

**5/4-7/20 PL-33 BACKFILLING,  
BIOCELL SOIL SPREADING &  
REMOVAL OF MONITORING WELLS**

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**PHOENIX LOGGING SHOP & STORAGE YARD**

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**Klawock, Alaska**

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**May 2020**

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*Prepared for*

**Phoenix Logging**

P. O. Box 5758

Ketchikan, Alaska 99901

*Prepared by*

**Southeast Management Services**

1061 Mendenhall Peninsula Road; Juneau, Alaska 99801

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May 2020  
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**Table of Contents**

	<u>Page No.</u>
<b>I. OVERVIEW.....</b>	<b>1</b>
<b>II. SITE DESCRIPTION.....</b>	<b>2</b>
<b>III. 5/4/20 BACKFILLING OF PL-33 EXCAVATION SITE.....</b>	<b>3</b>
<b>IV. 5/5/20 SPREADING OF BIOCELL SOILS .....</b>	<b>3</b>
<b>V. 5/6/20 SHOP MONITORING WELL DECOMMISSIONING.....</b>	<b>3</b>
<b>VI. SUMMARY.....</b>	<b>4</b>
<b>VII. APPENDICES .....</b>	<b>A1-C11</b>
<i>Appendix A: Site Figures.....</i>	<i>A1-A4</i>
<i>Appendix B: 5/4-7/20 Site Photographs .....</i>	<i>B1-B9</i>
1. <i>5/4-5/20 Backfilling of the PL-33 Excavation.....</i>	<i>B2-B4</i>
2. <i>Spreading of the Biocell Soils .....</i>	<i>B4-B6</i>
3. <i>Decommissioning of the Well in Front of the Shop.....</i>	<i>B6-B7</i>
4. <i>Decommissioning of the Well in Back of the Shop .....</i>	<i>B8</i>
5. <i>Completed Backfilling of Both Shop Wells.....</i>	<i>B9</i>
<i>Appendix C: Reference Documents .....</i>	<i>C1-C11</i>

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## 5/4-6/20 PL-33 BACKFILLING, BIOCELL SOIL SPREADING & REMOVAL OF MONITORING WELLS

### ----- PHOENIX LOGGING SHOP & STORAGE YARD -----

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May 2020  
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#### **I. OVERVIEW**

The Phoenix Logging shop and equipment storage area is located on Klawock Island, near the City of Klawock on Prince of Wales Island, Alaska. The 40'x60' shop was built in 1981-82 by Seley Inc. for equipment and truck maintenance, to support its Sealaska logging operations. Phoenix Logging took over the shop in 1985 and operated out of it until 2017 when logging operations began to shut down. A capped woodwaste fill across the road from the shop was used for equipment storage and material logistics, and both areas are on land leased from the Klawock-Heenya Corporation.

In late 1992, the Alaska Dept. of Environmental Conservation (ADEC) notified Klawock Heenya Corp. of contaminated soil concerns at the Phoenix Logging shop. An initial contaminated soil evaluation was carried out in 1993, followed in 1999 by a proposed cleanup plan and in 2006 by another proposed evaluation, neither of which were carried out.<sup>1</sup>

As Phoenix Logging was closing their Klawock Island facilities in 2017, Southeast Management Services of Juneau Ak was retained to identify what cleanup actions were needed to meet ADEC requirements. The report, "*11/28/17 Sampling Results, Proposed Soil Cleanup Plan*" was submitted to ADEC on 1/13/18 for review and was approved on 2/20/18.

The initial contaminated soil excavations took place in the first part of 2018, and were summarized in the report entitled, "*6/23-26/18 Excavations, Proposed Completions & Bioremediation Plan - Phoenix Logging Shop & Storage Yard*". Additional excavations, evaluations and monitoring took place on 9/3-5/18, 9/23-26/18, 11/29-30/18, and 2/28-3/1/19. Two groundwater monitoring wells were installed at the shop, and four biocells for treating the excavated soils were established on the sort yard. On 5/20/19, ADEC concluded that all Phoenix Logging cleanup sites met the cleanup criteria except for one remaining sample site,<sup>2</sup> and that no further groundwater evaluations were needed.

The Phoenix Logging biocells were sampled on 10/17-18/19. All results met ADEC criteria and were summarized in a 11/20/19 report. The report was revised and resubmitted on 1/21/20 to

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<sup>1/</sup> Refer to Section III of the report entitled, "*11/28/17 Sampling results, Proposed Soil Cleanup Plan - Phoenix Logging Shop & Storage Yard*", for a detailed description of the 1993-2006 sampling & proposed plans/approvals involving the Phoenix Logging shop & storage yard.

<sup>2/</sup> All soils around the one sample site at the shop's former fueling/oil rack area were subsequently excavated to solid rock and removed, as clarified in a 2/10/20 SE Management letter to ADEC, see Ref. Doc. #4, pages E7-E12 in the 2/28/20 cleanup report.

include additional details requested by ADEC. A final sampling of the shop's groundwater wells was made on 2/2/8/20, and also included the shop's non-potable water supply well. All ADEC criteria were met, and the results were summarized in a 3/20/20 report.

On 4/23/20, ADEC indicated that no further biocell tilling or groundwater well monitoring was required. ADEC requested a workplan for biocell spreading and decommissioning the shop groundwater wells,<sup>3</sup> which Phoenix Logging submitted on 5/1/20<sup>4</sup> and ADEC quickly approved.<sup>5</sup>

A conceptual plan was made on 5/4/20 to guide the biocell soil spreading,<sup>6</sup> and Phoenix Logging began soil spreading later that day. The following sections of this report document the biocell soil spreading activity and removal of the shop monitoring wells.

Site plan figures of the Phoenix Logging shop & storage yard facilities are provided in Appendix A. Appendices B - C include site photographs and reference documents.

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## II. SITE DESCRIPTION

Figure 1 (page A2) provides a vicinity map of Klawock Island, situated along the southwest coast of Prince of Wales Island in Southeast Alaska. The Phoenix Logging shop and its equipment storage yard are in the southwest portion of the island, with the Klawock Fuels Tank Farm being adjacent and upslope to the Phoenix Logging shop area.

The shop is in a former rock quarry, and the storage yard is on a capped former woodwaste fill of about 360' x 340' across its usable top. The fill was capped at some time before the shop's construction by Klawock Timber Alaska Inc.<sup>7</sup> The storage yard's northeast corner previously was occupied by the former Derry Shop facilities, as shown on Figure 1 (page A2). Figure 2 (page A3) provides a 5/3/20 site plan of the Phoenix Logging shop & sort yard, just prior to starting the biocell soil spreading at the sort yard and removing the shop groundwater monitoring wells.

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<sup>3/</sup> Reference Doc. #1 in Appendix C, page C2.

<sup>4/</sup> Reference Doc. #2 in Appendix C, pages C3-C5.

<sup>5/</sup> Reference Doc. #3 in Appendix C, pages C6.

<sup>6/</sup> Reference Doc. #4 in Appendix C, pages C6-C8.

<sup>7/</sup> The Klawock Timber Alaska Inc. ceased operations in early 1994, after which it was purchased by Viking Lumber Co. and restarted later that year.

### III. 5/4/20 BACKFILLING OF PL-33 EXCAVATION SITE

Photo #1 in Appendix B (page B2) shows the Phoenix Logging sort yard's PL-33 excavation site at the start of 5/4/20, just prior to being backfilled. The PL-33 site was backfilled with clean rock/gravel fill from the adjacent biocell containment berms, as described in Reference Doc. #6 (page C10) and shown in Photos #2-#5 (pages B2-B4).<sup>8</sup>

All biocell berm material was carefully removed by a wheeled front end loader/backhoe, to avoid using any adjacent biocell soils for the PL-33 backfill.

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### IV. 5/5/20 SPREADING OF BIOCELL SOILS

Figure 3 (page A4) provides a 5/6/20 site plan of the Phoenix Logging shop area, after the biocell soils had been spread to a 5"-6" thickness throughout by a D9 dozer.<sup>9</sup> Photos #6-#9 (pages B4-B6) provide views of the spread soils, showing the spread soils having been thoroughly tracked and contoured by the D9 dozer.

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### V. 5/6/20 SHOP MONITORING WELL DECOMMISSIONING

Figure 2 (page A3) shows the Phoenix Logging shop's two groundwater monitoring wells, just prior to being removed on 5/6/20. Removal of the two groundwater well then proceeded as follows, and as originally proposed to ADEC:<sup>10</sup>

1. The monitoring well in front of the shop was removed first. The shot rock fill first was carefully removed from around the pipe stem (Photo #10, page B6), down to the pipe coupling that was about 6" above the ponded groundwater.
2. The initial coupled length of the well stem was removed, after which a strap was wrapped around the well pipe and attached to the backhoe bucket. Bentonite chips were poured into the pipe and rammed (with some difficulty) down and out the bottom to the well pipe.<sup>11</sup> Photos of the process are shown on page B7.
3. The backhoe then proceeded to pull the remainder of the pipe out in 1'-1.5' lifts, each time adding more chips to be rammed down the pipe until the pipe was completely removed from the ground.
4. Additional bentonite was added to any remaining hole or depression left by the pulled pipe, after which the remaining excavation was backfilled with clean shot

<sup>8/</sup> Reference Docs. #5-#6 in Appendix C, pages C9-C10.

<sup>9/</sup> See also the Phoenix Logging sketch of the spread biocell soils, Reference Doc. #5, page C9.

<sup>10/</sup> Reference Doc. #2 in Appendix C, pages C3-C5.

<sup>11/</sup> Reference Doc. #7 in Appendix C, page C11.

rock. The pipe sections were removed from the site and placed in a Craig garbage dumpster for disposal.

5. The monitoring well behind the shop was removed in a similar manner as the first well. Photos of the removal process are shown on page B8.
6. Photos on page B9 show the shop's two former groundwater monitoring well sites, after being backfilled with shot rock and gravels.

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## **VI. SUMMARY**

As described in the preceding sections of this report,

1. The PL-33 excavation site on the Phoenix Logging storage yard was backfilled with clean rock/fill from the biocell berms.
2. All biocell soils on the Phoenix Logging storage yard were spread in a 5"-6" thick layer across the western portion of the Phoenix Logging sort yard, creating a firm surface suitable for equipment use or storage purposes.
3. Both Phoenix Logging shop monitoring wells were completely removed and backfilled, and
4. The Phoenix Logging shop's non-potable water supply well was tested and met all ADEC groundwater cleanup criteria.

All contaminated soil excavations, biocell treatment of excavated soils, groundwater monitoring and workplan closure activities therefore have been completed at the Phoenix Logging shop and storage facilities.

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& REMOVAL OF MONITORING WELLS**

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**PHOENIX LOGGING SHOP & STORAGE YARD**  
May 2020  
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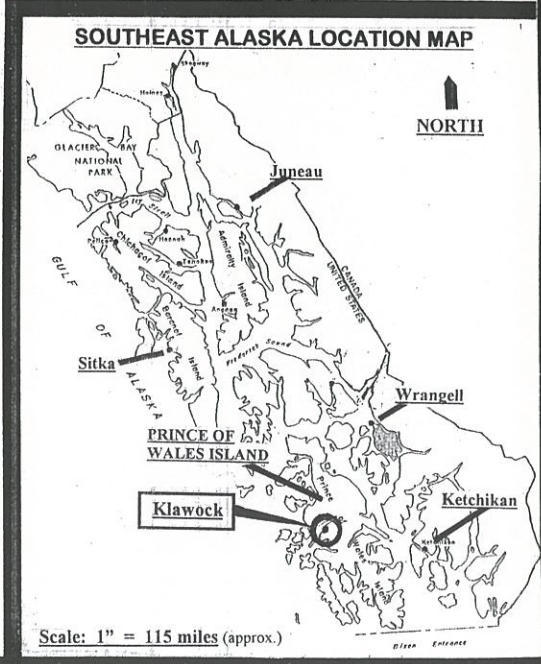
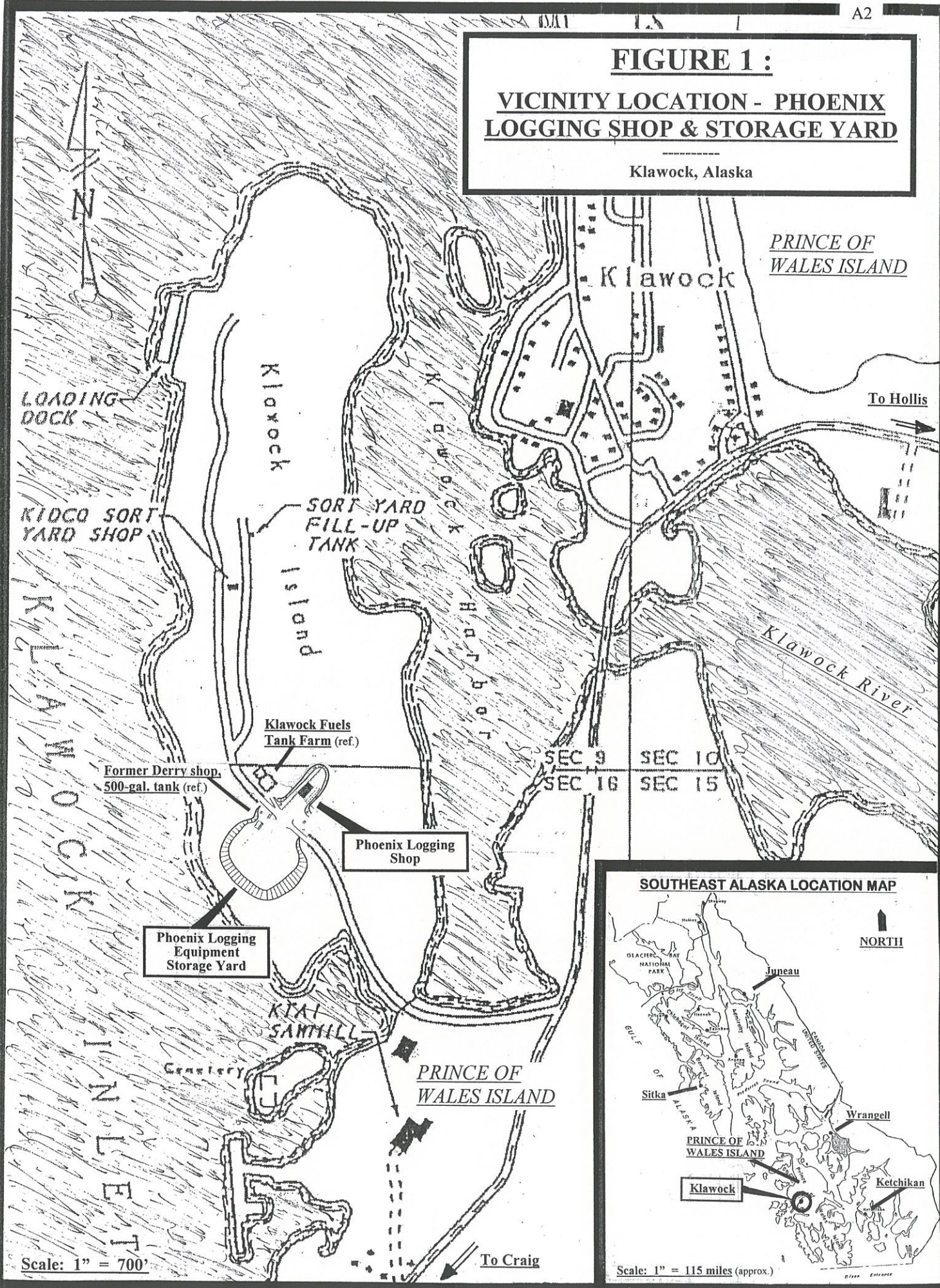
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**APPENDIX A**  
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**Site Figures**

1. Vicinity Location - Phoenix Logging Shop & Storage Yard .....A2  
2. 5/3/20 Phoenix Logging Shop & Sort Yard.....A3  
3. 5/6/20 Phoenix Logging Shop & Sort Yard.....A4

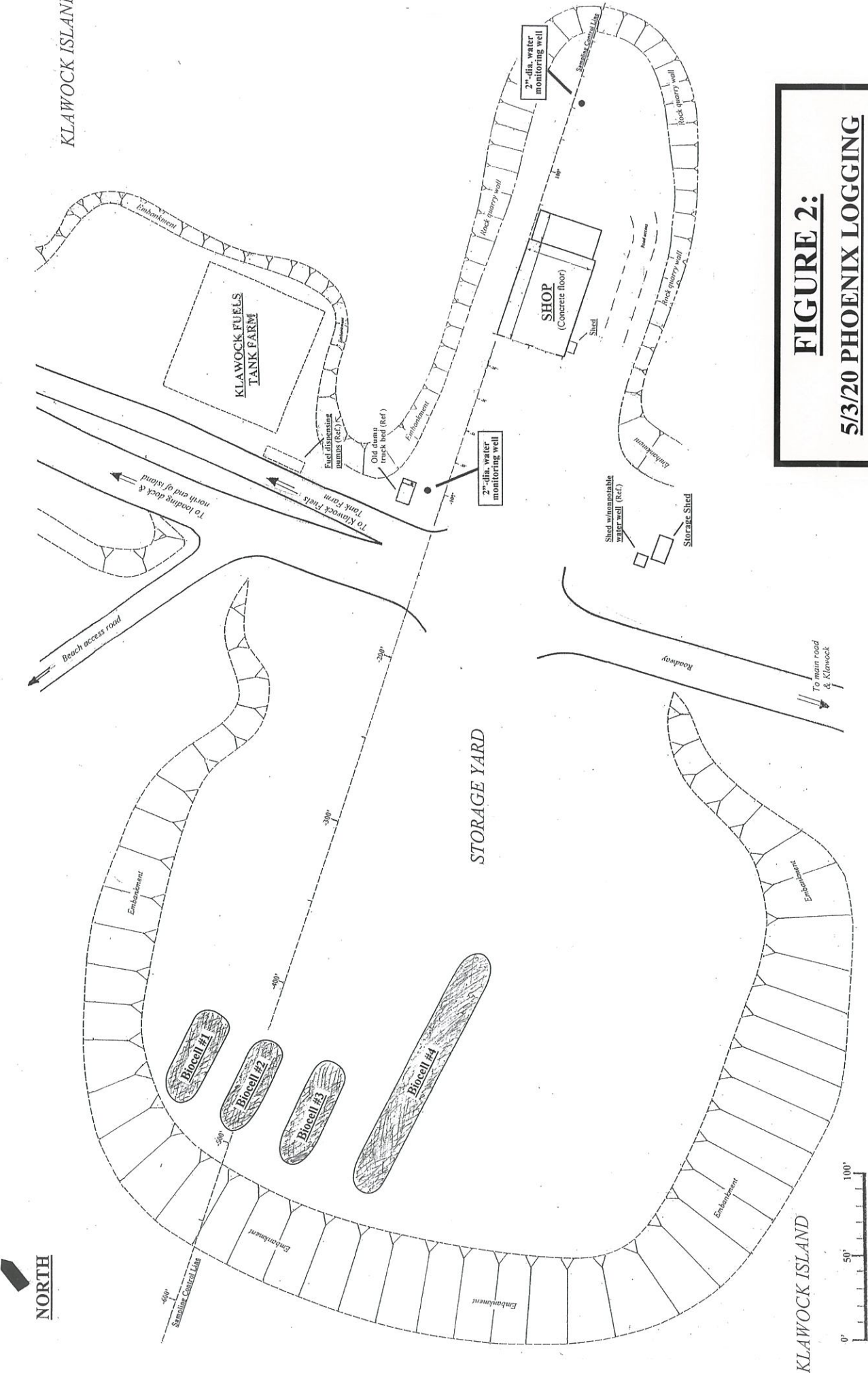
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**FIGURE 1:**  
**VICINITY LOCATION - PHOENIX**  
**LOGGING SHOP & STORAGE YARD**  
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 Klawock, Alaska





KLAWOCK ISLAND

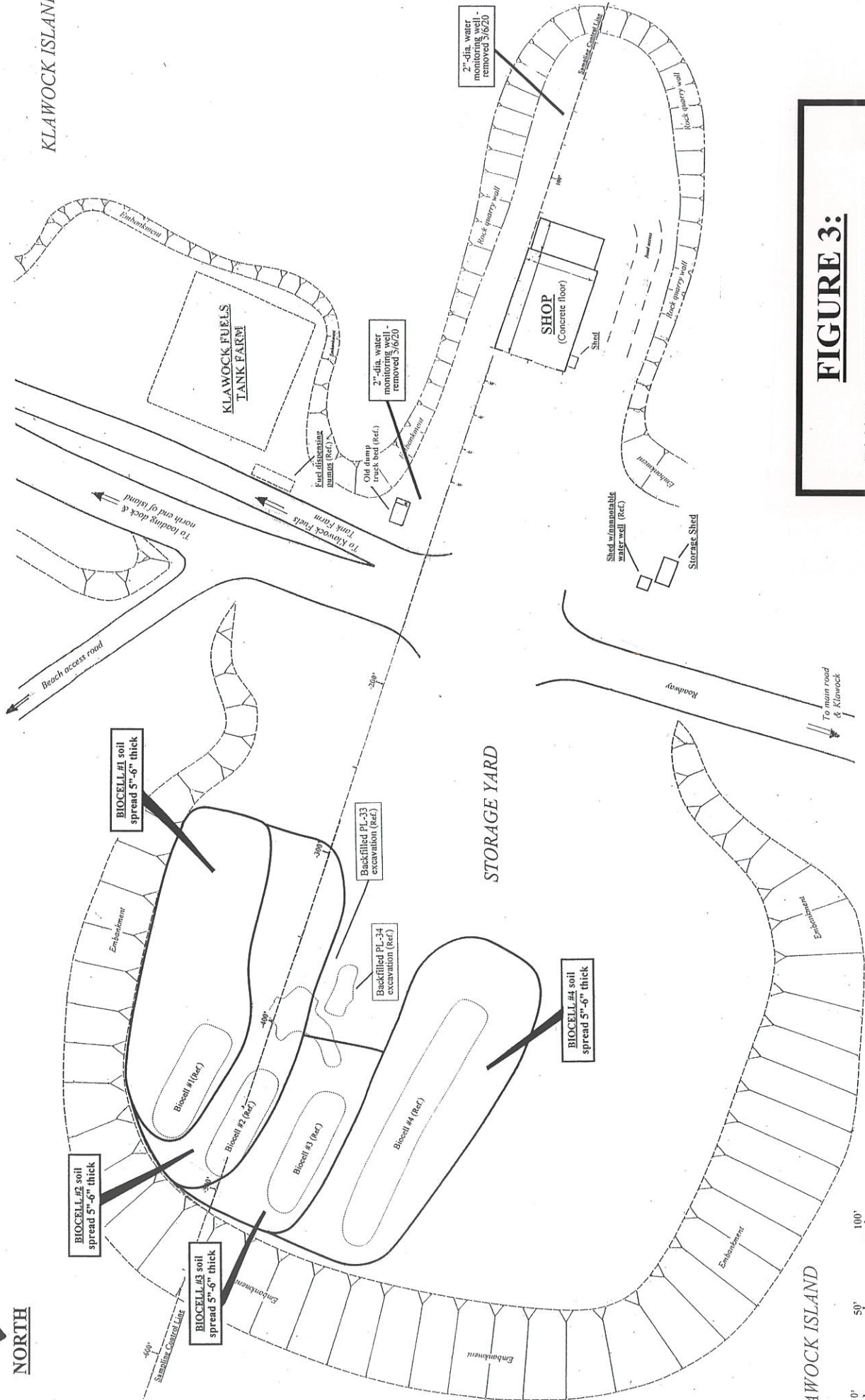


**FIGURE 2:**

**5/3/20 PHOENIX LOGGING  
SHOP & STORAGE YARD**

Klawock Island; Klawock, Alaska

KLAWOCK ISLAND



**FIGURE 3:**  
**5/6/20 PHOENIX LOGGING**  
**SHOP & STORAGE YARD**  
 Klawock Island; Klawock, Alaska

**NORTH**



KLAWOCK ISLAND

**5/4-7/20 PL-33 BACKFILLING, BIOCELL SOIL SPREADING  
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**PHOENIX LOGGING SHOP & STORAGE YARD**

-----  
May 2020  
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**APPENDIX B**  
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**Site Photographs**

1. 5/4/20 backfilling of the PL-33 Site – Phoenix Logging Storage Yard ..... B2-B4
2. 5/5/20 Biocell Soil Spreading – Phoenix Logging Storage Yard..... B4-B6
3. 5/6/20 Monitoring Well Removal - Front of the Phoenix Logging Shop ..... B6-B7
4. 5/6/20 Monitoring Well Removal – Back of the Phoenix Logging Shop ..... B8
5. 5/6/20 Backfilled Monitoring Wells – Phoenix Logging Shop..... B9

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**Photo #1:** 5/4/20 photo looking west across the partially backfilled PL-33 excavation on the Phoenix Logging storage yard, just before it was completely filled in with fill from the side containment berms from Biocells #1-#4. See next 2 photos.

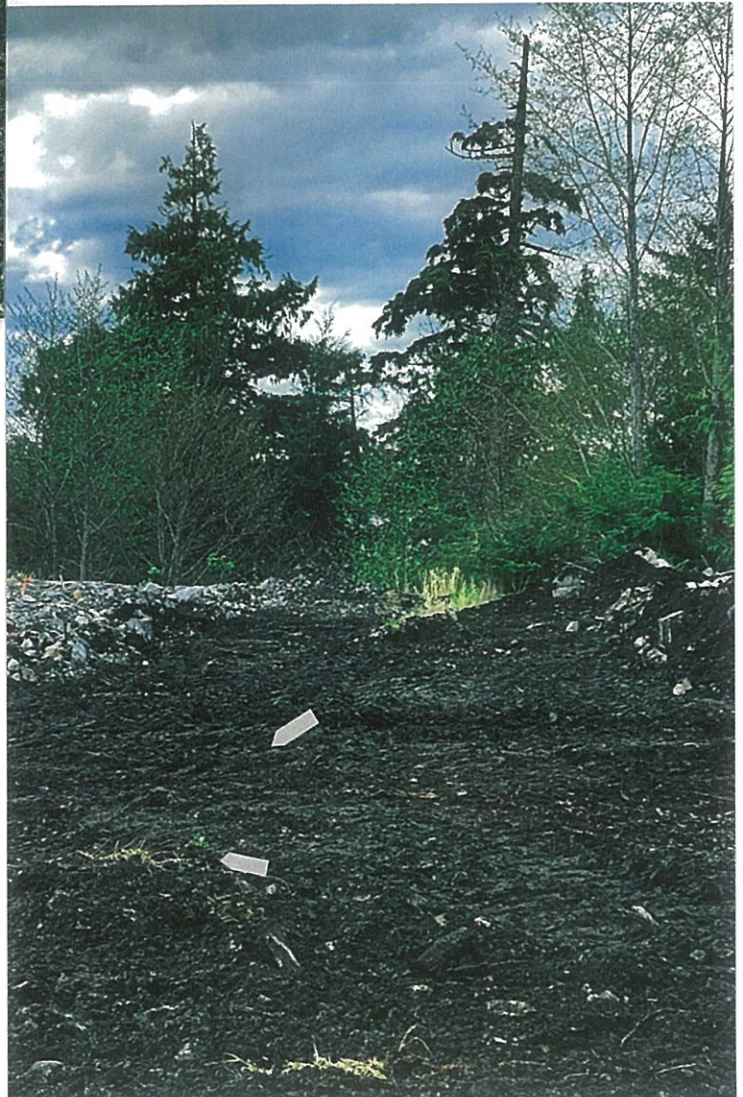


**Photo #2:** 5/4/20 view looking SW between Biocells #3 & #4, where its adjacent rocked containment berms had been removed and used as fill for the PL-33 excavation.



**Photo #3:** 5/4/20 view looking SW between Biocells #2-#3, showing the removed containment berms without affecting the biocell soils. Arrows show the approximate perimeter of the backfilled PL-33 excavation (see also next photo).

**Photo #4:** 5/4/20 view looking SW along the outer side of Biocell #1, showing its removed side containment berm to help fill in the PL-33 excavation (outlined by arrows).





**Photo #5:** 5/5/20 view looking west across the area where the PL-33 excavation took place, now totally backfilled prior to spreading of the biocell soils.



**Photo #6:** 5/5/20 view looking SW across the 5"-6" thick layer of soils from Biocell #1. The spread soils extended considerably more to the right, as shown in the next photo.



**Photo #7:** 5/5/20 view looking NE across the end of the Biocell #1 soils, as being spread to a 5"-6" thickness and a 180'-190' length.



**Photo #8:** Closer 5/5/20 view looking SW across the upper end of the Biocell #1's soils, after being bladed and smoothed with the D9 cat to a 5"-6" thickness throughout.



**Photo #9:** 5/5/20 view looking SSW across the far end of Biocell #4, after its soils had been spread to a 5"-6" thickness and contoured by the D9 tracks.

**Photo #10:** 5/6/20 view looking down the 4' deep excavation at the groundwater well in front of the shop, exposing the pipe coupler that was about 10" above the ponded groundwater. See next 2 photos.







**Photo #11:** 5/6/20 view of the groundwater well in front of the Phoenix Logging shop, after its initial length and coupler had been removed. Bentonite chips had just been poured into the pipe, then rammed quickly down and out before they could swell and plug the pipe.



**Photo #12:** 5/6/20 view of more bentonite chips being poured down the groundwater pipe stem, after which the bentonite was rammed down the pipe and the backhoe pulled the pipe about 1'-1.5' out of the ground. More bentonite chips then were added, rammed down the pipe and then the backhoe raised the pipe an additional 6". This process was repeated until the pipe was completely removed from the ground.



**Photo #13:** 5/6/20 view of the groundwater well pipe stem in the back of the Phoenix Logging shop, as bentonite chips were being poured down the pipe. Once the chips were rammed out the bottom of the pipe, the backhoe pulled the pipe about 1'-1.5' out of the ground, and additional bentonite was poured into the pipe (see photo below).

**Photo #14:** 5/6/20 view of the groundwater well in the back of the Phoenix Logging shop, as it had been pulled about 3' from the ground and more bentonite was being added. The pipe continued to be pulled from the ground in 1'-1.5' increments until it was completely removed from the ground.





**Photo #15:** 5/6/20 view looking at the area in front of the Phoenix Logging shop, where the groundwater well pipe (arrow) had just been removed and the area backfilled.



**Photo #16:** 5/6/20 view looking at the area in back of the Phoenix Logging shop, where the groundwater well pipe had just been removed and the area backfilled. The area shows the approximate location of the former groundwater well (arrow). The pipe stems for both wells were removed from the jobsite and sent to the municipal landfill.

**5/4-7/20 PL-33 BACKFILLING, BIOCELL SOIL SPREADING  
& REMOVAL OF MONITORING WELLS**

**PHOENIX LOGGING SHOP & STORAGE YARD**

**May 2020**

**APPENDIX C**

**Reference Documents**

	<u>Page No.</u>
1. 4/23/20 ADEC email to Phoenix Logging, indicating that ADEC will not require any further biocell soil tilling or groundwater monitoring at the Phoenix Logging facilities, and requesting a letter workplan for spreading of the biocell soils and decommissioning the shop’s groundwater monitoring wells.....	C2
2. 5/1/20 SE Management letter to ADEC, proposing a revised plan for decommissioning the two shop groundwater monitoring wells and spreading of the biocell soils .....	C3-C5
3. 5/1/20 ADEC email to SE Management, approving the revised plan for the shop groundwater monitoring wells and spreading of the biocell soils.....	C6
4. 5/4/20 SE Management email to Phoenix Logging, proposing a conceptual plan and sequence for biocell soil spreading .....	C7-C8
5. 5/5/20 Phoenix Logging email to SE Management, transmitting a sketch & photos of the actual biocell soil spreading and backfilling the PL-33 excavation site at the storage yard (photos included in <u>Appendix B</u> , pp. B2-B4) .....	C9
6. 5/6/20 Phoenix Logging email to SE Management, transmitting descriptions & photos of backfilling the PL-33 excavation on the Phoenix Logging storage yard, using clean rock & fill material from the biocell berms (photos included in <u>Appendix B</u> , pp. B2-B4) .....	C10
7. 5/6/20 Phoenix Logging email to SE Management, transmitting descriptions & photos of the decommissioning & backfilling of the shop groundwater monitoring wells (photos included in <u>Appendix B</u> , pp. B6-B9) .....	C11

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**southeastmanagement@gci.net**

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**From:** David Creighton <dave@sheltercovelodge.com>  
**Sent:** Thursday, April 23, 2020 2:15 PM  
**To:** Tom Hanna  
**Subject:** Fwd: Phoenix Logging Site

Please see email below. I will plan to begin decommissioning of wells next week per your instructions and the spreading of this soil.

Please advise.

Dave

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----- Forwarded message -----

**From:** Lidren, Grant M (DEC) <[grant.lidren@alaska.gov](mailto:grant.lidren@alaska.gov)>  
**Date:** Thu, Apr 23, 2020 at 10:47 AM  
**Subject:** Phoenix Logging Site  
**To:** [dave@sheltercovelodge.com](mailto:dave@sheltercovelodge.com) <[dave@sheltercovelodge.com](mailto:dave@sheltercovelodge.com)>  
**Cc:** Wiegers, Janice K (DEC) <[janice.wiegers@alaska.gov](mailto:janice.wiegers@alaska.gov)>

Dave, based on review of the site files and the latest March 2020 Report, ADEC will not require any further tilling of the biocell or monitoring of the groundwater. As recommended by Southeast Management Services, the biocells should be spread no more than 6 inches thick at the Phoenix Logging storage yard and the monitoring wells need to be decommissioned in accordance with ADEC guidance. ADEC will require a brief letter work plan prior to field work and a brief report after completion. The report should include pictures and a figure showing where the biocell soil was spread.

Pending completion of this work, ADEC will do a final review of the site and issue a decision for the site.

Let me know if you have any questions.

Thanks, Grant  
Environmental Program Specialist – State Sites Coordinator  
Alaska Department of Environmental Conservation  
Contaminated Sites Program  
(907) 229-4969

# SOUTHEAST MANAGEMENT SERVICES

*1061 Mendenhall Peninsula Road  
Juneau, Alaska 99801  
(907) 789-0637 Fax (907) 789-9487*

May 1, 2020

Grant Lidren  
Environmental Program Specialist – State Sites Coordinator  
Contaminated Sites Remediation Program  
**Alaska Department of Environmental Conservation**  
555 Cordova Street  
Anchorage, Alaska 99501

Dear Mr. Lidren:

The Phoenix Logging work plan for decommissioning the two shop groundwater monitoring wells and the spreading of biocell soils is hereby revised to incorporate your 4/27/20 comments:

- A. Decommissioning of the groundwater monitoring well in front of the shop will take place as follows;
1. The protective large rock around the groundwater well in the front of the shop will be set aside in an out-of-the-way place along the side of the shop driveway.
  2. Soils around the first 3'-4' of the groundwater pipe stem will be carefully removed by the backhoe to expose its pipe coupling. A lifting strap will be wrapped as low as possible around the exposed portion of the pipe below the coupling. The coupling and its upper pipe segment will remain in place.
  3. The lifting strap will be attached to the backhoe bucket to carefully lift the pipe a few inches to knock off its end cap with a ramming rod.
  4. The upper portion of the well pipe will be cut off to about 2' above the groundwater surface. Bentonite chips will be poured into the upper end of the pipe and then pressed down the pipe with a ramming rod as the backhoe bucket slowly lifts it 1'-1.5' from the fill.
  5. Additional bentonite chips will be added to the upper end of the pipe, followed by continued ramming of the chips down the pipe as it is lifted another 1'-1.5'.
  6. More bentonite chips will be added and pressed down the pipe, as it is lifted completely out of the ground and set out of the hole for eventual disposal.

7. Once the groundwater pipe has been removed, additional bentonite will be added to serve as a cap and fill any remaining void or depression where the pipe had exited from its surrounding fill.
  8. Clean shot rock and gravels will be added to fill in the remaining several feet of excavation to ground level.
- B. Decommissioning of the groundwater monitoring well in back of the shop will take place in a similar manner as the well in front of the shop;
1. The protective large rock around the groundwater well will be set aside in an out-of-the-way place along the side of the rock wall.
  2. Soils around the first 2'-3' of the groundwater pipe stem will be carefully removed by the backhoe. A lifting strap will be wrapped as low as possible around the exposed portion of the pipe.
  3. The lifting strap will be attached to the backhoe bucket to carefully lift the pipe a few inches to knock off its end cap with a ramming rod.
  4. The upper portion of the well pipe will be cut off to about 2' above the groundwater surface. Bentonite chips will be poured into the upper end of the pipe and then pressed down the pipe with a ramming rod as the backhoe bucket slowly lifts the pipe 1'-1.5' from the fill.
  5. Additional bentonite chips will be added to the upper end of the pipe, followed by ramming the chips down the pipe as it is lifted another 1'-1.5'.
  6. More bentonite chips will be added and pressed down the pipe, as it is lifted completely out of the fill and set out of the hole for eventual disposal.
  7. Once the groundwater pipe has been removed, additional bentonite will be added to serve as a cap and fill any remaining void or depression where the pipe had exited from its surrounding fill.
  8. Clean shot rock and gravels will be added to fill in the remaining several feet of excavation to ground level.
- C. Dismantling the four biocells and spreading of their soils will take place as follows;
1. The containment berms around each of the bioremediation cells will be used to completely backfill the PL-33 excavation site, amounting to an estimated 10-15 c.y. of fill.
  2. Once the PL-33 excavation site has been backfilled, the remaining containment berm volume will be spread with the bioremediated soils across the back portion of the Phoenix Logging sort yard, resulting in a layer of no more than about 6" in depth.
  3. Once the four biocell soils have been initially spread across the back portions of the Phoenix Logging storage yard, it will be worked and

contoured with equipment to provide a firm final surface that will be suitable for equipment use or storage purposes.

4. An as-built site plan figure of the Phoenix Logging storage yard will be included in the final report to ADEC.

Phoenix Logging has revised the start of this work plan to May 5, assuming that ADEC approval is received before then. Photographs will be taken to document completion of each step of the work plan. A final brief report with photographs will be submitted for ADEC's review and approval.

We are looking forward to your review and approval of our workplan. By all means call or email on any remaining questions you might have. I would be glad to provide whatever additional information you might need as soon as possible.

Sincerely yours,



Thomas R. Hanna

cc: Dave Creighton, Phoenix Lumber Co.  
Mary Edenshaw, Klawock Heenya Corporation



**southeastmanagement@gci.net**

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**From:** Lidren, Grant M (DEC) <grant.lidren@alaska.gov>  
**Sent:** Friday, May 1, 2020 2:22 PM  
**To:** southeastmanagement@gci.net  
**Cc:** dave@sheltercovelodge.com  
**Subject:** RE: Revised closure workplan - Phoenix Logging wells & biocells

Tom, I have no objections to the work plan. SEM may proceed.

Thanks, Grant

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**From:** southeastmanagement@gci.net [mailto:southeastmanagement@gci.net]  
**Sent:** Friday, May 1, 2020 1:47 PM  
**To:** Lidren, Grant M (DEC) <grant.lidren@alaska.gov>  
**Cc:** dave@sheltercovelodge.com  
**Subject:** Revised closure workplan - Phoenix Logging wells & biocells

Grant -

Attached for your review and approval, is Phoenix Logging's revised workplan for decommissioning the shop's two groundwater wells and spreading the biocell soils at the storage yard. The signed hard copy will be sent in the mail this afternoon.

We plan to begin this work next Tuesday on May 5, and look to receiving your approval.

Thanks - Tom

southeastmanagement@gci.net

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On Mon, May 4, 2020 at 12:07 PM <[southeastmanagement@gci.net](mailto:southeastmanagement@gci.net)> wrote:

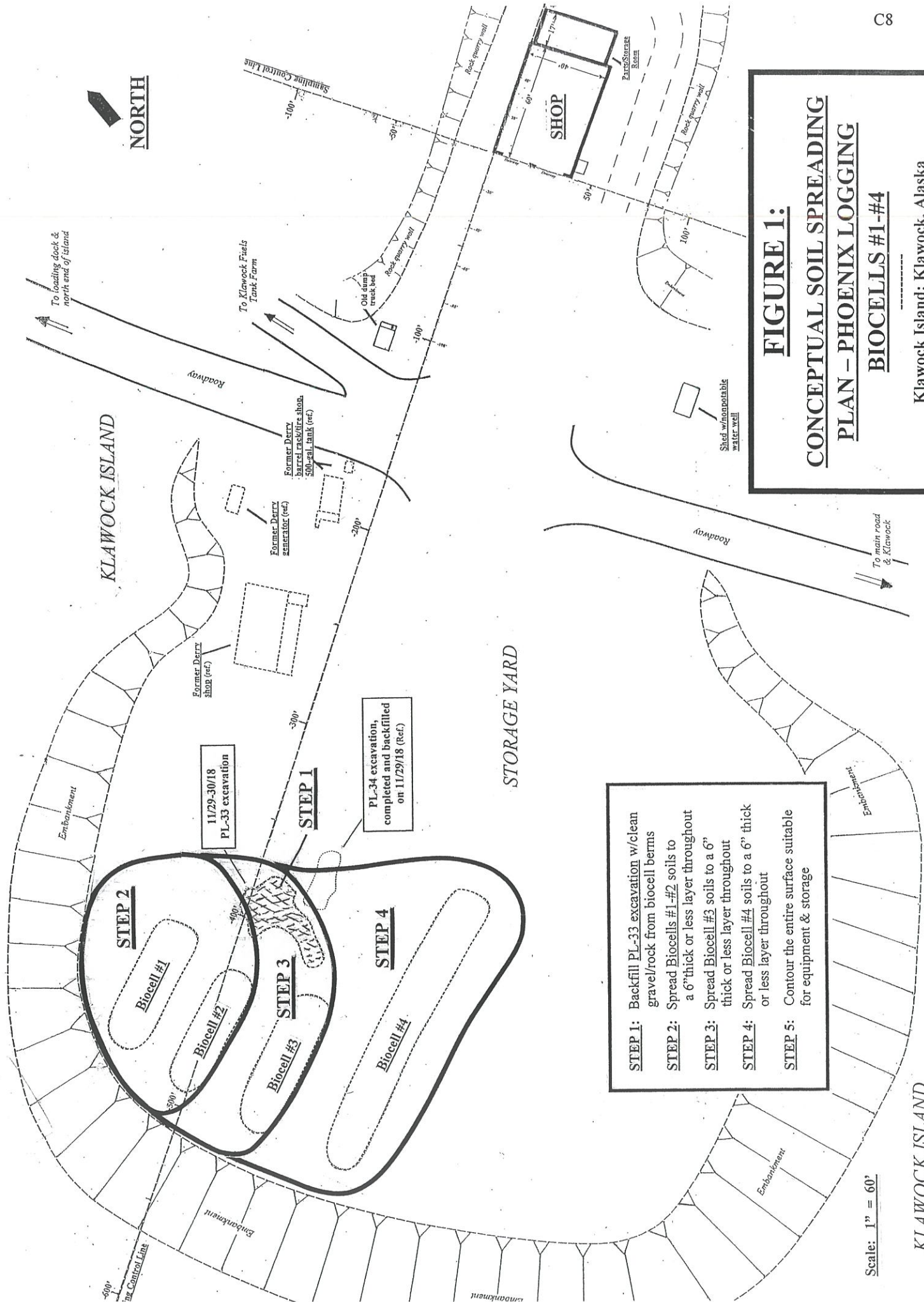
Dave -

I thought it might be helpful to make up a conceptual plan and soil spreading sequence for your use in spreading the biocell soils.

If you approximately follow the approximate outlined areas for each step, you will result in a soil thickness of 5"-6", meeting ADEC criteria. Once you've filled the PL-33 excavation with biocell berm material, the remaining biocell berm volume can be spread along with the bioremediated soils - they don't have to be kept separate.

I hope this will be of help, and make the biocell closure process much easier to document as well as to complete.

Let me know that you think.



**FIGURE 1:**  
**CONCEPTUAL SOIL SPREADING**  
**PLAN - PHOENIX LOGGING**  
**BIOCELLS #1-#4**  
 Klawock Island; Klawock, Alaska

- STEP 1:** Backfill PL-33 excavation w/clean gravel/rock from biocell berms
- STEP 2:** Spread Biocells #1-#2 soils to a 6" thick or less layer throughout
- STEP 3:** Spread Biocell #3 soils to a 6" thick or less layer throughout
- STEP 4:** Spread Biocell #4 soils to a 6" thick or less layer throughout
- STEP 5:** Contour the entire surface suitable for equipment & storage

Scale: 1" = 60'

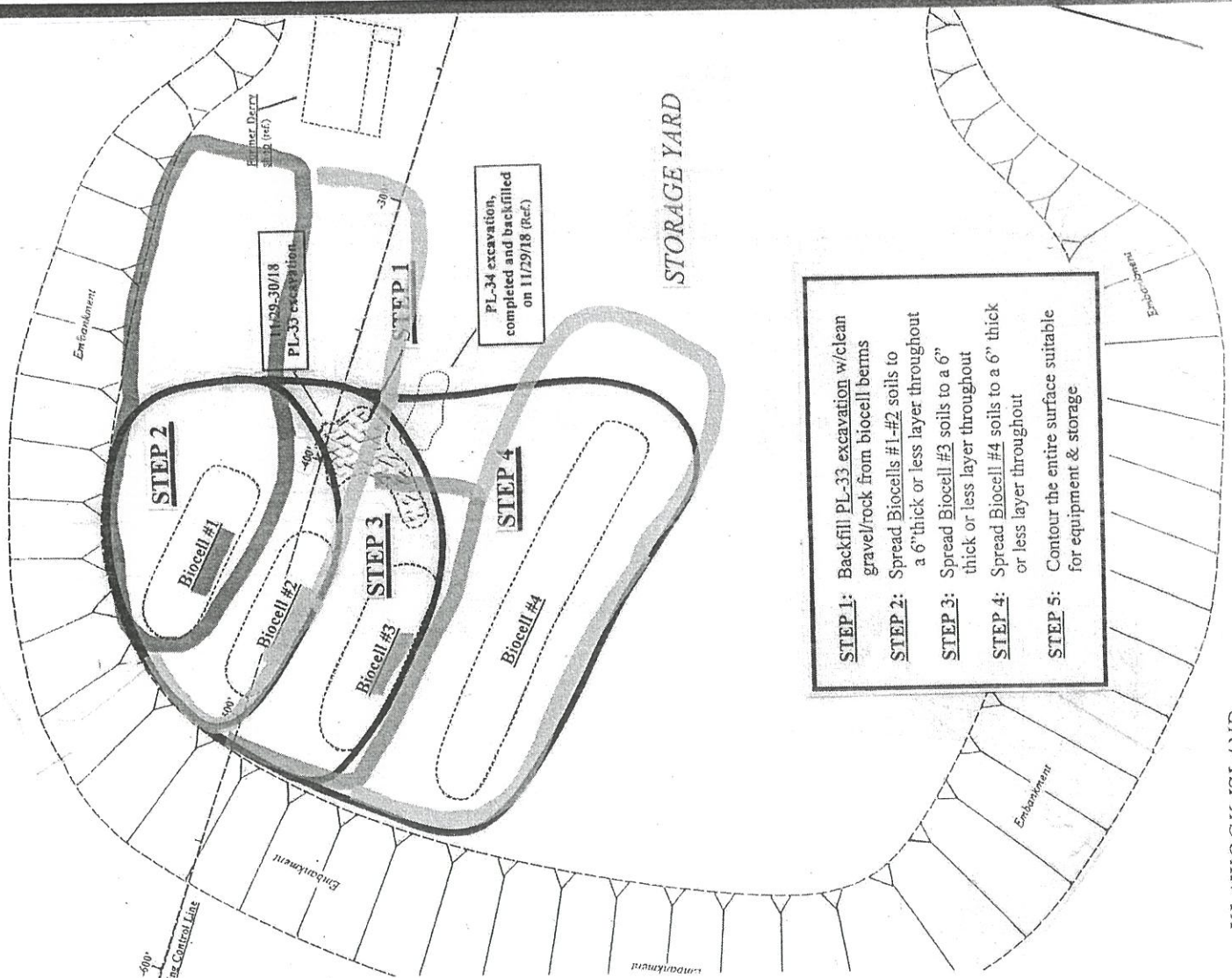
KLAWOCK ISLAND

southeastmanagement@gci.net

From: David Creighton <davecreighton@gmail.com>  
 Sent: Tuesday, May 5, 2020 4:05 PM  
 To: Tom Hanna  
 Subject: Phoenix Shop  
 Attachments: Actual Spread to accomplish 6 inches.jpg; PL-33 Hole.jpg; PL-33 Filled.jpg

Tom,  
 I'm Hoping this works for you.  
 Attached is an estimate of the actual spread. To get it to 5-6 inches, we had to expand a bit from your estimates.  
 Attached are 2 pictures  
 Pl 33 hole, empty then filled. Please let me know if these Jpeg file types work for you.

Dave



- STEP 1:** Backfill PL-33 excavation w/clean gravel/rock from biocell berms
- STEP 2:** Spread Biocells #1-#2 soils to a 6" thick or less layer throughout
- STEP 3:** Spread Biocell #3 soils to a 6" thick or less layer throughout
- STEP 4:** Spread Biocell #4 soils to a 6" thick or less layer throughout
- STEP 5:** Contour the entire surface suitable for equipment & storage

**southeastmanagement@gci.net**

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**From:** David Creighton <dave@sheltercovelodge.com>  
**Sent:** Wednesday, May 6, 2020 10:01 AM  
**To:** Tom Hanna  
**Subject:** PL 33 info  
**Attachments:** Berms used 3.jpg

Tom,

For the filling of the hole left by PL-33, As shown in photos labeled "Berms used" and "Berms used 2" as well as this additional photo " Berms used 3",

"Berms Used" Shows the removed berms from the North side of Cell 4 and South side of Cell 3.

"Berms Used 2" Shows the removed berms from the North side of Cell 3 and South side of Cell 2.

Berms Used 3" shows the removed berms from the North side of cell 2 and about 2/3 of the South side of cell 1.

The berm removal was done with a wheeled front end loader/ Backhoe for accuracy as can be clearly shown in the photos.

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Craig, Alaska  
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**From:** David Creighton <dave@sheltercovelodge.com>  
**Sent:** Wednesday, May 6, 2020 10:19 AM  
**To:** Tom Hanna  
**Subject:** Wells  
**Attachments:** Well 1 #1.jpg; Well 1 #2.jpg; Well 1 #3.jpg

For our email purposes, I'm calling the Well in front of the shop #1.  
In the attached photos,  
#1. Excavation to the coupler, Top portion was removed. Remaining PVC was pulled up approx 6", the bottom came off with some effort.  
#2. Clay added at approx. 6" pull increments. It was not without difficulty as the clay had to be added in very small amounts, or it could not be shoved through easily. Would bind in the pvc. The closure was a success and the hole backfilled.  
#3 Ram Rodding.

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**From:** David Creighton <dave@sheltercovelodge.com>  
**Sent:** Wednesday, May 6, 2020 10:25 AM  
**To:** Tom Hanna  
**Subject:** Well 2  
**Attachments:** Well 2 #1.jpg; Well 2 #2.jpg; Well 2 #3.jpg

For our purposes, the well behind the shop is #2

Having learning from Well #1, Well #2 went better.  
No excavation needed as we knew it was one piece. The pulls were easily accomplished in 6" increments, smaller amounts of clay to push through more easily, tamped. This was done to approx. 5 ft of pipe sticking out of the ground, then we cut it off, and continued to full extraction which was only a couple more ft.

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