



State of Utah

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Department of
Environmental Quality

Alan Matheson
Executive Director

DIVISION OF WASTE MANAGEMENT
AND RADIATION CONTROL
Scott T. Anderson
Director

FILE COPY

November 28, 2016

Kent Park, Chairman
Juab Rural Development Agency
160 North Main Street
Nephi, UT 84648

RE: JRDA Landfill Permit Renewal

Dear Mr. Park:

Enclosed is Permit No. 9808R1 for the Juab Rural Development Agency Landfill. A 30-day comment period was held from September 14, 2016 to October 17, 2016. No comments were received.

The expiration date for Permit No. 9808R1 is December 1, 2026. Please note that R315-311-1(4)(a) of the Utah Administrative Code requires that an application for renewal must be made 180 days before the expiration date.

We appreciate your efforts to operate the facility in compliance with current regulations. If you have any questions, please call Phil Burns at (801) 536-0253.

Sincerely,

Scott T. Anderson, Director
Division of Waste Management and Radiation Control

STA/PEB/kl

Enclosure: JRDA Landfill Solid Waste Permit Renewal (DSHW-2016-009966, DSHW-2016-009967, DSHW-2016-009968, DSHW-2016-013882)

c: Michael J. Seely, Assistant to the Commission
Nathan Selin, Acting Health Officer/Env. Health Director, Central Utah Public Health Dept.
John Chartier, P.E., DEQ District Engineer

DSHW-2016-013883

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DIVISION OF WASTE MANAGEMENT
AND RADIATION CONTROL
CLASS II SOLID WASTE LANDFILL PERMIT

Juab Rural Development Agency Landfill

Pursuant to the provision 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:

Juab Rural Development Agency,
as owner and operator, (Permittee),

to own, construct, and operate the JRDA Landfill located in the west ½ of Section 15, Township 13 south, Range 1 west, Salt Lake Base and Meridian, Juab County, Utah as shown in the permit renewal application that was determined complete on April 15, 2016. (DSHW-2015-005447).

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

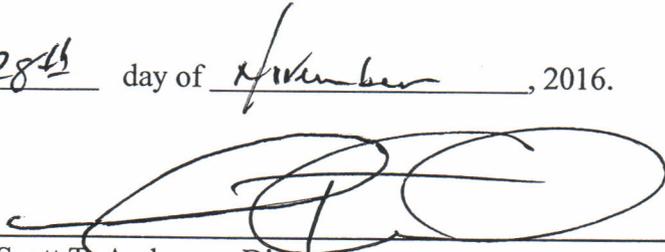
All references to R315-301 through 320 of the Utah Administrative Code are to regulations that are in effect on the date that this permit becomes effective.

This Permit shall become effective December 1, 2016.

This Permit shall expire at midnight November 30, 2026.

Closure Cost Revision Date: December 1, 2021.

Signed this 28th day of November, 2016.



Scott T. Anderson, Director
Division of Waste Management and Radiation Control

FACILITY OWNER/OPERATOR INFORMATION

LANDFILL NAME: Juab Rural Development Agency Landfill

OWNER NAME: Solid Waste Management Special Service District
#1

OWNER ADDRESS: Juab Rural Development Agency Landfill
21 East 100 North
Nephi, Utah 84648

OWNER PHONE NO.: (435) 623-0822

OPERATOR NAME: same as owner

TYPE OF PERMIT: Class II Landfill

PERMIT NUMBER: 9808R1

LOCATION: Landfill site is located south of Hwy 132 in
Township 13 South, Range 1 West, Section 15,
SLMB; Juab County, Lat. 31° 41' 24" N, Long. 111°
55' 31"W

PERMIT HISTORY Permit renewal November 28, 2016

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

Attachments to this permit are hereby incorporated into this Solid Waste Permit. All representation made in the attachments are part of this Permit and 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.

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 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, for a Class II 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, 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 waste as defined by R315-302-2(14) of the Utah Administrative Code;

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

I.B.1.d Construction/demolition waste as defined by 19-6-102(4), Utah Code Annotated;

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

I.B.1.f Conditionally exempt small quantity generator hazardous waste as specified in R315-303-4(7)(a)(i)(B) of the Utah Administrative Code; and

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

I.B.2. The Permittee is limited to an average of 20 tons per day of municipal waste or a service area population of 8900. The daily average shall be determined by dividing the total tons, for facilities with scales, of municipal waste received in a calendar year by 365. For facilities that do not have scales, the population served shall be used. If the 20 tons per day average is exceeded or the maximum population served is exceeded, the Permittee shall notify the Director and apply for a new permit for a Class I landfill.

I.C. Prohibited Waste

I.C.1. Disposal of the following wastes at the JRDA Landfill is prohibited:

I.C.1.a Hazardous waste as defined by R315-1 and R315-2 of the Utah Administrative Code except as allowed in permit condition I-B6 (Acceptable Waste) above;

- I.C.1.b 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.1.c PCBs as defined by R315-301-2 of the Utah Administrative Code, except as allowed in Section I-B (Acceptable Waste) of this Permit; and
- I.C.1.d Regulated asbestos-containing material.
- I.C.2. Any prohibited waste accepted for treatment, storage, or disposal at the facility shall constitute a violation of this Permit, of Utah Code Ann. § 19-6-101 through 123 and of 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 Central Utah Public 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, inspection 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 the 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 Provide written notice of the noncompliance or violation and a description of measures taken to protect human health and the environment within seven days after notification of the Director.
- I.E.4. Within 30 days after documenting the event, the Permittee shall submit to the Director a written report describing the nature and extent of the noncompliance or violation and a complete description of all of 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 additional 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 this Permit 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.

II. DESIGN AND CONSTRUCTION

II.A. Design and Construction

- II.A.1. 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 alternative design submitted in accordance with R315-301 thru 320 of the Utah Administrative Code and Attachment 1.
- II.A.2. If ground water is encountered during excavation of the landfill, the Director shall be notified immediately and the Permittee shall develop and submit an alternative construction design for approval.

- II.A.3. The Permittee shall notify the Director upon completion of construction of any landfill cell, sub-cell, engineered control system or any feature where Director approval is required. No landfill cell or engineered control system may be used until as-built documents are submitted and construction is approved by the Director and this permit has been modified to reflect the changes.
- II.A.4. 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 shall be received from the Director and this permit modified prior to construction. The design shall be accompanied by a Construction Quality Control and Construction Quality Assurance (CQC/CQA) Plan, for each construction season where incremental or final closure is performed.
- II.A.5. A qualified party, independent of the owner and the construction contractor shall perform the quality assurance function on cover components and other testing as required by the approved CQC/CQA Plan. The results shall be submitted as part of the as-built drawings to the Director.
- II.A.6. All engineering drawings submitted to the Director shall be stamped and approved by a professional engineer with a current registration in Utah.

II.B. Run-On Control

- II.B.1. 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.

III. LANDFILL OPERATION

III.A. Operations Plan

- III.A.1. The Permittee shall keep the Operations Plan included in Attachment 2 on site at the landfill or at the location designated in section III-H 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, is as protective of human health and the environment as the Operations Plan approved as part of this Permit and is approved by the Director as a permit modification under R315-311-2(1) of the Utah Administrative Code. The Permittee shall note any modification to the Operations Plan in the daily operating record.
- III.A.2. The Permittee shall submit any modification to the Operations Plan to the Director for approval.

III.B. Security

- III.B.1. The Permittee shall operate the Landfill so that unauthorized entry to the facility is restricted. The Permittee shall:
 - III.B.1.a Lock all facility gates and other access routes during the time the landfill is closed.

- III.B.1.b Have at least one person employed by the Permittee at the landfill during all hours that the landfill is open.
- III.B.2. Construct all fencing and any other access controls as shown in Attachment 1 to prevent access by persons or livestock by other routes.
- III.C. Training
- III.C.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.
- III.D. Burning of Waste
- III.D.1. Except as provided in this paragraph, intentional burning of solid waste is prohibited and is a violation of R315-303-4(2)(b) of the Utah Administrative Code. The Permittee is allowed to burn material by complying with the requirements of R307-202-5 of the Utah Administrative Code. The Permittee shall perform such burning in a segregated area within the landfill site. The Permittee shall extinguish all accidental fires as soon as reasonably possible. The Permittee's non-compliance with R307-202-5 of the Utah Administrative Code, as determined by the Director of the Division of Waste Management and Radiation Control, also constitutes non-compliance with this Permit.
- III.E. Daily Cover
- III.E.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.
- III.E.2. The Permittee may use an alternative daily cover material when the material and the application of the alternative daily cover meet the requirements of R315-303-4(4)(b) through (e) of the Utah Administrative Code.
- III.F. Ground Water Monitoring
- III.F.1. This facility is not required to monitor ground water (R315-303-3(3)(e)(iv) of the Utah Administrative Code).
- III.G. Gas Monitoring
- III.G.1. The Permittee shall monitor explosive gases at the landfill in accordance with the Gas Monitoring Plan contained in Attachment 2 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 as protective of human health and the environment as that approved in Attachment 2, 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.

- III.G.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:
- III.G.2.a Immediately take all necessary steps to ensure protection of human health and notify the Director;
 - III.G.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;
 - III.G.2.c Implement a remediation plan that meets the requirements of R315-303-3(5)(b) of the Utah Administrative Code; and
 - III.G.2.d Submit the plan to, and receive approval from, the Director prior to implementation.
- III.H. Waste Inspections
- III.H.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.
 - III.H.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.
 - III.H.3. The Permittee shall inspect all loads that the Permittee suspects may contain a waste not allowed for disposal at the landfill.
 - III.H.4. The Permittee shall conduct complete random inspections as follows:
 - III.H.4.a The Permittee shall conduct the random waste inspection at the working face or an area designated by the Permittee.
 - III.H.4.b The Permittee shall direct that loads subjected to complete inspection be unloaded at the designated area;
 - III.H.4.c Loads shall be spread by equipment or by hand tools;
 - III.H.4.d Personnel trained in hazardous waste recognition and recognition of other unacceptable waste shall conduct a visual inspection of the waste; and
 - III.H.4.e The personnel conducting the inspection shall record the results of the inspection on a waste inspection form as found in Attachment 2. The Permittee shall place the form in the daily operating record at the end of the operating day.
 - III.H.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.
- III.I. Disposal of Special Wastes

- III.I.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.
- III.I.2. The Permittee may dispose of animal carcasses 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.
- III.I.3. The Permittee/s shall handle and dispose of asbestos waste in accordance with R315-315-2 of the Utah Administrative Code.

III.J. Self Inspections

- III.J.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, fences and access controls, roads, run-on/run-off controls, 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.

III.K. Recordkeeping

- III.K.1. The Permittee shall maintain and keep on file, at the District office, 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 to be kept shall be signed and dated by the appropriate operator or personnel. The Daily operating record shall consist of the following two types of documents:

III.K.1.a Records related to the daily landfill operation or periodic events including:

III.K.1.a.(1) 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;

III.K.1.a.(2) Major deviations from the approved plan of operation, recorded at the end of the operating day the deviation occurred;

III.K.1.a.(3) 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;

III.K.1.a.(4) 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.

III.K.1.b Records of a general nature including:

III.K.1.b.(1) A copy of this Permit, including all Attachments;

III.K.1.b.(2) Results of inspections conducted by representatives of the Director, and of representatives of the local Health Department, when forwarded to the Permittee;

III.K.1.b.(3) Closure and Post-closure care plans; and

III.K.1.b.(4) Records of employee training.

III.L. Reporting

III.L.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, a re-application for approval of the financial assurance mechanism, the results of gas monitoring and all training programs completed.

III.M. Roads

III.M.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 as necessary to assure safe and reliable all-weather access to the disposal area.

III.N. Litter Control

III.N.1. Litter resulting from operations of the landfill shall be minimized. In addition to the litter control plans found in Attachment 2, the Permittee shall implement the following procedures when high wind conditions are present:

III.N.1.a Reduce the size of the tipping face;

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

III.N.1.c Orient vehicles to reduce wind effects on unloading and waste compaction;

III.N.1.d Reconfigure tipping face to reduce wind effect;

III.N.1.e Use portable and permanent wind fencing as needed; and

III.N.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.

IV. **CLOSURE REQUIREMENTS**

IV.A. Closure

IV.A.1. The Permittee shall install final cover of the landfill as shown in Attachment 3. 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 re-compacted clay placed as part of the final cover.

IV.A.2. 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 Attachment 3. 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.

IV.B. Title Recording

IV.B.1. 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.

IV.C. Post-Closure Care

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

IV.D. Financial Assurance

IV.D.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 mechanism(s) to provide for the cost of closure and post-closure until termination of financial assurance in accordance with R315-309-11 of the Utah Administrative Code.

IV.E. Financial Assurance Annual Update

IV.E.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.

IV.F. Closure Cost and Post-Closure Cost Revision

- IV.F.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.

V. ADMINISTRATIVE REQUIREMENTS

V.A. Permit Modification

- V.A.1. Modifications to this Permit may be made upon application by the Permittee or by the Director following the procedures specified in R315-310-11-2 of the Utah Administrative Code. The Permittee shall be given written notice of any permit modification initiated by the Director.

V.B. Permit Transfer

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

V.C. Expansion

- V.C.1. This Permit is for a Class II 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 Attachment 1, but within the property boundaries designated in Attachment 1, shall require submittal of plans and specifications to the Director. The plans and specifications shall be approved by the Director prior to construction.

- V.C.2. Any expansion of the landfill facility beyond the property boundaries designated in the description contained in Attachment 1 shall require submittal of a new permit application in accordance with the requirements of R315-310 of the Utah Administrative Code.

- V.C.3. 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. 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 Section I-C of this Permit.

V.D. Expiration

- V.D.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.

Attachments

Attachment 1 – Landfill Design and Construction Plans

Attachment 2 – Plan of Operation

Attachment 3 – Closure and Post-Closure

Attachment 1

7.0 ENGINEERING REPORT

7.1 Maps, Drawings and Specifications

Appendix D of this report contains the maps and drawings pertaining to the location, conceptual design, daily progression, final contouring and final cover design of the JRDA Landfill.

Drawing D-1 is a 7.5-minute USGS quadrangle map showing the facility boundary, property boundary, surface drainage channels, existing utilities, direction of prevailing winds, and any structures (none) within one-quarter mile of the facility.

Drawing D-2 is a topographic map of the JRDA Landfill unit drawn to a scale of 400 feet to the inch with five-foot contour intervals. The drawing shows the boundaries of the unit and current borrow and fill areas.

Drawing D-3 represents final configuration of the landfill upon closure. Included on this drawing are run-on and run-off control ditch locations, access road alignment, and final elevations of cover.

Drawing D-4 shows proposed cross-sections for the run-on and run-off control ditches.

Drawing D-5 shows the future access road section.

Drawing D-6 shows daily, intermediate, and final cover designs.

7.2 Location Standards

In accordance with UAC R315-302-1 Location Standards for Disposal Facilities, location criteria must be considered for the location of the JRDA Landfill. Due to the existing facility status of the JRDA Landfill, it is exempt from some of the location requirements; however, the following location standards must be met.

7.2.1 Airports

The JRDA Landfill is not located within 10,000 feet of an airport runway end.

7.2.2 Unstable Areas

No geologic or geomorphologic features exist at the landfill site which could compromise the structural integrity of the landfill. Soil and subsurface studies performed by the USDA and USGS indicate the landfill is located in an area of shallow native soils underlain by unweathered bedrock as described in Section 6.2. Significant differential settling is not expected to occur due to differential settling of the native soils or unweathered bedrock.

The waste mass already in place at the JRDA Landfill does present opportunity for differential settlement. The equipment used to place and compact the waste was a small, antiquated traxcavator. Compaction of the waste mass was minimal and placement of daily cover was not regular. As additional cells have been constructed, and will be constructed on top of the relatively uncompacted waste, some settling is expected to occur. The uncompacted waste will be located near the center and bottom of the completed landfill. The full extent of the settling may not be realized until that portion of the landfill approaches final elevation. Final contouring of the landfill will account for the possibility of continued, higher than average settlement over that portion of the site.

7.2.3 Floodplains

No FEMA maps have been prepared for the location of the JRDA Landfill. No large washes or drainages intersect or lie uphill of the landfill site. USGS surface maps of the area indicate an

absence of surface water, streams, and springs or seeps within a 3,000-foot radius of the site. The landfill will eventually encompass the entire drainage in which it is located. The site does drain toward the active cells of the landfill and potential run-on must be redirected away from the waste mass by drainage channels.

7.3 Design and Operation

Drawing D-3 illustrates the progression of daily cell construction, run-on and run-off control measures, and the general boundary limits of the JRDA Landfill.

The location of future cell construction will be both on top of and downhill (north) from the existing cells which have been constructed. Current plans call for the northern end of the site to remain stationary when it meets the main portion of Hall Canyon. The new cells will be constructed using proper compaction equipment and regular daily cover. The slope of the active face should be maintained at approximately three horizontal to one vertical. Due to the size and slope of the existing northern face of the landfill, new cells will be constructed alongside the existing northern face. The new cells will abut the existing northern face and eventually rise to the same elevation. When the new cells reach the elevation of the existing northern face, the operator can spread construction of new cells onto the top of the existing fill. The landfill will continue to progress vertically, expanding to the canyon walls. Excavation from the eastern, western, and southern boundaries of the landfill active area will result in expansion laterally, yet remaining within existing boundaries. As new cell construction approaches final grade, the operator shall carefully place cells to correspond with the final design elevations. Final cover shall be placed in phases. Due to the topography of the canyon, the north end of the landfill will reach design elevation and receive final cover first. The final cover shall be graded to have a maximum slope of three horizontal to one vertical.

Daily volumes of solid waste will be received at either the top or the bottom of the active face depending on the judgment of the operator and condition of the access roads. The operator shall spread the waste onto the active face at a depth of two feet. After spreading the waste, the operator shall compact the waste. Near the end of the day the operator shall cover the waste with a minimum of six inches of soil taken from the canyon walls, thereby completing a daily cell. Care shall be taken during cell placement and construction to minimize potential ponding and run-on to the surface of the solid waste.

As the entire breadth of the canyon begins to be filled, the existing access road will require relocation. Drawing D-3 shows the location of the road on the west side of the canyon. If at some point the road is placed on the refuse, approximately 3 feet of backfill shall be required for the road base. Drawing D-5 shows a section of the proposed road if it is placed on refuse.

7.4 Groundwater Monitoring, Leachate Collection and Treatment

Based on criteria outlined in Section 6.5, this permit application is submitted for approval of continued operation of the JRDA Landfill without a groundwater monitoring, leachate collection, or leachate treatment system.

7.5 Landfill Gas Control and Monitoring

Landfill gas monitoring will be performed by the Nephi City Gas Department on a quarterly basis. Monitoring shall be performed at designated locations for which a history of gas levels shall be compiled. These locations shall continue to be used for post-closure monitoring purposes. The monitoring shall be performed using hand-held detectors capable of indicating the concentration of

landfill gas in the air. The instrument shall be able to detect gas levels which are at 25% of the lower explosive limit (LEL). If landfill gas levels are detected above 25% of the LEL in facility structures (excluding gas control or recovery system components), or if levels at the LEL are detected elsewhere (including at the property boundary or beyond), the contingency plan outlined in Section 2.7.3 of this application will be used.

7.6 Run-on/Run-off Control Systems

Run-on/run-off control systems shall be constructed and maintained during both the active life of the landfill and during the post-closure period. Run-on control ditches shall be constructed up slope from the active portion of the landfill. These ditches shall be located so as to capture the maximum amount of potential run-on and redirect it around the waste mass. As the landfill rises in elevation, new run-on ditches must be constructed as the existing ditches become buried by new cell construction.

Run-off from the surface of the active portion of the landfill shall be controlled using berms and stockpiles of daily cover. During cell construction care shall be taken to eliminate potential ponding sites on top of the cells. The surface of the cells shall be contoured to redirect excess precipitation to the perimeter of the active portion of the landfill. At the perimeter the run-off shall be directed around the waste mass.

Post-closure run-off control ditches shall be constructed across the entire face of the landfill. The ditches redirect the run-off into adjacent natural drainages. The ditches shall minimize velocity and segregate run-off from the various sections of the final cover into more manageable volumes. Drawing D-3 illustrates the alignment of the final run-off control ditches. The ditches are designed to control a 25-year, 24-hour storm event. The calculations for sizing the ditches for a 25-year, 24-hour storm event are included in Appendix F. A detail of a ditch is included as Drawing D-4.

The run-on control ditch dimensions are based on the tributary area of the entire west side of the landfill. The south and east sides will utilize the same size run-on control ditches even though the tributary areas are smaller. Run-off control ditches shall be constructed to the same dimensions as the run-on control ditches.

7.7 Facility Life

The facility life was analyzed using estimated site volume, current volume of waste received, anticipated population growth rates and expected in-place density of solid waste.

7.7.1 Site Volume

During preparation of this application, topographic survey of the landfill was completed. The site was then analyzed using Bentley InRoads software to determine an accurate volume for a specified elevation of the landfill surface. Volumes were estimated for intermediate profiles the landfill will reach and for the final anticipated elevation of the site. The total useful volume of the canyon is estimated to be 4,600,000 cubic yards. UAC R307-221 requires municipal solid waste landfills with design capacities greater than 2,755,750 tons and 3,270,000 cubic yards to be subject to emission inventory requirements. The capacity for the JRDA landfill is administratively limited to 3,270,000 cubic yards of waste. Based on an assumed waste to soil ratio of 3:1, this results in a total volumetric capacity of 4,360,000 cubic yards. All life and capacity calculations are based on this volume.

7.7.2 Current Volume of Waste Received

The JRDA Landfill currently (2014) accepts an estimated 100 tons of municipal waste per week and 55 tons of construction and demolition waste per week. These values are averages based on actual tonnage history records from 1996 to 2004.

7.7.3 Population Growth Rate

Census data from 1980, 1990, and 2010, and population data from 1994 for the major communities using the JRDA Landfill are as follows:

	1980	Annual % Change	1990	Annual % Change	1994	Annual % Change	2000	Annual % Change	2010	Avg. Annual Rate of Growth	
										1994 - 2000	2000 - 2010
Nephi	3,285	0.68%	3,515	1.23%	3,691	4.23%	4733	1.32%	5394	4.71%	1.40%
Mona	536	0.86%	584	4.60%	699	3.54%	861	6.05%	1549	3.86%	7.99%
Levan	453	-0.85%	416	3.43%	476	6.33%	688	2.04%	842	7.42%	2.24%
Service Area	4,274	0.55%	4,515	1.89%	4,866	4.32%	6,271	0.98%	6,914	4.81%	1.03%

Using the 2000 to 2010 growth rates, a weighted annual average growth rate of 1.03% can be obtained for the above communities using the JRDA Landfill. For purposes of estimating the life of the landfill, 1.50% per year will be used for the long-term growth rate of the waste volume received.

7.7.4 In-place Density of Solid Waste

For estimating the site life, an in-place density of 750 lbs/yd³ has been selected as the minimum acceptable density. If higher densities are achieved, the life of the facility may be extended. In addition, daily and intermediate cover is assumed to occupy a volume equal to one-third of the in-place and compacted waste material.

7.7.5 Estimated Facility Life

Given the above criteria, the estimated facility life using compacted density of 750 lbs/yd³ ends in 2086. Due to population growth, waste received at the JRDA Landfill is expected to exceed 20 tons per day in approximately 2037.

Table 7.75 on the next page outlines the estimated volumes of waste expected to be received at the JRDA Landfill for the remaining life of the facility. The total volumes in 2005, 2006, and 2014 are based on actual survey data. The remaining values are calculated. The cumulative compacted volumes shown include a waste-to-cover ratio of 3:1 and a compaction level of 750 lbs/yd³. The full table is included in Appendix G.

7.8 Closure and Post-Closure Design, Construction, and Maintenance

Sections 4 and 5 of this application contain details of closure design, construction, and maintenance. The post-closure use of the site will be limited due to the location of the landfill, and the projected topography of the final cover. Open range is the most probable post-closure use of the land.

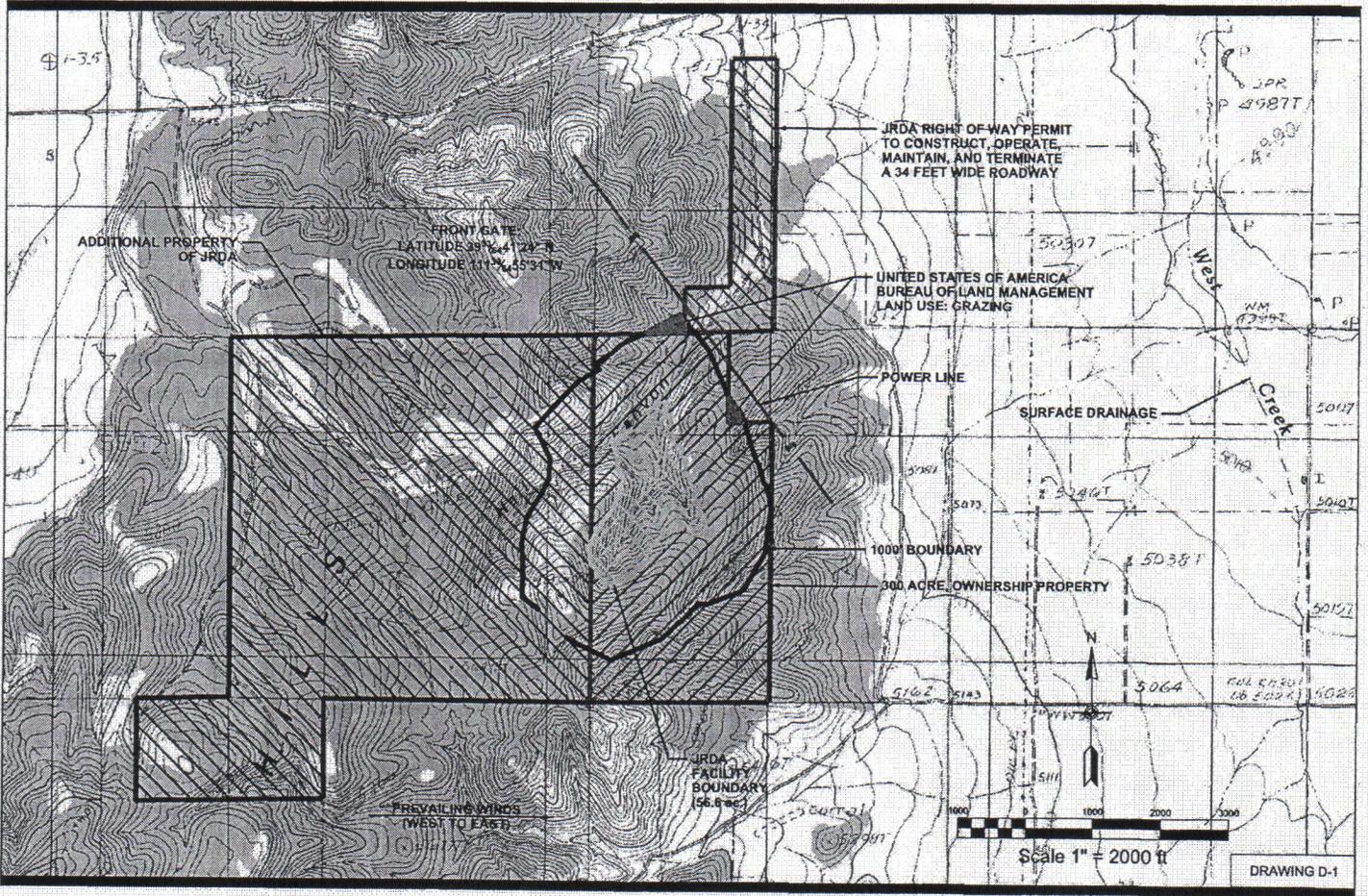
TABLE 7.75
JRDA LANDFILL ESTIMATED FACILITY LIFE

Current Tons of Waste Received Per Week 100 tons household and 55 tons C&D
 Compacted Density of Waste (lbs/yd³) 750
 Estimated Annual Population Growth Rate 1.50%
 Site Capacity (yd³) 4,360,000

Year	Annual Household Waste Received (Tons)	Annual C&D Waste Received (Tons)	Compacted Waste Volume (yd ³)	Daily Cover Volume (yd ³)	Cumulative Waste + Cover Volume (yd ³)
1 (2005)	4,800	3,267	21,512	7,171	210,625
5 (2009)	5,712	1,681	19,714	6,571	490,261
10 (2014)	5,200	2,860	21,493	7,164	627,923
15 (2019)	5,602	3,081	23,154	7,718	777,790
20 (2024)	6,035	3,319	24,944	8,315	939,240
25 (2029)	6,501	3,576	26,872	8,957	1,113,167
30 (2034)	7,004	3,852	28,948	9,649	1,300,536
33 (2037)	7,324*	4,028	30,271	10,090	1,419,838
40 (2044)	8,128	4,470	33,596	11,199	1,719,835
45 (2049)	8,756	4,816	36,192	12,064	1,954,089
50 (2054)	9,433	5,188	38,989	12,996	2,206,448
55 (2059)	10,162	5,589	42,003	14,001	2,478,310
60 (2064)	10,947	6,021	45,249	15,083	2,771,183
65 (2069)	11,793	6,486	48,746	16,249	3,086,690
70 (2074)	12,705	6,988	52,513	17,504	3,426,581
75 (2079)	13,687	7,528	56,571	18,857	3,792,739
80 (2084)	14,744	8,109	60,943	20,314	4,187,196
82 (2086)	15,190	8,355	62,785	20,928	4,353,387

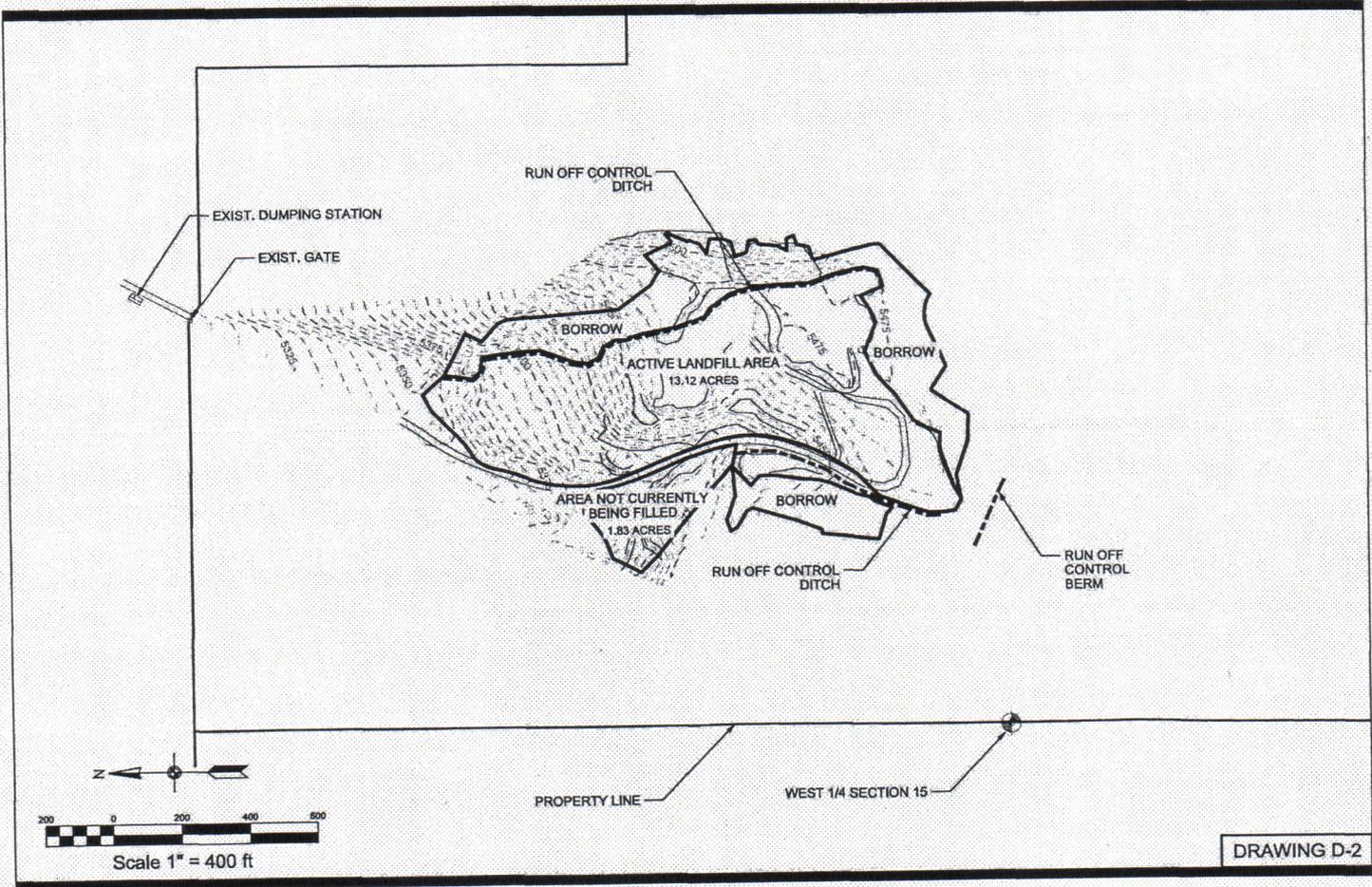
* Class I status

Appendix D – Drawings



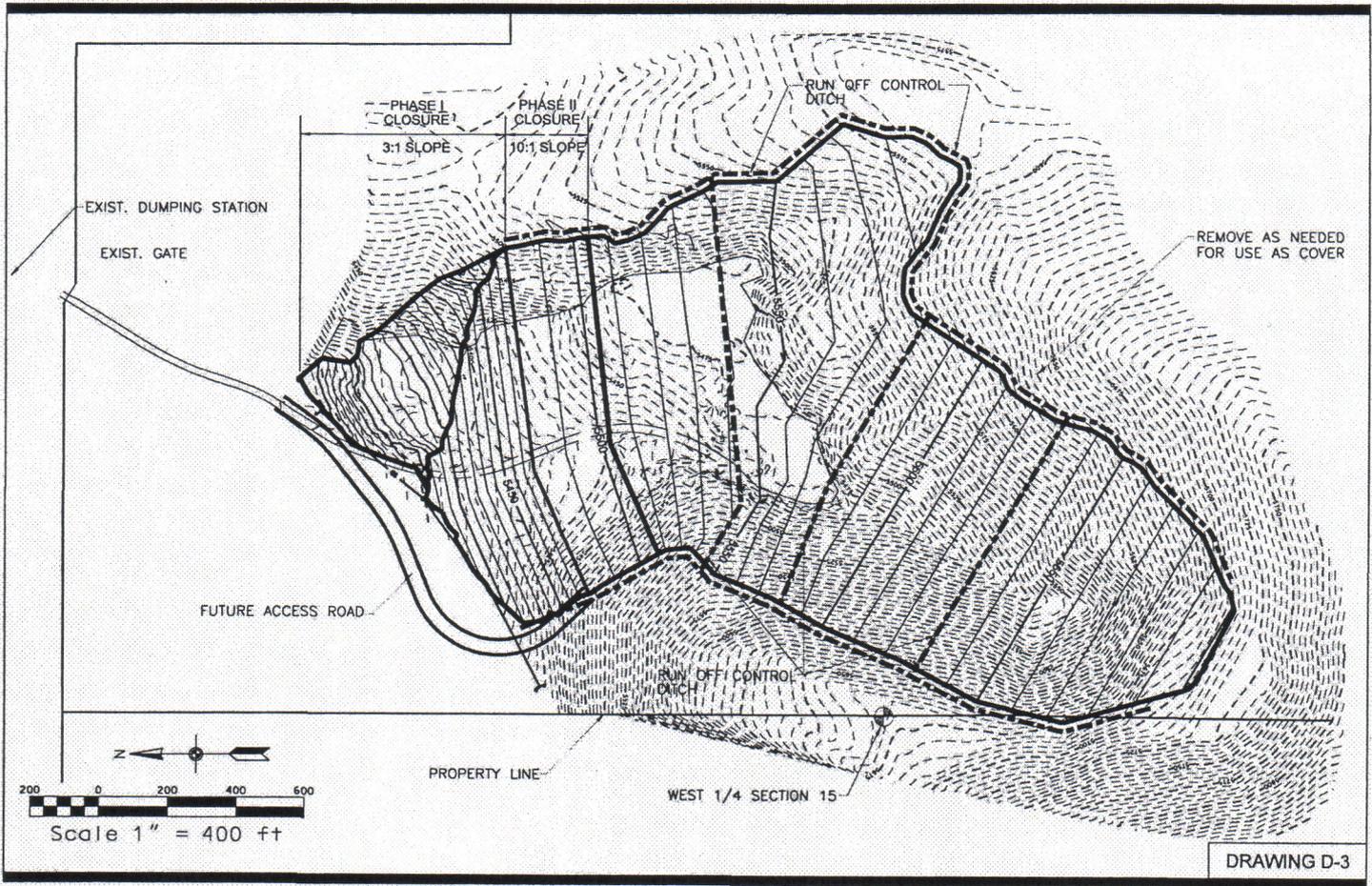
RB&G
 ENGINEERING, INC.

U.S. GEOLOGICAL SURVEY TOPOGRAPHICAL MAP
 SUGARLOAF QUADRANGLE
 UTAH - JUAB COUNTY
RENEWAL APPLICATION
JUAB RURAL DEVELOPMENT AGENCY
CLASS II AND CLASS IV LANDFILL



RB&G
ENGINEERING, INC.

EXISTING LANDFILL & BORROW AREAS
RENEWAL APPLICATION
JUAB RURAL DEVELOPMENT AGENCY
CLASS II AND CLASS IV LANDFILL

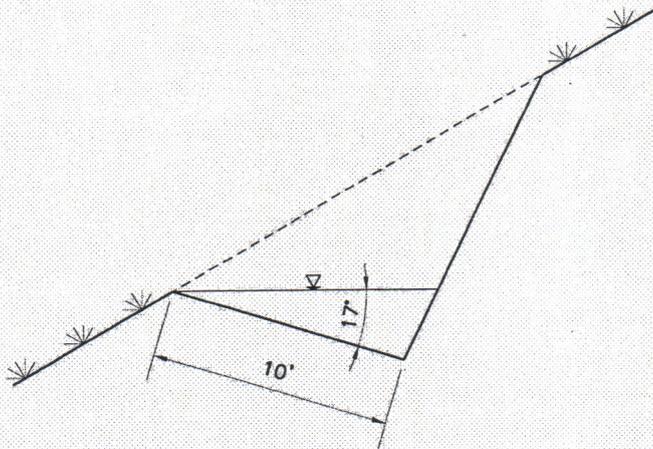


DRAWING D-3

RB&G
ENGINEERING, INC.

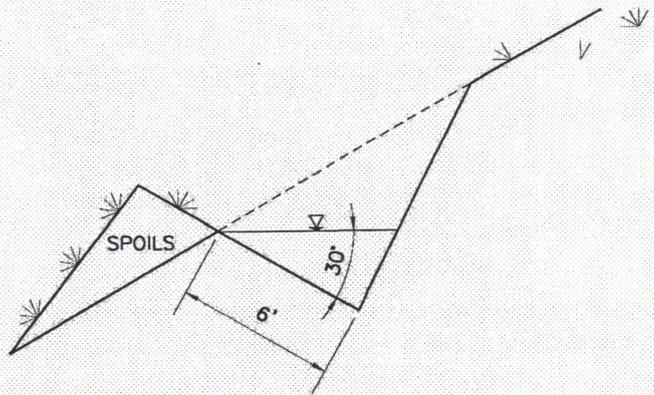
FINAL CLOSURE DESIGN

**RENEWAL APPLICATION
JUAB RURAL DEVELOPMENT AGENCY
CLASS II AND CLASS IV LANDFILL**



10' WIDTH REQ'D. @ LOWER END OF DITCH.
 7' WIDTH REQ'D. @ UPPER END OF DITCH.

RUN OFF CONTROL



6' REQ'D. @ LOWER END OF DITCH

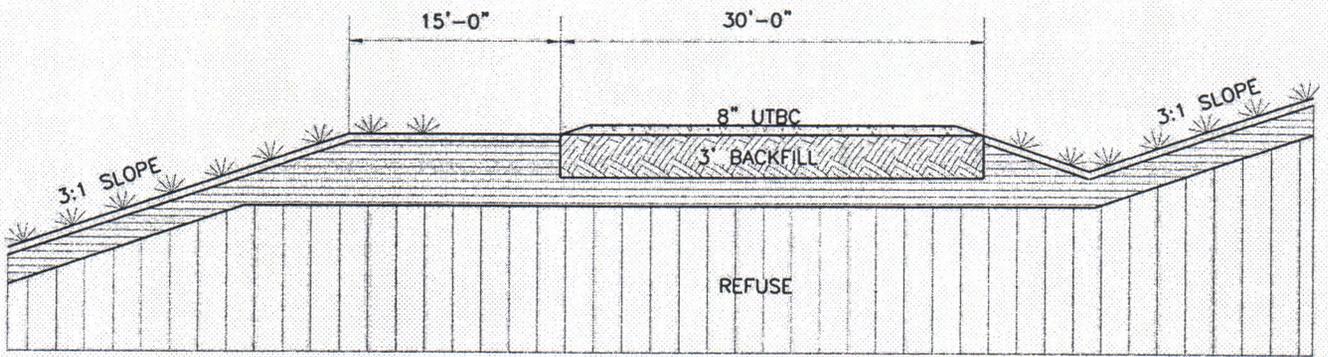
RUN ON CONTROL

DRAWING D-4

RB&G
 ENGINEERING, INC.

RUN ON/ RUN OFF CONTROL DITCHES

RENEWAL APPLICATION
 JUAB RURAL DEVELOPMENT AGENCY
 CLASS II AND CLASS IV LANDFILL



FUTURE ACCESS ROAD
OVER REFUSE

DRAWING D-5

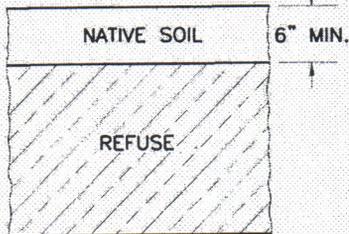
RB&G
ENGINEERING, INC.

FUTURE ACCESS ROAD SECTION

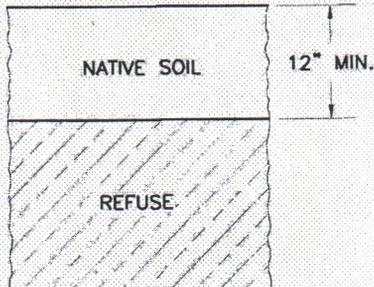
RENEWAL APPLICATION
JUAB RURAL DEVELOPMENT AGENCY
CLASS II AND CLASS IV LANDFILL

COVER DESIGN

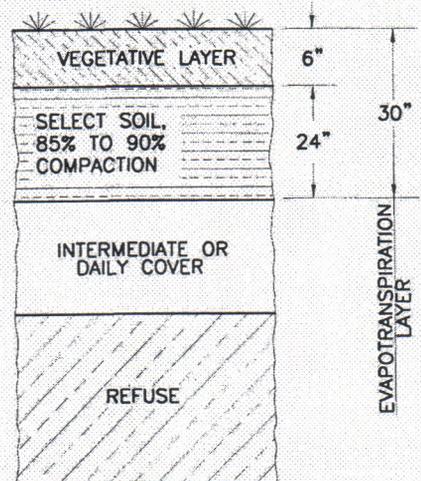
DAILY COVER



INTERMEDIATE COVER



FINAL COVER



DRAWING D-6

RB&G
ENGINEERING, INC.

COVER DESIGN

RENEWAL APPLICATION
JUAB RURAL DEVELOPMENT AGENCY
CLASS II AND CLASS IV LANDFILL

Attachment 2

2.0 PLAN OF OPERATION

In accordance with the Utah Solid Waste Permitting and Management Rules, R315-301 through 320 of the Utah Administrative Code (UAC), the JRDA is submitting the following Plan of Operation for a Class II municipal landfill with a Class IV construction/demolition waste cell. This plan is submitted to the Utah Department of Environmental Quality (UDEQ) as part of the application to operate a Class II landfill.

2.1 Hours of Operation

The hours of operation shall be posted at the landfill site and may be adjusted from time to time to best suit the needs of the communities. Landfill hours will also be posted on the County web site and in any other public location as seen fit by County administrators. During the posted hours of operation a landfill attendant will be on site at all times.

2.2 Intended Schedule of Construction

Nephi City began landfill operations at the present location in 1983. The JRDA subsequently assumed responsibility of the landfill operation. The site is in a narrow and relatively short canyon which runs south to north. Solid waste is deposited across the breadth of the canyon while daily cover is excavated along the sides of the canyon. Separate cells for household waste and construction/demolition waste are maintained in close proximity along the active face.

Current plans call for the northern end of the site to remain stationary when it meets the main portion of Hall Canyon. The landfill will continue to progress vertically, expanding to the canyon walls. Excavation from the eastern, western, and southern boundaries of the landfill active area will result in expansion laterally, yet remaining within existing boundaries. Final cover shall be placed in phases. Due to the topography of the canyon, the north end of the landfill will reach design elevation and receive final cover first. The final cover shall be graded to have a maximum slope of 3 horizontal to 1 vertical.

2.3 Waste Handling Procedures

The JRDA Landfill accepts the following types of waste for disposal:

- Household Waste
- Commercial Solid Waste
- Yard Waste
- Industrial Solid Waste
- Construction/Demolition Waste
- Furniture and Appliances
- Automobile Bodies
- Waste Tires
- Dead Animals
- Asbestos
- Medical Wastes

An example of the form used to record the weights/volumes of waste received is included in Appendix B.

2.3.1 Household Waste

Household waste includes any solid waste derived from households including garbage, trash, and sanitary wastes. Sources for this type of waste include single and multiple residences, motels, hotels, schools, bunkhouses, ranger stations, campgrounds, picnic grounds and day-use recreation areas. These wastes will be deposited on the working face at the site, and covered on a daily basis.

2.3.2 Commercial Solid Waste

Commercial solid waste includes all types of solid waste generated by stores, offices, restaurants, warehouses, and other non-manufacturing activities, excluding household waste and industrial wastes. These wastes will be deposited on the working face at the site, and covered on a daily basis.

2.3.3 Yard Waste

Yard waste includes plant and tree trimmings derived from landscaping, land clearing and seasonal landscaping maintenance. Yard waste does not include garbage, paper, plastic, processed wood, sludge, septage, or manure.

Yard wastes will be placed in the Class IV waste cell at the landfill. The Class IV cell will be located on the same level as the active face of the landfill and will progress with the active face as the landfill is constructed. The Class IV cell will alternate locations on the active face and will be moved and covered on a monthly basis, or when the height of the Class IV cell equals the cell height of the adjoining cells of household wastes. The Class IV cell shall be covered more often if required to eliminate litter and fire hazards.

At the discretion of the operator, yard waste may also be placed in a separate location away from all active and inactive cells, to be burned according to the requirements of Section 2.12 of this application.

2.3.4 Industrial Solid Waste

Industrial solid waste includes any solid waste generated at a manufacturing or other industrial facility which is non-hazardous and non-liquid. Acceptance of industrial solid waste is contingent upon the type, quantity, and verification of the waste. Industrial wastes shall be separated as to Class II or Class IV wastes and disposed of in the appropriate cell. Hazardous or liquid waste generators must use the services of a permitted hazardous waste facility. Industrial solid waste does not include mining waste, oil and gas waste, or other hazardous wastes.

2.3.5 Construction/Demolition Waste

Construction/demolition waste includes waste from building materials, packaging and rubble resulting from construction, remodeling, repair, renovation and demolition operations on pavements, houses, commercial buildings and other structures. Construction/demolition waste includes: untreated wood, tree stumps, concrete, brick, masonry materials, soil, rock, non-asbestos insulation, glass, wallboard, waste asphalt, rebar contained in concrete, etc. Construction/demolition debris shall be placed in the Class IV waste cell. Compaction and cover of the Class IV waste shall occur as described in Section 2.3.3.

Construction/demolition waste does not include regulated quantities of hazardous PCB's, liquid wastes or asbestos wastes generated by construction or demolition activities. Nor does it include contaminated soils and tanks resulting from remediation or clean-up at any spill or release.

2.3.6 Furniture and Appliances

Furniture and appliances are to be disposed of in the Class IV waste cell. Appliances shall be crushed and placed in the working face. Appliances must have any Freon removed by a private contractor. A sticker stating the Freon has been removed must accompany the appliance. Recycling may take place in the future at the agency's direction. Compaction and cover of this waste shall occur as described in Section 2.3.3.

2.3.7 Automobile Bodies

Automobile bodies are to be disposed of in the Class II waste cell. Automobiles shall be crushed and placed onto the working face near the bottom of the cell. Automobiles must have all fluids removed, and a dismantlement permit or clear title from the State of Utah must be provided before acceptance. Compaction and cover of the automobile bodies shall occur as described in Section 2.3.3.

2.3.8 Waste Tires

Automobile tires will be accepted four (4) at a time in accordance with UAC R315-320-3. The tires shall be placed at the bottom of the working face of the Class II or Class IV cell. Commercial tire haulers and individuals wishing to dispose of more than four tires shall be excluded.

2.3.9 Dead Animals

Dead animals are accepted at the JRDA Landfill in accordance with UAC R315-315-6. Dead animals shall be managed and disposed of in a manner that minimizes odors and the attraction, harborage, or propagation of insects, rodents, birds, or other animals. The carcass shall be placed at the bottom of the Class II cell and immediately covered with a minimum of two feet of other waste. The active face will be covered daily.

2.3.10 Asbestos Waste

Asbestos waste is accepted at the JRDA Landfill provided the following conditions are met in accordance with UAC R315-315-2:

- Asbestos waste is handled and transported in a manner that does not permit the release of asbestos fibers into the air and complies with R307-1-4.12, R307-1-8 and 40 CFR Part 61, Subpart M, 1995 ed.
- Asbestos waste is adequately wetted and containerized to prevent fiber release.
- Containers are labeled showing the name of the waste generator, location where the waste was generated, and tagged with a warning label indicating the containers hold asbestos.

Upon receipt of the asbestos waste the operator shall:

- Require the transport vehicle to be marked with warning signs in accordance with 40 CFR Part 61.149(d)(1)(iii), 1995 ed.
- Inspect the load to ensure the asbestos waste is properly contained in leak proof containers and labeled appropriately.

- Place the containers at the bottom of the daily covered face with sufficient care so as to not rupture the container.
- Cover the unruptured container within 18 hours of placement with a minimum of six inches of material containing no asbestos. If rupture occurs, or the asbestos is improperly containerized, it shall immediately be covered with a minimum of six inches of material containing no asbestos and shall not be compacted until cover is in place.
- Limit access to the area of the active face where the asbestos is located until a minimum of six inches of cover material containing no asbestos is in place.

If the operator believes the asbestos waste is in a condition that may cause significant fiber release during disposal, the operator shall notify the health department and the executive secretary. If the operator accepts improperly containerized asbestos waste the operator shall thoroughly soak the waste with water spray prior to unloading, rinse the truck, and immediately cover the waste with non-waste material which prevents fiber release prior to compacting the waste.

Access to the asbestos management site will be restricted by limiting access to the landfill to only one gate that will be locked when left unattended. Warning signs will be placed at the landfill entrance and at intervals not to exceed 200 feet along the perimeter of the landfill. All warning signs will comply with the requirements of 40 CFR Part 61.154(b), 1995 ed.

2.3.11 Infectious/Medical Waste

Infectious wastes that have not been incinerated will be accepted at the JRDA Landfill if properly containerized in accordance with R315-316-5. The transporter of infectious waste shall notify the landfill operator that the load contains infectious waste. When received at the landfill, the landfill operator shall place the containers at the bottom of the daily covered cell in such a manner as to avoid breaking them and immediately cover the containers with 12 inches of earth or waste material containing no infectious waste. The containers shall not be compacted until completely covered.

Currently, the medical and infectious wastes generated by the Central Valley Medical Center located in Nephi are disposed of by BFI Medical Waste Systems of North Salt Lake. If, in the future, these medical wastes are disposed of in the JRDA landfill, all requirements of UAC R315-316-5 must be met.

2.3.12 Household Hazardous Wastes

Juab County does not have a household hazardous waste program. Household cleaning agents and solvent residuals are accepted and managed in the solid waste stream. The containers must be household size (5 gallons or less), purchased and generated by individual residences.

2.3.13 Waste Exclusion Program

The JRDA Landfill does not accept the following types of waste:

- automobile batteries, motor oil, antifreeze
- liquid waste
- hazardous/PCB wastes
- radioactive wastes

Automobile batteries, used motor oil and antifreeze are not accepted at the landfill. These items can be taken to service stations and auto parts stores where arrangements are in place with licensed recyclers to periodically pick up the waste.

In accordance with UAC R315-303-3, disposal of containerized liquids larger than household size, non-containerized liquids, sludge containing free liquids, or any waste containing free liquids in containers larger than household size (5 gallons or less) is prohibited.

Sanitation workers and haulers are the first line of defense against household hazardous waste and liquid wastes which do not meet landfill standards. Landfill attendants and operators provide a second screening for these items. Landfill staff are trained to recognize liquid filled containers which may require segregation from the waste stream. Upon observation of a suspect container, the attendant shall determine whether or not the container is empty. Only empty, vented containers that do not contain hazardous materials shall be accepted for disposal. The generator must be able to produce documentation of the non-hazardous nature of the container upon request. The accepted containers may not have more than two percent grease in them. Containers shall not be opened by the operator without checking with the field supervisor and having knowledge of the hazardous contents of the container.

Containers not meeting the above criteria shall be refused by the landfill attendant and returned to the generator. If suspect containers are found at the landfill and the generator is unknown, and the container is not empty, the container shall be stored in a designated area until it can be determined to be non-hazardous by trained personnel. If the contents are determined to be non-hazardous, the contents shall be mixed with soil and disposed of on site. If the contents are found to be hazardous, a licensed transport and disposal facility shall be contacted by the operator to remove the container from the landfill. Notations shall be made in the operating record as to the nature of the containers, actions taken, and the final disposal method for the container and contents. If possible, the record will also include a description of the generator, transport vehicle description and license number. In the event of a hazardous waste determination, the Division of Solid and Hazardous Waste, and if possible, the hauler and generator shall be notified within 24 hours.

2.3.14 Hazardous/PCB Waste Exclusion Program

Hazardous wastes and PCB wastes are not accepted at the JRDA Landfill. The landfill attendants and operators are trained to recognize regulated quantities of hazardous or PCB containing wastes which cannot be disposed of at the JRDA Landfill. Incoming loads are met by the operator and visually inspected as they arrive at the active face. If regulated quantities of hazardous waste or PCB containing wastes or suspicious wastes are identified, the load shall be refused and the Utah Division of Environmental Quality (UDEQ) notified.

Incoming loads shall be randomly inspected by the landfill attendant for free liquids and hazardous or PCB containing wastes. The number of loads inspected will be one out of every 100

incoming loads. The inspections shall occur prior to unloading of the waste at the active face. Loads known to be non-hazardous yet suspected of containing a high liquid content shall be tested on site by EPA Method 9095, paint filter test. Loads failing this test shall be rejected. Loads identified as containing hazardous or PCB containing waste shall be rejected.

The operator shall make notation in the waste screening inspection form and operating record of all loads turned away and why they were refused.

2.3.14.1 Waste Screening Procedure

Random load inspections and loads suspected of containing prohibited waste, requiring a more thorough inspection, shall be accepted only after the following steps are performed:

1. Waste shall be unloaded in a designated inspection area convenient to the active face. The hauler shall remain on site until load verification is completed.
2. Protective gear shall be worn (gloves, goggles, coveralls, and a respirator).
3. Waste shall be carefully spread and visually examined using the front end loader or hand-tools.
4. The structural integrity of all potentially hazardous containers shall be determined by visual inspection, and if possible contents of container shall be determined by visual inspection of outside labels or markings. Unmarked or unidentifiable containers shall be opened and inspected only by properly trained personnel.
5. All wastes suspected of being hazardous shall be handled and stored as a hazardous waste until proven otherwise.
6. If the content of the load is determined to be non-hazardous, the load can be transferred to the active face for disposal.
7. If non-hazardous yet prohibited wastes are revealed during the screening process, the following steps may be necessary:
 - a) Wastes can be loaded back on the hauler's vehicle, and the hauler informed of proper disposal options.
 - b) If the hauler or generator is no longer on site and is known, they will be asked to retrieve the waste and be directed to a proper disposal facility.
8. Inspection form shall be completed, including written description of final disposition of any prohibited wastes in log book.

If wastes stored temporarily at the site are identified as being hazardous, and the source of the waste is unknown, the Juab County Sheriff's Office shall be notified, and shall be responsible for proper disposal of the waste. Hazardous waste to be transported from the facility must be: 1) stored

in accordance with generator requirements; 2) manifested; 3) transported by a licensed transporter; and 4) disposed of at a permitted hazardous waste facility. UDEQ shall be notified of the characterization of the rejected load. UDEQ shall be contacted to provide instruction on the proper procedures for notifying the generator and instructions for proper disposal.

2.3.14.2 Training of Landfill Personnel

Each attendant and equipment operator has been trained to recognize labels commonly used to identify hazardous and PCB containing wastes. JRDA Landfill personnel have attended screening of hazardous waste training which addresses waste handling, safety precautions and record keeping. Ongoing education and training of landfill personnel will maintain the necessary level of skill and knowledge to operate an effective hazardous waste screening program at the JRDA Landfill. Documentation of personnel training will be maintained in the operating record and will be submitted with each annual report.

2.3.14.3 Inspection Records

Records of inspections shall be maintained and made available upon request of UDEQ. Appendix B contains an example Annual Report form, Site Inspection Record, Landfill Gas Monitoring Record, and Random Load Inspection Record. Included on the Random Load Inspection Record shall be the following items:

1. Date and time of inspection
2. Inspector's name
3. Transporter including license number and driver identification
4. Load description
5. Generator of waste
6. Observations made by inspector
7. Reason for rejecting load
8. Driver's signature
9. Inspector's signature

2.3.14.4 Handling Procedures for Hazardous Waste

Hazardous waste identified on incoming loads from independent haulers will be refused as stated above in the Hazardous Waste Exclusion Program. If regulated quantities of hazardous or PCB waste are detected on incoming County or commercial haul vehicles or at the active face, the Juab County Sheriff's Office shall be notified and public access to the contaminated area (or temporary storage location of the waste if it can be safely removed to the storage area) restricted. If the landfill can safely remain open, the working face shall be moved as far as possible from the hazardous material.

The Sheriff's Office shall implement and manage their Hazardous Materials Response Plan. The Sheriff's Office shall oversee containment, transportation, storage, and ultimate disposal of the hazardous material in accordance with state and federal regulations. JRDA Landfill personnel shall not participate except as directed by the Sheriff's Office.

Wastes which are determined to be hazardous may be stored at the JRDA Landfill for a maximum of 180 days provided the following conditions are met:

- Waste is placed in 55-gallon containers or suitable tanks
- Tanks or containers are marked "Hazardous Waste"
- Tanks or containers are clearly marked with the date of packaging
- Tanks or containers shall be clearly marked with the name and telephone number of the emergency response coordinator

When waste is transported off site by a hazardous waste disposal company, a provisional US EPA identification number will be obtained. The waste will be properly packaged, transported and manifested to its destination. All applicable federal and state regulations shall be followed.

PCB containing wastes identified at the JRDA Landfill shall be managed by the Juab County Sheriff's Office. The wastes shall be stored and disposed of in accordance with all applicable state and federal standards. At minimum the following steps must occur:

1. An EPA PCB identification number must be obtained
2. The PCB waste will be properly stored until transported
3. The containers shall be marked with the words, "Caution: Contains PCBs"
4. The container will be manifested for shipment to a permitted disposal facility

2.3.14.5 Notification

In accordance with UAC R315-303-5, the Utah Department of Environmental Quality, the hauler and the generator shall be notified within 24 hours of the discovery of suspected hazardous or PCB containing wastes at the JRDA Landfill. A report will be submitted to UDEQ indicating the time and date of discovery, type of hazardous material, probable hauler, quantity of waste, and actions or proposals for removal of the waste. The record of notification shall also be entered upon the operating record of the JRDA landfill.

2.4 Daily and Interim Cover

The soil excavated from the sides of the canyon shall be stockpiled near the working face. Incoming municipal waste shall be deposited along the working face on the landfill. Accumulations of waste shall be spread and compacted into the working face and covered with, at minimum, a six-inch (6") layer of soil on a daily basis. Compaction will be accomplished using a steel wheeled compactor and a track loader. The intermediate cover at the landfill will be native materials from the site. The material will typically be GM or GC type material. The optimum moisture for the material at the site ranges between 9% and 16%. Incoming loads at the Class IV waste cell will be compacted and covered as described in Section 2.3.3.

2.5 Monitoring and Self Inspections

One or more JRDA Board members, or someone appointed by the board, shall inspect the landfill on a quarterly basis. Inspection will include observation of run-off and run-on control structures, sidewalls of any excavations, active disposal area, perimeter fencing, infiltration layer of completed cells, and on site structures. In accordance with UAC R315-302-2 the following items shall be included in the written inspection report:

- Date and time of inspection

- Printed name and handwritten signature of inspector
- Observations made and recommended repairs or corrective action
- Date and nature of any repairs or corrective action

In addition to the quarterly inspection by the JRDA, the operator shall perform a weekly inspection of the landfill, observing those items outlined in the quarterly inspection.

Records shall be kept on site for a period of three years from the date of inspection. Inspection records shall be available to the Executive Secretary or his/her authorized representative upon request.

2.6 Record Keeping

The operating record shall be maintained on site and on a periodic basis these records shall be turned over to the JRDA office for permanent filing.

The record shall include the following:

- Estimated volume of waste received each day
- Number of vehicles entering the landfill each day
- The types of waste received each day
- Deviations from approved plan of operation
- Training and notification procedures
- Gas monitoring results
- Incident reports
- Inspection log
- This application document
- Other information pertaining to the landfill

2.7 Contingency Plans

In accordance with UAC R315-302-2 (2)(d, f, j) the following sub-sections outline contingency plans which may need to be implemented from time to time at the JRDA Landfill. Potential contingencies include fire or explosion, release of hazardous or toxic materials, release of explosive gasses, and equipment breakdown.

2.7.1 Contingency for Fire or Explosion

In the event of fire, extinguishers are available in each piece of landfill equipment. If fire is discovered in the active face, it shall be extinguished or smothered with stockpiled cover soil. Water will not be applied to the active face unless absolutely necessary. If the fire becomes uncontrolled and cannot be managed by on site personnel, the operator will call 911 or radio for help. If for some reason the phone and radio do not work, the operator shall evacuate the landfill then go to the nearest phone to call the Sheriff's Office. The operator shall immediately notify the JRDA.

After notifying the Sheriff's Office, the operator shall remain in the vicinity of the landfill to inform the fire chief of the type of waste that is burning and other hazards which may be encountered. UDEQ shall be notified immediately, and within 14 days the operator shall submit a written report of the incident of UDEQ.

2.7.2 Release of Hazardous or Toxic Materials

In the case of a hazardous waste spill or leak at the JRDA Landfill, the Juab County Sheriff's Office shall be notified and shall act as the emergency response team. Upon arrival at the landfill, the Juab County Sheriff's Office shall assume responsibility for all subsequent activities related to the containment, handling and off site transportation of the hazardous material. Landfill employees shall not handle hazardous materials spills.

2.7.3 Landfill Gas

Landfill gas monitoring shall be performed quarterly as described in Section 7.5 of this application. If landfill gas levels are detected above 25% of the lower explosive limit (LEL) in facility structures (excluding gas control or recovery system components), or if levels at the LEL are detected elsewhere (including at the property boundary or beyond), operations shall be halted and steps taken to ensure protection of human health and the environment. The executive secretary will be notified. Within seven days of detection the methane gas levels detected and the steps taken to protect human health shall be entered into the operating record. Within 60 days of detection a plan for remediation and release of the methane gas shall be implemented, a copy of the remediation plan shall be placed in the operating record, and the executive secretary notified of plan implementation.

2.7.4 Equipment Breakdown

Equipment breakdowns shall be reported to the Juab County Road Maintenance Department. The Department has qualified heavy equipment mechanics available to service the JRDA Landfill equipment and the ability to service the equipment in the field or transport it to a maintenance facility. In the event the repairs require an unacceptable amount of time, additional equipment is available on an emergency basis.

2.7.5 Alternative Waste Handling

During periods when the facility is unable to compact and cover waste due to equipment breakdown, the waste shall be stockpiled at the active face until the equipment is repaired or temporary replacement equipment arrives. In the event of a complete closure of the entire landfill, wastes may be temporarily long-hauled to the Utah County Landfill west of Utah Lake.

2.8 Installed Equipment Maintenance

The site has no liner or leachate collection system and no temporary or permanent equipment has been installed. Maintenance of on-site equipment will be performed by the Juab County Road Department.

2.9 Vector Control

Daily compaction of the working face will limit the access into, and harborage of vectors and rodents in the waste mass. Daily cover will further reduce or eliminate the attraction of vectors by minimizing entry spaces, nesting sites and food sources.

Accumulations of stagnant water in bulky waste, tires, or from run-on control measures will be addressed and eliminated on a case by case basis as discovered. Dead rodents, putrescible waste, and other randomly occurring potential vector attractions will be minimized through "good housekeeping" practices at the site.

2.10 Training and Safety Program

The operator will read the Plan of Operation and Permit after they are approved by the state. Each new employee will also read these documents prior to working at the site. These documents provide basic operation and safety training specific to the JRDA Landfill. Additional training and refresher courses are available from various professional organizations.

The current landfill operator and attendants have attended a landfill operations course presented by the Solid Waste Association of North America (SWANA). The course was specifically tailored to rural arid landfill operations such as exists at the JRDA Landfill. The course included general landfill operations and hazardous waste identification, handling, fire prevention and health and safety concerns unique to landfills. Future employees of the landfill will attend similar training courses. Training of personnel is an ongoing process, and the JRDA Landfill will continue to pursue educational opportunities for its personnel including basic first aid and safety training.

Communications via two-way radio enable landfill personnel to contact outside emergency services in the event of an accident. Each Juab County vehicle is equipped with a first aid kit. Depending on the severity of the injury, the workers may treat themselves or summon assistance from the Juab County Sheriff's Office or ambulance. The worker is given discretion on whom to call and at what point to call. The County shall be notified in the case of severe injury and will ensure availability of appropriate medical care. If emergency services are summoned to the site, an incident report shall be prepared which includes the following:

- Time and date of accident
- Type of injury
- Actions taken
- Response time of EMS

2.11 Recycling Program

At present, the communities using the JRDA Landfill do not have a curbside recycling program. Aluminum and newspapers are recycled through efforts of individuals in the community. Larger items such as junk cars, white goods, and scrap metal may be stockpiled on site for pick up by a licensed crusher/recycler.

2.12 Additional Operational Procedures

Several other standards for maintenance and operation are outlined in UAC R135-303-5. It shall be the responsibility of the operator to ensure these standards, outlined below, are met and maintained during the daily operation of the site.

Control Road Dust: Access to the landfill site from Highway 132 is provided by a 5,500-foot unpaved roadway. Current plans are to hard surface this road. Until this is done, the road will be watered as required to minimize excessive dust generation which could create nuisance problems.

Open Burning: No open burning shall be allowed except during the "burn window" designated by the local fire marshal. The burn window is typically 30 days in the spring, and occurs sometime between March 30 and May 30. The burn window in the fall is determined by the state forester as conditions allow. Approval of the local fire marshal must be obtained before burning.

Collect Scattered Litter: Care shall be taken to ensure litter is controlled at the active face. Stray litter shall be collected as required to eliminate aesthetic nuisance and blowing of the litter beyond the disturbed landfill site.

Prohibit Scavenging: No scavenging is allowed at the JRDA Landfill.

On Site Reclamation: On site reclamation shall be conducted in an orderly, sanitary manner which does not interfere with the disposal site operation. Reclamation efforts at the JRDA Landfill will begin some years into the future as lower portions of the landfill reach final grade. These efforts will continue periodically as the entire site is brought up to final grade.

Landfill Attendant: An attendant shall be on site during all times when the site is open to the public.

Vector Control: Daily vector control operations shall be conducted as described in Section 2.9.

Reserve Equipment: The JRDA Landfill is operated by Juab County as agent of JRDA and as such, backup equipment is available to ensure minimal disruption to daily operational procedures.

Boundary Posts: The corners of the site are delineated by six boundary posts. In addition, posts have been placed at strategic locations along the boundary lines. The entrance to the facility is clearly posted.

Daily Cover: Daily cover shall be maintained as described in Section 2.4.

Monitoring Systems: Groundwater monitoring systems are not included in the design of the JRDA Landfill.

Recycling: At this time no containers for recycling are planned for at the JRDA Landfill. If at a future time demand develops for recyclable items for which individual recycling efforts are inadequate, containers for these items will be provided as required by UAC R135-303-5.

Hazardous Wastes: Disposal of hazardous waste is prohibited at the JRDA Landfill. Section 2.3.9 of this application describes the program for exclusion of hazardous waste.

Firearms: No discharging of firearms is allowed at the landfill.

Appendix B – Forms and Records

**JRDA LANDFILL
LOAD WEIGHT RECORD**

Date: _____

	Driver's Name	Size of Truck	Estimated Weight of Load
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			

JRDA LANDFILL

SITE INSPECTION RECORD

INSPECTION INFORMATION		
Inspectors Name: _____		Date: _____ Time: _____
STRUCTURES AND ROADS		
Overall Condition		
	<u>Satisfactory</u>	<u>Needs Work*</u>
Access Road:	<input type="checkbox"/>	<input type="checkbox"/> _____
Fence and Gate:	<input type="checkbox"/>	<input type="checkbox"/> _____
Signage:	<input type="checkbox"/>	<input type="checkbox"/> _____
On-Site Roads:	<input type="checkbox"/>	<input type="checkbox"/> _____
Ash Pit Structure:	<input type="checkbox"/>	<input type="checkbox"/> _____
Run-on Control:	<input type="checkbox"/>	<input type="checkbox"/> _____
* Specify needed repairs or work	_____	

OPERATIONS		
Overall Condition		
	<u>Satisfactory</u>	<u>Needs Work*</u>
Traffic Control:	<input type="checkbox"/>	<input type="checkbox"/> _____
Access to Active Face:	<input type="checkbox"/>	<input type="checkbox"/> _____
Litter & Weed Control:	<input type="checkbox"/>	<input type="checkbox"/> _____
Daily Cover:	<input type="checkbox"/>	<input type="checkbox"/> _____
Bulky Waste Piles:	<input type="checkbox"/>	<input type="checkbox"/> _____
Recyclable Storage:	<input type="checkbox"/>	<input type="checkbox"/> _____
Prohibited Wastes:	<input type="checkbox"/>	<input type="checkbox"/> _____
Vector Control:	<input type="checkbox"/>	<input type="checkbox"/> _____
Heavy Equipment:	<input type="checkbox"/>	<input type="checkbox"/> _____
* Specify needed repairs or work	_____	

JRDA LANDFILL
LANDFILL GAS MONITORING RECORD

INSPECTION INFORMATION

Nephi City Gas Department

Inspectors Name: _____

Date: _____

Time: _____

Detection Equipment: _____

INSPECTION RESULTS

Inspection Station

Gas Detected

Detected Gas Level

1

No Yes

2

No Yes

3

No Yes

4

No Yes

5

No Yes

6

No Yes

7

No Yes

8

No Yes

JRDA LANDFILL

RANDOM LOAD INSPECTION RECORD

INSPECTION INFORMATION	
Inspectors Name: _____	Date: _____ Time: _____
VEHICLE INFORMATION	
Drivers Name: _____	
Vehicle Type: _____	
Vehicle License #: _____	
Description Of Waste: _____	

WASTE GENERATOR INFORMATION	
Company Name: _____	
Address: _____	

Phone Number: (801) _____ - _____	
OBSERVATIONS AND ACTION TAKEN	
Observations: _____	

Load Accepted : <input type="checkbox"/>	
Load Rejected : <input type="checkbox"/>	

Drivers Signature*: _____ Date: _____

Inspectors Signature: _____ Date: _____

* Drivers signature hereon indicates his presence during inspection and does not admit, confirm, or identify liability.

Attachment 3

4.0 CLOSURE PLAN

The closure plan contained herein has been prepared in accordance with UAC R315-302-3. The plan will be performed in such a manner so as to:

1. Minimize the need for future maintenance;
2. Eliminate threats to human health and the environment for post-closure escape of solid waste constituents, leachate, landfill gases, contaminated run-off or waste decomposition products to the ground, groundwater, surface water, or the atmosphere; and
3. Prepare the facility or unit for the post-closure period.

4.1 Elements of Closure

The following closure steps are based on current regulations. Negotiations with the state may be required at the actual time of closure to verify compliance with future regulations in place at the time of closure.

JRDA Landfill shall perform placement of final cover periodically during the active life of the landfill. Placement of final cover shall begin at the northern end of the site where the active portion of the landfill site reaches the main drainage of Hall Canyon. Rough contouring of the landfill will occur on a daily basis. Upon reaching final grade, interim cover shall be placed on that portion of the waste mass. When sufficient area of the landfill has reached final grade, final contouring shall occur. Closure will occur in one 8.6-acre phase, five 6.9-acre phases, and a final phase of 13.4 acres. An explanation of how the acreages for each phase were calculated is shown in Section 4.4.

The final contouring operation shall use native soils to establish a suitable foundation for placement of the final cover layer. The site shall be surveyed to establish base elevations for proper contouring of the foundation layer. The grade of all slopes shall be between 2% and 33%. After final contouring of the foundation layer, placement of an evapotranspiration final cover layer shall begin.

The evapotranspiration layer shall be constructed in such a manner so as to minimize infiltration of surface precipitation into the waste mass, and the layer shall meet design standards described in Section 4.2. The soil material for the evapotranspiration cover is produced from selected deposits on adjacent property owned by JRDA. Placement of the evapotranspiration layer shall occur immediately after final contouring. When sufficient area has received the evapotranspiration layer, the layer shall be inspected and any deficiencies due to erosion, settlement, and non-compaction shall be repaired.

Appendix D of this report contains drawings D-1 through D-6, pertaining to the location, conceptual design, daily progression, final contouring and final cover design of the JRDA Landfill. Drainage diversions shall be constructed in the locations illustrated on Drawing D-3 of Appendix D. The diversions shall control surface run-off of precipitation and minimize erosion of the vegetation and evapotranspiration layer.

4.2 Closure Design

The final closure design is illustrated on Drawing D-3 in Appendix D. As described above, the closure and final placement of cover shall occur when portions of the landfill reach their final elevations. Due to the topography of the canyon, the northern end of the landfill site will reach final grade first. The final grade of the remaining portions of the landfill shall progress from the north to the south as the landfill climbs up the canyon.

An evapotranspiration final cover shall be constructed in accordance with UAC R315-303-3(4)(c). The final cover design incorporates a 30-inch evapotranspiration cover constructed with soils found on adjacent property owned by JRDA. The sufficiency of the cover design is verified by a mathematical model, as demonstrated in a report submitted to the Division of Solid and Hazardous Waste separately. The 30-inch evapotranspiration cover will consist of a 24-inch select soil layer overlain by a 6-inch vegetation layer. Drawing D-6 shows the proposed cover design.

Soil investigations were conducted within the property owned by JRDA with the intent of locating material that would be suitable for use as the primary layer in an evapotranspiration cover system. A total of fourteen test pits were excavated within two areas. The locations of the excavated test pits are shown on Figure 2 in Appendix E. The soils were analyzed, and it was determined that soil from the vicinity of test pits 12-04, 14-04, 14-05, 14-06, 12-06, and 14-07 are appropriate for use in constructing the evapotranspiration cover (see test pit logs in Appendix E). Approximately 240,000 cubic yards of material will be needed in order to provide a 30-inch evapotranspiration cover depth over the final closed landfill area. Using the depth of potentially acceptable material from the test pit excavations as shown on the logs, and an approximate area where the material is available, it is estimated that 250,000 to 300,000+ cubic yards of material can be obtained. The approximate area where the material is located is shown on Figure 3 in Appendix E.

Soil used to construct the evapotranspiration cover will be compacted to no more than 90%, with 85% being the optimum compaction level. To avoid overcompaction, light compaction equipment, thicker loose lifts (12"), and fewer passes of the compactor may be required. The 6-inch vegetation layer shall be prepared for seeding by ripping and discing. A mixture of native plants, including warm-season and cool-season species (grasses and shrubs) shall be planted. Every effort shall be made to ensure that the vegetation grows well and that a minimum of 75% coverage is achieved. Following construction of the final cover, the site shall be surveyed and inspected to ensure adequate depth and function of the cover, including appropriate vegetation growth.

4.3 Site Capacity

The JRDA Landfill utilizes a narrow, relatively short canyon which runs south to north. Solid waste is deposited across the breadth of the canyon while daily cover is excavated along the sides of the canyon. The depth of the canyon starts at approximately 120 feet which gradually diminishes as the head of the canyon is approached. At the crest of the sidewalls, the canyon encompasses approximately 75 acres of area. The estimated useful volume of the canyon between the sidewalls is approximately 4,600,000 cubic yards. UAC R307-221 requires municipal solid waste landfills with design capacities greater than 2,755,750 tons and 3,270,000 cubic yards to be subject to emission inventory requirements. The capacity for the JRDA landfill is administratively limited to 3,270,000 cubic yards of waste. Based on an assumed waste to soil ratio of 3:1, this

results in a total volumetric capacity of 4,360,000 cubic yards. All life and capacity calculations are based on this volume. The total area occupied by the landfill at this volume is 56.6 acres.

The following assumptions have been made in order to estimate the anticipated life of the site:

Uncompacted Waste Density	= 300 lbs./yd ³
Compacted Waste Density	= 750 lbs./yd ³
Waste to Soil Ratio	= 3:1
Municipal Waste Received Per Week (beginning 2014)	= 100 tons
Construction & Demolition Waste Received Per Week (beginning 2014)	= 55 tons
Population Growth Rate (Annual)	= 1.50%

Using the above assumptions, the soil and waste volume will reach the estimated capacity limit of 4,360,000 cubic yards (1,635,000 compacted tons of waste) in approximately 2086. Because the cover soil is removed from the sides of the canyon, the actual volume of the canyon increases. Due to the sifting of the cover material into the waste mass, and compaction effects of truck traffic over the cover, the volume of the in-place cover could be assumed to be the volume of the excavation from which it was taken. The increased volume of the canyon due to cover material excavation has not been accounted for in this analysis, thereby resulting in a conservative life-span estimate. If included, the additional volume may extend the life of the facility beyond the year 2086. Higher compaction levels at the landfill can also provide additional years to the useful life of the landfill. If the volume of the landfill ever exceeds the volumetric capacity limit of 4,360,000 cubic yards (waste capacity of 3,270,000 cubic yards), the permit will be updated to include the additional emission inventory requirements as stated in UAC R307-221.

4.4 Closure Schedule

As required by UAC R315-302-3, the executive secretary shall be notified of intent to close the landfill at least 60 days prior to the projected final receipt of waste. JRDA will initiate closure procedures for each phase within 30 days of receipt of the final volume of waste into that phase. The closure activities shall be completed within 180 days from their starting. Upon completion of closure, JRDA shall submit to the executive secretary as-built closure plan sheets signed by a professional engineer registered in the State of Utah and certification by JRDA and a registered professional engineer that the unit has been closed in accordance with the approved closure plan.

The JRDA landfill will be closed in seven phases. The area and volume of each phase were calculated as follows. The area of the first phase, 8.6 acres, was chosen in order to close the entire face of the proposed 3:1 slope at the north end of the landfill (See Drawing D-3, elevations 5340 through 5480. The remainder of the landfill, elevations 5480 through 5702, is set at approximately a 10:1 slope.) This first closure also then decreases the current existing disturbed area (the 14.95-acre maximum) down to the minimum area still needed to conduct landfill operations (approximately 6.4 acres). Bentley InRoads was used to calculate the total volume in the landfill at the time of the first 8.6-acre closure. This volume was determined to be approximately 1,073,000 cubic yards. Since the volume of waste brought into the landfill will be constantly increasing, the time between closure cycles of equal area will decrease. The final closure was selected to occur six years after the

previous closure. Therefore, the size of the final phase was based on six years of volume. The calculated volume brought into the landfill during the last six years of landfill life is approximately 493,000 cubic yards. Bentley InRoads was used to calculate the acreage associated with this final closure phase volume. The area was found to be 13.4 acres. Using 8.6 acres as the first closure area and 13.4 acres as the final closure area leaves 34.6 acres to be closed in the intermediate phases. It was determined that five additional closures of 6.92 acres each would be the approximate amount required to cycle between a maximum disturbed area of 13.2 acres and the minimum operating area of 6.4 acres. Since the second through sixth closure phases all have the same cover slope of approximately 10:1, they were assumed to have roughly equal areas and volumes. Based on this, the volume available for each of these five phases is approximately 559,000 cubic yards. The landfill will then occupy a cumulative total of 4,360,000 cubic yards at the time of the final 13.4-acre closure.

Based on the large footprint currently open and the 3:1 north face slope of the final cover design, the first 8.6-acre phase will not be ready for closure until 2028. At the time this phase is closed, the landfill will contain a total volume of approximately 1,073,000 cubic yards. The next five 6.92-acre closure cycle phases containing approximately 559,000 cubic yards each will be ready for closure in approximately 2042, 2054, 2064, 2073, and 2080. The final phase will cover 13.4 acres and contain approximately 493,000 cubic yards. It will be ready for closure in approximately 2086.

4.5 Closure Costs

Closure funds will be withdrawn from the account discussed in Section 3.2 as each phase is ready for closure. Appendix C1 contains an estimate of the largest closure cost at any time. Appendix C2 contains a summary sheet of closure costs by phase, detailed closure cost estimates for each of the planned seven phases, and a schedule of deposits and withdrawals from the financial assurance account. The estimates have been prepared in accordance with UAC R315-309, following the guidelines from the Division of Solid and Hazardous Waste. Unit costs are based on recent bid tabulations for similar work and conversations with contractors and suppliers. A 10% contingency budget has been included for unforeseen construction difficulties or adjustments in unit costs for materials. 2015 dollars are used in each estimate.

4.6 Final Inspection

Upon completion of closure activities, a final report will be prepared by an engineer registered in the State of Utah. This report will document conformance of the final cover and closure procedures with state solid waste regulations and the approved closure plan for the JRDA Landfill. Included in this report will be the facility closure plan as-built drawings of the site upon final inspection. Upon completion of closure activities, the executive secretary shall be notified and arrangements made for UDEQ final inspection of the facility. After acceptance by UDEQ of the closure, the approved Post-Closure Plan shall be implemented as contained in the following Section.

5.0 POST-CLOSURE PLAN

In accordance with UAC R315-302-3, the following post-closure plan shall be implemented at the JRDA Landfill upon closure. This plan provides for continued facility maintenance and monitoring of landfill gas.

5.1 Monitoring

Surface and Groundwater: The design of the JRDA Landfill does not include a groundwater monitoring or leachate collection system. The nearest potential surface water is West Creek located 1.6 miles east of the site. This reach of West Creek has a low volume seasonal flow. The post-closure plan does not include ground or surface water monitoring requirements. This permit application includes no provisions for ground or surface water monitoring, leachate collection, or leachate treatment.

Landfill Gas: Monitoring of landfill gas by the Nephi City Gas Department will continue on a quarterly basis at points established during the active life of the facility. If monitoring results indicate the landfill has stabilized and does not represent a threat to human health and safety, the owner or operator may petition the executive secretary for a decrease in the length of the post-monitoring period.

5.2 Post-Closure Schedule

JRDA Landfill shall perform post-closure activities for 30 years or as long as the executive secretary determines is necessary for the facility to become stabilized and protect human health and the environment. The 30-year post-closure period for each phase will begin when closure for that phase is completed. If post-closure monitoring indicates the site has stabilized and poses no threat to health and safety, JRDA may petition the executive secretary for a decrease in the length of the post-closure monitoring period.

Following closure of each phase of the facility, the final cover and drainage control systems shall be inspected annually by a designated representative of the JRDA. The inspection shall identify sites of erosion, subsidence, or other events which could compromise the integrity of the final cover or drainage system. Any deficiencies identified shall be repaired at the earliest practicable date to maintain the effectiveness of the systems.

Upon completion of the post-closure activities or as determined by the executive secretary, JRDA shall submit to the executive secretary certification signed by a professional engineer registered in Utah stating why post-closure activities are no longer necessary.

5.3 Record Modifications

In accordance with UAC R315-302-2(6), plats and a statement of fact concerning the location of the disposal site shall be recorded as part of the record of title with the County Recorder not later than 60 days after final certification of complete landfill closure. The notation will serve to notify any potential purchaser of the property that the site has been used as a landfill and may be subject to certain zoning and restricted use.

5.4 Post-Closure Costs

A maximum (at any one time) post-closure cost estimate for the JRDA landfill facility prepared in accordance with UAC R315-309 is included in Appendix C1. The estimate is based on monitoring an area ranging from 14.95 to 34.16 acres for a 30-year post-closure period. Since the landfill is closed in phases over a period of 58 years, part of the landfill will have gone through the 30-year post-closure period before the last phases are ready to be closed, and 34.16 acres is the maximum area ever included in any 30-year monitoring period. The area being monitored will periodically decrease to the final 13.4-acre closure cycle area. The estimate is based on assumptions which include monitoring of landfill gas, annual general inspections of the site, record keeping, maintaining cover integrity, and maintaining erosion control measures. It is assumed that occasional maintenance projects will be necessary. The cost estimate is based on 2015 dollars. A ten percent contingency budget has been added to cover unforeseen monitoring work. The total maximum (at any one time) post-closure costs, including contingencies, are \$220,770.

Appendix C2 contains a schedule of deposits and withdrawals from the financial assurance account. The schedule assumes that lump sum post-closure costs other than the cost to demonstrate stability for each phase are withdrawn in the same year each of the seven phases is closed and that yearly post-closure costs are distributed over the entire 88-year post-closure period. The cost to demonstrate stability is withdrawn after the 30-year post-closure period for each phase.

5.5 Contact Information

The office to contact about the facility during the post-closure care period is:

Juab Rural Development Agency
Attn: Mike Seely
160 North Main
Nephi, Utah 84648
435-623-3408