0072652

Date Submitted: 3/6/07 Originator: L. M. Dittmer Phone: 372-9664	**WASTE SITE RECLASSIFICATION FORM** Operable Unit(s): 100-BC-1 Waste Site Code: 126-B-2, 183-B Clearwells Type of Reclassification Action: Closed Out ☐ Interim Closed Out ☐ No Action ☒ RCRA Postclosure ☐ Rejected ☐ Consolidated ☐	Control Number: 2007-004

This form documents agreement among parties listed authorizing classification of the subject unit as Closed Out, Interim Closed Out, No Action, RCRA Postclosure, Rejected, or Consolidated. This form also authorizes backfill of the waste management unit, if appropriate, for Closed Out and Interim Closed Out units. Final removal from the NPL of No Action and Closed Out waste management units will occur at a future date.

Description of current waste site condition:
The 126-B-2, 183-B Clearwells are located west of the 105-B Reactor, in the 100-BC-1 Operable Unit of the 100-B/C Area, on the Hanford Site in southeastern Washington State. The 126-B-2, 183-B Clearwells were built as part of the 183-B Water Treatment Facility but have been assigned their own waste site number. The clearwells are composed of 2, five million gallon (1.9×10^7 liter) capacity covered concrete reservoirs. The clearwells contained river water that had been chemically and physically treated in the 183-B Water Treatment Facility. Any contamination associated with the additives used during the water treatment process would have been very dilute after the sedimentation and filtration steps. The bulk of the water stored in the clearwells was used as process water to cool the 105-B Reactor. The clearwells were also used as a source for clean water applications, such as potable water. The 126-B-2, 183-B Clearwells were upstream of where sodium dichromate additions occurred and were also upstream of the 105-B Reactor. There is no evidence to suggest that the water stored in the clearwells was ever a source of human health risk.

Remedial action objectives and goals for the 126-B-2, 183-B Clearwells are established by the *Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington* (Remaining Sites ROD), U.S. Environmental Protection Agency, Region 10, Seattle, Washington. The selected action involved evaluating the site using available process information and proposing the site for reclassification as No Action.

Basis for reclassification:
Residual conditions at the 126-B-2, 183-B Clearwells were determined to meet the remedial action objectives specified in the Remaining Sites ROD through an evaluation of the available process knowledge. The results of the evaluation do not preclude any future uses (as bounded by the rural-residential scenario) and allow for unrestricted use of shallow zone soils (i.e., surface to 4.6 m [15 ft] deep). The results also indicate that residual concentrations are protective of groundwater and the Columbia River. This waste site has a deep zone; however, no deep zone institutional controls are required. The basis for reclassification is described in detail in the *Remaining Sites Verification Package for the 126-B-2, 183-B Clearwells Attachment to Waste Site Reclassification Form 2007-004.*

Waste Site Controls:
Engineered Controls: Yes ☐ No ☒ Institutional Controls: Yes ☐ No ☒ O&M requirements: Yes ☐ No ☒
If any of the Waste Site Controls are checked Yes specify control requirements including reference to the Record of Decision, TSD Closure Letter, or other relevant documents.

K. D. Bazzell DOE Federal Project Director (printed)	Signature	3/19/07 Date
NA Ecology Project Manager (printed)	Signature	Date
D.A. Faulk EPA Project Manager (printed)	Signature	3/20/07 Date

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REMAINING SITES VERIFICATION PACKAGE FOR THE 126-B-2, 183-B Clearwells

Attachment to Waste Site Reclassification Form 2007-004

March 2007

REMAINING SITES VERIFICATION PACKAGE FOR THE 126-B-2, 183-B CLEARWELLS

EXECUTIVE SUMMARY

The 126-B-2, 183-B Clearwells are located west of the 105-B Reactor, in the 100-BC-1 Operable Unit of the 100-B/C Area, on the Hanford Site in southeastern Washington State. The 126-B-2, 183-B Clearwells were built as part of the 183-B Water Treatment Facility. The clearwells are composed of two, 5 million gallon (1.9×10^7 liter) capacity covered concrete reservoirs. Water stored in the 126-B-2, 183-B Clearwells was transferred to the 190-B Process Pumphouse and used to cool the 105-B Reactor before the water was returned to the river. The clearwells also served as a source for sanitary and potable water applications in the 100-B Area.

The 126-B-2, 183-B Clearwells waste site is limited to the clearwells themselves. The remainder of the 183-B facility (i.e., head house, flocculation and sedimentation basins, and pump house) and the pipelines around the original 183-B facility are all part of the 100-B-22 waste site, the 100-B-14 waste site, or the 100-B-28 waste site, and are not addressed in this document.

Water stored in the 126-B-2, 183-B Clearwells would have contained additives from the flocculation and sedimentation steps that occurred at the 183-B facility. Chlorine, sulfuric acid, alum, ferric sulfate, Sepran®[1] (a coagulant), and lime (Wahlen 1989) were used in the treatment process. After the filtration step, the additives and any trace contamination from the additives would have been very dilute in the treated water stored in the 126-B-2, 183-B Clearwells. The 126-B-2, 183-B Clearwells were upstream of the location of sodium dichromate additions and were also upstream of the 105-B Reactor. There is no evidence to suggest that the water stored in the clearwells ever contained sufficient quantities of radionuclide or nonradionuclide hazardous chemicals to present a human health risk.

The concrete roof of the clearwells is finished with asphalt and mastic sealant and is suspected asbestos-containing material (ACM). The suspect ACM is non-friable and does not present a potential release to the environment; therefore, no cleanup action is required. Upon demolition of 126-B-2, the roofing materials will become construction debris and are not considered regulated waste.

Similar in construction and function to the 126-B-2, 183-B Clearwells were the 126-F-2, 183-F Clearwells. In the evaluation of the 126-F-2 clearwells, the concrete structure was determined to be intact with no chemical staining or structural cracks. No evidence of liquid or contaminant migration through the structure was found and verification sampling of the concrete structure and underlying soils was determined to be unnecessary (WCH 2006). Similarly, no evidence of liquid or contaminant migration through the 126-B-2, 183-B Clearwells has been found. An

[1] Sepran: a trademark of The Dow Chemical Company, Midland, Michigan.

external visual inspection of the inside of the 126-B-2 clearwells revealed no chemical staining or structural cracks.

A No Action decision for the 126-B-2, 183-B Clearwells waste site is supported based on an evaluation of the site history and process knowledge, along with field observations. The evaluation of the 126-B-2, 183-B Clearwells waste site is used to make reclassification decisions in accordance with the TPA-MP-14 (DOE-RL 2007) procedure. In accordance with this evaluation, a waste information data system (WIDS) reclassification of No Action has been determined for the 126-B-2, 183-B Clearwells waste site. The current site conditions achieve the remedial action objectives and the corresponding remedial action goals established in the *Remedial Design Report/Remedial Action Work Plan for the 100 Area* (DOE-RL 2005) and the *Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington* (Remaining Sites ROD) (EPA 1999). The 126-B-2 waste site will support future unrestricted land uses that can be represented (or bounded) by a rural-residential scenario and is considered protective of human health, groundwater, and the Columbia River. No institutional controls are required.

The basis for this No Action determination precludes the need for sampling at this site; therefore, a comparison between soil data and ecological screening levels is not necessary. A baseline risk assessment for the river corridor portion of the Hanford Site began in 2004, which includes a comprehensive ecological risk assessment. That baseline risk assessment will be used as part of the final closeout decision for this site.

REMAINING SITES VERIFICATION PACKAGE FOR THE 126-B-2, 183-B CLEARWELLS

STATEMENT OF PROTECTIVENESS

This report demonstrates that the 126-B-2 waste site, also known as the 183-B Clearwells, meets the objectives for interim closure as established in the *Remedial Design Report/Remedial Action Work Plan for the 100 Area* (DOE-RL 2005) and the *Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington* (EPA 1999). These evaluations show that residual soil concentrations support future land uses that can be represented (or bounded) by a rural residential scenario. The evaluations also demonstrate that residual contaminant concentrations support unrestricted future use and that contaminant levels remaining in the soil are protective of groundwater and the Columbia River. This site does have a deep zone; however, no deep zone institutional controls are required.

GENERAL SITE INFORMATION AND BACKGROUND

The 126-B-2, 183-B Clearwells (Appendix B, Photograph B-1) are located in the 100-BC-1 Operable Unit in the 100-B/C Area of the Hanford Site, west of the 105-B Reactor (Figure 1). The 126-B-2, 183-B Clearwells provided storage for partially-treated process water during their period of operation from 1944 to 1968. Water from the clearwells was used to cool the 105-B Reactor prior to the water being returned to the river. The clearwells were also the source for sanitary and potable water applications.

Cooling water for the 105-B Reactor flowed from the 181-B River Pumphouse on the Columbia River, through the 182-B Reservoir, the 183-B Filter House (including the clearwells), the 190-B Process Pumphouse, to the 105-B Reactor (Figure 2), and eventually back to the river. Of those facilities, the 181-B River Pumphouse, the 182-B Reservoir, the 126-B-2 Clearwells, and the 105-B Reactor are the only remaining intact structures. The 181-B and 182-B Facilities continue to provide fire suppression water, sanitary water, and dust suppression water in the B/C Area. The 183-B Filter House facility was decommissioned and demolished (D&D) in 1986 and 1987, except for the clearwell portions of that facility (Appendix B, Photographs B-2 and B-3). The clearwell section of the 183-B Building was preserved and given the waste site designation, 126-B-2. The original intent was to use the 100-B Area Clearwells as a dumping ground for inert solid wastes after the 126-B-3 Coal Pit was filled with inert solid wastes and closed. Therefore, WIDS lists 126-B-2 as a dumping ground (Appendix A). However, no wastes have been disposed of at 126-B-2.

Figure 1. 100-B Area Water Treatment Facilities Site Map.

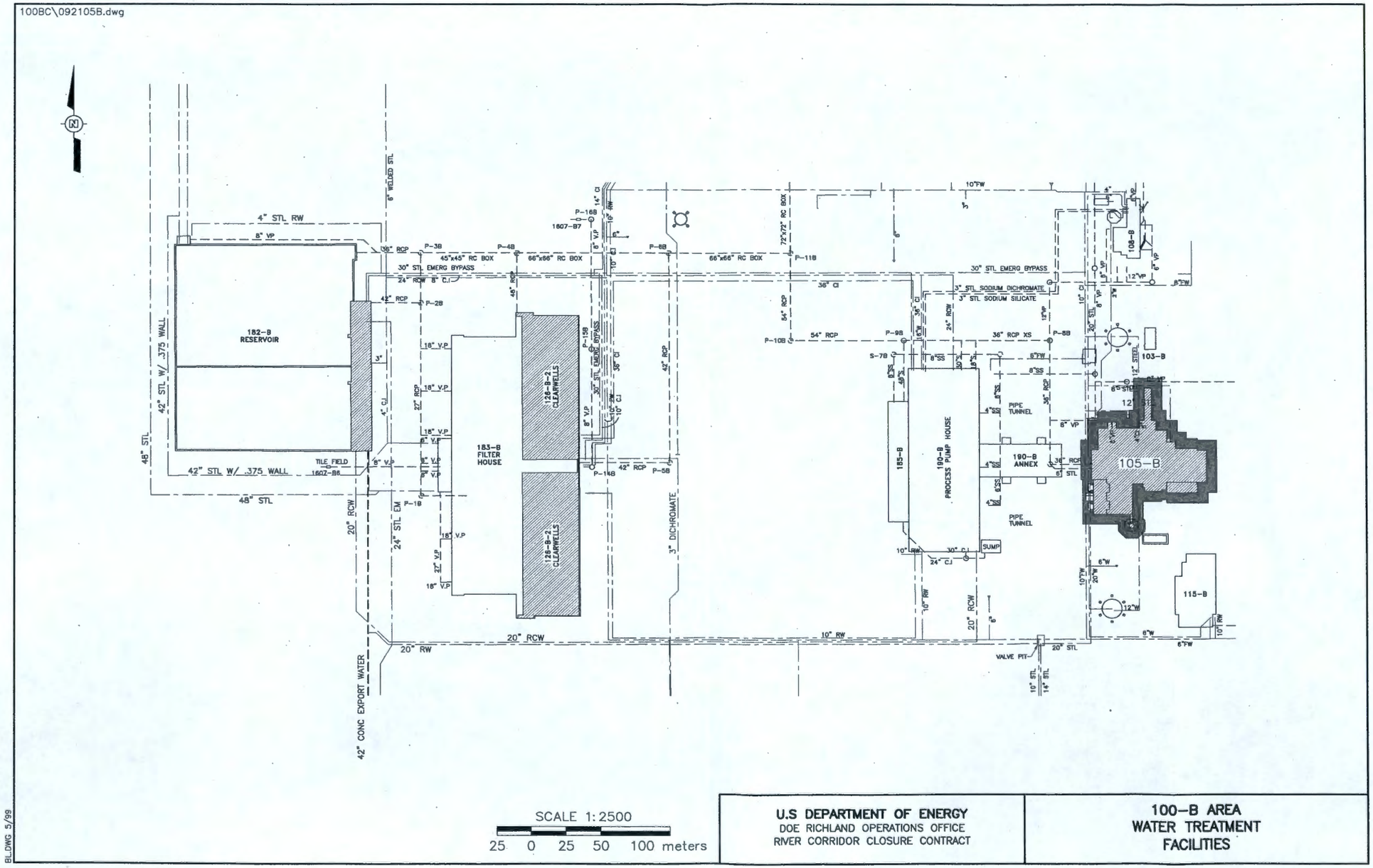
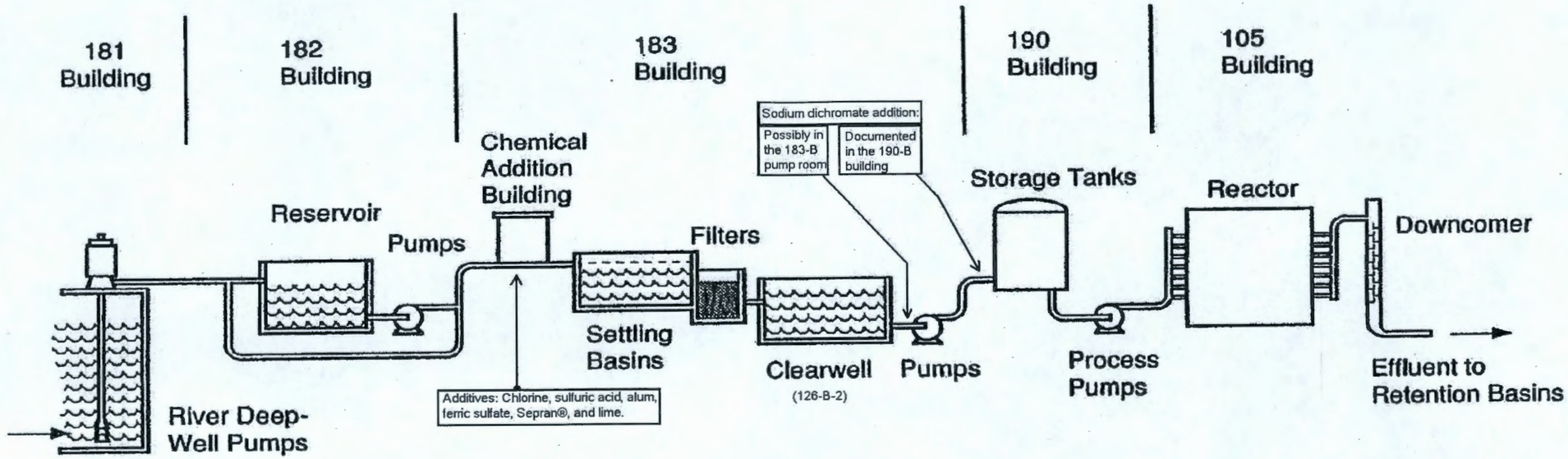


Figure 2. 100-B Water Treatment Process (from Wahlen 1989, with modification).



Site Research

Research of historical documents showed that the water held in the 126-B-2, 183-B Clearwells would have contained some additives from the flocculation and sedimentation steps that occurred at the 183-B facility. Chlorine, sulfuric acid, alum, ferric sulfate, Sepran®[1] (a coagulant), and lime (Wahlen 1989) were used in the treatment process. The alum was prepared from bauxite, some of which had trace levels of naturally occurring radionuclides. Some of the sulfuric acid, used to prepare the alum and adjust the pH of the water, had low levels of lead and/or mercury contamination. In areas where concentrated sulfuric acid was spilled or otherwise allowed to collect, lead and/or mercury have been found above the remedial action goals. These areas are associated with the transportation and handling of the concentrated sulfuric acid. These additives and any trace contamination from these additives would have been at least partially removed during the sedimentation and filtration steps. Any remaining contamination from the additives would be very dilute in the treated water found in the 126-B-2, 183-B Clearwells. The 126-B-2, 183-B Clearwells were upstream of where sodium dichromate additions occurred (BHI 1994) and were also upstream of the 105-B Reactor. There is no evidence to suggest that the water stored in the clearwells was ever a source of human health risk.

Similar in construction and function to the 126-B-2, 183-B Clearwells were the 126-F-2, 183-F Clearwells. In the evaluation of the 126-F-2 clearwells, the concrete structure was determined to be intact with no chemical staining or structural cracks. No evidence of liquid or contaminant migration through the structure was found and verification sampling of the concrete structure and underlying soils was determined to be unnecessary (WCH 2006). Similarly, no evidence of liquid or contaminant migration through the 126-B-2, 183-B Clearwells has been found.

Site Visit

A site visit to the 126-B-2 Clearwells was conducted on November 1, 2006, to determine the current condition of the interior of the clearwells. Observational access was made at three hatches around the northern clearwell. For safety reasons, no actual physical entry was made into the clearwells. Windblown debris, sand, and evidence of bird habitation were observed inside the structure, but no liquids, chemical stains, or cracks were observed therein (Appendix B, Photographs B-4 through B-7). The structure itself appears to be in good shape, except for the central walls that were connected to the now demolished 183-B Pumproom. The access hatches on the southern clearwell were all closed, bolted, and rusted shut. It is assumed that the current interior condition of the southern clearwell is the same as the interior condition of the northern clearwell.

BASIS FOR NO ACTION

On September 15, 2005, a meeting between the Washington Closure Hanford (WCH) Field Remediation Closure Project, the U.S. Environmental Protection Agency (EPA), and the U.S. Department of Energy, Richland Operations Office (DOE-RL) was conducted to discuss a path forward for the 126-B-2 Clearwells and the 100-B-22, 100-B Water Treatment Facilities and Surrounding Soils.

Background information presented to facilitate the discussion included a description of the water treatment facilities, the 126-B-2 Clearwells, and current information from the 100-B-14 excavations

[1] Sepran: a trademark of The Dow Chemical Company, Midland, Michigan.

occurring in the area. The status of pipelines in the immediate area of the 126-B-2, 183-B Clearwells was also presented. It was agreed to by the parties that all of the pipelines in the area were part of the 100-B-14, the 100-B-28, or the 100-B-22:1 waste sites (GE 1942, HEW 1944) and not part of the 126 B-2, 183-B Clearwells waste site.

It was further discussed that under the original and final configurations of the water treatment facilities, sodium dichromate was added to the process water in the 190-B facility, which is downstream of the 126-B-2 Clearwells. The 100-B-28 pipeline appears to have transferred sodium dichromate solution from the 100-C Area to the 183-B Pumphouse. If sodium dichromate had been added to the process water at the 183-B Pumphouse, then that process water would have then been pumped to the 190-B facility for storage and use as cooling water in the 105-B Reactor. Therefore, water in the 126-B-2 Clearwells would not have been expected to contain hexavalent chromium or radionuclides, even at low concentrations.

SUMMARY FOR INTERIM CLOSURE WITH NO ACTION

Process knowledge, historical documents, historical drawings, and site visits were all used in the evaluation of the 126-B-2, 183-B Clearwells. The conclusion of that evaluation is that no contamination or suspected contamination is associated with the 126-B-2 waste site. No remedial action is required for this site. Based on remedial action objectives established in the *Remedial Design Report/Remedial Action Work Plan for the 100 Area* (DOE-RL 2005) and the Remaining Sites ROD (EPA 1999), this evaluation does not preclude any future uses (as bounded by the rural-residential scenario) and allows for unrestricted use of shallow and deep zone soils; no deep zone institutional controls are required.

REFERENCES

BHI, 1994, *Final Decommissioning Report for the 185/190-B Main Pumphouse Complex*, BHI-00057, Rev. 00, Bechtel Hanford, Inc., Richland, Washington.

DOE-RL, 2005, *Remedial Design Report/Remedial Action Work Plan for the 100 Area*, DOE/RL_96-17, Rev. 5, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE-RL, 2007, *Tri-Party Agreement Handbook Management Procedures*, RL-TPA-90-0001, Guideline Number TPA-MP-14, Rev. 1, "Maintenance of the Waste Information Data System (WIDS)," U.S. Department of Energy, Richland Operations Office, Richland, Washington.

EPA, 1999, *Interim Action Record of Decision for the 100-BC-1, 100-BC-2, 100-DR-1, 100-DR-2, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-KR-1, 100-KR-2, 100-IU-2, 100-IU-6, and 200-CW-3 Operable Units, Hanford Site, Benton County, Washington*, U.S. Environmental Protection Agency, Region 10, Seattle, Washington.

GE, 1942, *Piping-Schematic Underground Sewer & Water Lines,* Drawing No.H-1-13050, General Electric Hanford, Richland Washington.

HEW, 1944, *Building No "108-D" Outside Lines-Plan & Elevation,"* Drawing No. W75014, Rev 8, Hanford Engineer Works, Richland Washington

Wahlen, R. K., 1989, *History of 100-B Area*, WHC-EP-0273, Westinghouse Hanford Company, Richland, Washington.

WCH, 2006, *Waste Site Reclassification Form 2006-017 and Attachment Remaining Sites Verification Package for the 126-F-2, 183-F Clearwells*, Washington Closure Hanford, Richland Washington.

APPENDIX A

WASTE INFORMATION DATA SYSTEM GENERAL SUMMARY REPORT

Waste Information Data System
General Summary Report

Site Code: 126-B-2 **Site Classification: Accepted** Page 1

Site Names: 126-B-2, 183-B Clearwells

Site Type: Dumping Area
Status: Inactive
Hanford Area: 100B
OU/WMA: 100-BC-1
ClosureZone:

Start Date:
End Date:
Pipe Type:

Site Description: The site consists of two underground concrete reservoirs, or clearwells, separated in the center by the remains of a demolished pump room. A concrete piping structure remains above ground at the southeast corner of the clearwell site.

Location Description: The site is located approximately 430 meters (1,410 feet) directly west of the 105-B Reactor Facility and southeast of the 182-B Retention Basin.

Process Description: This site was part of the 183-B Water Treatment Facility. River water stored at the 182-B Retention Basin was transferred sequentially to the 183-B Head House for chemical additions, then to flocculation and sedimentation basins, next through anthracite filters, and finally into the clearwells. The 183-B Filter Pump House then fed most of the stored water to the 185/190 B facilities, which provided final treatment and storage before use as cooling water for the 105-B Reactor.

The pump room was constructed of concrete and was approximately 6.7 meters (22 feet) below grade. The remaining portion of the pump house contains debris from the demolition of the above-ground portion and is believed to include steel, concrete, and asbestos-containing siding (transite). The clearwells are each 1.9E+7 liter (5E+6 gallon) concrete rectangular boxes, with flat concrete roofs. The concrete roofs are surmounted by an above-grade water-resistant roof, which may be made of asbestos-containing materials in asphalt-saturated board, covered by tarred felt.

This site was part of the 183-B Water Treatment Facility. River water stored at the 182-B Retention Basin was transferred sequentially to the 183-B Head House for chemical additions, then to flocculation and sedimentation basins, next through anthracite filters, and finally into the clearwells. The 183-B Filter Pump House then fed most of the stored water to the 185/190 B facilities, which provided final treatment and storage before use as cooling water for the 105-B Reactor.

Associated Structures: This unit was part of the 183-B Water Treatment Facility.

Site Comment: During the D&D of the 183-B Filter Plant, it was decided to leave the clearwells intact to serve as a dumping site for future D&D work, as was done at the 183-F Filter Plant. In particular, the clearwells were to be used for inert solid wastes from the D&D of the 126-B-3 Coal Pit. Based on WAC 173-350-990, much of the expected wastes from 126-B-3 (as well as any other D&D activity) would likely be excluded from disposal in the clearwells.

Environmental Monitoring Description: This unit is included in a monthly Environmental Protection surveillance of the 100 Area demolition and inert waste landfills.

References:
1. 11/30/90 WIDS Site Addition, 126-B-2.
2. R.K. Whalen, 8/91 Summary of the Hanford Site Decontamination, Decommissioning, and Cleanup FY 1974 through FY 1990, WHC-EP-0478.
3. R. W. Carpenter, 05/18/94 100-B Area Technical Baseline Report, WHC-SD-EN-TI-220.
4. 11/11/04 100-B/C AREA ORPHAN SITE EVALUATION SUMMARY, CCN 117587.
5. R. K. Wahlen, 1989 History of 100-B Area, WHC-EP-0273.

Waste Information:

Type: Demolition and Inert Waste
Category: Hazardous/Dangerous

Physical State:	Solid
Description:	No wastes were deposited at the clearwells in the past. However, this unit is scheduled for future use as a disposal site for demolition and inert solid waste after the 126-B-3 Coal Pit and demolition landfill is closed. The remaining portion of the pumphouse currently contains waste from the demolition of the above ground portion. These wastes were believed to include steel, concrete, and asbestos transite.
References:	1. 11/30/90 WIDS Site Addition, 126-B-2. 2. R. W. Carpenter, 05/18/94 100-B Area Technical Baseline Report, WHC-SD-EN-TI-220.

Dimensions:

Length:	228.90	Meters	751.00	Feet
Width:	41.15	Meters	135.00	Feet
Depth/Height:	5.18	Meters	17.00	Feet
Sq. Area:	9,418.97	sqMeters	101,384.90	sqFeet

Comments: The depth of the clearwells were 5.18 meters (17 feet) and the pumphouse was 6.7 meters (22 feet).

References:
1. 11/30/90 WIDS Site Addition, 126-B-2.
2. M. S. Gerber, 09/93 Manhattan Project Buildings and Facilities at the Hanford Site: a Construction History, WHC-MR-0425.
3. Shearer, Jeffrey P. with Roger W. Carpenter, 4/4/96 Depth of 100BC Sites.

Regulatory Information:

Programmatic Responsibility

DOE Program: EM-40 **Confirmed By Program:** Yes

DOE Division: ERD - Environmental Restoration Division

Responsible Contractor/Subcontractor: WCH Washington Closure Hanford

Reclassifying Contractor/Subcontractor:

ResponsibleProject:

Site Evaluation

Solid Waste Management Unit: Yes

TPA Waste Management Unit Type:

Permitting

RCRA Part B Permit:	No	**TSD Number:**	
RCRA Part A Permit:	No	**Closure Plan:**	No
RCRA PermitStatus:			
Septic Permit:	No	**216/218 Permit:**	None
Inert LandFill:	No	**NPDES:**	No
Air Operating Permit:	No	**State Waste Discharge Permit:**	No

Tri-Party Agreement

Lead Regulatory Agency: EPA

Unit Category: Decontamination & Decommissioning (D&D)

TPA Appendix:

Remediation and Closure

Decision Document:

Site Code: 126-B-2 **Site Classification: Accepted** Page 3

Decision Document Status:	
Remediation Design Group:	
Closure Document:	
Closure Type:	
Post Closure Requirements:	**ResidualWaste:**

APPENDIX B

SITE PHOTOGRAPHS
(7 Pages)

Photograph B-1. 126-B-2 Clearwells.

Photograph B-2. Exposed Pipelines in Excavation, East of 126-B-2.

Photograph B-3. The 105-B Reactor viewed from 183-B.

Background: The 105-B Reactor
Center: The remains of the 183-B Pumproom with the 126-B-2 Clearwells to either side.
Foreground: Gravel over the demolished 183-B Filter Building.

Photograph B-4. An Access Hatch on the West Side of the Northern 126-B-2 Clearwell

Photograph B-5. An Access Hatch on the West Side of the Northern 126-B-2 Clearwell

Photograph B-6. Stairwell below an Access Hatch on the East Side of the Northern 126-B-2 Clearwell.

Photograph B-7. Concrete Sidewall on the East Side of the Northern 126-B-2 Clearwell

Mr. Nicholas Ceto, Program Manager
Office of Environmental Cleanup
Hanford Project Office
U.S. Environmental Protection Agency
309 Bradley Boulevard, Suite 115
Richland, Washington 99352

Dear Mr. Ceto:

TRANSMITTAL OF APPROVED WASTE SITE RECLASSIFICATION FORM AND SUPPORTING DOCUMENTATION FOR THE 126-B-2 SITE

This letter transmits the approved Waste Site Reclassification Form No. 2007-004 and supporting Revision 0 *Remaining Sites Verification Package for 126-B-2, 183-B Clearwells* for your use. Mr. D. A. Faulk of your staff has reviewed this document.

If you have any questions, you may contact me or your staff may contact Chris Smith, of my staff, at (509) 372-1544.

Sincerely,

J. R. Franco, Assistant Manager
for the River Corridor

XXX:xx

Enclosure

cc w/encl:
Administrative Record
D. A. Faulk, EPA

cc w/o encl:
R. A. Carlson, WCH
L. M. Dittmer, WCH