

**APPENDIX C7
EXAMPLE FOR BRIDGING MEMORANDUM**

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PREFACE TO EXAMPLE BRIDGING MEMORANDUM

This appendix presents an example bridging memorandum describing the changes in the cleanup process that occurred as a result of applying the PT&R approach for a hypothetical site. The bridging memorandum is placed into the administrative record to document how use of the PT&R approach affected site cleanup. Typically, the DTSC project manager will prepare the bridging memorandum.

In general, the bridging memorandum should look similar to this example. The content of the bridging memorandum should reflect site-specific circumstances.

Provided for illustration purposes only, the content and type of activities described in this example are not applicable to every site. For instance, not every site will be cleaned up to an unrestricted land use scenario and the cleanup goals included herein are not applicable to every site. Likewise, the document types will depend in the cleanup process being applied and the document content may vary depending on project-specific decisions.



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MEMORANDUM

TO: DTSC Project File for Site XYZ

FROM: John Smith
DTSC Project Manager

DATE: July 15, 2010

SUBJECT: Application of Proven Technologies and Remedies (PT&R) Approach to Cleanup of Metals-Impacted Soils Associated with Unit B, Site XYZ, North Highlands, Sacramento County, California (EPA ID # CAD 000 000 000)

The purpose of this memorandum is to document the application of the Proven Technologies and Remedies (PT&R) approach to cleanup of metals-impacted soils at Site XYZ in North Highlands, California. The PT&R approach is described in the guidance document entitled *Remediation of Metals in Soil*. (DTSC, 2008). Attachment A to this memorandum summarizes how application of the PT&R approach affected the Unit B cleanup.

Project Background: The PT&R approach was applied for cleanup of metals contamination associated with the battery and metal recycling area (referred to as Unit B) of Site XYZ. Unit B covers approximately 5 acres in the northeast corner of the Site. The *Preliminary Endangerment Assessment* (PEA; Consultant X, 2008) identified elevated concentrations of cadmium and lead in Unit B soil with maximum concentrations of 205 and 9,800 mg/Kg, respectively. The metals contamination is associated with surface releases.

Assessment of Site Suitability for PT&R Approach: DTSC staff met with Company ABC representatives on February 13, 2009 to discuss the PEA findings and to make a decision regarding suitability for application of the PT&R approach. With one exception, the site clearly met the suitability requirements identified in Section 3.2 of *Remediation of Metals in Soils*. The exception pertained to the depth to groundwater which ranges from 10 to 12 feet bgs beneath the site. During the February 2009 meeting, Consultant X to Company ABC presented the soil data which indicated that the cadmium and lead concentrations in site soil attenuated rapidly with depth and approached the estimated background concentrations at a depth of 3 feet bgs. Based on the PEA findings and discussion of site characteristics, DTSC and Company ABC representatives agreed to

apply the PT&R approach. A fact sheet (DTSC, 2009) was sent out informing the community and other stakeholders of the decision to apply the PT&R approach. Responses were provided to two stakeholders who commented on the fact sheet.

Completion of Site Characterization: Based on the findings of the PEA, additional investigation activities were conducted under the *Remedial Investigation Workplan for Unit B* (Consultant X, 2009a) to fully define the nature and extent of the soil contamination associated with Unit B and to verify the conceptual site model. The scope of this investigation also included collection of samples to support the site background estimates and geotechnical data needed to support the remedial design. The results of the investigation were documented in the *Remedial Investigation Report for Unit B* (RI Report; Consultant X, 2009b). The investigation confirmed the attenuation of metals contamination in the upper 3 feet of soil.

Risk Screening and Cleanup Goals: Metals concentrations in Unit B soils were compared to the site background concentrations included in the RI Report. This process identified cadmium and lead as the only constituents of potential concern (COPCs). The exposure point concentration for cadmium exceeds a cancer risk of 1×10^{-6} . The cleanup goal for cadmium was selected based on an unrestricted land use scenario and a target cancer risk of 1×10^{-6} . The current California Human Health Screening Level (CHHSL) value of 1.7 mg/Kg was selected as the remedial goal for cadmium. The remedial goal for lead (150 mg/Kg) was selected using the DTSC LeadSpread model. The concentrations of lead on the Site presented a potential significant health risk to children and adults.

Screening and Evaluation of Cleanup Technologies: The *Remediation of Metals in Soil* performed the initial screening and evaluation step for sites with metals-impacted soils (as documented in Section 6.1 and Appendix C1 of the guidance document). Therefore, the screening and evaluation step was not repeated for the cleanup of Unit B at Site XYZ. A focused evaluation was performed for the no action alternative (as required by the NCP) and the two PT&R alternatives: excavation/disposal and containment/capping. This evaluation is documented in the *Remedial Action Plan for Unit B* (RAP; Consultant X, 2009c). The RAP was developed using the sample document provided as Appendix C2 of *Remediation of Metals in Soil*.

Remedy Selection: As approved in the RAP, excavation/disposal was selected as the remedy for Unit B. A CEQA Negative Declaration was prepared in conjunction with the RAP.

Remedy Design and Implementation: The remedial design and supporting documents were included as appendices to the RAP. Cleanup activities are described in the *Remedial Action Completion Report for Unit B* (RACR; Consultant X, 2010). As recommended by Section 5.5 of *Remediation of Metals in Soil*, a post-cleanup evaluation for lead was included in the RACR.

Site Certification: Confirmation sampling verified achievement of cleanup goals for unrestricted use. On July 10, 2010, DTSC issued a letter certifying that Unit B cleanup is satisfactorily completed.

Public Participation: The cleanup process for Unit B followed the public participation process identified in the DTSC *Public Participation Manual* (DTSC, 2003). As discussed above, an additional fact sheet was distributed informing community members and stakeholders that the PT&R approach would be used.

REFERENCES

- Consultant X. 2008. Preliminary Endangerment Assessment, Site XYZ, 123 Orange Avenue, North Highlands, California. December 13.
- Consultant X. 2009a. Remedial Investigation Workplan for Unit B, Site XYZ, 123 Orange Avenue, North Highlands, California. March 31.
- Consultant X. 2009b. Remedial Investigation Report for Unit B, Site XYZ, 123 Orange Avenue, North Highlands, California. June 30.
- Consultant X. 2009c. Remedial Action Plan for Unit B, Site XYZ, 123 Orange Avenue, North Highlands, California. September 15.
- Consultant X. 2010. Remedial Action Completion Report for Unit B, Site XYZ, 123 Orange Avenue, North Highlands, California. April 4.
- DTSC. LeadSpread Model. www.dtsc.ca.gov/AssessingRisk/leadspread.cfm.
- DTSC. 2003. Updated Public Participation and Procedures Manual. April.
- DTSC. 2008. Proven Technologies and Remedies Guidance, Remediation of Metals in Soil. August.
- DTSC. 2009. Fact Sheet, Cleanup of Unit B, Site XYZ, 123 Orange Avenue, North Highlands, California. March.
- DTSC. 2010. Letter to Company ABC certifying cleanup of Unit B. July 10.

ATTACHMENT A
SUMMARY OF UNIT B CLEANUP USING PT&R APPROACH
SITE XYZ, NORTH HIGHLANDS, SACRAMENTO COUNTY
EPA ID #000 000 000

Cleanup Process: California Hazardous Substances Account Act, Remedial Action Plan (RAP)

| ACTIVITY | FOLLOWED TYPICAL CLEANUP PROCESS? | ADJUSTMENT FOR PT&R APPROACH? | COMMENT OR EXPLANATION OF PT&R-RELATED DIFFERENCE |
|-----------------------------------|-----------------------------------|-------------------------------|---|
| PUBLIC PARTICIPATION | Yes | Yes | <ul style="list-style-type: none"> Fact sheet informing community and stakeholders of decision to apply PT&R approach. Responded to stakeholder comments regarding decision to use PT&R approach. |
| REMEDIAL INVESTIGATION | | | |
| Investigation | Yes | Yes | <ul style="list-style-type: none"> Data to support site background estimate and design collected during characterization phase. |
| Identification of COPCs | Yes | No | <ul style="list-style-type: none"> Documented in RI Report. |
| Exposure Point Concentrations | Yes | No | <ul style="list-style-type: none"> Documented in RI Report. |
| Health Risk Screening | Yes | Yes | <ul style="list-style-type: none"> Used CHHSL for cadmium and DTSC LeadSpread model for lead. Performed post-cleanup evaluation for lead. |
| Cleanup Goals | Yes | Yes | <ul style="list-style-type: none"> Used CHHSL for cadmium and DTSC LeadSpread model for lead. Documented in RAP. |
| FEASIBILITY STUDY (FS) | | | |
| Initial Screening & Evaluation | No | Yes | <ul style="list-style-type: none"> Completed during development of <i>Remediation of Metals in Soil</i>. |
| Detailed Analysis of Alternatives | Yes | Yes | <ul style="list-style-type: none"> Evaluated no action, excavation/disposal, and containment/capping. Documented in RAP. Used RAP sample from <i>Remediation of Metals in Soil</i>. |
| Remedy Selection | Yes | No | <ul style="list-style-type: none"> Documented and approved in RAP. |
| CEQA | Yes | No | <ul style="list-style-type: none"> Negative Declaration prepared in conjunction with FS/RAP. |
| REMEDIAL DESIGN | Yes | Yes | <ul style="list-style-type: none"> Design and implementation plans included as appendices to FS/RAP. Used sample documents from <i>Remediation of Metals in Soil</i>. |
| REMEDIAL ACTION | Yes | Yes | <ul style="list-style-type: none"> RACR includes post-cleanup evaluation for lead. RACR follows annotated outline from <i>Remediation of Metals in Soil</i>. |

ATTACHMENT A (Continued)

| ACTIVITY | FOLLOWED TYPICAL CLEANUP PROCESS? | ADJUSTMENT FOR PT&R APPROACH? | COMMENT OR EXPLANATION OF PT&R-RELATED DIFFERENCE |
|-----------------------------------|-----------------------------------|-------------------------------|---|
| SITE CERTIFICATION | Yes | No | <ul style="list-style-type: none"> • DTSC certification letter issued on July 10, 2010. |
| LAND USE COVENANT | n/a | n/a | |
| OPERATION & MAINTENANCE AGREEMENT | n/a | n/a | |
| ADMINISTRATIVE RECORD | Yes | Yes | <ul style="list-style-type: none"> • Prepared this bridging memorandum. • Included <i>Remediation of Metals in Soil</i> as electronic appendix to RAP. • Includes responses to comments regarding decision to use PT&R approach. |