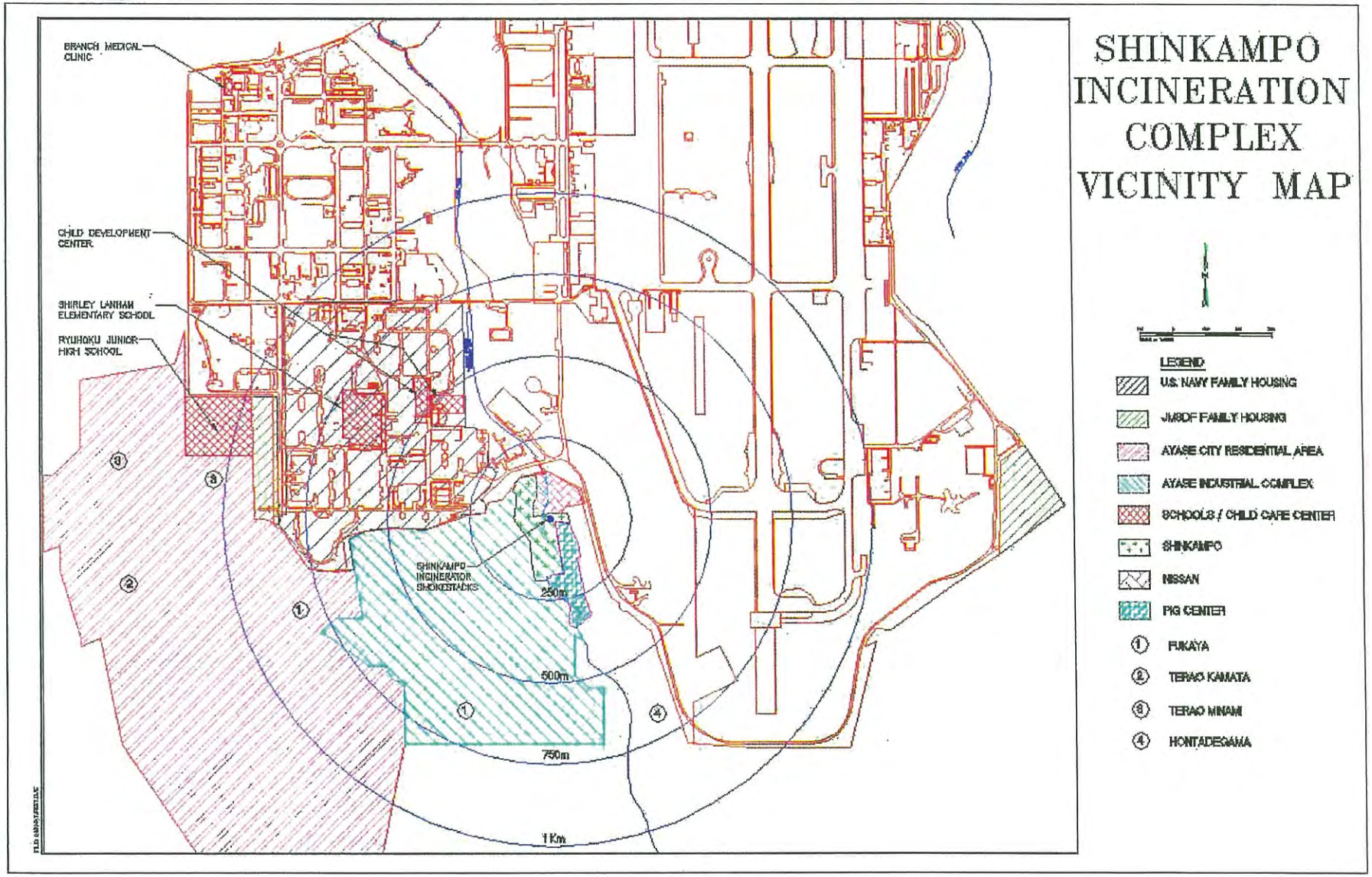
Monitoring Shinkampo's Operations & Impact on NAF Atsugi

Shinkampo's Proximity to NAF Atsugi



Shinkampo--Early 1980's

Challenges to Safe Incineration

Elevation:

Site in valley below housing
Valley channels wind
Little or no dispersion
Fumigation

Proximity:

250 meters from housing

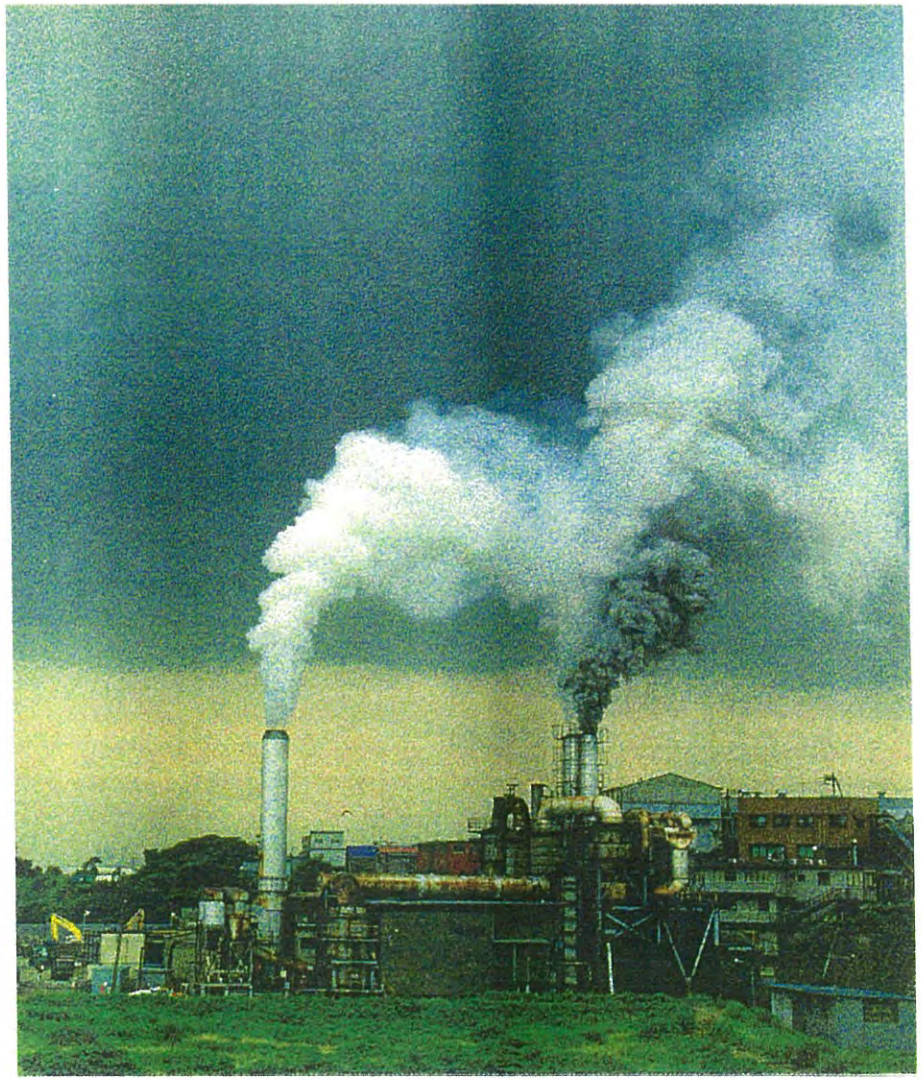
Challenges to Safe Incineration

Equipment:

- Short stacks
- Antiquated anti-pollution system
- Decrepit condition

Operations:

- Illegal, unsound practices
- Wide variety of waste



Shinkampo in Prefectural Context

Unlike privately-owned industrial waste incinerators, municipal incinerators are state-of-the-art, completely enclosed facilities with tall stacks.

Shinkampo's Customers

- Collection & Transportation permits with 8 prefectures, 5 cities, & Tokyo metro
- Major governmental customers:
  - ➢Ministries of Finance, Construction & Justice, Japan Highway Public Corp.
  - ➢Kanagawa Prefecture & its Urban Renewal Public Corporation
  - ➢19 cities, including Ayase

Shinkampo's Incineration Waste Streams

- General Industrial Waste
  - Industrial solvents
  - Construction debris, plastics, rubber
  - Organic residue
- Specially Controlled Industrial Waste
  - Alkali with pH>12.5
  - Infectious industrial waste
  - Special categories of petrochemicals

Reactions to Shinkampo's pollution

- Headache
- Breathing problems
- Upper respiratory disease

- Nausea
- Skin rash
- Eye, nose & throat irritation
- Increased Cancer Risk

Japan Air Pollution Law

- Incinerator dioxin limits

  New incinerators: 0.1 ng/cubic meters

  Existing incinerators: 80 ng/cubic meters (from 1997-2002)

  1 ng/cubic meters after 2002

- Japan regulates stack emission only, not ambient air as in US. Japan does have a non-regulatory standard for ambient dioxin of 0.8 pg/m3
- New standard of 0.6 pg/m3 15 Jan 00 - 15 Jan 01

1995 Air Quality Report Results

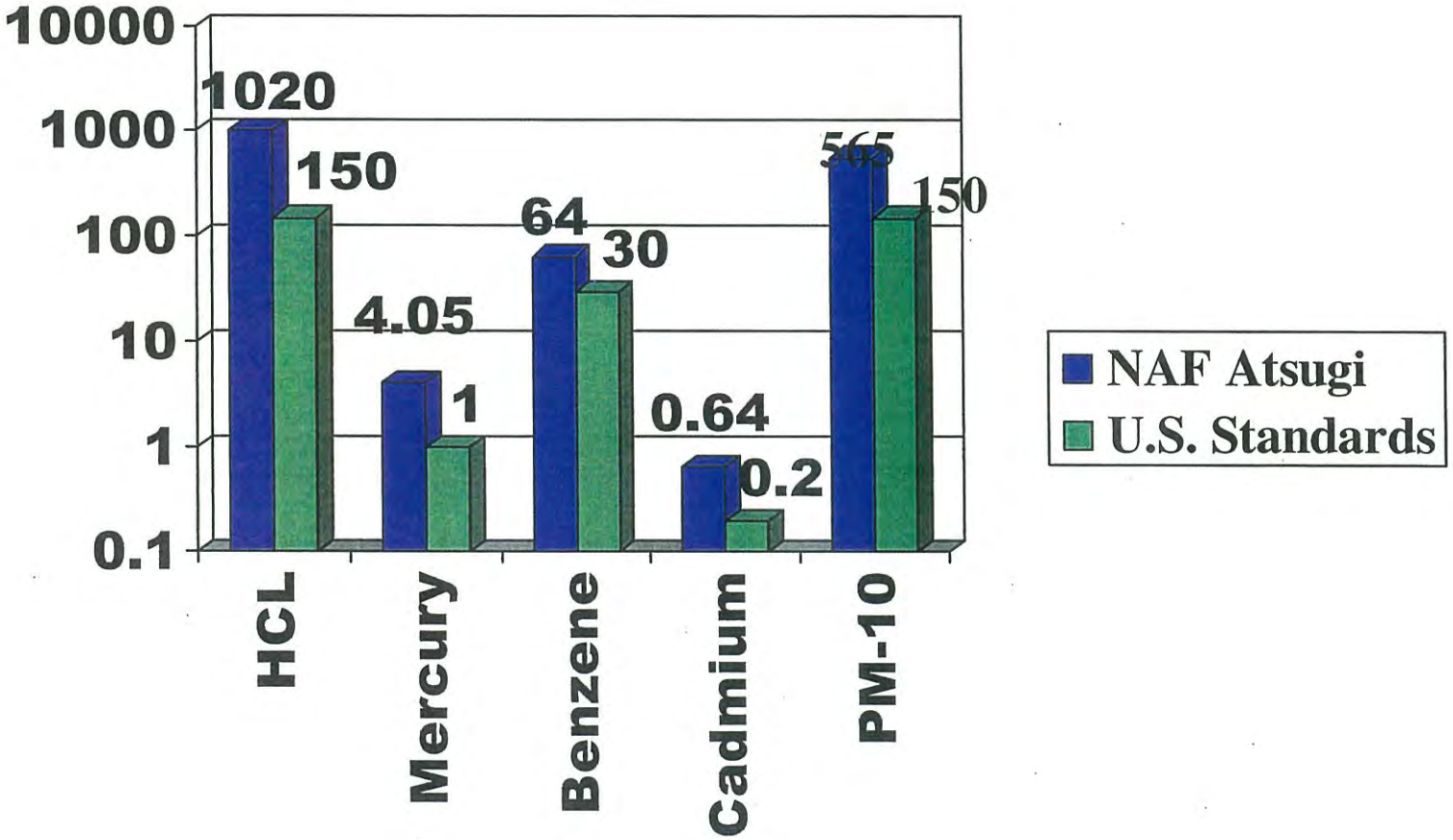
Engineering Study

- 12 pollutants exceeded U.S. standards.
- Shinkampo primary source of these pollutants.

Health Risk Evaluation

- Incinerator emits chemicals known to cause cancer & upper respiratory disease.
- 3 year exposure elevated cancer risk by 40 adults/million & 110 children/million.
- 3 pollutants significantly exceeded level for noncarcinogenic health effects.

Comparison of 1995 Ambient Air Data to U.S. Standards



1995 Air Quality Report Conclusions

- Pollution in NAF Atsugi's air poses an unacceptable level of risk and imminent health hazard to exposed populations.
- Shinkampo incinerator emissions are the primary source of the base's pollutants.
- At the observed levels, U.S. regulators would require a risk generating activity to immediately suspend operations.

1997 Air Quality Study

- Japanese environmental attorney consulted for sampling plan
- Nine ambient air monitoring stations & 33 sets of soil samples
- Data specifically developed for Letter of Objection submitted by RADM Haskins to Kanagawa Governor Okazaki

Results of 1997 Air Quality Study

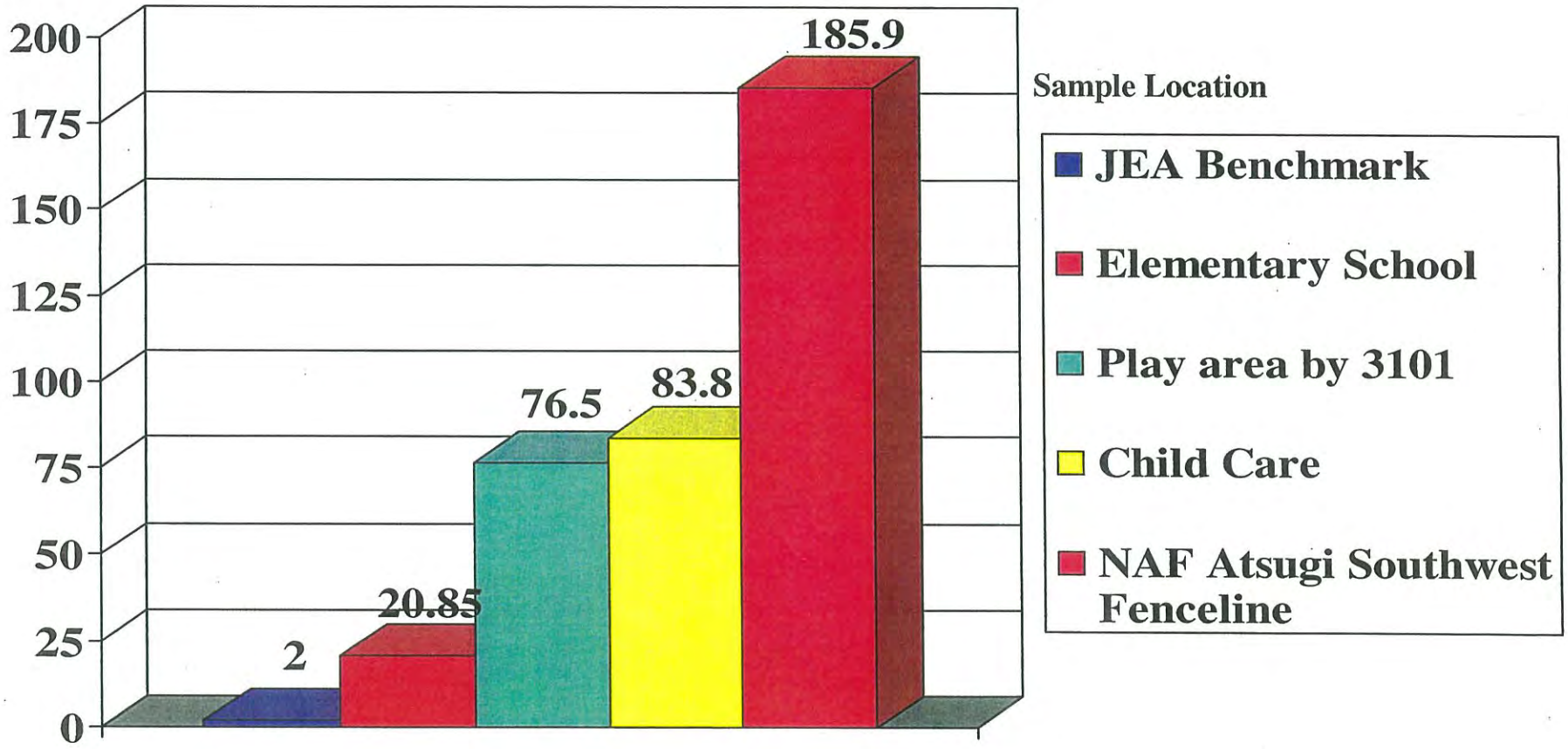
- **Before Shinkampo noticed monitors**
  - **Dioxin: 660 ng/m^3 (US: 10 ng/m^3)**
  - **Lead: Highest level lab had ever seen (3.3 ug/ m^3 vs 1.5 ug/m^3 U.S. std)**

- **After Shinkampo noticed monitors**
  - **NOX, SOX, VOC mostly non-detect**
  - **Dioxin & metals high but not extraordinarily so**

- **Elevated Levels of Soil Dioxin**

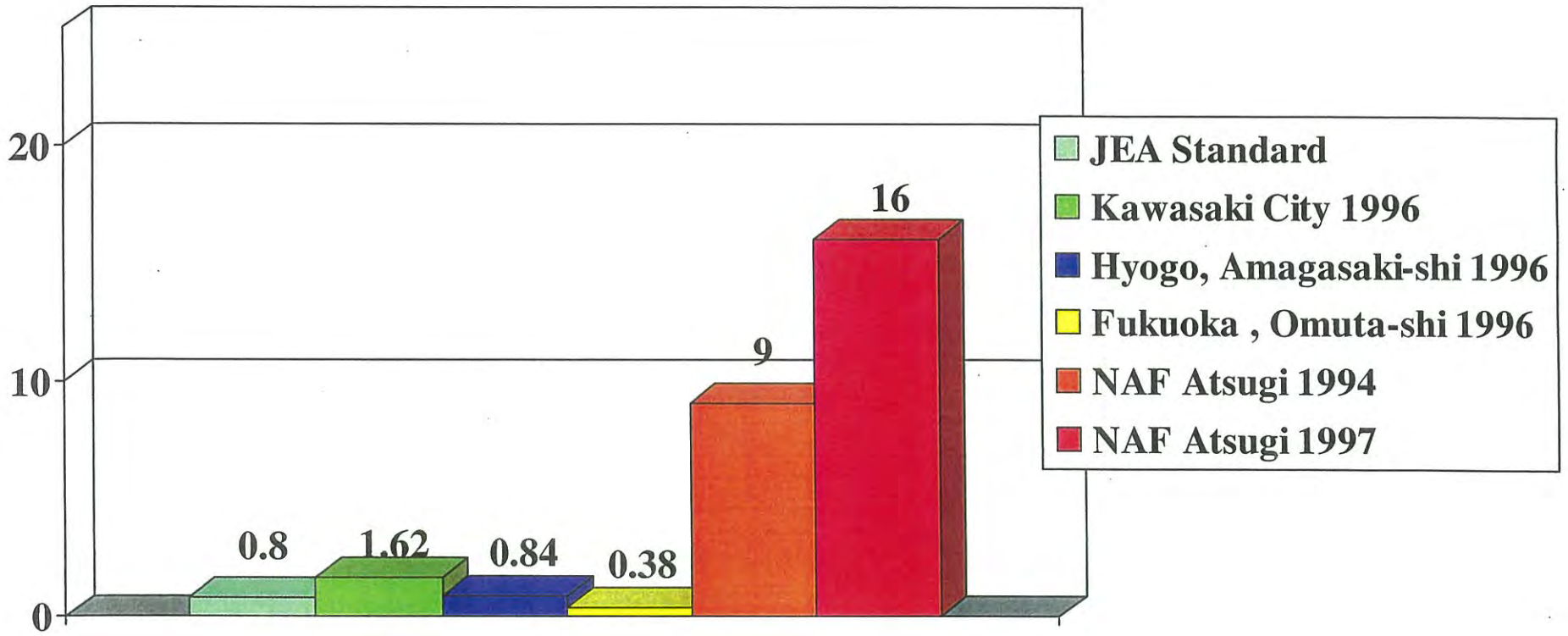
1997 NAF Atsugi Dioxin Soil Sampling

TEQ picograms/gram (TEQ pg/g)

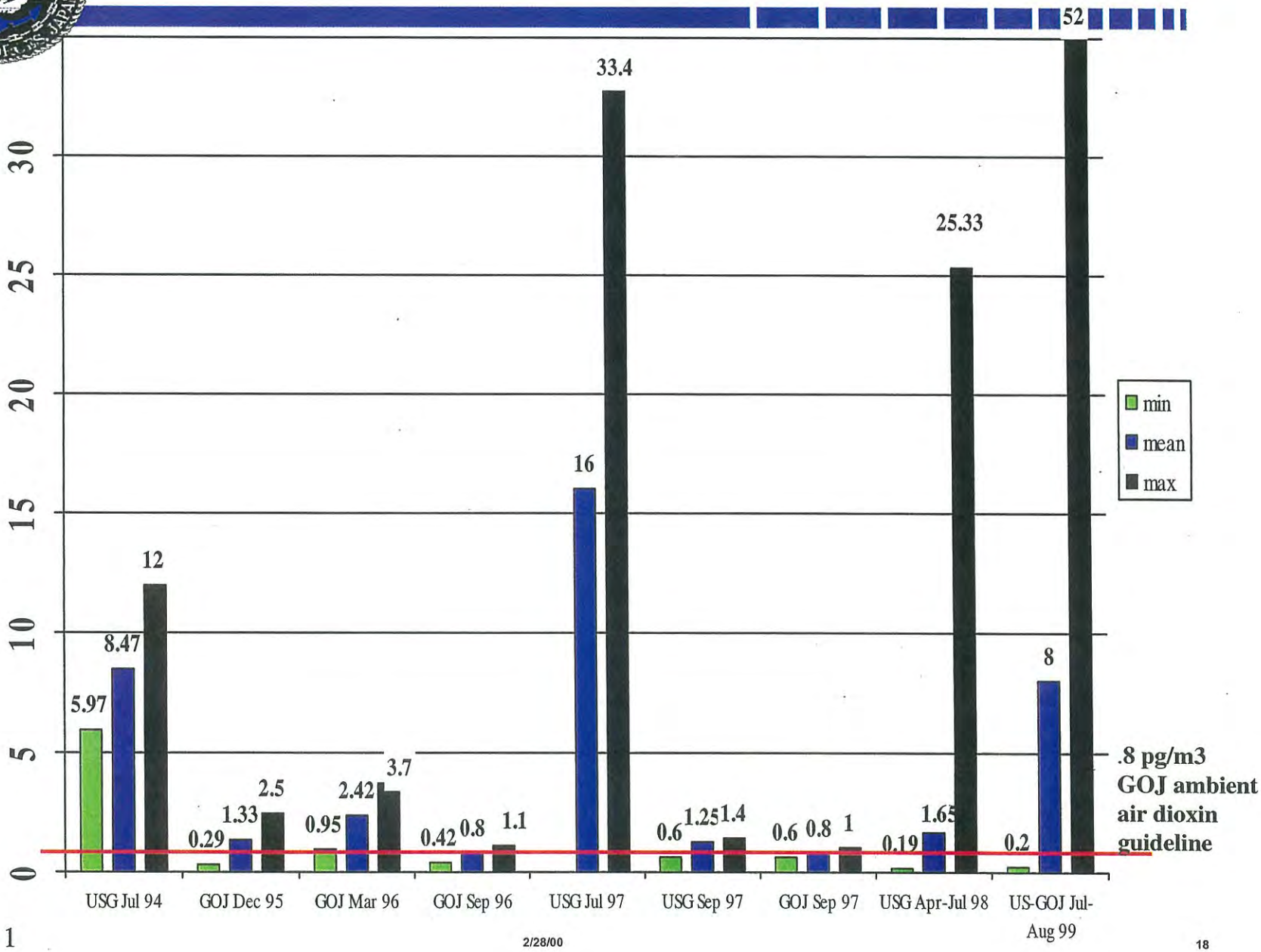


Dioxin Concentrations in Ambient Air

TEQ picograms/cubic meter (TEQ pg/m^3)



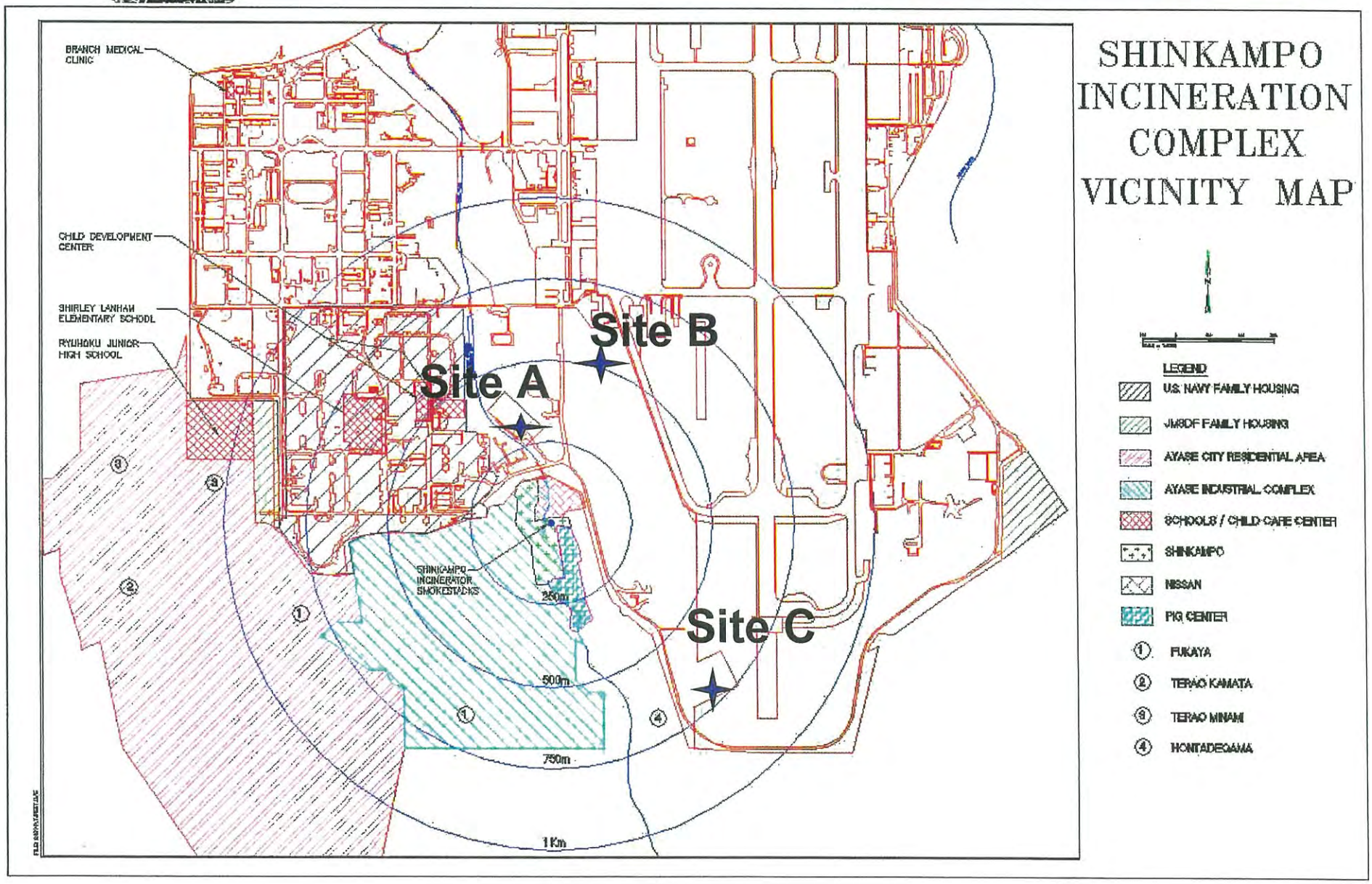
US-GOJ Ambient Air Dioxin Sampling Comparisons at NAF Atsugi



N005 Figure 1

Joint Monitoring Sample Sites

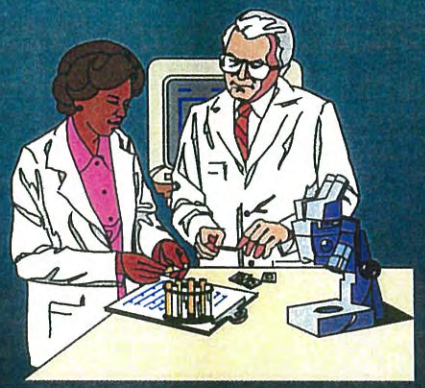
Ambient Air



The 1998/1999 Health Risk Assessment

12 Months of Data Collection beginning March 98

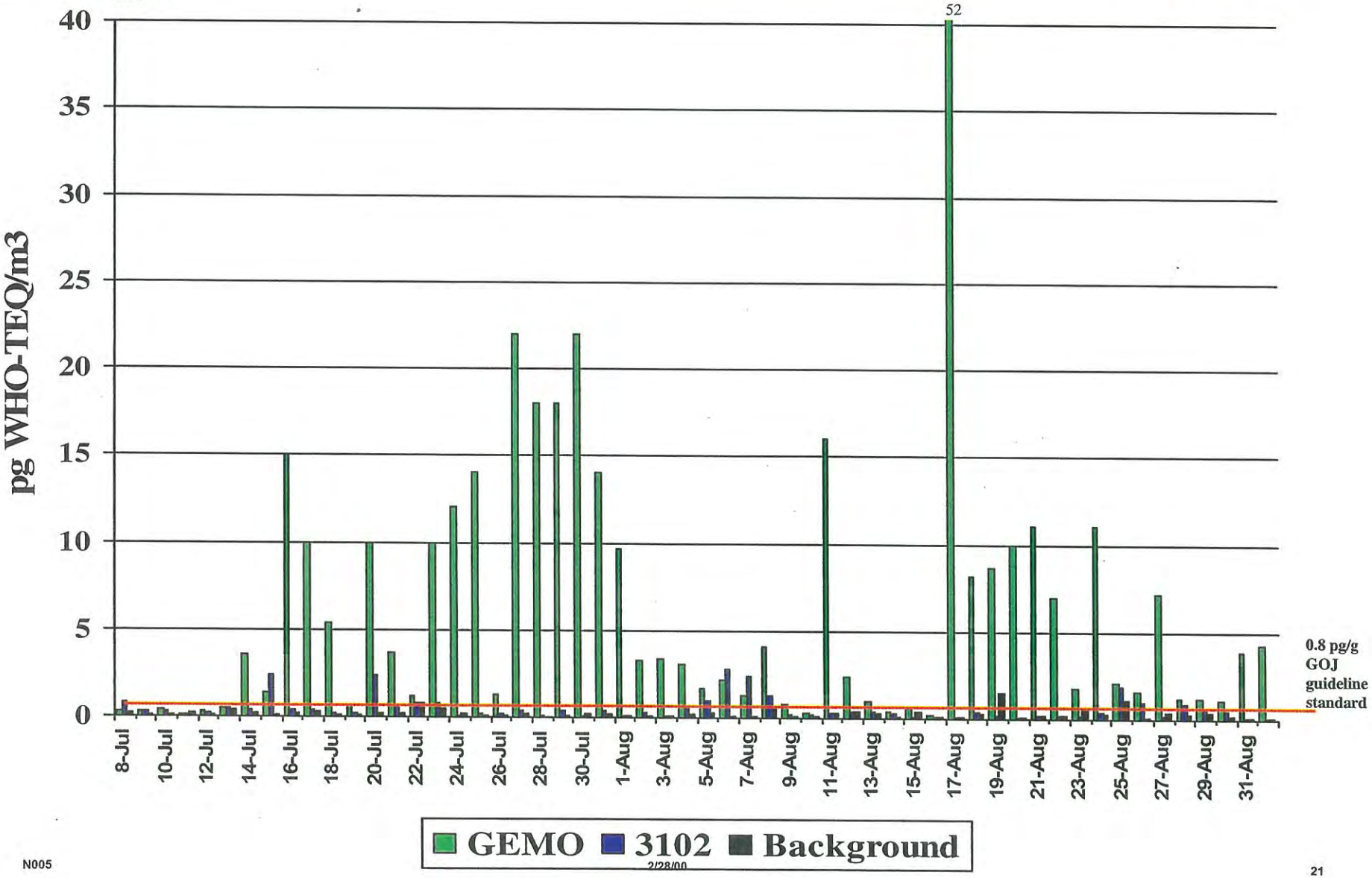
- 5 fixed ambient air monitoring stations
- Mobile extractive FTIR ambient monitor
- Quarterly indoor air sampling
- 31 soil sampling sites
- Food chain & water pathway analysis
- Risk Communication to all hands



Sampling Complete in June 99--Report Due….JUN 00

1st, 2nd, 3rd Qtr Data points to report results similar to 95/97

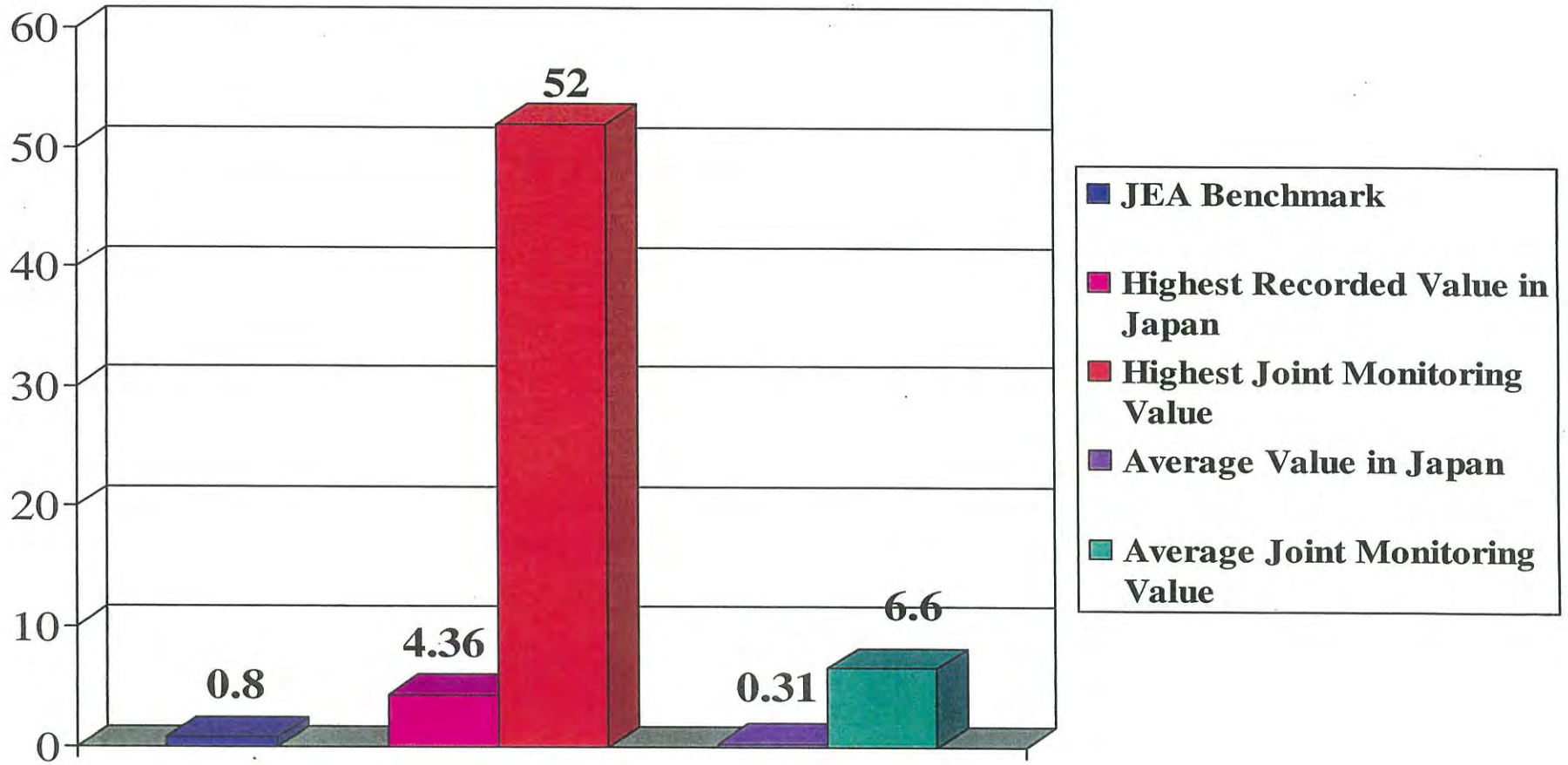
NAF Atsugi Ambient Air Dioxin Joint Monitoring--Jul & Aug 1999



Ambient Air Dioxin Sampling

NAF Atsugi Joint Monitoring Comparison to Recorded Values in Japan

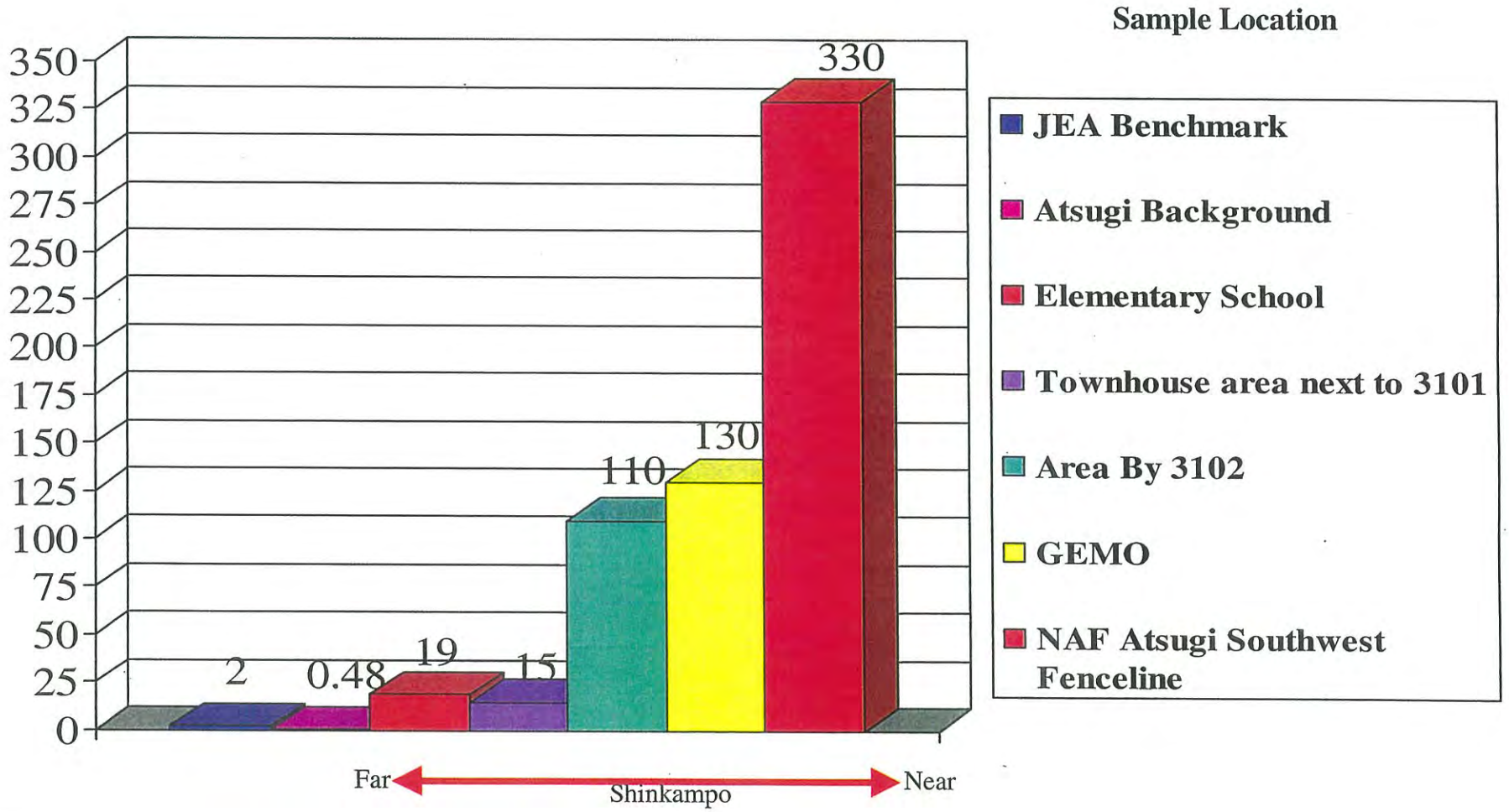
TEQ picograms/cubic meter (TEQ pg/m3)



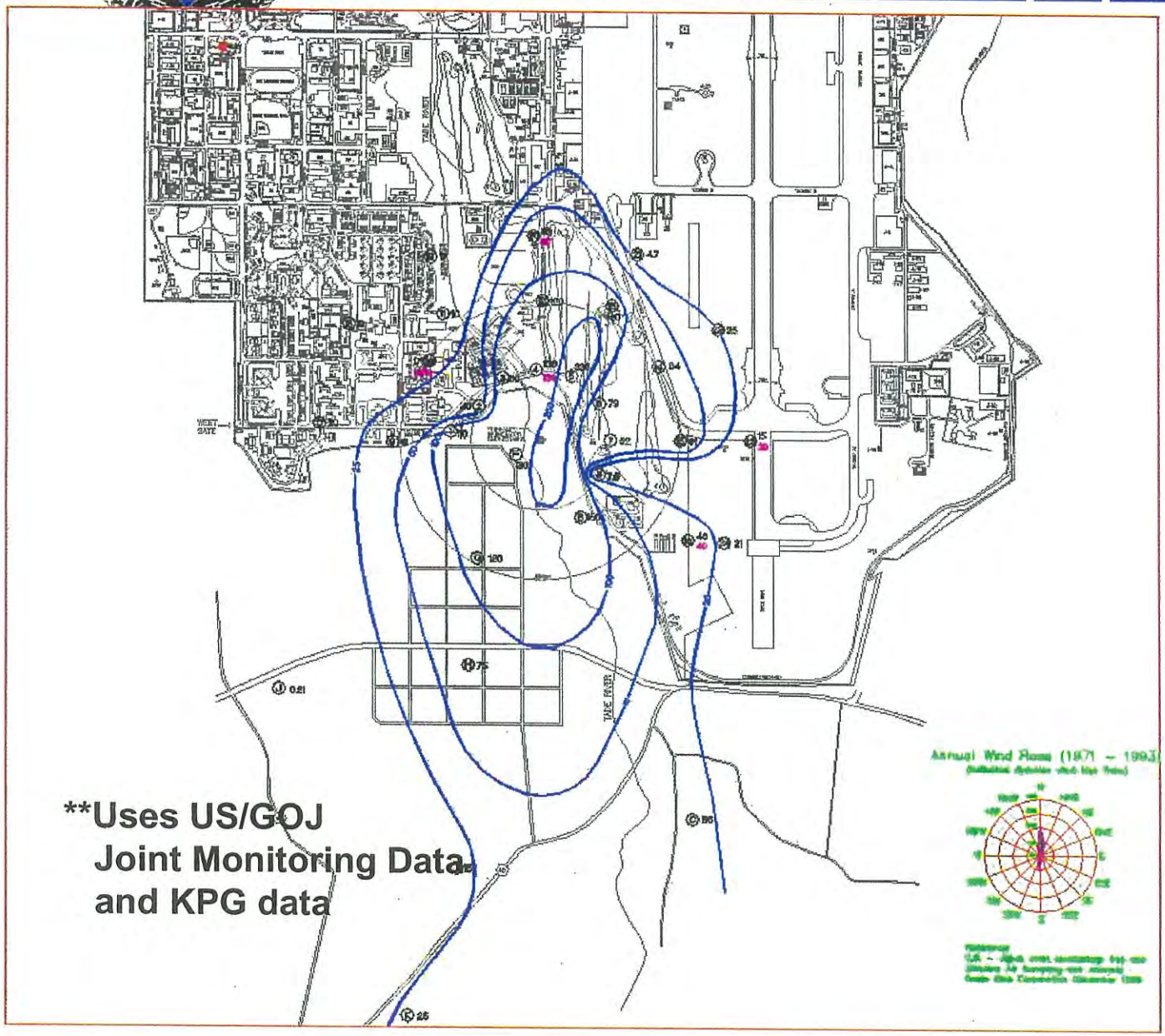
Atsugi Dioxin Soil Sampling

Joint Monitoring-July 1999

TEQ picograms/gram (TEQ pg/g)

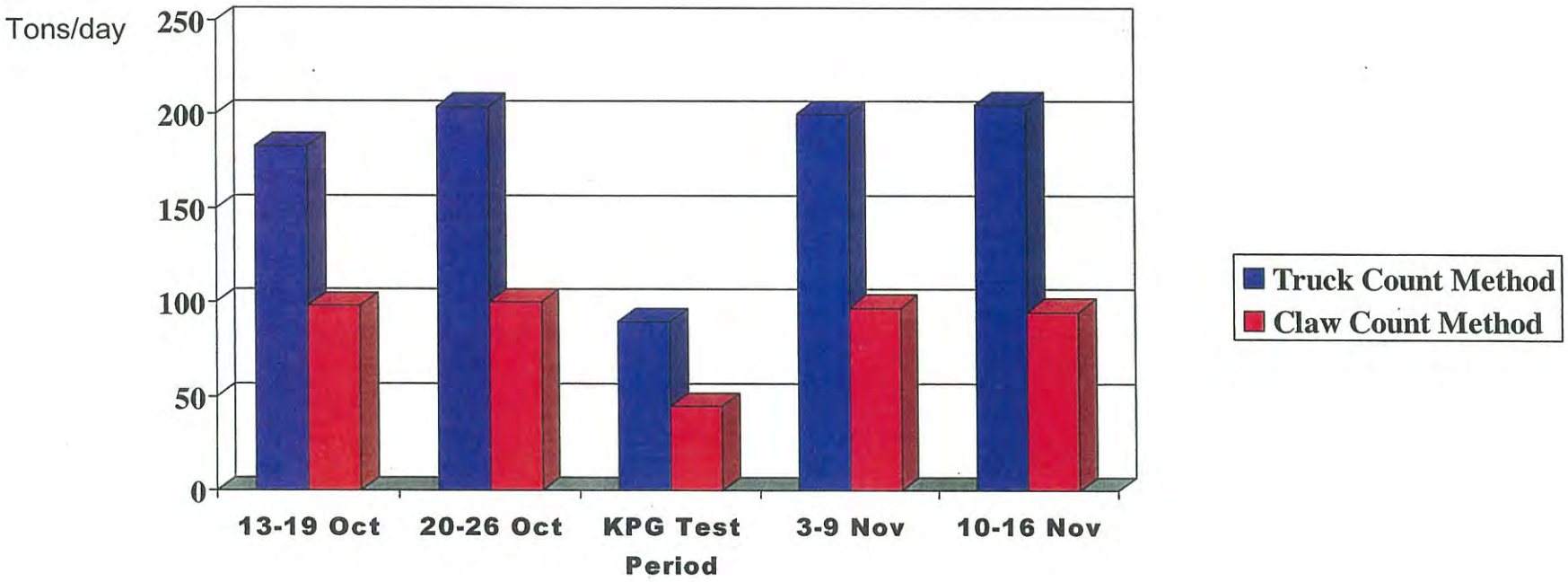


Soil Sampling Bull's-eye



**Uses US/GOJ Joint Monitoring Data and KPG data

Shinkampo's Reaction to KPG Monitoring

Oct 1999:

Upon release of JM data, KPG conducts own publicly announced air sampling. Shinkampo modifies operations during the 7 day sampling period in an effort to skew the data