1226095
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FACILITY STATUS CHANGE FORM
(for DOE/RL-2010-34 Facilities)

Date Submitted:	Area:	Control #:
June 9, 2014	100-B	D4-100B-003
Originator:	**Facility ID:**	
Clay McCurley	183B Clear Wells	
Phone:	**Action Memorandum:**	
942-8928	General Hanford Site Decommissioning Activities	

This form documents agreement among the parties listed below on the status of the facility D&D operations and the disposition of underlying soil in accordance with the applicable regulatory decision documents.

Section 1: Facility Status

- ☒ All removal actions require by action memo complete.
- ☐ Removal actions required by actions memo partially complete, remaining operations deferred.

Description of Completed Activities and Current Conditions:
Decontamination and Decommissioning: The only hazardous material requiring removal prior to facility demolition was Regulated Asbestos-Containing Material (RACM) which was removed in accordance with the *Removal Action Work Plan for River Corridor General Decommissioning Activities*, DOE/RL-2010-034. The RACM consisted of old deteriorated category II asphaltic roofing, caulking, and patching materials. Based on past uses of this facility, and a radiological scoping survey performed prior to demolition, radiological contamination was not expected and none was found.

Demolition: The 183B clear wells were demolished in place in the 100-B Area from March to June, 2014. The debris was managed under asbestos controls and loaded out/disposed at the ERDF. The walls and floors of the below-grade facilities were left in place, inspected for stains and anomalies, and backfilled to a grade consistent with surrounding terrain with clean fill material from a nearby borrow pit.

Description of Deferral (as applicable):
N/A

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JUN 10 2014
EDMC

Section 2: Underlying Soil Status

- ☒ No waste site(s) present. No additional actions anticipated.
- ☐ Documented waste site(s) present. Cleanup and closeout to be addressed under Record of Decision.
- ☐ Potential waste site discovered during removal action. Waste site identification number <to be> assigned.

  Cleanup and closeout to be addressed under Record of Decision.

Description of Current/As-Left Conditions:
Below-grade walls and floors of the 183B clear wells have been left in place. The location on the structures is provided in Attachment 8. Holes have been punched in the floors to facilitate moisture drainage. The clear wells have been backfilled with material from a nearby borrow pit to a level consistent with the surrounding terrain.

Identification of Documented Waste Site(s) or Nature of Potential Waste Site Discovery (as applicable):
100-B-14:2, 115B Gas Recirculation Sanitary Sewer Pipelines, Interim Closed Out.
100-B-22:2, Water Treatment Facilities, Most of 183B, 185B, 190B, Interim Closed Out
100-B-23, 100-B/C Surface Debris, Interim Closed Out
100-B-28, 183C Headhouse to 183B Pump House Sodium Dichromate Transfer Pipeline, Interim Closed Out

Section 3: List of Attachments

1. Facility Information
2. Photographs of the 183B Clearwells
3. DOE Approval of No PTE for Demolition of 183B Clearwells

0088786

FACILITY STATUS CHANGE FORM
(for DOE/RL-2010-34 Facilities)

4. 183B Clear Well Structural Evaluation
5. EPA Approval to Perform 183B Asbestos Demolition
6. EPA Concurrence with Leaving Clean Concrete in Structure for Backfill
7. Visual Inspection of 183B Clearwells
8. Pre-Demo GPS Survey of 183B Clear Wells

Rudy Guercia — 6/9/2014

DOE-RL (Lead Agency) — Date

DISTRIBUTION:

DOE: Rudy Guercia, A3-04
Document Control, H4-11
Administrative Record, H6-08 (100-BC-1 OU)
SIS Coordinator: Benjamin Cowan, H4-22
D4 EPL: Clay McCurley, L4-45
Sample Design/Cleanup Verification:Theresa Howell, H4-23
FR Engineering: Rich Carlson, N3-30
FR EPL: Dan Saueressig, N3-30

Attachment 1

Facility Information (4 pages)

Facility Information

Introduction

This document provides information regarding the history, characterization, and final status at the completion of deactivation, decontamination, decommissioning, and demolition (D4) activities of the 183B clear wells and associated valve pits located in the 100-B Area as shown in Figure 1 (Attachment 2). The 183B clear wells were part of the former 183B water treatment plant constructed in the 1940s approximately 1,300 feet west of the 105B Reactor to support its operation. A photo of the former water treatment plant is provided in Figure 2 (Attachment 2). The water treatment plant consisted of a headhouse, flocculators, sedimentation basins, filter building, and a pump room that separated the clear wells. In 1987, the water treatment plant was demolished leaving only the clear wells intact. Clean rubble from demolition was placed in the sedimentation basins and the area was backfilled with soil and compacted to provide a minimum of 18 inches of cover. The site was graded to provide a smooth contour matching surrounding terrain. The clear wells were left intact with intentions of using them for future use as a landfill for demolition debris. The roof of the pump room, which supported the electrical building, was collapsed, partially filled, and graded. A 2013 photo of the clear wells, prior to D4, is provided in Figure 3 (Attachment 2).

Building Description

The 183B clear wells consisted of two 5 million-gallon, covered, reinforced concrete reservoirs separated by a pump house that was previously demolished. The clear wells were managed free of contamination from site operations and processes. Processes conducted in these facilities were free of radioactive materials. Each reservoir had a concrete slab roof covered with a tar and gravel surface. Suction wells approximately 5 feet lower than the bottom of the reservoir were located on either side of the pump room allowing water to flow from the reservoir by gravity. The pump room originally contained nine electric pumps and six steam turbine pumps. Two of these pumps were used for backwashing filter beds and four pumps were connected to the combined sanitary and fire protection system. The remaining nine pumps handled the distribution of filtered water. Overflow trenches of 20,000 gpm ran along both walls of the pump room below floor level, paralleling the two reservoirs. Directly above the pump room was an electric switchgear room containing various electric meters and controls. The pump room itself had reinforced concrete side walls, reinforced concrete floor and reinforced concrete slab roof. The electrical switchgear room was reinforced concrete framed and concrete block enclosed with a precast concrete roof covered with tar and gravel.

The 183B clear wells also included two corrugated valve pits to the east side, one concrete valve pit to the south, and a 6 foot high berm on the west side. The valve pits contained valves and piping for sanitary/filtered water lines.

Facility History

The clear wells were never used as a landfill for demolition debris. They remained empty and unused since the demolition of the water treatment plant in 1987. Since the facility was free of radiological contamination, a "No Potential to Emit" Determination was requested and received from DOE (Attachment 3). Pre-demolition surveys of the structure identified asbestos containing materials (ACM) in the roof (CCN 174859) so a structural evaluation was performed to determine if the ACM could be safely abated prior to demolition (Attachment 4). The structural evaluation concluded that access to the clear well roof to perform work is not recommended. EPA

concurrence was requested and received for roof demolition without prior abatement of ACM in areas that presented a danger to workers (Attachment 5). To conserve resources (e.g., fuel) and help minimize the quantity of waste disposed at the ERDF, the concrete columns (that held up the clear well roofs) were left in place inside the clear wells prior to backfill. This action is allowed by the *Removal Action Work Plan for River Corridor General Decommissioning Activities* (DOE/RL-2010-34) and, as a courtesy, EPA concurrence was requested and received (Attachment 6).

The D4 of the clear wells began in March 2014 with the installation of a ramp on the west side of the south clear well as shown in Figure 4 (Attachment 2). The concrete roof and roofing materials were demolished, size reduced, transported to and disposed of daily under asbestos controls at the Environmental Restoration Disposal Facility (ERDF) as they were generated. D4 then proceeded to the north clear well in April 2014 as shown in Figure 5 (Attachment 2). The concrete columns that held up the roof were cleared size reduced, cleared to the sides, and left in place on the floor of the clear wells. Each clear well was visually inspected for stains and anomalies prior to backfill. Photographs were taken to document the observations and the information was compiled into the *Visual Inspection of the 183B Clear Wells* provided in Attachment 7. D4 activities were completed in May 2014. An aerial photo of the site in June 2013, provided in Figure 6 (Attachment 2), shows the area after the completion of backfill activities. A post-demolition Global Positioning System (GPS) survey of the area was not performed. The pre-demolition GPS survey provided in Attachment 8, documents the location of the walls and floors or the clear wells that were left in place. The berm on the west side of the clear wells was left in place. Clean fill from a nearby borrow pit was brought in and built up (over the clear wells) to the level of the berm rendering the surface over the clear wells consistent with the surrounding terrain.

Radiological Scoping and Industrial Hygiene Baseline Surveys

Table 1 summarizes the industrial hygiene, radiological control, and asbestos samples collected in the 183B clear wells.

Table 1: Summary of Characterization Surveys at 183B

Type	Date	Documented In	Results Summary
Asbestos	July 24, 2013 January 14, 2014 January 21, 2014	CCN# 174859	ACM identified in four homogenous areas, primarily old roofing material and caulking
IH Surveys and Beryllium Characterization	October 29, 2012	BFA-183B-13-001	Assessment documents the building is Be free.
Radiological Survey	November 8, 2013	RSR-100N-13-1221	No contamination identified.

Radiological Contamination

The 183B facility was never posted for radiological conditions. Based on research of past facility operations, the clear wells were managed free of contamination from site operations and processes. Radiological contamination was not expected and a pre-demolition radiological scoping survey (Attachment 3) identified no radiological contamination. As a result, it was determined that the facility did not have a radiological inventory sufficient to justify the calculation of a potential to emit (PTE). The lead agency's (DOE) concurrence was requested and received that an emissions estimate is not required prior to performing removal actions (Attachment 3). Since the 183B facility

had no radiological contamination, there was no need to perform a post-demolition radiological survey using the Global Positioning Environmental Radiological Surveyor (GPERS).

Asbestos

Inspections and sampling for ACM, conducted at the 183B clear wells from July 2013 through January 2014, identified various areas that contained ACM. The report, *Amended - Asbestos Inspection and Sampling Report for the 183B Clearwells* (CCN 174859) documents that 18 samples found friable ACM in four homogenous areas.

Beryllium

The 183B facility was listed on the Hanford Site Beryllium Controlled Facilities List however, the facility was sampled prior to demolition and down-posted as a beryllium-clean facility.

Associated WIDS Sites

The following table shows the WIDS sites associated with 183B clear wells and their current status.

Table 1. WIDS Sites near the 183B Clear Wells.

WIDS Site	Name	Current Status
100-B-14:2	115-B Gas Recirculation Sanitary Sewer Pipelines	Interim Closed Out
100-B-22:2	Water Treatment Facilities, Most of 183-B, 185-B, 190-B	Interim Closed Out
100-B-23	100-B/C Surface Debris	Interim Closed Out
100-B-28	183-C Headhouse to 183-B Pump house Sodium Dichromate Transfer Pipeline	Interim Closed Out

Civil Survey Information

A pre-demolition Global Positioning System (GPS) survey of the 183B clear wells was performed. A copy of the pre-demolition survey is provided in Attachment 8. A post-demolition GPS survey was not necessary since the locations of below-grade structures (walls and floors) left behind are documented in the pre-demolition survey

Anomalies Discovered During Demolition

No anomalies were discovered during D4 of the 183B clear wells.

Final Building Status and Underlying Soil

All D4 activities were performed in accordance with applicable environmental documentation, including the *Removal Action Work Plan for River Corridor General Decommissioning Activities* (DOE/RL-2010-34). Demolition of the structure was completed in May 2014. The walls and floors of the clear wells and valve pits were left in place below grade. Clean fill from a nearby borrow pit

was placed over the clear wells and valve pits to the level of the berm that spanned the structure's western edge and graded consistent with the surrounding terrain.

No post-demolition GPERS surveys were performed because the facility was radiologically clean. No Post-Demo GPS survey was taken since the Pre-Demo GPS Survey (Attachment 8) provides the locations of the below-grade structures left behind. The clear wells were visually examined prior to backfill and no unusual stains or anomalies were observed (Attachment 7). Holes were punched in the floors to facilitate drainage.

Table 2 summarizes the contaminants of concern for facility demolition and the Management Practices implemented to minimize the spread of those contaminants.

Table 2: Contaminants of Concern for Facility Demolition

Contaminant of Concern	Management Practice
Non-Friable Asbestos Containing Material (ACM)	Asbestos Containing Material (ACM) was the only contaminant of concern for demolition of the 183B clear wells. The ACM was in the form of category II materials. Facility demolition was performed under asbestos controls. Abatement activities were performed at the direction of an asbestos competent person. ACM was abated where it could be safely accessed.

Attachment 2

Photographs of the 183B Clear Wells (3 pages)

Figure 1. Aerial View of 100-B Area in May 2009 (facing south)

Figure 2. 183B Water Treatment Plant Circa 1983

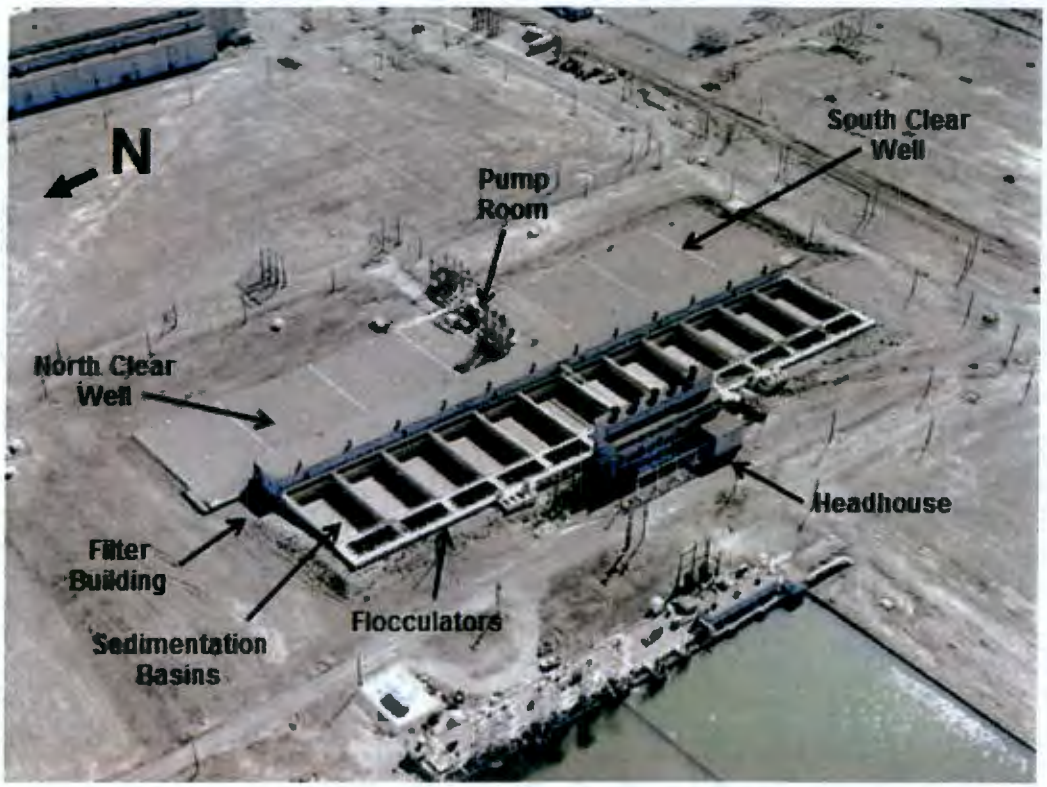


Figure 3. 183B Clear Wells in September 2013

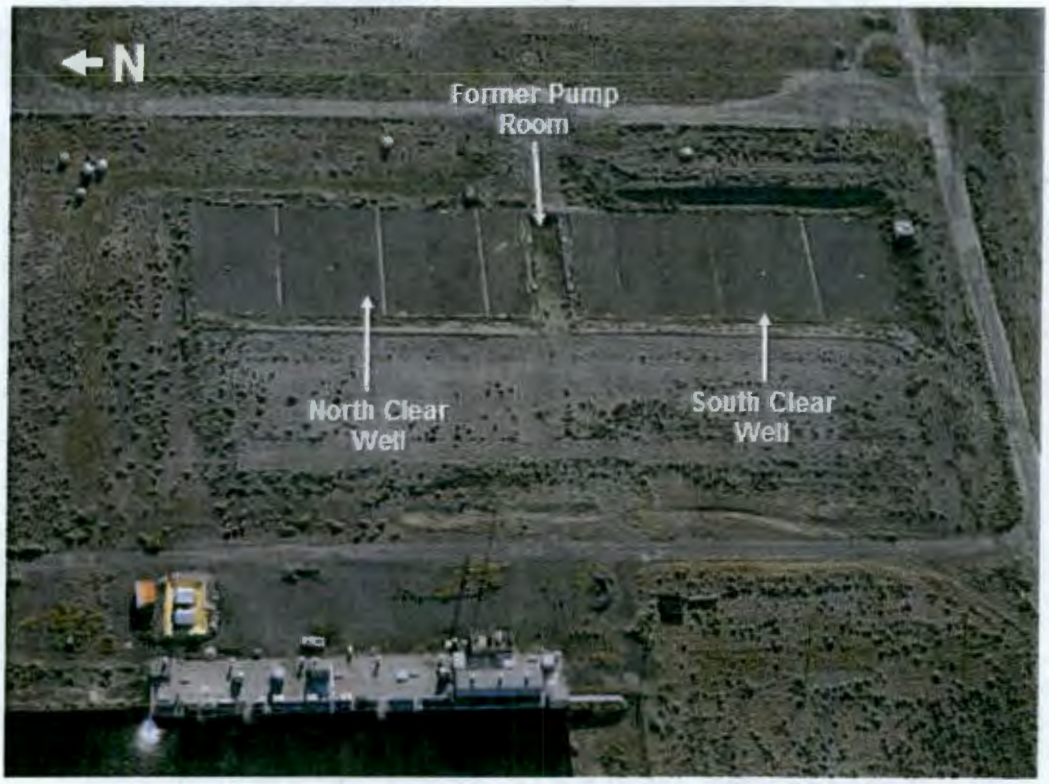


Figure 4. 183B South Clear Well in March 2014

Figure 5. 183B Clear Well in May 2014

Figure 6. 183B Clear Wells After Backfill in June 2014

Attachment 3

DOE Approval of No PTE for Demolition of 183B Clearwells (6 pages)

173814

^WCH Document Control

From: Strand, Christopher P
Sent: Tuesday, November 19, 2013 8:57 AM
To: ^WCH Document Control
Cc: Allen, Mark E; Douglas, L M (Michael); McCurley, Clay D
Subject: FW: No Potential to Emit for 183B Clear Wells

Attachments: Scoping Survey of 183B Clearwell.pdf; No PTE 183B Clearwells.doc

Please chron and enter into project record as "DOE Approval of No PTE for Demolition of 183B".

Thanks,

Chris
554-2720

From: Guercia, Rudolph F (Rudy) [mailto:rudolph.guercia@rl.doe.gov]
Sent: Tuesday, November 19, 2013 8:44 AM
To: Strand, Christopher P
Cc: McCurley, Clay D; Saueressig, Daniel G
Subject: RE: No Potential to Emit for 183B Clear Wells

After reviewing the data provided on the subject building, RL concurs with the analysis that the subject facility does not have a radiological inventory to justify calculation of a PTE. RL believes that facility has no potential to emit either from activities related to operation, demolition, or removal.

Please chron and place in the project files, including word file.

Scoping Survey of 183B Clearwe...

No PTE 183B Clearwells.doc (42...

R. F. Guercia, Field Engineering
U.S. Dept. of Energy, Richland Operations Office
PH: (509) 376-5494
Fax: (509) 373-0726

From: Strand, Christopher P [mailto:cpstrand@wch-rcc.com]
Sent: Tuesday, November 19, 2013 8:25 AM
To: Guercia, Rudolph F (Rudy)
Cc: McCurley, Clay D; Saueressig, Daniel G
Subject: No Potential to Emit for 183B Clear Wells

Rudy,

Planning and engineering are proceeding to begin removal actions on the 183B Clear-Wells. In accordance with Section 4.3.2 of the *Removal Action Work Plan for General Decommissioning Activities*, DOE/RL-2010-34, Rev. 2, a No Potential to Emit in lieu of an emissions estimate is attached for DOE approval. Radiological scoping surveys conducted on November 8, 2013 found no contamination.

Please call if you have any questions.

Thanks,

Chris
554-2720

RADIOLOGICAL SURVEY RECORD

Type of Survey			Survey #
☒ Work Progress ☐ Routine			RSR –100N-13-1221
RWP # / Rev. #	Date	Time	Location
NA	11-08-2013	1200	183B

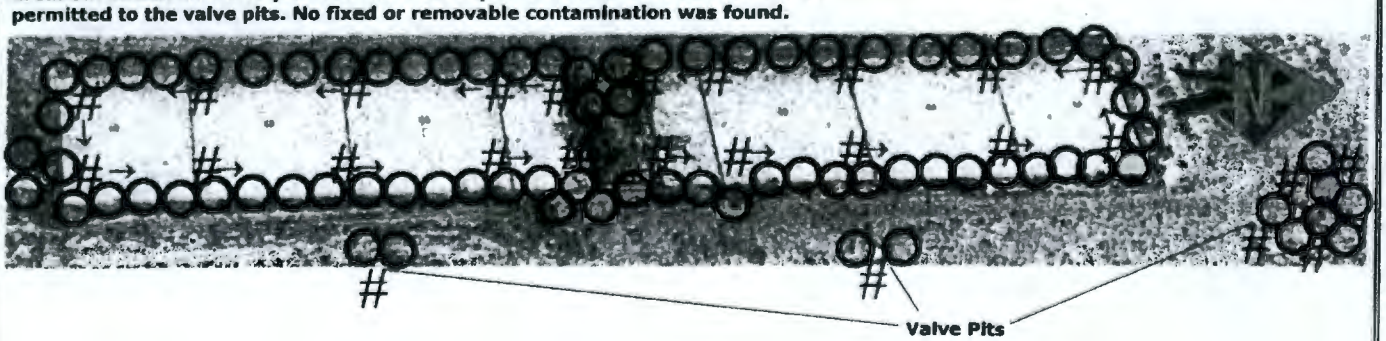
Description
Characterization/Scoping Survey of 183B Clear Well

References: (e.g., SRTA, ASER, LASER, RSP, Work Package)
TA-07-SR-02 Revision 3

Scoping Survey Performed at 183B Clear Well

No access was allowed to the clear well roof, and limited access was available to the walls and other surfaces. Surveys were performed as indicated. Direct survey symbols should not be construed to be exact survey locations, but represent a scanning survey of 10-14", pausing whenever an increase in count rate or an alpha indication was noted. Scanning surveys were performed in the same vicinity as the technical smears. Technical smears are shown but not numbered for clarity. The survey was begun in the Southeast corner of the facility and continued counter-clockwise. The facility is not a radiologically posted building.

183D Technical smears depicted below. Direct scans were performed in the same area. Six additional valve pits were also surveyed in like manner. No access was permitted to the valve pits. No fixed or removable contamination was found.



CA Contamination Area	HCA High Contamination Area	RBA Radiological Buffer Area	ARA Airborne Radioactivity Area	SCA Soil Contamination Area	RMA Radioactive Materials Area	RA Radiation Area	HRA High Radiation Area	VHRA Very High Radiation Area	RCA Radiologically Controlled Area	SOP Step Off Pad

○ Technical Smear	# Direct	M Large Area Wipe	T Transferable	General Area Dose Rates = Uncorrected Meter Reading (mR/hr)	All radiation readings are γ dose rates in units of mR/hr unless otherwise indicated	Contact 30 cm	N Neutrons (n/Rem/hr)	\ Micro Rem (μR/hr)	[AS] Air Sample Location	URMA Underground Radioactive Material Area

RCT Name/Signature/Date:
GL Eppling/ /11-08-2013

RadCon Supervisor Name/Signature/Date:
Mark Walden 11/13/13

RCT signature indicates portable instruments checked IAW RC-300-2.1

RADIOLOGICAL SURVEY RECORD

Survey #
RSR -100N-13-1221

Instruments

Model	ID #	Efficiency %		Cal Due Date	Model	ID #	Efficiency %		Cal Due Date
		α	βγ				α	βγ	
L2360	SCLL8-0032	NA	NA	11-14-2013	DP6BBD	DTNE2-0098	14	10	11-14-2013
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Contamination Measurement Information[1]

Circled values indicate Removable β contamination in mrad/hr β

No.	Description of Item or Location	Removable (dpm/100 cm²)				Total (dpm/100 cm²)			
		α bkgd (cpm)	α Activity	β-γ bkgd (cpm)	β γ Activity	α bkgd (cpm)	α Activity	β-γ bkgd (cpm)	β-γ Activity
1-80	Tech smears and directs as depicted	2	< 20	396	< 1,000	2	< 500	396	< 5,000
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

[1] Unless stated otherwise in the "References" section, exempted β-γ (i.e., C-14, Fe-55, Ni-59, Ni-63, Se-79, Tc-99, Pd-107, Eu-155) contamination levels are ≤ 10 times the β-γ contamination levels shown above.

Corrected Dose Rate Calculations

Show all work. CF = 1 unless noted.

Location	Contact Readings		30 cm Readings	
	β (mrad/hr) (WO-WC) X CF = DR	γ (mR/hr) WC X CF = DR	β (mrad/hr) (WO-WC) X CF = DR	γ (mR/hr) WC X CF = DR
NA	NA	NA	NA	NA
NA	NA	NA	NA	NA
NA	NA	NA	NA	NA
NA	NA	NA	NA	NA

No Potential-To Emit – 183B Clear-wells

Facility Description:

The 183B Clear-wells are located in the 100B Area, approximately 1,300 feet west of the 105-B Reactor at Washington State Plane coordinates E564855, N144516.

The 183B Clear-wells, originally called the Clear Water Reservoir, and Pump Room consisted of two 5,000,000 gallon reinforced concrete, completely enclosed, reservoirs between which was a pump room. Each reservoir had a concrete slab roof covered with a tar and gravel surface. The bottom of the suction wells on either side of the Pump Room was approximately 5 feet lower than the bottom of the reservoir, and thus the water flowed by gravity from the reservoir to the suction wells. The Pump Room originally contained nine electric pumps and six steam turbine pumps. Two of these pumps were used for backwashing filter beds and four pumps were connected to the combined sanitary and fire protection system. The remaining nine pumps handled the distribution of filtered water. Overflow trenches of 20,000 gpm ran along both walls of the Pump Room below floor level, paralleling the two reservoirs.

Directly above the Pump Room was an electric switchgear room containing the various electric meters and controls for the Pump Room. The Pump Room itself had reinforced concrete side walls, reinforced concrete floor and reinforced concrete slab roof. The electrical switchgear room was reinforced concrete framed and concrete block enclosed with a precast concrete roof covered with tar and gravel (HAN-10970).

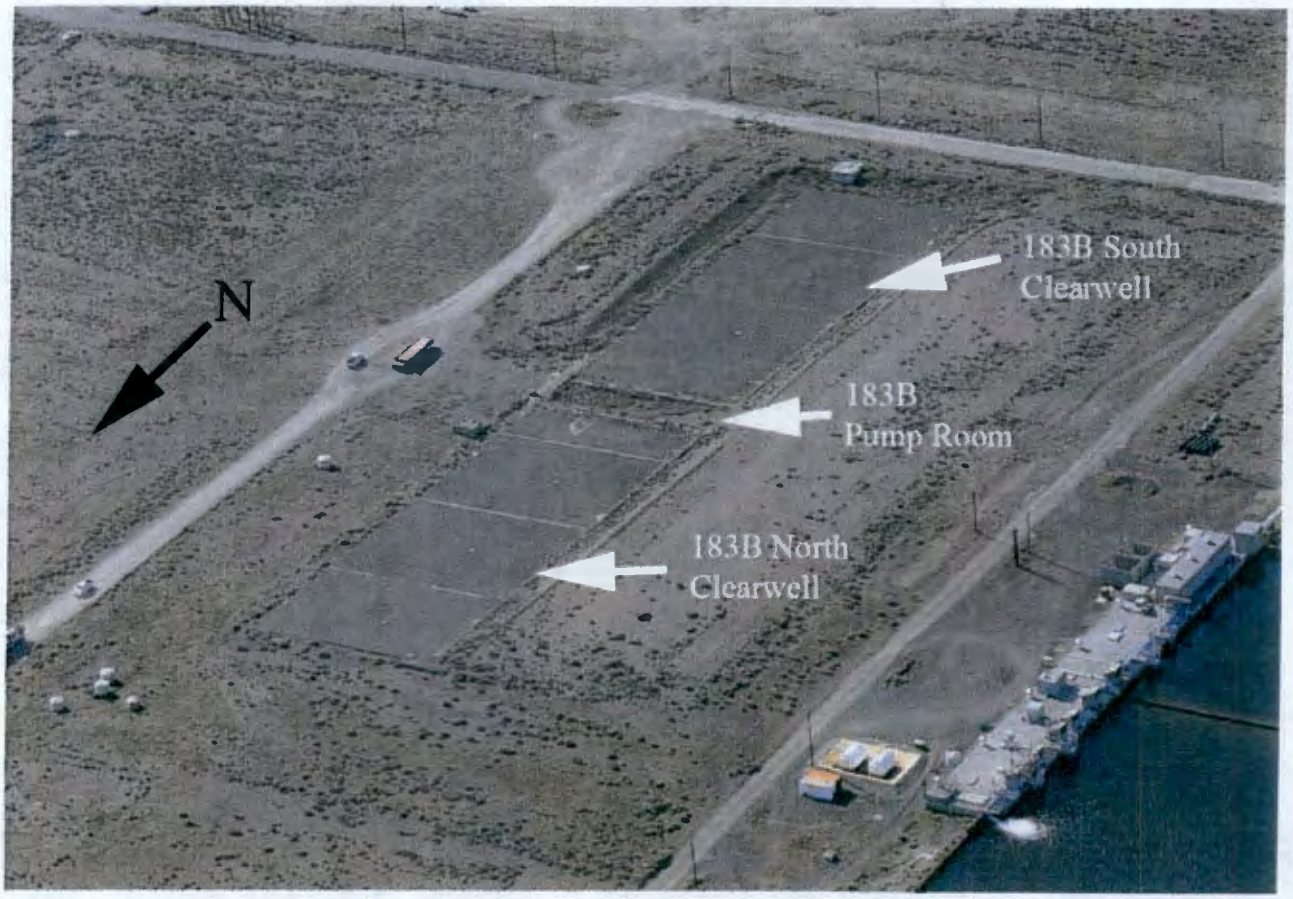
Facility History:

In 1987 the majority of the 183B Water Treatment Plant was demolished including the head-house, flocculators, sedimentation basins, filter building and most of the pump room. Clean rubble from demolition was placed in the sedimentation basins and the area was backfilled with soil and compacted to provide a minimum of 18 inches of cover. The site was graded to provide a smooth contour matching surrounding terrain. The clear-wells were left intact with intentions of using them for future use as a landfill for demolition debris. The roof of the pump room which supported the electrical building was collapsed, partially filled, and graded (WHC-SD-WM-TI-046).

Radiological Contaminants of Concern:

Radiological scoping surveys completed October 8, 2013 detected no radiological activity above background (RSR-100N-13-1221).

183B Clear-Wells, April 2013



Attachment 4

183B Clear Well Structural Evaluation (10 pages)

174036

WCH Washington Closure Hanford

Interoffice Memorandum

TO: M.E. Allen
100-Area Project Engineer
X9-09/308-5375

DATE: December 17, 2013

COPIES: See Below
Document Control H4-11

FROM: P. P. Santos
Engineering Services
H4-20/372-9648

12-17-13

SUBJECT: **183-B Clear Well Structural Evaluation**

REF:

1. WHC-SD-WM-TI-046, Rev. 0, "Facility Decommissioning Report for 183-B Water Treatment Plant", September 1989.
2. Craft Work Package No. 100 11 04 21 015, "183-B Clear Wells/Flumes Inspection for Bats"
3. WCH-450, Rev. 0 "Bat Surveys of Retired Facilities Scheduled for Demolition by Washington Closure Hanford", June 2011.
4. Dittmer, L.M., Waste Site Reclassification Form, Operable Unit: 100-BC-1, Waste Site Code: 126-B-2, 183-B Clearwells, Control Number 2007-004, dated 3/6/1997.

I. INTRODUCTION

An engineering assessment was performed to determine the structural condition of the 183-B Clear Well. The evaluation is needed to support asbestos abatement prior to demolition. During the asbestos abatement activity, the clear well roof will be used by personnel as a platform to remove asbestos containing material (ACM). It is anticipated that the activity will also need asbestos removal equipment to be placed on top of the roof.

As part of the assessment, the following activities were performed:

- An external walk down of the 183-B Clear Well on November 14, 2013, and
- A review of key decommissioning and inspection documents pertaining to the building.

II. OBSERVATIONS

A. November 14, 2013 Walk Down

Pictures from the most recent walk down are given in Attachment A. Having compared the pictures from Attachment A with the pictures in REF.2, it can be seen in Detail S4 of Attachment A that the side wood debris has been removed. The comparison of the hand rails between REF. 2 and Details S1, S2 and did NOT show significant degradation. The flashing that exhibited superficial corrosion given in the REF. 1 did NOT appear to have any further significant degradation. No additional areas of exposed concrete roof exterior were seen. In some cases, gravel was put back on top of exposed concrete roof areas.

B. Document Review

Four documents were reviewed as part of this assessment. REF. 1 describes the partial demolition of the 183-B Water Treatment Plant. REF. 2 & REF. 3 document activities performed on the 183-B Clear Wells subsequent to the partial demolition. REF. 4 documents the waste site reclassification of the 183-B Clear wells.

i. Method of Demolition

REF.1, page 27, Section 5.2.4 states that a 5-ton demolition ball attached to an 80-ton Linkbelt Crane and an excavator were the primary modes of demolition. This section of the document continues to state that "walls were knocked down". As seen in Attachment B, it appears that the demolition ball was used to knock down the walls of the head house and the filter building. It is also suspected that the pipe gallery and the pump room were knocked down using the demolition ball. Debris can be seen on top of the clear well during the partial demolition. It can be inferred that the debris on the clear well is a result of debris falling from the filter room demolition. The impact of falling debris to the clear well is unknown.

ii. Condition of 183-B Clear Wells after Partial Demolition

Photo B-7 in REF. 4 shows a column that appears to exhibit concrete spall common to its base. This discrepancy was verified during the walk down highlighted in REF. 2, Work Package Status Log, page 1 of 2. Note that this area was avoided during the bat surveys.

The ladder rungs common to the access hatch exhibited significant structural degradation. The rungs were found to be significantly more corroded upon bat survey entry. During the descent, I stipulated that three rungs CANNOT be used. The cross sections of these noted rungs were reduced to where their weight bearing capacity was highly suspect.

III. OTHER CONSIDERATIONS

The building does NOT have an active maintenance plan that ensures its structural integrity.

IV. OVERALL ASSESSMENT & SUMMARY

Based on the all of the data reviewed, performing routine work on the roof is structurally classified as medium-high to high risk without further mitigation of the current conditions. The method used to demolish the building leaves a high degree of uncertainty regarding the structural integrity walls of the clear well adjacent those portions of the 183-B facility demolished in 1987.

There is no on-going maintenance on this structure that ensures its integrity. The lack of maintenance and surveillance manifests into uncontrolled degradation of this building.

In conclusion, the use the roof area as a work platform is NOT recommended.

Attachments: A) Pictures of 183-B Clear Well taken on 11/14/13
B) Historical Pictures of 183-B Clear Well

Copies (w/a)
C. P. Strand L4-45
P. P. Santos H4-20
J. N. Winters L4-45
L.M. Douglas, X9-08
C.D. McCurley L4-45
Document Control H4-11

ATTACHMENT A – Pictures of 183-B Clear Well taken on 11/14/13

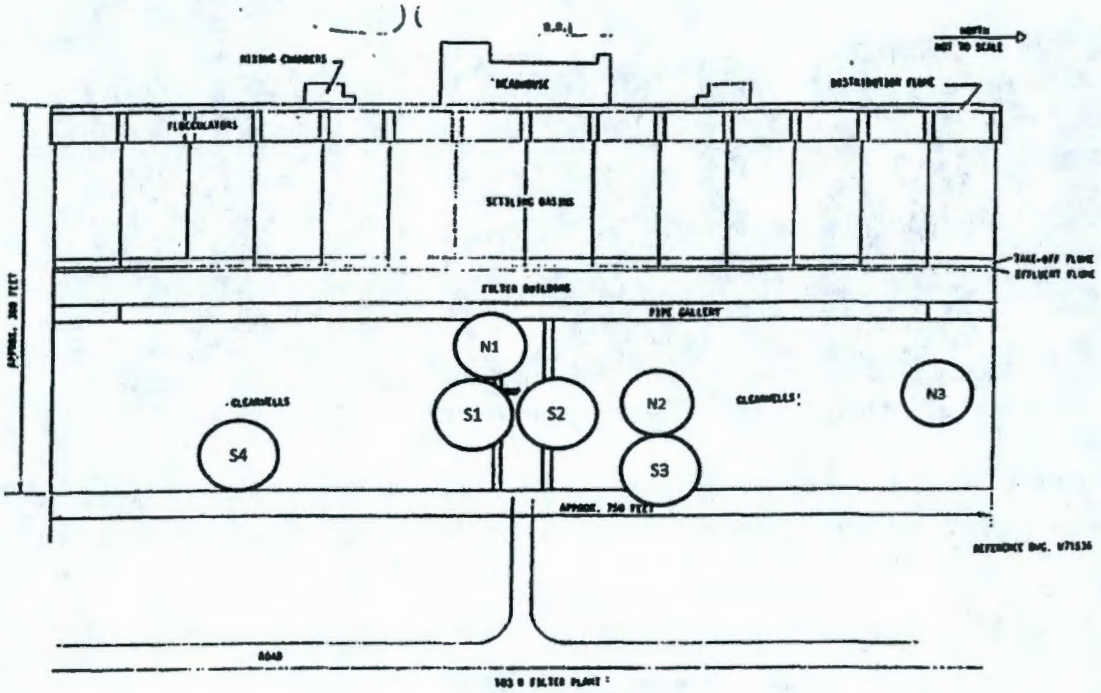


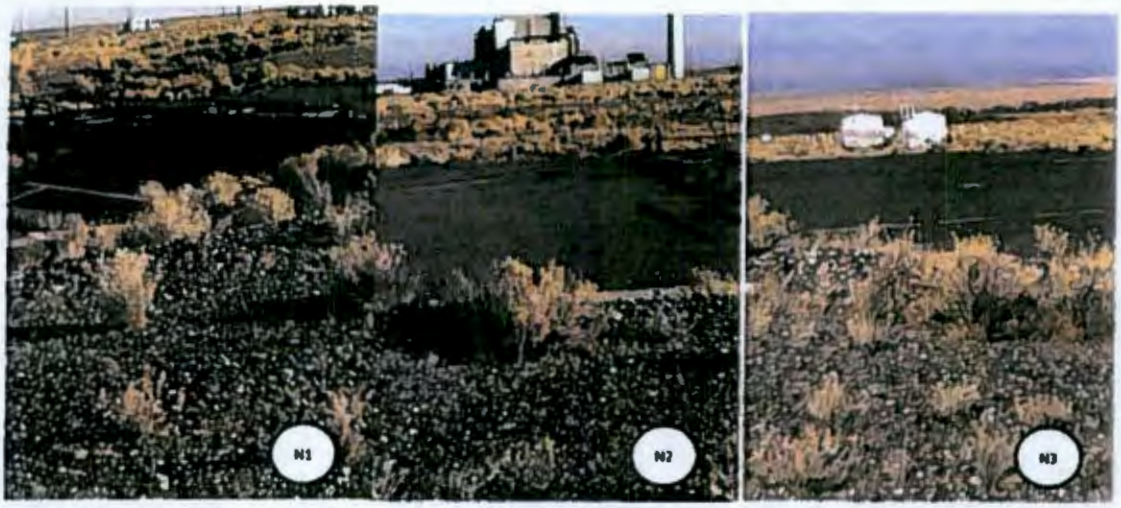
Figure 1 - 183-B Clear Well Inspection Map

S1 – South Wall of Demolished Pump Room - Exposed reinforcing steel bars, mild corrosion.

S2 – North Wall of Demolished Pump Room - Exposed reinforcing steel bar, mild corrosion.

S3 – East Wall of Northern Clear Well - Damaged wooden handrails; Exposed concrete roof.

S4 – Roof of South Clear Well - No significant structural deformation.



N1 – South wall of the demolished Pump Room, View from West side - Broken handrails; Exposed reinforcing steel bar, mild corrosion.

N2 – North Clear Well Roof, View from West side – exposed concrete roof common to E wall.

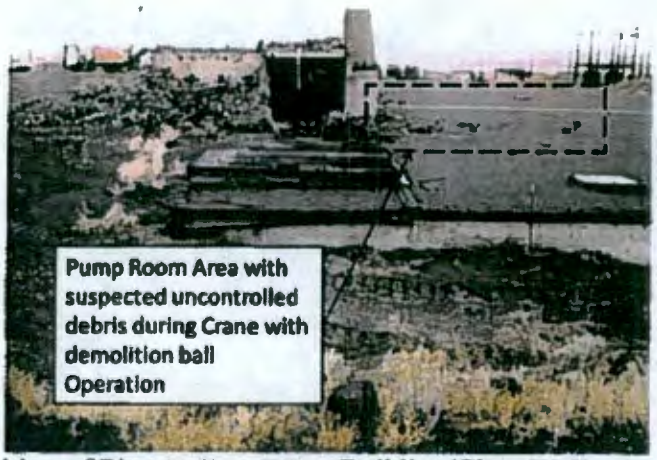
N3 – North Clear Well Roof, View from West side – Exposed concrete roof, N wall.

ATTACHMENT B – Historical Pictures of 183-B Clear Well

In-process demolition of Head House using Demolition Ball, (circa 1987)

In-process demolition of the Filter Building/Pipe Gallery/Clear Well wall using demolition ball, (circa 1987)

In-process demolition of the Pump Room/Clear Well wall using demolition ball, (circa 1987)



In-process demolition of Pipe Gallery/Filter Building/Clear Well using demolition ball, (circa 1987)

In-process condition of Clear Well Room after Filter Room and Pipe Gallery demolition (circa 1987)

Clear Well Roof showing displaced gravel with concrete roof exposed, (circa 1987)

Attachment 5

EPA Approval to Perform 183B Asbestos Demolition (3 pages)

174221

^WCH Document Control

From: Strand, Christopher P
Sent: Monday, December 23, 2013 8:57 AM
To: ^WCH Document Control
Subject: FW: 183-B Clear Well Asbestos Work Review

Please chron and enter into project record as "EPA Approval to perform 183B Asbestos Demolition".

Thanks,

Chris
554-2720

From: Pavitt, John [mailto:Pavitt.John@epa.gov]
Sent: Thursday, December 19, 2013 5:13 PM
To: Strand, Christopher P; Buelow, Laura; Guzzetti, Christopher
Cc: Guercia, Rudolph F
Subject: RE: 183-B Clear Well Asbestos Work Review

Hello Chris. Thank you for your e-mail regarding plans to demolish the 183-B Clear Well structure. An asbestos survey determined that friable asbestos asphaltic roofing is present on the roof and it is proposed to demolish the structure with the asbestos left in place. Portions of the structure were previously demolished.

You attached documents including an evaluation by a professional engineer who determined that deterioration of the structure indicates a medium high to high risk that the roof is not safe to work on. This is supported by observations of concrete spall at the base of 1 or more support columns, rotted wood railings, and debris on roofing left by the prior demolition activity using a wrecking ball and taking out of some walls leaving other walls less supported. It seems apparent that it would not be safe for workers and equipment to be placed on the roof for abatement work.

The asbestos NESHAP regulations allow for demolition with asbestos left in place in situations where a demolition has been ordered by a local government, and EPA has recognized that an evaluation by a professional engineer may meet this intent as the situation warrants. To maintain compliance with NESHAP requirements you are reminded to abate those portions of the structure that are accessible, keep asbestos containing materials wet during demolition until disposal, to prevent visible emissions (dust) and to stop work if dust is observed and apply additional water before continuing work.

Please let me know if you have any questions about this e-mail.

John Pavitt
EPA Region 10, Alaska Operations Office
(907) 271-3688

From: Strand, Christopher P [mailto:cpstrand@wch-rcc.com]
Sent: Thursday, December 19, 2013 2:51 PM
To: Buelow, Laura; Guzzetti, Christopher; Pavitt, John
Cc: Guercia, Rudolph F
Subject: 183-B Clear Well Asbestos Work Review

Laura, Chris,

Provided on DOE's behalf is the following information supporting demolition of the 183-B Clear Wells. EPA's concurrence with this approach requested in accordance with Section 2.4 of the *Removal Action Work Plan for River Corridor General Decommissioning Activities*, DOE/RL-2010-34, Rev. 2.

Should EPA have any questions, do not hesitate to contact me.

Thank you,

Chris
554-2720

183-B Water Treatment Plant/Clear Wells

The 183-B Water Treatment Plant was constructed in 1944 and used to treat Columbia River water for use in 105-B reactor operations and support services. The 183-B Water Treatment Plant originally included a head house (chemical storage and mixing building), twelve flocculation basins, twelve sedimentation basins, twelve filters, two Clear wells, and a filter pump house. Each flocculation basin was connected in series to a sedimentation basin and a gravity filter which drained into two large clear wells. The 183-B filter pump house contained several large pumps that supplied filtered water to the 190-B process water storage and pump house.

The 183-B Water Treatment Plant head house, sedimentation basins, flocculation basins, and filter pump house were demolished during the 1987 through 1987 timeframe. The two large clear wells (5 million gallons each) remain in place. The clear wells are completely enclosed concrete reservoirs with a flat concrete roof covered in asphaltic roofing material.

183-B Clear Wells - Asbestos Containing Materials

The 183-B clear well roofing material contains Category I asbestos containing material (ACM) that was determined through inspection and testing to be friable based on the age of the material and decades of exposure to the elements. Similar material exists on the roof of a small valve house immediately east of the clear wells (reference attached 183-B Asbestos Inspection and Sampling Report). No other ACM was identified during the inspection, however, the inspection was limited because of the degraded condition of the facility.

Asbestos Abatement and Controls

The 183-B Water Treatment Plant was constructed in 1944 and operated until 1968 when the 105-B Reactor was shut down. The majority of the plant has been demolished (reference above), but the clear wells were left intact, but have not been maintained for the past 45 years. The clear wells have now been scheduled for demolition under a CERCLA removal action and have been evaluated several times for bat habitat and structural integrity. An engineering evaluation performed by a professional structural engineer on November 14, 2013, concluded that access to the clear well roof to perform work is not recommended. This conclusion was based on past history of the facility, age, lack of

maintenance, previous demolition forces, and lack of access to certain areas (reference attached 183-B Clear Well Structural Evaluation).

Given the conclusion of the structural evaluation, it is proposed to leave the friable ACM clear well roofing in place during demolition. ACM roofing that is safely accessible on the nearby valve house will be removed and disposed as asbestos waste. The clear well demolition will be performed under asbestos controls using wet methods and in accordance with a work package developed by an AHERA qualified design authority. Supervision will be provided by asbestos qualified Competent Persons and work will be performed by trained asbestos workers. At a minimum, control methods will include 1) use of wet methods, 2) use of HEPA vacuums for dust and debris, 3) prompt clean-up and disposal of waste and debris. Following abatement and demolition activities, the regulated areas will be inspected by a competent person, documented, and down and down posted to ensure no ACM remains.

All building debris will be managed as asbestos waste and will be packaged, labeled, and shipped for disposal at ERDF in accordance with waste management and transportation standards as established in the Removal Action Work Plan for *River Corridor General Decommissioning Activities*, DOE/RL-2010-34, Revision 2. Final inspection and down posting will be documented in CERCLA closure documentation.

<< File: 173745_Asbestos Rpt for 183B Clearwells.pdf >> << File: 183B Structural Evaluation.pdf >>

Attachment 6

EPA Concurrence with Leaving Clean Concrete in Structure for Backfill (1 page)

174471

^WCH Document Control

From: McCurley, Clay D
Sent: Thursday, January 30, 2014 12:11 PM
To: ^WCH Document Control
Cc: Douglas, L M (Michael)
Subject: 183-B Clearwells - EPA Concurrence With Leaving Clean Concrete In Structure For Backfill

Folks. Please chron this email per the subject and let me know which number has been assigned. Thanks. Clay

---

From: Guercia, Rudolph F (Rudy) [mailto:rudolph.guercia@rl.doe.gov]
Sent: Thursday, January 30, 2014 11:03 AM
To: Douglas, L M (Michael)
Cc: Buelow, Laura; McCurley, Clay D
Subject: 183B clearwell concrete

Mike: EPA has indicated that they have no objection to leaving/placing/clean (e.g., no rad, asbestos, asphalt, etc) concrete from 183B demo in the bottom of 183B clearwells, with the following caveats

1. There must be at least 3 feet of soil placed on top of the concrete
2. You have to perforate the bottom of the clearwell slabs

Let me know if you have any questions.

R. F. Guercia, Field Engineering
U.S. Dept. of Energy, Richland Operations Office
PH: (509) 376-5494
Fax: (509) 373-0726

Attachment 7

Visual Inspection of 183B Clear Wells (3 pages)

176071

^WCH Document Control

From: McCurley, Clay D
Sent: Wednesday, May 21, 2014 1:21 PM
To: ^WCH Document Control
Subject: Visual Inspection of 183B Clearwells

Attachments: 183B Visual Inspection Photos.doc

Folks. Please print the attachment (in color) and chron with this email per the subject. Let me know which number is assigned. Thanks. Clay

---

From: McCurley, Clay D
Sent: Thursday, May 15, 2014 1:11 PM
To: Allen, Mark E; Douglas, L M (Michael)
Cc: Saueressig, Daniel G
Subject: Visual Inspection of 183B Clearwells

Mark/Mike. Dan Saueressig inspected the 183B clear wells prior to backfill and supplied me with his notes and photos. With those, I prepared this report (photos attached). He indicated that he inspected the south clear well in April and the north clear well recently (May 7), both prior to backfill. Neither had any unusual staining. For the north clear well, he indicated that holes had been punched in the floor.

Dan also mentioned that he couldn't see under the dirt ramps (shown in the photos) and that some inert debris and roofing material had been buried there during ramp construction but, he had been assured that D4 had dug up the ramps, extracted those materials, and hauled them to the ERDF prior to restoring the ramps. Contact me or Dan if you have any questions. Clay

183B Visual Inspection Photos....

Visual Inspection Photos of 183B Clearwells

South Clearwell facing south on 04/17/2014

South Clearwell facing north on 04/17/2014

Visual Inspection Photos of 183B Clearwells

North Clearwell facing south on 05/07/2014

North Clearwell facing north on 05/07/2014

Attachment 8

Pre-Demo GPS Survey of 183B Clearwells (3 pages)

0658104

LiDAR Survey Report for Pre-Demo 183B Clearwell

Project : Lidar

Job 1267

User name	maaye	**Date & Time**	12:16:22 PM 5/28/2014
Coordinate System	US State Plane 1983	**Zone**	Washington South 4602
Project Datum	NAD 1983 (Conus)		
Vertical Datum		**Geoid Model**	Not selected
Coordinate Units	Meters		
Distance Units	Meters		
Height Units	Meters		

```
Survey Project Name:        LiDAR for 183B
Date:                       5/28/2014
Equipment:                  5800
Survey Purpose:             Locate corners to the 183B Clearwell
Requested By:               Mark Allen
Location:                   100B/C
Charge Code:
Field Surveyor:             None
Survey Software Used:       LiDAR
Survey Equipment Used:
Control Monuments Used:
Survey Method:              LiDAR
Horizontal Precision:       +/1 ft
Vertical Precision:         +/1 ft
Fieldwork Start Date:       Fall 2008
Fieldwork Completion Date: LiDAR was recorded fall of 2008.
Notes:
```

Name	Feat_Code FAC_NAMES	Northing	Easting	Elevation	
1	Corner	144627.407268	564831.469328	141.94	183B, Clearwell
2	Corner	144627.472837	564845.719086	141.54	183B, Clearwell
3	Corner 183B, Clearwell	144625.573	564845.722	142	
4	Corner 183B, Clearwell	144625.618	564878.228	141.68	

5	Corner	144396.107794	564878.537288	141.64	183B, Clearwell
6	Corner	144396.294775	564845.882873	141.89	183B, Clearwell
7	Corner	144394.137164	564845.890511	141.48	183B, Clearwell
8	Corner	144394.005789	564832.385124	142.33	183B, Clearwell
9	Corner	144385.630796	564875.085803	143.98	183B
10	Corner	144391.836907	564869.863174	142.29	183B
11	Corner	144391.802994	564875.085803	142.86	183B
12	Corner	144385.766449	564869.829261	144.03	183B
13	183B Valve Box	144456.5	564900.5	143.79	183B, Valve
14	183B Valve Box	144558.5	564902.5	142.58	183B, Valve
15	183B Valve Box	144534.8	564881.8	141.36	183B, Valve
16	183B Valve Box	144535	564886.7	141.52	183B, Valve
17	183B Valve Box	144531.3	564882.5	141.5	183B, Valve
18	183B Valve Box	144531.3	564886.9	141.44	183B, Valve

LiDAR Elevation Data

- See Coordinate Information on Next Page

183B Clearwell Location, Pre-Demolition

LiDAR: Light Detection and Ranging
Accuracy +/- 1 ft, data collected Fall 2008

WCH:10/31/11:V:\maaye\ArcMap\100D\183DPre-demo.mxd, 4:16:47 PM

Pre-Demo LiDAR Survey for the 183B Building

0 25 50 100 Meters