State of Utah

SPENCER J. COX
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Lieutenant Governor

Department of
Environmental Quality

Kimberly D. Shelley
Executive Director

DIVISION OF WASTE MANAGEMENT
AND RADIATION CONTROL
Ty L. Howard
Director

March 26, 2021

Jaren Scott, O&M Committee Chair
Northern Utah Environmental Resource Agency
1997 East 3500 North
Layton, UT 84040

RE: Permit to Operate the Class I Bayview Landfill, Utah County
SW118

Dear Mr. Scott:

Enclosed is the approved permit for the Class I Bayview Landfill. The public comment period for the permit ended on March 3, 2021. No comments were received.

Periodic inspections of the landfill will be conducted by representatives of the Division of Waste Management and Radiation Control and the Utah County Health Department to assess compliance with permit conditions and applicable Solid Waste Rules.

If you have any questions, please call Matt Sullivan at (801) 536-0241.

Sincerely,

Ty L. Howard, Director
Division of Waste Management and Radiation Control

TLH/MS/wa

Enclosures: Bayview Landfill Permit (DSHW-2020-000422)
Attachment 1 – Operations Plan (DSHW-2020-015707)
Attachment 2 – Groundwater Monitoring Plan (DSHW-2020-015709)
Statement of Basis (DSHW-2021-003242)

c: Juli McIntosh, NUERA Records Clerk and Recorder (Email)
Eric Edwards, Health Officer, Utah County Health Department
Tyler Plewe, Environmental Health Director, Utah County Health Department

195 North 1950 West • Salt Lake City, UT
Mailing Address: P.O. Box 144880 • Salt Lake City, UT 84114-4880
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DIVISION OF WASTE MANAGEMENT AND RADIATION CONTROL SOLID WASTE LANDFILL PERMIT

Bayview Landfill

Pursuant to the provisions of the Utah Solid and Hazardous Waste Act, Title 19, Chapter 6, Part 1, Utah Code Annotated (Utah Code Ann.) (the Act) and the Utah Solid Waste Permitting and Management Rules, R315-301 through 320 of the Utah Administrative Code adopted thereunder, a Permit is issued to:

Northern Utah Environmental Resource Agency
as owner and operator (Permittee),

to own and operate the Class I Bayview Landfill located in Utah County, Utah as shown in the Permit Renewal Application that was determined complete on October 30, 2020 (tracking number DSHW-2019-014268).

The Permittee is subject to the requirements of R315-301 through 320 of the Utah Administrative Code and the requirements set forth herein.

All references to R315-301 through 320 of the Utah Administrative Code are to regulations that are in effect on the date that this permit becomes effective.

This Permit shall become effective March 26, 2021.

This Permit shall expire at midnight March 25, 2031.

Closure Cost Revision Date: March 26, 2026.

Signed this 26th day of March 2021.

Ty L. Howard, Director
Division of Waste Management and Radiation Control

FACILITY OWNER/OPERATOR INFORMATION

LANDFILL NAME:	Bayview Landfill, Class I Landfill
FACILITY OWNER NAME:	Northern Utah Environmental Resource Agency
FACILITY OWNER ADDRESS:	1997 East 3500 North, Layton, Utah 84040
FACILITY OWNER PHONE NO.:	(801) 614-5600
FACILITY OPERATOR NAME:	Same as above
FACILITY OPERATOR ADDRESS:	Same as above
FACILITY OPERATOR PHONE NO.:	(801) 614-5600
TYPE OF PERMIT:	Class I Landfill
FACILITY LOCATION	10800 S. Utah State Route 68, Utah County (Approximately 6 miles north of Elberta, on the west side of Utah State Route 68.)
PERMIT NUMBER:	9420R3
Location	Township 9 South, Range 1West, Sections 17 and 18, SLMB; Utah County, Latitude 40º 02' 0", Longitude 111º 57' 30" in Utah County
PERMIT HISTORY	This facility first received a permit to accept solid waste in 1991. This is the third permit renewal. This permit renewal is effective upon the date shown on the signature page.

The term, "Permit," as used in this document is defined in R315-301-2(55) of the Utah Administrative Code. Director as used throughout this permit refers to the Director of the Division of Waste Management and Radiation Control.

The Permit renewal application for Bayview Landfill on October 30, 2019 (tracking number DSHW-2019-014268) was deemed complete on the date shown on the signature page of this Permit. All representations made in the attachments of this permit are enforceable under R315-301-5(2) of the Utah Administrative Code. Where differences in wording exist between this Permit and the attachments, the wording of this Permit supersedes that of the attachments.

This Permit consists of the signature page, Facility Owner/Operator Information section, sections I through IV, and all attachments to this Permit.

The facility as described in this Permit is a Class I landfill with lined disposal cells, a heavy equipment maintenance building and staff break room, Cell 1 (lined and east side active), and Cells 1.5 and 2 (open, active, and lined). Cell 1.5 was constructed in March and April of 2020. The facility has two retention ponds east northeast of the Cell 2. One retention pond is designed to capture precipitation surface runoff from a former compost pad operation. The other is duel-lined and designed to capture any leachate from Cell 2.

Compliance with this Permit does not constitute a defense to actions brought under any other local, state, or federal laws. This Permit does not exempt the Permittee from obtaining any other local, state or federal permits or approvals required for the facility operation.

The issuance of this Permit does not convey any property rights, other than the rights inherent in this Permit, in either real or personal property, or any exclusive privileges other than those inherent in this Permit. Nor does this Permit authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations, including zoning ordinances.

The provisions of this Permit are severable. If any provision of this Permit is held invalid for any reason, the remaining provisions shall remain in full force and effect. If the application of any provision of this Permit to any circumstance is held invalid, its application to other circumstances shall not be affected.

By this Permit, the Permittee is subject to the following conditions.

PERMIT REQUIREMENTS

I. GENERAL COMPLIANCE RESPONSIBILITIES

I.A. General Operation

I.A.1. The Permittee shall operate the landfill in accordance with all applicable requirements of R315-301 through 320 of the Utah Administrative Code (UAC), for a Class I landfill, that are in effect as of the date of this Permit unless otherwise noted in this Permit. Any permit noncompliance or noncompliance with any applicable portions of Utah Code Ann. § 19-6-101 through 125 and applicable portions of R315-301 through 320 of the Utah Administrative Code constitutes a violation of the Permit or applicable statute or rule and is grounds for appropriate enforcement action, permit revocation, modification, termination, or denial of a permit renewal application.

I.B. Acceptable Waste

I.B.1. This Permit is for the disposal of non-hazardous solid waste that may include:

I.B.1.a Municipal solid waste as defined by R315-301-2(47) of the Utah Administrative Code;

I.B.1.b Commercial solid waste as defined by R315-302-2(14) of the Utah Administrative Code;

I.B.1.c Industrial solid waste as defined by R315-302-2(35) of the Utah Administrative Code;

I.B.1.d Construction/demolition solid waste as defined by R315-301-2(17) of the Utah Administrative Code;

I.B.1.e Special waste as allowed by R315-315 of the Utah Administrative Code and authorized in section II.H of this Permit and limited by this section;

I.B.1.f Hazardous waste generated by a very small quantity generator as specified in R315-262-14 of the Utah Administrative Code; and

I.B.1.g PCB's as specified by R315-315-7(2) of the Utah Administrative Code.

I.B.1.h The Permittee is authorized under this Permit to receive PCB wastes as defined in R315-315-7(3)(b) of the Utah Administrative Code for PCB wastes approved by the Director.

I.B.1.i Acceptable wastes are restricted to wastes that are received under sole contracts with local governments, within Utah, for waste generated within the boundaries of the local government. Each contract shall be approved by the Director prior to acceptance of the waste at the landfill.

I.C. Prohibited Waste

I.C.1. Hazardous waste as defined by R315-261-3 of the Utah Administrative Code except as allowed in permit condition I.B.1.f (Acceptable Waste) above;

I.C.2. Containers larger than household size (five gallons) holding any liquid; non-containerized material containing free liquids; or any waste containing free liquids in containers larger than five gallons;

I.C.3. PCB's as defined by R315-301-2(53) of the Utah Administrative Code, except as allowed in Section I.B (Acceptable Waste) of this Permit;

I.C.4. Regulated asbestos-containing material;

I.C.5. All wastes not received by contracts approved by the Director, and

I.C.6. Any prohibited waste received and accepted for treatment, storage, or disposal at the facility shall constitute a violation of this Permit, of Utah Code Ann. § 19-6-101 through 125 and R315-301 through 320 of the Utah Administrative Code.

I.D. Inspections and Inspection Access

I.D.1. The Permittee shall allow the Director or an authorized representative, or representatives from the Utah County Health Department, to enter at reasonable times and:

I.D.1.a Inspect the landfill or other premises, practices or operations regulated or required under the terms and conditions of this Permit or R315-301 through 320 of the Utah Administrative Code;

I.D.1.b Have access to and copy any records required to be kept under the terms and conditions of this Permit or R315-301 through 320 of the Utah Administrative Code;

I.D.1.c Inspect any loads of waste, treatment facilities or processes, pollution management facilities or processes, or control facilities or processes required under this Permit or regulated under R315-301 through 320 of the Utah Administrative Code; and

I.D.1.d Create a record of any inspection by photographic, video, electronic, or any other reasonable means.

I.E. Noncompliance

I.E.1. If monitoring, inspecting, or testing indicates that any permit condition or any applicable rule under R315-301 through 320 of the Utah Administrative Code may be or is being violated, the Permittee shall promptly make corrections to the operation or other activities to bring the facility into compliance with all permit conditions or rules.

I.E.2. In the event of noncompliance with any permit condition or violation of an applicable rule, the Permittee shall promptly take any action reasonably necessary to correct the noncompliance or violation and mitigate any risk to human health or the environment. Actions may include eliminating the activity causing the noncompliance or violation

and containment of any waste or contamination using barriers or access restrictions, placing of warning signs, or permanently closing areas of the facility.

I.E.3. The Permittee shall:

I.E.3.a Document the noncompliance or violation in the daily operating record, on the day the event occurred or the day it was discovered;

I.E.3.b Notify the Director by telephone within 24 hours, or the next business day following documentation of the event; and

I.E.3.c Give written notice of the noncompliance or violation and measures taken to protect human health and the environment within seven days after Director notification.

I.E.4. Within thirty days after the documentation of the event, the Permittee shall submit to the Director a written report describing the nature and extent of the noncompliance or violation and the remedial measures taken or to be taken to protect human health and the environment and to eliminate the noncompliance or violation. Upon receipt and review of the assessment report, the Director may order the Permittee to perform appropriate remedial measures including development of a site remediation plan for approval by the Director.

I.E.5. In an enforcement action, the Permittee may not claim as a defense that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with R315-301 through 320 of the Utah Administrative Code and this Permit.

I.F. Revocation

I.F.1. This Permit is subject to revocation if the Permittee fails to comply with any condition of the Permit. The Director will notify the Permittee in writing prior to any proposed revocation action and such action shall be subject to all applicable hearing procedures established under R305-7 of the Utah Administrative Code and the Utah Administrative Procedures Act.

I.G. Attachment Incorporation

I.G.1. Attachments to the Permit Application are incorporated by reference into this Permit and are enforceable conditions of this Permit, as are documents incorporated by reference into the attachments. Language in this Permit supersedes any conflicting language in the attachments or documents incorporated into the attachments.

I.H. DESIGN AND CONSTRUCTION

I.H.1. Design and Construction

I.H.1.a The Permittee shall construct any landfill cell, sub-cell, run-on diversion system, runoff containment system, waste treatment facility, leachate handling system, or final cover in accordance with the design submitted as part of the Permit Application and in accordance with R315-301 thru 320 of the Utah Administrative Code.

Prior to construction of any landfill cell, sub-cell, engineered control system, waste treatment facility, leachate handling system, or final cover, the Permittee shall submit construction design drawings and Construction Quality Control and Construction Quality Assurance (CQC/CQA) Plans to the Director for approval. Approved design drawings and CQA/CQC plans may be incorporated into this permit through modification if the design significantly varies from the approved proposed design. Buildings do not require approval. The Permittee shall construct any landfill cell, sub-cell, cell liner, engineered control system, waste treatment facility, leachate handling system, and final cover in accordance with the design drawings and CQC/CQA Plans submitted to and approved by the Director.

Subsequent to construction, the Permittee shall notify the Director of completion of construction of any landfill cell, sub-cell, engineered control system, waste treatment facility, or final cover. Landfill cells may not be used for treatment or disposal of waste until all CQC/CQA documents and construction-related documents, including as-built drawings, are approved by the Director and this permit has been modified to reflect these changes. The Permittee shall submit as-built drawings for each construction event that are stamped and approved by an engineer registered in the State of Utah.

The Permittee shall notify the Director of any proposed incremental closure, placement of any part of the final cover, or placement of the full final cover. Design approval must be received from the Director and this permit modified prior to construction. The design shall be accompanied by a CQC/CQA Plan, for each construction season where incremental or final closure is performed.

A qualified party, independent of the owner and the construction contractor, shall perform the quality assurance function on liner components, cover components, and other testing as required by the approved CQC/CQA Plan. The results shall be submitted to the Director as part of the as-built drawings.

All engineering drawings submitted to the Director shall be stamped and approved by a professional engineer with a current registration in Utah.

If ground water is encountered during excavation of the landfill, the Director shall be notified immediately, and a contingency plan implemented or an alternative construction design shall be developed and submitted for approval.

I.H.2. Run-On Control

I.H.2.a The Permittee shall construct drainage channels and diversions as specified in the Permit Application and shall maintain them at all times to effectively prevent runoff from the surrounding area from entering the landfill.

I.H.3. Equivalent Design

The Permittee proposed a landfill liner design that uses a geosynthetic clay liner in place of the clay component of the liner required by R315-303-3(3)(a)(ii) of the Utah Administrative Code. The proposed liner has been approved.

II. LANDFILL OPERATION

II.A. Operations Plan

II.A.1. The Permittee shall keep the Operations Plan, in Attachment 1, on site at the landfill or at the location designated in section II.J of this Permit. The Permittee shall operate the landfill in accordance with the operations plan. If necessary, the Permittee may modify the Operations Plan, provided that the modification meets all of the requirements of R315-301 through 320 of the Utah Administrative Code, and is approved by the Director as a minor modification under R315-311-2 of the Utah Administrative Code. The Permittee shall note any modification to the Operations Plan in the daily operating record.

II.A.2. The Permittee shall submit any modification to the Operations Plan to the Director for approval.

II.A.3. Security

II.A.3.a The Permittee shall operate the Landfill so that unauthorized entry to the facility is restricted. The Permittee shall:

II.A.3.b Lock all facility gates and other access routes during the time the landfill is closed.

II.A.3.c Have at least two persons employed by the Permittee at the landfill during all hours that the landfill is open.

II.A.3.d Construct all fencing and any other access controls as shown in the Permit Application to prevent access by persons or livestock by other routes.

II.B. Training

II.B.1. The Permittee shall provide training for on-site personnel in landfill operation, including waste load inspection, hazardous waste identification, and personal safety and protection.

II.C. Burning of Waste

II.C.1. Intentional burning of solid waste is prohibited and is a violation of R315-303-4(2)(b) of the Utah Administrative Code.

II.C.2. The Permittee shall extinguish all accidental fires as soon as reasonably possible.

II.D. Daily Cover

II.D.1. The Permittee shall completely cover the solid waste received at the landfill at the end of each working day with a minimum of six inches of earthen material.

II.D.2. The Permittee may use an alternative daily cover material when the material and the application of the alternative daily cover meets the requirements of R315-303-4(4)(b) through (e) of the Utah Administrative Code. Oversized wood chips may be used as an alternative daily cover material.

II.D.2.a The Permittee shall record alternative daily cover use dates in the facility daily operating log.

II.D.2.b The Director may rescind or amend the alternative daily cover approval if the requirements to prevent blowing debris, to minimize access to the waste by vectors, to minimize the threat of fires at the open face, to minimize odors, or to shed precipitation are not met, or if necessary to prevent nuisance conditions or adverse impacts to human health or the environment.

II.E. Ground Water Monitoring

II.E.1. The Permittee shall monitor the ground water underlying the landfill in accordance with the Groundwater Monitoring Plan in Attachment 2. If necessary, the Permittee may modify the Groundwater Monitoring Plan, provided that the modification meets all of the requirements of R315-301 through 320 of the Utah Administrative Code and is approved by the Director as a minor modification under R315-311-2(1)(a) of the Utah Administrative Code. The Permittee shall note in the daily operating record any modification to the Ground Water Monitoring Plan and the Ground Water Monitoring Quality Assurance/Quality Control Plan. A plan change that the Director finds to be less protective of human health or the environment than the approved plan is a major modification and is subject to the requirements of R315-311 of the Utah Administrative Code.

II.F. Gas Monitoring

II.F.1. The Permittee shall monitor explosive gases at the landfill in accordance with the Gas Monitoring Plan contained in the Permit Application and shall otherwise meet the requirements of R315-303-3(5) of the Utah Administrative Code. If necessary, the Permittee may modify the Gas Monitoring Plan, provided that the modification meets all of the requirements of R315-301 through 320 of the Utah Administrative Code and is approved by the Director as a minor modification under R315-311-2(1) of the Utah Administrative Code. The Permittee shall note any modification to the Gas Monitoring Plan in the daily operating record.

II.F.2. If the concentrations of explosive gases at any of the facility structures, at the property boundary, or beyond the property boundary ever exceed the standards set in R315-303-2(2)(a) of the Utah Administrative Code, the Permittee shall:

II.F.2.a Immediately take all necessary steps to ensure protection of human health and notify the Director;

II.F.2.b Within seven days of detection, place in the daily operating record the explosive gas levels detected and a description of the immediate steps taken to protect human health;

II.F.2.c Implement a remediation plan that meets the requirements of R315-303-3(5)(b) of the Utah Administrative Code; and

II.F.2.d Submit the plan to, and receive approval from, the Director prior to implementation.

II.G. Waste Inspections

II.G.1. The Permittee shall visually inspect incoming waste loads to verify that no wastes other than those allowed by this permit are disposed in the landfill. The Permittee shall conduct a complete waste inspection at a minimum frequency of 1% of incoming loads. The Permittee shall select the loads to be inspected on a random basis.

II.G.2. The Permittee shall inspect all loads suspected or known to have one or more containers capable of holding more than five gallons of liquid to ensure that each container is empty.

II.G.3. The Permittee shall inspect all loads that the Permittee suspects may contain a waste not allowed for disposal at the landfill.

II.G.4. The Permittee shall conduct complete random inspections as follows:

II.G.4.a The Permittee shall conduct the random waste inspection at the working face or an area designated by the Permittee.

II.G.4.b The Permittee shall direct that loads subjected to complete inspection be unloaded at the designated area;

II.G.4.c Loads shall be spread by equipment or by hand tools;

II.G.4.d Personnel trained in hazardous waste recognition and recognition of other unacceptable waste shall conduct a visual inspection of the waste; and

II.G.4.e Personnel conducting the inspection shall record the results of the inspection on a waste inspection form as found in Attachment 1 of this Permit. The Permittee shall place the form in the daily operating record at the end of the operating day.

II.G.4.f The Permittee or the waste transporter shall properly dispose of any waste found that is not acceptable at the facility at an approved disposal site for the waste type and handle the waste according to the rules covering the waste type.

II.H. Disposal of Special Wastes

II.H.1. If a load of incinerator ash is accepted for disposal, the Permittee shall transport it to the place of disposal in such a manner as to prevent leakage or the release of fugitive dust. The Permittee shall completely cover the ash with a minimum of six inches of material, or the Permittee shall use other methods or material, if necessary, to control

fugitive dust. The Permittee may use ash for daily cover when its use does not create a human health or environmental hazard.

The Permittee may dispose of animal carcasses may in the landfill working face and shall cover them with other solid waste or earth by the end of the operating day in which the carcasses are received. Alternatively, the Permittee may dispose of animal carcasses in a special trench or pit prepared for the acceptance of dead animals. If a special trench is used, the Permittee shall cover animals placed in the trench with six inches of earth by the end of each operating day.

The Permittee shall handle and dispose of asbestos waste in accordance with R315-315-2 of the Utah Administrative Code.

II.I. Self-Inspections

II.I.1. The Permittee shall inspect the facility to prevent malfunctions and deterioration, operator errors, and discharges that may cause or lead to the release of wastes or contaminated materials to the environment or create a threat to human health or the environment. The Permittee shall complete these general inspections no less than quarterly and shall cover the following areas: Waste placement, compaction, cover; cell liner; leachate systems; fences and access controls; roads; run-on/run-off controls; ground water monitoring wells; final and intermediate cover; litter controls; and records. The Permittee shall place a record of the inspections in the daily operating record on the day of the inspection. The Permittee shall correct the problems identified in the inspections in a timely manner and document the corrective actions in the daily operating record. Inspection forms are in Attachment 1.

II.J. Recordkeeping

II.J.1. The Permittee shall maintain and keep on file at the administrative office on site a daily operating record and other general records of landfill operation as required by R315-302-2(3) of the Utah Administrative Code. The landfill operator, or other designated personnel, shall date and sign the daily operating record at the end of each operating day. Each record shall contain the signature of the appropriate operator or personnel and the date signed. The daily operating record shall consist of the following two types of documents:

II.J.1.a Records related to the daily landfill operation or periodic events including:

II.J.1.a.(i) The number of loads of waste and the weights or estimates of weights or volume of waste received each day of operation and recorded at the end of each operating day;

II.J.1.a.(ii) Major deviations from the approved plan of operation, recorded at the end of the operating day the deviation occurred;

II.J.1.a.(iii) Results of monitoring required by this Permit, recorded in the daily operating record on the day of the event or the day the information is received;

II.J.1.a.(iv) Records of all inspections conducted by the Permittee, results of the inspections, and corrective actions taken, recorded in the record on the day of the event.

II.J.1.b Records of a general nature including:

II.J.1.b.(i) A copy of this Permit, including the Permit Application;

II.J.1.b.(ii) Results of inspections conducted by representatives of the Director, and of representatives of the local Health Department, when forwarded to the Permittee;

II.J.1.b.(iii) Closure and Post-closure care plans; and

II.J.1.b.(iv) Records of employee training.

II.K. Reporting

II.K.1. The Permittee shall prepare and submit to the Director an Annual Report as required by R315-302-2(4) of the Utah Administrative Code. The Annual Report shall include: the period covered by the report, the annual quantity of waste received, an annual update of the financial assurance mechanism, any leachate analysis results, all ground water monitoring results, the statistical analysis of ground water monitoring results, the results of gas monitoring, the quantity of leachate pumped, and all training programs completed.

II.L. Roads

II.L.1. The Permittee shall improve and maintain all access roads within the landfill boundary that are used for transporting waste to the landfill for disposal shall be improved and maintained as necessary to assure safe and reliable all-weather access to the disposal area.

II.M. Litter Control

II.M.1. Litter resulting from operations of the landfill shall be minimized. In addition to the litter control plans found in the Permit Application, on site or at the administrative office, the Permittee shall implement the following procedures when high wind conditions are present:

II.M.1.a Reduce the size of the tipping face;

II.M.1.b Reduce the number of vehicles allowed to discharge at the tipping face at one time;

II.M.1.c Orient vehicles to reduce wind effects on unloading and waste compaction;

II.M.1.d Reconfigure tipping face to reduce wind effect;

II.M.1.e Use portable and permanent wind fencing as needed; and

II.M.1.f Should high winds present a situation that the windblown litter cannot be controlled, the Permittee shall cease operations of the landfill until the winds diminish.

III. CLOSURE REQUIREMENTS

III.A. Closure

III.A.1. The Permittee shall install final cover of the landfill as shown in the Permit Application. The final cover shall meet, at a minimum, the standard design for closure as specified in R315-303-3(4) of the Utah Administrative Code plus sufficient cover soil or equivalent material to protect the low permeability layer from the effects of frost, desiccation, and root penetration. The Permittee shall submit to the Director a quality assurance plan for construction of the final landfill cover, and approval of the plan shall be received from the Director prior to construction of any part of the final cover at the landfill. A qualified person not affiliated with the Permittee or the construction contractor shall perform permeability testing on the recompacted clay placed as part of the final cover.

This Permittee has demonstrated through geologic, hydrogeologic, climatic, waste stream, cover material properties, infiltration factors, and other factors that the landfill will not contaminate ground water and is approved for the alternative cover design as outlined in the Permit Application. Upon finding by the Director of any contamination of ground water resulting from the landfill, the Director may revoke this alternative cover design approval and the Director may require placement of a cover meeting the requirements of R315-303-3(4)(a) of the Utah Administrative Code or other remedial action as required by the Director.

III.A.2. Title Recording

III.A.2.a The Permittee shall meet the requirements of R315-302-2(6) of the Utah Administrative Code by recording a notice with the Utah County Recorder as part of the record of title that the property has been used as a landfill. The notice shall include waste disposal locations and types of waste disposed. The Permittee shall provide the Director the notice as recorded.

III.B. Post-Closure Care

III.B.1. The Permittee shall perform post-closure care at the closed landfill in accordance with the Post-Closure Care Plan contained in the Permit Application. Post-closure care shall continue until all waste disposal sites at the landfill have stabilized and the finding of R315-302-3(7)(c) of the Utah Administrative Code is made.

III.C. Financial Assurance

III.C.1. The Permittee shall keep in effect and active the currently approved financial assurance mechanism or another approved mechanism that meets the requirements of R315-309 of the Utah Administrative Code and is approved by the Director to cover the costs of closure and post-closure care at the landfill. The Permittee shall adequately fund and maintain the financial assurance mechanisms to provide for the cost of closure at any stage or phase or anytime during the life of the landfill or the permit life, whichever is shorter, and the Permittee shall fully fund the trust fund within ten years of the date waste is first received at the landfill.

III.C.2. With each annual revision of the closure and post-closure care cost estimate, the Permittee shall determine the annual payments to be made to the trust fund by the following formula:

$$NP=[CE-CV]/Y$$

where NP is the next payment, CE is the current cost estimate for closure and post-closure care (updated for inflation or other changes), CV is the current value of the trust fund, and Y is the number of years remaining in the pay-in period.

III.D. Financial Assurance Annual Update

III.D.1. The Permittee shall submit an annual revision of closure and post-closure costs for inflation and financial assurance funding as required by R315-309-2(2) of the Utah Administrative Code, to the Director as part of the annual report. The Permittees shall submit the information as required in R315-309-8 of the Utah Administrative Code and shall meet the qualifications for the Local Government Financial Test.

III.E. Closure Cost and Post-Closure Cost Revision

III.E.1. The Permittee shall submit a complete revision of the closure and post-closure cost estimates by the Closure Cost Revision Date listed on the signature page of this Permit and any time the facility is expanded, any time a new cell is constructed, or any time a cell is expanded.

IV. ADMINISTRATIVE REQUIREMENTS

IV.A. Permit Modification

IV.A.1. Modifications to this Permit may be made upon application by the Permittee or by the Director following the procedures specified in R315-311-2 of the Utah Administrative Code. The Permittee shall be given written notice of any permit modification initiated by the Director.

IV.B. Permit Transfer

IV.B.1. This Permit may be transferred to a new permittee or new permittees by complying with the permit transfer provisions specified in R315-310-11 of the Utah Administrative Code.

IV.C. Expansion

IV.C.1. This Permit is for a Class I Landfill. The permitted landfill shall operate according to the design and Operation Plan described and explained in this Permit. Any expansion of the current footprint designated in the description contained in the Permit Application, but within the property boundaries designated in the Permit Application, shall require submittal of plans and specifications to the Director. The plans and specifications shall be approved by the Director prior to construction.

IV.C.2. Any expansion of the landfill facility beyond the property boundaries designated in the description contained in the Permit Application shall require submittal of a new permit application in accordance with the requirements of R315-310 of the Utah Administrative Code.

IV.D. Any addition to the acceptable wastes described in Section I.B shall require submittal of all necessary information to the Director and the approval of the Director.

IV.D.1. Acceptance for PCB bulk product waste under R315-315-7(3)(b) of the Utah Administrative Code can only be done after submittal of the required information to the Director and modification of Sections I.B and I.C of this Permit. Acceptance of a broader waste stream may also require a new permit and compliance with the requirements for a new permit under R315-301 through 320 of the Utah Administrative Code and Utah Code Ann. § 19-6-108.

IV.E. Expiration

IV.E.1. If the Permittee desires to continue operating this landfill after the expiration date of this Permit, the Permittee shall submit an application for permit renewal at least six months prior to the expiration date, as shown on the signature (cover) page of this Permit. If the Permittee timely submits a permit renewal application and the permit renewal is not complete by the expiration date, this Permit shall continue in force until renewal is completed or denied.

V. ATTACHMENTS

Attachment 1 – Operations Plan
Attachment 2 – Groundwater Monitoring Plan
Statement of Basis

Attachment 1

Operations Plan

SECTION 3 – OPERATIONS PLAN

This Operations Plan has been written to address the requirements of UAC R315-302-2 and briefly describes the operations of the Bayview Landfill. The purpose of the Plan of Operation is to provide the Manager and operating personnel with standard procedures for day-to-day operation of the landfill.

The primary function of the Bayview Landfill is currently to provide for the responsible disposal of MSW wastes generated by the citizens of Utah County. Future landfill operations will accommodate MSW wastes from other NUERA member entities participating in the Bayview Landfill project. The landfill is operated in accordance with the UAC R315-301 through 320.

3.1 SCHEDULE OF CONSTRUCTION

Landfill Cell 1 - Stage 1, the first landfill half-cell, was excavated in 1988. The soils excavated from this half-cell were used to construct portions of the screening berms on the eastern and northern boundaries of the site. The geomembrane lining system for this half- cell was installed during the fall of 1989. Essentially, the construction consisted of: excavating the native soils, compacting the exposed soils to 95% of optimum density (Standard Proctor), installing a geotextile to cushion the overlying geomembrane from underlying soils, installing a 40-mil HDPE geomembrane liner, installing a geotextile to absorb side slope tensile stresses and to transmit leachate, and placing the protective soil cover. Provo City Corporation and design personnel (HDR Engineering, Inc.) provided construction quality assurance observation during the installation of the geosynthetics and during the placement of protective cover soils. Stage 2 of Cell 1 was similarly constructed except that a 60-mil geomembrane was used.

Cell 2 Stage 1 was constructed in early 2004 and provided approximately 5 years of operational life. Cell 2 Stage 2 has been operational since approximately 2009 and is currently serving as the operational area of the landfill.

Currently operations at the Bayview Landfill are associated with Cell #2 Stage 2. All landfill operations consist of the importing, compacting, and covering of wastes with soil. Operations will be modified to accommodate the construction of a new lined landfill cell located between closed Cell 1 and the previously filled Cell 2 operations, the new cell will be identified as Cell 1.5. Appendix E – General Arrangement shows the locations of the landfill cells with regard to surrounding site features.

Cell 1.5 will be filled once construction is complete in the summer of 2020. Once Cell 1.5 starts operation, Cell 2 Stage 3 will be prepared for liner construction in 2022 with Cell 2 Stage 4 slated for liner construction in 2025 or 2026 depending on waste processed at the landfill.

Soil is utilized as the primary cover material on the working faces. Soil excavated in preparation for future cells is utilized as daily and intermediate cover soils.

3.2 WASTE STREAM MANAGEMENT - DESCRIPTION OF HANDLING PROCEDURES

3.2.1 Waste Acceptance

A waste control program designed to detect and deter attempts to dispose of hazardous and other unacceptable wastes will continue to be implemented at the Bayview Landfill in conjunction with the screening operation of the associated transfer stations. The program is designed to protect the health and safety of employees, customers, and the general public, as well as to protect against the contamination of the environment. The landfill is not open for private hauler or citizen self-hauled wastes.

The following procedures are practiced at the Bayview Landfill to deter disposal of hazardous and unacceptable waste. All waste entering are pre-screened for unacceptable materials by transfer station personnel prior to transfer of wastes. The operations at the individual transfer stations are not described in this Operations Plan.

3.2.2 Waste Disposal

Transfer trailers entering the site will be directed by landfill operations personnel to the working face, where the driver will be instructed to discharge the load. Landfill equipment

operators will push the solid waste up the working face using a compactor. The waste will be placed in lifts with a loose thickness of 2 - 3 feet. After the waste has been placed in loose lifts, the operator will run the compactor over all portions of the lift at least two times parallel with the slope (up slope), and at least one time across the slope. There may be times in operating the landfill when pushing uphill may be impractical or poor practice (i.e., when the first lift of waste is placed on protective cover soil.) Equipment operators will also maintain the working face so that it is as small as practical to allow for efficient unloading of transfer trucks, placement and compaction of solid wastes, and minimize the use of cover soils.

3.2.3 Placement of Cover Soils

Cover soils or other approved material will be placed over solid wastes to minimize the potential for nuisance conditions, fire, and disease vector contact with solid wastes. Nuisance conditions include odor generation and air discharges; blowing of plastic and paper wastes; and other conditions that impair the use of adjoining properties.

At the end of each working day, the landfill operators will cover all solid wastes received during that day with daily cover. The daily cover will consist of a minimum of 6 inches of soil excavated from other portions of the landfill site. Daily cover will be placed to minimize the nuisance, fire, and disease vector potential attributable to each day's waste placement.

Whenever a portion of the landfill cell will remain in an inactive condition for an extended period, landfill operators will place an intermediate cover over the inactive portion. The intermediate cover will reduce the potential for wind and water-induced erosion of the cover and reduce the production of leachate and contact stormwater within the landfill cell. The intermediate cover will consist of an additional 6-inches ofsoil.

3.2.4 Special Wastes

3.2.4.1 Used Oil and Batteries

Used oil and batteries will not be accepted at the Bayview Landfill.

3.2.4.2 Bulky Wastes

White goods are not accepted at the Bayview Landfill. Some white goods may be included in wastes transferred through the associated transfer stations.

3.2.4.3 Tires

Tires are not accepted at Bayview Landfill. Some tires may be included in wastes transferred through the associated transfer stations.

3.2.4.4 Dead Animals

Dead animals are accepted at the Bayview Landfill when included in wastes from associated transfer stations.

3.2.4.5 Asbestos Waste

Asbestos wastes are not accepted at Bayview Landfill.

3.2.4.6 Grease Pit and Animal Waste By-Products

Grease pit and animal wastes are not accepted at Bayview Landfill.

3.3 WASTE INSPECTION

3.3.1 Landfill Spotting

Landfill spotting is not utilized at Bayview since the waste has been screened at the transfer stations and Bayview is a commercial operation.

3.3.2 Random Waste Screening

In addition to the random screenings performed at the transfer stations, random inspections of incoming loads are conducted at the landfill according to the schedule established by the landfill management. If frequent violations are detected, additional random checks are scheduled at the discretion of the landfill management.

If a suspicious or unknown waste is encountered, the operator proceeds with the waste screening as follows:

- The driver of the vehicle containing the suspect material is directed to the waste screening area
- The waste screening form is completed
- Protective gear is worn (leather gloves, steel-toed boots, goggles, coveralls, and hard hat)
- The suspect material is spread out with the loader or hand tools and visually examined
- Suspicious marking or materials, like the ones listed below, are investigated further:
    - Containers labeled hazardous
    - Material with unusual amounts of moisture
    - Biomedical (red bag) waste
    - Unidentified powders, smoke, or vapors
    - Liquids, sludges, pastes, or slurries
    - Asbestos or asbestos contaminated materials
    - Batteries
    - Other wastes not accepted by the landfill

The landfill management is called if unstable wastes that cannot be handled safely or radioactive wastes are discovered or suspected. Specific attention will be paid to minimize the disposal of liquids by screening for liquid containers larger than household size, sludge containing free liquids, or any waste containing free liquids. The forms utilized by landfill personnel to record waste screening activities are included in Appendix F.

3.3.3 Removal of Hazardous or Prohibited Waste

Should hazardous or prohibited wastes be discovered during random waste screening or during tipping, the waste is removed from the landfill as follows:

The transfer station where the waste originated will be notified of the prohibited waste and be asked to perform additional waste screening to minimize the likelihood of a repeat event. The landfill management will arrange to have the waste transported to the proper disposal site and then work with the transfer station to determine the responsibility for associated disposal costs. The landfill management will also contact the State of Utah DWMRC about the incident.

A record of the removal of all hazardous or prohibited wastes is kept in the site operational records.

3.3.4 Hazardous or Prohibited Waste Discovered After the Fact

If Hazardous or prohibited wastes are discovered in the landfill, the following procedure is used to remove them:

- Access to the area is restricted
- The landfill management is immediately notified
- The operator will remove the waste from the working face if it is safe to do so
- The waste is isolated in a secure area of the landfill and the area cordoned off
- The Utah County Fire Department is notified
- The Utah County Health Department is also notified

The DWMRC, the transfer station, and the generator (if known) are notified within 24-hours of the discovery. The generator (if known) is responsible for the proper cleanup, transportation, and disposal of the waste.

3.3.5 Notification Procedures

The following agencies and people are contacted if any hazardous materials are discovered at the landfill:

Mark Lamoreaux, Landfill Manager.....(801) 885-4233
Utah County Health Department.....(801) 851-7095
Director, DWMRC.....(801) 536-0200
Utah County Fire Department .....(801) 851-4141

3.4 FACILITY MONITORING AND INSPECTION

3.4.1 Groundwater

The Bayview Landfill has a DWMRC approved groundwater monitoring plan and will continue to follow the plan. This plan includes sampling and analysis plans for the monitoring

of groundwater at the landfill. Appendix G includes a copy of the Groundwater Monitoring Report which details the groundwater sampling and analysis procedures.

3.4.2 Surface Water

Surface water management structure have been previously designed, installed and are currently operating as designed. Calculations of the anticipated run-on and run-off volumes are shown in Appendix H. Run-off from the final cover will be managed by a combination of berms and ditches. The berms will be placed to divert the water around the active area to culverts and a settling pond. Landfill staff will inspect the drainage system monthly. Temporary repairs will be made to any observed deficiencies until permanent repairs can be scheduled. Bayview staff or a licensed general contractor will repair drainage facilities as required.

The Bayview Landfill has an approved Multi-Sector General Permit for Storm Water Discharges Associated with Industrial Activity, Coverage No. UTR000000. A copy of the Storm Water Pollution Prevention Plan is included in Appendix I.

3.4.3 Leachate Collection

The Bayview Landfill has a leachate collection and management system that has been designed, largely constructed and is currently in service. The leachate generation calculations are presented in Appendix J – Leachate Generation Calculations. Appendix K – Engineering Drawings presents the details of the previously designed and constructed leachate system. Appendix K also presents additional details of the liner system and general engineering features previously designed and constructed at the Bayview Landfill.

3.4.4 Landfill Gas

Bayview staff began a landfill gas monitoring program by conducting an initial surface survey for combustible gases, and by purchasing a combustible gas indicator (CGI). During the initial survey, no measurable combustible gases were detected on the site, and landfill gas monitoring stations were established for future monitoring events.

The Bayview staff will continue to conduct combustible gas monitoring at the established stations on a quarterly basis. Landfill staff will coordinate the gas

monitoring events with groundwater monitoring events and will arrange for interpretation of the monitoring results if combustible gases are detected at any station.

If methane releases are detected in excess of 25 percent of the LEL, in the landfill building or more than 100 percent of LEL at the property boundary, the procedure outlined in the "Explosive Gases" section is followed.

The Bayview Landfill has a Title V Operating Permit issued from the Division of Air Quality. A copy of the most current Annual Title V Compliance Reports is included in Appendix L – Annual Title V Compliance Reports.

3.4.5 General Inspections and Quarterly Inspection

Routine inspections are necessary to prevent system malfunctions, facility deterioration, operator errors, and discharges that may cause or lead to release of wastes to the environment or a threat to human health. Operators are responsible for conducting and recording routine inspections of the landfill facilities according to the following schedule:

Operators perform pre-operational inspections of all equipment daily. A post-operational inspection is performed at the end of each shift while equipment is cooling down.

All equipment is on a regular maintenance schedule. A logbook is maintained on each piece of equipment and any repairs and comments concerning the inspection are contained in the log. Oil samples are pulled when each machine is serviced, and results are recorded in the machine log.

Facility inspections are completed on a quarterly basis. Any needed corrective action items are recorded, and the Operators complete needed repairs. If a problem is of an urgent nature, the problem is corrected immediately.

Scale maintenance is performed annually at a minimum. If specific problems arise before scheduled maintenance, scale maintenance is done as required. The scale is certified on an annual basis.

The quarterly inspection is performed by a team of qualified landfill employees and is intended to asses the condition of the following area of the landfill. This include dust control activities, cover condition, waste control, perimeter fence, run-off/ run-on system, roads, buildings, groundwater monitoring wells, compost area, tipping face, and general site conditions. The forms utilized by landfill personnel to record general and quarterly inspection activities are included in Appendix F.

3.5 CONTIGENCY AND CORRECTIVE ACTION PLANS

The following sections outline procedures to be followed in case of fire, explosion, groundwater contamination, release of explosive gases, or failure of the storm water management system.

The Utah County Fire Department is contacted in all cases where hazardous materials or materials contaminated with PCB's are suspected to be involved.

3.5.1 Fire

The potential for fire is a concern in all landfills. The likelihood of a fire is lower at the Bayview Landfill since nearly all of the waste is transferred through transfer stations. Bayview Landfill staff follows a waste handling procedure to minimize the potential for a landfill fire. If any load comes to the landfill on fire, the driver of the vehicle is directed to an area away from the working face. The burning waste is unloaded, spread out, and immediately covered with sufficient amounts of soil to smother the fire. Once the burning waste cools and is deemed safe, the material is then incorporated into the working face. Some loads coming to the landfill may be on fire but not detected until after being unloaded at the working face. If a load of waste that is on fire is unloaded at the working face, the load of waste is immediately removed from the working face, spread out, and covered with soil.

The Utah County Fire Department is called if it appears that landfill personnel and equipment cannot contain any fire at the landfill. The Utah County Fire Department is also called if a fire is burning below the landfill surface or is difficult to reach or isolate.

In case of fire, the Manager and DWMRC Director are notified immediately. A written report detailing the event is placed in the operating record within seven days, including any corrective action taken.

3.5.2 Loaded Vehicle Fires

In the event that a transport vehicle enters the landfill site carrying a burning or smoldering load of waste, landfill operations personnel will take the following actions:

- Direct the vehicle to a designated section of the landfill away from the working face.
- Direct the driver to deposit his load and to clear the area as quickly as possible.
- Access to the area is restricted
- The landfill management is immediately notified
- Immediately cover the burning waste with sufficient soil to completely smother the fire. Allow the waste to cool for several days, or longer if necessary.
- If necessary, spray equipment and the transfer vehicle with water to cool the equipment while working the fire. This will not be necessary if the equipment is pushing or dumping soil on the burning wastes in front of the advancing equipment.
- If landfill operations personnel cannot control the fire, the Utah County Fire Department will be contacted.
- Notify the UDEQ immediately and provide written documentation within 14 days of the fire.

3.5.3 Working Face/Below Cover Fire

In the event of a working face fire or a fire below cover, landfill operations personnel will take the following actions:

- Evacuate all non-essential personnel from the area of the fire. Non-essential personnel would include transfer truck drivers, attendants, and visitors.
- Isolate the burning material from other wastes to the extent possible. Use compactor blades and dozers to move the burning materials away from other wastes; this may not be possible if the fire is below cover soil.

- Immediately cover the burning waste with sufficient soil to completely smother the fire. Allow the waste to cool for several days, or longer if necessary.
- If landfill operations personnel cannot control the fire, the Utah County Fire Department will be contacted.
- Notify the UDEQ immediately and provide written documentation within 14 days of the fire.

3.5.4 Release of Explosive Gases

Methane gas generation and concentration is not anticipated to be a problem at the Bayview Landfill. However, due to the production of methane in all landfills, landfill gas levels are monitored quarterly. If a concentration of methane is detected in excess of 25 percent of LEL in a landfill building, 100 percent LEL at the property boundary, or over 100 parts per million in an off-site building, the following procedure is followed:

- Landfill operations cease immediately. The landfill is evacuated if personnel or buildings may be threatened
- If gas is detected in a building, the doors and windows are opened to allow the gas to escape
- If off-site buildings or structures appear to be threatened, the Utah County Fire Department is called, the property evacuated, and the property owners notified
- The Manager is called. The release is monitored, and a temporary corrective action implemented as soon as possible. Permanent corrective action is completed as soon as practicable

The DWMRC is notified immediately and a written report submitted within 14 days of detecting the release. The gas levels detected, and a description of the steps taken to protect human health are placed in the operating record within seven days of detection. A remediation plan for the methane gas release will be placed in the operating record within 60 days of detection and the Executive Secretary is notified that the plan has been implemented.

3.5.5 Explosion

In the event that an explosion should occur at the landfill or in any structure associated with the landfill, landfill operations personnel will take the following actions:

- Immediately evacuate the area surrounding the explosion, including any adjacent buildings. Shut down and abandon any equipment near the explosion that is hot and may provide an ignition source for additional explosions.
- Account for all personnel. Contact the Utah County Fire Department and the emergency dispatcher (911). Contact the Landfill Manager.
- Restrict the explosion area to any entry until emergency response personnel clear the area.
- Notify the DWMRC immediately and provide written documentation within 14 days of the explosion.

If the explosion is the result of methane gas, the gas levels detected, and a description of the steps taken to protect human health is placed in the operating record within seven days of detection. A remediation plan for the methane gas release will be placed in the operating record within 60 days of detection and the Executive Secretary is notified that the plan has been implemented.

3.5.6 Failure of Run-On/Run-Off Containment

The purpose of the run-on/run-off control systems is to manage the stormwater falling in or near the landfill. Water is diverted away from the landfill using a series of ditches, berms, and roads. These structures are inspected on a regular basis and repaired as needed. All stormwaters falling or flowing near the active landfill cell are prevented from flowing into the active area by diversion berms and ditches.

If the run-on system fails, temporary measures such as temporary berms, ditches, or other methods are used to divert water from the active landfill cell.

If a run-off ditch or berm fails, temporary berms or ditches will be constructed until a permanent run-off structure can be constructed.

Any temporary berms or other structures will be checked at least every 2 hours during working hours of the landfill. Permanent improvements or repairs will be made as soon as practicable.

The Manager is notified immediately if a failure of either of the run-on or run-off systems is discovered. The event will be fully documented in the operating record, including corrective action within 14 days.

3.5.7 Groundwater Contamination

If groundwater contamination is ever suspected, studies to confirm contamination will be conducted and the extent of contamination documented. This program may include the installation of additional groundwater monitoring wells. The groundwater monitoring program may be updated, and corrective action taken as deemed necessary, with the approval of the Executive Secretary.

3.6 CONTINGENCY PLAN FOR ALTERNATIVE WASTE HANDLING

Landfill operations have been adapted for wet weather by constructing an all-weather, asphalt-paved roadway from the site entrance to the active cell. The site soils, including those used as daily cover, consist primarily of sands and gravels. In the semi-arid climate of the Bayview Landfill site, experience has shown that precipitation has little effect on the operations of the landfill, especially given the nature of the cover soils. The Bayview management team does not believe that alternate waste handling plans are necessary for this site with respect to wet weather operations.

All reasonable caution and prudence will be exercised to not dispose of wastes during any unreasonable weather conditions. If unforeseen weather conditions occur, the manager, or his designee, will be informed and will coordinate any changes in operations. The manager will consider the system-wide requirements (including transfer station requirements) in determining what changes, if any, need to be made in operations at the landfill to accommodate any disruption in waste handling procedures.

In the event of a landfill tipper malfunction, wastes will be diverted to other area landfills that utilize tippers in their operation until the malfunctioning tipper can be repaired or replaced.

3.7 MAINTENANCE PLAN

3.7.1 Groundwater Monitoring Wells and Leachate System

The landfill personnel will conduct quarterly inspection which includes the assessment of the groundwater monitoring wells and the groundwater/leachate collection system.

3.7.2 Gas Monitoring System

Gas monitoring locations will be maintained on a routine basis. Weeds will be removed from the vicinity of each monitoring location at least every 3 months, approximately 2 weeks prior to each scheduled sampling event.

3.8 DISEASE AND VECTOR CONTROL

The vectors encountered at the Bayview Landfill are flies, birds, mosquitoes, rodents, skunks, and snakes. The program for controlling these vectors is as follows:

3.8.1 Insects

Eliminating breeding areas is essential in the control of insects. Bayview Landfill minimizes the breeding areas by covering the waste daily and maintaining surfaces to reduce ponded water.

3.8.2 Rodents

Reducing potential food sources minimizes rodent populations at the landfill. The potential food sources are minimized by properly applying daily cover.

In the event of a significant increase in the number of rodents at the landfill, a professional exterminator will be contacted. The exterminator would then establish an appropriate protocol for pest control in accordance with all county, state and federal regulations. Since the bulk of the waste delivered to the Bayview Landfill is through a transfer station the problems with rodents should be minimal.

3.8.3 Birds

As with rodent control, the primary method of controlling birds is to control the conditions favorable to their existence. The following methods will be used as needed:

- Minimizing the size of the working face. This is the most effective method of controlling birds since it reduces the area available for feeding. More frequent cover and higher degrees of compaction of the wastes may also serve to minimize the opportunities for feeding.
- Minimizing the accumulation of water in depressions, ponds, or other features near the active working face. The lack of water makes a landfill a less attractive feeding area for birds.
- Use of noise or other frightening techniques. These techniques offer short-term reductions in the numbers of birds feeding at a landfill.

If the primary methods do not produce satisfactory results, a destructive method of control may need to be implemented. Destructive methods may cause harm or death to some birds, and authorization must be obtained from local officials prior to implementing a destructive program.

3.8.4 Fugitive Dust

The roads leading to the landfill are paved with secondary site access provided via a maintained gravel access road. Some construction activities and daily traffic produce a certain amount of dust. Landfill activities compounded by the occasional high wind present a periodic fugitive dust problem. If the dust problem elevates above the "minimum avoidable dust level", the landfill applies water to problem areas.

The landfill has a water tank truck and is used to suppress the dust. Water is applied to the gravel roads leading to all landfill facilities and to the tipping face. The water is applied as often as needed to control the dust.

3.8.5 Litter Control

The use of the extensive litter fencing at Bayview Landfill minimizes the problem with litter control. Due to the nature of landfilling operations, litter control is still an ongoing

challenge. Landfill personnel perform routine litter cleanup to keep the landfill and surrounding properties clear of windblown debris.

Whenever possible, the working face is placed down wind so that blowing litter is worked into the landfill face. During windy conditions, landfill personnel minimize the spreading of the waste to reduce the amount of windblown debris.

3.9 RECYCLING

The primary location for recycling will be the transfer stations. These locations are best suited for separating recyclable materials, and separation will be difficult or impossible after the wastes have been loaded into over-the-road trucks. The landfill operations personnel may segregate tires, large and bulky wooden wastes, and similar materials upon receipt at the landfill; however, this recycling activity is considered secondary to recycling at the transfer stations.

3.10 TRAINING PROGRAM

As part of the initial training of new employees, Bayview Landfill Operations Plan is required reading. All landfill personnel are required to review the approved permit annually.

All personnel associated with the operation of the landfill receive training annually. Training typically includes Solid Waste Association of North America (SWANA) courses with certificates of completion are kept in personnel files. Regular safety and equipment maintenance training sessions are held to ensure that employees are aware of the latest technologies and that good safety practices are used at all times.

3.11 RECORDKEEPING

A daily operating record is maintained as part of a permanent record on the following items:

- Number of loads entering the landfill and types of wastes received
- Deviations from the approved Plan of Operation
- Number of waste inspections conducted
- Amount and type of cover material used
- Dust control

- Personnel training and notification procedures
- Landfill gas-monitoring results

3.12 SUBMITTAL OF ANNUAL REPORT

The Bayview Manager will submit a copy of its solid waste facility annual report to the Executive Secretary by March 1 of each year for the most recent calendar or fiscal year of facility operation. The annual report will include facility activities during the previous year and will include, at a minimum, the following:

- Name and address of facility
- Calendar or fiscal year covered by the annual report
- Facility type and status
- Annual quantity, in tons or volume, in cubic yards of solid waste handled for each disposal facility, including applicable recycling facilities
- Annual update of required financial assurances mechanism pursuant to Utah Administrative Code R315-309
- Ground water monitoring results
- Explosive gas monitoring results
- And an annual training report

A copy of the latest Annual Report is presented in Appendix C.

3.13 INSPECTIONS

The Manager, or his/her designee, inspects the facility to minimize malfunctions and deterioration, operator errors, and discharges that may cause or lead to the release of wastes to the environment or to a threat to human health. These inspections are conducted on a quarterly basis, at a minimum. An inspection log is kept as part of the operating record. This log includes at least the date and time of inspection, the printed name and handwritten signature of the inspector, a notation of observations made, and the date and nature of any repairs or corrective actions. Inspection records are available to the Executive Secretary or an authorized representative upon request.

3.14 RECORDING WITH COUNTY RECORDER

Plats and other data, as required by the County Recorder, will be recorded with the Utah County Recorder as part of the record of title no later than 60 days after certification of closure.

3.15 STATE AND LOCAL REQUIREMENTS

The Bayview Landfill maintains and will continue to maintain compliance with all applicable state and local requirements including zoning, fire protection, water pollution prevention, air pollution prevention, and nuisance control.

3.16 SAFETY

Landfill personnel are required to participate in an ongoing safety program. This program complies with the Occupational Safety and Health Administration (OSHA), and the National Institute of Occupational Safety and Health (NIOSH) regulations as applicable. This program is designed to make the site and equipment as secure as possible and to educate landfill personnel about safe work practices.

NUERA trains all of the landfill employees in First Aid, CPR, accident investigation, drug and alcohol policy, lockout and tagout, confined space entry, blood born pathogen, hazard communication, defensive driving, spill prevention control and counter measure, hazardous waste, and commercial driving license requirements.

3.17 EMERGENCY PROCEDURES

In the event of an accident or any other emergency situation, the Operator will notify the Manager and proceeds as directed. The emergency telephone numbers are:

Mark Lamoreaux, Landfill Manager ..... (801) 885-4233
Utah County Health Department ..... (801) 851-7095
Director, DWMRC ..... (801) 536-0200
Utah County Fire Department ..... (801) 851-4141

	Machine												Machine									
Date	836K	836H	836G	623 Old	623 New	D8R	D8T	Grader	WW	WT Kenwo	B Dodge	F350	Loader	W Dodge	Tipper	LGT Plants	Ranger	Welder	F150	F350 old	Misc	Misc
3-Sep																						
4-Sep																						
5-Sep																						
6-Sep																						
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Machine

Loader	W Dodge	Tipper	LGT Plants	Ranger	Welder	F150	F350 old	Misc	Misc

	Machine														
Date	836K	DEF	836H	836G	623 Old	623 New	D8R	D8T	DEF	Grader	WW	WT Kenworth	B Dodge	F350	MISC
3-Sep															
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South Utah Valley Solid Waste District
Bayview Landfill
Quarterly Landfill Gas Monitoring Results

_____ Quarter _____

Date _____

Time _____

Weather _____ Temperature _____

Sample Collector _____

Monitoring Device Calibrated Prior to sampling. Yes No

Monitoring Device Used: PhD Plus Multi Gas Detector

	Monitoring Location	Measured %LEL	Internal Action Limit Half Regulatory Limit %LEL	Regulator Action Limit %LEL
Maintenance Shop Outside			12	25
Office Lunch Room Inside			12	25
North Boundary			50	100
South Boundary			50	100
East Boundary Leachate Pond			50	100
West Boundary Pump House			50	100

Gas Sample Collector: If measured %LEL equals or exceeds internal action limit, contact landfill supervisor.

Landfill Supervisor: If measured %LEL equals or exceeds regulatory action limit, notify the State Director, in compliance with 40 CFR 258.23c.

Comments: _____

_____

Samples Collected By _____

Weekly Visual Inspection and Maintenance Report

Person Conducting Inspection:	
Date (MM/DD/YY)	

GOOD HOUSEKEEPING

Instructions: As necessary, review section 5.3, Good Housekeeping: Mark "Y" (yes) or"N" (no) as appropriate. For each "N", note question number and corrective action(s) in the space below

	Y		N	1	Is the maintenance building orderly and neat
	Y		N	2	Is there adequate space in the work areas? Are work areas free of clutter?
	Y		N	3	Are equipment, materials, and tools stored properly?
	Y		N	4	Are materials properly labeled and stored?
	Y		N	5	Is the material inventory up to date?
	Y		N	6	Are employees receiving regular training?
	Y		N	7	Is there evidence of drips or leaks from equipment or machery on site?
	Y		N	8	are outside areas orderly and neat?
	Y		N	9	Are roads, walkways, and other passageways easily accessible, safe, and free of protruding objects, materials, or equipment?
	Y		N	10	Is blown litter collected regulary?

No:	Corrective Action(s)

Preventive Maintenance

Instructions: As necessary, review section 5.4, preventive maintenance. As appropriate, inspect each facility feature for leaks, spills, signs of errosion, proper operation, etc. Indicate the type of test or observation: "V" for visual observation, "O" for other (if other, indicate type of test, e.g., pump ooperation). Note Condition as "S" (satisfactory) or "N" (not satisfactory) For each "N", include comments the corrective action(s) taken, such as maintenance performed.

Facility Feature	Type of Observation or Test		Condition		Comments (Corrective action, etc)
Active Landfill Working Face	V	O	S	N	
Leachate Conveyance Piping and Equipment	V	O	S	N	
Leachate Pond	V	O	S	N	
Landfill Slopes	V	O	S	N	
Berms	V	O	S	N	
Drainage Channels	V	O	S	N	
Culverts	V	O	S	N	
Outfalls	V	O	S	N	
Structural BMP's (Silt Fence, Straw Bales, etc.)	V	O	S	N	
Vegetative Cover	V	O	S	N	
Newly Graded Areas	V	O	S	N	
Heavy Equipment	V	O	S	N	
Storage Areas	V	O	S	N	
AST's	V	O	S	N	
Secondary	V	O	S	N	
Previous Spill & Leak Areas	V	O	S	N	

STATE OF UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY Page 1 of ___
DIVISION OF AIR QUALITY
VISIBLE EMISSION OBSERVATION FORM

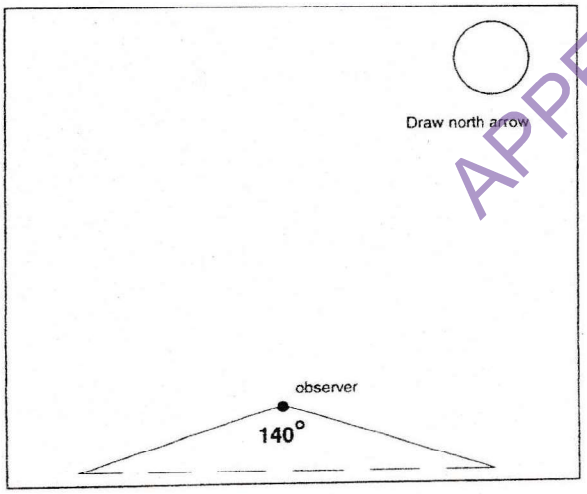
Type of Inspection: Initial ( ) Partial Initial ( ) Stack Test ( ) CEM ( ) Annual ( ) Followup ( ) Surveillance ( ) Complaint ( )

Source Name:
Street Address:
City/County:
Phone:
AIRS ID:

Facility:
Equipment:
Control Equipment:

Emission Point:

Height of Discharge Relative in Observer:
Distance from Observer:
Condensed Water Vapor Present? Y / N
Attached ☐ Detached ☐
Length of Condensed Water Vapor Plume:
Background:
Sky Conditions: Clear ☐ Partly Cloudy ☐ Overcast ☐
Wind Direction: Wind Speed: mph
Ambient Temp: ° F RH: %



Sun ⊕
Wind ►
Emission Point with Plume ○—
Observation Point X

Observer's Signature:
Affiliation: State of Utah, Department of Environmental Quality
Division of Air Quality
I Have Received a Copy of These Observations:

SIGNATURE:
Printed Name:
Title:

Observation Date:
Start Time: Stop Time:

min \ sec	0	15	30	45
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				

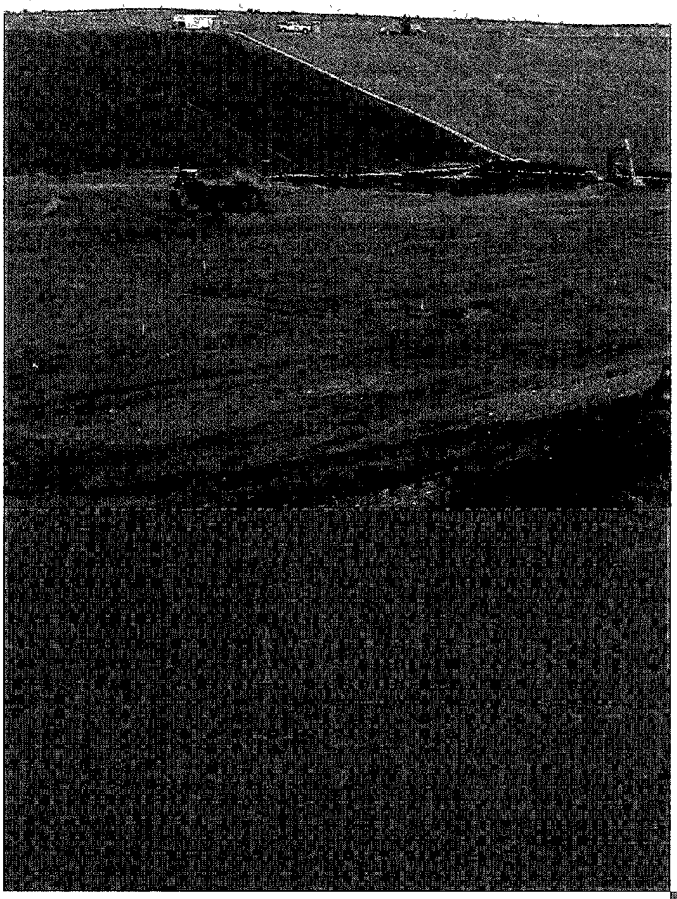
Average Opacity for Highest Six-Minute Period:

Comments:

Distribution: white-file; canary-EPA; pink-inspector; gold-owner/operator

Attachment 2
Groundwater Monitoring Plan

Groundwater Monitoring Plan for Bayview Municipal Solid Waste Landfill



NUERA Bayview Landfill

July 20, 2020

Contents

Appendices

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1 Introduction

This groundwater monitoring plan (GMP) addresses the groundwater monitoring and sampling program at the Northern Utah Environmental Resource Agency's (NUERA) Bayview Landfill. The GMP is required by Utah Administrative Code (UAC) Rule R315-303-3(7)(b) and will meet the requirements under UAC R315-308, Ground Water Monitoring Requirements.

The Bayview Landfill is located in southwestern Utah County about 6 miles north of Elberta, Utah and about 3 miles west of Goshen Bay of Utah Lake. The Bayview Landfill is owned and operated by NUERA, which purchased Bayview in 2016 from the South Utah Valley Solid Waste District (SUVSWD). NUERA is an organization made up of 6 solid waste entities[1] along the Wasatch Front jointed together by an inter-local agreement.

2 Groundwater Monitoring System

The groundwater flow at the Bayview Landfill can generally be described as flowing northeast across the site towards Utah Lake[2]. Compliance monitoring wells are, therefore, placed east and north of landfill environmental protection features (liner and leachate collection system sumps and leachate ponds).

The groundwater monitoring system for the Bayview Landfill consists of nine deep monitoring wells (DMW), DMW-1 through DMW-9. The wells serve to monitor the groundwater associated with the landfill's three operating units or "cells". The Bayview cells and monitoring wells are described in more detail below. Appendix Aprovides a map showing the location of the cells, wells, and other features across the site.

Not all of the deep monitoring wells are sampled because the current operation does not require that all wells are monitored. The next section of this report describes the current (2020) operating cells, the wells that are being sampled, and the statistical analysis approach used to demonstrate compliance with UAC R315-308.

The groundwater monitoring system also includes six shallow groundwater monitoring wells, SMW-1 through SMW-6. However, none of the six shallow monitoring wells have contained water sufficient to either purge or sample on any sampling event, and these wells are not included remainder of this document.

Additional monitoring wells will be added to the system as new cells or leachate basins are designed and constructed.

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[1] The NUERA entities are North Pointe Solid Waste Special Service District, South Utah Valley Solid Waste District, Trans-Jordan Cities, Wasatch Integrated Waste Systems, Weber County, and Logan City.

[2] SUVSWD Bayview Class I Landfill Permit Application, October 2019

2.1 Landfill Operating Cells

2.1.1 Cell 1

Cell 1 was the first landfill unit constructed at the site and is now closed. Cell 1 reached final permitted grades and a final cover was placed in 2005. Cell 1 is in post closure care.

2.1.2 Cell 1.5

Cell 1.5 is located between Cells 1 and 2. It was constructed in 2020 and is approximately 6 acres in size. The cell bottom liner ties into the liner of both adjacent cells (Cells 1 and 2). Cell 1.5 is graded so that any leachate generated in this cell would be collected and conveyed into the leachate collection and removal system constructed in Cell 2, described below. NUERA will

2.1.3 Cell 2

Cell 2 is an active cell with two stages. Stage 1 is a 20 acres cell located in northwest portion of the large Cell 2 and was constructed by SUVSWD in late 2004. Stage 2 is a 23 acre cell located south of Stage 1. The liner for Stage 2 Cell 2 was constructed in 2009. The leachate collection system for Cell 2 Stage 2 conveys leachate to the leachate collection and removal system in Cell 2 Stage 1.

2.2 Deep Monitoring Wells

2.2.1 Upgradient Monitoring Wells

DMW-1 and DMW-7 are located along the western boundary of the site. These monitoring wells serve as the upgradient or background wells for the landfill cells which have been constructed and filled with waste or are scheduled for development over the next 25 to 50 years. DMW-7 currently serves as the upgradient monitoring well for the landfill.

2.2.2 Compliance Monitoring Wells for Cell 1

Monitoring wells DMW-3 and DMW-8 were located east and adjacent to Cell 1 and served as downgradient compliance wells for Cell 1. DMW-3 and DMW-8 were abandoned for the construction of landfill Cell 1.5 in 2020[3]. Monitoring well DMW-9 serves as the groundwater monitoring compliance well for Cell 1, which is in post closure care. DMW-9 is located 200 feet north of Cell 2 Stage 1.

[3] Well abandonment and a groundwater monitoring program variance was approved by the Director of Division of Waste Management and Radiation Control on [date].

2.2.3 Compliance Monitoring Wells for Cell 2

Monitoring well DMW-9 serves as the downgradient compliance well for Cell 2 Stage 1 and Stage 2. DMW-9 is located within 500 feet of Cell 2 and is hydraulically downgradient of the leachate sump for Cell 2, where a pump removes leachate from Cell 2 Stages 1 and 2.

Two future compliance monitoring wells will be installed along the northern boundary of Cell 2 as the landfill development continues to the east within Cell 2. The location of these two wells will be determined after the limits of future stages of Cell 2 are defined.

2.2.4 Compliance Monitoring Wells for Cell 1.5

Cell 1.5 is located between Cells 1 and 2. Cell 1.5 is graded so that any leachate generated in this small cell would be collected and conveyed into the leachate collection and removal system constructed in Cell 2, described above. Therefore, DMW-9 also serves as the compliance well for Cell 1.5.

2.2.5 Additional Monitoring Wells for Leachate Basin 1

Monitoring well DMW-6 is located along the eastern property boundary and downgradient of from a former leachate retention basin that collected leachate from Cell 1. A new leachate retention basin was constructed with Cell 2 Stage 1. The new leachate pond collects and retains any leachate generated from all closed (Cell 1) and active cells (Cells 1.5 and 2). This leachate pond is double lined with a leak detection system in place to monitor leaks from the primary (upper) liner. DMW-6 could also serve as a compliance monitoring point for future stages of Cell 2, depending on the design of these future cells.

2.2.6 Property Boundary Wells

The remaining wells serve as property boundary wells. Wells DMW-2 and DMW-5 are located along the northern boundary, downgradient from Cells 1 and 2. DMW-4 is on the southern site boundary, upgradient of future cells.

2.3 Well Construction

Well construction records, including drilling logs, are presented in Appendix E of the Bayview Landfill Permit[4]. Generally, wells have been constructed of 4- or 4½ -inch diameter PVC pipe with a 20-foot screened interval and a 1-foot silt sump.

3 Groundwater Sampling Procedures

Groundwater sampling procedures generally consist of first measuring the groundwater elevation, then purging the monitoring wells of stagnant water, collecting field parameters (pH, temperature, and conductivity) and then collecting groundwater samples for laboratory analysis. The following sections will describe each of these procedures in

[4] See footnote #2.

greater detail. During each monitoring event, monitoring wells will also be inspected for damage to the upper well casing, protective cover, lock, well cap, and concrete pad. In addition, the ground surface around the well pads will be inspected for erosion. If any problems are discovered, they will be repaired or replaced as soon as practicable.

3.1 Groundwater Elevation Monitoring Procedures

Prior to each groundwater sampling event, the groundwater level in each monitoring well and the total well depth will be measured. Groundwater elevation measurements will be collected using either an electric well sounder marked to determine the depth to the nearest ½-inch (0.04-foot) increment. For each monitoring event, the total well depth will be measured to evaluate whether silt has collected in the well casing. Water levels in the wells will be measured prior to purging or sampling to record the static water level. The groundwater elevation measurements will be recorded to the nearest 0.04 foot from the top of the well casing. Water level measurements will always be referenced to the survey mark on the well casing. When a measurement is collected, the measuring device will be raised and lowered several times to be sure the correct measurement is recorded.

During each monitoring event, the current water level readings will be compared to the readings from the previous monitoring event in order to avoid discrepancies. If an obvious discrepancy is encountered, the water level will be measured again to ensure the measurement was recorded correctly.

Prior to collecting water level measurements, the measuring device will be checked for damage, including bends or kinks in the tape. To maintain consistency and precision, and to the degree possible, the same measuring device will be used during each monitoring event and will be decontaminated between each well (see Section 3.7, Decontamination Procedures). Also once each year, the tape will be checked against a calibrated tape measure to verify its accuracy.

3.2 Monitoring Well Purging Procedures

Purging refers to the removal stagnant water from the well in order to prevent stagnant water from entering sample containers. .During the purging activities, disposable latex gloves will be worn by the sampling team and changed between wells. Temperature, conductivity, and pH will be continuously measured during purging and recorded in the field data collection form (see Appendix B for the field data collection form).Once all these parameters stabilize, indicating stagnant water in the well has been replaced by formation water, purging will be considered complete. If a well dewaters prior to achieving the stabile water quality parameters, it will be allowed to recharge before sampling.

Prior to conducting the well purging activities, the pH and conductivity meters will be calibrated. Calibration of the instruments will be in accordance with the manufacturer's procedures for the particular instrument. At a minimum, the pH meter will be calibrated using standard calibration solutions as recommended by the manufacturer. The conductivity meter will be calibrated using standard solutions as recommended or supplied by the manufacturer. The same instrumentation will be used for each monitoring event.

The method of well purging for this site consists of using a dedicated submersible pump system for each well where the discharge rate can be regulated for sampling. The pump intake will be placed within the screened section of the well casing. For wells that sustain continuous pumping without dewatering, the discharge rate on the pump will be set to allow minimal drawdown in the well. This procedure will minimize any cascading effects that may volatilize constituents in the groundwater entering the well casing and will also minimize agitating sediment collected in the bottom of the well. If the main pump system fails, temporary portable pumps will be used as backups. If portable pumps are needed, the intake will be gently lowered into the upper most portion of the water column to minimize agitating any residual sediment that has collected in the bottom of the well. If a portable pump is used for more than one well, then proper cleaning of the pump is necessary to minimize the potential of cross contamination (refer to Section 3.0).

During the purging operations, a record of the climatic conditions, condition of the wells and surrounding ground surface, field collected water quality, color, odors, water level will be recorded. The information will be recorded in indelible ink, will be stored either on site at the landfill office and will become part of the site operating record for the landfill.

3.3 Groundwater Collection and Handling Procedures

3.3.1 Groundwater Collection Procedures

During groundwater collection disposable latex gloves will be worn, and changed between wells to minimize cross contamination of samples and to reduce the possibility of coming into contact with groundwater containing contaminants. Prior to collecting a groundwater sample, the monitoring wells will be purged of groundwater as described in Section 3.2. The wells will be sampled in the same order they are purged and samples will be collected within 24-hours following purging. If sufficient recharge does not occur within 7 days following purging, then the well will be considered dry and a sample will not be collected. NUERA will follow the laboratory's QA/QC protocols regarding sampling containers, preservation, and holding times.

Groundwater samples will be collected off the pump discharge. The pump discharge will be regulated at the time of sampling to maintain as slow discharge rate as possible (typically 0.1 liter per minute) to minimize cascading and volatilization as the sample containers are being filled. Once the discharge rate is set for sampling, it will be maintained at that rate for several minutes so that the sample collected will not be from the period of time when the pump was operating at a higher discharge rate, and to ensure that air has been adequately purged from the discharge line. Sample containers will be held at a slight angle to allow a slow steady stream of water to run down the inner wall. The sample containers will be held as close to the pump discharge as possible without touching.If not already done, preservative should be added immediately after filling a sample container. Sample containers for VOCs will be completely filled and sealed carefully to prevent air bubbles. If an air bubble is present, then the sample will be discarded and the sample will be collected again. All other sample containers will be filled as completely as possible.

Sample containers will labeled with the well number, date and time collected, preservatives used, analyses to be run, and the sampler's initials and placed in zip-

locked plastic bags. Samples will be preserved within 15 minutes of collection and immediately placed on ice. The sample containers for each well will include as a minimum two-40 milliliter VOA glass vials with Teflon® septa screw caps for VOCs, and other bottles as provided by the laboratory.

Quality Assurance Samples

To provide screening of field procedures, trip blanks, field blanks, and field duplicates will be analyzed[5].

Trip Blank. A trip blank is a vial or bottle filled with laboratory reagent grade water. These blanks are tested to see if something contaminated the water in the bottles during transit. The purpose of the trip blank is to determine if any volatile samples have become contaminated with extraneous substances during storage and transport. Trip blanks are only necessary when collecting VOC, gasoline range organics (GRO), and petroleum volatile organic compound (PVOC) samples. Trip blanks will be prepared by the laboratory and will accompany the empty sample containers and collected samples to and from the laboratory. At least one trip blank will be prepared for each day of sampling or for every container transported to the laboratory. Trip blanks will be handled in a similar fashion as the other samples and will be analyzed for VOC constituents. If no VOCs are detected in the groundwater samples the trip blank samples do not need to be tested.

Field Blank. Field blanks, or decontamination blanks, consist of a sample of the reagent grade water supplied by the laboratory and used in the final rinse step of the equipment decontamination procedure. Field blanks evaluate the effectiveness of decontamination procedures when equipment is not dedicated to a well or disposed of after one use. Field blanks are not required if dedicated sampling equipment or disposable sampling equipment is used.

If decontamination procedures are effective, there should be no contamination in the field blanks. One field blank should be collected for every 10 or fewer samples collected. Decontaminate the sampling equipment for the field blank the same way you do when collecting other samples. After decontaminating the sampling device, fill it with laboratory reagent grade water, then collect a sample of the reagent grade water - this is your field blank. Collect the field blank from equipment used in a site's most contaminated well, if possible.

Field Duplicate. Field duplicate samples will be collected to assess the variability of the analytical results caused by the sampling equipment and procedures used. Field duplicates should be collected in wells in which the contaminant concentrations have been relatively stable over time and wells that are screened in relatively homogeneous material. This will minimize analytical variability caused by contaminant concentration gradients that may exist in the ground water system. One field duplicate should be collected for every 10 or fewer samples and handled in the same manner as the original sample; however, label them differently so the laboratory cannot tell they are duplicates.

[5] Utah Division of Solid and Hazardous Waste, Groundwater Monitoring Plan Guidance, 2006

3.3.2 Groundwater Sample Handling Procedures

Once the samples have been properly sealed and labeled as described above, they will be recorded on a chain-of-custody (COC) form and signed and dated by the sampling technician(s). An example of a typical COC is presented in Appendix C. The COC will accompany the samples to the laboratory. The samples will be placed in a plastic ice chest (similar to an Igloo ice chest) with ice or a re-freezable type product to maintain a temperature as close to 4°C as possible until the analyses are performed. Dry ice is not permitted due to the potential of freezing the samples and breaking the containers. Precautions will be taken to secure the samples in the ice chest to prevent them from breaking during transport. The samples will be delivered to the laboratory within 24-hours after collection, therefore it will not be necessary to preserve the samples in the field, except samples collected for dissolved constituent analyses. Any samples, other than the samples collected for dissolved constituent analyses, requiring preservatives will be collected in pre-preserved containers supplied by the laboratory.

3.4 Groundwater Sampling Frequency

The groundwater sampling schedule for detection monitoring consists of collecting samples from each monitoring well for the detection monitoring constituents on a semi-annual basis after background data has been established (see Section 4.1.2 for a discussion on detection monitoring constituents). Any changes to the frequency and/or number and type of constituents for detection monitoring must be approved by the Director prior to implementing the change. The schedule for establishing background data is discussed in Section 5.5.

3.5 Weather Protocol

To the extent possible, sampling of the monitor wells will not be permitted during inclement weather, thunderstorms, or periods when the temperature drops below freezing. Caution should be taken when the temperature exceeds 100°F.

3.6 Employee Health and Safety

Landfill personnel are required to participate in an ongoing safety program[6]. This program complies with the Occupational Safety and Health Administration (OSHA), and the National Institute of Occupational Safety and Health (NIOSH) regulations as applicable. This program is designed to make the site and equipment as secure as possible and to educate landfill personnel about safe work practices.

NUERA trains all of the landfill employees in First Aid, CPR, accident investigation, drug and alcohol policy, lock-out and tag-out procedures, confined space entry, blood born pathogen, hazard communication, defensive driving, spill prevention control and counter measure, hazardous waste, and commercial driving license requirements.

While in the field, personnel engaged in the monitoring program shall also adhere to the following minimum health and safety protocol.

[6] 2019 Bayview Landfill Class I Permit Renewal Application, October 30, 2019.

- **Latex gloves.** A new set of gloves shall be used for each monitoring well. Used gloves will be stored in a plastic bag and disposed in the landfill at the end of each sample event.
- **Eye protection**. Safety glasses shall be wore at all times.

If excessive contamination is detected in the groundwater sampling, NUERA will develop a more detailed health and safety plan for subsequent ground water monitoring activities. This will include purge water storage, testing, and disposal, protective clothing requirements, emergency decontamination procedures (eye wash), emergency response protocols, and medical monitoring.

3.7 Decontamination Procedures

Prior to beginning each sampling event and between monitoring wells, all non-dedicated equipment, including the water level measuring device, will be decontaminated thoroughly to minimize the potential for cross contamination. The minimum decontamination procedures will consist washing the equipment with a non-phosphate detergent solution (e.g., Alquinox® , Liquinox®) and then thoroughly rinsing the equipment with organic-free tap water[7]. Decontamination of larger items, such as dedicated pumps removed for repair, will be accomplished by steam cleaning.

4 Analytical Testing and Statistical Analysis

4.1 Laboratory Analysis

The analytical laboratory selected to perform the required analyses will be licensed and certified by the State of Utah (UAC R315-308-2(5)). At a minimum, the selected laboratory will apply quality control procedures in accordance with Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, EPA publication SW-846, Third Edition, Final Updates I (1993), II (1995), IIA (1994), IIB (1995), III (1997), IIIA (1999), IIIB (2005), IV (2008), and V (2015).

4.1.1 Laboratory Procedures

The laboratory will follow appropriate QA/QC protocols developed as part of its licensing and certification. At a minimum, upon receipt of the samples by the laboratory, the sample lot will be verified with the information on the COC. If there is a discrepancy with the samples, the responsible party that collected the samples will be notified and the problem will be resolved before the analyses are performed. The COC will be signed and dated by the designated receiving personnel at the laboratory. The COC will remain with the laboratory until the analyses are completed, then will be attached to the completed laboratory report. For samples that require overnight transport to the laboratory, the COC will be signed; including date and time received by the transporter. The COC will be attached to the sample container(s) and delivered to the laboratory and a copy of COC will be supplied by the transporter. After the analyses are completed and the laboratory

[7] Utah Division of Solid and Hazardous Waste, Groundwater Monitoring Plan Guidance, 2006

report finalized, the complete COC, or receipt if sent by certified mail, will be attached to the laboratory report. The laboratory will keep a copy of the COC and laboratory results for a period of at least three years.

The laboratory will adhere to its QA/QC plan developed as part of its licensing and certification. If possible, the laboratory will be required to achieve detection limits (DLs) that are at least one order of magnitude below the maximum contaminant levels (MCLs) for a constituent for which an MCL has been promulgated.

4.1.2 Constituents to be Analyzed and Test Methods

As specified in UAC Rule R315-308-4, the groundwater monitoring program at all solid waste landfills shall consist of detection monitoring that includes specific constituents. The constituents to be tested for during the detection-monitoring program are listed in Table 1. Testing methods used for all constituents will incorporate laboratory detection limits (DLs) that are below the Ground Water Protection Standards identified in UAC Rule R315-308-4 for each of the constituents. All samples will be analyzed within the required holding times for the particular analyses. The laboratory will report the CAS number for each constituent analyzed.

Table 4. Background/Detection Monitoring Constituents

table units

Background/Detection Monitoring Constituents[a]	
Inorganic Constituents	
Ammonia (7664-41-7)	Manganese (7439-96-5)
Carbonate/Bicarbonate	Nitrate (as N)
Calcium	pH
Chemical Oxygen Demand (COD)	Potassium
Chloride	Sodium
Iron (7439-89-6)	Sulfate
Magnesium	Total Dissolved Solids (TDS)
	Total Organic Carbon (TOC)
Heavy Metals	
Antimony (7440-36-0)	Lead
Arsenic (7440-38-2)	Mercury (7439-97-6)
Barium (7440-39-3)	Nickel (7440-02-0)
Beryllium (7440-41-7)	Selenium (7782-49-2)
Cadmium (7440-43-9)	Silver (7440-22-4)
Chromium	Thallium
Cobalt (7440-48-4)	Vanadium (7440-62-2)
Copper (7440-50-8)	Zinc (7440-66-6)

Table 4. Background/Detection Monitoring Constituents

table units

Background/Detection Monitoring Constituents[a]	
VOCs	
Acetone (67-64-1)	cis-1,3-Dichloropropene (100061-01-5)
Acrylonitrile (107-13-1)	trans-1,3-Dichloropropene (10061-02-6)
Benzene (71-43-2)	Ethylbenzene (100-41-4)
Bromochloromethane (74-97-5)	2-Hexanone (591-78-6)
Bromodichloromethane (75-27-4)	Methyl bromide (74-83-9)
Bromoform (75-25-2)	Methyl chloride (74-87-3)
Carbon disulfide (75-15-0)	Methylene bromide (74-95-3)
Carbon tetrachloride (56-23-5)	Methylene chloride (75-09-2) Methyl ethyl ketone; MEK
Chlorobenzene (108-90-7)	(78-93-3) Methyl iodide (74-88-4)
Chloroethane (75-00-3)	4-Methyl-2-pentanone (108-10-1)
Chloroform (67-66-3)	Styrene (100-42-5)
Dibromochloromethane (124-48-1)	1,1,1,2-Tetrachloroethane (630-20-6)
1,2-Dibromo-3-chloropropane (96-12-8)	1,1,2,2-Tetrachloroethane (79-34-5)
1,2-Dibromoethane (106-93-4)	Tetrachloroethylene (127-18-4)
1,2-Dichlorobenzene, ortho (95-50-1)	Toluene (108-88-3)
1,4-Dichlorobenzene, para (106-46-7)	1,1,1-Trichloroethane (71-55-6)
trans-1,4-Dichloro-2-butene (110-57-6)	1,1,2-Trichloroethane (79-00-5)
1,1-Dichloroethane (75-34-3)	Trichloroethylene (79-01-6)
1,2-Dichloroethane (107-06-2)	Trichlorofluoromethane; CFC-11 (75-69-4)
1,1-Dichloroethylene (75-35-4)	1,2,3-Trichloropropane (96-18-4)
cis-1,2-Dichloroethylene (156-59-2)	Vinyl acetate (108-05-4)
trans-1,2-Dichloroethylene (156-60-5)	Vinyl chloride (75-01-4)
1,2-Dichloropropane (78-87-5)	Xylenes (1330-20-7)

Source: UAC R315-308-4

[a] The CAS Number (if appropriate) is listed in parenthesis.

4.2 Establishment of Background Data

UAC R315-308-2 (5)(a) specifies that background data for the detection monitoring constituents (see Table 1) should be established during the first year of facility operation after wells are installed or an alternative schedule as approved by the Director. Background data consists of a minimum of eight independent samples from the upgradient and four independent samples from each downgradient well.

The background sampling for the site's original monitoring wells (DMW-1 through DMW-6) was performed from March 1991 to June 1992, at the beginning of landfill operations. Upgradient monitoring well DMW-7 was installed in 1999. Background samples were collected between 2000 to 2003. Prior to DMW-7 installation, DMW-1 served as the upgradient monitoring well.

Downgradient monitoring well DMW-9 was installed in 2004. Four background samples were collected in 2005[8], the first year of operations in Cell 2 Stage 1. Four additional samples were collected in 2006 and 2007. These samples showed no statistically

[8] Includes one sample from late 2004.

significant changes and therefore the data points were added to the background data set for the statistical analysis of subsequent samples.

The NUERA plans to install new monitoring wells adjacent to each Cell 2 Stage 3 and 4 as the cells are developed, which will be over the next 5 to 10 years. Wells will be installed one year prior to the estimated time of operations. Background data for groundwater from the new wells will be collected quarterly adhere to the protocols outlined in the cited regulations.

4.3 Statistical Methods to Evaluate Analytical Data

After each sampling event the groundwater monitoring data will be evaluated to determine if statistically significant changes from background values exist for each constituent listed in Table 1. The statistical analyses will be performed in accordance with UAC R315-308-2 (8).

The initial inter-well analysis of the groundwater chemistry indicated enough variability between wells to justify using an intra-well analysis approach. The results of the analysis were presented in a report submitted to the Utah Division of Waste Management and Radiation Control (DWMRC) on October 8, 1998. The software package, Sanitas, will be used to perform the statistical analysis of the groundwater data.

The current statistical analysis approach uses intra-well methods consisting of control charts and prediction limits. The purpose of these analyses are to determine whether there are any statistically significant changes (SSCs) in the compliance data relative to background concentrations. These methods establish limit values based on the background water quality data collected for each well.

Parametric prediction limits are flexible and straightforward to interpret. The mean and standard deviation of the background data are used to construct a concentration or prediction limit (PL) which is then compared to one or more compliance values. Compliance values are considered acceptable if they are below the PL.

Control charts are applicable in cases where the groundwater has not been contaminated. The preferred method recommended in the Unified Guidance from the U.S. Environmental Protection Agency (EPA) is the combined Shewhart-CUSUM control chart. The Shewhart portion is similar to a PL in that compliance measurements are compared against background data. The cumulative sum (CUSUM) portion sequentially analyzes each new measurement with prior compliance data. Baseline limit values are established with the mean and standard deviation of the background data.

Both parametric prediction limits and the combined Shewhart-CUSUM control charts require data to be normally distributed or transformed normal. Normality implies that the values are consistent and follow a normal, bell-shaped curve (Gaussian curve) and that the majority of the values (95%) are within two standard deviations from the mean of the concentration values. The Sanitas software tests the data for normality using the Shapiro-Wilk normality test (for data sets with 50 or fewer samples) or the Shapiro-Francia test (for data sets with more than 50 samples). The Shapiro-Wilk normality test is the preferred method based on EPA guidance. The data are not considered normal if the percentage of non-detects in the background data is greater than 50%.

A non-parametric prediction limit is used if the data set fails the normality test, cannot be transformed normal, or has greater than 50% non-detects. When a non-parametric approach is applied, the highest background concentration from the data set is used to set the prediction limit.

5 Reporting Requirements

Upon completion of each detection monitoring sampling event, the laboratory analytical data and statistical analysis of the data will be summarized in a report. The report will be submitted with the landfill's annual report unless more immediate notification is required, which is the case when statistically significant increases are observed.

5.1 Detection Monitoring

When a statistically significant increase over background data has been detected, the owner or operator must enter the information in the operating record and notify the Director of this finding in writing within 14 days of the completion of the statistical analysis of the sample results and within 30 days of the receipt of the sample results (UAC R315-308-2 (11)(a). The notification must indicate what constituents have shown statistically significant increases. In addition, the owner or operator must immediately resample groundwater in all monitoring wells for the constituents listed in Table 1. If a statistically significant increase is still present after resampling, the owner or operator must notify the Director in writing within seven days of the completion of the statistical analysis of the sample results. However, if the statistically significant increase over background data is believed to be caused by a source other than the landfill, then the owner or operator can prepare a report that explains the cause of the significant change. This report must be prepared and certified by a qualified groundwater scientist and submitted to the Director within 90 days after the sampling event for approval.

5.2 Assessment Monitoring

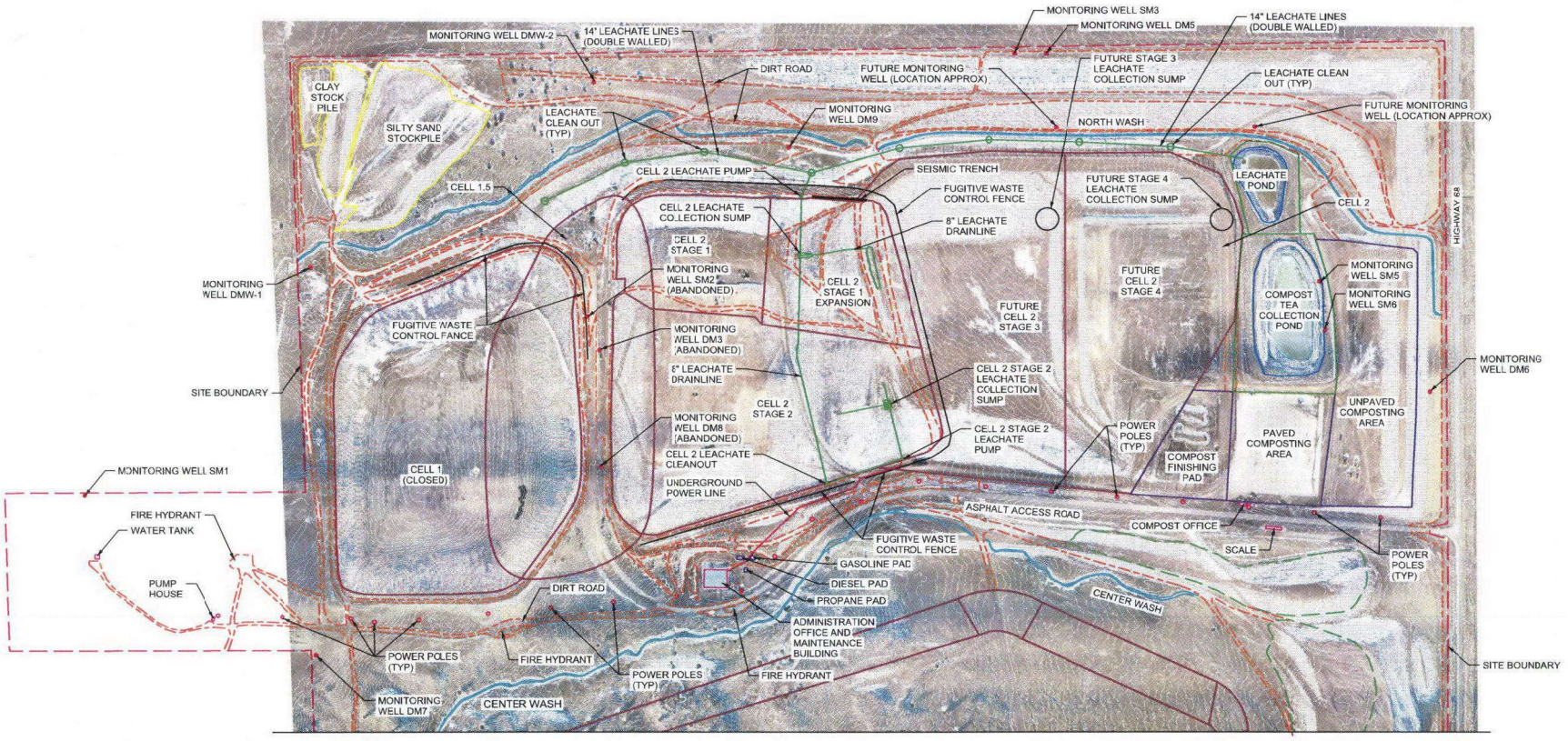
If the Director approves the report, then the landfill may return to Detection Monitoring. If the Director believes a satisfactory explanation is not given, the owner or operator must initiate the assessment monitoring program described in R315-308-2 (12).

5.3 Corrective Action

If after implementation of the assessment monitoring program, a successful demonstration is not made as described in R315-308-2(13)(e), NUERA will work with the Director to define the corrective actions to protect human health and the environment.

APPENDIX A

Bayview Municipal Solid Waste Landfill Site Map



REVISIONS

NO.	DATE	APPROVED BY	REMARKS

DRAWN BY

QC CHECKED BY

PROJECT

PROJECT NUMBER

PIN

SHEET NO.

APPENDIX B

Field Data Collection Form

GROUNDWATER MONITORING PROGRAM
BAYVIEW MUNICIPAL SOLID WASTE LANDFILL
NORTHERN UTAH ENVIRONMENTAL RESOURCE AGENCY

DATE:

SAMPLED BY:

RECORDED BY:

WEATHER:

Well Number	Depth of Well (feet)	Depth to Water (feet)	Temperature C___ F___	pH	Conductivity	Comments
DMW-1	300					
DMW-2	278					
DMW-3	308					
DMW-4	195					
DMW-5	210					
DMW-6	166					
DMW-7	295					
DMW-8	270					
DMW-9	242					

APPENDIX C

Typical Chain Of Custody

CHEMTECH - FORD ANALYTICAL LABORATORY

CHAIN OF CUSTODY

COMPANY: _____

ADDRESS: _____

CITY/STATE/ZIP: _____

PHONE #: _____ **FAX:** _____

CONTACT: _____ **PROJECT:** _____

EMAIL: _____

BILLING ADDRESS: _____

BILLING CITY/STATE/ZIP: _____

PURCHASE ORDER #: _____

CHEMTECH-FORD
LABORATORIES

TURNAROUND REQUIRED:* _____

** Expedited turnaround subject to additional charge*

Lab Use Only	CLIENT SAMPLE INFORMATION					TESTS REQUESTED															Bacteria			
	LOCATION / IDENTIFICATION	DATE	TIME	MATRIX	Field: Residual Chlorine																Total Coliform + E. coli (Present/Absent)	Total Coliform + E. coli (Enumerated)	HPC (Plate Count)	E. Coli Only
	1.																							
	2.																							
	3.																							
	4.																							
	5.																							
	6.																							
	7.																							
	8.																							
	9.																							
	10.																							

Sampled by: [print] | Sampled by: [signature]

ON ICE NOT ON ICE Temp (C°):

Special Instructions:

Samples received outside the EPA recommended temperature range of 0-6 C° may be rejected.

Relinquished by: [signature]	Date/Time	Received by: [signature]	Date/Time
Relinquished by: [signature]	Date/Time	Received by: [signature]	Date/Time
Relinquished by: [signature]	Date/Time	Received by: [signature]	Date/Time

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Statement of Basis
for the Bayview Landfill Permit

1. INTRODUCTION

   This Statement of Basis provides the rationale of the Director of the Division of Waste Management and Radiation Control for issuing the Bayview Landfill Class I permit. The Director's staff conducted this evaluation to ensure compliance with the applicable Solid Waste Rules. Matt Sullivan wrote this Statement of Basis.

2. FACILITY BACKGROUND

   a. Facility Location and History
      The Bayview Landfill is located approximately 6 miles north of Elberta, on the west side of State Route 68. It was constructed in 1989 according to Subtitle D requirements, and it has served most of the communities in the southern half of Utah County since 1990.

   b. Regulatory History
      Bayview Landfill has operated as a Class I landfill since its inception.

3. EVALUATION OF THE PERMIT APPLICATION

   a. The permit renewal application (DSHW-2019-014268) was received on October 30, 2019. The application was evaluated and determined complete on October 30, 2020 which included documentation and information meeting the regulations for Waste Management and Radiation Control.

4. JUSTIFICATION FOR ISSUING THE PERMIT

   a. The Director's staff has evaluated the permit application as required by Section 19-6-108 of the Solid and Hazardous Waste Act and R315-301 through 320 of the Solid and Hazardous Waste Rules. The information provided in the application satisfies all requirements.

5. PUBLIC PARTICIPATION

   a. As required by Utah Administrative Code R315-311-3, the Director provided an initial 30-day public comment period between February 2, 2021 through March 3, 2021. No Comments were received during this time period.

6. DIRECTOR RESPONSE TO PUBLIC COMMENTS:
   No Comments were received during the public comment period running from February 2, 2021 through March 3, 2021.

Bayview Landfill
Facility Site Map