

ESPERANCE CLEANUP AND RECOVERY PROJECT

MINUTES OF STEERING COMMITTEE MEETING

11 March 2010

Present:

Mr Michael Jackson	Co-ordinator, Esperance Community Consultations (Chair)
Mr Paul Clifton	Shire of Esperance
Mr Matthew Devenish	Esperance Cleanup and Recovery Project (ECRP)
Dr Charles Douglas	Department of Health (DOH)
Mr John Fischer	Department of Transport (DOT)
Mr Lindsay Gillam	Department of Health (DOH)
Mr. Alex Leonard	Esperance Port Authority (EsPA)
Mr Martin Matisons	Department of Health (DOH)
Mr Peter McCafferty	ChemCentre
Ms Pam Norris	Locals for Esperance Development (LED)
Ms Samantha Parkyn	Esperance Cleanup and Recovery Project (ECRP)
Mr Peter Skitmore	Department Environment and Conservation (DEC)
Ms Christine Smith	Community Representative
Mr Kieron Smith	Esperance Cleanup and Recovery Project (ECRP)
Mr Marcus Tromp (ECCI)	Esperance Chamber of Commerce and Industry
Mr Wayne Winchester	Esperance Cleanup and Recovery Project (ECRP)

Apologies:

Ms Jenny Brodie-Hall	Community Representative
Ms Michelle Crisp	Locals for Esperance Development (LED)

1. Opening of Meeting and Review of Agenda

The Chair welcomed Members and noted apologies from Jenny Brodie-Hall and Michelle Crisp.

This meeting was conducted by video conference from two locations. Those Esperance based Members participated from the GEDC conference room in Esperance and Perth based Members participated from the DEC conference room in Perth. Dr Charles Douglas participated by teleconference from Kalgoorlie.

It was agreed that the following additional items would be included in the Agenda for discussion:

- ECRP Project - Update Issue 11
- ECRP Policy on Asbestos Roofs [Discussed under item 9]
- Update on the implementation of the recommendations of the Golder Report on "Esperance Town-Site Human Health and Ecological Risk Assessment" [Discussed under item 13(b)]

2. Minutes of Previous Meeting

The Minutes from the previous meeting, 11 November 2009, had been accepted as a true record out of session and loaded onto the OnCue Website accordingly.

3. Actions from the previous meeting - 11 November 2009

i. Community blood lead testing

At the September 2009 meeting it was agreed to offer a one off intravenous blood testing program after the cleanup of Esperance is completed, as a final validation step.

Action: At the November 2009 meeting, Dr Charles Douglas agreed to provide advice on the approximate costs of conducting such a community blood lead survey.

Status:

Members noted:

- Advice from Dr Douglas that it was not possible to give precise costings for such a survey as this would depend on the number of participants. If the number of participants was low and the numbers presenting were at a steady rate, these could be accommodated using existing resources with minimal costs. However, if there was a high demand for blood lead testing, then additional staff [most likely two full time staff over a period of about 6 weeks] would need to be employed with the associated costs.
- An indication of the number of community members who would be interested in participating in such a survey could be obtained by the ECRP Project Team in their consultation with home owners.
- Advice from the Project Director that adequate provision for the costs of this survey would be included in the ECRP budget.

Action: ECRP Project Team to investigate means of assessing the likely community participation in a 'close out' validation blood lead survey and to incorporate provision for this in the ECRP budget.

ii. Program of sampling and cleaning Esperance homes

Action: At the November 2009 meeting the Project Director agreed to explore appropriate means of informing members of the Esperance community of the ECRP sampling and cleaning program for homes and other premises.

Status:

Members noted:

- Advice from the Project Director that since the last meeting, a detailed article on the ECRP had been printed in the Esperance Express. This article included a map of the staged approach in sampling and cleaning process. The working relationship between the ECRP team and the media had further improved and the Project Director would continue to provide details of progress and timetables to the broader Esperance community.

- The process of sampling of homes provides an opportunity for samplers to provide home owners with information on the ECRP program.
- The ECRP Project Team has made an effort to speed up the letters to home owners advising them of the results of sample analysis. [Further discussion under item 6]

iii. Development of ECRP Sampling Protocols

Action: The ECRP “Data Gap Analysis and Sampling and Analysis Plan” to be loaded onto the OnCue website.

Status: Action completed.

iv. Soil Sampling program – Water Corporation site near Panorama Place

Action: Peter Skitmore to provide details of the results of soil sampling at the Water Corporation site near Panorama Place, to all Members of the Steering Committee.

Status:

Members noted:

- Peter Skitmore had provided to Members the DEC document “Esperance Sampling - Old Water Corporation Reservoir and Discharge Channel 3 September 2008 Report” prepared by the Pollution Response Unit.
- Levels of lead and nickel at the site were all below National Health Investigational Levels for Residential Properties and the ECRP cleanup guidelines of 300mg/kg for lead and 600mg/kg for nickel. The highest concentration of lead found was 210mg/kg. Other lead levels found ranged from 13 to 130mg/kg.
- The higher concentrations were found in a localised drainage ‘sump’ area adjacent to the railway.
- Although the lead and nickel levels at the site were within the guidelines, Peter Skitmore undertook to discuss this matter and particularly the elevated levels in the sump area, with the Water Corporation and the Department of Transport.

Action: DEC [Peter Skitmore] to liaise initially with the Water Corporation and the Department of Transport and then with the ECRP Project Team regarding the need, or otherwise, for any remedial actions at this site.

v. Sampling from homes and other premises [Type “C” sampling]

Action: Working Group to be established to consider and further develop the identification and ongoing monitoring of ‘sentinel homes’. The Working Group to consist of Wayne Winchester, Michelle Crisp, Peter Skitmore, Lindsay Gillam and Peter McCafferty.

Status: Action completed. Discussion under item 10.

vi. Sampling and cleaning of first parcel of homes – Stage one

Action: Project Team to investigate disposal of waste water from cleaning roof surfaces, gutters and rainwater tanks, in consultation with DEC.

Status:

Members noted:

- The ECRP Project Team had liaised with DEC on the requirements for disposal of waste water and other wastes generated as part of the ECRP.
- Advice from the Project Director that the contaminated waste water from roof surfaces, gutters and tanks must be controlled at all times and the storage facility, even if a temporary one, must be licensed. Controlled wastes from the Trial Cleaning Project will be sent to a licensed disposal site in Albany.
- The cost of setting up a temporary, bunded, licensed disposal area (or processing plant as it would become) was prohibitive for the Trial Cleaning Project.
- For the Major Cleaning Project, it has been explained to tenderers that alternative disposal methods that reduce the liquid waste disposal costs should be considered.
- With regard to decanting the clear water, the Project Team has received advice from DEC that clear water can be decanted from tanks down to about 30%. This is subject to the following conditions:
 - Detergent is not added to the mix.
 - The levels of lead and nickel do not exceed the irrigation and agricultural guidelines.
 - The water is taken away in a water truck (not a controlled waste vehicle)
 - The water is used on a farm, outside of Esperance.

Action: The Project Team to continue to liaise with DEC [Peter Skitmore] on the management of wastes from the ECRP.

vii. Update on Esperance Port Authority Environmental Emission Data

Action: The November 2009 presentation of data on air quality monitoring by the Esperance Port Authority, and as compiled by DEC, to be placed on the OnCue website.

Status: Action completed.

viii. Prescribed method for the determination of the annualised guideline for nickel emissions

Actions:

1. DOH to provide advice whether the WHO guideline for annualised exposure to nickel is based on the TSP or PM₁₀ fraction and the method which WHO uses to calculate their annualised guideline.
2. DOH to advise the ChemCentre of the method for calculating the annualised guideline for nickel. ChemCentre to incorporate this method into the revised document.

3. ChemCentre to revise the document in light of Members comments and to resubmit to the Steering Committee.
4. DEC/ChemCentre to investigate the possibility of particle size analysis of the current HiVol samples being taken at the Port boundary.

Status: These matters are discussed under item 13(a).

ix. Golder Associates Report – need for public meeting?

Actions:

1. DEC to advise Golder Associates that a public meeting on the Report “Esperance Town-Site Human Health and Ecological Risk Assessment” is not necessary in view of the delay in publication of this document.
2. A link to the Golder Associates Report on the DEC website to be placed on the OnCue website.

Status: Actions completed

x. Ensuring the ECRP is completed in a timely manner

Action: Department of Transport to provide additional support for the ECRP Project Team to increase the efficiency of sampling and cleaning operations.

Status: Members noted that this matter had been addressed. The Department of Transport has ensured that appropriate resources are provided to the ECRP to meet projected timelines. Further information on this matter is provided under item 11. Action completed.

4. Project Update by ECRP Project Director

Members noted ECRP Project Update Issue 11 dated 5 March 2010 and had been loaded onto the OnCue website.

5. Report on Soil Sampling program – Type “A” sampling

Members noted:

- A report on this item by Kieron Smith, ECRP Project Manager Sampling.
- A total of 301 soil samples had been taken across the town of Esperance along 500m spaced concentric circles originating from the Port to determine soil lead and nickel levels. This sampling plan was in accordance with the Sampling and Analysis Plan recommended by Golder Associates. A map of Esperance showing the sampling points for this survey is set out in Attachment 2.
- As part of this sampling plan, 30 soil samples were taken in the immediate vicinity of the port at 250m distances along 11.25° radians from the Port. i.e. this was a more concentrated sampling grid closer to the Port.
- Logistically it was impractical to gain access to private residences to take soil samples without prior contact and requisite permissions being given. Experience gained from the Trial Cleaning Project showed the difficulties and length of time involved with gaining access to private property.

- Accordingly, soil samples were taken from publicly accessible areas and multiple samples were taken from playgrounds across the town.
- Soil samples were taken using a modified soil sampling procedure based on that recommended in AS 4874 -2000 *Guide to the investigation of potentially contaminated soil and deposited dust as a source of lead available to humans* as a guide.
- All soil samples showed lead and nickel were below the Residential National Environmental Protection Measure - Residential Soil Health Investigation Level [HILs] The concentrations of lead found were graphed on a Geographical Information System map [See Attachment 3].
- There were some areas of bushland which were not sampled but in all cases soil samples at surrounding sample points showed very low levels and most were below the limit of detection.
- Elevated lead levels were clustered around the main business part of the town area and also along major arterial routes, especially near the rail line. There was one site along the northern boundary of the superphosphate works showing a relatively high lead level. This was not unexpected as a lead acid chamber had been used on the site to manufacture sulphuric acid.
- Another site with a relatively high lead level was along the western side of the railway line in Nulsen.

Members considered:

- That these data confirmed the 'area of interest' which had been established by other surveys such as the DOH survey of lead and nickel levels in rain water tanks, the DEC vegetation surveys, the initial survey of 21 homes etc.
- Further soil samples which will be taken from homes and other premises as part of the Type "C" sampling program will provide additional data on lead and nickel levels in soils.
- With regard to the elevated lead levels near the rail line and marshalling area in Nulsen, that ARG and Cliffs were proposing to undertake works at this site. Although the lead levels in this area were within the HIL, it would be advisable if dust control measures were employed during these works to ensure that lead in dusts is not redistributed.

Action: Department of Transport to advise ARG and Cliffs to ensure that effective dust control strategies are employed during works at the Nulsen rail site.

6. Progress report on sampling and cleaning of homes [Stages 1, 2 and 3]

Members noted:

- A report on this item by Matthew Devenish, ECRP Project Manager Cleaning.
- Approximately 280 premises had been sampled to date and analysis of the cleaning requirements had been completed on approximately 150

- premises. Samples had been taken from homes/premises in Stages 1, 2, 3 and 4.
- The Project Team had engaged 12 samplers through local labour hire companies and these samplers had been appropriately trained. The sampling team is currently sampling 30 premises per week and is continually booked up two weeks in advance.
 - In addition to the initial sampling of premises, a validation team is following the Trial Cleaning Project sampling those areas that have been cleaned to verify that the cleaning was successful.
 - The following statistics from the assessment of sampling results to date:
 - i. 50% of homes sampled and analysed require roof spaces cleaning.
 - ii. 85% of homes sampled and analysed require some degree of internal and external surface cleaning.
 - iii. 70% of homes sampled and analysed require roof, gutter or rainwater tank cleaning.
 - iv. 25% of homes sampled and analysed require a combination of roof space, internal and external surfaces and roof, gutter and rain water tank cleaning.
 - v. 10% of homes require no cleaning at all.
 - Community feedback on the manner in which sampling teams have conducted the sampling program, has been positive.
 - The turn around time from submission of samples to receiving results from the Chemistry Centre is about 2 weeks.
 - For some home owners whose properties were sampled in late November 2009, there was a delay in receiving their sample results and the assessment of cleaning requirements. Providing this information to these home owners is a top priority issue for the ECRP Project Team.
 - The Project Team have made it a priority to improve the turn around time for home owners to receive the results of sampling from their homes and the assessment of cleaning requirements. A mail out target of letters to 100 home owners has been set to be achieved by the end of March 2010.
 - The Trial Cleaning Project will be completed by the end of March 2010. It is estimated that a total of 30 homes will have been cleaned under this project by that date.
 - To date, a total of 25 homes had been cleaned. Data on the relative costs of cleaning these homes were as follows:
 - i. Roof spaces - 35% of the total expenditure with an average of \$6k per premise.
 - ii. Roof surfaces, gutters and rain water tanks - 55% of the total expenditure with an average of \$9k per premise.
 - iii. Internal/external surfaces - 10% of the total expenditure with an average of \$2k per premise.
 - The validation testing of cleaned surfaces had shown good results. Cleaning was found to successfully remove lead and nickel residues in the case of roof surfaces, rainwater tanks, roof spaces, internal surfaces and external surfaces.

- Cleaning of carpets to remove lead residues to meet the cleanup guidelines had proved to be technically challenging. In some cases it had been concluded that it was more cost effective to replace some carpets rather than to repeat cleaning after several attempts.
- The Project Team had learnt many valuable lessons from the Trail Cleaning Project.
- There had been no accidents or safety issues during the Trail Cleaning Project.

Members congratulated the Project Team on the progress and work to date.

7. Report on current status on process for evaluation of tenders and awarding of major contracts

Members noted:

- The Project Director provided a summary report on the process of awarding of the tenders for the Major Cleaning Project.
- Three separate tenders had been called for the cleaning of the following:
 - i. Cleaning Roof Surfaces, Gutters and Rain Water Tanks.
 - ii. Cleaning of Roof Spaces
 - iii. Internal and External cleaning of homes and other premises.
- Tenders closed in early February 2010.
- A briefing session for potential tenderers was held in mid January 2010. There were numerous questions [15] arising from the briefing session which required a formal response. Additional information on these matters was subsequently provided to tenderers.
- A selection panel has been established for assessment of the tenders.
- It is anticipated that the contracts for the major cleaning works will be awarded in April 2010.

8. Assessment and cleaning of roof gutters and roof surfaces

Members noted:

- That the existing ECRP policies and cleanup guidelines do not capture all of the various scenarios in regard to rainwater tanks, gutters and roof surfaces. In particular, they do not provide a trigger for cleaning roof surfaces when a rainwater tank does not exist.
- Given that the ECRP charter is to complete a thorough and comprehensive cleanup of the townsite, the development of clear and consistent guidelines is crucial to the successful completion of this project.
- The Project Team requires a clear set of guidelines to make consistent decisions and implement cleaning, where required, in relation to roof surfaces.
- The ECRP has existing cleanup guidelines in respect to rainwater tanks as follows:
 - Lead: 0.01mg/L
 - Nickel: 0.02mg/L
 These guidelines are based on Australian Drinking Water Guidelines which have been recommended by the Department of Health and accepted by the ECRP Steering Committee.

- The ECRP also has an existing policy in relation to gutter sludge cleaning.
Lead: 300mg/kg
Nickel: 600mg/kg
The ECRP Soil Guidelines are based on the National Environment Protection Council of Australia Guideline on Health-based Soil Investigation Levels for a standard residential setting. The Soil Guidelines have been recommended by the Department of Health and accepted by the ECRP Steering Committee. Following general support from the Steering Committee, the ECRP team have adopted the soil guidelines for gutter sludge, and as a trigger to clean gutters. This is primarily because gutter sludge has a clear pathway to the soil (and possible access by children) via open downpipes and the gutter cleaning process itself.
- Current ECRP policy is that where a rainwater tank reading is above cleanup guidelines, all pathways to that rainwater tank are cleaned, including the downpipes, gutters and roof surfaces.
- In addition, the ECRP has adopted a policy to use soil cleanup guidelines for gutter sludge, as a trigger to clean gutters.
- To resolve the entire rainwater tank/gutter/roof surface issue, the final policy that requires development is in respect to roof surfaces, and specifically when there is no rainwater tank.
- Available data do not show any clear correlation between lead levels in rainwater tanks, gutter sludge and on roof surfaces. Relevant sample data is as follows:
 - 135 premises have had rainwater tank samples taken and 43 sets of results are available.
 - 40% are above the rainwater tank guidelines
 - 13 show above guidelines for nickel
 - 5 show above guidelines for lead
 - One tank showed above guidelines for nickel and lead
 - 100 premises have had gutter sludge samples taken and 45 sets of results are available.
 - 73% are above the soil guidelines.
 - 25 show above guidelines for both nickel and lead.
 - 165 premises have had roof surface swabs taken and 83 sets of results are available. Notwithstanding the difficulties of swabbing rooves, lead results range from 0 to $7\mu\text{g}/\text{cm}^2$
 - 55% have a reading of 0
 - 14% are greater than 0 and less than $0.4\mu\text{g}/\text{cm}^2$
 - 15% are greater than $0.4\mu\text{g}/\text{cm}^2$
 - 12% are greater than $1.0\mu\text{g}/\text{cm}^2$
 - 4% are greater than $4.0\mu\text{g}/\text{cm}^2$
- Only two roof surface results greater than $0.4\mu\text{g}/\text{cm}^2$ coincided with gutter sludge readings over the soil guidelines.
- There is also no strong link between gutter sludge, rain water tank and roof surface results. The correlation between readings for roof surfaces, gutters and rainwater tanks is erratic and non-conclusive. Given the amount of natural weathering that has happened in the past 3 years since the contamination event, it is not surprising that low roof surface levels are

evident, where gutters and tanks are high. In that period of weathering it is likely that soluble, or available, lead residues will have been substantially removed.

Members considered:

- Two Options
 - i. The development of a Roof Surface Guideline
 - ii. Roof Surface Cleaning trigger levels. Under this option if an “above guideline” reading is found in either the rainwater tank or gutter sludge, then this could be the trigger for cleaning everything that is on the pathway that contributes to the reading.
- A policy paper on ‘Development of a Cleanup Guideline for Roof Surfaces in Esperance’ that had been prepared.
- That there are a variety of roof surfaces in Esperance. Samples from roof surfaces are taken by wipe sampling techniques. This technique is effective in providing an accurate sample of available lead.
- Data provided by the Project Team showed that of 75 samples obtained from roof surfaces of homes close to the port, 50% have no reading of lead and 50% have lead levels between 0.1 and $7\mu\text{g}/\text{cm}^2$
- The data also showed that for metal roofs the chance of finding residual lead was less than 30% while for tile roofs there was a 60% chance of finding lead residues.
- Based on the limited data available, lead residues on roof surfaces decreased with increasing distance from the Port. [Lead residues on roof surfaces close to the port had levels of about $2\mu\text{g}/\text{cm}^2$, those up to 2km from the port had levels from 0.3 to $0.6\mu\text{g}/\text{cm}^2$, and for those greater than 2km levels varied from 0 to $0.1\mu\text{g}/\text{cm}^2$].
- Advice from the DOH that there was no health basis for setting a cleanup guideline for roof surfaces, especially as these surfaces are not readily accessible to children.
- There are other sources of lead on roof surfaces such as in tile glazes, in galvanising and in lead flashings.
- Isotopic analyses have not been carried out to differentiate the origin of lead residues on roof surfaces i.e. Magellan lead or from other sources.
- Previous experience in cleaning roof surfaces has shown that lead residues can be effectively removed by cleaning.
- There was no cleanup guideline or standard for lead residues on roof surfaces which could be used as a precedent for the ECRP.
- Comments from Professor Brian Gulson on setting a cleanup guideline for roof surfaces in Esperance.
- That the Project Team needed a clear and defensible cleanup guideline for roof surfaces.
- That on the basis of all data and information available to members, it was agreed to establish a cleanup guideline of $1\mu\text{g}/\text{cm}^2$ for lead on roof surfaces.

- A decision matrix for the cleaning of rainwater tanks, gutters and roof surfaces included in the policy paper. This matrix was amended as shown below.

RWT	Gutter	Roof surface	Cleaning decision
Above guideline	Above guideline	Above guideline	Clean all
Above guideline	Above guideline	Below guideline	Clean RWT and gutters
Above guideline	Below guideline	Above guideline	Clean all
Above guideline	Below guideline	Below guideline	Clean RWT
Below guideline	Above guideline	Below guideline	Clean all gutters
Below guideline	Above guideline	Above guideline	Clean gutters and roof surfaces
Below guideline	Above guideline	Below guideline	Clean gutters
Below guideline	Below guideline	Above guideline	Clean roof surfaces and gutters
Below guideline	Below guideline	Below guideline	No cleaning required
No Tank	Above guideline	Above guideline	Clean gutters and roof surfaces
No Tank	Above guideline	Below guideline	Clean all gutters
No Tank	Below guideline	Above guideline	Clean roof surfaces and gutters
No Tank	Below guideline	Below guideline	No cleaning required

Action: The ECRP Project Team adopt a cleanup guideline of 1µg/cm² for lead on roof surfaces.

Action: The decision matrix concerning the cleaning of rain water tanks, gutters and roof surfaces as set out above, should be adopted by the ECRP Project Team.

9. ECRP Policy on asbestos roofs.

Members noted:

- That an ECRP policy on asbestos roofs had not been articulated and was required by the Project Team.
- The cleaning of asbestos roofs is not a viable, practical or safe option and the ECRP cleaning procedures make this quite clear in the following statement.

“Note: Under no circumstances should pressure cleaning be undertaken on any asbestos roof. This is a dangerous and illegal procedure. Any cleaning of asbestos must be carried out by a licensed operator.”

- To disturb or attempt to clean the asbestos would create a greater health risk than might be posed by any lead residues that might be present.
- At this stage the ECRP Project Team is not sampling roofs of homes with asbestos roofs, but is sampling [and cleaning where appropriate] internal and external areas, rain water tanks and gutters of homes with asbestos roofs.
- The available options for the treatment of asbestos roofs are:
 - Do not deal with asbestos roof surfaces,
 - Apply a suitable coating to the asbestos roof surfaces,
 - Replace asbestos roofs.
- Advice from Peter McCafferty that any coating is not likely to last indefinitely and will eventually need to be replaced at some stage.
- Advice from DOH that the asbestos is a greater health issue than a low level of lead (in terms of health) on a roof. DOH does not support the replacement of asbestos roofs in Esperance as part of the lead clean up programme.
- Advice from Mike Rowe and the Department of Minerals and Petroleum that to consider cleaning asbestos roofs would introduce a new problem in unnecessarily mobilising asbestos.
- In Stages 1 to 4 inclusive, the number of premises with asbestos roofs has been proximated as follows:
 - i. 10 private residences
 - ii. 3 commercial premises
 - iii. 1 large community premise.
- Special sampling techniques are required for the sampling of asbestos roof surfaces. It was agreed that Peter McCafferty would liaise with Kieron Smith in advising on a suitable technique.

Members considered:

- That cleaning, coating or replacement of asbestos roofs were not viable options under the ECRP.
- The issue of asbestos roofs in Esperance needed to be taken up as a separate issue with the government.

Action: Department of Transport to raise the issue of asbestos roofs in Esperance, with government.

10. ECRP Monitoring of sentinel homes

Members noted:

- A report by the Sub-committee, appointed at the November 2009 meeting, to investigate the opportunity to undertake Sentinel Monitoring for Lead and Nickel Deposition across the Esperance townsite. Members of the Sub-committee were Wayne Winchester (Chair), Michelle Crisp (Community), Peter Skitmore (DEC), Lindsay Gillam (DoH), and Peter McCafferty (ChemCentre).
- In setting up this Sub-committee, the ECRP Steering Committee had raised the importance of ongoing monitoring to ensure that the work undertaken by the ECRP has been effective and to ensure there is no

- further re-contamination from lead or nickel of the Esperance townsite, above acceptable guidelines, once the cleanup project is completed.
- The use of sentinel premises had been suggested to achieve the following objective.

“To ensure that the ECRP has been effective in its cleanup operations and that recontamination is not occurring.”
 - To address the objective for this project, the Sub-Committee recommended a combination of validation sampling and Petri dish methodology.
 - Validation sampling at sentinel premises would be used to ensure that the ECRP has been effective in its cleanup operations and that recontamination is not occurring. This would involve the periodic repeat of validation sampling that was undertaken by the ECRP team at the end of premises cleaning.
 - The same locations within the premises would be sampled using identical methodologies as those previously used by the ECRP team.
 - To ensure consistency with previous testing, ChemCentre would undertake all sample testing during the Sentinel Monitoring project.
 - Validation sampling would be undertaken at 6 month intervals over a period of 2 years. The need or otherwise for continued sentinel monitoring would be reviewed at that time, based on results of the sampling.
 - The Sub-committee had also recommended that Petri dishes be placed in roof spaces that had been cleaned. It cited studies undertaken by the NSW Department of Health which concluded that “the Petri dish method can be used as a measure of recontamination, allowing individuals and health authorities to assess the effectiveness of abatement strategies”. These studies related to Petri dishes placed indoors. [Petri dish methodology had been used in Esperance homes in the early stages of monitoring after the lead contamination was recognised].
 - That Petri dish methodology would be used to determine if roof space recontamination is occurring or not and therefore provide validation of the ECRP cleaning of these areas. Petri dishes used in the proposed studies would be sent to the ChemCentre for lead and nickel analysis.
 - The results of Petri dish analysis would be shown as mg/m² per month, which is a recognised unit of measurement and is consistent with existing dust deposition gauges around the townsite.
 - The initial set-up costs for both the Petri dish and ongoing validation sampling would be funded from within the ECRP budget.
 - However, once the ECRP team is disbanded, funding would need to be provided for external consultants to complete the work, possibly from ECRP funds held in trust.
 - The Sub-committee had recommended that 8 sentinel sites be selected across the townsite. Six of these sites should be within the “area of interest” identified by the ECRP as the likely area of contamination from the Port. The two remaining sites should be located well outside the “area of interest”, one in Castletown and one in Nulsen.
 - Sentinel premises would need to be carefully chosen to ensure a stable environment for the duration of the project.

- The sites would be selected by the ECRP team (in consultation with the Sentinel Homes sub-committee), based on data gathered during the ECRP sampling program. Selected sites would provide a variety of roof constructions and be represented by at least 6 sites that showed elevated levels of lead and/or nickel (above the guidelines) during the ECRP sampling program. All selected premises would have either already been cleaned under the ECRP or not require cleaning under the ECRP, but in all cases would have been sampled.

Members considered:

- That the Petri dish methodology had been generally applied to ongoing monitoring inside homes rather than in roof spaces. Peter Skitmore considered that there was no value in using this method in roof spaces especially as there were no guidelines for interpretation of data gathered. This would make interpretation of the data so obtained, difficult. Also it could not be assumed that any lead measured in the dishes was 'new' lead rather than lead which had moved around inside the roof space. The suggestion was made for dishes to be put outside homes on verandah ledges to be sure it was "new" lead being measured.
- The sentinel program should take into consideration the other data being gathered on an ongoing basis, such as that obtained from the 19 depositional dust gauges located throughout Esperance and the five community HiVols.
- The sentinel program should start from when the homes are cleaned.
- That the proposal for sentinel monitoring should be reviewed to include consideration of the following:
 - i. The use of Petri Dish methodology in undisturbed areas inside and outside homes,
 - ii. The integration of the sentinel monitoring program within the broader context of ongoing environmental monitoring in Esperance.

Action: The Sentinel Homes sub-committee review the proposal for the monitoring of sentinel homes in the light of the above comments by the Steering Committee.

11. ECRP Administrative issues

Members noted:

- RiskCover had carried out an independent Risk Assessment of the ECRP in late November 2009. The Project Team is addressing a number of risk specific actions which were identified in the RiskCover report.
- Additional premises have been leased at 125 Dempster Street and the required fit-out is almost complete. These premises will replace the existing lab facilities at the Department of Agriculture and Food on the outskirts of Esperance. Although this was initially a useful facility, the logistics of travel became an operational efficiency issue for the project.
- The new premises will house a Niton testing area, 2 data analysers, 2-3 works supervisors and a bookings receptionist. It will also act as the base

- for the sampling teams and a storage area for sampling equipment, customer files and physical samples.
- The existing offices at 113 Dempster Street will remain as the ECRP administration head office.
 - The initial stages of the project had highlighted unexpected delays in timeframes for the delivery of results to homeowners. This has caused a large degree of concern in the community and the Project Team is addressing this issue. Sampling methodology in the early stages of the project has meant that the level of information available to make decisions on cleaning requirements has not always been adequate.
 - As a result of learnings from the Trial Cleaning Project, the current sampling methodologies have been amended accordingly and are now delivering excellent results for analysis against established clean-up guidelines.
 - The ECRP team have 'road-tested' the prototype computer application interface developed to help manage the sampling and cleaning workflow. The IT consultant is now creating the "live" version of the software to install on the ECRP network, which is due to be operational in April.
 - This workflow application has been designed to be compatible with the DOH database, which is the central repository to house ECRP data.
 - Because of the size and complexity of the project and the need to 'ramp up' the detailed sampling and cleaning phases, additional resources have been provided to support the existing Project Team. As a consequence, 2 data analysers, 2 sampling supervisors and a bookings officer have been appointed. When the major cleaning contracts are awarded 2-3 works supervisors will also be appointed.
 - The Project Team had reviewed the existing Gantt chart to reflect the desire of the community and government to have the majority of the cleaning completed before the end of December 2010. Monthly targets have been established for:
 - Premises sampled
 - Samples sent to ChemCentre
 - Results analysed
 - Cleaning jobs ready to go
 - Premises cleaned

Members considered:

- That it was very important to ensure that the auditing process and outcomes are addressed. The risks need to be properly identified and addressed at both the strategic and operational level.

12. Update on Esperance Port Authority Environmental Emission Data

Members noted:

- A verbal report by Peter Skitmore on the most recent compilation of data on lead and nickel air quality in Esperance.

- That the powerpoint presentation of this data dated 11 March 2010 would be circulated to Members following the meeting and loaded onto the OnCue website.
- Results from community dust depositional gauges show that over the last 12 months there has been a reduction in nickel deposition when compared to historic data.
- However, DG9 which is located in close proximity to the kibble unloading area has shown an increasing trend over the last 5 months. This is of concern to DEC. Alex Leonard advised that the EsPA is addressing power supply issues to the tipper which is delaying the introduction of half height containers for delivery of concentrate into the port. The introduction of half height containers will replace delivery of nickel sulphide concentrate in kibbles.
- Results from the four HiVol monitors located at the port boundaries over the period November 2007 to date show that the daily target of $0.14 \mu\text{g}/\text{m}^3$ (which applied from 6 October 2008) has only been exceeded on two occasions during the 43 ship loading events.
- Sites 1, 3 and 4 each show numerous 24 hr results where levels less than the annual guideline for nickel were recorded
- With regard to compliance with the annual guideline of $0.003\mu\text{g}/\text{m}^3$, Site 2 has for October, November and December 2009, shown only 5 days where levels were below this guideline. [Calculations carried out by community members show that levels at HiVol Site 2 are above the annual guideline.]
- Site 5 (Council Chambers) has, since it was installed in July 09, showed most nickel levels 'below detect' with others at very low levels.
- HiVol results show very low lead levels and in most cases below the level of detection.
- All community deposition gauges show very low levels of lead dust or below the limit of detection
- These data indicate recirculation of lead dust in air not is an issue

Action: The March 2010 presentation of data on air quality monitoring by the Esperance Port Authority, and as compiled by DEC, be circulated to Members and placed on the OnCue website.

13. Other Business

a) Recommended method for sampling, analysis and calculation of the annualised guideline for nickel emissions in Esperance.

Members noted:

- A document titled "Sampling and Analytical Methodology for the Measurement of Nickel Emissions, Esperance, Western Australia" prepared by the ChemCentre.
- This method of sampling and chemical analysis had been developed in order to measure the very low levels for nickel and compare these to the annualised guideline of 0.003 micrograms per cubic metre.

- The document recommends that three new HiVols, be located within the community, (one is already in place at the Council Chambers) would collect the PM₁₀ fraction, which would be analysed by this method and determine compliance with the annualised guideline.
- That the existing HiVol sites 1-4 would continue to measure nickel emissions as TSP [this would enable comparison with previously recorded results].
- As an action item from the November 2009 meeting, DOH was requested to provide advice whether the WHO guideline for annualised exposure to nickel is based on the TSP or PM₁₀ fraction and the method which WHO uses to calculate their annualised guideline.
- Advice from DOH that WHO does not specify either the TSP or the PM₁₀ fraction in the calculation of the annual guideline. However because PM₁₀ is the respirable fraction, this is of most interest to DOH.
- Comments by Pam Norris that issues highlighted at the previous meeting had not been addressed. These issues were:
 - i. “data has always shown us there is a relatively quick drop off in concentrations as distance from the Port increases and
 - ii. if only the new community HiVols were to used to measure compliance with the WHO standards, the location of the new community HiVols (several streets back from the Esperance esplanade) created a ‘no mans land’ in the community between these HiVols and the existing hivolts on the port boundary. This zone would effectively not be measured for the PM₁₀ fraction which as was mentioned earlier. This particulate fraction is also of greater concern from a toxicological point of view as the finer particles can penetrate more deeply into the lung tissue than the larger” and the most vulnerable area (i.e. in it’s closeness to the Port boundary) would also not be taken into account when determining compliance with the WHO standards)”.
- It was explained by DEC that the existing HiVols on the Port boundary needed to be kept without PM₁₀ heads to maintain a historical data set and there had been a request from DOH for more monitoring within the community to gauge air quality within the community. Follow up comments were that whilst this is a good thing, it should not be at the expense of not using data collected at the Port boundary to measure the DOH annualised guideline. Pam Norris then asked if existing data had been or could be analysed for particle size. Peter Skitmore advised that for sites 1-4, TEOM data at PM₁₀ is available but the amount of nickel in that fraction is unknown. [Post script the ChemCentre has subsequently advised that analysis for particle size is possible].

- Peter Skitmore advised that data from sites 1-4 could be assessed against the annualised target.”
- Pam Norris commented that the nickel being measured is from a point source (being the Port) and should therefore be measured on the boundary of that point source not from sites a good distance into the community. These “community” sites are useful as a backup to ensure the dust is not getting into the centre of the community but does nothing to ensure the health and compliance of WHO dust targets for the community members living between the point source and the first “community” site (No Mans land). Therefore measurement of the annual guideline should be taken at the boundary of the Port, otherwise a ‘no-mans land’ would be created between the existing HiVols 1-4 [which measure TSP that can be analysed for particle size)] and the new community HiVols [which are proposed to measure the PM₁₀ fraction.] Pam Norris was also under the impression that as separating the PM₁₀ fraction was not a problem Sites 1-4 would be used to calculate the adherence to WHO target- the minutes from the last meeting reflect this. “Peter Skitmore advised that data from sites 1-4 could be assessed against the annualised target.”
- That HiVols 1-4 would continue to measure TSP and data so generated would be used to assess air quality against the annual guideline at these sites as well.
- The new HiVols would be used to assess air quality against the annual guideline by measuring the PM₁₀ fraction.
- That this draft Method required resolution and should be listed early in the agenda for the next meeting.

Action: The ‘Recommended Method for Sampling, Analysis and Calculation of the Annual Guideline for Nickel Emissions in Esperance’ should be listed early in the agenda for the next meeting.

b) Golder Associates Report on Human Health and Ecological Risk Assessment for the Esperance Townsite

Members noted:

- A request by Pam Norris for feedback on the adoption and implementation of recommendation 4 of the Golder Report. Recommendation 4 which is as follows:

“The Western Australian Government adopt a partnership approach with Esperance Stakeholders and community representatives for the design and implementation of environmental monitoring and management in relation to Port operations”.

Action: Advice on the implementation of Recommendation 4 of the Golder Report be included in the agenda for the next meeting.

14. Next meetings

Members noted:

- It was proposed to convene the next meetings of the Steering Committee on [approximately] a two monthly basis for the remainder of 2010.
- A series of suggested dates had been circulated to Members for consideration as follows:
 - 11 March
 - 20 May
 - 15 July [subsequently changed to 29 July]
 - 9 September
 - 18 November
- The proposed dates were generally suitable to Members with the exception of the date in July. This would be reviewed in an effort to select meeting dates suitable to all members.

Action: Meeting dates to be reviewed to select dates suitable to all Members.

15. Close of meeting

The meeting closed at 4.36 pm.

ESPERANCE CLEANUP AND RECOVERY PROJECT

STEERING COMMITTEE MEETING

11 March 2010

SUMMARY OF ACTIONS

1. Community blood lead survey

Action: ECRP Project Team to investigate means of assessing the likely community participation in a 'close out' validation blood lead survey and to incorporate provision for this in the ECRP budget.

2. Soil Sampling program – Water Corporation site

Action: DEC [Peter Skitmore] to liaise initially with the Water Corporation and the Department of Transport and then with the ECRP Project Team regarding the need, or otherwise, for any remedial actions at this site.

3. Sampling and cleaning of first parcel of homes – disposal of waste water and other wastes

Action: The Project Team to continue to liaise with DEC [Peter Skitmore] on the management of wastes from the ECRP.

4. Report on Soil Sampling program – Type “A” sampling

Action: Department of Transport to advise ARG and Cliffs to ensure that effective dust control strategies are employed during works at the Nulsen rail site.

5. Assessment and cleaning of roof gutters and roof surfaces

Action: The ECRP Project Team adopt a cleanup guideline of $1\mu\text{g}/\text{cm}^2$ for lead on roof surfaces.

Action: The decision matrix concerning the cleaning of rain water tanks, gutters and roof surfaces as set out in the policy paper in Attachment 4, should be adopted by the ECRP Project Team.

6. ECRP Policy on asbestos roofs.

Action: Department of Transport to raise the issue of asbestos roofs in Esperance, with government.

7. ECRP Monitoring of sentinel homes

Action: The Sentinel Homes sub-committee review the proposal for the monitoring of sentinel homes in the light of the above comments by the Steering Committee.

8. Update on Esperance Port Authority Environmental Emission Data

Action: The March 2010 presentation of data on air quality monitoring by the Esperance Port Authority, and as compiled by DEC, be circulated to Members and placed on the OnCue website.

9. Prescribed method for the determination of the annualised guideline for nickel emissions

Action: The 'Recommended Method for Sampling, Analysis and Calculation of the Annual Guideline for Nickel Emissions in Esperance' should be listed early in the agenda for the next meeting.

10. Golder Associates Report on Human Health and Ecological Risk Assessment for the Esperance Townsite

Action: Advice on the implementation of Recommendation 4 of the Golder Report to be included in the agenda for the next meeting.

11. Next meetings

Action: Meeting dates to be reviewed to select dates suitable to all Members.

ESPERANCE CLEANUP AND RECOVERY PROJECT

Steering Committee Meeting 11 March 2010

Golder Associates recommended soil sampling locations showing shaded areas of native vegetation which were not sampled.



Legend

- Suggested Sampling Location
- Street
- Proposed Sampling Distance From Port (m)
 - 500
 - 1000
 - 1500
 - 2000
 - 2500
 - 3000
 - 3500
 - 4000
 - 4500
 - 5000
 - 5500

COPYRIGHT:
 Imagery sourced from Landgate, Shared Land Information Portal (SLIP) 2007 Esperance, extracted July 2009. Roads, StreetPro V9, 2009

0 250 500 1,000
 Metres
 A3 SCALE 1:30,000
 Datum GDA94, Projection MGA Zone 51

CLIENT DEPARTMENT FOR PLANNING & INFRASTRUCTURE
 PROJECT 097643268 001 R REV0
 DATE 28/07/2009
 COMPILED JOR
 APPROVED SAT

Golder Associates
 Level 1, Heald Street Perth WA 6000
 Unit 10/100, 100 Perth WA 6000

DPI Sampling Analysis Plan

PROPOSED SAMPLING POINTS FOR "TYPE A" SAMPLING

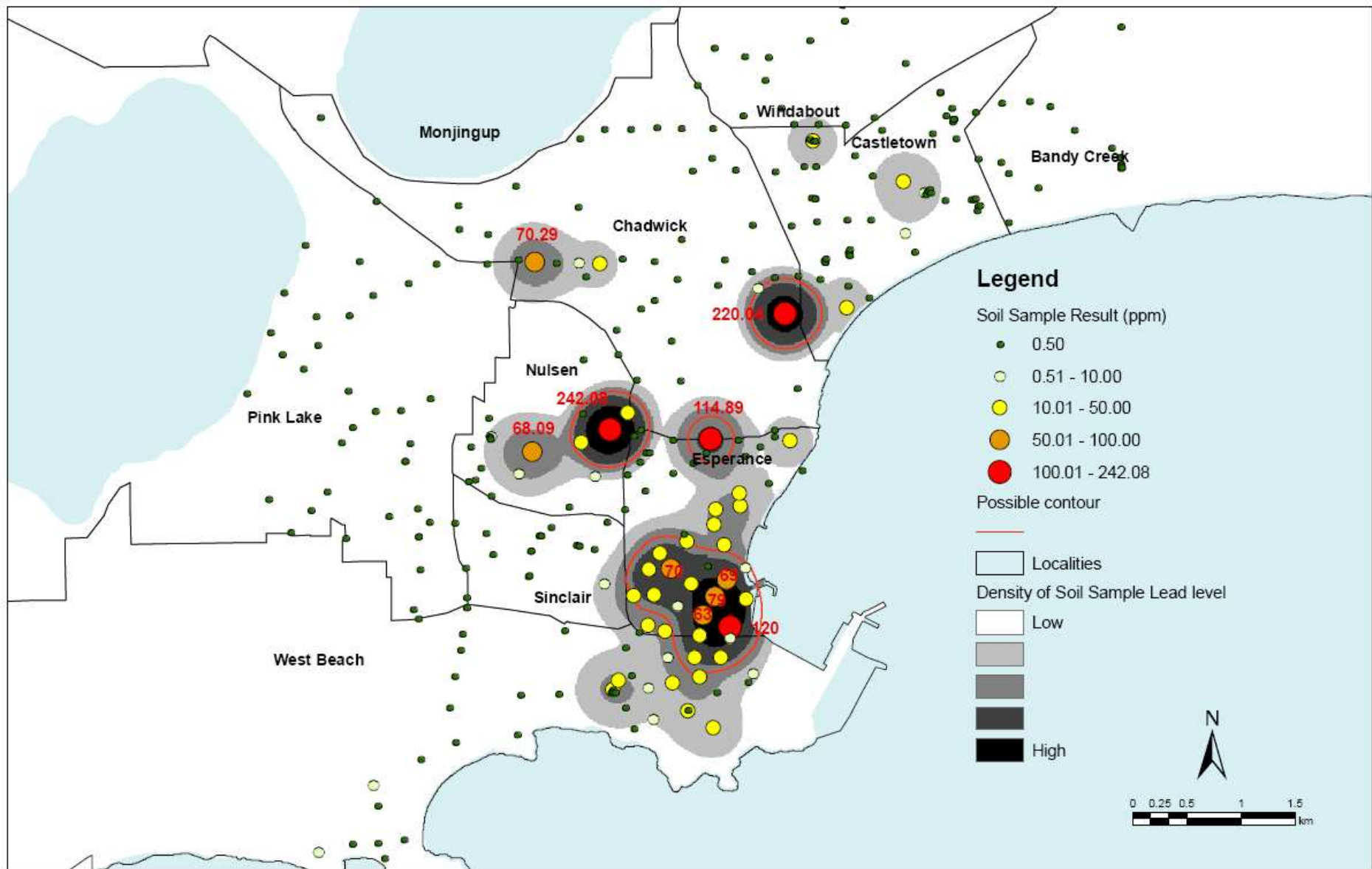
FIGURE 1

Information contained on this drawing is the copyright of Golder Associates Pty Ltd. Unauthorised use or reproduction of this plan without the prior written permission of Golder Associates Pty Ltd. is prohibited.

ESPERANCE CLEANUP AND RECOVERY PROJECT

Steering Committee Meeting 11 March 2010

. Results of soil sampling across Esperance



Soil Sample locations

Results based on 300 samples 09/02/2010

Produced by: Grace Yun, Epidemiology and GIS Branch, February 2010
Source Data: Landgate, DoHWA.

Produced for: Kieron Smith, Esperance Cleanup and Recovery Project