WSP Landfill Grading

Walla Walla, WA

State Project No. 2020-312

Washington State Penitentiary Landfill

Remedial Action Report

October 30, 2024

Prepared for:

Washington State Department of Corrections
Capital Planning and Development
7345 Linderson Way
Tumwater, WA 98501

PO Box 41112
Olympia, WA 98504-1112

Prepared by:

Clinton D. Pierpoint, Associate
Whitney Dunlap, PE

kpff

Consulting Engineers
612 Woodland Square Loop SE, Suite 100
Lacey, WA 98503
(360) 292-7230
(360) 292-7231 FAX

Washington Department of Corrections
WSP Landfill Grading
PROJECT # 2020-312

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EXECUTIVE SUMMARY

This document presents the Remedial Actions taken to address the Cleanup Action Plan (CAP) and Agreed Order No. DE 13229 for the Washington State Department of Corrections (DOC) Washington State Penitentiary (WSP) Site in Walla Walla, Washington. The site is more specifically located at 1313 N 13th Ave, Walla Walla in Walla Walla County, Washington.

DOC has been named the potentially liable person (PLP) by the Washington State Department of Ecology (Ecology) and is responsible for remediating the items as identified by the Agreed Order and CAP.

KPFF Consulting Engineers, Inc. has been retained by DOC to provide this Remedial Action Report outlining the actions implemented to show the cleanup requirements have been met at the WSP site.

The summary of remedial actions taken at the WSP site are categorized into five areas of work:

1. Capping of the existing landfill.
2. Capping of the area at former dry-cleaning building.
3. Decommissioning of the irrigation well within landfill limits.
4. Ongoing groundwater quality monitoring.
5. Institutional controls to prevent future disturbance of contaminated areas and keep Ecology informed on status of contaminated areas over time.

This report is a narrative discussion how the DOC is in compliance with the determinations or plans to continue work to meet compliance.

1.0 INTRODUCTION

This report presents the work completed for the cleanup of the Washington State Department of Corrections (DOC), Washington State Penitentiary Site (Facility Site #779, Cleanup Site #4971) located at 1313 N 13th Ave, Walla Walla in Walla Walla County Washington. The cleanup of this site is a result of Agreed Order No. DE 13229 issued by the Washington State Department of Ecology (Ecology).

This purpose of this report is to provide compliance with Washington Administrative Code (WAC) *173-340-400: Implementation of the cleanup action* for the Washington State Penitentiary (WSP) as determined by the Agreed Order and Cleanup Action Plan (CAP) for the project site.

The summary of remedial actions taken at the WSP site are categorized into five areas of work:

1. Capping of the existing landfill.
2. Capping of the area at former dry-cleaning building.
3. Decommissioning of the irrigation well within landfill limits.
4. Ongoing groundwater quality monitoring.
5. Institutional controls to prevent future disturbance of contaminated areas and keep Ecology informed on status of contaminated areas over time.

These five topics and remedial actions associated with each topic are covered in-depth within the later sections of this report.

1.1 Site Background

Remedial action is required for the WSP due to contamination from previous on-site activities. A vicinity map of the WSP in relation to Walla Wall can be found in Appendix A – Vicinity Map. Contaminated areas of the site include the landfill at the northwest portion of the WSP and the former dry-cleaning building at the eastern portion of the site, depicted and labeled in Appendix B – WSP Site Map. Due to concern of contaminants and activities on-site, a Remedial Investigation and Feasibility Study (RI/FS) was required by Ecology and was completed by Parametrix and HWA GeoScience, Inc. and funded by DOC. The RI/FS documented the contamination levels, testing procedures, potential remedies, and the recommended solution to deal with the contaminants found on-site. This study was then used by Ecology to complete the CAP for the site. Following this Ecology released the Agreed Order No. DE 13229, using the CAP as an appendix to set forth the requirements for DOC to complete the site remedies at the WSP landfill and dry-cleaner.

Following the Agreed Order, DOC contracted Fulcrum Environmental Consultants, Inc. (Fulcrum) to complete the Engineering and Design Report to provide final construction documents and specifications to be used to complete the physical cleanup of the site and comply with the Agreed Order requirements. Fulcrum completed the Engineering Design Report with the intent that cleanup actions would be conducted on-site by the Department of Corrections where possible. Fulcrum's determination was that a licensed professional was needed for the well decommissioning; however, DOC had the capability to conduct grading, rock placement, and concrete work needed for the project.

DOC completed the capping at the dry cleaner building and a portion of the landfill regrading. After this period of initial work by DOC, the landfill remained undisturbed for some time. KPFF was selected as a consultant to complete additional topographic survey of the landfill and

provide updated grading and capping construction documents to assist in the final landfill capping.

The Fulcrum Report, Agreed Order, CAP and prior studies of the site were used to develop plans consistent with the Agreed Order determination and incorporate the portions of work already completed by DOC. The grading plans completed by KPFF can be found in Appendix C of this report. A Job Order Contractor was selected to complete the work. The following section of this report includes the specific remedial actions taken on-site.

2.0 SELECTED REMEDIAL ACTIONS

2.1 Landfill Capping

The existing landfill in the northwest corner of the WSP as depicted within Appendix B requires improvements to the existing permeable landfill cap. The area of site with underlying landfill debris is approximately 9.8 acres. The capping section for the landfill varies throughout based on the composition and contaminant levels below. Figure 1 depicts the location of the two different capping sections.

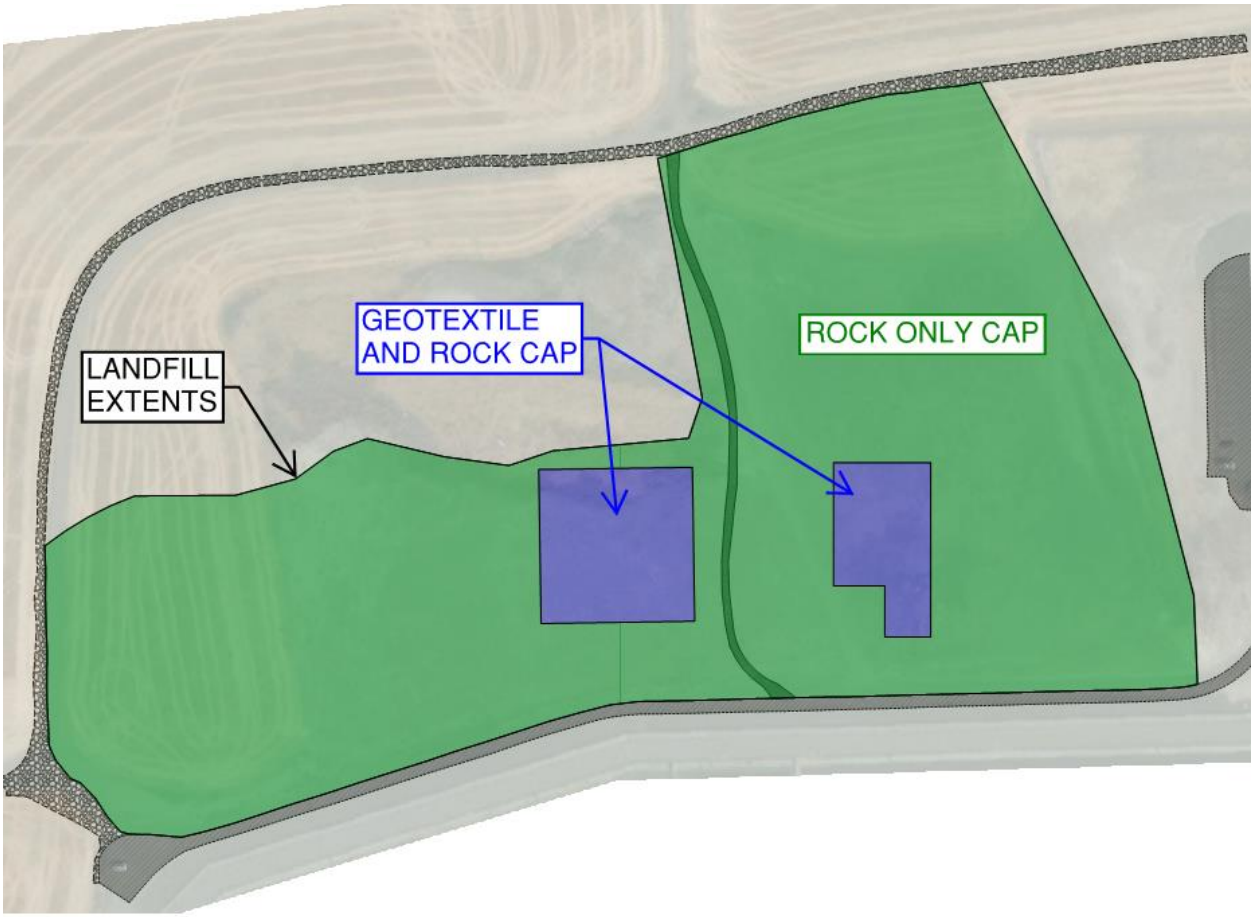

Figure 1: Landfill Capping Depiction

The capping sections for the landfill shown in Figure 1 comprise of the following:

- Geotextile and Rock Cap:
  - Totals 36,150 square-feet (0.83 acres)
    - Western portion = 22,500 square-feet (0.52 acres)
    - Eastern portion = 13,650 square-feet (0.31 acres)
  - Section equals 12-inches rock, over layer of geotextile fabric over existing ground.
  - This section is used on both the eastern and western portion of the landfill in localized areas where contamination was identified. After further topographic survey, these areas were identified, and area is slightly larger than the area

originally identified in the Fulcrum report and complies with requirements of the Agreed Order.

- Rock Only Cap
    - Totals 390,750 square-feet (8.97 acres)
    - Section equals a minimum of 12-inches rock over existing landfill.
    - Previous grading activity by DOC imported rock in this area and was redistributed along this portion of the landfill. The Fulcrum Report indicated that a soil only cap would also have been sufficient for capping in this area.

Appendix C of this report includes the Landfill Capping Plan and Details. The proposed capping sections vary from the Fulcrum Report, shown in Appendix D, however the intent of capping the landfill is met with the proposed sections and utilizes material available at the WSP site from other construction activities.

2.2 Dry Cleaner Capping

The Agreed Order requires a low-permeability cap around the former dry-cleaning building due to contaminants present in the soil. A concrete cap was installed at this location by DOC with a section of 6 inches concrete over rock that varies between 6 to 12 inches. The area of the capping is approximately 0.1 acres and is roughly 80-foot by 40-foot rectangle to the east of the old dry-cleaning building. The original CAP report recommended at minimum a capping section of 2.5-inches of asphalt concrete over 6-inches of rock. The proposed and installed section exceeds the requirements and matches the surrounding concrete in the vicinity. Appendix D of this report includes the exhibit and section used as provided by Fulcrum in the Engineering Design Report.

2.3 Irrigation Well Decommissioning

Irrigation Well No. 4 has been decommissioned at the time of this report. The location of the former well is shown on the WSP Site Map included as Appendix B. The decommissioning was conducted per Fulcrum recommendations per section 6.1 of that report as follows:

> "Irrigation Well No. 4 will be decommissioned in accordance with WAC 173-160-381 (1) (a) generally described as follows:
>
> - Remove debris and accumulated sediment from the well bore to the extent feasible using an appropriate drilling method. Dispose of removed materials per applicable regulations.
> - Survey the well with a downhole video camera to evaluate the condition and depth intervals of the well casing(s).
> - Seal the open bedrock borehole (525 feet to 1,004 feet); allow grout to set.
> - Perforate and pressure-grout the 16-inch-diameter casing (383 feet to 525 feet).
> - Perforate and pressure-grout the 20-inch-diameter casing (290 feet to 383 feet).
> - Perforate and pressure-grout the 24-inch-diameter casing (5 feet to 290 feet).
> - Seal the upper casing with cement (0 feet to 5 feet).
> - Document the coordinates of the well by a licensed surveyor.
> - Submit the well decommissioning report to Ecology."

2.4 Groundwater Quality Monitoring

Ongoing groundwater monitoring is required until the pollutants in the groundwater are reduced to an acceptable level per the CAP. While a specific groundwater monitoring schedule is not in place, testing should generally occur on a semi-annual basis at least once during fall and once during spring with results submitted to Ecology annually.

Monitoring will occur in six wells surrounding the project site. Ecology has selected the following six wells in the project vicinity to conduct testing: MW-03, -05, -09, -11, -12, -14. A map of the groundwater monitoring wells within the project vicinity is located within Appendix E of this report and identifies the selected wells for testing. Well MW-15 has also been suggested by Ecology for an optional monitoring location to evaluate any pollutants that are migrating onto the project site from an offsite source.

The following constituents will be tested at the selected monitoring wells:

- pH
- Temperature
- Conductivity
- Nitrate < 10,000 µg/L
- Manganese < 2,240 µg/L
- Hexavalent Chromium (VI) < 48 µg/L
- Tetrachloroethene < 5 µg/L

Testing for all constituents at the six chosen monitoring wells will continue until there are four consecutive monitoring events that show the levels for a specific constituent are below required cleanup levels (CULs). At that time, testing for that specific constituent can cease while all remaining constituents will continue to be tested.

2.5 Institutional Controls

WSP is required to restrict future activities and uses within the landfill and former dry cleaner areas of the project site. WSP has been made aware of the development restrictions on the land that is part of this cleanup action. Ecology must be involved and approve of any restricted activities in the landfill or former dry cleaner areas. No restricted activities can occur in these areas without the consent and approval of Ecology. Environmental covenant negotiations are ongoing between Ecology and Corrections at the time of this report issuance.

3.0 DEVIATIONS FROM ORIGINAL DESIGN

3.1 Landfill Capping

Original Requirement from CAP:
Install soil cap improvements over approximately 1.8 acres, including placement of additional material to cover exposed debris and provide positive drainage across the surface of the landfill. Install a geotextile barrier overlain by 12 inches of rock across approximately 0.7 acres of area to prevent exposure where testing has indicated surface soil contamination.

Deviation:
A rock cap section of 12 inches was placed over 9.8 acres of the landfill and graded to provide positive drainage. Geotextile fabric was placed below the rock section across 0.83 acres, an increase of 0.13 acres of area from original requirements. No soil cap was provided.

3.2 Dry Cleaner Capping

Original Requirement from CAP:
Install an approximately 0.1 acre low permeability asphalt cap in the vicinity of the former dry cleaner building, consisting of 2.5 inches of asphalt concrete pavement over 6 inches of crushed rock and stormwater controls.

Deviation:
Installed 6 inches of Portland cement concrete over a varying depth of 6-12 inches of crushed rock. The area of capping did not deviate from the original requirement.

3.3 Irrigation Well Decommissioning

Original Requirement from CAP:
Decommission Irrigation Well No. 4.

Deviation:
No deviation, well has been decommissioned at the time of this report.

3.4 Groundwater Quality Monitoring

Original Requirement from CAP:
Quarterly groundwater monitoring in 14 wells, for 7 constituents. Monitoring was to be conducted quarterly, with annual reports sent to Ecology, until groundwater CULs are achieved in four consecutive sampling events.

Deviation:
Semi-annual groundwater monitoring in six monitoring wells chosen by Ecology. Testing to occur at a minimum of each spring and fall to reflect differing groundwater elevations. Testing for individual constituents can cease once four consecutive results show CULs for that specific constituent are below the indicated level. There is no deviation regarding the annual reporting to Ecology or the constituents to be tested.

3.5 Institutional Control

Original Requirement from CAP:
Apply deed restrictions that prohibit prohibiting soil excavation or disturbance within the specified area without prior consultation with Ecology. More specifically this would prohibit the

disturbance of the landfill, area adjacent to the dry cleaner building, and modification of any stormwater facilities affecting drainage to these areas.

Deviation:
Agreement on the institutional controls is ongoing between Ecology and Corrections and will be implemented as part of the acceptance of this report by Ecology.

4.0 CONCLUSION

At the time of this report landfill capping, dry-cleaner capping and well decommissioning have been completed. The groundwater quality monitoring will be an ongoing task conducted until contaminant levels are reduced to an acceptable level as determined by Ecology and outlined more specifically in the previous sections. Agreement on the institutional controls is ongoing between Ecology and Corrections and will be implemented as part of the acceptance of this report by Ecology.

APPENDIX A

Vicinity Map

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WALLA WALLA, WA

kpff
612 Woodland Square Loop,
Suite 100
Lacey, WA 98503
360.292.7230
www.kpff.com

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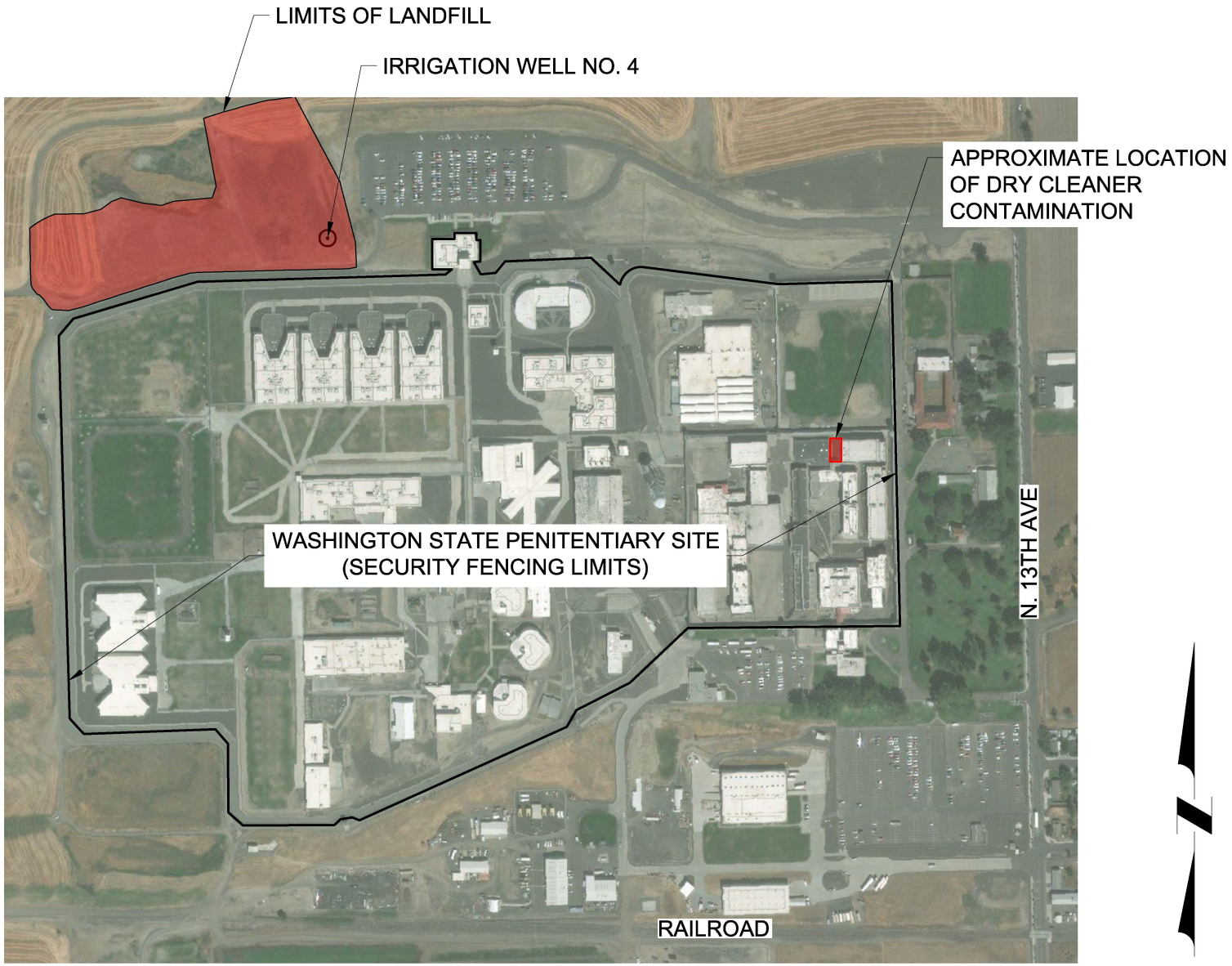
VICINITY MAP

KPFF PROJ NO:	STATE PROJ NO:	APPENDIX
101819001 09	2020-312	A
DATE: 4/21/21		
SCALE: N.T.S.		

APPENDIX B

WSP Site Map



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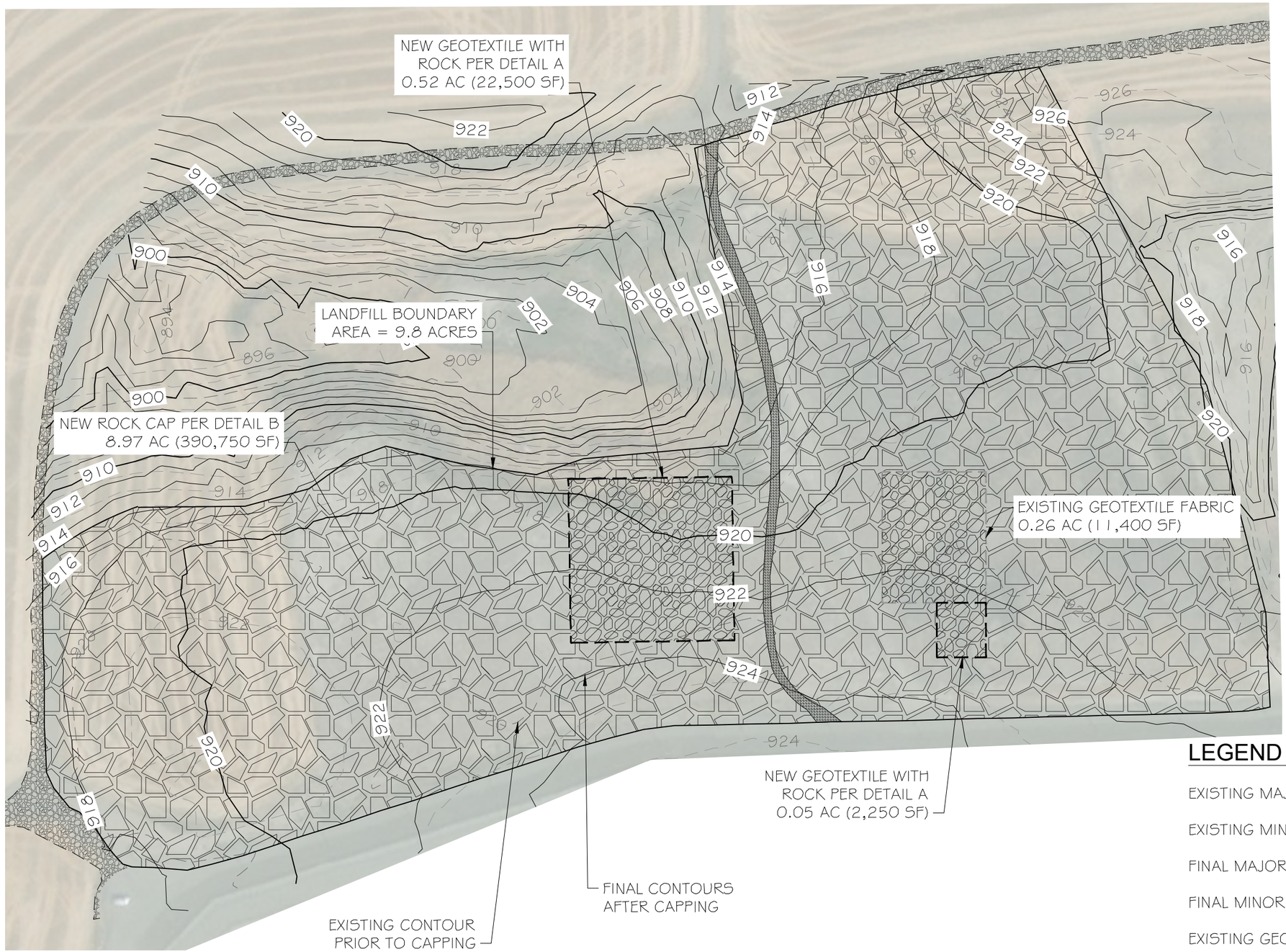
WSP SITE MAP

KPFF PROJ NO:	STATE PROJ NO:	APPENDIX
101819001 09	2020-312	B
DATE: 4/21/21		
SCALE: N.T.S.		

APPENDIX C

Landfill Capping Plan and Details



0 100 200

SCALE

LEGEND

- EXISTING MAJOR CONTOUR (2')
- EXISTING MINOR CONTOUR (10')
- FINAL MAJOR CONTOURS (10')
- FINAL MINOR CONTOURS (2')
- EXISTING GEOTEXTILE FABRIC
- NEW GEOTEXTILE FABRIC
- GEOTEXTILE & ROCK CAP (DETAIL A)
- ROCK ONLY CAP (DETAIL B)

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CHECKED BY: CDP
DATE: 10/28/2024
SCALE: 1"=100'

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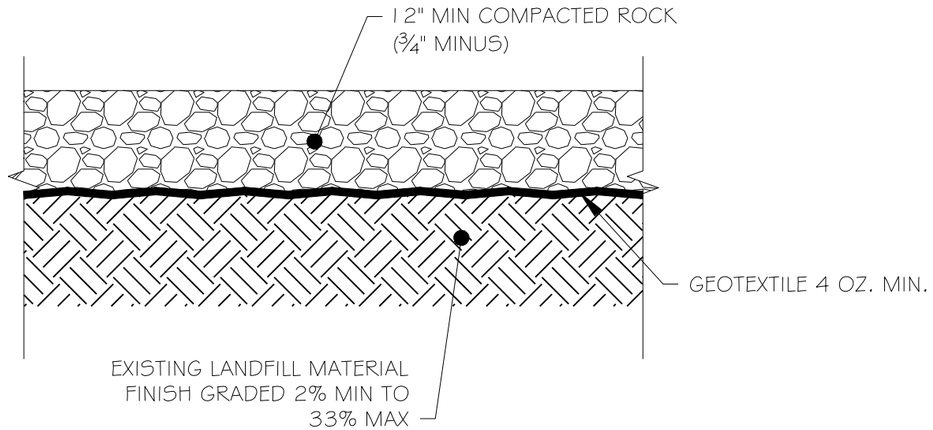
LANDFILL CAPPING - STATE PROJECT #2021-312

LANDFILL CAPPING PLAN

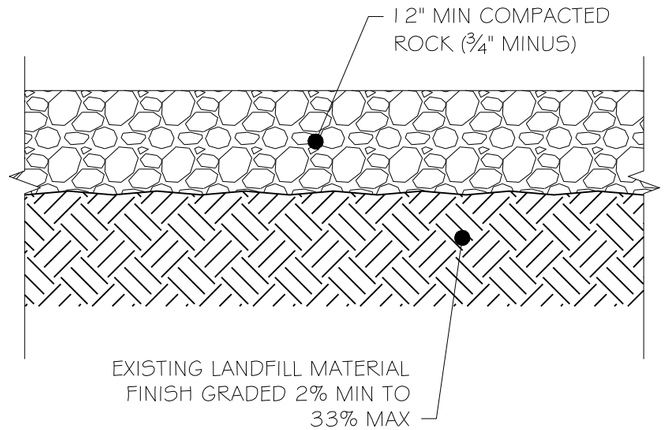
APPENDIX
C-1
SHEET 1 OF 2



NOTE:
THIS SECTION TO BE USED ONLY WHERE NEW GEOTEXTILE IS REQUIRED.

A GEOTEXTILE AND ROCK CAP

SCALE: N.T.S.



NOTE:
THIS SECTION TO BE USED ON EAST SIDE OF LANDFILL IN AREAS WITHOUT GEOTEXTILE.

B ROCK ONLY CAP

SCALE: N.T.S.

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LANDFILL CAPPING - STATE PROJECT #2021-312

LANDFILL CAPPING DETAILS

APPENDIX
C-2
SHEET 2 OF 2

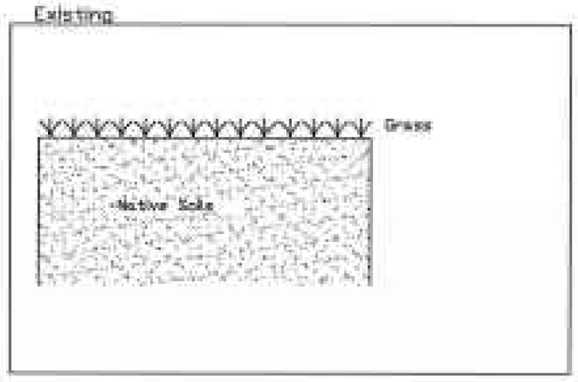
PLOTTED: Aug 31, 2021 - 9:10a8p8 PLOTTED BY: whitneyd
FILE: I:\2019\1018190010B - WSP Landfill Grading and Survey (DES On-Call)\CADD\DWG\SITE

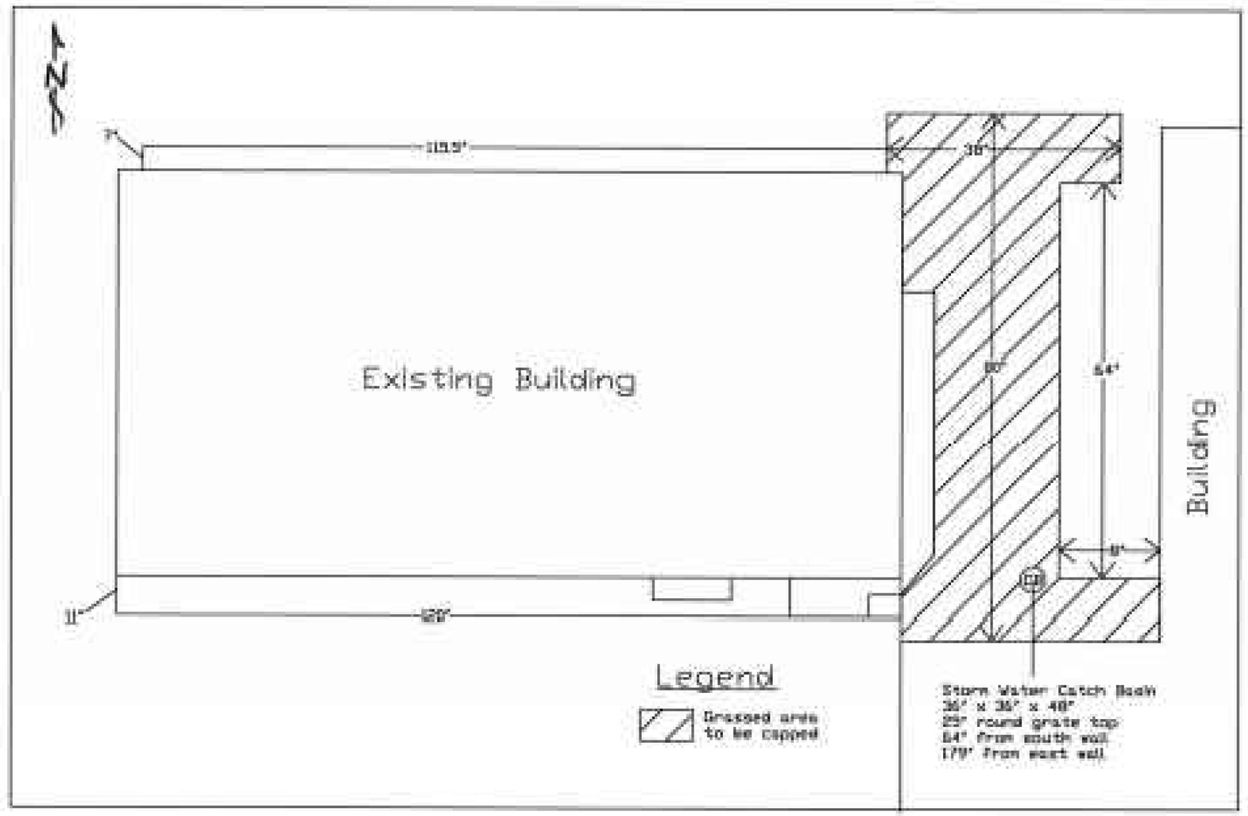
APPENDIX D

Dry Cleaner Area Capping Plan

FULCRUM environmental consulting

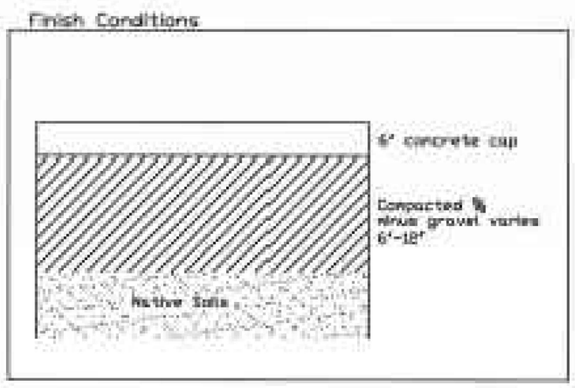
Dry Cleaner





Dry Cleaner

Finish Conditions



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DRY CLEANER AREA CAPPING

(FROM FULCRUM REPORT)

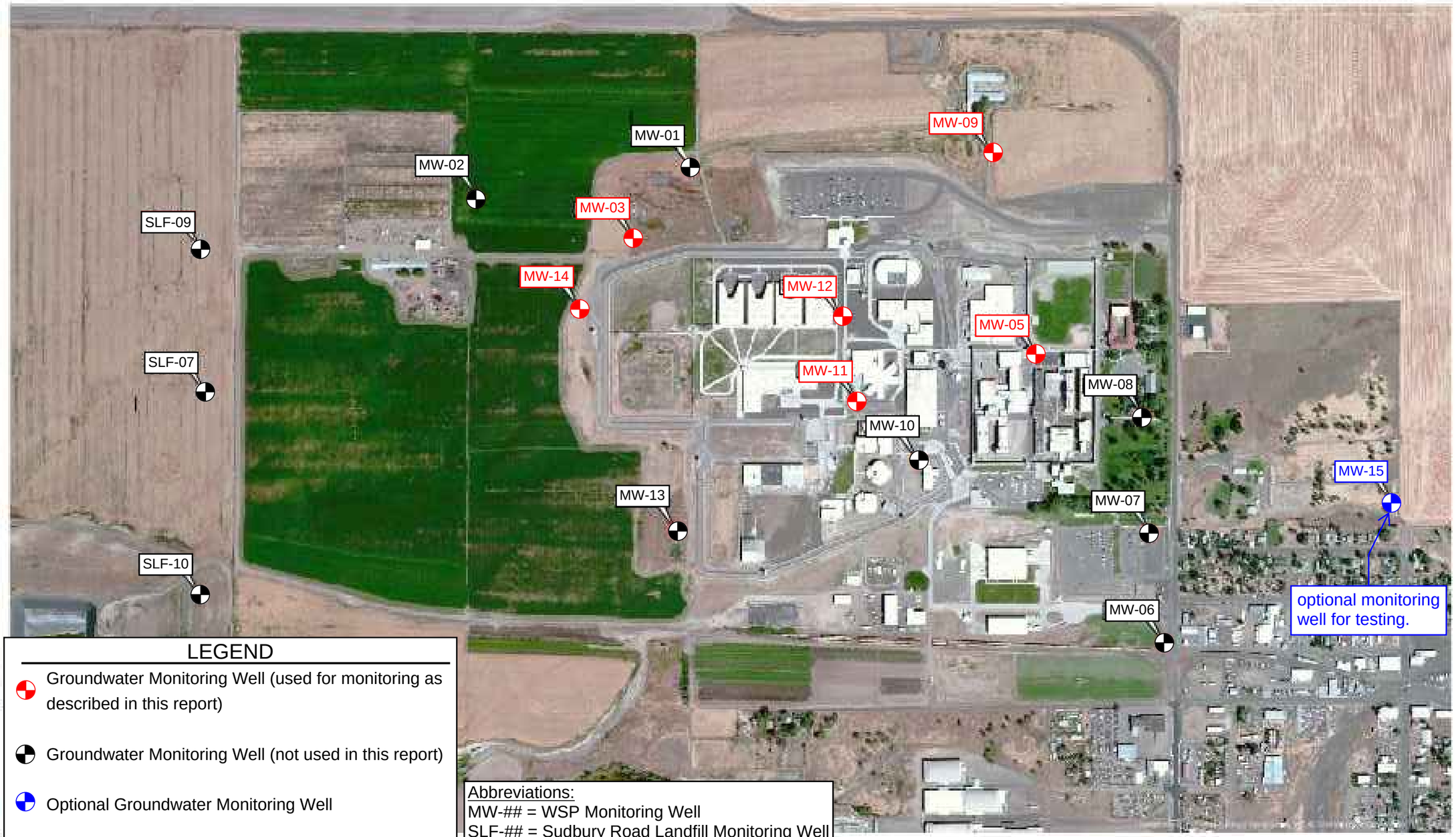
APPENDIX

D

APPENDIX E

Groundwater Monitoring Well Locations

FULCRUM environmental consulting



LEGEND

- Groundwater Monitoring Well (used for monitoring as described in this report)
- Groundwater Monitoring Well (not used in this report)
- Optional Groundwater Monitoring Well

Abbreviations:
MW-## = WSP Monitoring Well
SLF-## = Sudbury Road Landfill Monitoring Well

Exhibit modified from Fulcrum Environmental Consultants Report

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GROUNDWATER MONITORING WELL LOCATIONS

(FIGURE FROM FULCRUM REPORT)

APPENDIX

E