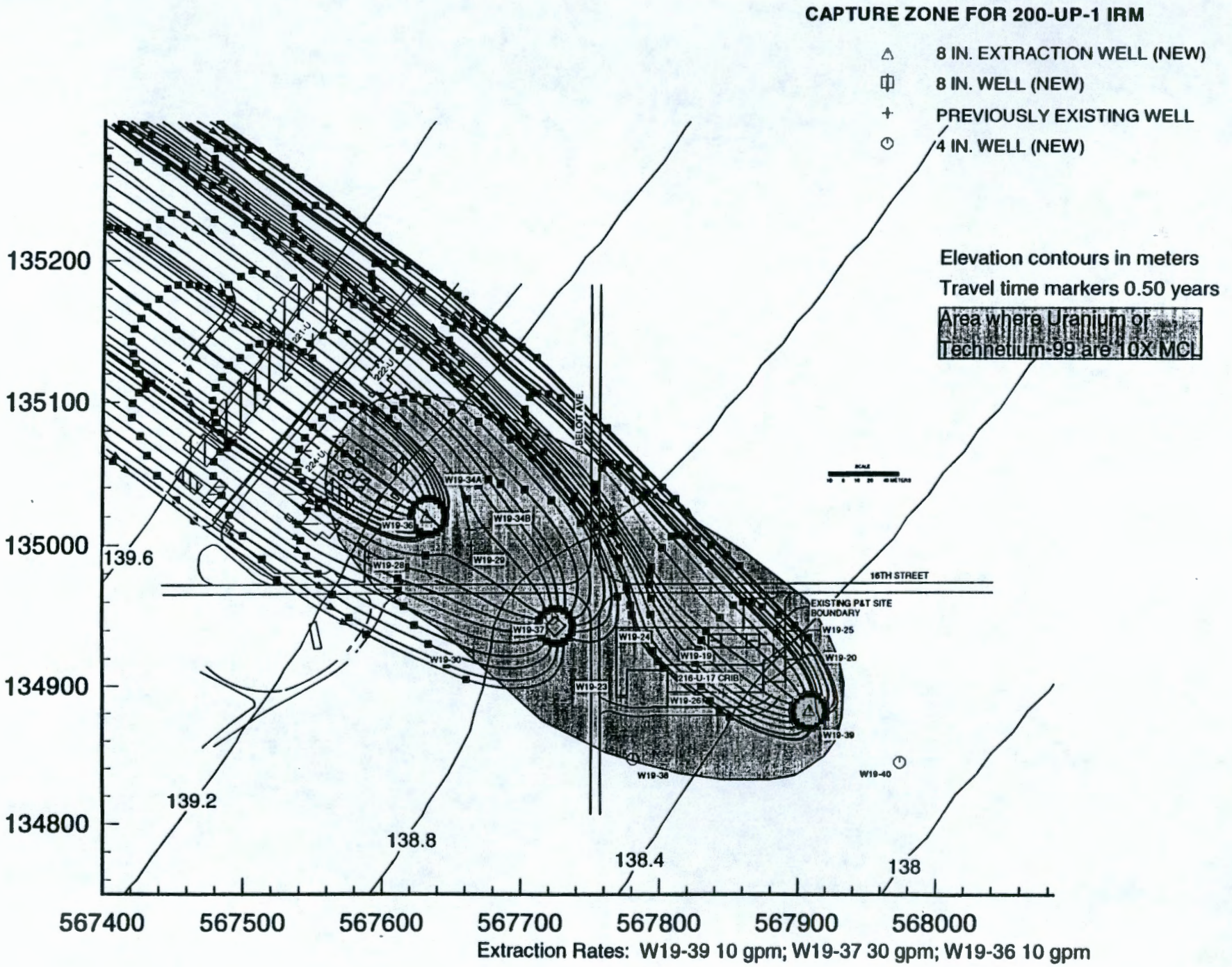












CAPTURE ZONE FOR 200-UP-1 IRM

Elevation contours in meters

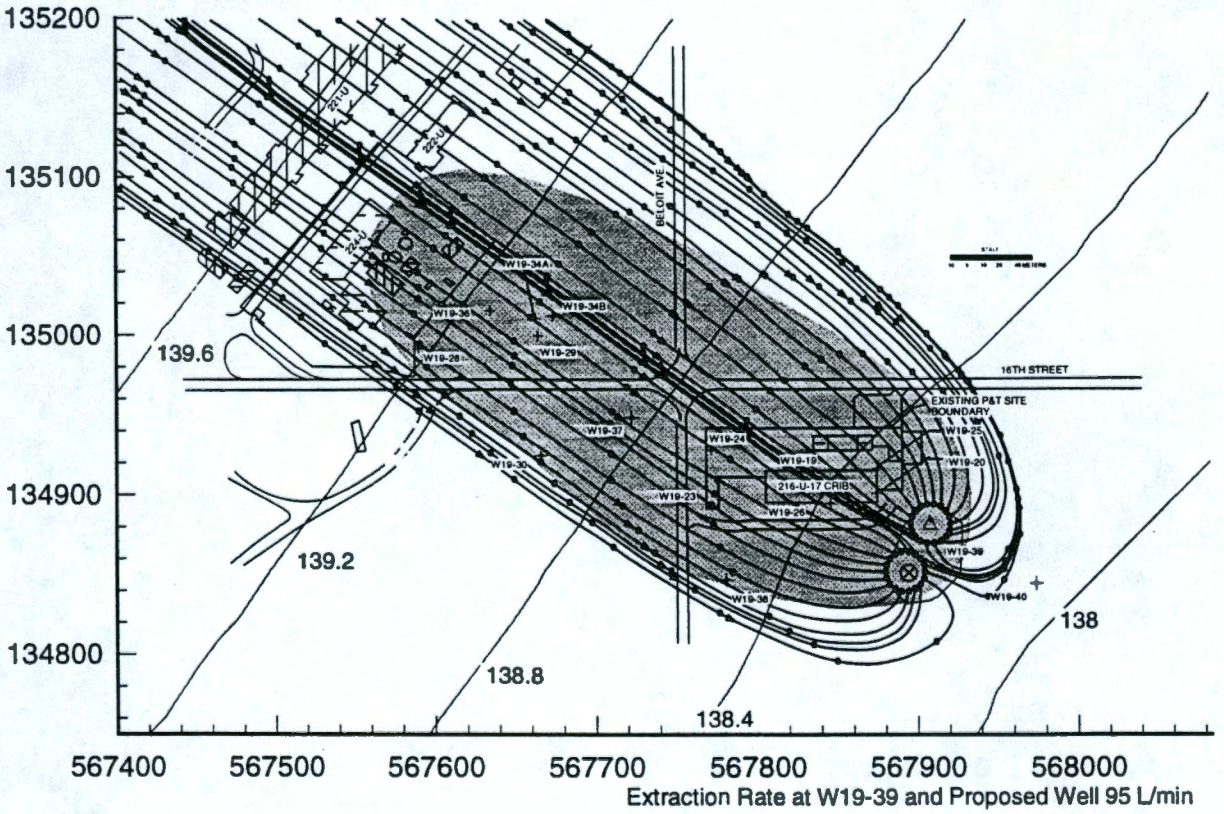
Travel time markers 0.50 years

Area where Uranium > 590 µg/L or Technetium-99 > 9000 pCi/L

△ EXTRACTION WELL

\+ MONITORING WELL

⊗ EXTRACTION WELL (PROPOSED)



Extraction Rate at W19-39 and Proposed Well 95 L/min

200-PO-1 OPERABLE UNIT

UNIT MANAGERS' MEETING

MARCH 12, 1996

AGENDA

1. MODELING RESULTS TIMELINE
2. RISK ASSESSMENT STRATEGY - SITEWIDE
3. RISK ASSESSMENT STRATEGY - 200-PO-1
4. MODELING RESULTS
5. OTHER CONTAMINANTS
6. RFI COMMENTS - MAJOR ISSUES
7. RFI COMMENTS - OTHER ISSUES

MODELING RESULTS TIMELINE

- **MODELING CONDUCTED FOR CURRENT, 2005, 2015, 2045, 2095, AND 2195**
- **DQO PROCESS IDENTIFIED 2018 AND 2128**
- **PROPOSE TO USE MODELED DATES AS OPPOSED TO DQO DATES**

RISK ASSESSMENT STRATEGY - SITEWIDE

- **RISK CONTOURS BASED ON CUMULATIVE RISK ASSOCIATED WITH MODELING CONCENTRATIONS AND HSRAM**

- **CUMULATIVE RISKS UNDER INDUSTRIAL SCENARIO FOR CURRENT AND 2015**

- **CUMULATIVE RISKS UNDER RESIDENTIAL SCENARIO FOR 2015, 2095, AND 2195**

- **CUMULATIVE RISKS CALCULATED CONSIDERING THE FOLLOWING CONTAMINANTS:**

  - **TRITIUM**
  - **IODINE-129**
  - **URANIUM**
  - **TECHNETIUM-99**
  - **CARBON TET**
  - **CHLOROFORM**
  - **TCE**

- **ONLY CARCINOGENIC RISKS CALCULATED AT THIS TIME**

RISK ASSESSMENT STRATEGY - 200-PO-1

- SAME AS SITEWIDE
- WILL CONTOUR IODINE-129 ALONE
- NEED TO DISCUSS IMPACTS FROM WEST AREA CONTAMINANTS
- WILL COMPARE INDIVIDUAL CONCENTRATIONS TO MCL
- WILL EVALUATE NITRATE AGAINST MCL
- NEED TO DISCUSS OTHER CONTAMINANT STRATEGY

MODELING RESULTS

- EVALUATED NITRATE, IODINE-129, AND TRITIUM FOR PO-1
- IMPACTS FROM PO-1 WILL BE EVALUATED FROM MODELING RESULTS FOR THESE CONTAMINANTS
- NEED TO DETERMINE WAY TO ADDRESS CONTAMINANTS FROM WEST AREA

RFI COMMENTS - MAJOR ISSUES

- **TSDs - REVIEW AGREEMENTS FROM DQO PROCESS**
- **ADDITIONAL CLARIFICATION ON COMMENTOR EXPECTATIONS**
- **FIGURES FOR TRITIUM, IODINE-129, AND NITRATE**

Distribution

Unit Manager's Meeting: 200 Aggregate Area/200 Area Operable Unit
March, 1996

Donna Wanek ..... DOE-RL, PRD (H4-83)
Mary Harmon ..... DOE-HQ (EM-442)
Richard Person ..... DOE-HQ (EM-442)

Paul Beaver ..... 200 Aggregate Area Manager, EPA (B5-01)

Dib Goswami ..... WDOE (Kennewick)
Suzanne Dahl ..... WDOE (Kennewick)

Lynn Albin ..... Washington Dept. of Health

Curt Wittreich ..... BHI (H6-02)
George Henckel ..... BHI (H4-80)
Alvina Goforth ..... BHI (H6-08)
Tom Wintczak ..... BHI (H0-11)
Tom Page (Please route to:) ..... PNL (K1-31)

Cheryl Thornhill	PNL (K1-19)	Steve Slate	PNL (K1-19)
Mark Hanson	PNL (K1-51)	Bill Stillwell	PNL (K1-30)
		Ben Johnson	PNL (K1-78)

Original Sent To: ADMINISTRATIVE RECORD: 200 AAMS Care of EDMC, WHC (H6-08)