

33167
Ark and others

~~CNS: 720144 Permit No. 123-SR1
Media: Air, Water, Solid, Hazardous
Permit No. 162-SR1
Arkansas Department of Pollution Control and Compliance Enforcement~~

*Tony Morris with Sunray
at schedule
solid waste
could
Mark
4/1/90*

MEMORANDUM

TO : Mark Witherspoon, Chief, Solid Waste Division
FROM : Tony Morris, Geologist Solid Waste Division *TM*
DATE : 5-APR-1990
SUBJECT : Groundwater monitoring at the Sunray sanitation
landfills (Permit No. 162-SR1 and 123-SR1)

The company was required by the Department to install a groundwater monitoring system as a result of compliance action for Solid Waste and Hazardous Waste violations. The nine wells in the monitoring system were located based upon a hydrogeologic evaluation of the site.

Both sites are located in gullies situated within the Boone Formation. The Boone consist of interbedded clay and chert grading down to interbedded limestone and chert. Near the base of the formation is a chert free limestone known as the StJoe limestone member. The Boone is approximately 250 feet thick in the area of the landfill and is characterized as a fractured bedrock aquifer with some fractures being enlarged by solution.

Department records indicated eight sampling events have been recorded at the site. The parameters being monitored include ten general water quality indicators and two specific indicators of a hazardous waste stream received at the facility. Attached to this report are a series of eight graphs of various water quality indicators. The graphs depict water quality trends for a particular parameter for the eight sampling events which have occurred at the facilities. The radical fluctuations noted can be attributed to seasonal water quality changes, primarily due to flushing within the aquifer. It is safe to assume that the aquifer storage is relatively low, therefore, rapid changes in water level and water quality can occur after storm events or seasonally.

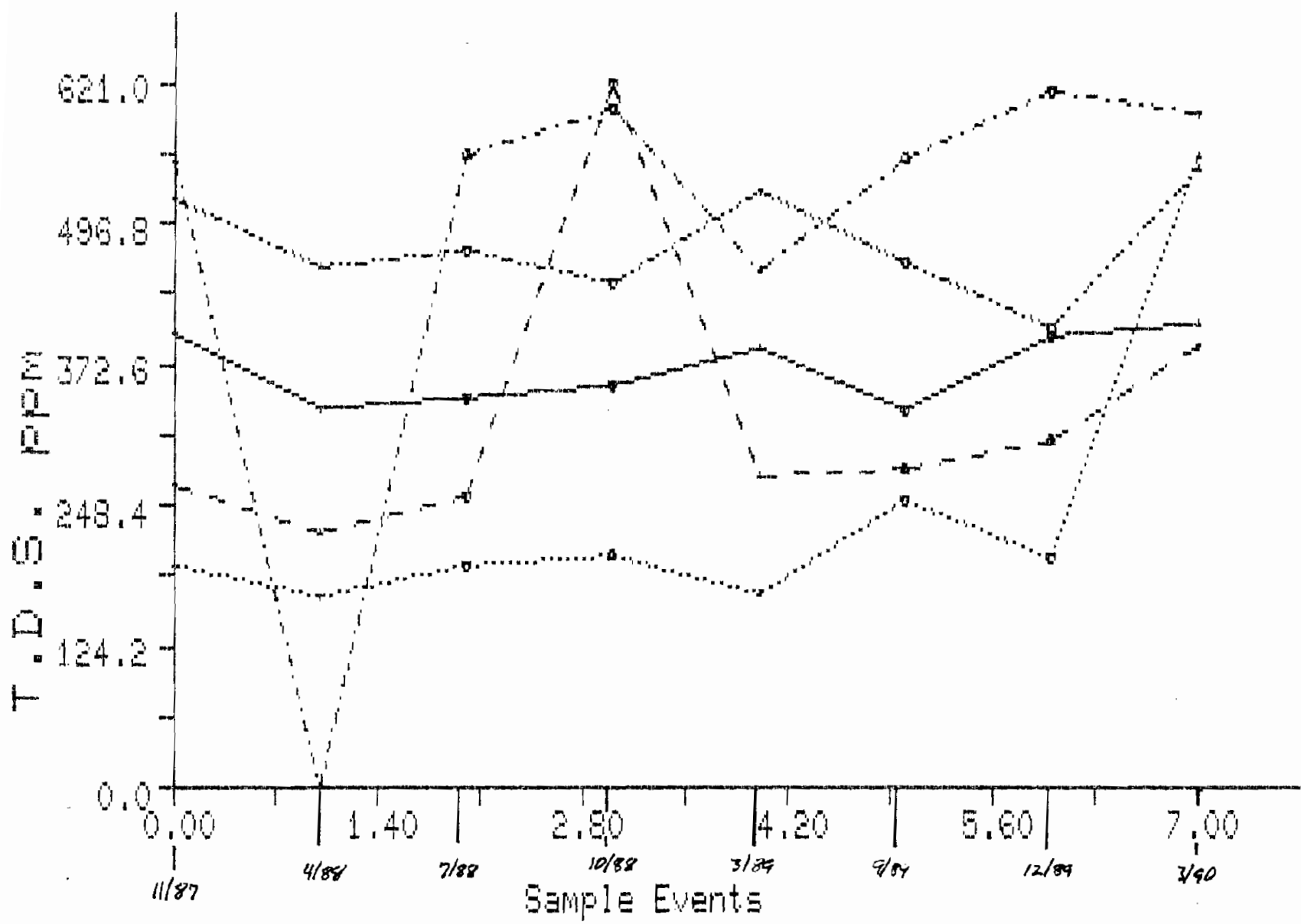
The data submitted thus far indicate the water quality between wells is much greater for each sampling event than would be expected for wells screened in the same hydrologic unit.

It is obvious from the data that several parameters exceed the National Secondary Drinking Water Standards in certain wells. Also, the last round of sampling at the facility indicated a positive detection of Methyl Ethyl Ketone in wells #7 and #9. This man made compound does not occur naturally in groundwater and is a constituent of a R.C.R.A. listed hazardous waste which was received by the facility on a regular basis prior to a 1986 legal action by the Department. Therefore, the positive detection can only be due to leakage from the landfill or laboratory error.

It would be appropriate at this time to require the facility to expand the list of parameters analysed for in the monitor well system. The list should include volatile and semi volatile compounds. The company should evaluate their sampling and analysis plan to insure the integrity of the reported values. It may be appropriate for the Solid Waste Division staff to split samples with the company at the next sampling event.

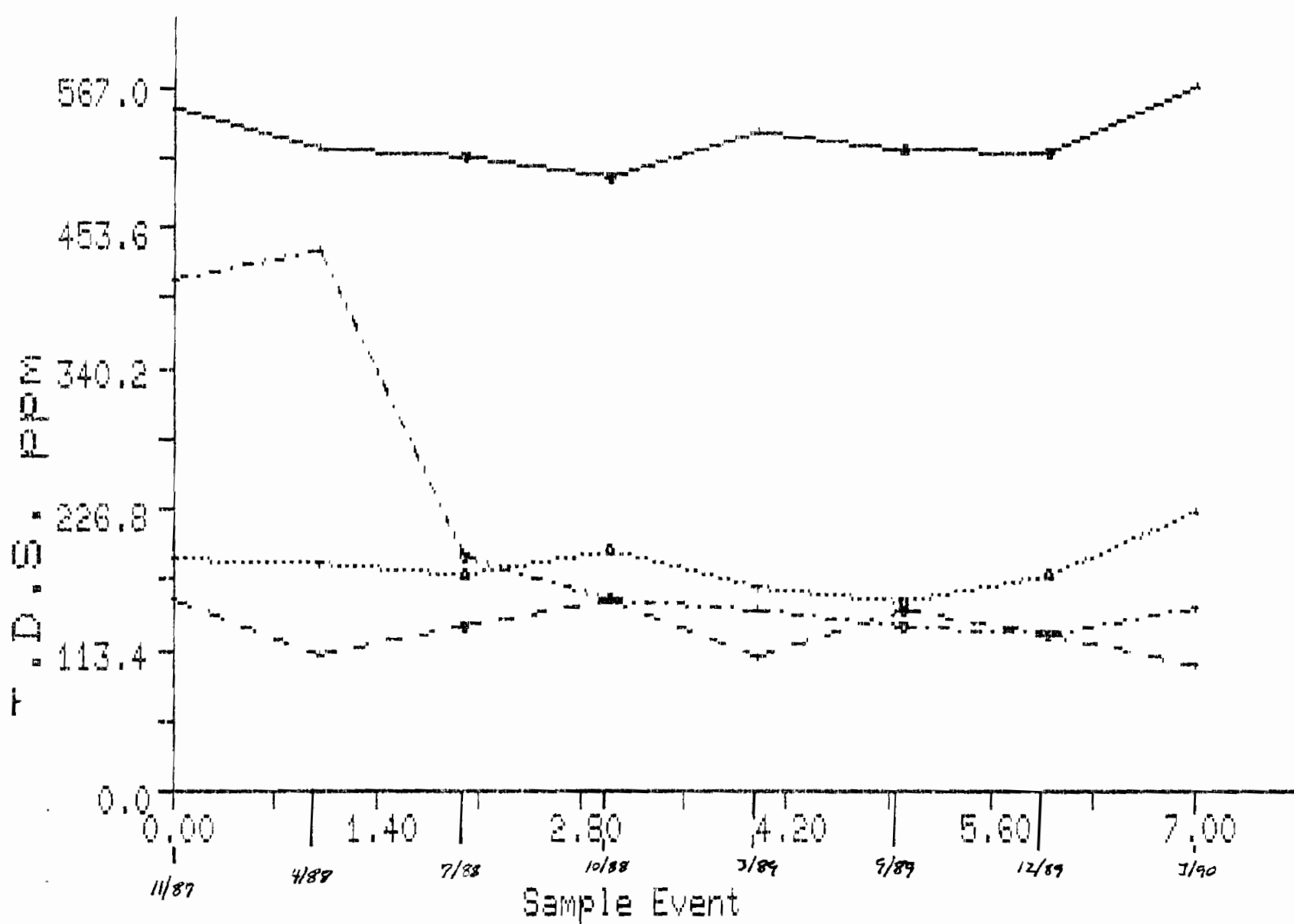
T.D.S. SR4

LEGEND



Secondary drinking water standard 500 ppm

T.D.S SR3



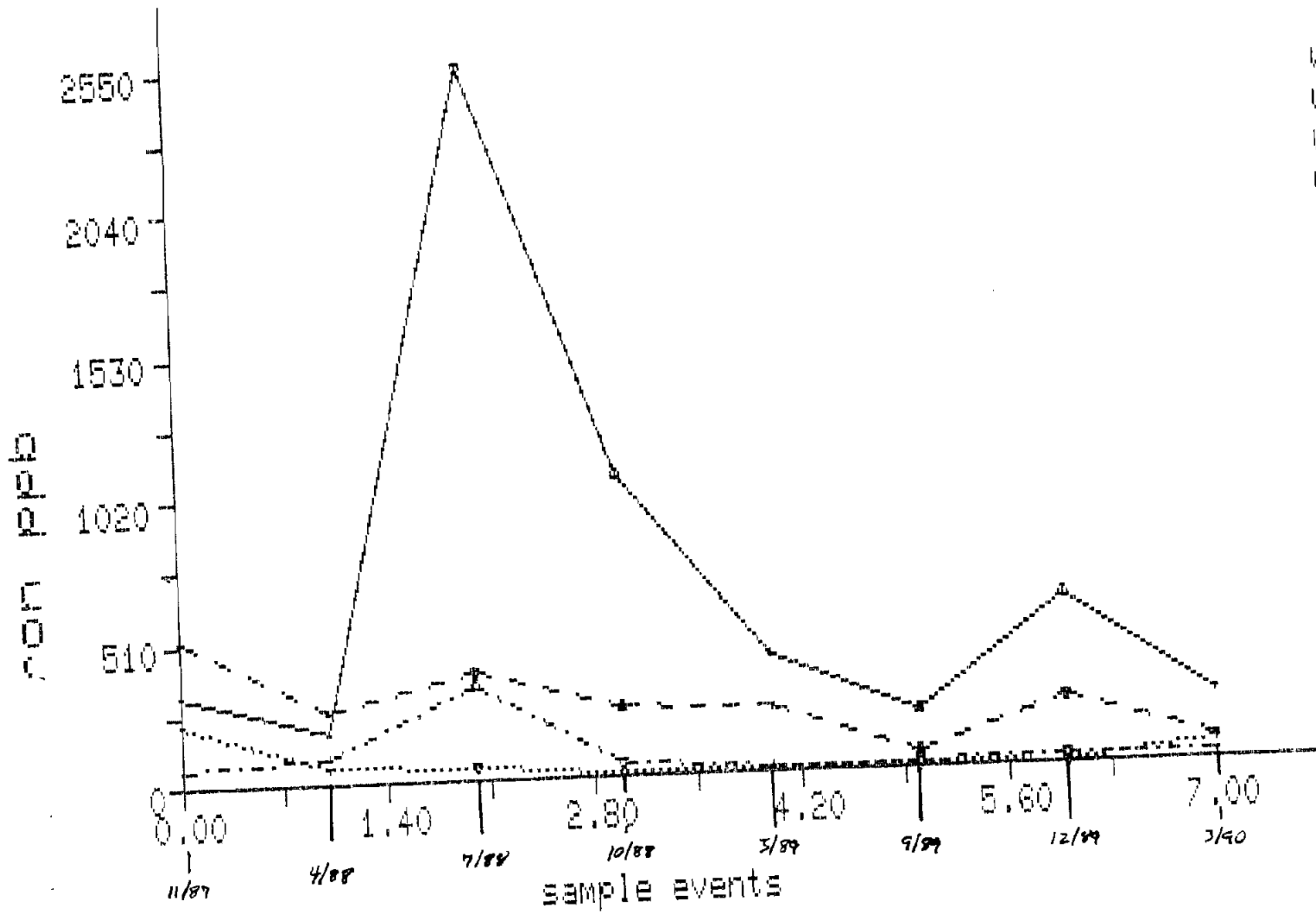
LEGEND

- well 1 ———
- well 2 - - - -
- well 3
- well 4 - . . .

Secondary drinking water standard 500 ppm

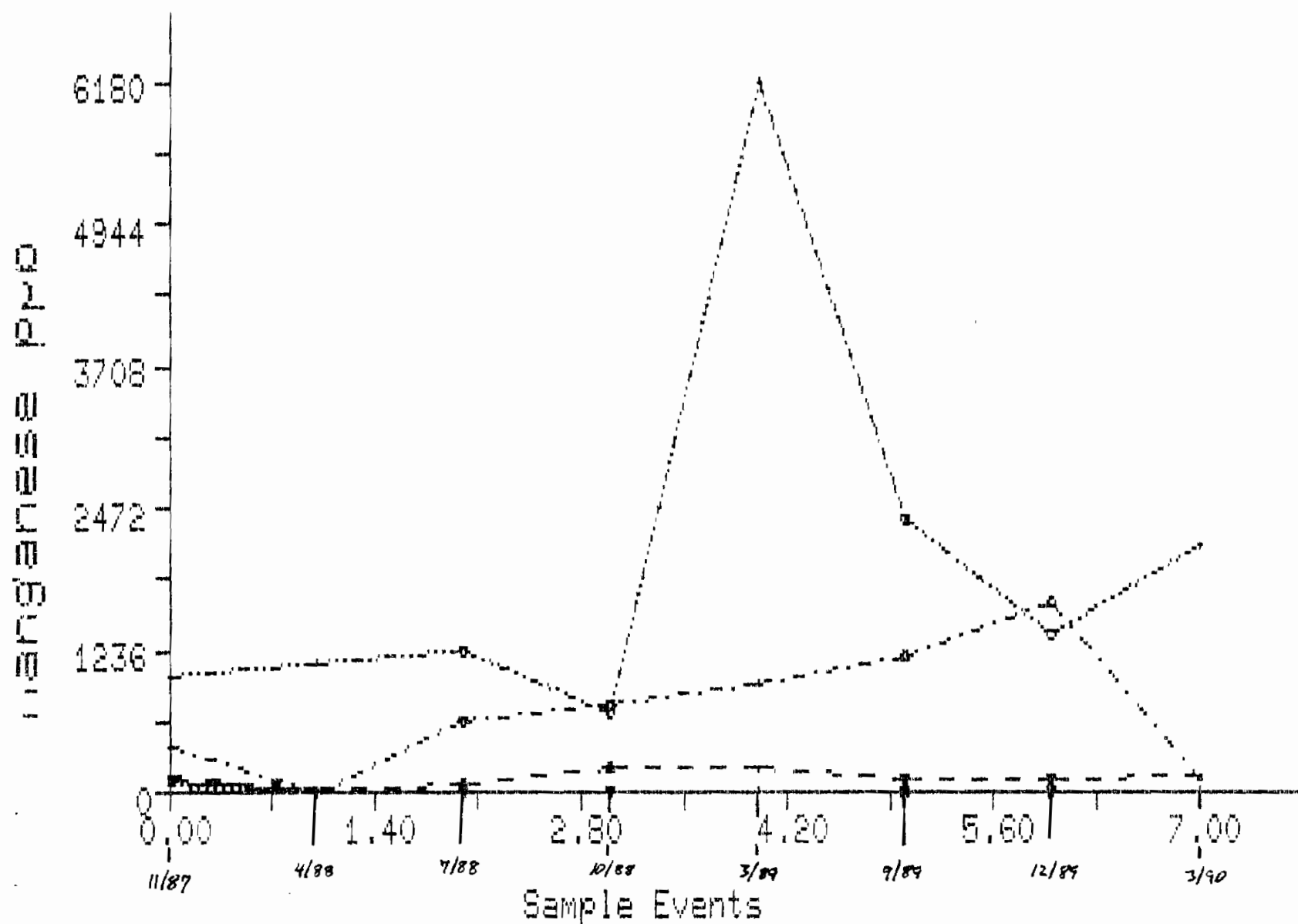
Iron SR3

LEGEND



Secondary drinking water standard 300 ppb

Manganese SR4



LEGEND

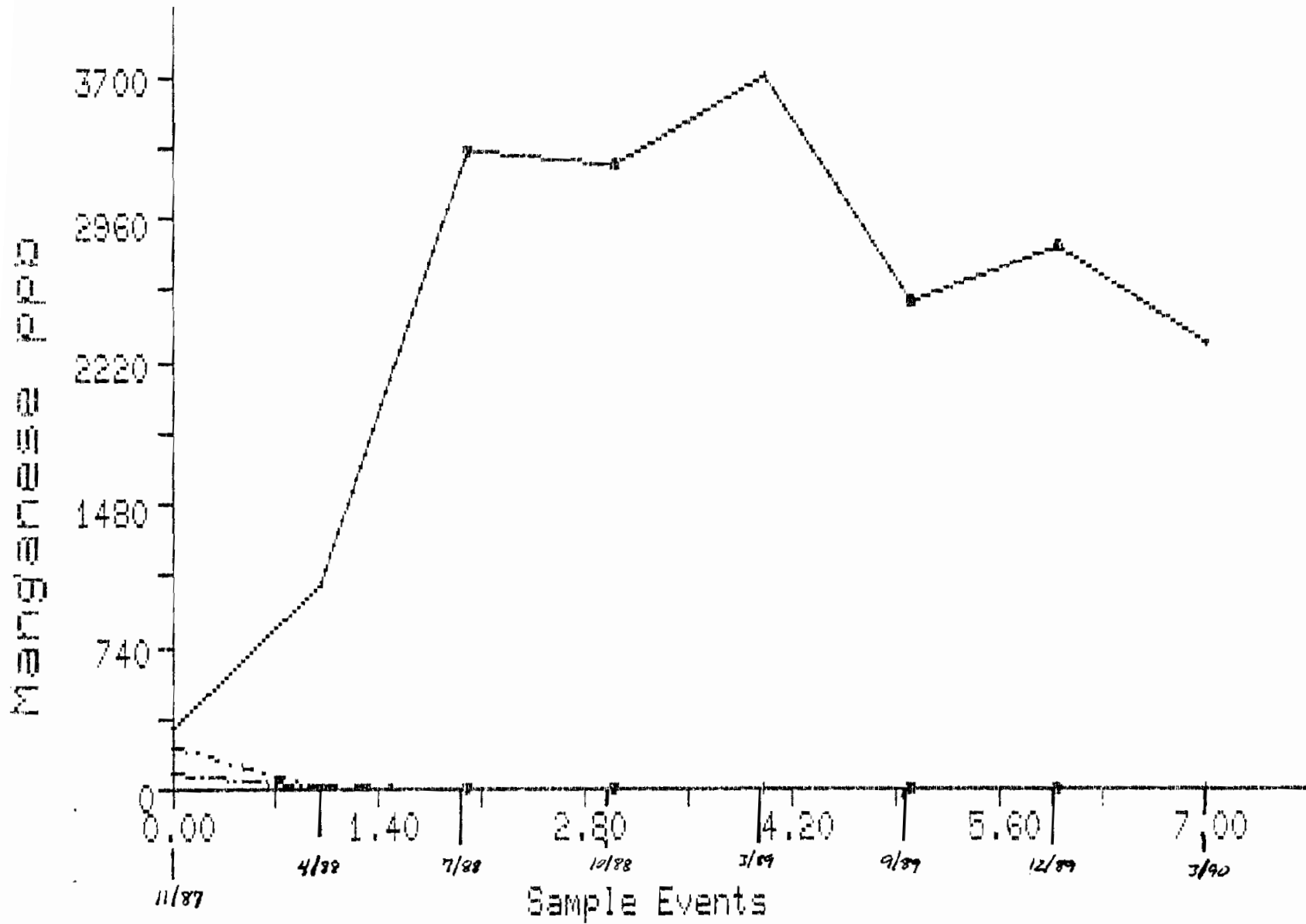
- Well 5
- Well 6
- Well 7
- Well 8
- Well 9

Secondary drinking water standard 50 ppb

Manganese SR3

LEGEND

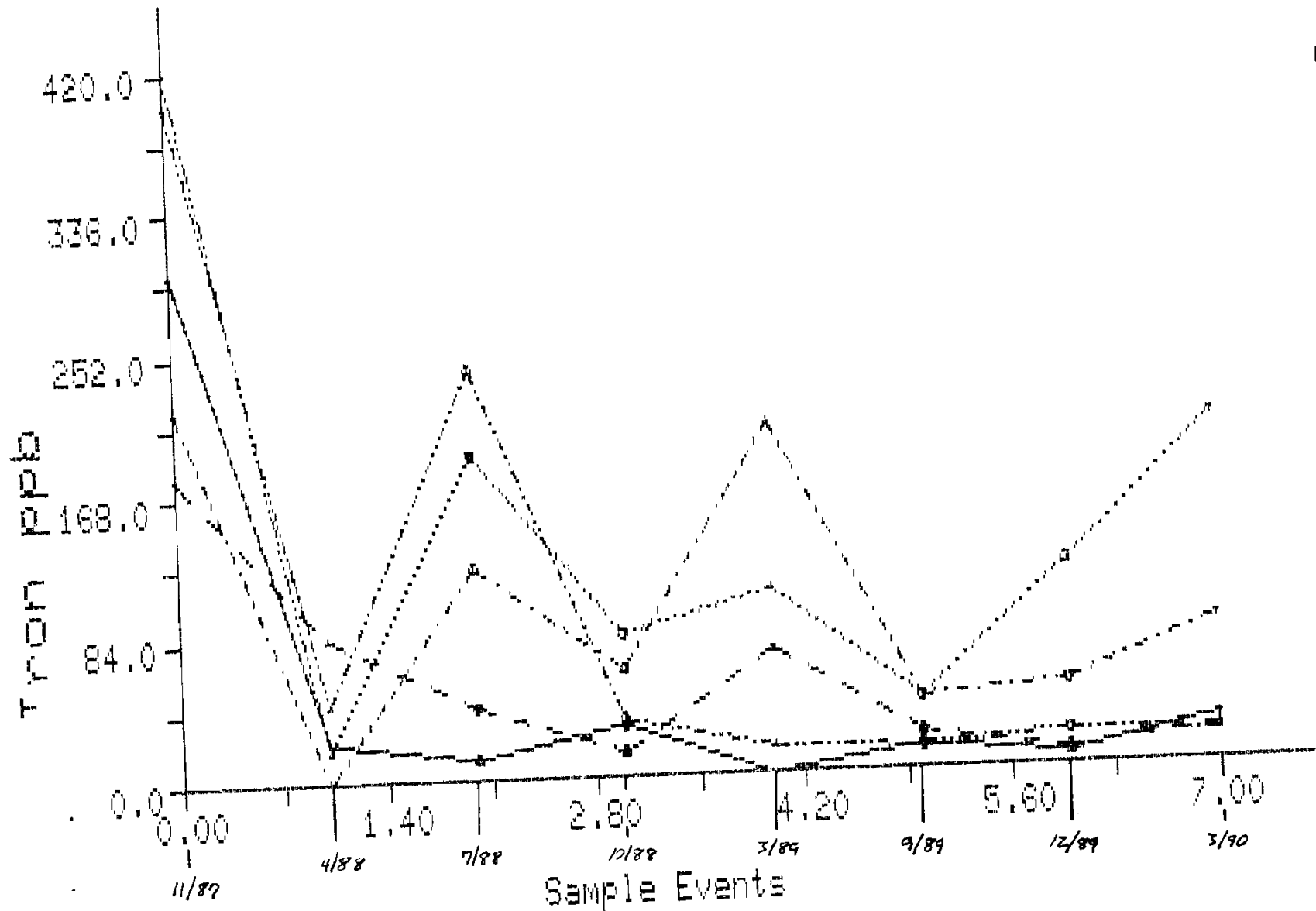
- well 1
- well 2
- well 3
- well 4



Secondary drinking water standard 50 ppb

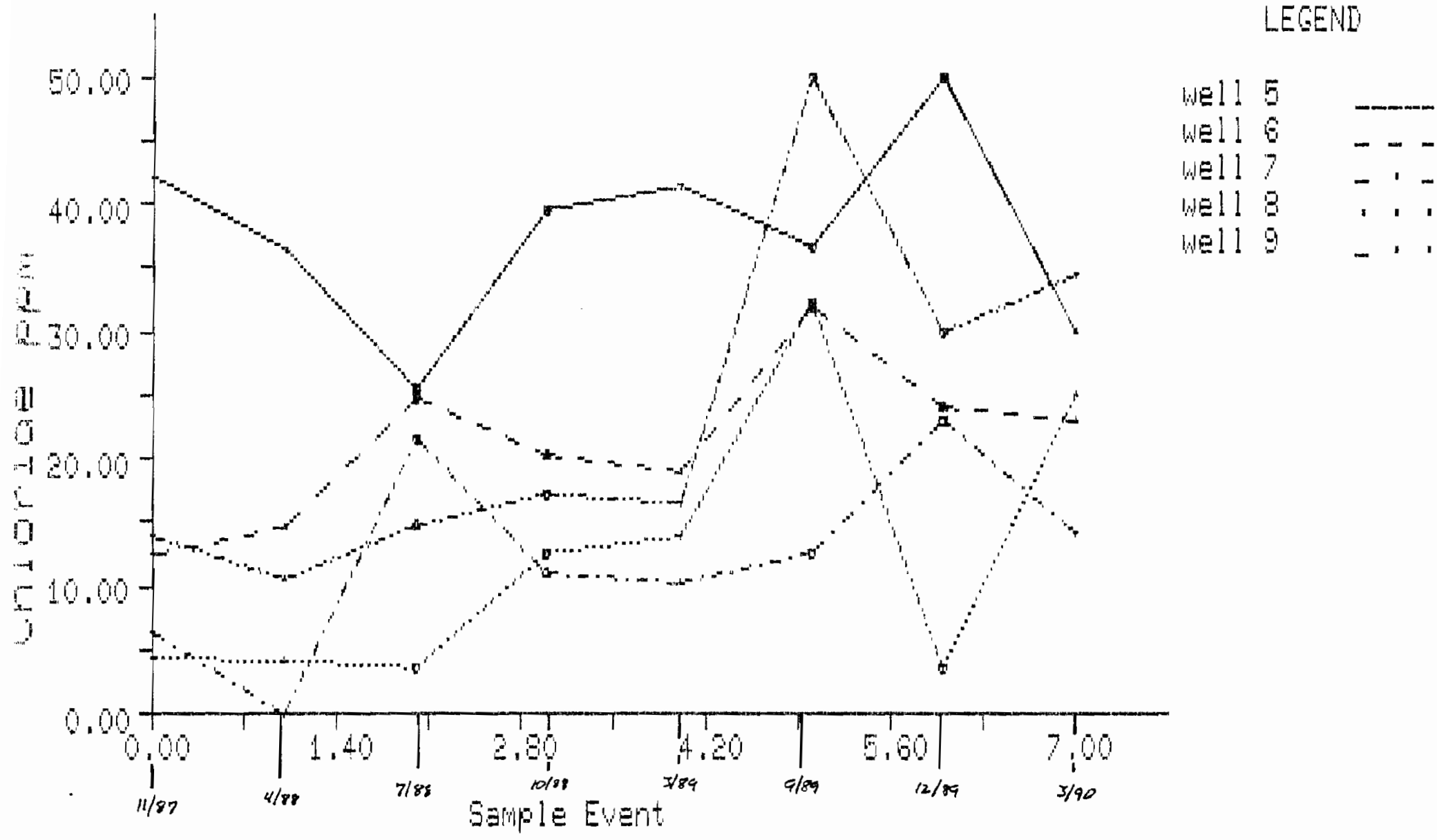
Iron SR4

LEGEND






Secondary drinking water standard 300 ppb

Chloride SR4



Chloride SR3

LEGEND

- well 1 
- well 2 
- well 3 
- well 4 