



Periodic Review

Sudbury Road Landfill
414 Sudbury Road
Walla Walla, WA 99362

Facility Site ID#: 4446540
Cleanup Site ID#: 2485

Prepared by:
Eastern Region Office
Solid Waste Program

July 2022

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1.0 INTRODUCTION

This document is a review by the Washington State Department of Ecology (Ecology) of post-cleanup conditions and monitoring data to assure Sudbury Road Landfill Site (Site) cleanup actions are protecting human health and the environment. The City of Walla Walla (City), as Site owner, implemented cleanup under the Model Toxics Control Act (MTCA) regulations, Chapter 173-340 Washington Administrative Code (WAC).

The cleanup actions were performed to address tetrachloroethene (PCE) and vinyl chloride concentrations in groundwater at the Site that exceeded MTCA cleanup levels. WAC 173-340-720 establishes the MTCA cleanup levels for groundwater. WAC 173-340-420(2) requires Ecology to conduct a periodic review of a Site every five years under the following conditions:

1. Whenever the department conducts a cleanup action;
2. Whenever the department approves a cleanup action under an order, agreed order or consent decree;
3. As resources permit, whenever the department issues a no further action opinion;
4. And one of the following conditions exists at the Site:
 - (a) Institutional controls or financial assurance are required as part of the cleanup;
 - (b) Where the cleanup level is based on a practical quantitation limit; or
 - (c) Where, in the department's judgment, modifications to the default equations or assumptions using Site-specific information would significantly increase the concentration of hazardous substances remaining at the Site after cleanup or the uncertainty in the ecological evaluation or the reliability of the cleanup action is such that additional review is necessary to assure long-term protection of human health and the environment.

The factors Ecology shall consider when assessing whether cleanup actions are protecting human health and the environment include [WAC 173-340-420(4)]:

- (a) The effectiveness of ongoing or completed cleanup actions, including the effectiveness of engineered controls and institutional controls in limiting exposure to hazardous substances remaining at the Site;
- (b) New scientific information for individual hazardous substances of mixtures present at the Site;
- (c) New applicable state and federal laws for hazardous substances present at the Site;
- (d) Current and projected Site use;
- (e) Availability and practicability of higher preference technologies; and
- (f) The availability of improved analytical techniques to evaluate compliance with cleanup levels.

Ecology shall publish a notice of all periodic reviews in the Site Register and provide an opportunity for public comment.

2.0 SUMMARY OF SITE CONDITIONS

2.1 Site History

2.1.1 Site Location

The Site is located at 414 Landfill Road (formerly Sudbury Road), Walla Walla, Washington 99362, about 4 miles west of the City of Walla Walla and 0.25 mile north of Highway 12. The landfill covers approximately 125 acres and has seven disposal areas (Areas 1 through 7). The landfill is located within the western portion of an 828.86-acre City-owned parcel of land zoned and used for various waste management purposes. The landfill is located in rural southeastern Washington and surrounded by land used for dry-land wheat farming.

2.1.2 Local Populations

The Washington State Penitentiary and its inmate population are located 1.2 miles east of the Site property boundary. The closest residential populations are located about 2,000 feet south of the landfill.

Groundwater underneath the Site flows from the east to the west-southwest. Four residential properties located in a general downgradient direction maintain their own domestic wells for water supply:

- The Camp well is about 0.75 mile northwest of the landfill
- The Small well is about 0.75 mile west of the landfill
- The Kinman well is about 1.5 mile west of the landfill
- Two wells are located on the Schmidt property, which is about 1.5 mile southwest of the landfill

2.1.3 Site Geology

The Site lies on the northern flank of the Walla Walla Valley. The geology beneath the landfill consists of (from upper to lower) Palouse silt; reworked lacustrine silt and clay of the Touchet beds; interbedded alluvial gravels in a clayey, silty, or sandy matrix, informally termed the "old gravel and clay"; and Columbia River basalt. The unconsolidated to semi-consolidated deposits overlying the Columbia River basalts may be 600 feet or more in thickness.

2.1.4 Hydrogeology

Groundwater beneath the Site is 30 to 87 feet below ground surface (bgs). Groundwater flow direction is to the west-southwest, with an approximate horizontal gradient of 0.004 feet per foot beneath the landfill. The calculated groundwater velocity is about 190 feet/year. Groundwater elevations near the landfill have been declining, and since 1997, the water level in one well has declined as much as 10 feet.

A second, deeper aquifer is present in the underlying Columbia River basalts. Based on information in driller's water well reports within the Site vicinity, the aquifer is 150 to 200 feet bgs.

2.1.5 Landfill and Groundwater Monitoring History

The Sudbury Road Landfill currently operates under Chapter 173-351 WAC, Criteria for Municipal Solid Waste Landfills (WAC 173-351), and a solid waste handling permit issued by the Walla Walla County Health Department. The health department issued the initial permit for the landfill on June 27, 1977 and news publications announced that the “New City Landfill on Sudbury Road” opened to the public on July 10, 1978 (*Walla Walla Union Bulletin* 1978). The landfill has received municipal solid waste (MSW), asbestos waste, and medical waste since that time.

The City has placed MSW in five separate areas, commonly referred to as Areas 1, 2, 5, 6 and 7. Areas 1, 2, 5 and 6 are unlined and contain MSW. Area 7 is lined and actively receiving MSW. Areas 3 and 4 are unlined and contain medical waste and asbestos waste, respectively. The City closed Areas 3 and 4 in 2004 and in 2006 and constructed a composting facility over the former asbestos and medical waste areas.

As part of their solid waste handling permit requirements, the City has monitored groundwater on a quarterly schedule since July 1978. In July 2001, the City installed monitoring well MW-15, a downgradient well adjacent to Area 5. Tests showed the presence of volatile organic compounds (VOCs) in groundwater including trichloroethene (TCE), tetrachloroethene (PCE), trichlorofluoromethane (Freon 11), dichlorodifluoromethane (Freon 12), vinyl chloride, chloroethane, 1,1-dichloroethane, and cis-1,2-dichloroethane, and other constituents including calcium, sodium, bicarbonate/alkalinity, chloride, and total dissolved solids. These constituents were generally at higher levels in MW-15 than other Site wells and surrounding groundwater. This prompted further investigation.

2.2 Site Investigations

2.2.1 Assessment Monitoring and Domestic Well Sampling

In September 2002, the City began assessment monitoring in accordance with WAC 173-351-440. Assessment monitoring increases the number of constituents tested to find out if additional constituents need to be added to the quarterly groundwater monitoring program. The tests resulted in one additional constituent found to be present at concentrations greater than background concentrations – Freon 12 – and the City subsequently added it to the routine monitoring program.

Since 2002, the City has periodically tested water from four private wells to the west-southwest of the landfill, in the direction of groundwater flow. The Washington Department of Health looked at water quality from three of the private wells in 2012. It found one chemical in two of the wells that warranted additional analysis – PCE. The Washington Department of Health concluded that the level of PCE was below federal and state drinking water standards and, therefore, not at levels expected to harm people's health through drinking, showering, bathing, and cooking with this

water. The potential source of PCE in these wells is unknown. There may be sources unrelated to the landfill contributing PCE to the two wells.

2.2.2 Independent Remedial Investigation

The City initiated a remedial investigation (RI) in 2004 to characterize MW-15 contamination. The City prepared a work plan to guide the RI process and started the work in 2005. It stalled the RI in 2006 before it could complete all of the tasks due to factors such as insufficient funds and off-Site access.

2.2.3 Agreed Order

In January 2010, Ecology submitted an Early Notice Letter to the City. This notice indicated that Ecology was aware that a release of hazardous substances had occurred and that the City needed to take further remedial actions. Ecology and the City entered into Agreed Order No. 8456, which became effective May 26, 2011. The Agreed Order required the City to conduct a RI/FS to determine the nature and extent of contamination in groundwater from the Site.

2.2.4 Interim Actions

The City initiated interim actions at the Site in 2010 consistent with a Revised Interim Action Plan (Schwyn 2010). The interim actions included:

- Area 6 closure design and construction; and
- Improvements to stormwater controls along the north side of Area 5.

Area 6 closure consisted of placement of an evapotranspiration cover, installation of a landfill gas collection and control system, and a stormwater collection and conveyance system. Improvements to stormwater controls north of Area 5 included filling depressions in the stormwater channel and grading to prevent future ponding and direct stormwater flow to the west, installation of a sedimentation basin, installation of a culvert under the western perimeter roadway, and erosion control mats in the stormwater channel.

2.2.5 Remedial Investigation

In 2012 and 2013, the City conducted a remedial investigation in accordance with the Agreed Order. The City installed several new groundwater and landfill gas monitoring wells, sampled well water from residents to the west/southwest of the landfill, sampled soils beneath buried waste, inspected stormwater controls and cover over landfill areas, tested landfill gas composition and production, and checked existing gas control systems at the Site. A 2014 RI/FS report included details and findings of the remedial investigation.

2.3 Cleanup Levels and Points of Compliance

2.3.1 Overview

MTCA requires the establishment of site-specific cleanup standards. The two primary components of cleanup standards are cleanup levels and points of compliance. Cleanup levels are the concentrations at which a substance does not pose an unacceptable threat to human health or the environment. Points of compliance represent the locations on the Site where the City must meet cleanup levels. Following establishment of cleanup levels, the City needs to mitigate media having concentrations above cleanup levels.

MTCA provides three options for establishing cleanup levels – Methods A, B, and C. Method A provides cleanup levels for routine cleanup actions at sites with relatively few hazardous substances. Methods B and C concentrations are calculated from applicable or relevant and appropriate requirements (ARARs) and from using formulas provided in WAC 173-340-720 through WAC 173-340-760. Method B is the standard method for establishing cleanup levels and is applicable to any site. Method C is a conditional method for use at sites subject to limited uses.

Groundwater is the contaminated medium at the Site with tetrachloroethene (PCE) and vinyl chloride above cleanup levels. There are other volatile organic compounds detected in groundwater, but at concentrations below MTCA screening levels. Cleanup levels are based on the highest beneficial use being drinking water and other domestic water uses due to the presence of domestic wells downgradient of the Site. Method B standards establish cleanup levels at this Site.

2.3.2 Site Cleanup Levels

Indicator hazardous substances as defined by WAC 173-340-200 are a subset of hazardous substances present at a site selected under WAC 173-340-708 for monitoring and analysis during any phase of remedial action for the purpose of characterizing a site or establishing cleanup levels. The criteria found in WAC 173-340-708(2) are used to screen the list of hazardous substances present at a site. Following the selection of indicator hazardous substances, one establishes cleanup levels for the indicator hazardous substances.

The City has detected many hazardous substances in groundwater at the Site, but only PCE and vinyl chloride have exceeded screening criteria. For this reason, PCE and vinyl chloride are the Site indicator hazardous substances in groundwater. Monitoring well MW-15 has the highest concentrations, with vinyl chloride detected in MW-15 only.

Method B cleanup levels are based on the following:

- The cleanup level for PCE is 5 µg/L based on the state and federal drinking water maximum contaminant level.
- The cleanup level for vinyl chloride is calculated to be 0.29 µg/L. This is based on overall site risk from the presence of both indicator hazardous substances and is protective of human health. A concentration is protective of human health if the hazard

index does not exceed 1 and the total excess cancer risk does not exceed 1 in 100,000 (1×10^{-5}):

| Indicator Hazardous Substance | Cleanup Level ($\mu\text{g/L}$) | Associated Risk Values | |
|-------------------------------|-----------------------------------|------------------------|-----------------|
| | | Excess Cancer Risk | Hazard Quotient |
| Tetrachloroethene (PCE) | 5.0 | 2.3×10^{-7} | 0.1 |
| Vinyl chloride | 0.29 | 9.9×10^{-6} | 0.01 |
| | <i>Total Risk</i> | 1.0×10^{-5} | 0.11 |

$\mu\text{g/L}$ = micrograms per liter

2.3.3 Point of Compliance

Under MTCA, the standard groundwater point of compliance is throughout a site from the uppermost level of the saturated zone extending vertically to the lowest depth which could potentially be affected by the site (WAC 173-340-720(8)(b)). Where hazardous substances remain on-site, as is the case at this Site where MSW will remain in place, a conditional point of compliance is established. The conditional point of compliance must be as close as practicable to the source of hazardous substances, and should not exceed the property boundary.

For this Site, the downgradient property boundary (western boundary) coincides with the western edge of MSW in Area 5 and the location of well MW-15. This is the only well with groundwater that has exceeded cleanup levels and it is an on-site well. Therefore, a conditional point of compliance is set at the western property boundary.

2.4 Remedial Actions

The selected remedy for the Site consisted of:

- Control landfill gas from Areas 1, 2 and 5
- Improve Area 2 and 5 cover systems
- Improve Area 5 northern stormwater controls
- Improve Area 5 southern stormwater controls
- Place an environmental covenant on the property to prevent future land uses that may damage systems put into place
- Monitor and maintain groundwater, gas, landfill cover and stormwater control systems

The general details for the selected cleanup action are presented below.

2.4.1 Landfill Gas Controls for Areas 1, 2 and 5

The design for the Area 6 landfill gas (LFG) extraction and treatment system, installed in 2010, indicated extraction well spacing intervals of approximately 150 feet would effectively remove LFG. This system was evaluated as part of the remedial investigation and found to be controlling LFG effectively. For this reason, controls for Areas 1, 2 and 5 were similarly designed.

The City expanded LFG extraction and treatment system for Area 6 to include Areas 1, 2 and 5. It installed two extraction wells in Area 1, one extraction well in Area 2, and seven extraction wells in Area 5. The extraction wells have screens throughout the depth of municipal solid waste in each area, and linked by a header system to a flare station for LFG destruction.

2.4.2 Landfill Cover System for Areas 2 and 5

An evapotranspiration (ET) (soil) cover was designed to improve existing cover over Area 2 and Area 5. Engineering plans showed that the ET cover design would perform better than a geomembrane cover, allowing less percolation through the cover into waste. A 4.8-foot-thick layer of native soils compacted in 24-inch lifts at 85 percent of maximum compaction was the design for Areas 2 and 5. The top foot of the cover incorporated biosolids and compost to create a medium in which to establish dryland vegetation to control erosion. Improving overall Site drainage through grading and an erosion control berm on Area 5 to facilitate surface runoff was also included.

2.4.3 Area 5 Northern Stormwater Control

The City constructed a cast-in-place concrete channel along the north side of Area 5 to prevent runoff north of Area 5 from draining into waste and leading to creation of leachate that could affect groundwater. A geomembrane underneath the concrete channel provides secondary protection. The design included a strip of geomembrane attached to the top of the concrete channel and covered with an erosion control mat to prevent undermining and rutting as stormwater enters the channel. The channel has a slope of 0.7% to the west, connecting to an existing culvert that carries stormwater off-Site. The slope should promote natural cleanout of sediment from the channel, particularly during storm events.

In case the City needs mechanical means to remove sediment and other debris from the channel, the cross-sectional shape of the channel is rectangular and sized to allow cleanout with a compact rubber-tired skid steer. The design included reinforced concrete and a pea gravel base to provide structural support needed for a skid steer.

2.4.4 Area 5 Southern Stormwater Control

The City constructed an elevated soil berm to the south of Area 5 to prevent stormwater south of Area 5 from flowing north onto Area 5 and graded surface soils and an access road southeast of Area 5 to convey stormwater away. The City also replaced a culvert to direct stormwater from Area 5 onto an asphalt pad used for composting to convey it to the compost facility lagoon. The lagoon had adequate capacity and the additional water will aid in providing moisture needed for composting.

2.4.5 Institutional Controls

Institutional controls are measures undertaken to limit or prohibit activities that may interfere with the integrity of a cleanup action or result in exposure to hazardous substances at the Site. Such measures are required to assure both the continued protection of human health and the environment and the integrity of the cleanup action whenever hazardous substances remain at the Site at concentrations exceeding applicable cleanup levels. WAC 173-340-440 provides information on institutional controls.

2.4.5.1 Environmental Covenant

An environmental covenant consistent with the Uniform Environmental Covenant Act (Chapter 64.70 RCW) is in place for this property to prohibit activities that may:

- Threaten the integrity of the cover, waste containment, stormwater control, gas, leachate, public access control, and environmental monitoring systems;
- Interfere with the operation and maintenance, monitoring, or other measures necessary to ensure the integrity of the landfill and continued protection of human health and the environment; and
- Result in the release of solid waste constituents or otherwise exacerbate exposures.

2.4.5.2 Financial Assurance

WAC 173-340-440 states that financial assurance mechanisms shall, as appropriate, be required at sites where the selected cleanup action includes engineered and/or institutional controls. Financial assurances are in place at the Site.

2.4.6 Monitoring

Compliance monitoring is conducted in accordance with WAC 173-340-410. The following subsections generally describe monitoring requirements:

2.4.6.1 Groundwater

The goal of groundwater monitoring is to confirm that the cleanup action is working to reduce tetrachloroethylene and vinyl chloride concentrations in groundwater at the conditional point of compliance. Monitoring includes quarterly sampling and analysis of groundwater from on-Site monitoring wells MW-11, MW-12b, MW-14b and MW-15, and from downgradient off-Site monitoring wells MW-19 and MW-20. The Cleanup Action Plan (CAP) for the Site specifies that monitoring be done for a minimum period of five years after completing construction (Ecology approved the completion of construction May 2017) and for at least two years after achieving groundwater cleanup levels.

2.4.6.2 Landfill Gas (LFG)

LFG monitoring is conducted in Area 1 (GW-11) and Area 5 (GW-5 and GW-6), and at the landfill perimeter using existing gas monitoring wells (GW-7S, GW-7D, GW-8, GW-9, GW-10

and GW-12). Effective system performance is based on not exceeding the methane lower explosive limit at the landfill perimeter (five percent by volume), as well as a reduction in volatile organic compound concentrations in downgradient groundwater. The CAP specifies that LFG monitoring be done for a minimum period of five years after completing construction and for at least two years after achieving groundwater cleanup levels.

2.4.6.3 Landfill Cover

The City conducts annual landfill cover inspection, maintenance and repair to preserve the integrity of the evapotranspiration covers. The following cover conditions are observed, documented and repaired if needed:

- Appearance and condition of vegetation;
- Vegetation stress or death due to LFG;
- Deposition of eroded soil at the toe of steep slopes;
- Soil erosion;
- Rills or cracks in the cover;
- Changes in the surface slope and settlement of waste;
- Intrusion by humans or animals;
- Holes of any kind that allow surface runoff to enter the MSW directly;
- Wildlife trails created on the cover; and
- Damage by vehicles or maintenance machines.

2.4.6.4 Stormwater Controls

The City conducts annual inspections of stormwater controls. Inspections document erosion, settlement, ponded stormwater, blockage of flow or other issues that compromise the prevention of infiltration into soil or the municipal solid waste. Maintenance and repairs are done as needed to maintain the integrity of the stormwater control system.

2.5 Environmental Covenant

The City recorded an environmental covenant consistent with the Uniform Environmental Covenant Act (Chapter 64.70 RCW) with the Walla Walla County Auditor's Office on October 16, 2019. It prohibits activities that may:

- Threaten the integrity of the cover, waste containment, stormwater control, gas, leachate, public access control and environmental monitoring systems;
- Interfere with the operation and maintenance, monitoring or other measures necessary to ensure the integrity of the landfill and continued protection of human health and the environment; and
- Result in the release of solid waste constituents or otherwise exacerbate exposures.

3.0 PERIODIC REVIEW

3.1 Effectiveness of completed cleanup actions

Evaluating the cleanup action effectiveness involves verifying the status of engineered and institutional controls and assessing contaminant levels and trends. The Site's cleanup action involved improving cover in certain areas, improving stormwater controls and installing a landfill gas collection and control system. These features have been in place for at least five years. The City or its consultants inspect the condition of these features routinely. Any observations, such as functioning of the gas control system, erosion, animal burrows or poor vegetative growth are monitored and/or repaired. These actions provide reasonable assurance that engineered controls have been operational and effective.

An environmental covenant is in place for the Site. The covenant prohibits activities that could result in the release of contaminants at the Site and prohibits use of the property that is inconsistent with the covenant. Financial assurance is also in place to ensure funds are available to conduct monitoring and maintenance activities.

Based upon a Site visit conducted on April 4, 2022, the landfill cover and stormwater controls appear to be in good condition and functioning as designed to prevent water infiltration into waste. There were no signs of erosion or inadequate vegetation on cover systems. The northern stormwater channel was free of significant debris that might prevent conveyance of stormwater away from the landfill.

Based on compliance monitoring reports, the landfill gas control system appears to be effectively reducing gas contributions to contaminants in groundwater. Methane concentrations in gas probes within Area 1 and 5 have fairly consistent gas ranges, but appear to have decreased since system installation. Monitoring of gas probe GW-5 within Area 5 showed methane levels of 36-60% in 2016 and in 2021, levels were 24-31%. Gas probe GW-11 within Area 1 showed methane at 1-18% in 2016 and 0% throughout 2021 quarterly monitoring events.

Tetrachloroethylene (PCE) and vinyl chloride (VC) concentrations in groundwater have decreased to below cleanup levels since cleanup actions were completed. MW-15 has historically been the only well with concentrations above PCE and VC cleanup levels of 5 µg/L and 0.29 µg/L respectively. PCE in MW-15 has been at or below the cleanup level since the March 18, 2019 quarterly monitoring event and VC has been at or below its cleanup level since the December 3, 2019 event.

Based on the above observations, cleanup actions appear to be effectively reducing landfill contribution of contaminants to groundwater.

3.2 New scientific information for individual hazardous substances for mixtures present at the Site

There is no new scientific information for the contaminants related to the Site.

3.3 New applicable state and federal laws for hazardous substances present at the Site

The cleanup at the Site was governed by Chapter 173-340 WAC (2007 ed.). WAC 173-340-702(12) (c) [2001 ed.] provides that:

“A release cleaned up under the cleanup levels determined in (a) or (b) of this subsection shall not be subject to further cleanup action due solely to subsequent amendments to the provision in this chapter on cleanup levels, unless the department determines, on a case-by-case basis, that the previous cleanup action is no longer sufficiently protective of human health and the environment.”

There are no changes to cleanup levels for contaminants related to the Site.

3.4 Current and projected Site use

The Site is currently used for managing solid wastes. There have been no changes in current or projected future Site or resource uses.

3.5 Availability and practicability of higher preference technologies

The remedy implemented included containment of hazardous substances and it continues to be protective of human health and the environment. While higher preference cleanup technologies such as source removal remain available, they are still not practicable at this Site.

3.6 Availability of improved analytical techniques to evaluate compliance with cleanup levels

The analytical methods used are capable of detecting contaminant concentrations below Site cleanup levels. The presence of improved analytical techniques would not affect decisions or recommendations made for the Site.

4.0 CONCLUSIONS

The cleanup actions completed at the Site appear to be protective of human health and the environment. Landfill cover enhancements and stormwater controls appear to have reduced or eliminated infiltration of precipitation into waste. This protects groundwater by reducing the creation of leachate. The landfill gas control system appears to be effective given that the two contaminants of concern at the Site began decreasing soon after installation and have been at or below cleanup levels for more than two years.

An environmental covenant is in place at the Site and will be effective in protecting public health and the environment from exposure to hazardous substances and protecting the integrity of the cleanup action.

The Cleanup Action Plan (CAP) for the Site specifies that monitoring be done for a minimum period of five years after completing construction (Ecology approved the completion of construction May 2017) and for at least two years after achieving groundwater cleanup levels. The Site has met this standard. Tetrachloroethene has been at or below the cleanup level of 5 µg/L since March 2019 and vinyl chloride has been at or below the cleanup level of 0.29 µg/L since December 2019. As such, Ecology proposes the following changes for the Site:

- Eliminate sampling of off-site downgradient wells MW-19 and -20, while maintaining monitoring of on-site wells MW-12b, -11, 14b and 15.
- Ecology is looking into releasing the City's cleanup financial assurance set aside for ongoing operations and maintenance for areas that were the primary subject of cleanup actions. This includes costs for groundwater and landfill gas monitoring, gas control system operations and maintenance, and inspections of landfill cover and stormwater control systems. The rationale for releasing these funds is that the City is already required to have financial assurance for ongoing operations and maintenance of all landfill units at the Site under solid waste handling regulation. If Ecology determines adequate funds are in place to cover all ongoing cleanup action work, there is no need for the additional financial assurance.

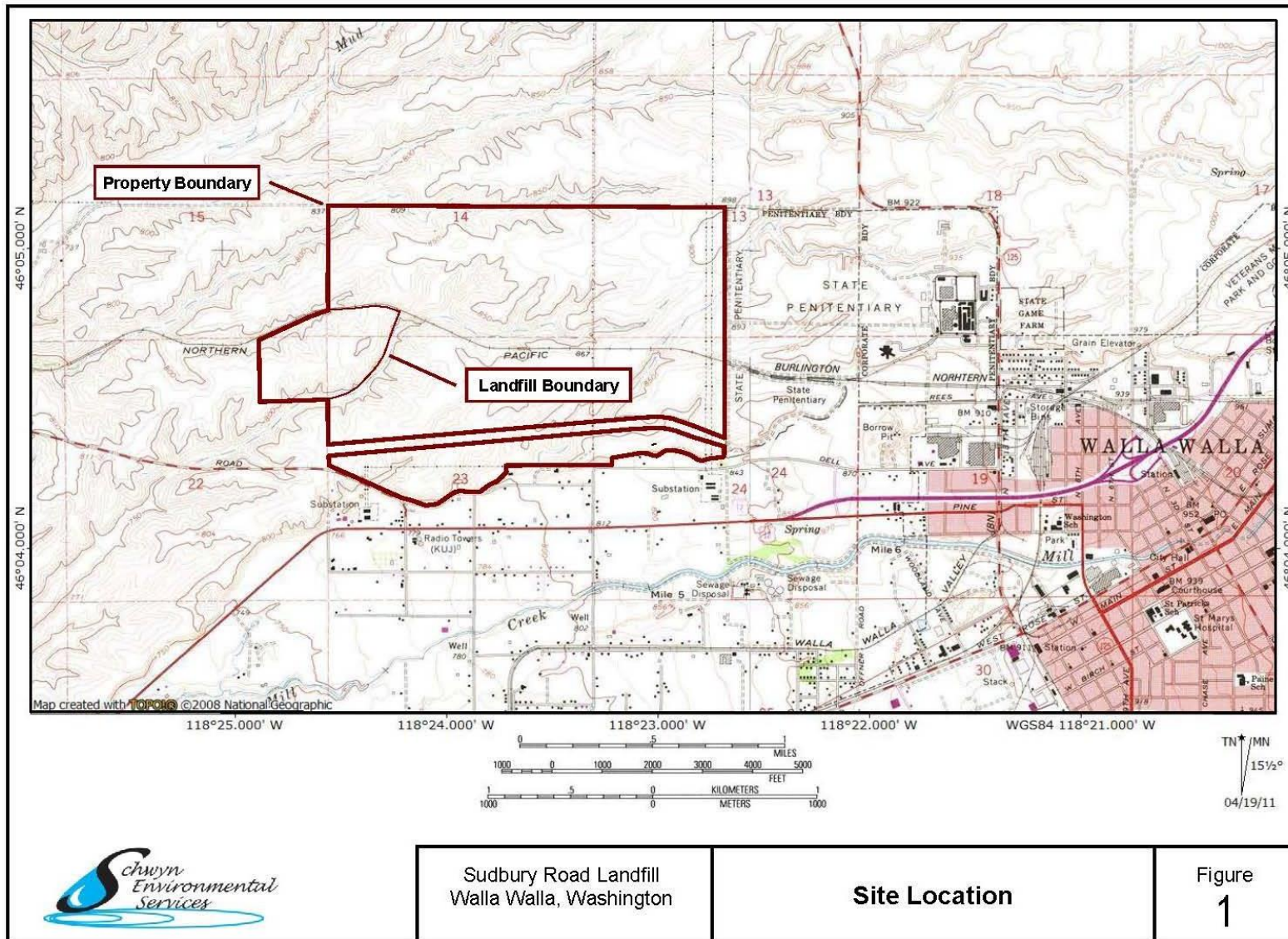
Based on this periodic review, Ecology has determined that cleanup actions have been effective at decreasing contaminants below cleanup levels and no additional cleanup actions are required. The City is responsible for continued monitoring, inspections and maintenance to assure that the integrity of the remedy is maintained.

4.1 Next Review

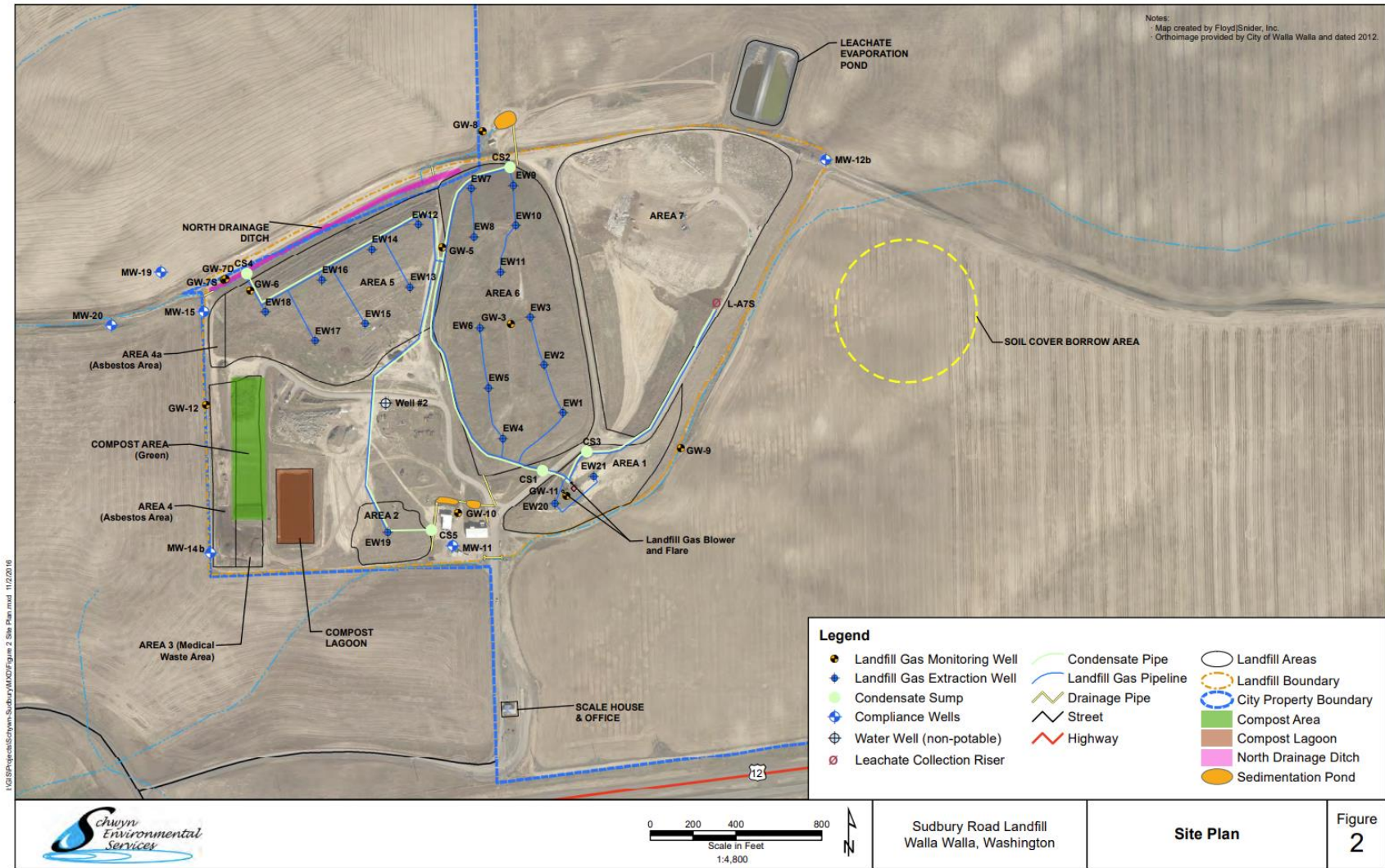
The next review for the Site will be five years from the date of this periodic review. In the event that additional cleanup actions or institutional controls are required, the next periodic review will be five years from the completion of those activities.

5.0 APPENDICES

5.1 Vicinity Map



5.2 Site Plan



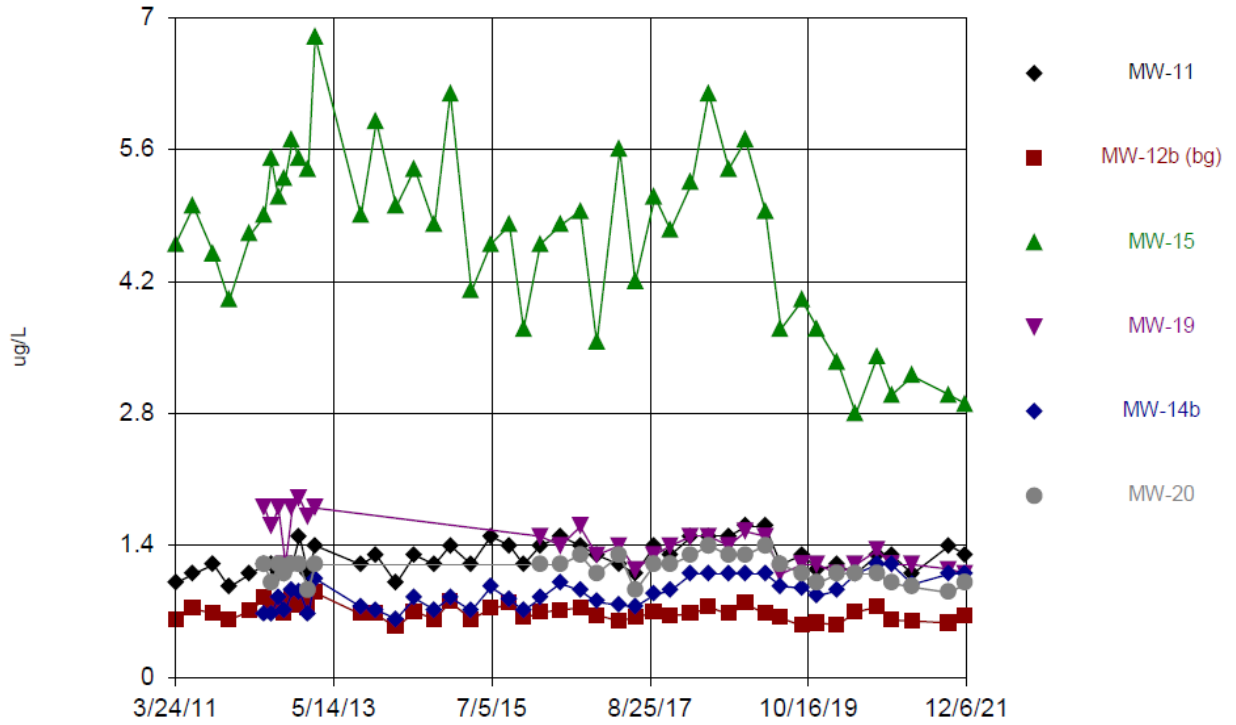
I:\GIS\Projects\GIS\Gis\Projects\Sudbury\MapDocs\Figure 2 Site Plan.mxd 11/2/2018



5.3 Monitoring Well Contaminant Graphs

Sanitas™ v.9.6.32 Software for use by regulators in official oversight duties. UG

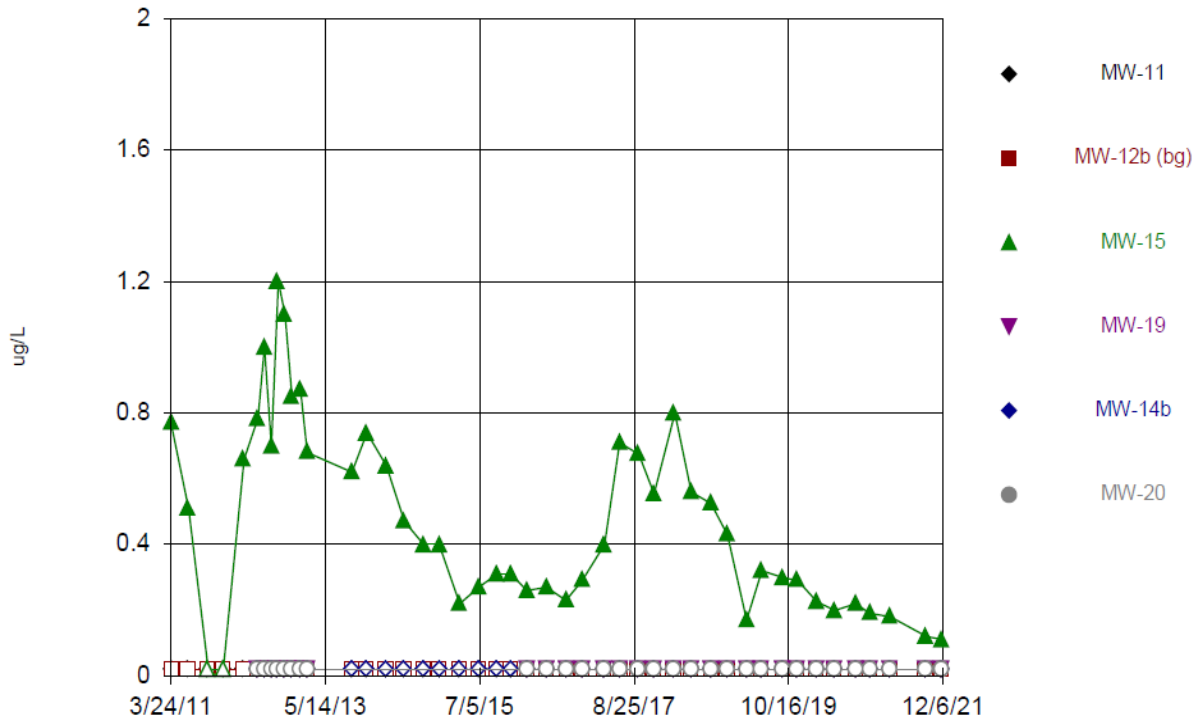
Time Series



Constituent: Tetrachloroethene Analysis Run 3/9/2022 1:45 PM View: Appendix I and II
Sudbury Landfill Client: GOVT. USE ONLY Data: Sudbury 2021 VOCs

Sanitas™ v.9.6.32 Software for use by regulators in official oversight duties. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Vinyl Chloride Analysis Run 3/9/2022 1:45 PM View: Appendix I and II
Sudbury Landfill Client: GOVT. USE ONLY Data: Sudbury 2021 VOCs

ENVIRONMENTAL COVENANT

After Recording Return
Original Signed Covenant to:
Marni Solheim
Solid Waste Management Program
Department of Ecology
4601 N. Monroe St.
Spokane, WA 99205

RECEIVED
AUG 16 2019
Department of Ecology
Eastern Washington Office

Environmental Covenant

Grantor: City of Walla Walla

Grantee: State of Washington, Department of Ecology (hereafter "Ecology")

Brief Legal Description: Portions of the south half of the southwest quarter of Section 14, portions of the southeast quarter of the southeast quarter of Section 15, the northeast quarter of the northeast quarter of Section 22, and portions of the north half of the northwest quarter of Section 23; all in Township 7 North, Range 35 East of the Willamette Meridian, Walla Walla County, Washington.

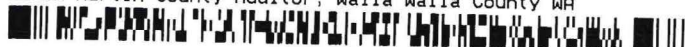
Tax Parcel Nos.: All of 350722110001 and 350715440004, and portions of 350714310002, 350723110005, and 350714330003.

RECITALS

a. This document is an environmental (restrictive) covenant (hereafter "Covenant") executed pursuant to the Model Toxics Control Act ("MTCA"), chapter 70.105D RCW, Uniform Environmental Covenants Act ("UECA"), chapter 64.70 RCW, and Solid Waste Management – Reduction and Recycling, chapter 70.95 RCW.

b. The property that is the subject of this Covenant consists of the site commonly known as the Sudbury Road Landfill Site, Cleanup Site No. 2485, Facility Site No. 4446540 (the "Property"). The Property is legally described in Exhibit A. Figures 1 and 2 attached as Exhibit B depict the general location and landfill boundary. If there are differences between the depictions and legal description, the legal description in Exhibit A shall prevail.

c. The Property is the subject of remedial action under MTCA and the post-closure requirements under chapter 70.95 RCW. This Covenant is required because a conditional point of compliance has been established for groundwater and because municipal solid waste will remain on the Property after completion of the remedial action and closure of the landfill. Containment of municipal solid waste is part of the remedial action performed under MTCA. This covenant is also required because municipal solid waste is contained on the Property beneath a final cover system that is designed to minimize infiltration and erosion and to prevent exposing waste. In addition, during the post-closure care period conducted in accordance with Chapter 173-351 WAC and all other applicable laws, the owner or operator is required, under the terms of its Municipal Solid Waste permit from the jurisdictional health department, to maintain and operate leachate control systems, and gas and groundwater monitoring systems on the Property.



d. It is the purpose of this Covenant to restrict certain activities and uses of the Property to protect human health and the environment, and maintain the integrity of remedial actions conducted at the Property. Records describing the extent of residual contamination and remedial actions conducted, and landfill closure and post-closure activities are available through Ecology.

e. This Covenant grants Ecology certain rights under UECA and as specified in this Covenant. UECA defines the grantee of an environmental covenant as a Holder. As the Holder of this Covenant under UECA, Ecology has an interest in real property, however, this is not an ownership interest which equates to liability under MTCA or the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. § 9601 *et seq.* The rights of Ecology as an “agency” under UECA, other than its’ right as the Holder, are not an interest in real property.

COVENANT

The City of Walla Walla, as Grantor and owner of the Property, hereby grants to Ecology, and its successors and assignees, the following covenants. Furthermore, it is the intent of the Grantor that such covenants shall supersede any prior interests the Grantor has in the property and run with the land and be binding on all current and future owners of any portion of, or interest in, the Property.

Section 1. General Restrictions and Requirements.

The following general restrictions and requirements shall apply to the Property:

a. **Interference with Remedial Action and the Landfill Unit/s.** The Grantor shall not engage in any activity on the Property that may impact or interfere with the remedial action or landfill unit/s and any operation, maintenance, inspection or monitoring of that remedial action or landfill unit/s without prior written approval from Ecology. Such activities shall include those that may:

- i. Threaten the integrity of any cover, waste containment, storm water or leachate control, gas collection and/or treatment system, public access control, or environmental monitoring system.
- ii. Interfere with the operation and maintenance, monitoring, or other measures necessary to assure the integrity of the landfill unit/s and continued protection of human health and the environment.
- iii. Result in release of solid waste constituents or otherwise exacerbate exposures to solid waste constituents.

b. **Protection of Human Health and the Environment.** The Grantor shall not engage in any activity on the Property that may threaten continued protection of human health or the environment through any activity that results in the release of solid waste constituents or residual contamination without prior written approval from Ecology. This includes, but is not limited to, any activity that results in the release of residual contamination that was contained as a part of the remedial action or landfill closure, or that exacerbates or creates a new exposure to residual contamination or municipal solid waste remaining on the Property.

c. **Continued Compliance Required.** Grantor shall not convey any interest in any portion of the Property without providing for the continued adequate and complete operation, maintenance and monitoring of remedial actions and the landfill unit/s post-closure permit requirements, and continued compliance with this Covenant.

d. Leases. Grantor shall restrict any lease for any portion of the Property to uses and activities consistent with this Covenant and notify all lessees of the restrictions on the use of the Property.

Section 2. Specific Prohibitions and Requirements.

In addition to the general restrictions in Section 1 of this Covenant, the following additional specific restrictions and requirements shall apply to the Property.

a. The Grantor shall maintain a suitable barrier that restricts unauthorized access to the Property.

b. Any activity on the Property that may disturb the integrity of landfill caps are prohibited without prior written approval from Ecology. Such activities include, but are not limited to, the following: drilling; digging; grading; excavation; installation of underground utilities; removal of the cap; or, application of loads in excess of the cap load bearing capacity. Routine operation and maintenance tasks that do not disturb the integrity of the landfill cap are not within the scope of this requirement and prior written approval from Ecology is not required for those tasks.

c. To minimize the potential for mobilization of contaminants that may remain in the soil, municipal solid waste, and groundwater on the Property, no stormwater infiltration facilities shall be constructed on the Property. All stormwater catch basins, ponds, conveyance systems, and other appurtenances located within the Property shall receive written approval by Ecology and shall be constructed in a way that minimizes infiltration into soil or waste.

d. The residual contamination on the Property includes volatile organic constituents that may generate harmful vapors and biodegradable municipal solid wastes that may generate methane, a combustible gas. To minimize the potential for exposure to these vapors, no building or other enclosed structure shall be constructed above Areas 1, 2, 5, 6, and 7 without written approval by Ecology and suitable engineering controls.

e. Groundwater and landfill gas monitoring wells are located on the Property to monitor the performance of the remedial action and landfill unit/s. Grantor shall make reasonable efforts to protect these devices from damage.

f. Drilling of a well on the Property for any potable water supply purpose is strictly prohibited. Drilling of a well for any other non-potable purpose is prohibited without prior written approval from Ecology. Groundwater extracted from the Property for any purpose shall be considered potentially contaminated and any discharge of this water shall be done in accordance with state and federal law. Notwithstanding the foregoing and when lawfully permitted, Grantor may continue to extract and use groundwater from an existing well located on the Property for its nonpotable purposes.

Section 3. Access.

a. The Grantor shall maintain reasonable access to all components necessary to construct, operate, inspect, monitor, and maintain the remedial action and landfill unit/s.

b. The Grantor freely and voluntarily grants Ecology and its authorized representatives, upon reasonable notice, the right to enter the Property at reasonable times to evaluate the effectiveness of this Covenant and associated remedial actions and landfill post-closure activities, and enforce

compliance with this Covenant and those actions, including the right to take samples, inspect any remedial actions conducted on the Property, inspect any structures or systems on the Property, and to inspect related records. Except during an emergency, Ecology shall be accompanied by an authorized representative of the Grantor while on the Property unless otherwise agreed to by Grantor.

c. No right of access or use by a third party to any portion of the Property is conveyed by this instrument.

Section 4. Notice Requirements.

a. **Conveyance of Any Interest.** The Grantor, when conveying any interest in any part of the Property, including but not limited to title, easement, leases, and security or other interests, must:

- i. Notify Ecology at least thirty (30) days in advance of the conveyance.
- ii. Include in the conveying document a notice in substantially the following form, as well as a complete copy of this Covenant:

NOTICE: THIS PROPERTY IS SUBJECT TO AN ENVIRONMENTAL COVENANT GRANTED TO THE WASHINGTON STATE DEPARTMENT OF ECOLOGY ON _____ AND RECORDED WITH THE WALLA WALLA COUNTY AUDITOR UNDER RECORDING NUMBER _____. USES AND ACTIVITIES ON THIS PROPERTY MUST COMPLY WITH THAT COVENANT, A COMPLETE COPY OF WHICH IS ATTACHED TO THIS DOCUMENT.

- iii. Unless otherwise agreed to in writing by Ecology, provide Ecology with a complete copy of the executed document within thirty (30) days of the date of execution of such document.

b. **Reporting Violations.** Should the Grantor become aware of any violation of this Covenant, Grantor shall promptly report such violation to Ecology.

c. **Emergencies.** For any emergency or significant change in site conditions due to Acts of Nature (for example, flood, fire) resulting in a violation of this Covenant, the Grantor is authorized to respond to such an event in accordance with state and federal law. The Grantor must notify Ecology of the event and response actions planned or taken as soon as practical but no later than within 24 hours of the discovery of the event.

d. **Notification procedure.** Any required written notice, approval, or communication shall be personally delivered or sent by first class mail to the following persons. Any change in this contact information shall be submitted in writing to all parties to this Covenant. Upon mutual agreement of the parties to this Covenant, an alternative to personal delivery or first class mail, such as e-mail or other electronic means, may be used for these communications.

| | |
|---|--|
| Frank Nicholson City of Walla Walla 55 Moore Street Walla Walla, WA 99362 509-524-4510 fnicholson@wallawallawa.gov | Marni Solheim Washington State Department of Ecology Solid Waste Management Program 4601 N. Monroe Spokane, WA 99205 509-329-3564 Marni.solheim@ecy.wa.gov |
|---|--|



Section 5. Modification or Termination.

a. Grantor must provide written notice and obtain approval from Ecology at least sixty (60) days in advance of any proposed activity or use of the Property in a manner that is inconsistent with this Covenant. For any proposal that is inconsistent with this Covenant and permanently modifies an activity or use restriction at the site:

i. Ecology must issue a public notice and provide an opportunity for the public to comment on the proposal; and

ii. If Ecology approves of the proposal, the Covenant must be amended to reflect the change before the activity or use can proceed.

b. If the conditions at the site requiring a Covenant have changed or no longer exist, then the Grantor may submit a request to Ecology that this Covenant be amended or terminated. Any amendment or termination of this Covenant must follow the procedures in Chapter 64.70 RCW, Chapter 70.105D RCW, Chapter 70.95 RCW, and any rules promulgated under these chapters.

Section 6. Enforcement and Construction.

a. This Covenant is being freely and voluntarily granted by the Grantor.

b. Within ten (10) days of execution of this Covenant, Grantor shall provide Ecology with an original signed Covenant and proof of recording and a copy of the Covenant and proof of recording to others required by RCW 64.70.070.

c. Ecology shall be entitled to enforce the terms of this Covenant by resort to specific performance or legal process. All remedies available in this Covenant shall be in addition to any and all remedies at law or in equity, including MTCA, UECA, and Chapter 70.95 RCW. Enforcement of the terms of this Covenant shall be at the discretion of Ecology, and any forbearance, delay or omission to exercise its rights under this Covenant in the event of a breach of any term of this Covenant is not a waiver by Ecology of that term or of any subsequent breach of that term, or any other term in this Covenant, or of any rights of Ecology under this Covenant.

d. The Grantor shall be responsible for all costs associated with implementation of this Covenant. Furthermore, the Grantor, upon request by Ecology, shall be obligated to pay for Ecology's costs to process a request for any modification or termination of this Covenant and any approval required by this Covenant.

e. This Covenant shall be liberally construed to meet the intent of MTCA, Solid Waste Management – Reduction and Recycling, chapter 70.95 RCW, and UEAC.

f. The provisions of this Covenant shall be severable. If any provision in this Covenant or its application to any person or circumstance is held invalid, the remainder of this Covenant or its application to any person or circumstance is not affected and shall continue in full force and effect as though such void provision had not been contained herein.

g. A heading used at the beginning of any section or paragraph or exhibit of this Covenant may be used to aid in the interpretation of that section or paragraph or exhibit but does not override the specific requirements in that section or paragraph.



The undersigned Grantor warrants he/she holds the title to the Property and has authority to execute this Covenant.

EXECUTED this 9th day of August, 2019.

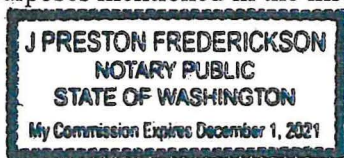
CITY OF WALLA WALLA

[Signature]
NABIEL SHAWA
CITY MANAGER, CITY OF WALLA WALLA

REPRESENTATIVE ACKNOWLEDGEMENT

STATE OF WASHINGTON
COUNTY OF WALLA WALLA

On this 9th day of AUGUST, 2019, I certify that NABIEL SHAWA personally appeared before me, acknowledged that he/she signed this instrument, on oath stated that he/she was authorized to execute this instrument, and acknowledged it as the CITY MANAGER [TYPE OF AUTHORITY] of THE CITY OF WALLA WALLA [NAME OF PARTY BEING REPRESENTED] to be the free and voluntary act and deed of such party for the uses and purposes mentioned in the instrument.



[Signature]
Notary Public in and for the State of Washington
Residing at WALLA WALLA, WA
My appointment expires DEC. 1, 2021

The Department of Ecology, hereby accepts the status as GRANTEE and HOLDER of the above Environmental Covenant.

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

[Signature]
LAURIE DAVIES

PROGRAM MANAGER, SOLID WASTE MANAGEMENT PROGRAM

Dated: 8/27/19

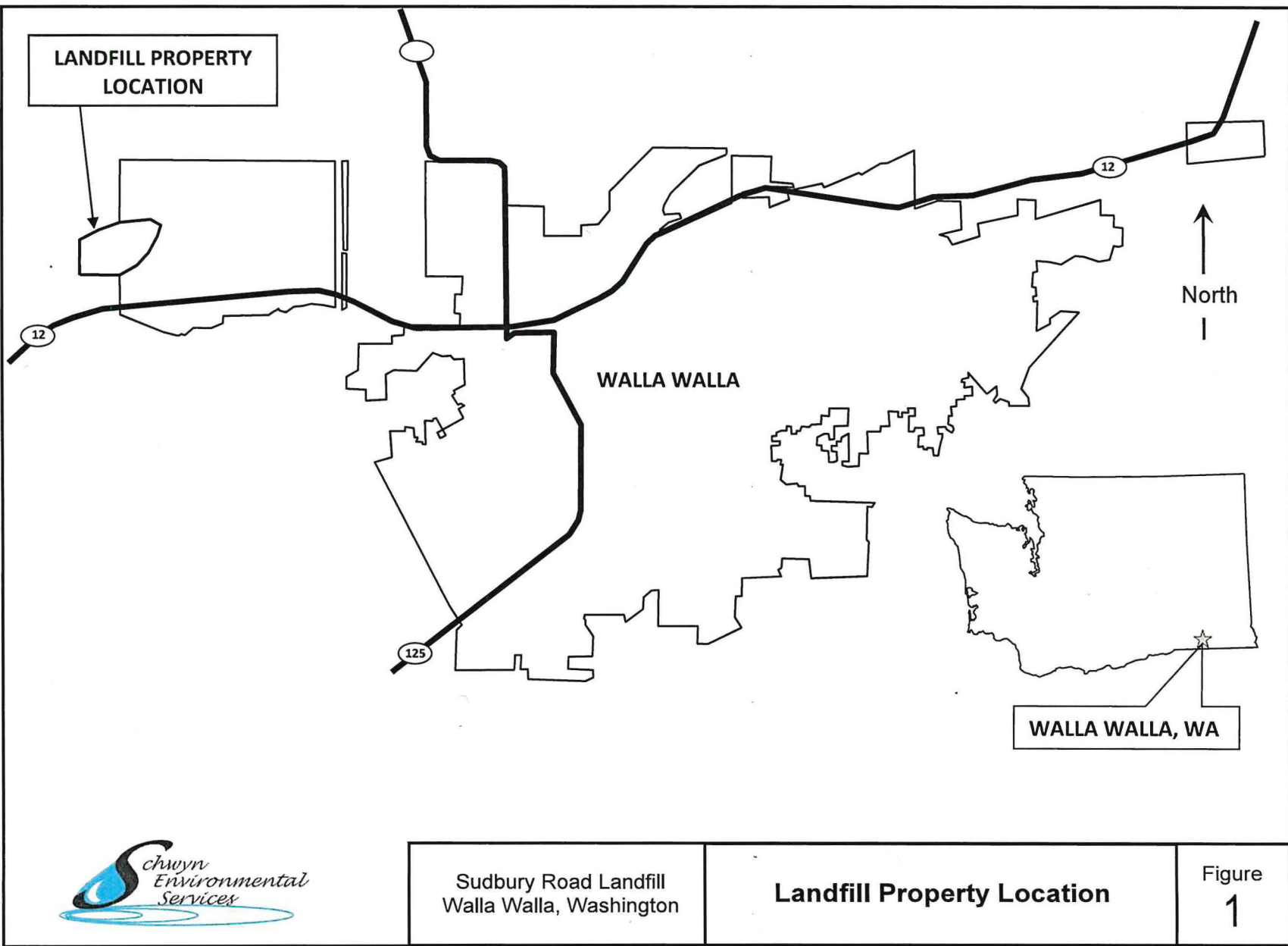


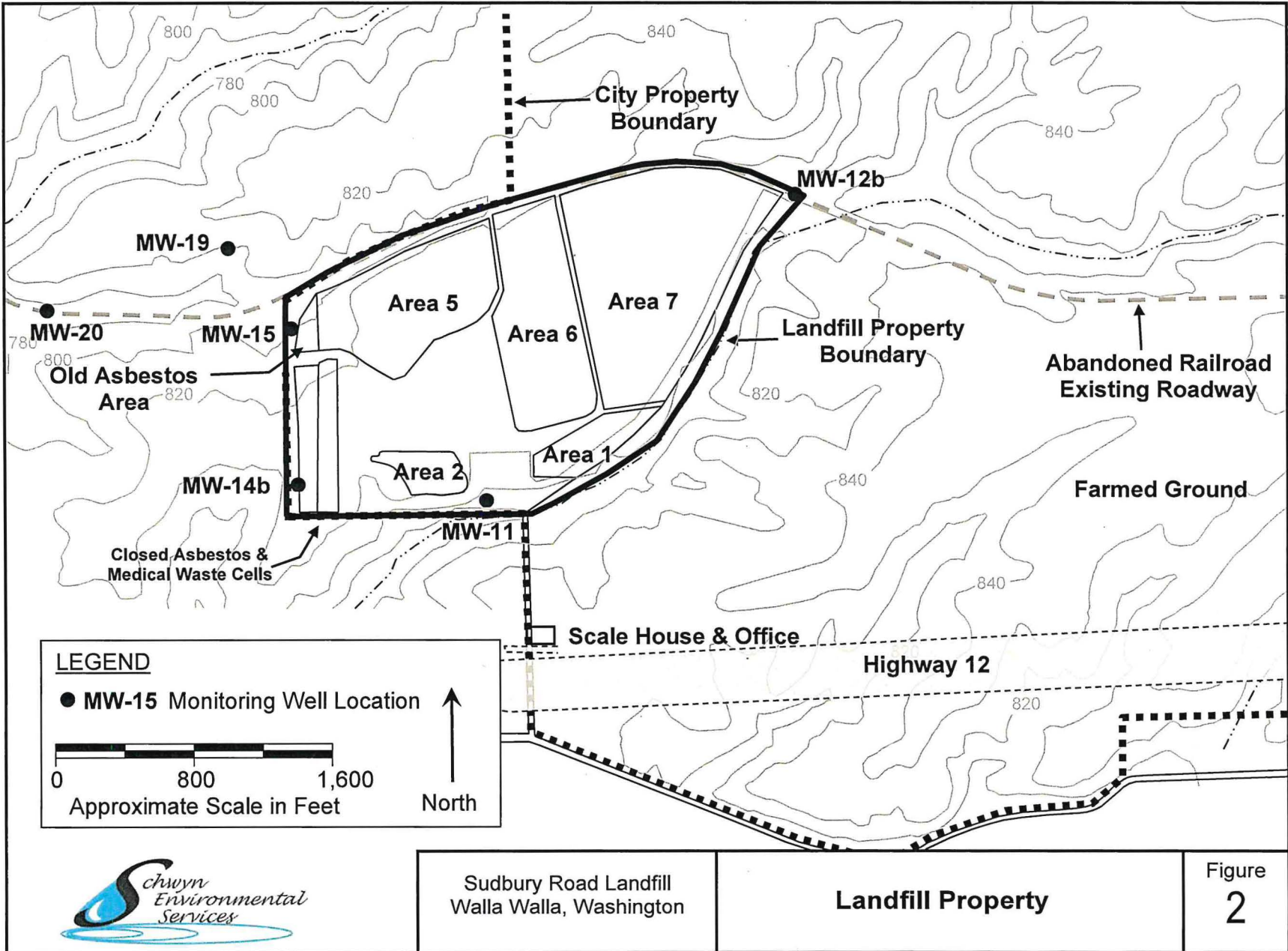
Figures 1 and 2

**Exhibit A
Legal Description of Property**



2019-08284 CV
10/16/2019 10:21:40 AM Page 8 of 11 Fees: 113.50
Karen Martin County Auditor, Walla Walla County WA





2019-08284 CV
 10/16/2019 10:21:40 AM Page 9 of 11 Fees: 113.50
 Karen Marlin County Auditor, Walla Walla County WA

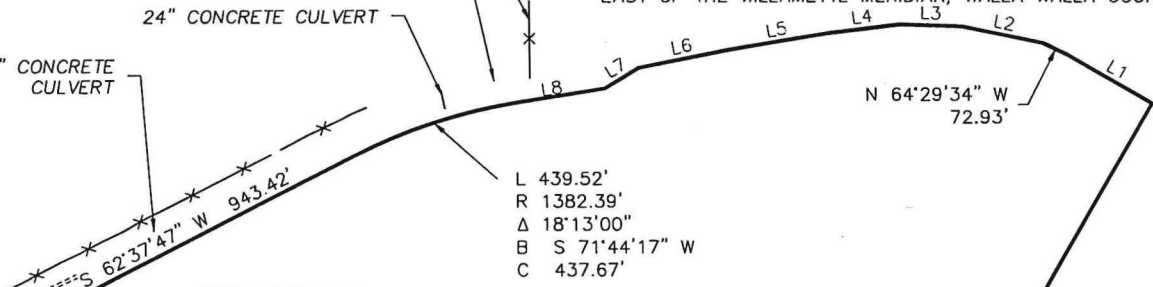
EXHIBIT A

SUDBURY LANDFILL

BEING PORTIONS OF THE SOUTH HALF OF THE SOUTHWEST QUARTER OF SECTION 14, PORTIONS OF THE SE QUARTER OF THE SOUTHWEST QUARTER OF SECTION 15 THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 22 AND PORTIONS OF THE NORTH HALF OF THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 23 ALL IN TOWNSHIP 7 NORTH, RANGE 35 EAST OF THE WILLAMETTE MERIDIAN, WALLA WALLA COUNTY, WASHINGTON.

LINE COMMON TO SECTIONS 14 AND 15 COMPUTED FROM HISTORICAL DATA NOT BASED ON AN ACTUAL ON THE GROUND SURVEY RAILROAD CENTERLINE BASED ON RECORD DATA AND THE PHYSICAL LOCATION OF EVIDENCE OF THE RAILROAD GRADE LOCATION

24" CONCRETE CULVERT
24" CONCRETE CULVERT



| LINE | BEARING | DISTANCE |
|------|---------------|----------|
| L1 | N 59°34'54" W | 247.91' |
| L2 | N 78°20'11" W | 211.73' |
| L3 | N 88°04'05" W | 160.68' |
| L4 | S 82°44'11" W | 184.25' |
| L5 | S 80°37'10" W | 261.09' |
| L6 | S 78°53'40" W | 236.66' |
| L7 | S 58°27'05" W | 103.88' |
| L8 | N 80°50'47" E | 231.16' |

95.68 Acres

WEST LINE OF THE NE 1/4 OF THE NE 1/4 OF SECTION 22 COMPUTED FROM HISTORICAL DATA NOT BASED ON AN ACTUAL ON THE GROUND SURVEY

SW CORNER OF THE NE 1/4 OF THE NE 1/4 OF SECTION 22 COMPUTED FROM HISTORICAL DATA NOT BASED ON AN ACTUAL ON THE GROUND SURVEY

SOUTH LINE OF THE NE 1/4 OF THE NE 1/4 OF SECTION 22 COMPUTED FROM HISTORICAL DATA NOT BASED ON AN ACTUAL ON THE GROUND SURVEY

LINE COMMON TO SECTIONS 22 AND 23 COMPUTED FROM HISTORICAL DATA NOT BASED ON AN ACTUAL ON THE GROUND SURVEY

THIS LINE HAS BEEN BASED ON THE 2014 LANDFILL TOPOGRAPHIC SURVEY



08/08/2019

| | |
|------------------------------|---------------------|
| CLIENT: SCHWYN ENVIRONMENTAL | PROJECT NO.: 3975 |
| SURVEYOR: GREG E. FLOWERS | DATE: 08/08/2019 |
| CALC BY: GEF | DRAWN BY: GEF |
| SECTION: 23 | TOWNSHIP: 7 NORTH |
| CITY: WALLA WALLA | COUNTY: WALLA WALLA |
| SCALE: 1" = 400' | |
| RANGE: 35 EAST | |
| SHEET 1 OF 1 | |

PBS Engineering and Environmental Inc.
5 N Colville St, Ste 200
Walla Walla, WA 99362
509.956.3026
pbsusa.com

PBS

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Karen Martin County Auditor, Walla Walla County WA



Landfill Area Legal Description

Portions of the south half of the Southwest Quarter of Section 14, portions of the Southeast Quarter of the Southeast Quarter of Section 15, the Northeast Quarter of the Northeast Quarter of Section 22 and portions of the north half of the Northwest Quarter of Section 23 all in Township 7 North, Range 35 East of the Willamette Meridian, Walla Walla County, Washington being more particularly described as follows:

Beginning at the Southwest corner of the Northeast Quarter of the Northeast Quarter of Section 22, Township 7 North, Range 35 East of the Willamette Meridian, Walla Walla County, State of Washington and running thence N87°25'36"E, along the South line of the Northeast Quarter of the Northeast Quarter of said Section 22 and the easterly prolongation thereof, a distance of 1347.39 feet to a point on the easterly side of the primary access road to the City of Walla Walla Sudbury Landfill; thence N03°53'20"W a distance of 104.02 feet; thence N86°28'13"E a distance of 263.78 feet; thence N69°42'55"E a distance of 252.96 feet; thence N60°38'11"E a distance of 221.90 feet; thence N43°28'18"E a distance of 127.56 feet; thence N36°48'34"E a distance of 223.99 feet; thence N26°24'52"E a distance of 500.49 feet; thence N19°07'36"E a distance of 298.52 feet; thence N29°52'06"E a distance of 555.89; thence N59°34'54"W a distance of 247.91 feet; thence N64°29'34"W a distance of 72.93 feet; thence N78°20'11"W a distance of 211.73 feet; thence N88°04'05"W a distance of 160.68 feet; thence S82°44'11"W a distance of 184.25 feet; thence S80°37'10"W a distance of 261.09 feet; thence S78°53'40"W a distance of 236.66 feet; thence S58°27'05"W a distance of 103.88 feet; thence S80°50'47"W a distance of 231.16 feet; thence with a curve turning to the left with an arc length of 439.52 feet, with a radius of 1382.39 feet, with a chord bearing of S71°44'17"W, with a chord length of 437.67feet; thence S62°37'47"W a distance of 943.42 feet to a point on the west line of the Northeast Quarter of the Northeast Quarter of said Section 22; thence S01°41'22"E, along the west line of the Northeast Quarter of the Northeast Quarter of said Section 22, a distance of 1293.52 feet to the point of beginning,

Having an area of 95.68 acres, more or less.



landfill area legal description.doc, 8/8/2019

5.5 Photo log



Photo 1 Photo showing condition of north drainage ditch during an inspection for the periodic review.



Photo 2 Photo showing condition of cap over part of Area 5 during an inspection for the periodic review.



Photo 3 Photo showing condition of cap over part of Area 6 during an inspection for the periodic review.