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Please distribute to the following:

100/300 AREA UNIT MANAGER MEETING
ATTENDANCE AND DISTRIBUTION

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100/300 AREA UNIT MANAGERS MEETING
APPROVAL OF MEETING MINUTES

August 11, 2011

APPROVAL: _____ Date 9/8/11
for Mark French, DOE/RL (A3-04)
River Corridor Project Manager

APPROVAL: _____ Date 09/08/11
Briant Charboneau, DOE/RL (A6-33)
Groundwater Project Manager

APPROVAL: _____ Date Sept. 8, 2011
Nina Menard, Ecology (H0-57)
Environmental Restoration Project
Manager

APPROVAL: _____ Date Sept 8, 2011
Laura Buelow, Rod Lobos, or Christopher
Guzzetti, EPA (B1-46)
100 Area Project Manager

APPROVAL: _____ Date Sept 8, 2011
Larry Gadbois, EPA
(B1-46)
300 Area Project Manager

100 & 300 AREA UNIT MANAGER MEETING MINUTES

Groundwater and Source Operable Units; Facility Deactivation, Decontamination, Decommission, and Demolition (D4); Interim Safe Storage (ISS); Field Remediation (FR); and Mission Completion

August 11, 2011

ADMINISTRATIVE

- Next Unit Manager Meeting (UMM) – The next meeting will be held September 8, 2011, at the Washington Closure Hanford (WCH) Office Building, 2620 Fermi Avenue, Room C209.
- Attendees/Delegations – Attachment A is the list of attendees. Representatives from each agency were present to conduct the business of the UMM. Attachment B shows the delegations.
- Approval of Minutes – The July 14, 2011, meeting minutes were approved by the U.S. Environmental Protection Agency (EPA), Washington State Department of Ecology (Ecology), and U.S. Department of Energy, Richland Operations Office (RL).
- Action Item Status – The status of action items was reviewed and updates were provided (see Attachment C).
- Agenda – Attachment D is the meeting agenda.

EXECUTIVE SESSION (Tri-Parties Only)

Executive Session: An Executive Session was not held by RL, EPA, and Ecology prior to the August 11, 2011, UMM.

GENERAL

The groundwater, D4, FR, and Mission Completion presentations were provided in advance of the UMM. This allowed the presentation to be discussed "by exception." This practice will be continued for future UMMs.

100-F & 100-IU-2/100-IU-6 AREAS (GROUNDWATER, SOILS, D4/ISS)

Attachment 1 provides status and information for groundwater. Attachment 2 provides status and information for Field Remediation activities. No issues were identified and no action items were documented.

Agreement 1: Attachment 3 provides an agreement to treat lead contaminated soil from 600-298 (area 3A and 3B), 600-312 (area 1), 600-317 (area 1), 600-318 (areas 4 and 5), and 600-319 (areas 1 and 3) waste sites in accordance with the "Treatment Plan and Protocol for Treatment of Lead Contaminated Soils," WCH-252, Rev. 2).

Agreement 2: Attachment 4 provides an agreement to excavate the northwest portion of the 100-F-57 site to a depth of 19.5 ft.

100-D & 100-H AREAS (GROUNDWATER, SOILS, D4/ISS)

Attachment 1 provides status and information for groundwater. Attachment 2 provides status and information for Field Remediation activities. No issues were identified and no agreements or action items were documented.

100-N AREA (GROUNDWATER, SOILS, D4/ISS)

Attachment 1 provides status and information for groundwater. Attachment 2 provides status and information for Field Remediation activities. Attachment 5 provides status and information for D4/ISS activities at 100-N. No issues were identified and no agreements or action items were documented.

100-K AREA (GROUNDWATER, SOILS, D4/ISS)

Attachment 1 provides status and information for groundwater. Attachment 2 provides status and information for Field Remediation activities. No issues were identified and no agreements or action items were documented.

100-B/C AREA (GROUNDWATER, SOILS, D4/ISS)

Attachment 1 provides status and information for groundwater. Attachment 2 provides status and information for Field Remediation activities. Attachment 6 provides a schedule for 100-C-7 remediation activities. No issues were identified and no agreements or action items were documented.

300 AREA – 618-10/11 (GROUNDWATER, SOILS, D4/ISS)

Attachment 1 provides status and information for groundwater. No issues were identified and no action items were documented.

> Agreement 1: Attachment 7 provides TPA Change Notice TPA-CN-472, revising DOE-RL-2001-47, *Remedial Design Report/Remedial Action Work Plan for the 300 Area,* Rev. 3, to be consistent with an explanation of Significant Differences to the record of Decision for the 300 Area Remedial Action that was approved on August 3, 2011, to authorize a modified approach for managing liquids in bottles at 618-10.

300 AREA - GENERAL (GROUNDWATER, SOILS, D4/ISS)

Attachment 1 provides status and information for groundwater. Attachment 8 provides status of the 300 Area Closure Project activities. No issues were identified and no agreements or action items were documented.

REGULATORY CLOSEOUT DOCUMENTS OVERALL SCHEDULE

No issues were identified and no agreements or action items were documented.

MISSION COMPLETION PROJECT

Attachment 9 provides status and information regarding the Orphan Sites Evaluations, Long-Term Stewardship, River Corridor Baseline Risk Assessment, the Remedial Investigation of Hanford Releases to the Columbia River, and a Document Review Look-Ahead. Attachment 10, *Close Out Procedures for National Priorities List Sites*, OSWER Directive 9320.2-22, May 2011, was provided by EPA for use on future reports. No issues were identified and no agreements or action items were documented.

5-YEAR RECORD OF DECISION ACTION ITEM UPDATE

No changes were reported to the status of the CERCLA Five-Year Review action Items. No issues were identified and no agreements or action items were documented.

Attachment A

100/300 AREA UNIT MANAGER MEETING
ATTENDANCE AND DISTRIBUTION
August 11, 2011

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Attachment B

Lewis, Jacqueline L

From: Hadley, Karl A
Sent: Thursday, September 08, 2011 10:52 AM
To: Lewis, Jacqueline L
Subject: FW: UMM

See below delegation for the meeting minutes.

From: French, Mark [mailto:Mark.French@rl.doe.gov]
Sent: Thursday, August 11, 2011 12:59 PM
To: Hadley, Karl A; Menard, Nina; gadbois.larry@epamail.epa.gov
Subject: UMM

Joanne Chance is delegated to act for me in my absence at the UMM today.

Mark S. French
Federal Project Director
373-9863

Attachment C

100/300 Area UMM
Action List
August 11, 2011

Open (O)/ Closed (X)	Action No.	Co.	Actionee	Project	Action Description	Status
O	100-181	RL	J. Hanson	100-HR	DOE will provide Ecology with a briefing on the applicability and status of bioremediation of chromium and the associated feasibility studies.	Open: 4/14/11; Action:
O	100-187	RL	G. Sinton	All	DOE will revise RAO 6 and delete RAO 7 and distribute to the Tri-Parties for review.	Open: 6/9/11; Action:
O	100-188	RL	J. Hanson	100-HR	DOE will provide Ecology with a maintenance schedule for any wells impacted by the high water levels	Open: 6/9/11; Action:

Attachment D

100/300 Area Unit Manager Meeting
August 11, 2011
Washington Closure Hanford Building
2620 Fermi Avenue, Richland, WA 99354
Room C209; 1:30-4:30 p.m.

1:30 - 1:45 p.m. **Administrative:**

- Approval and signing of previous meeting minutes (July 2011)
- Update to Action Items List
- Next UMM (9/8/2011, Room C209)

1:45 - 4:00 p.m. **Open Session: Project Area Updates - Groundwater, Field Remediation, D4/ISS:**

- 100-F & 100-IU-2/6 Areas (Greg Sinton/Tom Post/Jamie Zeisloft)
- 100-D & 100-H Areas (Jim Hanson/Tom Post/Joanne Chance)
- 100-N Area (Joanne Chance, Rudy Guercia, Mike Thompson)
- 100-K Area (Jim Hanson, Jamie Zeisloft, Ellen Dagon, Steve Balone)
- 100-B/C Area (Greg Sinton, Tom Post)
- 300 Area - 618-10/11 exclusively (Jamie Zeisloft)
- 300 Area (Mike Thompson/Rudy Guercia)
- Regulatory Closeout Documents Overall Schedule (John Neath, Mike Thompson)
- Mission Completion Project (John Sands)

4:00 - 4:15 p.m. **Special Topics/Other**

- 5-Year Record of Decision Action Item Update (Jim Hanson)

4:15 - 4:30 p.m. **Adjourn**

Attachment 1

100/300 Areas Unit Managers Meeting
August 11, 2011

100-FR-3 Groundwater Operable Unit – Nathan Bowles / Mary Hartman

(M-015-64-T01, 12/17/2011, Submit CERCLA RI/FS Report and Proposed Plan for the 100-FR-1, 100-FR-2, 100-FR-3, 100-IU-2, and 100-IU-6 Operable Units for groundwater and soil.)
Schedule Status - On schedule to meet the TPA milestone. Field investigations are complete and internal review comments are being incorporated into a Decisional Draft for DOE/RL review scheduled to begin in mid August.

- The sample events scheduled for July have not yet been collected. Notable results from the June sampling (delayed from April) are discussed below.

- Cr(VI) continued to be near or below the detection limit in the new wells.

- Carbon tetrachloride was undetected (<1 ug/L) in the new wells in June. It had been detected in January, which may have been associated with a rash of blanks detections. TCE and other organics all non-detects in the new wells too.

- Nitrate decreased in both new water-table wells sampled in June. This trend was mirrored by specific conductance, indicating inflow of river water. These wells are located near the river. The aquifer in this portion of 100-F responds to rising river stage rapidly.

- Sr-90 was reported as detected in wells 199-F5-52 and 199-F5-54 in June. However, in well 199-F5-52 the "detection" was less than the total error: 2.6 ±2.8 pCi/L. Well F5-54 has a more definite detection at 5.8±3.4 pCi/L in June; it was 2±3 pCi/L in January. This well is adjacent to the Sr-90 plume at 8 pCi/L, so the low detections fit.

100-HR-3 Groundwater Operable Unit – Fred Biebesheimer / John Smoot

(M-15-70-T01, 11/24/2011, Submit feasibility study report and proposed plan for the 100-HR-1, 100-HR-2, 100-HR-3, 100-DR-1 and 100-DR-2 operable units for groundwater and soil.)
Schedule Status - On schedule to meet the TPA milestone. Drilling and sampling are complete with the exception of on replacement RI/FS well at the 100-D-12 waste site (a TPA change notice is being prepared to support the drilling and sampling of this well). The Decisional Draft was delivered for review by DOE-RL on July 7th, 2011.

- HR-3 Treatment System
  - For the period July 1 through 31, 2011:
  - The HR-3 system is in the process of layup and placement in cold standby.

- DR-5 Treatment System
  - For the period July 1 through 31, 2011:
  - The DR-5 shut down is complete.
- DX Pump and Treat system
  - For the period July 1 through 31, 2011:
  - The DX pump and treat system is operating.
  - Total average flow through the system is 502 gpm.
  - The average influent hexavalent chromium concentration was 495 µg/L.
  - The four wells damaged during the high river stage are being assessed. Walk downs suggest surface equipment (wiring and piping) will need to be repaired or replaced at the wells. Well maintenance has been requested to inspect the wells to assure the integrity of the well bores. Design modifications are being evaluated to prevent future damage.

- HX Pump and Treat System,
  - Construction of the facility is complete; Construction Acceptance Testing is complete, and acceptance testing has commenced.
  - Acceptance Testing is scheduled for August and September 2011.
  - The plant will be operational, and in Operations Testing from October through December 2011.
  - ISRM Pond Sealing
  - The ISRM pond is largely dry (muck and wet sediment remain).
  - CHPRC is evaluating decommissioning path forward. Upon completion of the evaluation a meeting will be held to present recommendations.
  - An ISRM pond decommissioning schedule will be added to the RD/RA WP revision. An IAMIT agreement calls for the pond decommissioning to be complete by 12/31/2011.

- RI/FS Activities
  - Fieldwork is complete, with the exception of the replacement well to be installed at the 100-D-12 waste site location (well R5). Drilling is expected to begin in September.
  - The RI/FS report decisional draft was delivered for review by RL on July 7, 2011.

<u>100-NR-2 Groundwater Operable Unit – Nathan Bowles / Deb Alexander</u>

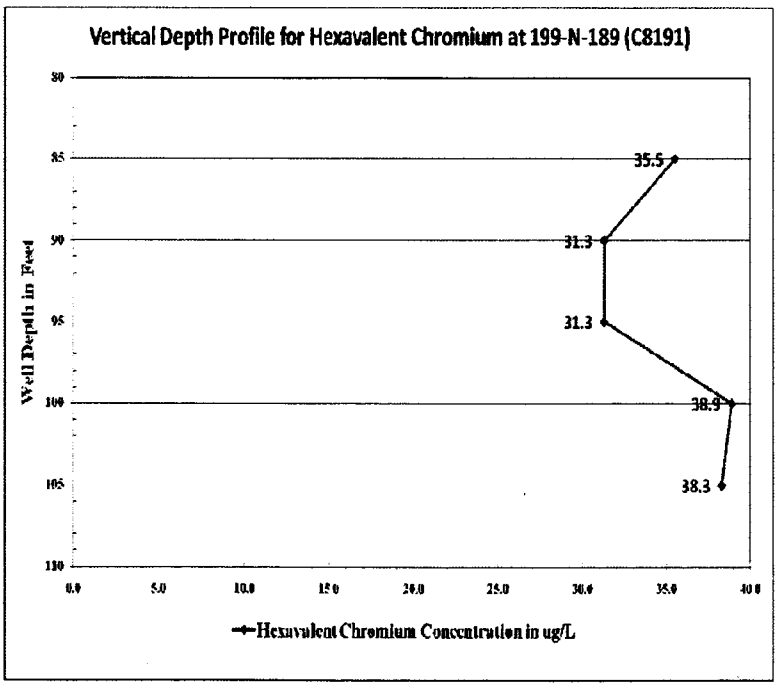
(M-015-60 - Six months after the ROD amendment [03/29/2011], if an amendment to the 100-NR-1/2 Record of Decision for Interim Action is issued, DOE shall submit an RD/RA Work Plan.)
Schedule Status - TPA milestone met by DOE/RL submittal of Rev. 1 Draft A document to Ecology on March 25, 2011. The submitted document was reviewed by Ecology, and the resulting Ecology comments were provided to DOE-RL on August 3rd.

(M-015-62-T01, 9/17/2012, Submit a Feasibility Study [FS] Report and Proposed Plan [PP] for the 100-NR-1 and 100-NR-2 Operable Units including groundwater and soil. The FS Report and PP will evaluate the permeable reactive barrier technology and other alternatives and will identify a preferred alternative in accordance with CERCLA requirements.)
Schedule Status – On schedule. The due date for this TPA Target Date changed to September 17, 2012 under TPA CN M-015-11-1, approved on March 12, 2011. Field investigations are underway with only well-drilling/sampling work remaining to be completed (discussed further below).

- <u>RI/FS Activities</u>
  - Well drilling/sampling:
    - 199-N-183 (C8185/#2) and 199-N-185 (C8187/#R2) – Field activities were completed in previous months.
    - 199-N-182 (C8184/#R1) – Ringold Upper Mud (RUM) well down-gradient of 1301-N and in the Sr-90 hot spot – The water table at this location is at approximately 72 ft bgs, and the RUM unit was encountered at 102 ft bgs. Samples were collected in the RUM per the SAP. Total borehole depth within the RUM at 154.0 ft bgs was reached July 12th. The well was originally planned to be screened within the RUM, however, no water-producing interval was encountered. As a result, the final well design (as approved by both RL and Ecology on July 14th) calls for installing a 20-ft screened interval at the bottom of the unconfined aquifer. The well is currently being constructed.
    - 199-N-186 (C8188 #3) – Well at the former head works of the remediated 1301-N Trench – Elevated field radiological readings at 19 ft bgs suspended drilling until additional

radiological controls were in place. Drilling resumed on July 19th and is now continuing as planned.

- 199-N-187 (C8189/#4) – Well within the remediated 1301-N Trench – Drilling began at this well on July 19. However drilling temporarily ceased in response to high radiological readings at approximately 24 ft bgs. Due to radiological safety concerns with collecting samples under these high-risk conditions, drilling proceeded without the collection of one planned split-spoon sample to allow for radiation levels to drop to more manageable levels. Without the collection of this split-spoon soil sample, drilling was able to continue safely since all of the drill cuttings were sleeved and there was no contact with the material (unlike during the soil-sampling process). Sampling resumed at 31.6 ft bgs and continues as originally planned. Because of the radiological-contamination levels encountered, the drill casing size will need to be reduced once the borehole advances past these higher-level radiological conditions. This will result in the need to complete this as a 4-inch well instead of the originally planned 6-inch well.
- 199-N-188 (C8190/#5) – Well at the former head works of the remediated 1301-N Trench – Well drilling was initiated on August 8th and is continuing.
- 199-N-189 (C8191/#6) – Well between 100-N and 100-K to further delineate the extent of the Cr(VI) plume which may be coming in 100-K Area – Well drilling began in June and the borehole was advanced to the total depth of 117.3 ft bgs on July 18th. The water table at this location is at approximately 79 ft bgs, and the RUM unit was encountered at 107 ft bgs. All sampling was completed per the SAP, and preliminary analytical results indicate that Cr(VI) is vertically continuous in the unconfined aquifer at this location ranging from approximately 30 to 40 ppb (as shown in the figure below). Based on this, the final well design (as approved by RL, Ecology, and EPA on July 20th) called for a 45-ft well screen to be installed from above the water table to the RUM. Well construction was completed on August 4th.



- <u>100-N Integrated Groundwater Sampling and Analysis Plan</u> – The Draft A document was submitted to Ecology by RL on June 2, 2010, and Ecology review of this document is now complete. Ecology

provided comments to RL on August 3rd alongside comments on the draft revision to the RD/RA Work Plan (discussed above).

- Apatite PRB Performance Monitoring
  The high-river stage performance monitoring at the existing apatite PRB was conducted in May and June. The results of this sampling May/June sampling event will be provided when all of the analytical date are available (most likely at the September UMM meeting).

100-KR-4 Groundwater Operable Unit – Bert Day

- RI/FS Activities:
  - Transmitted for RL review the *Proposed Plan for Remediation of the 100-KR-1, 100-KR-1, and 100-KR-4 Operable Units*, Decisional Draft, on June 23.
  - Received RL comments on *Remedial Investigation/Feasibility Study for the 100-KR-1, 100-KR-2, and 100-KR-4 Operable Units*, Decisional Draft, on July 5. Draft A is being prepared, incorporating RL comment resolutions.

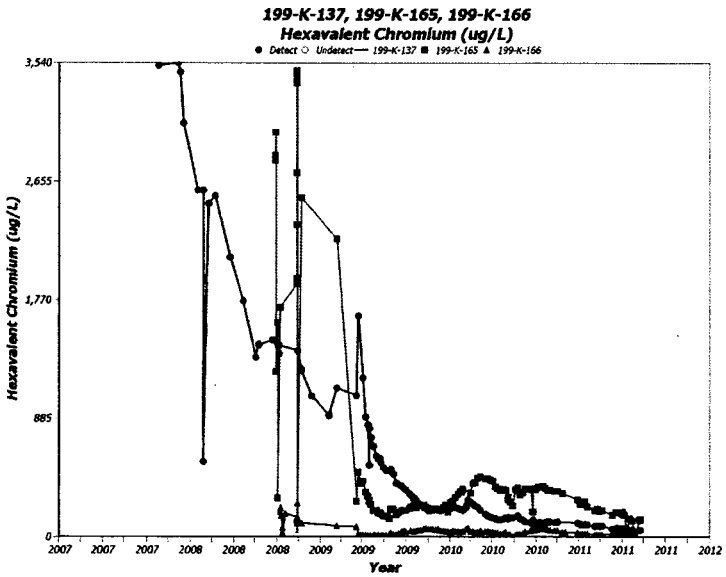
- Pump and Treat Systems Expansions and Modifications:
  - Phase 3 Realignment: in progress; currently drilling 199-K-196.
  - ResinTech SIR-700: The NFPA 1, Fire Code, action regarding controls for increased sulfuric acid use at the facility has been resolved by reducing the concentration to 50% with a maximum allowable quantity of 500 gallons. The Test Plan was updated to incorporate these changes and the revised schedule. Currently modifying the KW system for the acid modifications and resin change-out to SIR-700. Anticipate transition to SIR-700 within the next couple of weeks.

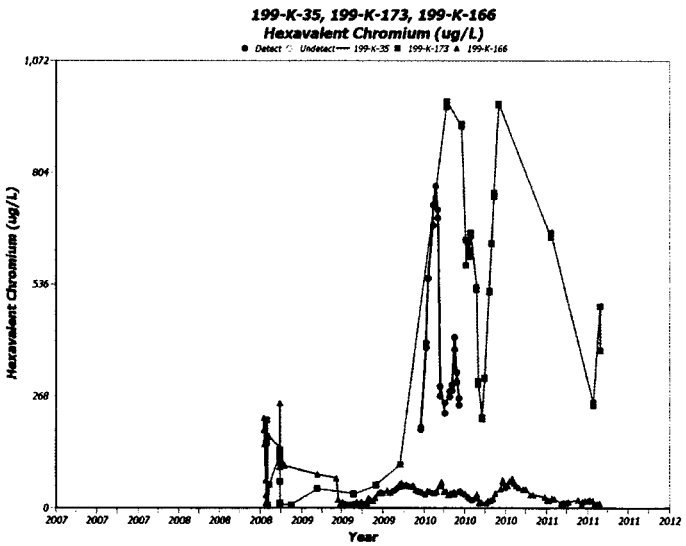
- Pump and Treat Operations:
  - KR-4, KX, and KW pump and treat systems are operating normally. The following provides data from 7/1/2011 – 7/31/2011:

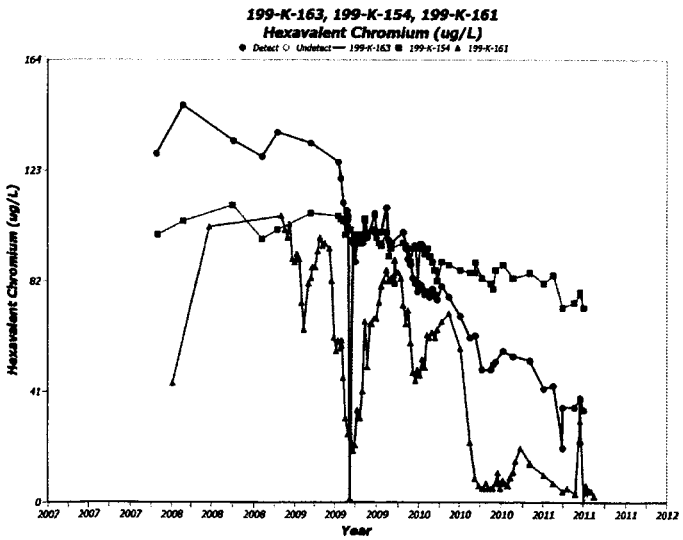
System	Average Flow Rates gpm	Cr(VI) Removed lbs	Average Influent Cr(VI) Concentration ppb
KX	464	5.2	34
KW	198	4.0	57
KR-4	105	0.9	27

- Monitoring Activities:
  - Monthly Cultural Monitoring: The monitoring was conducted on Friday July 22. This month Dana Miller and Leah Sue Aleck of the Yakama Nation assisted with the monitoring. No issues or new off-road driving incidents were observed this month.
  - Routine Monitoring:
    - Twenty seven wells were sampled with 100 samples collected for July sampling. No 100-K aquifer tubes were sampled in July. No significant changes overall from last month except for slight increase in Cr(VI) concentrations observed at extraction wells 199-K-144 and 199-K-148.
    - Well 199-K-152 has been connected to the KX P&T system as an extraction well. Average hexavalent chromium concentration (field data) at this well remains around 70 mg/L.

- Hexavalent chromium at KW treatment system remains generally near or below the current 20 µg/L standard. Well 199-K-165 remains above 100 µg/L, K-127 has declined to the 25 to 40 µg/L range. Well 199-K-166, which had reached to 62 µg/L in February 2010, has declined to 7 µg/L in July 2011 field analyses..
- Broad, long-term decreases in overall Cr6+ levels have been observed at KR4 and KX extraction wells at Northeast end of the K-2 Trench over the last 15 months. New shallow RI/FS well 199-K-201 at 116-K-2 trench is the only well showing continuing high values above 100 µg/L Well 199-K-22, which has gradually declined Cr6+ from 164 µg/L in 2000, decreased sharply to April values of 58.9 and 86.3 µg/L. At well 199-K-18, which has had an increasing Cr6+ concentration trend since December 1996, Cr6+ concentrations continued to decrease after peaking at 190-200 µg/L in Spring 2010. Concentrations at 199-K-18 have declined further, to 46.3 µg/L in July 2011, and are ~20% of the Spring 2010 maximum.



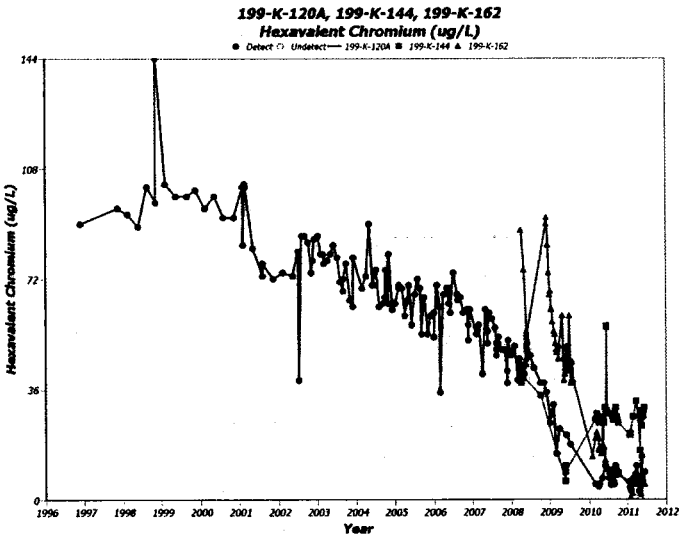




Hexavalent chromium concentrations at the downgradient extraction wells 199-K-162 and K-120A remained below 10 µg/L for April. Extraction well 199-K-145 declined from 62 to 46 µg/L in early October 2010 to 30 µg/L in July 2011. Farther upgradient, Cr6+ at well 199-K-111A has risen to 118 µg/L. Well 199-K-110A has increased to 10.7 µg/L after several years of hex chrome non-detections.

- Well 199-K-36, at the KE headhouse increased by over 300%, to 115 µg/L in June 2011 sampling. The KE headhouse and sedimentation basin structures are being demolished.

- Hexavalent chromium at KW monitoring well 199-K-173 has begun rising from a February 2011 low of 247 µg/L and rose to 483 µg/L in June, 2011.
- Initial sampling for all RI wells was completed in June and 9 of the 14 active wells were sampled in July. Except for temporary wells 199-K-200 and K-201, all reported values were less than 20 µg/L, with 3 of the wells less than 10 µg/L. Temporary wells 199-K-200 and 199-K-201 both increased, the former to 29.4 µg/Land the latter to 125 µg/L.



- Milestones:
  - M-015-66-T01: Submit CERCLA RI/FS Report and PP for the 100-KR-1, 100-KR-2, and 100-KR-4 Operable Units for groundwater and soil.

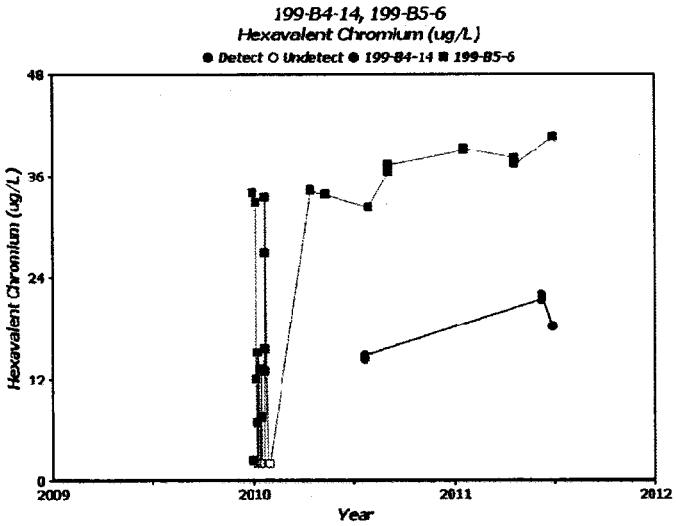
<u>100-BC-5 Groundwater Operable Unit – Nathan Bowles / Mary Hartman</u>

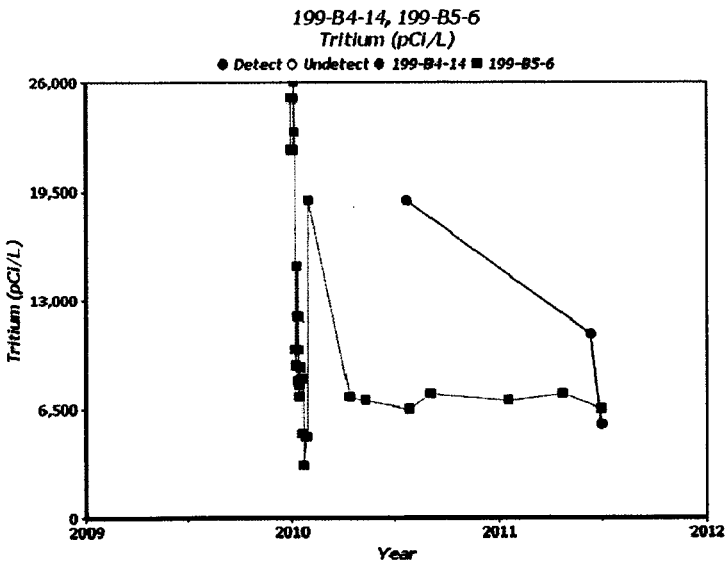
(M-015-68-T01, 11/30/2011, Submit CERCLA RI/FS Report and Proposed Plan for the 100-BC-1, 100-BC-2 and 100-BC-5 Operable Units for groundwater and soil.)

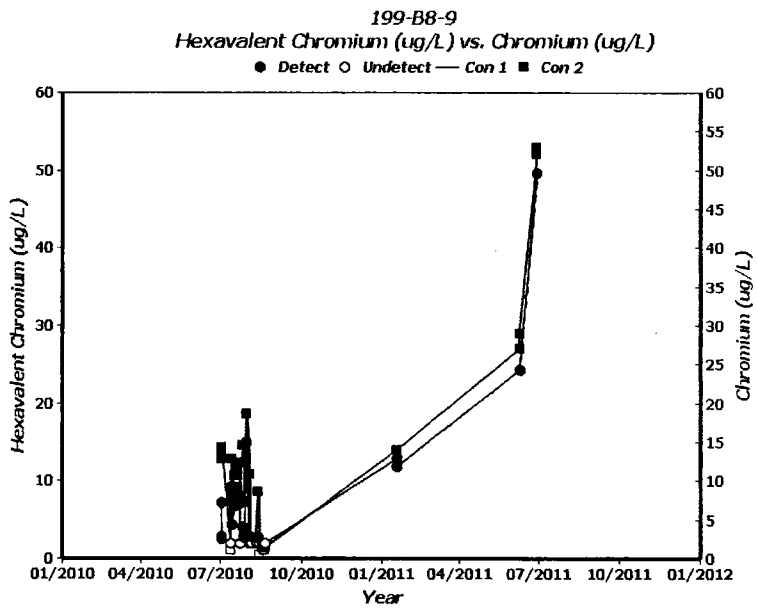
Schedule Status - On Schedule to meet TPA milestone. Field investigations are complete and the Decisional Draft was provided to DOE/RL on July 28, 2011, for review.

Five of eight wells scheduled for July sampling were sampled in late June; the other three are expected to be sampled in August.

Hexavalent chromium continued previous trends downgradient of 100-C-7. B4-14 is the water-table well and B5-6 is screened in the lower part of the aquifer. Tritium declined at the top of the aquifer and continued the previous trend in the lower part of the aquifer.







In well 199-B8-9, near C Reactor, hexavalent and total chromium increased between January and early June, and increased again, more sharply, between early and late June (to 50-53 ug/L). If this is a persistent change, it will affect our plume interpretation somewhat, but at these levels it does not affect our conceptual model significantly. The well is scheduled for sampling again in October.

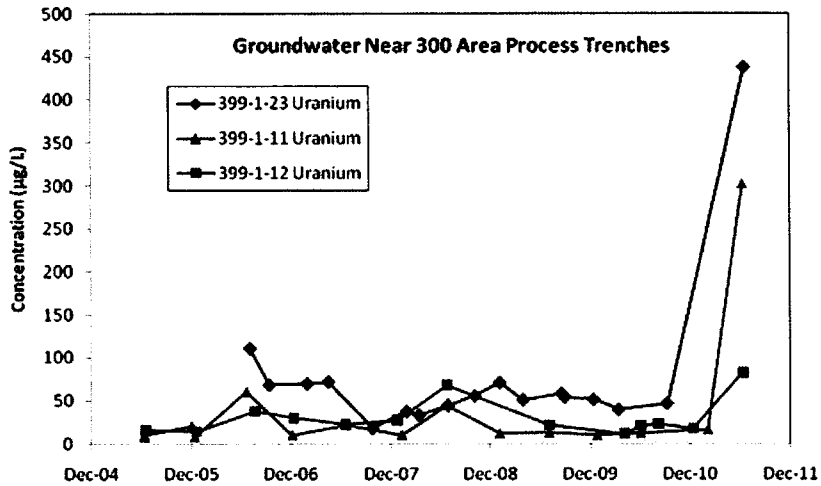
300-FF-5 Groundwater Operable Unit – Mark Kemner / Kelly Johnson

(M-015-72-T01, 12/31/2011, Submit CERCLA RI/FS Report and Proposed Plan for the FF-5 Operable Units for groundwater and soil.)

- Schedule Status - On Schedule to meet TPA milestone. Field investigations are complete. The 11 monitoring wells and 5 temporary wells in the RI/FS work plan are complete. The four IFRC wells in the South Pond are complete.
- All three rounds of RI/FS spatial and temporal groundwater sampling for 300-FF-5 have been completed.
- 300 Area RI/FS Activities (DOE/RL-2009-30, Rev. 0, 2010)
- *300 Area Drilling:* All eleven of the planned characterization boreholes have been drilled, completed as monitoring wells, and accepted for use in February. They are in the scheduling queue for quarterly sampling. The five 'temporary wells' have been drilled, completed, and accepted for use in early April, and are also in the scheduling queue. At the IFRC research site in the former South Process Pond, four boundary condition wells have been completed and accepted for use by that project.
- *300 Area RI/FS Report:* **Chapter 1 (Introduction)** - Review of author draft complete; revisions incorporated; tech pubs formatting and editing complete. **Chapter 2 (Remedial Investigation Activities)** - author review complete; revisions incorporated; new RI data needs to be incorporated prior to internal review. **Chapter 3 (Physical Characteristics)** - Author review complete; some revisions incorporated. PNNL to address comments related to geology and groundwater. Tech pubs began to format/edit the chapter in advance of comments being addressed. **Chapter 4 (Nature and Extent)** - Work continues by WCH on the soils portion of Chapter 4, which is 100% complete and undergoing internal comment resolution. Additional summaries include tables showing recent groundwater monitoring results for all COPC's identified in the Work Plan, and maximum values for various waste indicator constituents by well for each year since the remedial investigation began in 1992. The annual report will be used as a starting point for the Chapter 4 text and a number of the figures; 40% complete. **Chapter 5 (Fate and Transport)** - draft of uranium discussion complete; awaiting final list of soil COPCs and modeling write up to complete remaining discussion; 75% complete **Chapters 6 and 7 (Human Health and Risk Assessment)** risk

assessment team has provided an internal draft of Chapter 6 with Chapter 7 due next Monday. Approximately 75% complete. **Chapter 8 (Identification and Screening of Technologies) -** text and technology screening tables (Tables 8-5 and 8-6) 95% complete; final COPCs and PRGs are being used to complete the draft. **Chapter 9** – preliminary work began based on 100K report. 90% of model runs conducted to evaluate groundwater alternatives. Draft waste binning table submitted in late April; waste sites will need to be binned prior to proceeding with alternative development; 50% complete. **Chapter 10** – Not started.

- 300-FF-5 Operations and Maintenance Plan Activities (DOE/RL-95-73, Rev. 1, 2002)
- 300 Area Subregion:
- The most recent analytical results are for samples collected in June 2011. There were significant changes in groundwater conditions due to the unusually high water table conditions. Uranium concentrations are significantly elevated at several wells (see graph), with the largest increases occurring in the vicinity of the 300 Area Process Trenches and Ponds. Gross alpha and gross beta measurements confirm these higher values. Several inland wells, located away from the liquid waste disposal sites, also show an increase that correlates with the water table, but at much lower concentrations.



- Special sampling near the 618-1 Burial Special sampling Ground/Acid Neutralization Pit remediation site: The most recent sampling at two wells that monitor conditions downgradient of these remediation sites took place in June. Increased uranium concentrations were observed in both 399-1-21A and 399-1-2, however, those increased concentrations are attributed to the unusually high water table conditions. Monthly sampling continues at wells 399-1-2 and 399-1-21A, although remediation activities are essentially complete at these waste sites.
- 326 Pipeline Leak: On 7-17-2011, a potable water pipeline failed and released an estimated 100,000 gallons of water near the southeast corner of the 326 building. The monitoring of wells nearby have been adjusted to the following, based on a monitoring response plan submitted to RL and EPA on and approved on 7/20/2011:
    - 399-3-2 and 399-3-3 will be monitored every 10 days for one month for gross alpha, gross beta, and field parameters and within one month for uranium, major cation, and major anion concentrations. Note: 399-3-2 was sampled on 8-4-11.
    - 399-3-6 will be sampled as soon as possible for the currently scheduled sample (uranium, major cations, anions, etc).
    - 399-6-5 will be sampled as soon as possible as a baseline well.
    - Based on the gross alpha, gross beta, and field parameters results, CHPRC will determine which wells are best fit for monthly sampling for the duration of four months.

- 324 Building issue: No new information since the April unit manager meeting. The most recent sampling of a well that monitors conditions near the building took place in May. To date, monitoring results do not reveal evidence of groundwater impacts from releases at the building.

- *618-11 Burial Ground Subregion:* No new information to report since the March and April 2011 unit manager meetings. The most recent results are for samples collected in May 2011.
- *618-10 Burial Ground/316-4 Cribs Subregion:* The most recent analytical results are from two wells situated adjacent to the burial ground that was sampled in May 2011. Concentrations for waste indicator constituents remain consistent with historical trends and below their respective drinking water standards.

Annual Reports

- Groundwater Annual Report - The 2010 site-wide annual groundwater report is in final layup by document production.

  - 100 Area Annual Report - 100 Areas pump-and-treat performance report was issued on July 28, 2011

General Discussion

The Stop work for the use of dedicated submersible pumps has been lifted. The well access list was revised to include the electrical bonding requirements for each well. Additionally, the groundwater sampling procedure was revised to require the use of a temporary grounding strap pending permanent electrical bonding of the wells.

Attachment 2

August 11, 2011 Unit Manager's Meeting
Field Remediation Status

100-B/C

- Continued remediation efforts at 100-C-7 & 100-C-7:1
- 100-C-7, 139,000 bank cubic meters removed, excavation depth at 55 feet
- 100-C-7:1, 364,000 bank cubic meters removed, excavation depth at 45 feet

100-D

- Continued excavation and stockpile of 100-D-104
- Continued demo, processing and load-out at 100-D-50:6 and 100-D-30
- Began grouting pipes at 116-D-5 and 116-DR-5
- Continued chasing plume at 100-D-100
- Continued anomaly processing at 118-D-3

100-F

- Completed excavation and load-out of the western 2-15 foot deep portion of 100-F-57
- Preparing to excavate deeper plume at 100-F-57 to 19.5 feet
- Completed southern excavation and load-out of 100-N-64
- Began remediation of plume at 100-F-62
- Began remediation of plume at 100-F-48

100-H

- Completed siting of new trailers and relocation of personnel to support pipeline remediation under existing trailer complex.
- Continued backfill of 118-H-4 and 118-H-1:1
- Continued stockpiling backhauled material from ERDF

100-K

- Continued excavation and load-out at trenches I and H
- Found 10" SSNF piece and moved to the bunker
- Finished trenches D/E/P and C/F, being scheduled for civil survey
- Conducting final cleanup activities (downposting/surveying/sampling/spot removal) at trenches K and O

100-N

- Continued phase II design for UPR-100-N-17, insitu bioremediation site, design briefing for Ecology being planned for the week of August 15
- Continued excavation, processing and load-out of 100-N-61 and 100-N-64
- Continued tapping and draining adjacent pipelines near petroleum waste sites and 100-N-61 pipelines
- Completed excavation and load-out activities at 100-N-23
- Initiated excavation and load-out activities at 120-N-3

618-10 Trench Remediation

- Continued excavation and drum removal from South Trench
- Removed Concrete drums from west end of North Trench
- Developing strategy for in trench bottle processing
- Continued East Surge Trench excavation
- Testing started on Drum Punch #2 after repairs and work package were complete

100-IU-2/6 (milestone sites)

600-176 (White Bluffs Paint Disposal Area)
- Site is closed
- Completd backfill and re-contouring

600-120 (White Bluffs Spare Parts Burn Pit)
- Site is closed
- Completed backfill

600-109 (Hanford trailer camp Landfill)
- Site is closed
- 98 % complete with backfill (snake den needed)

600-124 (White Bluffs Burn Site & Paint Disposal Area)
- Site is closed
- Completed backfill

600-127 (White Bluffs Loading Docks & Fuel Storage Area)
- Site is closed
- Completed backfill

600-125 (White Bluffs Waste Disposal Trench 1)
- Site is closed
- Site is re-vegetated

600-5 (White Bluffs Waste Oil Dump)
- Site is closed
- Site is re-vegetated

600-182 (White Bluffs Asbestos Pipe Lagging)
- Site Closed
- Completed backfill

600- 3 (Hanford Townsite Excess Material Storage Yard, Paint Pit)
- Continuing the closure process

600- 280 (Hardened Tar Site)
- Site is closed

600-188 (White Bluffs Waste Disposal Trench 2)
- Site is closed
- Completed backfill

600- 205 (Hanford Townsite Landfill 2)
- Site is closed

600- 202 (Hanford Townsite Burn and Burial Pits)
- Site is closed
- Need to Profile and mulch site

600-108 (Pu-Vaults)
- Continued the closure process

600-178 (Guard House Toilet Pit)
- Continued the closure process

600-146 (Steel Structure on the Northwest side of Gable Mountain)
- Site is closed
- Site is re-vegetated

600-100 (White Bluffs Landfill)
- Site is closed
- Site is re-vegetated

600-149:1 (Small Arms range - UXO)
- Continued the closure process

600-186 (Hanford Construction Camp Septic and Pipelines)
- Continued the closure process

100-IU-2/6 (non-milestone sites)

600-350 (PNL Mounds)
- Completed final backfilling
- Entry road scarification complete

600-319 (Hanford townsite sub site 5)
- Completed excavation and loadout

600-328
- Waiting for approval of lead treatment plan prior to remediation

Cultural reviews
- Work continues on cultural review for the IU farmstead
- Work continues on cultural review for the IU White Bluffs
- Work continues on cultural review for the IU Shoreline

Attachment 3

Approval to Treat the Lead Contaminated Soil from 600-298(area 3A and 3B), 600-312(area 1), 600-317(area 1), 600-318(areas 4 and 5), and 600-319(areas 1 and 3) in Accordance with the "TREATMENT PLAN AND PROTOCOL FOR TREATMENT OF LEAD CONTAMINATED SOILS, WCH-252, Rev. 2"

This approval applies to lead contaminated soil from the 600-298(area 3A and 3B), 600-312(area 1), 600-317(area 1), 600-318(areas 4 and 5), and 600-319(areas 1 and 3) waste sites as described under waste profile, WPIU26PBSOIL001, rev. 1. The waste matrix consists mainly of soil, gravel, and cobble.

The waste is similar to the material treated in "*TREATMENT PLAN AND PROTOCOL FOR TREATMENT OF LEAD CONTAMINATED SOILS, WCH-252, Rev. 2*".

This approval allows treatment of this waste using the recipe described in Table 1, *Bench-Scale Test Results (Including Results and Reduction Ratios)* of the treatment plan under Mixture 2, which would treat soil with a lead concentration of up to 30.6 mg/L.

8/2/11

Chris Guzzetti — **Date**
U.S. Environmental Protection Agency

2 August 2011

Ellwood Glossbrenner — **Date**
U.S. Department of Energy

Attachment 4

160301

Roberts, Diana L

From: Saueressig, Daniel G
Sent: Friday, August 05, 2011 11:29 AM
To: Hadley, Karl A
Cc: Roberts, Diana L
Subject: FW: 100-F-57 CR6 Dig:

Attachments: -15 DEPTH SAMPLING_080211A 0100F-DD-C0427 (1).pdf

-15 DEPTH
1PLING_080211A 01

Karl, Diana Roberts will have hard copies of this downstairs for you to bring to the UMM.

Dan

-----Original Message-----
From: Saueressig, Daniel G
Sent: Friday, August 05, 2011 11:29 AM
To: ^WCH Document Control
Subject: FW: 100-F-57 CR6 Dig:

Please provide a chron number (and include the attachment). This email documents a regulatory agreement.

Thanks,

Dan
521-5326

-----Original Message-----
From: Christopher Guzzetti [mailto:Guzzetti.Christopher@epamail.epa.gov]
Sent: Wednesday, August 03, 2011 2:19 PM
To: Post, Thomas C
Cc: Saueressig, Daniel G; Fancher, Jonathan D (Jon); Jakubek, Joshua E
Subject: RE: 100-F-57 CR6 Dig:

I also concur.

Christopher J. Guzzetti
U.S. EPA Region 10
Hanford Project Office
Phone: (509) 376-9529
Fax: (509) 376-2396
Email: guzzetti.christopher@epa.gov

From: "Post, Thomas" <Thomas.Post@rl.doe.gov>
To: "Jakubek, Joshua E" <jejakube@wch-rcc.com>, Christopher Guzzetti/R10/USEPA/US@EPA
Cc: "Fancher, Jonathan D (Jon)" <jdfanche@wch-rcc.com>, "Saueressig, Daniel G" <dgsauere@wch-rcc.com>
Date: 08/03/2011 12:58 PM
Subject: RE: 100-F-57 CR6 Dig:

I concur.

Tom

From: Jakubek, Joshua E
Sent: Wednesday, August 03, 2011 12:16 PM
To: Christopher Guzzetti; Post, Thomas
Cc: Fancher, Jonathan D (Jon); Saueressig, Daniel G
Subject: 100-F-57 CR6 Dig:

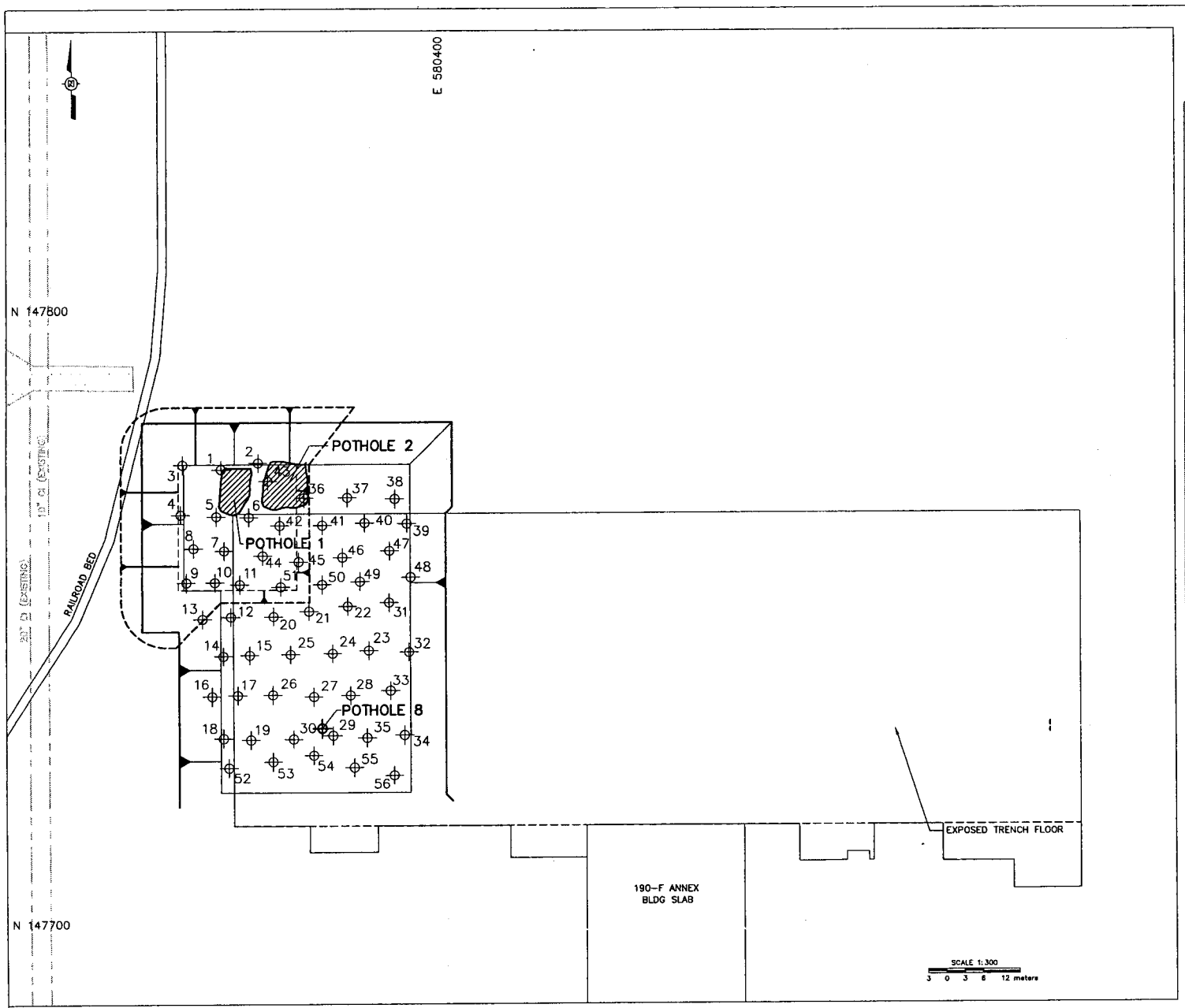
Chris/Tom, we have results back for all but seven samples taken from the 15' deep excavation portion of the 100-F-57 site. I have attached a map showing the sample locations with a table containing the CR6 results. As you will see, we have three location that exceed the RAG's. We would like to excavate the Northwest portion down to 19.5' in hopes of getting the area cleaned up. The proposed area is also shown on the map with the new proposed layback. The reason we chose 19.5' deep total is to hopefully take care of the CR6 issue without needing to bench (20' and over) and the added design that comes with that. If this does not take care of the issue we will design accordingly, but we feel like this should do the trick. With your concurrence we hope to start building the ramp down to the bottom as soon as this Friday. Please let us know what you think about this plan.

<<-15 DEPTH SAMPLING_080211A 0100F-DD-C0427 (1).pdf>>

Thanks,

Josh Jakubek
Washington Closure Hanford
Resident Engineer
509-942-4703

"Safety, Productivity & Quality Achieved by Integrity & Teamwork."



Sample Location	HEIS Number	CVI Results (mg/kg)	Qualifier
1	JHK551	0.274	
2	JHK552	0.23	
3	JHK553	0.155	U
4	JHK554	1.4	
5	JHK555	0.526	
6	JHK556	0.155	U
7	JHK557	2.03	
8	JHK558	3.42	
9	JHK559	0.449	
10	JHK560	0.163	
11	JHK561	0.155	U
12	JHK562	0.383	
13	JHK563	0.536	
14	JHK564	0.155	U
15	JHK565	0.155	U
16	JHK647	0.155	U
17	JHK648	0.155	U
18	JHK649	0.155	U
19	JHK650	0.155	U
20	JHK651	0.155	U
21	JHK652	0.155	U
22	JHK653	0.155	U
23	JHK654	0.155	U
24	JHK655	0.155	U
25	JHK656	0.155	U
26	JHK657	0.18	
27	JHK658	0.155	U
28	JHK659	0.155	U
29	JHK660	0.65	
30	JHK661	0.155	U
31	JHK662	0.155	U
32	JHK663	0.155	U
33	JHK664	0.155	U
34	JHK665	0.155	U
35	JHK666	0.587	
36	JHKM47	0.297	
37	JHKM49	0.408	
38	JHKM45	1.23	
39			
40			
41	JHKM44	0.155	U
42	JHKM43	1.02	
43	JHKM42	2.56	
44	JHKM41	0.155	U
45	JHKM40	0.155	U
46	JHKM39	0.155	U
47	JHKM38	0.155	U
48	JHKM37	0.155	U
49	JHKM36	0.155	U
50	JHKM35	0.155	U
51	JHKM34	0.155	U
52			
53			
54			
55			
56			

SITE 100-F-57
SAMPLING LOCATIONS
(15 FEET BELOW
SLAB/GRADE
(8-02-11)

Attachment 5

100 Area D4/ISS Status
August 11, 2011

D4 (WCH)

100-N River Structures (181-N, 181-NE, 1908-NE): Sediment has been removed from the floors of the 181-NE and 1908-NE. Sediment is currently being removed from the floor of the 181-N and is expected to be complete next week. Turbidity curtain installation unsuccessful due to unusually high flows in river. NMFS approved use of a fish exclusion nets in place of curtains. Fish exclusion nets currently being installed simultaneously with activities to ensure fish are not trapped inside the work area (area between the nets and shoreline). Placement of fill material in river expected to begin this week provided net installations are successful and areas behind nets can be adequately cleared of fish. Deliveries of rip rap for bench construction have been ongoing for approximately two weeks and will continue as benches are constructed. Project is currently awaiting confirmation from the USACOE and issuance of the excavation permit prior to beginning placement of fill material in the river. The DQO/SAP has been approved and signed by DOE and Ecology.

182-N High Lift Pumphouse: Asbestos abatement activities continue.

105-N Fuel Storage Basin (FSB): ISS crews installing the roof over the 105-N west side rod room recently completed activities and moved to the 105-N roof. They are now far enough away to allow D4 crews to resume demolition of the FSB. Activities are now focused on demolishing the 8-foot thick layer of grout at the bottom of the FSB. WDOH has been scheduled to collect ambient air samples at 100-N this week.

117-N Exhaust Air Filter House: West tunnel and most of the floor have been demolished. Currently finishing demolition of floor and proceeding toward east tunnel. After completion of east tunnel, demolition activities may proceed to the tunnels connecting the 105-NE Fission Product Trap pending coordination with FR activities to maintain an access road to the FSB. Demolition of the 105-NE Fission Product Trap likely to begin next month.

400 Area Buildings: To date, seven buildings (i.e., 4791TC, 4843, and 4831, 4760, 4814, 4719, and 4727), including slabs, have been demolished and removed from the 400 Area. Building 4706 is nearing completion.

ISS/SSE (Intermech):

105-N Reactor Building: ISS crews recently completed the roof section over the west side rod room allowing D4 to resume demolition activities in the Fuel Storage Basin. ISS has now again concentrating activities on the 105-N roof.

109-N Heat Exchanger Building: Roof is complete. Final inspection is pending.

Attachment 6

Field Remediation
100-C-7

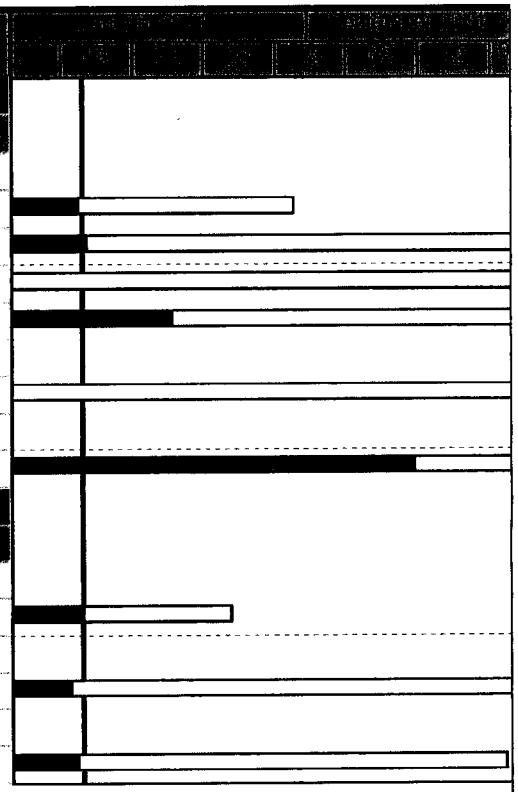
Washington Closure Hanford

Field Remediation - Rob Cantwell

100-C-7 and 100-C-7:1					
FR3710	Potential Asbestos Contaminated Material (7,000 TONs)	82%	12	06-May-11 A	30-Aug-11
FR3720	100-C-7 and 100-C-7:1 LDR Loadout (40,000 TONs)	6%	140	25-Jul-11 A	23-Apr-12
FR3740	ERDF Can Loadout (80 ppm <ERDF CAN<LDR) 213,000 TO...	1%	140	25-Jul-11 A	23-Apr-12
FR3730	100-C-7 and 100-C-7:1 ACL Loadout (324,000 TONs T&P)	9%	140	25-Jul-11 A	23-Apr-12
100-C-7					
FR1000	Excavate 100-C-7 (0-85 ft -315,000 BCMs)	52%	88	27-Jan-11 A	19-Jan-12
100-C-7:1					
FR3550	Excavate 100-C-7:1 (0-85 ft - 650,000 BCMs)	59%	104	27-Jan-11 A	16-Feb-12

Mission Completion - Wayne Johnson

Cultural Review for 100-B/C MR Fence					
A1520	Cultural Review for 100-B/C Miscellaneous Restoration Fence	93%	9	27-Jan-11 A	24-Aug-11
100-B/C Miscellaneous Restoration					
A1490	Cultural Review for 100-B/C Miscellaneous Restoration	58%	37	10-May-11 A	13-Oct-11
Borrow Pit 24 HCRC #2011-100-057					
A1500	Cultural Review for Pit 24	71%	23	28-Apr-11 A	20-Sep-11



ACTIVITIES / ACTIONS SUPPORTING SCHEDULE

- The deepest points of excavation is 55 ft at 100-C-7 and 45 ft at 100-C-7:1.
- Awaiting direction from DOE to determine the path forward for the discovered chromium contamination at 100-C-7:1.
- Meeting scheduled for next week with MSA to determine what options are available for power poles at 100-C-7:1

ISSUE / CONCERNS

Milestones	Due Date	Status
PM - 31	6/30/2013	6/30/2013 F

Attachment 7

Tri-Party Agreement

Change Notice for Modifying Approved Documents/ Workplans
In Accordance with the Tri-Party Agreement Action Plan,
Section 9.0, *Documentation and Records*

Change Number	Document Submitted Under Tri-Party Agreement Milestone	Date:
TPA-CN- 472	_____	**8/11/2011**

Document Number and Title:	Date Document Last Issued:
DOE/RL-2001-47, Rev. 3 Remedial Design Report/Remedial Action Work Plan for the 300 Area	December 2009

Originator: Jamie Zeisloft **Phone:** 372-0188

Description of Change: An Explanation of Significant Differences (ESD) to the Record of Decision for the 300 Area Remedial Action was approved on August 3, 2011 and authorizes a modified approach for managing liquids in bottles at 618-10. The Remedial Design Report/Remedial Action Work Plan is being modified to be consistent with the ESD. Specific changes are:

Section 1.2.1, page 1-4, added language describing the 2011 ESD
Section 3.5.2, pages 3-11 and 3-12, inserted language to describe the process for treating bottles containing less than 1 gallon of liquids at 618-10.

J. Zeisloft and L. Gadbois agree that the proposed change modifies an approved
DOE **Lead Regulatory Agency**

workplan/document and will be processed in accordance with the Tri-Party Agreement Action Plan, Section 9.0, *Documentation and Records*, and not Chapter 12.0, *Changes to the Agreement.*

Justification and Impacts of Change:

DOE/RL-2001-47, Rev. 3 needs to be updated to reflect a revised approach to the remedy for the 618 10 burial ground as described in the 2011 Explanation of Significant Differences for the 300 Area Remedial Action. These changes will be included in the next revision of the document. Affected pages are 1-4, 3-11, and 3-12.

Shading indicates changes

Approvals:

DOE Project Manager	8/11/11 Date	X Approved	__ Disapproved	
Larry Gadbois Lead Regulatory Project Manager	8-11-2011 Date	X Approved	__ Disapproved	

Once all the above steps have been completed, the originator sends a copy of the signed change notice to the MSA TPAI organization (H7-28), the Administrative Record (H6-08) (refer to TPA Action Plan, Section 9.3), lead regulatory agency, affected Hanford

contractor, DOE Project Manager, project/contractor Document Custodian, and others as appropriate. Maintain the original Change Notice per approved Records Management procedures.

The 618-10 and 618-11 Burial Grounds are specifically included in this revision of the RDR/RAWP, but it is anticipated that a separate sampling and analysis plan (SAP) or sampling and analysis work instructions will be prepared for these two burial grounds. In addition, waste sites recently added to the 300-FF-2 ROD by the 2009 ESD (EPA 2009) are included in this revision.

Appendix A provides additional detail for each waste site, as well as remedial action status. Figures 1-2 and 1-3 show the locations of various 300-FF-2 waste sites to be addressed. Information on many of these sites can also be found in the *Focused Feasibility Study for the 300-FF-2 Operable Unit* (300-FF-2 FFS) (DOE-RL 2000a).

Twenty-six candidate sites (also referred to as "remaining sites") consistent with the 300-FF-2 OU waste profile have been identified, but additional site characterization data are required to evaluate the basis for action either through sampling or historical data. This site characterization effort is required by the 300-FF-2 ROD (EPA 2001) and will be presented in separate site-specific work instructions (WIs) as discussed in the *300 Area Remedial Action Sampling and Analysis Plan* (300 Area SAP) (DOE-RL 2009a). If site characterization results indicate that remedial action is needed, the waste sites will be plugged into the removal, treatment, and disposal remedy under this RDR/RAWP. If no remedial action is needed, the waste sites will be categorized as "no action." These candidate waste sites are also called confirmatory sampling sites. The 300-FF-2 ROD and the 2009 ESD (EPA 2009) also provide the guidelines by which newly discovered sites may be designated for RTD or categorized as candidate sites for no action. If site characterization indicates that remedial action is needed or that no action is required, the disposition of these waste sites will be included in the annual fact sheet published by DOE identifying the plug-in sites that have been added and the reclassification of waste sites to "no action.

A 2011 ESD changed the approach to bottles containing liquids in the 618-10 burial ground. The ESD modified the remedy for 618-10 to allow for necessary treatment of liquid waste in bottles, up to one gallon per bottle, to occur in a tray or box within the excavation area in accordance with an approved work plan. Because of the unknown integrity of bottles, removing each bottle from the excavation for individual handling poses a safety challenge. Safety for both workers and the environment can be improved if the bottles are placed into a tray or box in the excavation for in-hole treatment.

As it is determined that sites will remain active in the future, this document will require revision to reflect the changes in the remediation strategy and to update any previous information that has been changed because of new developments.

1.2.2 300-FF-1 Operable Unit

The 300-FF-1 OU covers an area of approximately 47.4 ha (117 acres) and consisted of solid waste and contaminated vadose zone soils for the major 300 Area liquid/process waste disposal sites, the 618-4 Burial Ground, and three small landfills. Remediation of these waste sites was completed in 2004. The 300-FF-1 liquid/process waste sites were unlined trenches and ponds

- Material that is free of anomalous waste and below cleanup levels may be stockpiled onsite for use as backfill material. In certain situations, soil may be placed over material excavated within a waste site or discovered within a staging pile as a temporary measure. Such action may be undertaken to minimize an imminent threat to the worker (e.g., a high-dose item is uncovered, and a temporary soil cover is appropriate to control worker exposure). Temporary covering with soil may also be undertaken to prevent windborne dispersal of excavated material or highly contaminated soil and to maintain segregation from other waste site materials. These temporary measures may be undertaken while plans are developed for safe re-excavation and removal of waste site materials. In these instances lead regulator notification will be made.

- Excavated material that has been packaged may be returned to an excavation area or staging pile area in situations where the dose rates, contamination levels, free liquids, or other abnormalities have subsequently been determined to exceed normal transport requirements. In these situations, when repackaging is necessary, the previously excavated material will be reloaded into the transportation container. Notification to the lead regulatory agency is generally not required for these actions. The exception is LDR waste, which shall be managed in accordance with the second bullet above.

- An approved LDR treatment method for radioactively contaminated cadmium-, silver-, and mercury-containing batteries allows for macroencapsulation prior to disposal. However, lead-acid batteries are not covered by this standard and require initial treatment (draining corrosive liquids, treating separately prior to disposal) (DOE-RL et al. 2005b).

- If spent nuclear fuel (SNF) is discovered, it must be managed as spent nuclear fuel and is not eligible for disposal in ERDF. Shielded bunkers will be used for interim storage of the SNF with minimum specifications of (1) a 1.8-m (6-ft)-tall security fence, and (2) a bunker constructed of concrete shielding blocks including a heavy metal lid or concrete shielding block cover. SNF will be characterized for shipment to the 100-KW Fuel Storage Basin or the Canister Storage Building until an offsite storage or disposal facility authorized to manage SNF becomes available (DOE-RL et al. 2005b).

- If transuranic (TRU) material is discovered, it must be identified as either contact-handled transuranic (CH-TRU) waste or remote-handled transuranic (RH-TRU) waste and managed in accordance with the waste acceptance criteria of the receiving facility (WCH 2007b).

- For the 618-10 Burial Ground, treatment of liquid waste in bottles, up to one gallon per bottle, will occur in a tray or box within the excavation. Bottles will be placed in a spaced pattern into a containment structure within an excavated trench. Bottles will be covered with soil and fixative and then crushed. Crushing may occur individually or in a batch process. After all bottles in the tray are crushed, they will be stabilized by mixing with grout. Post treatment verification sampling will be performed to demonstrate compliance with land disposal restrictions and disposal facility acceptance criteria. The requirements are met by mixing the liquid into grout which immobilizes metals and radioactive metals expected in the waste, and neutralizes acids. A grab sample from each treatment batch will be subject to

laboratory analysis to confirm that the treated waste falls below the Land Disposal Restriction limits for COCs in accordance with the 300 Area Remedial Action Sampling and Analysis Plan (DOE/RL-2001-48). Liquid waste treated in this manner will be subsequently handled as bulk waste as described below or may be transported for disposal as a monolith within an acceptable container.

Excavated material will be surveyed and characterized for appropriate disposition prior to undertaking disposal of materials. When excavation of a waste site is complete, exposed dig faces will be evaluated to verify that remedial action goals have been met. When RAGs have been met and backfill concurrence is obtained from the lead regulatory agency, site backfill will be authorized. (Note: Unless specified otherwise, the term "backfill" as used in this document refers to filling in the excavation once post-waste site remediation sampling has demonstrated that RAGs have been met). Clean backfill material is obtained from clean material storage areas, approved/clean rubble, and local borrow sites. Excavations are backfilled so the sites conform to local topography.

3.5.3 Material Handling and Transportation

All contaminated materials (including excavated soils, debris, disposable protective clothing, air filters, and trash) require proper packaging, handling, and transportation in accordance with the waste management plan prescribed in Section 4.0. Contaminated bulk materials will be hauled in the standard ERDF open-top, hinged-gate roll-off boxes that are designed for a maximum capacity of approximately 18.1 metric tons (20 tons) and 22.7 metric tons (25 tons). The bulk containers will be transported on roll-on/roll-off trailers with hydraulic dumping capabilities that are towed by conventional tractor units. Drummed waste will be hauled on flatbed tractor-trailer units. The trailers and tractors will be suitable for operating on sloped excavation access ramps and other off-road ramps, and meet applicable DOT requirements. The wheel wells of the tractor will be constructed to prevent soil from being thrown onto the trailer and its containers during transport.

Weighed containers will be transported from the 300 Area to the ERDF over existing Hanford Site roadways. Each shipment of soil/debris transported to the ERDF will be referenced to a waste profile that is intended to bound the material found at the site. The waste profile is in effect until the characteristics of the excavation site have changed significantly. Empty containers returning from the ERDF will be removed from the ERDF tractor trailers in the CTF and rolled on to project haul trucks for refilling. The CTF helps to maintain a continuous flow of materials through the transportation system by allowing excavation to continue for a limited time if the trucks running to the ERDF are not operating, or it allows ERDF trucks to continue to run for a limited time if the excavators are not operating.

The containers are inspected for the presence of water prior to placing a liner or waste into the container. When water is found in a container with an estimated volume of 151 L (40 gal) or less (less than a depth of 1.27 cm (0.5 in.) in the bottom of the container), the water will typically be used as an aid for dust suppression in the adjacent radiological excavation, staging pile, or radiological debris piles in a manner that is consistent with regulator-approved work plans. When water is found in the container with an estimated volume greater than 151 L (40 gal), lead

Attachment 8

300 Area Closure Project Status
August 11, 2011
100/300 Area Combined Unit Manager Meeting

Ongoing Activities

- 324 – Received preliminary data for two of 300-296 waste site soil samples beneath 324. Initial review determined no unexpected contaminants for contamination levels. It is anticipated soils will be eligible for disposal at ERDF when ready for retrieval.
- 327 – Removed lower SERF cell and dry carousel from basement, balance of below-grade demolition to follow.
- 309 – Removing remainder of containment structure to grade. Engineering on reactor core removal ongoing.
- 308 – Completing final demolition preparations, initiated demolition of 308-A.
- 340 – Initiated stabilization of piping, vaults, vault tanks and 340-A tanks. Preparing to grout vault and vault tanks.
- Size reduction and processing of 337 High Bay demolition debris nearly complete.
- Completing demolition preparations for 320.
- Initiated engineering evaluation of "hot" piping in support of stabilization and remediation.

Current Demolition Preparations & Activities

- Continue 327 below-grade demolition.
- Complete 308-A demolition, finalize 308 demolition preparations.
- Continue preparations for 309 reactor core removal.
- Complete preparations for 320 demolition
- Continue preparations for start of above-grade demolition at 340 Complex

60-Day Project Look Ahead

- Continue evaluation/characterization of source-term beneath 324 Building, evaluation of remediation technique and technologies.
- Complete 308-A demolition, initiate demolition of 308. Finalize engineering for TRIGA reactor removal.
- Continue planning and engineering on final group of delayed release facilities from PNNL (326, 329, 331C, D, H &G). Initiated planning, documentation, and characterization activities for demolition.
- Continue 327 below-grade demolition.
- Complete demolition of 320.

Attachment 9

Environmental Protection Mission Completion Project
August 11, 2011

Orphan Sites Evaluations

- The 100-F/IU-2/IU-6 Area – Segment 4 Orphan Sites Evaluation Report was transmitted to RL for review and subsequent submittal to EPA for review on 7/20/11.
- Briefings to review the findings of the 100-F/IU-2/IU-6 Area – Segment 5 orphan sites process were completed in July. The drafting of the summary report will be initiated in August.

Long-Term Stewardship

- RL comments on the consolidated (CHPRC, MSA, and WCH) 100-F/IU-2/IU-6 - Segment 1 turnover and transition package to support transition of interim surveillance and maintenance responsibilities between contractors are currently being resolved and incorporated.
- The 100-F/IU-2/IU-6 Segment 1 Interim Remedial Action Report was submitted to RL on 5/24/11.
- The Draft A 100-BC-1 OU Interim Remedial Action Report was transmitted to RL for review and subsequent submittal to EPA for review on 7/18/11. Comments are requested by 8/18/11.

River Corridor Baseline Risk Assessment

- The Draft C Ecological Risk Assessment report (Volume I) is being finalized to reflect RL pre-concurrence review comments.
- The Rev 0 Human Health Risk Assessment report (Volume II) is being finalized to reflect EPA and Ecology review comments.

Remedial Investigation of Hanford Releases to Columbia River

- The Draft A screening level ecological risk assessment is being finalized to reflect RL comments.
- RL comments on the Decisional Draft Human Health risk assessment were received on July 8. The Draft A human health risk assessment is being developed to reflect RL comments.

Document Review Look-Ahead

Document	Regulator Review Start	Duration
100-F/IU-2/IU-6 Area – Segment 1 Interim Remedial Action Report	TBD	30 days
100-BC-1 Operable Unit Interim Remedial Action Report	July 18, 2011	30 days
100-F/IU-2/IU-6 - Segment 4 Orphan Sites Evaluation Report	July 25, 2011	30 days
River Corridor Baseline Risk Assessment – Ecological Risk Assessment Report (DOE/RL-2007-21, Draft C, Volume I)	September 2011	45 days
Columbia River Component Risk Assessment – Screening Level Ecological Risk Assessment Report (DOE/RL-2010-117, Volume I)	September 30, 2011	45 days
Columbia River Component Risk Assessment – Baseline Human Health Risk Assessment Report (DOE/RL-2010-117, Volume II)	December 2011	45 days

Attachment 10

OSWER Directive 9320.2-22
May 2011

www.epa.gov/superfund/programs/npl_hrs/closeout/pdf/2011guidance.pdf

Close Out Procedures for National Priorities List Sites

Office of Superfund Remediation and Technology Innovation
U.S. Environmental Protection Agency

Table of Contents

Section **Page**

Acronyms iv

1.0 Introduction 1-1
- 1.1 Background 1-1
- 1.2 Contents of the Guidance 1-2
- 1.3 Role of the Remedial Project Manager 1-3

2.0 Remedial Action Completion 2-1
- 2.1 Introduction 2-1
  - 2.1.1 Relation to Operable Units 2-1
  - 2.1.2 Utilizing Multiple RA Projects at a Site 2-1
- 2.2 Remedial Action Completion Definition 2-2
  - 2.2.1 RA Completion for Source Remediation Actions 2-4
  - 2.2.2 RA Completion for Source and Groundwater Containment Actions 2-4
  - 2.2.3 RA Completion for Groundwater and Surface Water Restoration Remedies 2-5
  - 2.2.4 RA Completion for Institutional Control Actions 2-7
- 2.3 Relationship of RA Completion to Other Actions 2-7
  - 2.3.1 Operational & Functional (O&F) 2-8
  - 2.3.2 Long Term Response Action (LTRA and PRP LR) 2-8
  - 2.3.3 Operation and Maintenance (O&M) 2-9
- 2.4 Inspection Guidelines for RA Completion 2-9
  - 2.4.1 Fund-lead RA Completion Inspections 2-10
  - 2.4.2 Responsible Party-lead RA Completion Inspections 2-10
  - 2.4.3 Federal Facility-lead RA Completion Inspections 2-10
- 2.5 Preparing the RA Report 2-11
- 2.6 RA Report Approval 2-11
- 2.7 RA Report Distribution 2-14

3.0 Construction Completion 3-1
- 3.1 Introduction 3-1
- 3.2 Construction Completion Process 3-1
  - 3.2.1 Pre-Final Inspection 3-1
  - 3.2.2 Preliminary Close Out Report 3-2
- 3.3 Technology Considerations for Construction Completions 3-4
  - 3.3.1 Groundwater Treatment Remedies 3-5
  - 3.3.2 Soil Vapor Extraction Remedies 3-5
  - 3.3.3 In-situ Remedies for Groundwater or Soil 3-6
  - 3.3.4 Interim Remedies 3-7
  - 3.3.5 RODs with Contingency Remedies 3-8
  - 3.3.6 Groundwater Monitoring 3-8
  - 3.3.7 Institutional Controls 3-8

3.4 Lead and Authority Considerations for Construction Completions 3-9
3.4.1 PRP Lead Sites 3-9
3.4.2 Federal Facilities 3-9
3.4.3 State Lead Sites 3-9
3.4.4 NPL Sites Addressed Under Removal Authority 3-10
3.4.5 Multiple Authorities Conducting Cleanup at the Same Site 3-10
3.5 Sites Deleted from the NPL 3-10
3.6 Additional Work at Construction Completion Sites 3-11

4.0 Site Completion 4-1
4.1 Introduction 4-1
4.2 Site Completion Criteria 4-1
4.2.1 All Remedial Decision Documents have been Completed and the Selected Remedy is Consistent with CERCLA, the NCP, and EPA Policy and Guidance 4-1
4.2.2 All Response Actions have been Completed and Appropriately Documented in the Site File 4-2
4.2.3 Institutional Controls are In Place 4-3
4.3 Role of Operation and Maintenance Activities in Achieving Site Completion 4-3
4.4 Final Close Out Report 4-4

5.0 Site Deletion and Partial Deletion 5-1
5.1 Introduction 5-1
5.2 NPL Deletion Criteria 5-2
5.3 NPL Deletion Through Resource Conservation and Recovery Act (RCRA) Deferral 5-2
5.4 The Deletion Process 5-3
5.4.1 State Concurrence 5-3
5.4.2 Deletion Docket 5-3
5.4.3 Two-step Rulemaking Process 5-5
5.4.3.1 Notice of Intent to Delete (NOID) Preparation 5-6
5.4.3.2 Headquarters Concurrence 5-6
5.4.3.3 Publication of the Notice of Intent to Delete and the Local Notice 5-7
5.4.3.4 Receiving Comments and Responsiveness Summary Preparation 5-8
5.4.3.5 Notice of Deletion (NOD) Preparation and Publication 5-8
5.4.4 Direct Final Rulemaking Process 5-8
5.4.4.1 Direct Notice of Intent to Delete and Direct Notice of Deletion Preparation 5-9
5.4.4.2 Headquarters Concurrence 5-10
5.4.4.3 Publication of the NOID, Direct NOD and the Local Notice 5-10
5.4.4.4 Withdrawal Notice Preparation and Publication 5-10

5.4.4.5 Receiving Comments and Responsiveness Summary Preparation 5-11
5.4.4.6 Notice of Deletion Preparation and Publication 5-11

Exhibits

Section **Page**

2-1 Remedial Action Completion Examples 2-3
2-2 Source Remediation Actions Pipeline 2-4
2-3 Source and Groundwater Containment Actions Pipeline 2-5
2-4 Groundwater and Surface Water Restoration Actions Pipeline 2-6
2-5 Recommended Remedial Action Report Contents 2-12

3-1 Examples of Minor Punch List Items 3-2
3-2 Recommended Preliminary Close Out Report Outline 3-3

4-1 Role of Institutional Controls 4-3
4-2 NCP Definition for Operation and Maintenance 4-3
4-3 Recommended Final Close Out Report Outline 4-5

5-1 Example Deletion Docket Documents 5-5
5-2 Two-step Rulemaking Process 5-6
5-3 Federal Register Deletion Package Contents 5-7
5-4 Direct Deletion Process 5-9

Acronyms

ARAR	Applicable or Relevant and Appropriate Requirement
ATSDR	The Agency for Toxic Substances and Disease Registry
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR	40 Code of Federal Regulations
CIC	Community Involvement Coordinator
DoD	Department of Defense
DQO	Data Quality Objective
EPA	U.S. Environmental Protection Agency
ESD	Explanation of Significant Differences
FCOR	Final Close Out Report
FDMS	Federal Docket Management System
FF	Federal Facility
FR	Federal Register
HQ	Headquarters
HRS	Hazard Ranking System
IC	Institutional Control
LTRA	Long Term Response Action
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
MNA	Monitored Natural Attenuation
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NOD	Notice of Deletion
NOID	Notice of Intent to Delete
NPL	National Priorities List
O&F	Operational & Functional
O&M	Operation and Maintenance
OSC	On-Scene Coordinator
OSWER	Office of Solid Waste and Emergency Response
OU	Operable Unit
PCOR	Preliminary Close Out Report
POLREP	Pollution Report
PRB	Permeable Reactive Barrier
PRP	Potential Responsible Party
QA/QC	Quality Assurance and Quality Control
QAPP	Quality Assurance Project Plan
RA	Remedial Action
RACR	Remedial Action Completion Report
RAO	Remedial Action Objective
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision

RPM	Remedial Project Manager
SAA	Superfund Alternative Approach
SARA	Superfund Amendments and Reauthorization Act of 1986
SITREP	Situation Report
SPIM	Superfund Program Implementation Manual
SVE	Soil Vapor Extraction
USACE	U.S. Army Corps of Engineers

1.0 Introduction

This guidance document is designed primarily for U.S. Environmental Protection Agency (EPA's) Remedial Project Managers (RPMs). It describes a recommended process for accomplishing and documenting remedial action completion, construction completion, site completion, and site deletion. The guidance is intended for those sites that are or were final on the National Priorities List (NPL). Portions of this guidance also may assist in the management of sites with Superfund Alternative Approach (SAA) agreements in place. [1]

This guidance supersedes the following documents:

- OERR Directive 9320.2-11, *Procedures for Partial Deletions at NPL Sites*, April 30, 1996.
- OSWER Directive 9320.2-09A-P, *Close Out Procedures for National Priorities List Sites*, January 2000.
- OSWER Directive 9320.2-13, *Addendum to Policy for 'Close Out Procedures for National Priorities List Sites,'* December 6, 2005.

1.1 Background

Section 105(a)(8)(B) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended by the Superfund Amendments and Reauthorization Action of 1986 (SARA), requires that the statutory criteria provided by the Hazard Ranking System (HRS) be used to prepare a list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States.[2] This list, which is Appendix B of the National Contingency Plan, is the NPL. Pursuant to the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (40 Code of Federal Regulations [CFR] Part 300), sites on the NPL are eligible for Superfund-financed remedial actions (RAs).

Superfund often addresses NPL sites through a combination of removal and remedial authority. Cleanup activities under removal authority include actions developed to achieve prompt risk reduction through emergency, time-critical, and non time-critical actions. In general, cleanup actions under removal authority are selected in an Action Memorandum.

[1] For additional guidance on SAA sites, see *Revised Response Selection and Settlement Approach for Superfund Alternative Sites* (OSWER 9208.0-18; June 17, 2004).

[2] 40 CFR 300.425(c) provides two other mechanisms for listing a site on the NPL. The second mechanism allows the State to list one priority regardless of their HRS score. The third mechanism allows certain sites to be listed regardless of their HRS score, if all of the following conditions are met:

- The Agency for Toxic Substances and Disease Registry (ATSDR) of the U.S. Public Health Service has issued a health advisory that recommends dissociation from the release.
- EPA determines that the release poses a significant threat to public health.
- EPA anticipates that it will be more cost-effective to use its remedial authority than to use its removal authority to respond to the release.

Cleanup activities under remedial authority are called remedial actions. A remedial investigation/feasibility study (RI/FS) at an NPL site generally evaluates the nature and extent of contamination, and identifies potential alternatives for the remedy. The Record of Decision (ROD) generally documents the remedial activities selected to achieve protectiveness and meet Applicable or Relevant and Appropriate Requirements (ARARs). Consistent with CERCLA §121, RAs are required to protect human health and the environment, and they may include a combination of engineered response actions (such as treatment, containment, removal of contaminated material, and providing alternate water supplies). Institutional controls are often used to complement these engineering controls.

1.2 Contents of the Guidance

A Superfund site may require several response actions to address all the site hazards. The recommended process for remedial action completion is described in Chapter 2 of this guidance.

When physical construction is complete at the entire site (through removal and/or remedial authority), the site typically achieves the construction completion milestone. EPA Headquarters monitors and reports site progress towards the construction completion milestone. The recommended process for construction completion is described in Chapter 3.

Site completion typically occurs when it is determined that no further response is required at the site, all cleanup levels have been achieved, and the site is deemed protective of human health and the environment. The recommended process for site completion is described in Chapter 4.

Once the site completion milestone has been achieved, the site is typically eligible for deletion from the NPL. The deletion process generally includes EPA verification, in consultation with the state, that no further federal response is needed, and the opportunity for public notice and comment in the *Federal Register* before the site is deleted from the NPL. The NCP deletion criteria may also be applied to portions of the site. Consistent with the recommended site deletion process, these portions of a site may be partially deleted from the NPL. The recommended process for site deletion and partial deletion is described in Chapter 5.

This guidance provides recommended processes related to showing how the various milestones of the NPL site close out process are achieved, highlighting specific activities and the recommended documentation for each activity's completion.

OSWER Directive No. 9200.4-22A, *CERCLA Coordination With Natural Resource Trustees* dated July 31, 1997, calls for Trustees listed in the Regional Contingency Plans to be notified of the completion of construction at an NPL site. The guidance also indicates that EPA will seek to consult with Trustees prior to deleting a site or portion of a site from the NPL. Appropriate language is included in this document for addressing these notification requirements.

In addition, Section 126(a) of CERCLA provides that the governing body of an Indian tribe shall be afforded substantially the same treatment as a state regarding a number of actions, including consultation on remedial actions, and roles and responsibilities under the national contingency plan and submittal of priorities for remedial action. RPMs should consult with tribes, as appropriate and consistent with EPA tribal policy, throughout the recommended processes discussed in this guidance.

1.3 Role of the Remedial Project Manager

The EPA RPM typically has lead responsibility for ensuring the successful completion of cleanup activities at an NPL site and for guiding a site through each successive phase of the Superfund process. It is recommended that the RPM consider the recommendations contained in this guidance when evaluating whether each milestone at a site can be achieved. The RPM should review the recommendations in this guidance to assist in determining that all statutory and regulatory requirements have been met, and that all appropriate policies have been considered for each recommended step in the site completion process.

2.0 Remedial Action Completion

2.1 Introduction

This chapter describes the recommended procedures for achieving remedial action completion at a NPL site. For purposes of this guidance, the term "remedial action" (RA, or "RA project") refers to the actual construction or implementation of a discrete scope of activities supporting a Superfund site cleanup. Each RA project is generally designed to achieve progress toward specific remedial action objectives (RAOs) identified in a CERCLA remedy decision document (e.g., ROD, ROD amendment).

The guidelines and processes for RA completion described in this chapter are independent of any requirements for "Certification of Completion of the Remedial Action" that may exist under the terms of a consent decree. For example, the RA completion milestone does not necessarily signify that a PRP has fully performed an RA in accordance with the terms of a consent decree (see 2.4.2).

2.1.1 Relation to Operable Units

Throughout the site investigation phase, the lead and support agencies should first identify the type and optimal sequence of site activities, including whether the site may best be addressed as a series of separate operable units (OU). The NCP (40 CFR 300.5) defines an OU as a "discrete action that comprises an incremental step" in cleaning up a site. In practice, however, an operable unit now more commonly refers to a geographical area, a contaminated medium, or the chronological phase of a cleanup. The division of a site into OUs often serves to better inform stakeholders of the manner in which EPA expects to manage the cleanup of a site.

The RA project is the physical work carried out to address contamination at a particular OU. Rather than refer to the descriptive area or phase of a site, the terms "RA" or "RA project" are used synonymously to refer to the particular action implemented, such as sediment dredging or construction of a landfill cap.

A Superfund site may consist of one or more OUs, each of which may in turn be addressed by one or more RA projects. The number of OUs and planned projects at a site may increase or decrease over time as knowledge of site conditions change.

Both OUs and RA projects are used to sub-divide a site into a series of smaller components that allow for more effective management and implementation of cleanup activities. A distinct RA project corresponds to the "action" level in CERCLIS. It has a definite start and completion date as defined in the *Superfund Program Implementation Manual* (SPIM).

2.1.2 Utilizing Multiple RA Projects at a Site

The appropriate division of a site into discrete operable units and projects is based on the best professional judgment of the site manager and is often dependent on the size and

complexity of a site. Each RA should consist of an appropriate scope of activities, developed through sound engineering and project management analysis, which contribute to the efficient and effective achievement of an overall site cleanup strategy.

Some unique types of sites (for example, residential soil cleanups, excavation of mine waste, or sediment dredging) may require multiple RA projects to effectively carry out a single remedy. The approach to remediating these types of sites typically involves the removal of very large volumes of waste over an expansive geographic area and/or an exceptionally long period of time. In these situations, site managers may find that implementation of the remedy is best managed as a series of individual projects which may employ different delivery mechanisms.

Site managers should consider a variety of site-specific factors as well as programmatic constraints when determining how to divide implementation of a remedy into projects. For example, different parties may be funding or conducting actions at physically distinct portions of the site, a particular property owner may impede access thereby delaying work in some areas, or there may be large distances separating distinct waste areas. Site managers may also consider the impact of various contract mechanisms and durations when determining how to implement particularly large-scale remedies. The above considerations are merely examples of issues that could exist at a site; RPMs should fully consider the circumstances at their site to determine the most appropriate and efficient manner in which to manage the cleanup.

2.2 *Remedial Action Completion Definition*

Completion of a remedial action project is typically achieved when the designated Regional official (Branch Chief or above, as determined by the EPA Region) approves in writing the RA Report. The RA Report is often referred to as a Remediation Action Completion Report (RACR) at federal facilities.

The key factors to consider for achieving RA completion and submitting the RA Report vary depending on the type of remedy that was implemented. For purposes of this guidance, remedies are generally grouped into four categories:

- source remediation actions,
- source and groundwater containment actions,
- groundwater and surface water restoration actions, and
- institutional control (IC) actions.

The RA completion factors for each of these scenarios will be discussed separately in this chapter.

Exhibit 2-1 provides examples of RAs and indicates when it may be appropriate to achieve RA completion. Multiple technologies are increasingly being used to address both source

and groundwater contamination in parallel. In these situations, each remedial technology may have a unique goal. It is recommended that the RPM consult with HQ to ensure that the appropriate RA completion criteria are being considered.

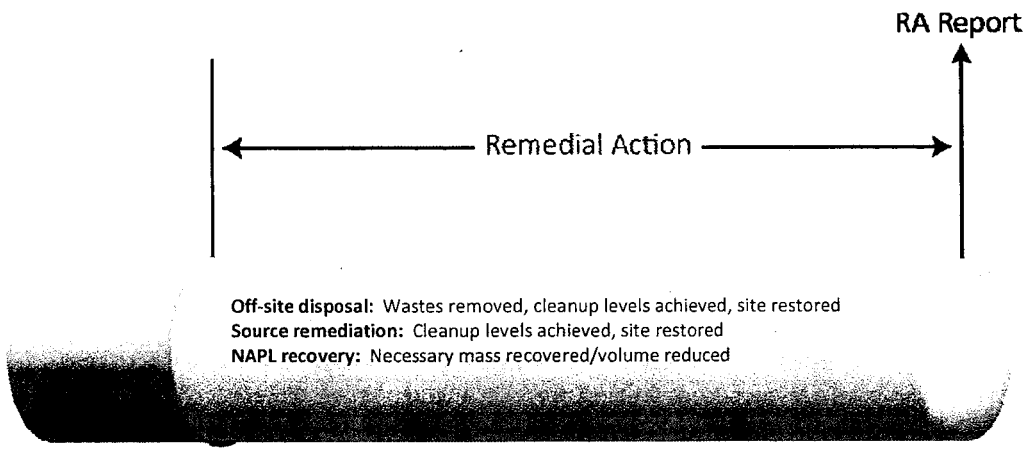
Exhibit 2-1
Remedial Action Completion Examples

Example RA	RA Complete Guidelines
Source Remediation Actions	
Source remediation (e.g., soil vapor extraction, in situ treatment of source material)	Cleanup levels have been achieved for the treated wastes and site has been restored.
Excavation and off-site disposal of contamination	All wastes that need to be addressed as part of the RA have been excavated, removed from the site to an approved location, cleanup levels have been achieved, and site has been restored.
NAPL remediation (destruction or recovery) with the goal of reducing the volume of source material, not restoring groundwater	Necessary contaminant mass removed or volume reduced.
Source and Groundwater Containment Actions	
Containment remedies (e.g., source control, landfill cap, groundwater containment in conjunction with a technical impracticability waiver)	Construction of the designed remedy is complete and data indicate that effective containment has been achieved (operational and functional, or O&F).
Extraction and treatment of groundwater to prevent plume migration	Construction of the treatment plant and monitoring system are complete, and data indicate that effective containment has been achieved (O&F).
Groundwater and Surface Water Restoration Actions	
Groundwater and surface water restoration remedies that involve ex situ treatment	Construction of the treatment plant and monitoring system are complete, and the remedy is operating as intended (O&F).
Groundwater restoration remedies that involve in situ treatment	Construction of the remedy and monitoring system are complete, injections of the appropriate reagent are underway, and the remedy is operating as intended (O&F).
Groundwater and surface water restoration remedies that involve monitored natural attenuation	The ROD is signed and any necessary RA is conducted (e.g., installation of sufficient monitoring well network to make the O&F determination).
Institutional Control Actions	
Implementation of an IC remedy	Institutional controls specified in the decision document are implemented.

2.2.1 RA Completion for Source Remediation Actions

For purposes of this guidance, source material is defined as material that includes or contains hazardous substances, pollutants, or contaminants that act as a reservoir for migration of contamination to groundwater, to surface water, to air, or acts as a source for direct exposure.[3] Source remediation generally refers to actions taken to reduce or eliminate the toxicity, mobility, or volume of contaminated source material, either through on-site treatment to appropriate cleanup levels or by physically removing it from the site. Examples include soil vapor extraction, in situ thermal treatment, and dredging of contaminated sediments. Exhibit 2-2 graphically depicts source remediation actions.

Exhibit 2-2
Source Remediation Actions Pipeline



For excavation and other active source remediation remedies, regions should consider the following factors prior to approval of the RA Report:

- Whether all construction activities are complete, including site restoration and demobilization;
- Whether all remedial action objectives and associated cleanup levels specified in the applicable ROD have been achieved;
- Whether a successful contract final inspection or equivalent has been conducted (see 2.4); and
- Whether the RA Report contains the information described in Exhibit 2-5.

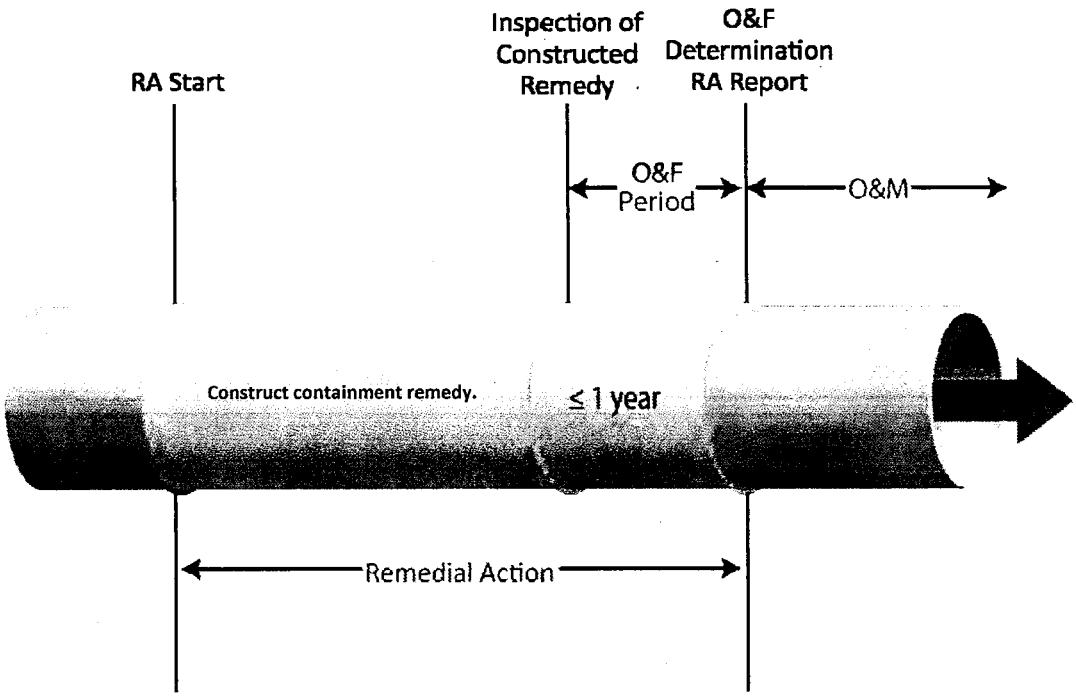
2.2.2 RA Completion for Source and Groundwater Containment Actions

Containment remedies may include, but are not limited to, permanent source control, a landfill cap, or physical measures to control the migration of a contaminated groundwater plume or surface water. Exhibit 2-3 graphically depicts source and groundwater containment actions. For containment remedies, regions should consider the following factors prior to approval of the RA Report:

[3] See also *A Guide to Principal Threat and Low Level Threat Wastes* (OSWER 9380.3-06FS; November 1991).

- Whether all construction activities are complete, including site restoration and demobilization;
- Whether all remedial action objectives in the applicable ROD have been achieved;
- Whether there is data to indicate that containment has been achieved, and the operational & functional (O&F) determination has been made (see 2.3.1);
- Whether a successful contract final inspection or equivalent has been conducted (see 2.4); and
- Whether the RA Report contains the information described in Exhibit 2-5.

Exhibit 2-3
Source and Groundwater Containment Actions Pipeline



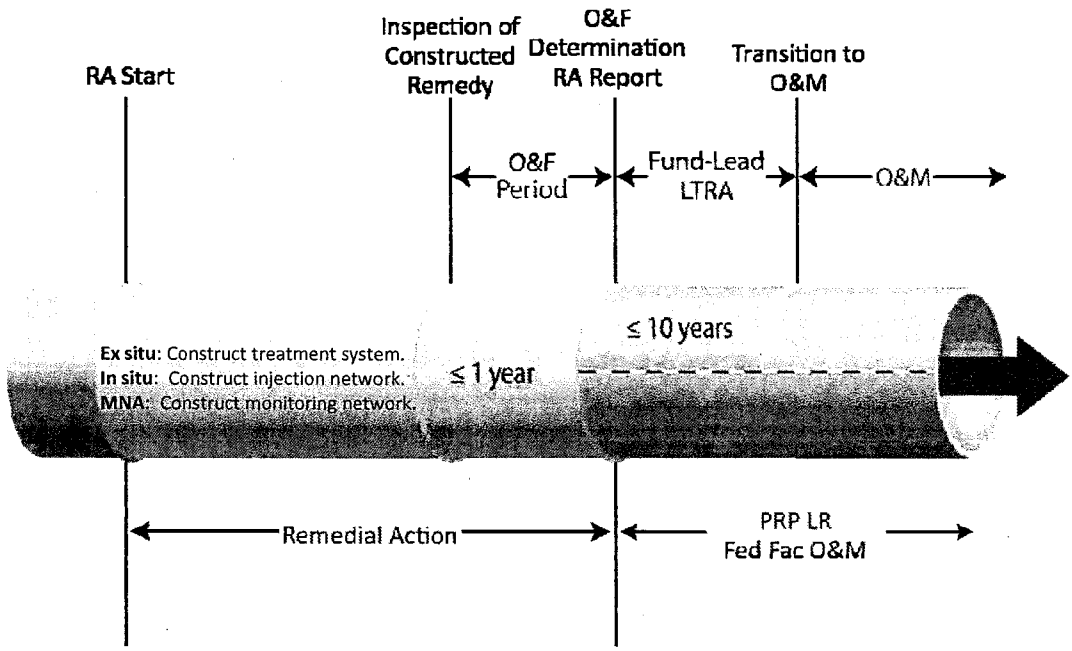
2.2.3 RA Completion for Groundwater and Surface Water Restoration Remedies

For purposes of this guidance, a restoration remedy is a remedial action with the objective of returning all or part of a surface water body or groundwater aquifer to the beneficial use specified in the ROD.[4] For groundwater currently or potentially used for drinking water purposes, these levels may be Maximum Contaminant Levels (MCLs) or non-zero Maximum Contaminant Level Goals (MCLGs) established under the Safe Drinking Water Act. The timing of the RA Report is generally unique for these remedies due to the duration of remediation, which may be substantially longer than for the other categories of remedies described above. For a restoration remedy, the RA Report is typically written when the

[4] See also *Transfer of Long Term Response Action (LTRA) Projects to States* (OSWER 9355.0-81FS-A; July 2003)

remedy has been constructed and is operating as intended, but prior to achieving the remedial action objectives specified in the ROD. Exhibit 2-4 graphically depicts groundwater and surface water restoration actions.

Exhibit 2-4
Groundwater and Surface Water Restoration Actions Pipeline



For groundwater and surface water restoration remedies, regions should consider the following factors prior to approval of the RA Report:

- Whether the construction of the treatment system is complete;
- For in situ restoration remedies, whether delivery of the appropriate reagent (e.g., oxidant or surfactants) is underway;
- Whether the monitoring well network is installed;
- Whether the remedy is operating as intended (O&F, see 2.3.1);
- Whether a successful contract final inspection or equivalent has been conducted (see 2.4); and
- Whether the RA Report contains the information described in Exhibit 2-5.

Previous guidance distinguished between Interim and Final RA Reports, where Interim RA Reports were used to document RA completion for groundwater and surface water restoration actions (a Final RA Report would then be issued when cleanup levels were achieved). Current guidance eliminates this distinction, now referring to all reports simply as "RA Reports". Rather than producing a Final RA Report, monitoring data demonstrating that cleanup levels have been achieved may be referenced in the Final Close Out Report (see Chapter 4).

2.2.4 RA Completion for Institutional Control Actions

EPA considers ICs to include "non-engineered instruments, such as administrative and legal controls, that help to minimize the potential for human exposure to contamination and/or protect the integrity of a response action."[5] ICs typically are designed to work by limiting land or resource use or by providing information that helps modify or guide human behavior at a site. Some common examples of ICs include zoning restrictions, building or excavation permits, well drilling prohibitions, easements, and covenants.

Institutional controls typically are selected to supplement an engineered remedy. In some instances, the party responsible for IC implementation is different from the party constructing the engineered remedy (e.g., the state and EPA's contractor, respectively). In such instances, the RA Report requirements are typically met when the engineered remedy has been implemented (see sections 2.2.1, 2.2.2, 2.2.3) and are not contingent on implementation of the ICs. A subsequent RA Report documenting the implementation of the ICs is typically not necessary.

There may be instances where ICs are an integral component of a single RA project, documented in the ROD as such and described in more detail in the Statement of Work, Consent Decree or other agreement. In these situations, it may be appropriate to ensure implementation of ICs prior to approval of the RA Report.

In limited cases when ICs are the sole remedy selected in a decision document, an RA Report is used to document completion.[6] In these limited cases, regions should consider the following factors prior to approval of the RA Report:

- Whether the ICs specified in the ROD (or ROD Amendment, ESD) are implemented;
- Whether a successful final inspection or equivalent has been conducted (see 2.4); and
- Whether the RA Report contains the information described in Exhibit 2-5.

2.3 *Relationship of RA Completion to Other Actions*

This section describes other actions in the remedial pipeline that often relate to RA completion. Detailed definitions, as well as additional guidance on tracking RAs and other related activities, may be found in the *Superfund Program Implementation Manual* (SPIM).

[5] *Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites (Interim Final)* (EPA 540-R-09-001/OSWER 9355.0-89; November 2010). (PIME Guidance)

[6] Under the NCP, ICs are not to be used as the sole remedy unless active response measures are determined to be impracticable. See Section 2.3 of the PIME Guidance, cited above.

2.3.1 Operational & Functional (O&F)

O&F activities are generally conducted after physical construction of the remedy is complete to ensure that it is functioning properly and operating as designed. The phase following construction of the remedy and before O&F is often referred to as shakedown, where the constructor makes minor modifications as necessary to ensure the remedy is operating as designed. O&F determinations are generally made for containment remedies (all media), as well as groundwater and surface water restoration remedies (including monitored natural attenuation remedies). A separate O&F determination should be made for each remedial action at a site, and is not directly related to the site-wide construction completion determination (see Chapter 3).

For Fund-financed remedies, the O&F determination generally governs the schedule for transfer of a project from EPA to the state for operation and maintenance. O&F determinations may also be made at Potential Responsible Party (PRP) lead projects to signify the end of the shakedown period. A similar determination, Operating Properly and Successfully, is sometimes made at federal facility (FF) projects for purposes of property transfer under CERCLA section 120(h)3(B).[7]

According to the NCP (40 CFR 300.435(f)(2)), a remedy becomes O&F either one year after construction is complete, or when the remedy is determined concurrently by EPA and the state to be functioning properly and is performing as designed, whichever is earlier. EPA may grant extensions to the one-year period in writing, as appropriate. The specific criteria for determining O&F will vary for each remedy and site. For Fund-financed remedies, the Superfund State Contract or site-specific Cooperative Agreement provides an opportunity to describe the process and expectations for O&F prior to the initiation of the remedial action.

EPA and the state (and PRP, if appropriate) conduct a joint inspection at the conclusion of construction to determine that the remedy has been constructed properly. The joint inspection also typically marks the beginning of the O&F, or shakedown, period. Following the shakedown period, the O&F determination should be documented by a letter from EPA to the state (and PRP, if appropriate). The date of the O&F determination may be subsequently referenced in the RA Report; however the RA Report should not serve as the primary documentation for O&F due to the length of time it takes to prepare and approve the RA Report. This will help ensure timely transfer of O&M responsibilities to states for Fund-financed projects.

2.3.2 Long Term Response Action (LTRA and PRP LR)

For purposes of this guidance, LTRA refers to the Fund-financed operation of groundwater and surface water restoration measures, including monitored natural attenuation, for the first ten years of operation following the O&F determination or until cleanup levels are

[7] For additional information, see *Guidance for Evaluation of Federal Agency Determinations that Remedial Actions are Operating Properly and Successfully Under CERCLA Section 120(h)(3)* (Interim), August 1996.

achieved, whichever is earlier.[8] The Fund typically continues to pay 90 percent of the cost during this ten-year period (with the remaining 10 percent paid by the state as a required cost share), then the state becomes responsible for operation and maintenance (O&M) of 100 percent of the remedy.

The operation of PRP-lead restoration remedies following the RA is considered O&M, however EPA refers to these activities as "PRP LR" (for PRP long-term response) for tracking and reporting purposes. The ten-year time frame is not used for PRP LR. For federal facility-lead sites, groundwater and surface water restoration remedies transition from RA completion directly to O&M. Guidelines for the start and completion of LTRA and PRP LR activities may be found in the *Superfund Program Implementation Manual* (SPIM).

2.3.3 Operation and Maintenance (O&M)

O&M consists of the activities required to maintain the effectiveness and integrity of the remedy; in the case of Fund-financed measures to restore groundwater or surface water, O&M refers to the continued operation of such measures beyond the LTRA period until cleanup levels are achieved. Guidelines for the start and completion of O&M activities at Fund, PRP and federal facility-lead sites may be found in the *Superfund Program Implementation Manual* (SPIM).

2.4 *Inspection Guidelines for RA Completion*

EPA generally conducts contract pre-final and final inspections prior to closing out an RA construction contract, regardless of lead or contracting party. These inspections are conducted to determine whether the construction has been completed in accordance with the contract design and specifications. The inspections are generally held between the contracting party and the construction contractor, although others may be invited.

During the contract pre-final inspection, the contracting party's project manager and the construction contractor should inspect all elements of work to see if the work is substantively complete and ready for acceptance under the terms of the contract. Some minor defects may come to light as the inspection proceeds. The construction manager should develop a "punch list" of all items that need correction or completion before the work can be accepted. A pre-final inspection report should be prepared, including the punch list, completion dates for outstanding items, and a date for a final inspection.

If punch list items are minor, the pre-final inspection may automatically serve as the final inspection. Otherwise, a final inspection should be conducted later to determine that punch list items are corrected and all work has been completed in accordance with the contract plans and specifications.

[8] For additional information on LTRAs, see *Transfer of Long Term Response Action (LTRA) Projects to States* (OSWER 9355.0-81FS-A; July 2003).

An applicable consent decree, Federal Facility Agreement, Statement of Work or other agreement may recommend additional inspections depending upon site circumstances. These inspections may be held concurrently with or separately from the contract pre-final and final inspection described in this guidance.

2.4.1 Fund-lead RA Completion Inspections

The NCP refers to an additional inspection at Fund lead sites requiring LTRA and/or O&M. This inspection is typically conducted jointly by EPA and the state at the end of all construction activities for that RA project in order to initiate the shake down, or O&F, period. If convenient, it can be conducted in conjunction with the contract pre-final or final inspection (see Section 2.4). The results of this inspection should be clearly documented in order to support the initiation of the O&F period.

2.4.2 Responsible Party-lead RA Completion Inspections

The *Model RD/RA Consent Decree* (Section XIV, Certification of Completion) refers to a pre-certification inspection upon completion of the RA. This inspection may involve the Settling Defendants (PRPs), EPA, the state, and appropriate contractors. The purpose of this inspection is typically to determine if the remedial action has been fully performed, and the performance standards have been achieved in accordance with the terms of the consent decree.

After the pre-certification inspection, if the Settling Defendants still believe that the RA has been fully performed and the performance standards have been achieved, the final consent decree normally requires them to submit a written report to EPA for approval stating that "the Remedial Action has been completed in full satisfaction of the requirements of this Consent Decree." This report, if it contains the proper information, may also serve as the RA Report for the remedial action.[9]

2.4.3 Federal Facility-lead RA Completion Inspections

Federal Facility Agreements may include an additional set of inspections to determine that all aspects of the remedy have been implemented in accordance with applicable enforcement documents and the ROD. Participants may include representatives from the federal facility, the EPA, the state, and appropriate contractors. The inspection can be done concurrently with the contract inspection described in Section 2.4, where appropriate.

[9] Final RD/RA Consent Decrees (Section XIV, Certification of Completion) usually require use of a "Certification of Completion of the Remedial Action" for consent decrees that address the sole or final operable unit for the site in which the United States has decided to grant a site-wide covenant not to sue. The model states that this Certification may be used, consistent with regional practice, for non-final OU consent decrees but this is not typically the case.

2.5 Preparing the RA Report

The RA Report should document the cleanup activities that occurred in order to fully implement a remedial action project at a site. The collection of individual RA Reports for a site can be used as the supporting documentation for development of the Final Close Out Report, as described in Chapter 4.

The RA Report is typically prepared by the party most familiar with the RA construction efforts (e.g., construction or oversight contractor). Such familiarity should provide the best opportunity to describe the specific activities conducted as part of the remedial action, and should provide the necessary supporting information to document that the remedy has either met cleanup levels or has achieved O&F.

The RA Report should be completed as soon as possible after contract final inspection of the completed construction, and the determination that the remedy is O&F, if applicable. The RA Report may take some time to compile; however, the goal is to have the report submitted to the region for approval within 90 days of the final inspection. This is a recommended guideline; the applicable Consent Decree, Statement of Work, or Federal Facility Agreement may specify the report schedule for a given RA project.

Exhibit 2-5, at the end of this chapter, presents the recommended contents of the RA Report. As discussed in Section 2.2.2, the contents of the RA Report are dependent upon the nature of the activities that have occurred for that particular RA project. Some items previously recommended for RA Reports (including documentation of actual RA costs and analysis of lessons learned) are no longer recommended. These items may be included as an optional appendix to the report, or documented independently in the site file.

Additional guidance specific to the preparation of Remedial Action Completion Reports (RACRs) for Department of Defense facilities on the NPL is available in the January 19, 2006 document *Recommended Streamlined Site Close Out and NPL Deletion Process for DoD Facilities.*

2.6 RA Report Approval

Since the RA Report is not typically prepared by EPA, the report is approved by EPA in order to achieve RA completion. There is no formal EPA Headquarters review or concurrence role for RA Reports.

Approval occurs when the designated regional official (Branch Chief or above, as determined by the EPA Region) approves in writing the RA Report. The approval can be provided with an appropriate signature on the RA Report cover sheet, an internal approval memorandum from the RPM to the designated regional official, or by letter to the originator of the RA Report.

Exhibit 2-5
Recommended Remedial Action Report Contents

Section	Contents
I. Background	• Provide a brief description of the site (e.g., name, location). • Summarize requirements specified in the applicable ROD for the RA. Include information on the remedial action objectives, cleanup levels (and basis for determining the cleanup levels), institutional controls, monitoring requirements, operation and maintenance requirements, and other parameters applicable to the design, construction, operation, and performance of the RA. • Briefly summarize the remedial design (RD), including any significant regulatory or technical considerations or events that occurred during the preparation of the RD. • Identify and briefly discuss any ROD amendments, explanation of significant differences, or technical impracticability waivers.
II. Construction Activities	• Provide a step-by-step summary description of the activities undertaken to construct and implement the RA (e.g., mobilization and site preparatory work; construction of the treatment system; associated site work, such as fencing and surface water collection and control; system operation and monitoring; and sampling activities). • If a treatment remedy, refer reader to an appendix for a description of the major components of the treatment train and operating parameters for the system. • If implemented, summarize details of the institutional controls (e.g., the type of institutional control, who will maintain the control, who will enforce the control). • Summarize any significant problems or deviations that occurred during construction (an ESD or other documentation separate from the RA Report may also be appropriate).

Section	Contents
III. Chronology of Events	• Provide a tabular summary that lists the major events for the RA, and associated dates of those events, starting with ROD signature. • Include significant milestones and dates, such as RD submittal and approval; decision document modifications; mobilization and construction of the remedy; significant operational events such as treatment system / application start-up, monitoring and sampling events, system modifications, operational down time, variances or non-compliance situations, and final shut-down or cessation of operations; final sampling and confirmation-of-performance results; required inspections; demobilization; and completion or startup of post-construction operation & maintenance activities.
IV. Performance Standards and Construction Quality Control	• For treatment remedies, identify the quantity of material treated, the strategy used for collecting and analyzing samples, and the overall results from the sampling and analysis effort to confirm that cleanup levels have been achieved (where applicable). • For containment remedies, summarize the data to confirm that containment is occurring (basis for O&F determination) and that, if applicable, cleanup levels have been achieved. • For excavation remedies, identify the amount of material excavated, the strategy for temporary storage and sampling, (or direct load-out), a description of any on-site or off-site treatment prior to disposal, and the final disposal location. • Provide an explanation of the approved construction quality assurance and construction quality control requirements or cite the appropriate reference for this material. Explain any substantial problems or deviations. • Provide an assessment of the performance data quality, including the overall quality of the analytical data, with a brief discussion of quality assurance and quality control (QA/QC) procedures followed, use of a quality assurance project plan (QAPP), comparison of analytical data with data quality objectives (DQOs). • For PRP or federal facility-lead projects, discuss EPA's oversight activities and results with regard to analytical data quality and the review of confirmatory data.

Section	Contents
V. Final Inspection and Certifications	• Report the results of the various pre-final and final RA contract inspections. Note punch list items identified during the pre-final inspection and discuss how they were addressed prior to the final inspection. • Briefly describe adherence to health and safety requirements while implementing the RA. Explain any substantial problems or deviations. • For RP-lead, describe results of pre-certification inspection. • If applicable, certify that the remedy is operational and functional, along with the date this was achieved.
VI. Operation & Maintenance Activities	• Describe anticipated operation and maintenance activities, such as monitoring, site maintenance, and closure activities. • Identify potential problems or concerns with such activities. • If the remedy involves groundwater or surface water restoration, describe the future activities necessary to meet cleanup levels. • If ICs have not been implemented, describe activities that need to be completed to get the controls in place.
VII. Contact Information	• Provide contact information (names, addresses, phone numbers, and contract/reference data) for the major design and remediation contractors, EPA oversight contractors, and the respective RPM and project managers for EPA, the state, and the PRPs, as applicable.
Appendices	• Provide supplemental information in appendices to the RA Report, as appropriate. These could include a map of the site and operable unit, a schematic of the treatment system, as-built drawings, site restoration plan, supplemental performance information, documentation of the O&F determination, and a list of references.

2.7 RA Report Distribution

Once the RA Report is approved, the original is retained in the Regional site file, and a copy should be provided to the originator of the report and other appropriate parties (e.g., state, tribe and/or PRP). Upon RA Completion, the region should also notify the appropriate Natural Resources Damages Trustees listed in the Regional Contingency Plans (if there are trustees at the site).[10] The region should provide a copy of the RA Report to the Trustees within one week of the completion and approval of the report.

[10] For additional information, see *CERCLA Coordination With Natural Resource Trustees* (OSWER 9200.4-22A; July 31, 1997).

3.0 Construction Completion

3.1 Introduction

In the first ten years of the Superfund program, outside audiences often measured Superfund's progress in cleaning up sites by the number of sites deleted from the NPL. This measure, however, did not and still does not fully recognize the substantial construction work and reduction of risk to human health and the environment that has occurred at NPL sites not yet eligible for deletion.

In response, the NCP Preamble *Federal Register* notice (55 FR 8699, March 8, 1990) established a "construction completion" category of NPL sites to more clearly communicate to the public the status of cleanup progress among sites on the NPL. In a subsequent *Federal Register* notice (58 FR 12142, March 2, 1993) EPA formally introduced construction completions "... to simplify its system of categorizing sites and to better communicate the successful completion of cleanup activities."

For purposes of this guidance, a construction completion site is a CERCLA site where physical construction of all cleanup actions is complete, including actions to address all immediate threats and to bring all long-term threats under control. Only sites that are final on the NPL or deleted from the NPL may qualify for construction completion.

Determination of construction completion at a site has no legal or financial significance, as it does not relate to satisfying contractual or other requirements (e.g., cleanup contract, consent decree, cooperative or interagency agreement), nor does construction completion affect the eligibility of cost reimbursement from the Fund.

3.2 Construction Completion Process

Construction completion is a site-wide measure; therefore completion of the last response action at a site generally determines when a site becomes eligible. This section discusses the typical construction completion process for sites addressed under CERCLA remedial authority, which is the most common approach to cleanup of sites on the NPL. At these sites, the milestone is normally achieved when a pre-final inspection for the last RA has been conducted and a Preliminary Close Out Report (PCOR) has been signed. Later sections of this guidance will address unique scenarios for sites addressed under other, or multiple, authorities.

3.2.1 Pre-Final Inspection

A pre-final inspection should be conducted for the site's final RA following the recommended procedures outlined in Section 2.4, Inspection Guidelines for RA Completion. Construction completion criteria are normally satisfied when only minor "punch list" items are identified in the inspection to finish the work in accordance with design plans and

specifications. For purposes of this guidance, punch list items are activities that are part of the contract but do not affect the functionality of the remedy. These items are usually addressed by the construction contractor before the final inspection, but typically do not impact the construction completion determination. Exhibit 3-1 provides examples of potential punch list items. Exhibit 3-1 is only a representative list; each site is evaluated individually to determine eligibility for construction completion.

Exhibit 3-1
Examples of Minor Punch List Items

- Revegetating landscape (except when integral to the remedy)
- Removing construction debris
- Installing additional monitoring wells
- Installing support equipment, such as security lighting
- Repairing minor defects in workmanship or construction
- Demobilization activities
- Resurfacing roads

3.2.2 Preliminary Close Out Report

While much of the input can be provided by the contractor or through previous RA Reports, the PCOR is an EPA document that is typically prepared by the Remedial Project Manager (RPM). Even before the pre-final inspection is conducted, the RPM can start drafting portions of the PCOR because much of the documentation is historical and not generally dependent on the outcome of the pre-final inspection.

The PCOR should focus on all OUs at the site, including a description of the releases at the site, site conditions, all construction activities (including removals), completion of construction, Five-year Reviews, and a detailed schedule of steps remaining for site completion. The PCOR generally should be seven to nine pages and contain the information shown in Exhibit 3-2.

The RPM will often prepare the PCOR for the site before the RA Report for the final RA project is completed. This sequence is typical because the RA Report may take up to 90 days for the preparer (PRP, contractor, USACE, etc.) to submit and get approved, or the site may have a long period of operation before cleanup levels are achieved (e.g., soil vapor extraction, bioremediation).

EPA Headquarters (HQ) has Regional Coordinators assigned to act as primary reviewers of draft PCORs. These individuals will work closely with the RPM in assessing eligibility for construction completion and reviewing the draft document. The RPM sends the draft PCOR to the appropriate HQ Regional Coordinator for review and comment prior to regional signature. After addressing HQ comments and obtaining the signature of the Regional Superfund Division Director (or designee), a copy of the signed report is forwarded to EPA HQ for concurrence and tracking. If HQ concurs, the construction completion date normally corresponds to the date the regional official signed the PCOR.

Exhibit 3-2
Recommended Preliminary Close Out Report Outline

Section	Contents
I. Introduction	• Include general statement indicating date of pre-final inspection and a statement that contractors or agencies have constructed the remedies in accordance with remedial design plans and specifications.
II. Summary of Site Conditions	• Provide background summary of site location, site description, and NPL listing information. • Describe any removal action activities at the site. • Summarize remedies selected and remedial action objectives from all decision documents. • Include dates each RA was initiated and completed, method used to implement RA (e.g., consent decree, contract, cooperative or other agreement), and date and description of pre-final inspections used to determine that construction is complete. • If implemented, summarize details of the institutional controls (e.g., the type of ICs, who will maintain and enforce the controls).
III. Demonstration of Construction QA/QC	• Document that the construction quality assurance/quality control plan was implemented, and that construction completion is consistent with the ROD(s) and remedial design plans and specifications. • Summarize any significant deviations that occurred during construction (an ESD or other documentation separate from the PCOR may also be appropriate).
IV. Schedule of Activities For Site Completion	• Identify activities remaining in order to: » Assure effectiveness of the remedy (e.g., implement institutional controls, work plan for operation and maintenance), » Assure consistency with the NCP (e.g., joint EPA/state inspection, operational and functional determination), » Satisfy requirements for site completion (e.g., achieve groundwater cleanup goals). • Note the schedule for the first (or next) Five-Year Review and state whether the review is statutory or policy. • Specify the organization responsible for implementation of each activity. • Set estimated dates for completion of each activity.

Sometimes a PCOR may not be needed because the site meets both construction completion and site completion criteria (See Chapter 4) simultaneously. In these instances, the RPM may elect to prepare a Final Close Out Report (FCOR) to satisfy the purposes of both documents concurrently. For example, a site where the remedy involves only excavation and consolidation of contaminated soils under a cap may be eligible for both construction completion and site completion pending confirmatory sampling and a successful final inspection. At a site with a groundwater restoration remedy, an FCOR would likely not be appropriate at the time of construction completion due to the extended operation of the groundwater remedy prior to achieving final cleanup levels.

At some NPL sites, EPA determines that no physical construction is necessary in the final OU to protect human health and the environment. There may or may not have been previous removal or remedial actions conducted at other OUs of the site. All sites qualifying for construction completion, including sites with No Action RODs in the final operable unit, should be documented via a Preliminary Close Out Report or Final Close Out Report.

> The construction completion milestone is typically achieved when the Regional Superfund Division Director (or designee) signs the PCOR, a hard copy of the signed document is sent to EPA HQ, and EPA HQ concurs.

Upon completion of a PCOR or FCOR, the appropriate Trustees listed in the Regional Contingency Plans should be notified of the construction completion determination (if there are trustees at the site).[11] The region should provide a copy of the report to the Trustees within one week of the completion of the report. A copy should also be provided to the state, tribe and PRP, if applicable.

3.3 Technology Considerations for Construction Completions

This section includes considerations for specific types of remedies, including groundwater treatment remedies, in-situ groundwater and soil remedies, soil vapor extraction, monitoring, and institutional controls. This section also discusses some special considerations for interim remedies and contingency remedies. The information below only addresses a subset of the many technologies employed at NPL sites. In instances where other remedial technologies are used, site-specific circumstances should be evaluated to determine eligibility for construction completion.

The sections below provide information and recommendations for achieving construction completion for a given remedy, assuming the given remedy is the last action at a site prior to achieving construction completion. However, the official construction completion determination applies to the entire NPL site. The site-wide determination generally will not be made until each individual remedy at a given site meets the definition of construction completion.

[11] For additional information, see *CERCLA Coordination With Natural Resource Trustees* (OSWER 9200.4-22A; July 31, 1997)

3.3.1 Groundwater Treatment Remedies

Groundwater treatment remedies often involve extraction of groundwater followed by conveyance to an above-ground treatment system. Such remedies may be undertaken to restore groundwater quality to levels that allow for beneficial use (e.g., restoration to safe drinking water levels) or to prevent further migration of a contaminated plume. These actions typically involve a continuous operation phase long after the system has been constructed in order to achieve the cleanup levels specified in the ROD.

These sites may achieve construction completion when physical construction of the remedy (e.g., construction of the treatment plant, pumps, and extraction wells) is complete, the pre-final inspection has been conducted, the treatment system is operational, and any expected future adjustments are likely to be minimal in nature (e.g., well replacement). If additional, substantial work is expected (e.g., expansion of the extraction network or additional treatment components), then the site may not qualify for construction completion.

In instances where monitored natural attenuation (MNA) is being used to achieve groundwater remediation goals, the initial network of monitoring wells necessary to effectively evaluate MNA progress should be in place prior to construction completion.

For sites with a groundwater treatment remedy, the "Schedule of Activities for Site Completion" section of the PCOR should include the anticipated date of the Operational and Functional (O&F) determination and an estimated timeframe to achieve cleanup goals.

3.3.2 Soil Vapor Extraction Remedies

Soil vapor extraction (SVE) units are generally designed to physically remove volatile compounds from soil layers located above the water table. The process typically employs vapor extraction wells alone or in combination with air injection wells. Vacuum blowers are designed to induce air through the soil layers, which strip volatile compounds from the soil and carry them to the surface via extraction wells. Volatiles can be controlled by adsorption to activated carbon, incineration, or condensation by refrigeration. SVE systems vary in size, but typically consist of several extraction wells, blowers, and collection/treatment units.

For purposes of this guidance, SVE resembles groundwater treatment remedies in that little day-to-day activity, other than routine operation of the treatment facility, takes place once the treatment facility is built. These actions may require a continuous operation phase long after the system has been constructed in order to achieve the cleanup levels specified in the ROD. Accordingly, the construction completion policy for SVE remedies and groundwater treatment remedies are generally the same.

Since SVE is in situ, construction activity is primarily limited to the installation of extraction wells, blowers, and collection/treatment units. Construction completion at SVE sites may be achieved when the extraction network and treatment unit have been constructed, a successful pre-final inspection has been conducted, the treatment system is operational, and any expected future adjustments are likely to be minimal in nature (e.g., well replacement).

The "Schedule of Activities for Site Completion" section of the PCOR should include the anticipated date of the Operational and Functional (O&F) determination and an estimated timeframe to achieve cleanup goals.

3.3.3 In-situ Remedies for Groundwater or Soil

In-situ treatment remedies for groundwater or soil could include chemical oxidation or other types of chemical treatment, biological treatment, thermal treatment, air sparging, permeable reactive barriers, and other similar technologies. In-situ treatment remedies typically involve adding treatment agents to the subsurface. Treatment agents could include chemical agents (e.g., oxidants, or surfactants); agents to facilitate microbiological activity; heating agents (e.g., steam, or electric current); physical reactants (such as zero valent iron, oxygen or air); or other agents.

In 2005, EPA published a policy addendum (*Addendum to Policy for "Close Out Procedures for National Priorities List Sites"* OSWER 9320.2-13, December 6, 2005) to clarify the criteria to evaluate eligibility for construction completion for in situ groundwater remedies. Prior to construction completion, any treatability or pilot tests should be complete and implementation of the full-scale remedy should be underway. Full-scale in situ remedies are often implemented in phases across areas of the site (e.g., an initial round of injections in the source area is followed by data evaluation, then subsequent injections in a downgradient dissolved plume). In such instances, the criteria for construction completion generally apply to the initial phase of the full-scale remedy.

Generally, in situ treatment remedies may be considered construction complete when each of the following three activities has been completed and documented in a PCOR:

(1) Physical construction of at least the first phase of the full-scale remedy should be complete, including injection wells, metering systems or other components needed to place or control movement of treatment agents in the subsurface.

    If a pump and treat system is part of the remedy, physical construction of all components of the system should also be completed. If a permeable reactive barrier (PRB) is used, physical construction of all components of the barrier system, including reactive and non-reactive segments of the barrier, should be completed.

If no physical construction is needed for the full-scale remedy (e.g., existing injection wells from the pilot will be used), construction may be considered complete when final design of the full-scale remedy is completed. In this case, the final design report should specify the treatment agents to be used, the method for placing treatment agents in the subsurface, and the location and design of injection wells to be used for the full-scale remedy.

(2) At least one round of treatment/agent addition has been initiated for the full-scale remedy.
- If different agents are to be added in stages, at least one round of the first stage should have been initiated.
- For electrical resistive heating and thermal conductive heating, this typically would mean turning on the power for electrodes or heater elements.
- For steam enhanced extraction, this generally would mean commencement of steam generation.
- For in-situ chemical oxidation and surfactant/co-solvent flushing, this usually would mean initial agent addition.
- For phytoremediation, this typically means completing the initial planting (harvesting, if planned, does not typically need to occur prior to construction completion).
- For a permeable reactive barrier (PRB), the treatment agent (reactive barrier material) should have been placed during remedy construction.
- If Geoprobe^{tm} points (or similar) are to be used for injection of treatment agents, injection points needed for at least the first round of treatment should have been installed.

(3) The pre-final inspection indicates the remedy will perform as designed and any expected future adjustments are likely to be minimal in nature (e.g., replacement of existing injection wells).

3.3.4 Interim Remedies

Interim remedies are most commonly used to institute temporary measures to stabilize an area of a site and prevent further migration of contaminants while a final remedial solution is being developed.[12] An interim remedy may also be used to evaluate the performance of a remedial technology prior to establishing final cleanup levels. Interim remedies generally are limited in scope and address media or areas of a site that will be subsequently addressed by a final ROD.

If an interim remedy has been used to initiate cleanup at a site, it should be followed by a final ROD and implementation of the final remedy before the site qualifies as a construction completion.

[12] See also *A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents* (EPA 540-R-98-031 / OSWER 9200.1-23.P; July 1999).

3.3.5 RODs with Contingency Remedies

RODs sometimes incorporate contingency remedies when there is uncertainty about the ability of the selected option to meet cleanup goals. Often this is particularly true where an innovative treatment technology is selected for use at a site. In terms of the construction completion criteria, the issue of contingency remedies may arise in situations where remediation may still be ongoing after the site is considered construction complete (e.g., groundwater restoration, SVE). For example, where natural attenuation is selected as the groundwater remedy, EPA may have included a more traditional pump and treat as the contingency remedy.

Sites that have contingency remedies identified in a ROD may be considered construction complete if the region has information to determine that use of the contingency remedy is not anticipated at the site, and the PCOR includes a statement to this effect. This determination in no way affects any Potential Responsible Party (PRP) settlement or other obligations. Making this determination does not preclude having to later invoke the contingency should it be required.

3.3.6 Groundwater Monitoring

Monitoring efforts generally are designed to provide information about remedy performance and progress toward achieving cleanup levels. Monitoring may be appropriate at any stage of remediation, including operation and maintenance (O&M) which continues after construction completion. Although monitoring occasionally may identify the need for future work, the need for monitoring does not preclude considering a site as a construction completion if the site qualifies otherwise.

In instances where monitored natural attenuation (MNA) is being used to achieve groundwater remediation goals, the initial network of monitoring wells necessary to effectively evaluate MNA progress should be in place prior to construction completion. Due to the dynamic nature of groundwater remedies, the installation of additional monitoring wells may continue after construction completion.

3.3.7 Institutional Controls

For purposes of this guidance, institutional controls are non-engineered instruments, such as administrative and legal controls, that help minimize the potential for human exposure to contamination and/or protect the integrity of a response action.[13] ICs typically are designed to work by limiting land or resource use or by providing information that helps modify or guide human behavior at a site. Some common examples of ICs include zoning restrictions, building or excavation permits, well drilling prohibitions, easements, and covenants.

[13] *Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites* (Interim Final) (EPA 540-R-09-001 / OSWER 9355.0-89; November 2010). (PIME Guidance)

Since institutional controls do not require physical construction, a site can achieve the construction completion milestone before ICs are in place. The need for institutional controls should be documented in a decision document and the details regarding future implementation should be included in the "Schedule of Activities for Site Completion" section of the PCOR. However, ICs need to be implemented in order to achieve site completion (see Chapter 4).

3.4 *Lead and Authority Considerations for Construction Completions*

Some NPL site cleanups are addressed by parties other than EPA. Construction completion guidelines and procedures for these sites are discussed below.

3.4.1 PRP Lead Sites

A determination of construction completion at a site generally does not have any legal significance and therefore, should not affect any enforcement agreement or other obligations associated with the PRPs. Construction completion criteria for PRP sites are meant to be identical to those for Fund lead sites. The RPM, however, should carefully determine whether the activities performed by the PRP are in accordance with applicable enforcement documents.

3.4.2 Federal Facilities

Construction completion procedures for federal facility sites are identical to those for Fund- and PRP-financed remedial actions. The EPA RPM is generally responsible for developing the PCOR at federal facility sites. Due to the size and complexity of these sites, the PCOR is typically longer but generally should not exceed 20 pages.

3.4.3 State Lead Sites

Sites where the state is the lead agency for conducting and/or overseeing response actions typically call for state certification of construction completion. In these situations, EPA relies heavily on the state to determine the appropriate response actions at a site. (See Section 4.2.1. for guidelines to ensure all response actions have been appropriately documented in a decision document.)

In most instances, the state prepares the PCOR and EPA concurs with this decision by signing the PCOR. The PCOR should indicate regional concurrence with the state's determination that no further physical construction is anticipated.

If the state does not prepare an actual PCOR, then the state should send a certification letter to the region that includes a detailed summary of all actions taken at the site. The letter should also clearly state that no further construction is anticipated.

All sites qualifying for construction completion will be documented by a PCOR (or FCOR, as appropriate, see Section 3.2.2). If the state does not prepare the PCOR, then the EPA RPM prepares the document after regional concurrence with the state's certification letter.

3.4.4 NPL Sites Addressed Under Removal Authority

Actions under removal authority are generally intended to achieve prompt risk reduction through emergency, time critical, and non-time critical actions. In some rare instances, NPL sites may be addressed entirely under removal authority. In such instances, the site may achieve construction completion at the same time as site completion.

The RPM (or On-Scene Coordinator (OSC), as appropriate) should document in the final Pollution Report (POLREP) that the contractor has completed all removal actions and demobilized from the site.[14] The RPM or OSC should then prepare an FCOR to document the construction completion (and simultaneous site completion) for sites that were addressed entirely under removal authority. (See Section 4.2.1 for guidelines to ensure all response actions have been appropriately documented in a decision document.)

For sites addressed through a combination of remedial and removal authority, the process outlined in Section 3.2 (including a pre-final inspection, punch list items and the PCOR) is applicable. The PCOR should summarize all construction activities, whether conducted under removal or remedial authority.

3.4.5 Multiple Authorities Conducting Cleanup at the Same Site

Cleanup work under different authorities may be planned or under construction simultaneously at a site. For example, operating facilities may have RCRA corrective action ongoing at one part of the site, while CERCLA response work is occurring elsewhere. In situations where all physical construction identified under CERCLA authority for the NPL site is complete, but other non-CERCLA work remains, the site may qualify for construction completion if documentation guidelines are met. Any physical construction that has been identified through the CERCLA process should be finished before the site is declared construction complete.

3.5 Sites Deleted from the NPL

Initially, only final NPL sites qualified for construction completion. As a result, sites already deleted from the NPL would never qualify for construction completion if physical construction remained at the time of deletion. This included sites deleted from the NPL as a result of deferral of the remedy and associated physical construction to RCRA Subtitle C.

[14] For information regarding POLREPs refer to *Guidance for Preparing POLREPs/SITREPS* (OSWER No. 9360.3-03; December 2007).

In 2000, the Agency published a Notice of Policy Change in the *Federal Register* (65 FR 57810, September 26, 2000) which states that all sites that are on the NPL or have been deleted from the NPL may be eligible for construction completion "when all physical construction under all authorities is complete and all other applicable construction completion policy criteria have been satisfied." As a result, the construction completion milestone may follow deletion from the NPL at a small number of sites that have been deleted where, for example, cleanup was deferred to and carried out under RCRA Subtitle C.

3.6 Additional Work at Construction Completion Sites

Routine adjustments and modifications to a constructed remedy can be expected, particularly during O&M. Anticipating the need for these routine activities to occur does not preclude listing a site as a construction completion if the site qualifies otherwise.

Examples of routine adjustments or modifications may include the following:

- drilling of additional extraction wells as subsurface conditions evolve,
- replacement of injection wells for in-situ remedies,
- modifications to unit processes at groundwater treatment plants,
- dismantling and removing on-site remediation facilities,
- repair, replacement or relocation of equipment,
- cap maintenance (e.g., mowing, landscaping, erosion control),
- making repairs or adjustments to a treatment plant,
- clearing debris from a drainage system or settling pond,
- modifying the sampling and analysis scheme for the monitoring portion of a remedy.

The region should carefully evaluate the status of all response actions at the site and consider the need for additional construction activities. If the region believes that substantial construction might still be required in the future for the site (e.g., to address a potential new exposure pathway or expand an extraction network to a downgradient area), then the construction completion determination is likely premature. Similarly, if the region anticipates the need for an additional ROD, or a fundamental change that requires an amended ROD, then the construction completion determination may also be premature.

However, unforeseen circumstances may trigger the need for more substantial work after the site has been declared a construction complete. Examples may include adding a new treatment component to address a previously undetected contaminant, removing newly discovered pockets of contamination, or rebuilding a remedy following a natural disaster. In such situations where the need for the additional work is unforeseen, EPA HQ will decide, in consultation with the region, if the site should retain its construction completion status.

4.0 Site Completion

4.1 Introduction

For purposes of this guidance, site completion signifies the end of all response actions at a NPL site. The site completion designation generally means that the response actions at the site were completed and it is anticipated that no further Superfund response is necessary to protect human health and the environment.

It is recommended that the RPM apply EPA's site completion criteria discussed in this chapter to a site to help verify that it is eligible for site completion status. Site completion is typically documented by a FCOR. This chapter explains the recommended site completion criteria and the recommended documentation to demonstrate that the criteria have been met and that the site completion milestone has been achieved.

4.2 Site Completion Criteria

Typically, it is recommended that regions evaluate all the criteria discussed in this section when evaluating whether the site is eligible for site completion. Consistent with CERCLA, section 300.430 of the NCP states that the national goal of the Superfund Program is to select (and implement) remedies that are protective of human health and the environment, that maintain protection over time, and that minimize untreated waste. The recommended criteria are:

- All remedial decision documents have been completed and the selected remedy is consistent with CERCLA, the NCP, and EPA policy and guidance;
- All response actions have been completed and appropriately documented in the site file; and
- All institutional controls are in place.

4.2.1 All Remedial Decision Documents have been Completed and the Selected Remedy is Consistent with CERCLA, the NCP, and EPA Policy and Guidance

When evaluating site completion, it is recommended that all remedial activities taken at a site be documented in a remedial decision document. In addition, if cleanup actions were taken under another authority (for example, removal or state authority), it is recommended that these actions be evaluated in a CERCLA remedy decision document before site completion. In situations where site investigation activities conclude that site risks do not warrant a response action, this decision is generally documented in a no action or no further action ROD. At the time of site completion, all anticipated decision documents should be completed.

When reviewing the remedial decision documents and associated response actions, it is important to assess whether they adequately address all contamination and exposure pathways identified during the RI/FS or any subsequent site characterization. The remedial action objectives and cleanup levels selected in these documents are typically reviewed in light of CERCLA, the NCP, and current EPA policy and guidance. These reviews should provide assurance that the remedial action objectives (RAOs) and associated cleanup levels selected for the response actions identify clear expectations and objectives and are consistent with ARARs, as appropriate.

4.2.2 All Response Actions have been Completed and Appropriately Documented in the Site File

CERCLA and Section 300.5 of the NCP both define response as removal or remedial action, including enforcement related activities. As defined by the NCP, response actions may include a combination of engineering and/or institutional controls selected to address risks posed at the site. If waste is left in place, O&M activities may continue after all response actions have been completed. See 4.2.4 for additional definitions and information related to operation and maintenance activities.

In order to determine that all response actions have been completed, it is encouraged that the regions have defensible and reportable data to verify that the cleanup levels associated with the response action have been achieved. This data, along with other remedial and removal action activities, are typically included in a report signifying completion of these activities. The data and report should be part of the post-decision document file or general site file kept at the region.

For removal actions, the completion of these activities is typically documented in Pollution Reports (POLREPs). The content of these reports can be found in the *Guidance for Preparing POLREPs/SITREPS* (EPA 540/F-94/018).

For remedial actions, the completions of these actions are typically documented in RA Reports. Chapter 3 provides details on the recommended content of these reports for different types of remedial action.

It is recommended that the content of these reports be summarized in the Final Close Out Report. In addition to the compilation of the reports described in this section, the FCOR typically summarizes all activities associated with restoration of groundwater or surface water, including a summary of monitoring data and an analysis that demonstrates that cleanup levels have been achieved.

Recommended contents for this report are summarized in Exhibit 4-3.

4.2.3 Institutional Controls are In Place

EPA considers ICs to include "non-engineered instruments, such as administrative and legal controls, that help to minimize the potential for human exposure to contamination and/or protect the integrity of a response action".[15]

Exhibit 4-1
Role of Institutional Controls

The NCP (40 CFR 300.430(a)(1)(iii) states that institutional controls should supplement engineering controls to prevent or limit exposure, but institutional controls normally "shall not substitute for active response measures."

Institutional controls (ICs) may be necessary to ensure protectiveness and/or to protect a remedy. If any cleanup options being evaluated leave waste in place, ICs should be considered to ensure that unacceptable risk from residual contamination does not occur. In order to achieve site completion, the appropriate institutional controls need to be implemented, and the requirement for the institutional controls needs to be in a decision document.

4.3 Role of Operation and Maintenance Activities in Achieving Site Completion

The NCP discussion of Operation and Maintenance (O&M) is provided in Exhibit 4-2. O&M is not defined as a response action by the NCP, and may continue after site completion and deletion.

Exhibit 4-2
NCP Definition for Operation and Maintenance

The NCP (40 CFR 300.435(f)) states that: Operation and maintenance (O&M) measures are initiated after the remedy has achieved the remedial action objectives and remediation goals in the ROD, and is determined to be operational and functional, except for groundwater or surface water restoration under §300.435(f)(4). A state must provide its assurance to assume responsibility for O&M, including, where appropriate, requirements for maintaining institutional controls, under §300.510(c).

[15] *Institutional Controls: A Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites (Interim Final)* (EPA 540-R-09-001/OSWER 9355.0-89; November 2010). (PIME Guidance)

O&M activities that continue after the site has achieved the remedial action objectives and cleanup goals generally relate to maintaining engineering and/or institutional controls at the sites where waste is left on site.

Any site with O&M activities being conducted in a continued effort to attain remedial action objectives or cleanup levels typically does not qualify for site completion until these objectives and levels are met. These activities typically include actions related to groundwater or surface water restoration.

4.4 *Final Close Out Report*

The FCOR typically documents compliance with statutory requirements and provides a consolidated record of all removal and remedial activities for the entire site. Since it is the final record, it is recommended that the FCOR be a complete and stand-alone document. The report typically does not signify that the terms of cooperative agreements, consent decrees, or administrative orders have been satisfied, nor does it signify resolution of contractual or other administrative issues for Superfund activities.

It is recommended that the FCOR describe how the cleanup was accomplished and provide the overall technical justification for site completion. Although the content and format of the report may vary depending on site circumstances, it is recommended that the report include information presented in Exhibit 4-3. This recommended information is typically readily available from the previous documents such as the POLREPs, RI/FS, RODs, RDs, RA reports and O&M reports.

Typically, the RPM prepares the FCOR, but may task the state to prepare it at state-lead sites. In addition, PRPs or federal facilities may be requested to provide data to support the justification for site completion. The report is typically 10 to 15 pages, but may be longer for larger sites. To keep the report brief, it is recommended that detailed technical information and data be referenced or appended to the report. The state should have an opportunity to review and comment on the report prior to final signature. In addition, the region must send the draft to EPA Headquarters (HQ) for review and comment.

Once all stakeholder comments are appropriately addressed, the document is signed by the Regional Administrator or other appropriate official.

Upon completion of an FCOR, the appropriate Trustees listed in the Regional Contingency Plans will be notified of the completion of the remedial actions (if there are trustees at the site).[16] The region should provide a copy of the report to the Trustees within one week of the completion of the report. A copy should also be provided to the state, tribe and PRP, if applicable.

[16] For additional information, see *CERCLA Coordination With Natural Resource Trustees* (OSWER 9200.4-22A; July 31, 1997)

Exhibit 4-3
Recommended Final Close Out Report Outline

Section	Contents
I. Introduction	• Include general statement indicating all response actions have been successfully completed.
II. Summary of Site Conditions	• Provide background summary of site location, site description, and NPL listing information. • Describe any removal action activities at the site. • Summarize remedies selected and specify remedial objectives from all decision documents. • Include dates each RA was initiated and completed, method used to implement RA (e.g., consent decree, contract, cooperative or other agreement), and date of RA Reports. • Summarize details of the institutional controls (e.g., where ICs are a part of the remedy, include a map or figure, the objective of the ICs, the type of ICs, implementation, who will maintain and enforce the controls). • Discuss any final inspection activities that were performed.
III. Monitoring Results	• For source actions, discuss confirmatory sampling results which indicate compliance with cleanup levels. • For source and groundwater containment actions, discuss sampling results which indicate the remedy is functioning as designed. • For monitoring required for no action remedies, discuss sampling results which indicate the no action decision is appropriate.
IV. Attainment of Groundwater Restoration Cleanup Levels (if applicable)	• Provide a summary of monitoring data and an analysis to demonstrate cleanup levels specified in the RODs or Action Memoranda are achieved. • Append actual monitoring data and analysis from monitoring report(s) in appropriate level of detail.
V. Summary of Operation and Maintenance Required	• Description of ongoing monitoring activities for all media and engineering controls where waste is left on site. • Description of all enforcement and maintenance activities for institutional controls.
VI. Demonstration of Cleanup Activity QA/QC	• Document construction quality assurance/quality control plan that was implemented. • Document that the operation and maintenance quality assurance/quality control plan was implemented. • Document the sampling and analysis protocol that was followed.

Section	Contents
VII. Five-year Review	• Statement explaining whether a five-year review is appropriate, and if so, the type of review (statutory or policy) and the schedule for the review. • If five-year reviews were performed and are now discontinued, explain why. • If a five-year review had been performed at the site, provide a summary of the last five-year review completed (protectiveness determination, any identified issues and recommendations). • If issues were raised in the last five-year review, briefly describe activities taken to address issues and implement recommendations, as appropriate.
VIII. Site Completion Criteria	• Statement that the implemented remedy achieves the degree of cleanup or protection specified in the ROD(s) for all pathways of exposure. • Statement that all selected remedial and removal actions remedial action objectives and associated cleanup goals are consistent with agency policy and guidance. • Statement that no further Superfund response is needed to protect human health and the environment.
IX. Bibliography	• Complete citation of relevant reports

5.0 Site Deletion and Partial Deletion

5.1 Introduction

This chapter focuses on the NCP deletion criteria, the recommended process and documentation, and publication requirements needed to achieve the site deletion or partial deletion milestone. The information presented in the following sections generally references site deletions but applies to both site deletions and partial deletions of media, OUs, or specific parcels. Any differences will be noted in the text.

Deletion of a site or portion of a site from the NPL does not preclude eligibility for subsequent Fund-financed or responsible party actions. If future conditions warrant, the NCP (40 CFR 300.425(e)(3)) provides that Fund-financed remedial actions may be taken at sites or portions of sites deleted from the NPL. When there is a significant release from a site or portion of a site deleted from the NPL, the site or portion of a site may be restored to the NPL without rescoring the site under the HRS. Additional enforcement actions also may be taken, depending on liability releases in the consent decree or administrative order. Deletion of a site or portion of a site does not affect cost recovery efforts under CERCLA Section 107.

Deletion

The NPL deletion process typically begins at most sites once it is determined that the site completion milestone has been achieved and documented (Chapter 4). For purposes of this guidance, site deletion requirements include 1) the documentation of activities and decision making at the site is complete, 2) the activities conducted and documented are verified, and 3) the public has an opportunity for notice and comment before the site is formally deleted from the NPL.

Partial Deletion

The Partial Deletion Rule, which allows the EPA to delete portions of NPL sites, provided that deletion criteria are met, was published in the *Federal Register* on November 1, 1995 (65 FR 55466). Previously, EPA's policy had been to delete sites only after cleanup of the entire site has been completed. However, waiting to delete an entire site does not communicate the successful cleanup of portions of the site. Total site cleanup may take many years, while portions of the site may have been cleaned up and may be available for productive use. Such a portion may be a defined geographic area of the site, or may be a specific medium at the site, e.g., surface soil, depending on the nature or extent of the release(s).

5.2 NPL Deletion Criteria

These criteria are applied to the site or the portion of the site proposed for deletion.

The NCP (40 CFR 300.425(e)) states that a site may be deleted from, or recategorized on, the NPL when no response or no further response is appropriate. The EPA must consult with the state in making this determination. To delete a site from the NPL, EPA must determine, in consultation with the state, that one of the following criteria have been met:

- Responsible or other parties have implemented all appropriate response actions required;
- All appropriate Fund-financed response under CERCLA has been implemented, and no further response action by responsible parties is appropriate; or
- The remedial investigation has shown that the release poses no significant threat to public health or the environment, and, therefore, taking of remedial measures is not appropriate.

Site deletion from the NPL has been separated from the Five Year Review process (56 FR 66601, December 24, 1991). This means that a site can be deleted from the NPL without having the first Five Year Review completed. Once a site is deleted and waste is left in place above levels that allows for unrestricted use and unlimited exposure, a Five Year Review will be conducted at the site no less than every five years. EPA has separate guidance addressing Five Year Review requirements (OSWER No. 9355.703B P, June 2001).

Chapter 4 outlines the expectations for the determination that all response actions have been implemented.

5.3 NPL Deletion Through Resource Conservation and Recovery Act (RCRA) Deferral

EPA's *Deletion Policy for Resource Conservation and Recovery Act (RCRA) Facilities* dated March 20, 1995 (60 FR 14661), was later amended on November 24, 1997 (62 FR 62523) to also make the policy applicable to federal facility sites. The policy states that:

> "EPA believes it is appropriate to delete sites from the NPL based upon deferral to RCRA under certain circumstances. Deletion of sites from the NPL to defer them to RCRA Subtitle C corrective action authorities would free CERCLA's oversight resources for use in situations where another authority is not available, as well as avoid possible duplication of effort and the need for an owner/operator to follow more than one set of regulatory procedures."

A site can be deleted from the NPL through a RCRA deferral action if the site complies with the following criteria:

- The CERCLA site is currently being addressed by RCRA corrective action authorities under an existing enforceable order or permit containing corrective action provisions;
- Response under RCRA is progressing adequately; and
- Deletion would not disrupt an ongoing CERCLA response action.

This Deletion Policy pertains to deletions based on deferral to state/federal RCRA programs only, not other entities. For sites deferred to RCRA, the site may not necessarily meet the construction completion or site completion milestone prior to deletion. Sites deferred to other entities, such as Underground Storage Tanks or state cleanup programs, should still meet all deletion criteria discussed in Section 5.1.

5.4 The Deletion Process

Deleting a site from the NPL requires a modification to the Code of Federal Regulations. To perform this task, the Administrative Procedure Act requires formal administrative rule-making procedures which include creating a docket, publishing notices in the *Federal Register*, and holding a formal public comment period.

For full deletion, the site deletion process typically begins once the site achieves the site completion milestone.

For partial deletion, any person, including individuals, business entities, states, local governments, and other federal agencies, may submit a petition requesting a partial deletion. A petition may consist of a simple written request from any interested party. Upon evaluation by the region, this written request may begin the partial deletion process.

5.4.1 State Concurrence

Early in the site deletion or partial deletion process, the region consults with the state and requests the state's concurrence on EPA's intent to delete the site. A site cannot be deleted from the NPL without the state's concurrence. If the state agrees with the deletion, the state will provide a concurrence letter, and the letter is placed in the deletion docket.

5.4.2 Deletion Docket

The region prepares a deletion docket containing all pertinent information supporting the deletion recommendation. The deletion docket is not a continuation of the Administrative Record for the site. Documents in the Administrative Record can be referenced and do not have to be duplicated in the deletion docket (provided the Administrative Record is still available to the public). In addition to containing the documentation supporting the deletion, the docket also contains copies of the *Federal Register* deletion notices, Responsiveness summary and public comments, as appropriate. The deletion docket should be available to the public at the EPA regional office public docket, a local repository, and online in the site Federal Docket Management System (FDMS).

The FDMS holds deletion docket documents electronically in the online docket for the site. NPL site dockets contain documents that support all rulemaking actions for the site (site listing, partial deletions and deletions). Site dockets are available for public viewing at www.regulations.gov. RPMs are encouraged to work with their regional deletion coordinators to ensure the deletion docket is properly uploaded into FDMS.

The documents contained in the deletion docket will vary depending on the type of response (i.e., remedial action, removal action, and no action) and the lead agency (e.g., federal, state, or responsible party).

At a minimum, the following documents are typically included in the deletion docket for a full site deletion:

- Final Close Out Report
- State Concurrence Letter
- Administrative Record Index

At a minimum, the following documents are typically included in the deletion docket for a partial deletion:

- No Action ROD or RA Report for the parcels being proposed for deletion
- A map clearly delineating the boundaries of the parcels proposed for deletion
- State Concurrence Letter
- Bibliography of the Administrative Record citing those documents pertinent to the parcels

The documents listed in Exhibit 5-1 are examples of what may also be included in the deletion docket as applicable. This is not an exhaustive list. The contents of the deletion docket, outside of those minimum requirements listed above, are at the discretion of the region preparing the deletion.

It is recommended that regional program offices work with their regional Superfund deletions coordinators and records management staff to ensure that complete copies of the documents in the deletion docket are developed and placed in the appropriate regional, local, and FDMS site repositories. The public will have an opportunity to review the docket during the 30 day public comment period that follows publication of the Notice of Intent to Delete (NOID). Public meetings are optional.

Deletion notices are published in the *Federal Register* by either using the two-step rulemaking process (see Section 5.3.3) or the direct final rulemaking process (see Section 5.3.4). Although deletion requirements are the same for both processes, the administrative steps are slightly different.

Exhibit 5-1
Example Deletion Docket Documents

- ✓ Consent Decree
- ✓ Action Memoranda
- ✓ Community Relations Plans
- ✓ Superfund State Contract
- ✓ Cooperative Agreements
- ✓ Agreements with Potentially Responsible Parties
- ✓ Design Plans and Specifications
- ✓ Construction Inspection Reports
- ✓ On Scene Coordinator or Pollution Reports
- ✓ Five-Year Reviews
- ✓ Operation and Maintenance Plans
- ✓ Preliminary Close Out Report
- ✓ Transcripts from Public Meetings
- ✓ Institutional Control Documentation
- ✓ Monitoring Reports

5.4.3 Two-step Rulemaking Process

Exhibit 5-2 shows the administrative steps in the two-step rulemaking process. The deletion process steps generally include the following:

- Notice of Intent to Delete (NOID) preparation
- Obtaining HQ concurrence
- Publishing the NOID and Local Notice
- Receiving comments and preparing a Responsiveness Summary (if needed)
- Preparing and Publishing the Notice of Deletion (NOD)

5.4.3.1 Notice of Intent to Delete (NOID) Preparation

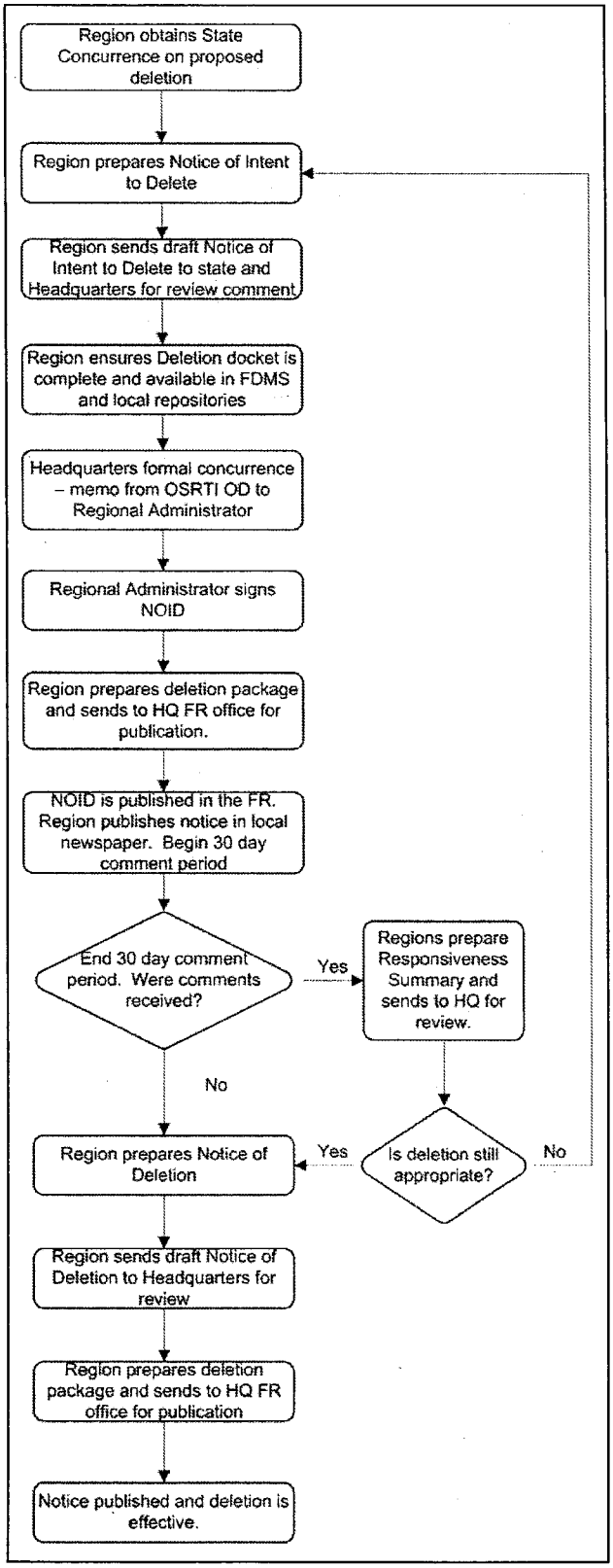
After consultation with the state, the region prepares the NOID.

The NOID contains EPA regional staff and other contacts, deletion criteria and procedures, and site specific information. It typically provides for a 30 day public comment period. Site specific information needed to prepare the NOID is generally obtained from the FCOR for full site deletions or the RA Report or no Action ROD for partial deletions. Templates for the site deletion and partial deletion NOIDs are available at the following website: http://www.epa.gov/superfund/cleanup/postconstruction/deletion.htm. The draft NOID is sent to EPA Headquarters for review and comment.

5.4.3.2 Headquarters Concurrence

The Regional Administrator is delegated authority to sign the NOID. Before the Regional Administrator can sign the document, the delegation requires formal Headquarters concurrence. After the region addresses Headquarters comments, the Office of Solid Waste and Emergency Response (OSWER) Assistant Administrator must concur with the deletion before the deletion process proceeds. This concurrence is delegated to the OSWER Superfund Office Director. The OSWER Superfund Office Director completes the "Headquarters Concurrence Checklist" to support the deletion concurrence.

Exhibit 5-2
Two-step Rulemaking Process



For full site deletions, the checklist includes the following:

- All NPL deletion criteria have been met.
- All institutional controls have been recorded in appropriate decision documents and have been implemented as recommended in the Institutional Control Implementation and Assurance Plan guidance.
- All program measures (Environmental Indicators, Five-Year Reviews, Sitewide Ready for Anticipated Use) support the decision to delete.
- State Concurrence letter is in the deletion docket.
- The Final Close Out Report has been completed.
- Deletion Docket is in local, regional and electronic (FDMS) repositories.
- NOID is consistent with templates and supports deletion.

For partial deletions, the checklist includes the following:

- All NPL deletion criteria have been met.
- All institutional controls have been recorded in appropriate decision documents and have been implemented as recommended in the Institutional Control Implementation and Assurance Plan guidance.
- State Concurrence letter is in the deletion docket.
- A map clearly delineating the parcels proposed for deletion is included.
- The no Action ROD or RA Report has been completed.
- Deletion Docket is in local, regional and electronic repositories.
- NOID is consistent with templates and supports deletion.

The directive entitled *CERCLA Delegation of Authority 14-17, National Priorities List Determinations, Headquarters Concurrence on Notice of Intent to Delete*, dated September 12, 2008, outlines the Headquarters concurrence process in more detail.

5.4.3.3 Publication of the Notice of Intent to Delete and the Local Notice

Upon receiving Headquarters concurrence, the Regional Administrator signs the NOID, and a deletion package is prepared in the region and sent to the Headquarters Federal Register Office for publication. The package contents are in Exhibit 5-3.

Exhibit 5-3
Federal Register Deletion Package Contents

✓ Original FR Notice
✓ Four hard copies
✓ *Federal Register* Typesetting Request – found in Webforms
✓ Disk or CD containing electronic version of FR notice in Microsoft Word

The regional Community Involvement Coordinator (CIC) typically prepares and distributes a local notice regarding the NOID that is published at the same time that the NOID is published in the *Federal Register*. It is recommended that this notice be published in a local newspaper of general circulation. It should announce the Agency's intent to delete the site or portion of the site from the NPL and the public comment period. The local notice should also provide contacts, methods for submission of comments, and locations of the deletion dockets. In addition to the local notice, the RPM or the CIC should notify the appropriate Trustees listed in the Regional Contingency Plans that EPA is planning to delete the site or portion of the site.[17]

5.4.3.4 Receiving Comments and Responsiveness Summary Preparation

If public comments are received during the comment period that oppose the deletion action (typically referred to as adverse comments), the region typically prepares a responsiveness summary. If comments are received during the comment period that are not considered adverse, it is at the region's discretion to determine what type of response may be appropriate. It is recommended that the responsiveness summary present comments received during the public comment period paired with detailed responses to the comments. A draft of the responsiveness summary is sent to EPA Headquarters for review and comment. Once Headquarters comments are addressed, the region includes a copy of the responsiveness summary, approved by the Regional Administrator, in the deletion dockets. A template for the responsiveness summary is available at the following website: http://www.epa.gov/superfund/cleanup/postconstruction/deletion.htm.

5.4.3.5 Notice of Deletion (NOD) Preparation and Publication

If, after responding to public comments, the deletion action is still appropriate, the region prepares a Notice of Deletion (NOD). Templates for the site deletion and partial deletion NODs are found at the following website http://www.epa.gov/superfund/cleanup/postconstruction/deletion.htm. The NOD includes an effective date (the date of publication), the name of a regional contact, supplemental site information and the responsiveness summary, as appropriate. A draft of the Notice of Deletion is sent to EPA Headquarters for review and comment. Once Headquarters comments are addressed, the Notice of Deletion is signed by the Regional Administrator and published in the *Federal Register* (see Exhibit 5-3 for deletion package materials).

5.4.4 Direct Final Rulemaking Process

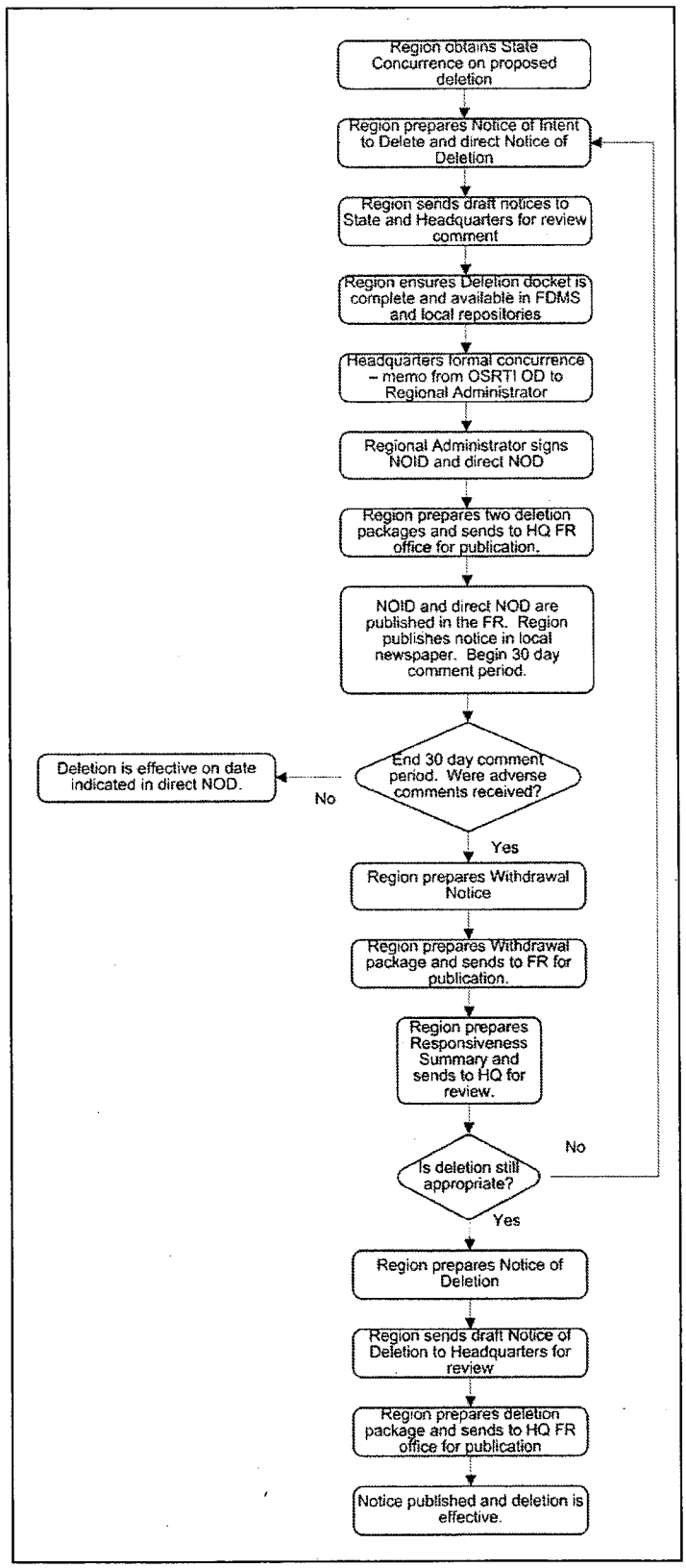
The direct final rulemaking process, also called the direct deletion process, is appropriate for sites where deletion is expected to be non-controversial, and EPA does not anticipate adverse comments during the comment period. If adverse comments are anticipated, it is recommended that the two-step final rulemaking process (Section 5.3.3) be utilized to ensure ample opportunity to address any adverse comments that are received.

[17] For additional information, see *CERCLA Coordination With Natural Resource Trustees* (OSWER 9200.4-22A; July 31, 1997)

Exhibit 5-4 shows the administrative steps in the direct deletion process. The direct deletion process steps generally include the following:

- Preparing the Notice of Intent to Delete (NOID) and the direct Notice of Deletion (NOD)
- Obtaining Headquarters concurrence, and
- Publishing the NOID, direct NOD and Local Notice
- If adverse comments are received:
  - Preparing and Publishing the *Federal Register* Withdrawal Notice
  - Receiving comments and preparing the Responsiveness Summary
  - Preparing and Publishing the Notice of Deletion

Exhibit 5-4
Direct Deletion Process



5.4.4.1 Direct Notice of Intent to Delete and Direct Notice of Deletion Preparation

After consultation with the state, the region prepares the NOID and the direct NOD.

The NOID primarily contains EPA regional staff and other contacts. It provides for a minimum 30 day public comment period. The NOID is published in the "Proposed Rules" section of the *Federal Register*. The NOID directs the reader to the NOD, published in the "Rules and Regulations" section of the same *Federal Register*, for deletion criteria and procedures, and site specific information.

The NOD contains all deletion criteria, explains the direct deletion process, and contains site specific information supporting the deletion. It indicates the effective date of deletion. The effective date is generally 30 days after the end of the minimum 30 day public comment period (i.e., typically 60 days after publication in the *Federal Register*). This allows sufficient time to withdraw the direct final notice of deletion in the event that unexpected adverse comments are received during the comment period.

Templates for the site deletion and partial deletion NOIDs and direct NODs are available at the following website:
http://www.epa.gov/superfund/cleanup/postconstruction/deletion.htm.

The draft NOID and NOD are sent to EPA Headquarters for review and comment.

5.4.4.2 Headquarters Concurrence

After the region addresses Headquarters comments, the Superfund Office Director completes the "Headquarters Concurrence Checklist". The OSWER Assistant Administrator must concur before the Regional Administrator signs the NOID and the NOD. The concurrence process is discussed in section 5.3.3.2.

5.4.4.3 Publication of the NOID, Direct NOD and the Local Notice

Once the Regional Administrator signs the Notice of Intent to Delete and the Notice of Deletion, a deletion package is prepared for each notice and sent to the Headquarters Federal Register Office for publication. The package contents are in Exhibit 5-3.

The CIC should also publish the local notice of the proposed deletion action in the newspaper of local circulation consistent with the two-step deletion process also described in section 5.3.3.3.

If no adverse comments are received during the comment period, the direct final deletion notice will become effective on the deletion date indicated in the direct NOD.

5.4.4.4 Withdrawal Notice Preparation and Publication

If adverse comments are received during the comment period, the region should issue a timely notice in the *Federal Register* withdrawing the direct final notice of deletion and informing the public that the deletion will not take effect. This withdrawal notice should be published in the *Federal Register* before the effective date of the direct NOD. The template for the Withdrawal Notice is available at the following website:
http://www.epa.gov/superfund/cleanup/postconstruction/deletion.htm.

The Withdrawal Notice is signed by the Regional Administrator. The region prepares a Withdrawal Notice package and sends it to the Headquarters Federal Register Office for publication. The package contents are in Exhibit 5-3.

5.4.4.5 Receiving Comments and Responsiveness Summary Preparation

A Responsiveness Summary is prepared consistent with the two-step deletion process (see 5.3.3.4).

5.4.4.6 Notice of Deletion Preparation and Publication

If the deletion action is still appropriate, a Notice of Deletion is prepared and published consistent with the two-step deletion process (see 5.3.3.5).