



Science and Communities: ESR's consultation work with the Paritutu community

Funded by the Ministry of Health

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Specialist Science Solutions

Manaaki Tangata Taiao Hoki
protecting people and their environment through science

Presentation outline

- **Study Purpose & Background**
- **Phase I: Consultation**
 - **How ?**
 - **Who was involved ?**
 - **Key Issues**
- **Phase II: Study Design**
 - **Selection criteria for serum testing**
- **Conclusion**

Study Purpose

- **Study to investigate allegations of exposure (current and historical) to dioxins for residents living in proximity to Ivon Watkins Dow chemical plant in Paritutu.**

Phases I & II

- **Phase I: Consult with community and stakeholders to design an appropriate scientific study.**
- **Phase II: Conduct a study to assess community exposure to TCDD, if, in fact, exposure had occurred.**
 - Serum / blood testing
 - Up to 100 samples
 - Determine possible exposure not health effects

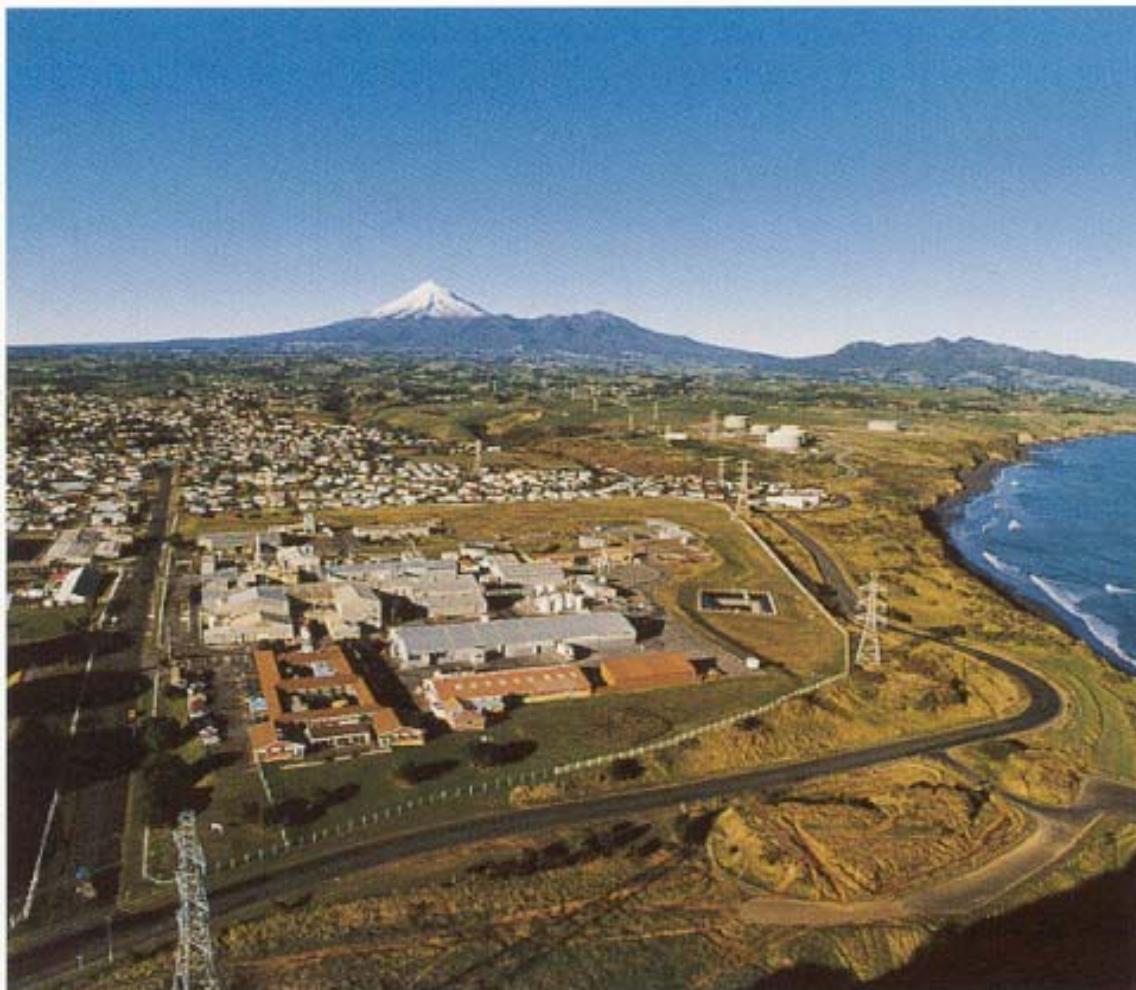
New Zealand

Auckland
Wellington
Christchurch



New Plymouth

– the home of Dow AgroSciences (NZ) Limited







Purpose of Phase I Consultation

- **Relationship building with key stakeholders**
- **Establish 'facts'**
 - Revisit previous NZ govt studies
 - Acknowledge local expertise
 - Share international literature
- **Listen to local concerns and ensure science addresses these to best extent possible**
- **Involve those most affected by the issue in the study design**

Consultation Processs

- **Paritutu Community Health Liaison (PCHL) Group**
- **One on one meetings with stakeholders to check that PCHL group encompassed all those who 'ought' to be involved**
- **Expanded consultation through stakeholder / interest group networks**
- **Principles: Active listening, acknowledgement of community expertise, open information sharing, being accessible**

Paritutu Community Health Liaison Group

- Taranaki Health
- Paritutu Residents Association
- Ngati Te Whiti hapu
- Te Puni Kokiri
- Cancer Society
- M.S. Society
- New Plymouth District Council
- DIN (Dioxin Investigation Network)
- DIAG (Dioxin Investigation Action Group)
- DLAG (Dioxin Legal Action Group)

Other stakeholder groups

- **Ivon Watkins Dow (now Dow AgroSciences)**
- **Taranaki Regional Council**
- **Ministry of Health**
- **Ministry for the Environment**
- **OTAG (Organochlorines Technical Advisory Group)**
- **Poisoned Peoples Assn**
- **RIMPAC**
- **N.Z. Vietnam Veterans**
- **Greenpeace N.Z.**



Community Concerns

Ngati te Whiti / Residents Assn

- Is it safe to live in Paritutu now ?
- Is it safe for our children and grandchildren living in the area ?
- Property values

Activist Groups

- Blood testing wrong method, need to test adipose tissue
- Concern that samples would be pooled
- Too much time elapsed since exposure to get positive result – therefore study flawed
- NZ background levels high (1998 national organochlorines survey not a good control)

Outcomes from Phase I

- **Better understanding of community concerns**
- **Some agreement on historical ‘facts’**
- **Boundaries of study (what science can /can’t do discussed)**
- **MfE soil study (2002) to address current safety concerns**
- **MoH (ESR) study to investigate historical exposure**

Community Input to Phase II Study Design

- Reviewed general content of selection questionnaires
- Agreed blood serum testing on individual samples
- Agreed comparison with age / gender matched cohorts from 1998 national survey
- Small targeted study for historical exposure
- Local data helped inform modelling
- Community nominated laboratory - Axys, Canada
- Community nominated peer reviewer – Hatfield Consultants Ltd, Canada

Phase II: Exposure Study Design

1. Advertising (national newspapers, local posters, leaflets) and mailing of Questionnaire 1
2. Assessment of Q1 / selection for Q2
3. Assessment of Q2
4. Analysis of Questionnaire data & Modelling
5. Final selected participants
6. Blood sampling, collection & analysis
7. Final report & results for participants

Selection questionnaires

Questionnaire 1: Exposure Factors

- Residential location
- Time and duration of residence
- Home produce consumption

Questionnaire 2: Toxico-kenetic Factors

- Age, Gender
- Children & breastfeeding
- Bodyweight history
- Exclusion criteria
(occupational exposure etc)

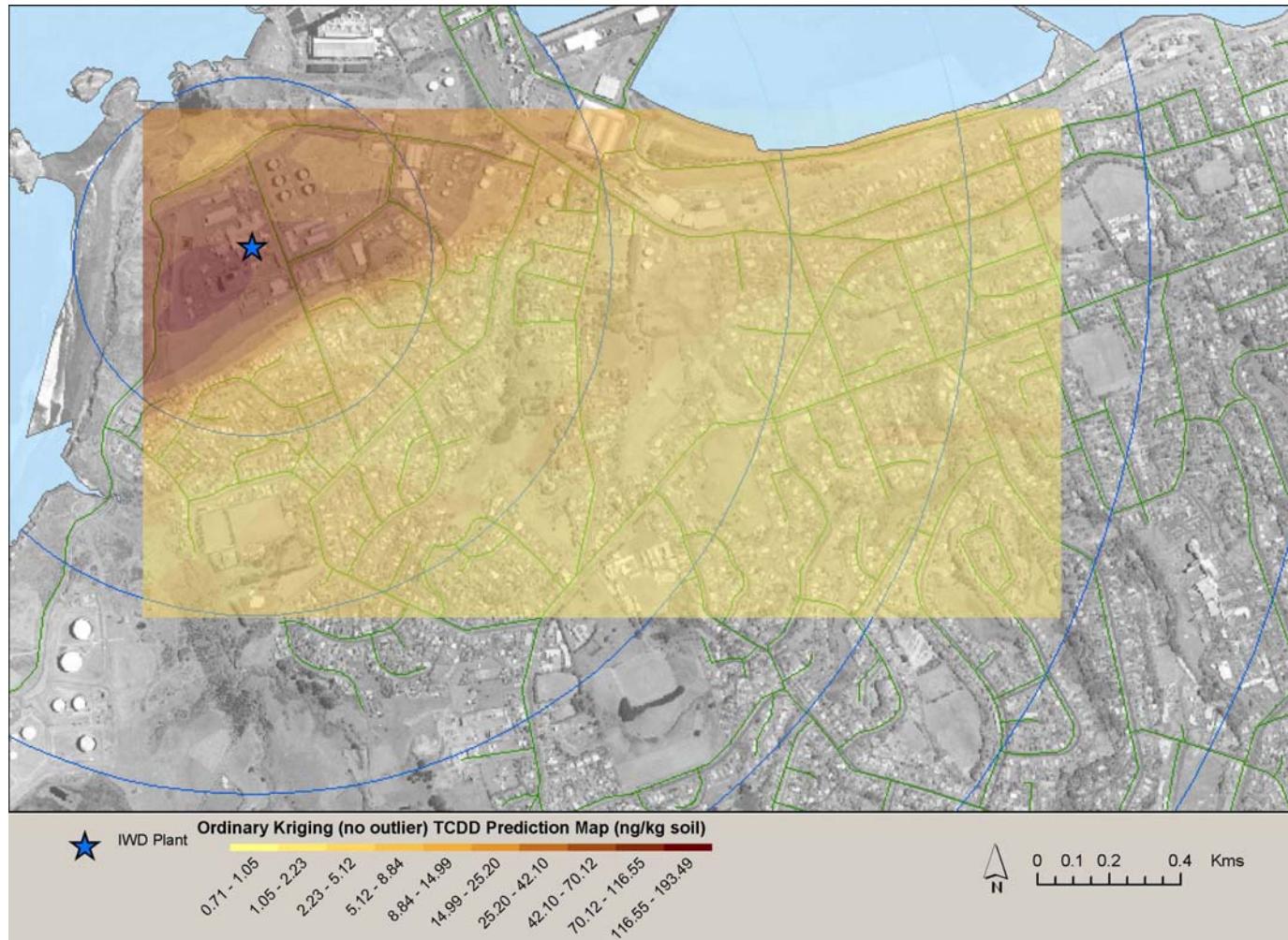
Modelling

- **Soil Modelling of TCDD in the community**
- **Air Dispersal Modelling for 1986 explosion**
- **Toxico-kinetic modelling for individuals**
- **Multipathway modelling for predicting total TCDD exposures**

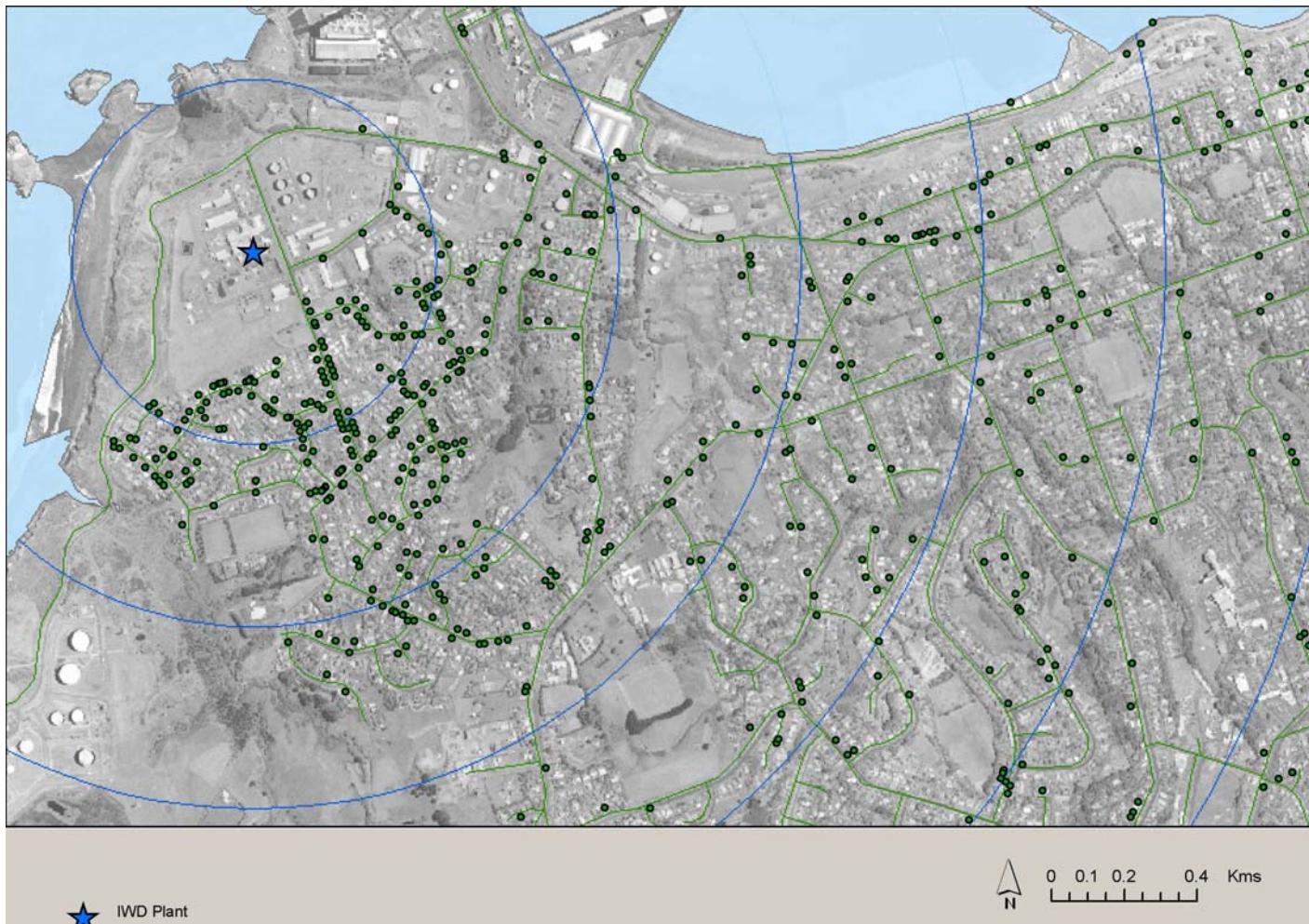
Selection Criteria

- Must have lived in the area at least 1 year between 1962-1987
- Must not have worked at IWD
- Did not have an occupation that involved potential TCDD exposure (i.e. herbicide spraying, timber treatment)
- Did not live for a substantial time overseas (more than two years)

Spatial Prediction Model of Soil TCDD



Location of Residents Expressing an Interest in Participating



Lessons from Phase I

- **Science can investigate, but will not ‘fix’ this problem**
- **Communicating boundaries is very important**
 - ESR’s mandate for action limited
 - Integrate anecdotal evidence
- **‘Independence’ key**
- **‘Best practice’ risk management or consultation principles are difficult to apply to ‘worst case scenarios’**

Conclusions

- The Paritutu community was consulted and had input into the study design
- The study was designed to select and test the serum of those most likely to have had historical exposure to dioxin
- The study was completed successfully and evidence of exposure was found
- On completion, the study design and results were not disputed by the community

Acknowledgements

ESR Ltd

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Ministry of Health

<http://www.moh.govt.nz/>