RML Revisions

LICENSE AMENDMENT

UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF RADIATION CONTROL
RADIOACTIVE MATERIAL LICENSE

Pursuant to Utah Code Annotated, Title 19, Chapter 3 and the Radiation Control Rules, Utah Administrative Code (UAC) R313, and in reliance on statements and representations heretofore made by the Licensee designated below, a license is hereby issued authorizing the Licensee to transfer, receive, possess, and use the radioactive material designated below; and to use radioactive material for the purpose(s) and at the place(s) designated below. The license is subject to all applicable rules, and orders now or hereafter in effect and to all conditions specified below.

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LICENSEE) 3. License Number UT 2300249
) Amendment # 910
1. Name EnergySolutions, LLC (EnergySolutions))

)**********
2. Address 423 West 300 South) 4. Expiration Date
Suite 200
) January 25, 2013
Salt Lake City, UT 84101
)**********
) 5. License Category 4-a

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6. Radioactive Material (element and mass number)		7. Chemical and/or physical form		8. Maximum Radioactivity and/or quantity of material the Licensee may possess at any one time.
A.	Any Radioactive Material including Special Nuclear Material specified in License Condition 13 A through J.	A. and B. Notwithstanding Conditions 9 (Authorized Use), 16 (Prohibitions and Waste Requirements), and 56 (containerized waste), typically large volume, bulky or containerized, soil or debris. Debris can include both decommissioning (cleanup) and routinely generated operational waste including but not limited to radiologically contaminated paper, piping, rocks, glass, metal, concrete, wood, bricks, resins, sludge, tailings, slag, residues, personal protective equipment (PPE) that conforms to the size limitations in currently	A.	20,000 Curies***

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Secretary of the Utah Radiation Control Board and also receiving approval from the Governor and the Legislature.

C. The Licensee shall fulfill and maintain compliance with all conditions and shall meet all compliance schedules stipulated in the Ground Water Quality Discharge Permit, number UGW 450005 (hereafter GWQ Permit), issued by the Executive Secretary of the Utah Water Quality Board.

D. The Licensee may receive and store up to twenty (20) empty radioactive waste transportation casks under the following conditions:

~~1.~~ The casks are dedicated to the transportation of low level radioactive wastes.

~~2.~~ Storage of the casks is confined to the Restricted Area within the area specified in License Condition 10, except when staged for return to commerce within 7 days.

~~3.~~ Internal contamination is kept minimal as practical but will not exceed the contamination limits specified for Department of Transportation, Class 7 Hazardous Material, Radioactive Material, Excepted Package-Empty Packaging, UN2908.

~~4.~~ During storage, casks are to be secured in accordance with their Department of Transportation or Nuclear Regulatory Commission approved design specifications.

E. The Licensee may dispose of Class A Low-Level Radioactive Waste (LLRW) and NARM in ~~both~~ the Class A ~~and Class A North~~West (CAW) disposal cell described in License Condition 40, and in the Mixed Waste Landfill Cell. Class A waste is defined in Utah Radiation Control Rule R313-15-1008 and NARM at R313-12-3.

F. Effective January 1, 2002, the Licensee shall not accept, possess, store or dispose of any radioactive waste delivered to the disposal site by any conveyance, unless the associated Shipping Documents have a valid Generator Site Access Permit number, issued by the Utah Division of Radiation Control, affixed.

G. The Licensee may receive and treat radioactively contaminated aqueous liquids and liquid mercury as characterized in the waste profile at the mixed waste facilities only, the waste must be Class A LLRW at receipt. Treated aqueous liquids may be disposed at the Mixed Waste Facility or the LLRW Facility, in accordance with Exhibit 3 of the Waste Characterization Plan. Treated (amalgamated) liquid mercury shall be disposed at the Mixed Waste Facility only.

H. Reserved

I. Licensed material in Items 6.C and 6.D, Sealed source(s) contained in compatible portable gauging devices (registered pursuant to R313-22-210 or an equivalent U.S. Nuclear Regulatory Commission or Agreement State regulation) for measuring properties of materials.

J. Licensed material in Items 6.E through 6.L, for operational checks and efficiency determinations of radiation detection instrumentation.

K. Licensed material in Items 6.M through 6.O, calibration or reference combined source(s) for use in conjunction with the Licensee's whole body counter.

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L. Licensed material in Item 6.P, sealed source(s) contained in MGP Instruments, Inc. Model IRD-2000 dosimeter calibrators/irradiators for tests and source checks of electronic dosimeters.

SITE LOCATION

10. A. The Licensee may receive, store and dispose of licensed material at the Licensee's facility located in Section 32 of Township 1 South and Range 11 West, Tooele County, Utah.

B. Section 32, Township 1 South and Range 11 West, Tooele County, Utah, is defined by the following points of reference:

Southwest Section Corner:	Latitude 40° 40' 51.890" N Longitude 113° 7' 28.580" W
Elevation	4269.76 feet above mean sea level (amsl)
Southeast Section Corner	Latitude 40° 40' 51.879" N Longitude 113° 6' 20.011" W
Elevation	4277.27 feet-amsl
Northwest Section Corner	Latitude 40° 41' 44.098" N Longitude 113° 7' 28.654" W
Elevation	4273.06 feet-amsl
Northeast Section Corner	Latitude 40° 41' 44.086" N Longitude 113° 6' 20.109" W
Elevation	4280.83 feet-amsl

C. The Southwest Section Corner marker of Section 32 shall be the Point of Beginning (POB).

D. The Licensee shall cause a survey to be conducted by a Utah licensed land surveyor to identify the section corners of Section 32, Township 1 South, and Range 11 West, Tooele County, Utah (as defined in Condition 10.B). Licensee shall place monuments with brass caps at the identified section corner locations. Monuments shall be permanent and constructed in a manner that will protect them from being disturbed.

E. Licensed material in Items 6.C through 6.P shall be used only at the Licensee's facilities referenced in Condition 10.B.

11. The open cell area within the Class A ~~and Class A North~~West disposal embankment~~s~~ where waste disposal/placement has or may occur, but the cover system has not been completed shall be limited to 3,650,000 square feet. Uncovered radioactive waste shall be limited to a surface area of 1,020,000 square feet.

12. Pursuant to UAC R313-12-55(1), the Licensee is granted an exemption to UAC R313-25-9, as it relates to land ownership and assumption of ownership.

any combination of them in accordance with the following formula:

$$\frac{\text{(Grams U-235)}}{350} + \frac{\text{(Grams U-233)}}{200} + \frac{\text{(Grams Pu)}}{200} \leq 1$$

"Possession" and "Disposal" are defined in License Conditions 63 and 64 respectively.

MIXED WASTE

14. A. The Licensee may receive for treatment, storage, and disposal any radioactive waste as authorized by this license that is also determined to be hazardous (commonly referred to as mixed waste) as permitted by the "Hazardous Waste Plan Approvals" issued and modified by the Executive Secretary, Utah Solid and Hazardous Waste Control Board and "HSWA Permit" issued by the U.S. Environmental Protection Agency.

B. The Licensee may dispose of treated mixed waste in the Class A ~~North or the Class A~~West disposal cell~~s~~ if it meets the criteria described in Exhibit 3 of the Waste Characterization Plan.

C. All other mixed wastes shall be disposed in the Mixed Waste Landfill Cell only.

WASTE TREATMENT AND PROCESSING

15. A. Prior to receipt of any low level radioactive or mixed wastes requiring treatment before disposal, the Licensee shall, based on knowledge of the technology to be used for treatment/processing of each particular radioactive or mixed waste, calculate and document that the resultant processed waste is neither Class B nor Class C waste.

B Reserved

C. Following treatment at the Mixed Waste facility the Licensee shall classify the resultant processed waste in accordance with UAC R313-15-1008.

D. The Licensee shall manifest treated waste from the Mixed Waste facility for disposal in accordance with UAC R313-15-1006.

PROHIBITIONS AND WASTE ACCEPTANCE REQUIREMENTS

16. A. Sealed sources as defined in Utah Administrative Code (UAC) R313-12 shall not be accepted for disposal.

B. In accordance with UAC R313-15-1008(2)(a)(v), waste shall not be readily capable of detonation or of explosive decomposition or reaction at normal pressures and temperatures, or of explosive reaction with water.

C. In accordance with UAC R313-15-1008(2)(a)(vi), waste shall not contain, or be capable of generating, quantities of toxic gases, vapors, or fumes harmful to persons transporting, handling, or disposing of the waste.

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L. The Licensee shall not accept containerized radioactive waste unless each waste package has been:
   i. Classified in accordance with R313-15-1008, "Classification and Characteristics of Low-Level Radioactive Waste." In addition, the Licensee shall require that all radioactive waste received for disposal meet the requirements specified in the Nuclear Regulatory Commission, "Branch Technical Position on Concentration Averaging and Encapsulation", as amended.
   ii. Marked as either Class A Stable or Class A Unstable as defined in the most recent version of the "Low-Level Waste Licensing Branch Technical Position on Radioactive Waste Classification." originally issued May, 1983 by the U.S. Nuclear Regulatory Commission.
   iii. Marked with a unique package identification number, clearly visible on the package, that can be correlated with the manifest for the waste shipment in which the package arrives at the facility.

M. The Licensee may accept containerized Class A LLRW in the following waste packages for disposal in the Containerized Waste Facility of the Class A ~~or Class A North~~West disposal cell:

   i. DOT "strong, tight" containers in accordance with 49 CFR 173 and meeting the following void space criteria: void spaces within the waste and between the waste and its packaging shall be reduced to the extent practicable, but in no case shall less than 85 percent of the capacity of the container be filled
   ii. High-Integrity Containers (HICs) exceeding the void space criteria provided in License Condition 16.M.i, shall be approved by the Executive Secretary.
   iii. DOT "strong, tight" containers in accordance with 49 CFR 173 exceeding the void space criteria provided in License Condition 16.M.i and large components shall be placed as approved by the Executive Secretary.
   iv. Oversized DOT containers (larger than 215 cubic feet) meeting the void space criteria provided in License Condition 16.M.i shall be placed in accordance with the currently approved LLRW Construction QA/QC Manual.

MANAGEMENT OF FREE LIQUIDS

17. A. In accordance with UAC R313-15-1008(2)(a)(iv), solid waste received for disposal shall contain as little free standing and non-corrosive liquid as reasonably achievable, but shall contain no more free liquids than one percent of the volume of the waste.

B. Solid waste received and containing unexpected aqueous free liquid in excess of 1% by volume shall have the liquid removed and placed in the evaporation ponds or the liquid solidified prior to management.

C. Unexpected non-aqueous free liquids less than 1% of the volume of the waste within the container shall be solidified prior to disposal.

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that have been and are reasonably anticipated to be disposed of at the facility within 180 days of Executive Secretary approval of the performance assessment.

D. Remediation: If following the completion of DRC's review of the performance assessment described in paragraph 35 B, the disposal of DU as performed after the date of this license condition would not have met the requirements of the performance assessment, the facility will undertake remediation to ensure that the performance standards are met, or if that is not possible, shall remove the DU and transport it off-site to a licensed facility.

E. Surety: The Licensee shall fund the surety for the remediation, in License Condition 35 D. Within 30-days of the effective date of this license condition, the licensee shall submit for Executive Secretary review and approval, the surety cost estimates for remediation of existing Savannah River DU waste disposal and planned, similar large quantity DU waste disposal.

36. A. The West Rail Spur and Unloading facility shall be operated as a transfer station for Surface Contaminated Objects (SCO) and large components, (waste storage is prohibited). These objects may be set on the gravel pad for 24 hours to facilitate unloading and transferring to the Class A West disposal cell.

B. The West Rail Spur and Unloading facility shall be operated as a transfer station for conveyances to be unloaded at the Containerized Waste Facility (unloading of waste packages is prohibited).

37. All ion exchange resins shall be disposed of as follows:

A. Solidified using solidification agents approved by the Executive Secretary and disposed of in the Containerized Waste Facility; or

B. Packaged in High-Integrity Containers (HIC) approved by the Executive Secretary, carbon-steel liners, unapproved HICs, or poly HICs meeting the void space criteria described in License Condition 16.M.i and disposed of in the Containerized Waste Facility; or

C. Packaged in High-Integrity Containers (HIC) approved by the Executive Secretary, carbon-steel liners, unapproved HICs, or poly HICs not meeting the void space criteria described in License Condition 16.M.i and disposed of as approved by the Division under License Condition 16.M.ii or 16.M.iii in the Containerized Waste Facility; or

D. Disposed of in accordance with the requirements of the Construction Quality Assurance/Quality Control Manual.

38. The Licensee shall construct the Class A West disposal Cell identified in the Ground Water Quality Discharge Permit No. UGW450005 and in accordance with approved engineering design drawings "Series ~~9821~~10014".

39 Waste placement and backfilling within the Containerized Waste Facility shall be conducted in accordance with the following:

A. The Containerized Waste Facility shall conform to the characteristics defined, analyzed, and

described in the Engineering Justification Report "Class A Disposal Cell Containerized Waste Facility" (dated April 12, 2001); Engineering Justification Report, Addendum "Fifteen Percent Void Space Criteria" (Revision 1 dated October 10, 2001); and the AMEC letter to Envirocare of Utah, Inc. "Placement of Drums and B-25 Containers with 15 Percent Voids; Envirocare Class A - Containerized Waste Facility Near Clive, Utah" (dated October 2, 2001). Waste containers that have void space in excess of 15 percent shall be filled to the top of the container opening using Controlled Low Strength Material (CLSM) in accordance with the Construction QA/QC manual. The Licensee is exempt from the CLSM cold weather requirements and the 48 hour notification for void remediation only at the CWF Facility.

B. Waste container placement configurations and associated waste placement procedures, backfill materials and procedures, and backfill cover materials shall be those approved by the Executive Secretary following testing according to Work Element: Containerized Waste Facility-Waste Placement Test Pad of the currently approved LLRW Construction Quality Assurance/Quality Control Manual.

C. Waste delivered in a shielded transportation cask shall remain in the cask until the waste is approved for disposal and the disposal location is prepared for the shipment. Waste received for disposal in the Containerized Waste Facility shall not be handled, stored or transferred within the contaminated portion of the Restricted Area without the approval of the Director of Health Physics.

D. The Containerized Waste Facility shall be operated as a contamination-free portion of the Restricted Area until containerized waste disposal operations are completed. Bulk waste may then be used to complete the filling of the cell.

E Interim storage is applicable only to the Containerized Waste Facility. Packages containing radioactive material shall not be stored for a period of longer than 30 days from the date of receipt. Retention of waste materials above ground pending disposal up to 3 working days does not constitute storage. All packages in storage shall be shielded so that the package or shielding shall not exceed 40 mR/hour at one meter from the surface.

F. Disposal of non-containerized decomposable or compressible waste at the Containerized Waste Facility is prohibited. Such waste shall be disposed of as debris in bulk waste portions of the Class A ~~or Class A North~~West disposal embankments, in accordance with debris placement requirements of the currently approved LLRW and 11e.(2) CQA/QC Manual.

40. The LARW and Class A West Disposal Cells, shall be defined by the areas enclosed by the points of reference in the Ground Water Quality Discharge Permit No. UGW450005. The Containerized Waste Facility within the Class A West disposal cell shall be separated from the non-containerized area by a 6-foot chain link fence on the berm around the Containerized Waste Facility perimeter area.

41. Reserved.

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42. Reserved.

43. The Licensee shall construct the Class A ~~North~~ West disposal cell identified in the Ground Water Quality Discharge Permit No. UGW450005 and in accordance with approved engineering design drawings "Series ~~0408~~10014".

44. The Licensee shall fulfill all requirements and maintain compliance with all conditions in the LLRW CQA/QC Manual and engineering drawings currently approved by the Executive Secretary.

45. All engineering related soil tests conducted by the Licensee to demonstrate compliance with Condition 44 shall be performed by a laboratory certified and accredited by the AASHTO Materials Reference Laboratory (AMRL). Said certification / accreditation shall apply to clay liner, clay radon barrier, soil filter layers, sacrificial soils, and riprap materials, or other soil or man-made materials as directed by the Executive Secretary. Said certification shall include all engineering test methods required by License Condition 44, or as directed by the Executive Secretary. Certification is not required for the DRC approved sealed single ring infiltrometer permeability test contained in Appendix B to the LLRW and 11e(2) CQA/QC Manual.

46. Reserved

47. The Licensee shall not initiate disposal operations in newly excavated areas until the Division has inspected and the Executive Secretary has approved the cell/embankment liner.

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CONSTRUCTION DRAWINGS.

48. A. The Licensee shall provide a comprehensive set of drawings for the entire Clive site. The drawings shall correctly: (1) locate all structures, utilities, fences, ponds, drainage features railroad tracks, roads, storage facilities, loading and off-loading facilities, disposal embankments, all environmental monitoring locations including instruments/devices, and any other appurtenances related to the operation, maintenance and closure of the disposal facility; and (2) provide survey control including elevations in sufficient detail to fully describe the site. The drawings shall be developed in accordance with the standards of professional care. A drawing index shall be included that identifies drawings by discrete number. Each drawing shall include a revision block that documents the latest changes or modifications by date and includes the initials of the responsible reviewer for QA/QC tracking purposes.

B. Drawings showing approved future designs shall be marked as "Final Drawings." Final drawings or drawings developed for construction shall be sealed by a Utah registered professional engineer. The drawings shall be developed in accordance with the standards of professional care.

C. Within 30 days of completion of any project that requires approval by the Executive Secretary, a set of "As-Built" drawings shall be submitted for review. The drawings shall indicate as-built conditions as they existed no earlier than 30 days prior to the submittal. Drawings of finished construction shall be marked as "As-Built" in the final entry in the revision block.

SITE OPERATING PROCEDURES

49. Shipments containing free liquid in excess of 1% shall be absorbed, evaporated, or the liquids removed only at facilities with approved secondary containment or the rail rollover facility.

50. A. On-site generated waste shall be managed according to its radiological, physical and chemical characteristics. Solid phase material shall be disposed in either the Class A ~~Cell, Class A North~~West Cell, Mixed Waste Cell, or the 11e.(2) Cell. Waste water from decontamination facilities will be put in the evaporation ponds or sprayed on disposal cells for purposes of dust and engineering controls.

B. Site equipment that has reached the end of its useful life, is not operational and does not meet the removable contamination limits of License Condition 27, Table 27-A, shall be disposed in the LLRW Class A ~~Cell or Class A North~~West Cell within 90 days as debris in accordance with requirements of the LLRW Construction Quality Assurance/Quality Control Manual or stored on approved facilities for storage, transfer, and sampling of bulk waste.

C. Facility vehicles transferring or unloading waste shall not be left unattended.

51. The following shall be implemented for LLRW and 11e.(2) Waste segregation purposes:

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A. LLRW and 11e.(2) waste shall not be managed simultaneously at the Rail rollover facility, Shredder Facility, Rotary Dump Facility, or Rail Digging facility;

B. Any vehicle or facility used to manage waste for disposal within the 11e.(2) disposal embankment, must be clearly labeled to designate 11e.(2) management. The labels shall be visible from both sides of a vehicle/facility designated for 11e.(2) waste management.

C. Equipment, vehicles and facilities, which are used for management of LLRW will be cleaned of any material before being used for 11e.(2) waste management activities. Equipment, vehicles and facilities shall be cleaned of all waste material to a limit of 500 grams per square foot prior to being used for other waste types.

52. Waste shipments or transportation packages received shall meet the following contamination control requirements for removable contamination

*Less then 220 dpm/100cm^2 alpha
*Less then 2200 dpm/100cm^2 Beta-gamma

If a shipment or transportation package does not meet the above contamination requirements, the Licensee shall take actions to reduce the risk for spread of contamination.

53. A. Quarterly, the Licensee shall clean the facility roads, or more frequently when needed. The material collected from cleaning the roads shall be disposed within an approved disposal embankment for Class A waste.

B. On a biweekly basis (once every two weeks) between the first day of May and the last day of September, the Licensee shall spray a polymer solution on all exposed contaminated cell areas and areas of waste within the Class A ~~Cell and Class A North~~West Cell which have been disturbed in the previous two weeks. The Licensee will apply a polymer-based stabilizer in accordance with the manufacturer's instructions.

C. The Licensee shall minimize the dust created during the process of placing and moving waste, through the use of water. Water or other engineering controls shall be placed on roads and in areas which work is being performed.

D. The Licensee shall cease loading, hauling, and dumping of un-containerized waste whenever the 5-minute average wind velocities exceed 35 miles per hour. When both the 5-minute average and 5-minute maximum wind velocities are less than 35 mph as observed on the meteorological station, management of un-containerized waste may resume.

54. The Licensee shall fulfill and maintain compliance with all conditions and requirements in the Site Radiological Security Plan (Revision 3, May 5, 2008).

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55. A. For the Class A ~~and Class A North~~West disposal cell~~s~~, the Licensee shall ensure that the actual cumulative activity of chlorine-36 does not exceed 0.2828 picocuries per gram in accordance with the following formula:

Total Activity of chlorine-36 Received (picocuries) *<73,900 ~~0.2828~~ picocuries per gram*
Total Mass of Active Cell (grams) + Completed Cell (grams)

~~1.~~B. For the Class A ~~and Class A North~~West disposal cells, the Licensee shall ensure that the actual cumulative activity of berkelium-247 does not exceed 0.0001 picocuries per gram in accordance with the following formula:
Total Activity of berkelium-247 Received (picocuries) *≤ 1.92~~0.0001~~* picocuries per gram
Total Mass of Active Cell (grams) + Completed Cell (grams)

~~1.~~C. For the Mixed Waste disposal cell, the Licensee shall ensure that the actual cumulative activity of chlorine-36 does not exceed 8.75 picocuries per gram in accordance with the following formula:

Total Activity of chlorine-36 Received (picocuries) *≤ 8.75 picocuries per gram*
Total Mass of Active Cell (grams) + Completed Cell (grams)

~~2.~~D. For the Mixed Waste disposal cell, the Licensee shall ensure that the actual cumulative activity of berkelium-247 does not exceed 0.00314 picocuries per gram in accordance with the following formula:

Total Activity of berkelium-247 Received (picocuries) *≤ 0.00314 picocuries per gram*
Total Mass of Active Cell (grams) + Completed Cell (grams)

56. Containerized Class A waste shall be certified by the generator to meet the Waste Acceptance Criteria in accordance with the Waste Characterization Plan described in License Condition 58.

57. A. The Licensee shall move rail shipments into the Restricted Area within seven (7) days of arrival. The shipments may be returned to the carrier when management of the waste is not possible within the seven (7) day period, unless additional time is approved by the Executive Secretary of the Utah Radiation Control Board.
B. Empty outbound railcars shall be picked up by the local rail service within seven (7) days of release from the Restricted Area, unless additional time is approved by the Executive Secretary of the Utah Radiation Control Board.
C. Railcars that have been decontaminated and surveyed both internally and externally and found to meet criteria of non-fixed radioactive surface contamination less than 220 dpm/100 cm^2 Alpha, 2,200 dpm/100 cm^2 Beta and a dose rate less than 0.5 mrem/hr or that meet` the limits found in Table 27-A do not have to picked up by local rail service within seven (7) days.

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76. Reserved.

SPECIAL HANDLING

77. Except while waste packages are being handled in the active areas of the Containerized Waste Facility, external gamma radiation levels shall not exceed 40 mR/hr at one meter from the surface of any emplaced waste package or from shielding placed around disposed waste containers.

78. The Licensee shall observe the following controls on waste handling at the Containerized Waste Facility:

    A. Before unloading any waste container whose external gamma radiation at the surface exceeds 10 R/hr, an ALARA review shall be performed and documented and a pre-job briefing shall be conducted.

    B. As part of the ALARA review, the Licensee shall determine and record (1) estimates of the radiation dose rates for the waste container, disposal unit working face, and any other potentially significant radiation sources; (2) expected durations of exposures to and distances from each radiation source; and (3) expected doses to each person involved in the actual disposal operation.

    C. Before unloading any waste container whose external gamma radiation at the surface exceeds 200 R/hr, a practice run shall be conducted. The practice run shall involve shielding, container(s) filled with non-radioactive material, and handling equipment that are similar to those involved with the actual shipment. Similarity includes similar rigging and physical characteristics (e.g., weight, dimensions, and attachments). Those personnel who will participate in receiving, processing, handling, and disposing of the actual waste will participate in the practice run, using actual procedures. The Licensee shall notify the Division 24 hours in advance of conducting the practice runs.

    D. On a case-by-case basis, the Executive Secretary may exempt the Licensee from conducting the required practice run, considering the results of earlier practice runs and actual experience handling waste containers with high radiation levels.

~~73.~~79. Reserved.

~~74.~~80. The Licensee shall notify in writing the Executive Secretary at the earliest possible date, but no later than 10 days before scheduled receipt of each shipment with contact radiation levels in excess of 200 R/hr. The notification shall include the anticipated dates of receipt and plan for disposal in the Containerized Waste Facility.

~~75.~~81. The Director of Health Physics or other qualified person designated by the Director of Health Physics shall be present for and shall observe the receipt, processing, handling, and disposal of each waste package with contact radiation levels in excess of 200 R/hr.

~~76.~~82. The Licensee shall dispose of only closed containers in the Containerized Waste Facility. The Licensee shall not dispose of any breached waste container in the Containerized Waste Facility without first repairing the breached container or overpacking it in an undamaged container. The Licensee is authorized to open packages at its facility only to:

A. Repair or repackage breached containers.

B. Inspect for compliance with conditions of this license.

C. Confirm package contents and fill voids in packages/containers that have greater than 15% void space.

D. Accomplish other purposes as approved by the Executive Secretary.

~~(1)~~83. The Licensee shall handle and emplace LLRW packages in the Containerized Waste Facility such that packaging integrity is maintained during handling, emplacement, and subsequent backfilling. Waste packages deposited in the Containerized Waste Facility shall be protected from any adverse effects of operations which may damage them.

SEALED SOURCES AND/OR DEVICES

84. A. i. Sealed sources shall be tested for leakage and/or contamination at intervals not to exceed the intervals specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or by equivalent regulations of an Agreement State.

ii. In the absence of a certificate from a transferor indicating that a leak test has been made within the intervals specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or by equivalent regulations of an Agreement State prior to the transfer, a sealed source received from another person shall not be put into use until tested.

iii. Sealed sources need not be tested if they are in storage and are not being used. However, when they are removed from storage for use or transferred to another person, and have not been tested within the required leak test interval, they shall be tested before use or transfer. No sealed source shall be stored for a period of more than 3 years without being tested for leakage and/or contamination.

iv. The leak test shall be capable of detecting the presence of 185 becquerels (0.005 μCi) of radioactive material on the test sample. If the test reveals the presence of 185 becquerels (0.005 μCi) or more of removable contamination, a report shall be filed with the Executive Secretary in accordance with R313-15-1208, and the source shall be removed immediately from service and decontaminated, repaired, or disposed of in accordance with Utah Radiation Control Rules. The report shall be filed within 5 days of the date the leak test result is known with the Division of Radiation Control, P.O. Box 144850, Salt Lake City, Utah 84114-4850. The report shall specify the source involved, the test results, and corrective action taken.

v. (a) The Licensee is authorized to collect leak test samples in accordance with Condition 85.D of this license, the Licensee's renewal application (dated March 1, 2001), and the Licensee's Memo (dated March 11, 2002).

(b) The analysis of leak test samples shall only be performed by individuals who meet the qualifications of a Health Physics Technician I or II, as defined by this

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A. On or before August 14, 2008, the licensee shall provide under oath or affirmation, a certification that the Trustworthiness and Reliability Official is deemed trustworthy and reliable by the licensee as required in paragraph 2.B of Attachment 1, "Fingerprinting and Criminal History Records Check Requirements for Unescorted Access to Certain Radioactive Material."

B. All fingerprints obtained by the licensee pursuant to this requirement must be submitted to the U.S. Nuclear Regulatory Commission for transmission to the U.S. Federal Bureau of Investigation (FBI). Additionally, the licensee's submission of fingerprints shall also be accompanied by a certification, under oath and affirmation, of the trustworthiness and reliability of the Trustworthiness and Reliability Official as required by paragraph 2.B of Attachment 1, "Fingerprinting and Criminal History Records Check Requirements for Unescorted Access to Certain Radioactive Material."

C. The licensee shall complete implementation of the fingerprinting requirements on or before November 12, 2008. The licensee shall notify the Executive Secretary when full compliance with the requirements described in the Executive Secretary's letter dated May 16, 2008, Attachment 1, "Fingerprinting and Criminal History Records Check Requirements for Unescorted Access to Certain Radioactive Material" and Attachment 2, "Specific Requirements Pertaining to Fingerprinting and Criminal History Records Checks" have been achieved. Notification to the Executive Secretary shall be made within twenty-five (25) days after full compliance has been achieved.

D. The licensee shall notify both the Executive Secretary and the U.S. Nuclear Regulatory Commission within 24 hours if the results from a criminal history records check indicate that an individual is identified on the FBI's Terrorist Screening Data Base.

CLOSEOUT CONDITIONS

89. Except as specifically provided otherwise in this license, the Licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents, including any enclosures, listed below. The Utah Radiation Control Rules, Utah Administrative Code R313 shall govern unless the statements, representations, and procedures in the Licensee's application and correspondence are more restrictive than the rules.

~~1.~~A. License renewal application, Revision 2, dated June 20, 2005.

1. B. The following documents refer to revisions made in Amendment 22:

~~1.~~(1) Letter CD04-0481, dated October 27, 2004, Amendment and Modification Request – Class A North Embankment.

~~2.~~(2) Letter CD04-0548, dated December 23, 2004, Revised Class A North Disposal Embankment License Amendment Request.

~~3.~~(3) URS Review of Revised Class A North Embankment Amendment Request, dated December 29, 2004.

~~4.~~(4) Letter CD05-0024, dated January 17, 2005, Class A North Disposal Embankment

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~~5.~~(5) Letter CD05-0265, dated May 20, 2005, Revision of Appendix R, Environmental Monitoring and Surveillance Plan.

~~6.~~(6) Letter CD05-0266, dated May 25, 2005, Surety Calculations for the Class A North Disposal Cell.

~~7.~~(7) Memo: Treesa Parker to John Hultquist, dated May 25, 2005, Proposed revisions to RML for Amendment 22

~~8.~~(8) Email: Treesa Parker to Christine Hiaring, dated June 1, 2005, License Amendment 22 Minor Changes for Consistency.

C. The following documents refer to revisions made in Amendment 22A:

~~a.~~(1) Division letter dated November 14, 2005.

D. The following documents refer to revisions made in Amendment 22B:

~~B.~~(1) Letter CD05-0333, dated June 30, 2005, RML no. UT 2300249 Request for approval of revisions to Appendix I, Organization, and amendment of License Condition 32 A.

~~C.~~(2) Memorandum dated August 2, 2005, Subject; Review of Appendix I

~~D.~~(3) Letter CD05-0398, dated August 16, 2005, Request for approval of revisions to Appendix I, Organization and amendment of license condition 31.A,B,C, and 32A.

~~E.~~(4) Letter CD05-0507, October 26, 2005, Additional information regarding proposed revisions to Appendix I, Organization and amendment of license condition 31.A,B,C, and 32A.

~~F.~~(5) Letter CD05-0453, dated September 19, 2005 Request for amendment of License Condition 9.10 RML UT2300478; Organization.

~~G.~~(6) Letter dated November 22, 2005, Request for information regarding request to revise Appendix I of the 11e(2) License Application and Amendment of L.C. 9.10.

~~H.~~(7) Letter dated October 11, 2005, Re: Request for Information: Revision to Appendix I and amendment 31A. B. C. and 32A. dated August 16, 2005 (CD05-0398).

~~I.~~(8) Memorandum, dated October 3, 2005, Subject; Appendix I, revisions to RML UT2300249 conditions 31 A, B, C, and 32 A.

~~J.~~(9) Letter CD05-0411, dated August 23, 2005, Payment of administrative cost for Appendix I amendment request dated August 16, 2005.

~~K.~~(10) Letter CD05-0472, dated September 30, 2005, License condition 39.E amendment

~~L.~~(11) Email dated August 10, 2005, Subject: Draft amendment for LC 39.E and attached august 10, 2005, License Condition 39 E. amendment "draft".

~~M.~~(12) Email dated September 16, 2005, Subject: RE: FW: Draft amendment for LC 39.E.

~~N.~~(13) Letter CD05-0285, dated June 1, 2005, Envirocare containerized waste facility concrete overpacks corrective action plan.

~~O.~~(14) Letter dated June 2, 2005, filling waste package voids at the containerized waste facility using controlled low strength material (CLSM)

~~P.~~(15) Letter CD05-0326, dated June 27, 2005, Re: Letter to Mr. Dane Finerfrock, dated April 13, 2005, CD05-0181.

~~Q.~~(16) Letter CD05-0366, dated July 26, 2005, Re: Letter to Dane Finerfrock, dated June 27, 2005, CD05-0326.

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~~R.~~(17) Letter CD06-0011, dated January 12, 2006, Request to amend License Condition No. 2, Address.

~~S.~~(18) Letter CD06-0043, dated February 3, 2006, Request to amend License Condition No. 1, Company Name.

~~T.~~(19) Letter dated February 6, 2006, evidence of name change with the Utah Department of Commerce.

~~U.~~(20) Email dated October 6, 2005, Subject: License condition 39.E.

~~V.~~(21) Memorandum from Woodrow W. Campbell through Loren Morton and Dane Finerfrock to Envirocare File, dated January 13, 2006 regarding AMRL Soils Lab Certification for the Envirocare Soils Lab.

~~W.~~(22) Email dated February 15, 2006 from Loren Morton to Dan Shrum, Subject: License Amendment for Condition 73.

~~X.~~(23) Email dated December 23, 2005 from Loren Morton to Dane Finerfrock, Subject: Proposed Changes to License Condition 73 - Annual Surety Evaluation Report.

~~Y.~~(24) Letter dated February 22, 2006, Subject: Revise void remediation procedure OPC-6.0.

E. The following documents refer to revisions made in Amendment 22C:

~~A.~~(1) Letter CD05-0435, dated September 8, 2005, Request to amend RML UT 2300249: Condition 58, Waste Characterization Plan.

~~B.~~(2) Letter CD05-0557, dated December 5, 2005, RML UT 2300249; Condition 58 Waste Characterization Plan –Revised License Amendment Request.

~~C.~~(3) Letter CD06-0072, dated February 27, 2006, Radioactive Material License UT 2300249: Condition 58 Waste Characterization Plan – Revised License Amendment Request.

~~D.~~(4) Email dated February 24, 2006 from Boyd Imai to Sean McCandless Re: Waste Characterization Plan.

~~E.~~(5) Letter CD06-0059, dated February 15, 2006, Radioactive Material License UT 2300249 –Self Identified Noncompliance.

~~F.~~(6) Letter dated March 17, 2006, from the DRC regarding the February 15, 2006 letter of noncompliance.

~~G.~~(7) Letter CD06-0055) dated February 9, 2006, Request to Amend RML UT 2300249 to show addition of Liquid Radioactive Sources to License Condition 6.E.

~~H.~~(8) Letter (CD06-0092) dated March 8, 2006, RML UT 2300249; Request for administrative amendment. Conditions 21A and B and Condition 81.

F. The following documents refer to revisions made in Amendment 22E:

~~1.~~(1) CD06-0389, "Request to amend Radioactive Materials License No. UT 23000249 and 11e.(2) Radioactive Materials License No. UT 23000478 – Request for approval revised Appendix I, *Organization*," October 6, 2006.

~~2.~~(2) Shredder Facility

~~i.~~a. CD05-0448, "Radioactive Materials License No. UT 2300249 (RML) and Groundwater Quality Discharge Permit UGW450005 (GWQDP). Request to Construct Shredding Facility," September 15, 2005.

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~~ii.~~b. CD05-0532, "Request to Construct Shredding Facility – Revised Design and Interrogatory Response," November 14, 2005.
~~iii.~~c. CD05-0556, "Request to Construct Shredding Facility – Additional Information," December 2, 2005.
~~iv.~~d. CD06-0036, "Request to Construct Shredding Facility – Response to Round 2 Interrogatories", February 1, 2006.
~~v.~~e. CD06-0098, "Request to Construct Shredding Facility – Response to Round 3 Interrogatory," March 10, 2006.
~~vi.~~f. ASTM F-1417, "ASTM Method F 1417-92," March 29, 2006.
~~vii.~~g. CD06-0188, "Request to Construct Shredder Facility – Response to Round 4 Interrogatory," May 9, 2006.
~~viii.~~h. CD06-0211, "Request to Construct Shredder Facility – Response to Round 4B Interrogatory," May 25, 2006.
~~ix.~~i. CD06-0234, "Requests to Construct Shredder and Rotary Dump Facilities – Revised Wastewater Management Process," June 19, 2006.
~~x.~~j. "EnergySolutions LLC Low-Level Radioactive Waste Closure & Post-Closure Trust License UT 2300249 Trust #16673400," June 29, 2006.
~~xi.~~k. CD-0346, "Interim Wastewater Management Plan for the Shredder Facility – Response to August 18, 2006 Request for Additional Information," August 31, 2006.
~~xii.~~l. CD06-0388, "Radioactive Material License UT 2300429 and Groundwater Quality Discharge Permit (GWDP) No UGW450005 Shredder Facility – Request to Operate," October 5, 2006.
~~xiii.~~m. CD06-0407, "Comment on Proposed Amendment of Radioactive Material License UT 2300249 and Groundwater Quality Discharge Permit (GWDP) No UGW450005, October 18, 2006.
~~xiv.~~n. CD06-0414, "Radioactive Material License UT 2300249 and Groundwater Quality Discharge Permit No UGW450005 Shredder Facility – Submittal of Revised Drawings" October 25, 2006.
~~xv.~~o. CD06-0425, "Groundwater Quality Discharge Permit No UGW450005 (GWQDP) Submittal of Revised Appendix J and K," November 7, 2006.

~~1.~~(3) Rotary Dump Facility
~~1.~~a. CD05-0564, "Request to Construct – Rotary Dump," December 12, 2005.
~~2.~~b. CD05-0570, "Request to Construct Rotary Dump 00 Submittal of Dose Assessment," December 16, 2005.
~~3.~~c. CD06-0086, "Request to Construct Rotary Dump Facility – Response to Round 1 Interrogatory", March 2, 2006.
~~4.~~d. ASTM F-1417, "ASTM Method F 1417-92," March 29, 2006.
~~5.~~e. CD06-0147, "Request to Construct Rotary Dump Facility – Revised Drawings," April 10, 2006.
~~6.~~f. CD06-0210, "Request to Construct Rotary Dump Facility – Response to Round 2 Interrogatory," May 25, 2006.
~~7.~~g. CD06-0211, "Request to Construct Rotary Dump Facility – Response to Round 4B Interrogatory", May 25, 2006.

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~~8.~~h. CD06-0226, "Request to Construct Rotary Dump Facility – Response to Round 2B Interrogatories," June 8, 2006.

~~1.~~i. CD06-0234, "Requests to Construct Shredder and Rotary Dump Facilities – Revised Wastewater Management Process," June 19, 2006.

~~1.~~(4) Intermodal Container Wash Building

~~1.~~a. CD05-0291a, "Radioactive Materials License No. UT 2300249 (RML) and Groundwater Quality Discharge Permit UGW450005 (GWQDP). Request to Construct Intermodal Container Wash Building and Access Control Building," June 9, 2005.

~~2.~~b. CD05-0388, "Request to Construct Intermodal Container Wash Building – Revised Design and Supplemental Information," August 8, 2005.

~~3.~~c. CD05-0432, "Request to Construct Intermodal Container Wash Building – Revised Design and Interrogatory Response," September 1, 2005.

~~4.~~d. CD06-0110, "MARSSIM Release for New Intermodal Container Wash Facility," March 22, 2006.

~~5.~~e. CD06-0206, "Radioactive Material License UT 2300249 and Groundwater Quality Discharge Permit No UGW450005 Intermodal Container Wash Building – Request to Operate," May 22, 2006.

~~6.~~f. "EnergySolutions LLC Low-Level Radioactive Waste Closure & Post-Closure Trust License UT 2300249 Trust #16673400," June 29, 2006.

~~7.~~g. CD06-0259, "Groundwater Quality Discharge Permit (GWDP) No UGW450005 Intermodal Container Wash Building – Revised Appendix J and K," July 10, 2006.

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~~8.~~(5) Decontamination Access Control Building

~~1.~~a. CD05-0291b, "Radioactive Materials License No. UT 2300249 (RML) and Groundwater Quality Discharge Permit UGW450005 (GWQDP). Request to Construct Intermodal Container Wash Building and Access Control Building," June 9, 2005.

~~2.~~b. CD05-0367, "MARSSIM Release of New Boxwash Access Control", July 26, 2005.

~~3.~~c. CD06-0139, "Radioactive Material License UT 2300249 and Groundwater Discharge Quality Permit (GWDP) No UGW450005 Decontamination Access Control Building – Request to Operate", April 6, 2006.

~~4.~~d. "EnergySolutions LLC Low-Level Radioactive Waste Closure & Post-Closure Trust License UT 2300249 Trust #16673400," June 29, 2006.

~~5.~~e. CD06-0245, "Groundwater Discharge Quality Permit (GWDP) No UGW450005 Decontamination Access Control Building – Revised Appendix J and K and Drawing No 05015-S100," June 30, 2006.

~~1.~~(6) East Side Drainage Project

~~1.~~a. CD06-0175, "Request to Construct East Side Drainage and Gray Water System Modifications," May 1, 2005.

~~2.~~b. CD06-0244, "East Side Drainage and Gray Water System Modifications – Response to DRC Review," June 30, 2006.

~~3.~~c. CD06-0293, "Groundwater Discharge Quality Permit No UGW450005 East Side Drainage and Gray Water System – Revised Design and BAT Plans," August 4, 2006.

~~4.~~d. CD06-0327, "Groundwater Discharge Quality Permit No UGW450005 East Side Drainage and Gray Water System – Revised Appendix J BAT Performance Monitoring Plan and Appendix K BAT Contingency Plan," August 23, 2006.

~~5.~~e. CD06-0328, "Groundwater Discharge Quality Permit No UGW450005 East Side Drainage and Gray Water System – Revised Drawings," August 24, 2006.

G. The following documents refer to revisions made in Revision 0 of the License Renewal Application:

(1) AGRA Earth & Environmental, Inc. 1999. Summary Seismic Stability and Deformation Analysis: Envirocare LARW Disposal Facility, Clive, Tooele County, Utah. September 1, 1999. (1998 LRA Appendix J)

(2) AGRA Earth & Environmental, Inc. 2000a. Evaluation of Settlement of Compressible Debris Lifts: LARW Embankments, Clive, Tooele County, Utah. June 1, 2000.

(3) AGRA Earth & Environmental, Inc. 2000b. Evaluation of Settlement of Incompressible Debris Lifts: LARW Embankments, Clive, Tooele County, Utah. June 1, 2000.

(4) AMEC Earth & Environmental, Inc. 2000a. Letter Report: Allowable Differential Settlement and Distortion of Liner and Cover Materials. October 4, 2000.

(5) AMEC Earth & Environmental, Inc. 2000b. Letter Report Stability Considerations: Proposed LLRW Embankment. October 25, 2000.

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Hultquist, Review; Formerly Characteristic Waste – License Amendment Request.

(8) Letter dated August 31, 2009, Sean McCandless to Dane Finerfrock, Radioactive Material License No. UT2300249 – Revised request for Amendment – Formerly Characteristic (LLRW Destined) Waste.

(9) Email dated October 15, 2009 Sean McCandless to John Hultquist, Formerly Characteristic, Attachments Revised RML 10/8/09 and WCP Revised 10/8/09.

(10) Memorandum dated October 19, 2009, from Boyd Imai to John Hultquist, Formerly Characteristic Wastes – Transfer to LLRW.

N. The following documents refer to revisions made in Amendment 7:

(1) Letter dated September 21, 2009 (CD09-0241) from Val J. Christensen to Amanda Smith; RML No. UT2300249 – Commitments Relating to Depleted Uranium Disposal.

(2) Letter dated October 1, 2009 (CD09-0258) from Val J. Christensen to Dane Finerfrock; RML No. UT2300249 – Commitments Relating to Depleted Uranium Disposal

(3) Notice of Agency Action to Consider Proposed License Condition No. 35 dated October 21, 2009.

(4) Email dated February 22, 2010, from Laura Lockhart to Dane Finerfrock and John Hultquist, License Condition documents –comment response document.

~~1.~~O. The following document refer to revision made in Amendment 8:

~~1.~~(1) Letter dated June 1, 2010 (CD10-0162) from Sean McCandless to Dane Finerfrock; RML No. UT2300249—Request for Amendment.

~~2.~~(2) Letter dated July 15, 2010 (CD10-0200) from Sean McCandless to Rusty Lundberg; RML No. UT2300249—Revision of Appendix I, *Organization.*

~~3.~~(3) Letter dated August 2, 2010 (CD10-0219) from Sean McCandless to Rusty Lundberg; RML No. UT2300249—Revision of Appendix I, *Organization.*

~~4.~~(4) Letter dated November 1, 2010 (CD10-0298) from Rick Chalk to Rusty Lundberg; 1. Radioactive Material License UT 2300249, License Condition 16.1 (sic) Letter dated November 23, 2009 to Dane Finer frock from Mark Ledoux, CD09-0323, 2. Administrative request from DRC to EnergySolutions to amend License UT 2300249, License Conditions 6, 7, and 8.

~~5.~~(5) Email date November 18, 2010 from Thomas Brown to Boyd Imai, LC 8 E, K, M and O.

P. The following documents refer to revision made in Amendment 9:

~~1.~~(1) Letter dated December 6, 2010 (CD10-0347) from Dan B. Shrum to Rusty Lunberg; RML No. UT2300249—Amendment Request – Condition 35.B, Depleted Uranium.

~~2.~~(2) Memorandum dated December 13, 2010 from John Hultquist to File regarding Amendment request.

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Q. The following documents refer to revision made in Amendment 10:

(1) AMEC Earth & Environmental, Inc. 2011. Report: Geotechnical Update Report – Energy*Solutions* Clive Facility Class A West Embankment. February 15, 2011.

(2) Whetstone Associates, Inc. 2011. Class A West Disposal Cell Infiltration and Transport Modeling. April19, 2011.

UTAH RADIATION CONTROL BOARD

_____ _____

Rusty Lundberg, Executive Secretary Date

GWQDP Revisions

Permit No. UGW450005

STATE OF UTAH
DIVISION OF WATER QUALITY
UTAH WATER QUALITY BOARD
P.O. BOX 16690
SALT LAKE CITY, UTAH 84116-0690

Ground Water Quality Discharge Permit

In compliance with the provisions of the
Utah Water Quality Act, Title 19, Chapter 5, Utah Code Annotated 1953, as amended,
EnergySolutions, LLC
423 West 300 South, Suite 200
Salt Lake City, Utah 84101

hereafter referred to as the "Permittee", is granted a Ground Water Quality Discharge Permit for a Low-Level Radioactive Waste and 11e.(2) Waste Disposal Facility in accordance with conditions set forth herein. This facility currently consists of five separate operable units: a Low-Activity Radioactive Waste (LARW) cell, an 11e.(2) Cell, a Mixed Waste cell, and a Class A West cell, ~~and a Class A North cell,~~ which are located at approximately latitude 40° 41' 18" North, longitude 113° 06' 54" West.

This modified Ground Water Quality Discharge Permit amends and supersedes all other Ground Water Discharge permits for this facility issued previously.

This modified permit shall become effective on ~~October 4 2010~~
This permit and the authorization to operate shall expire at midnight, **June 8, 2013.**

Co-Executive Secretary
Water Quality Board

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3. Ground Water Protection Levels for Radiologic Parameters, Mixed Waste Cell

Based on the type of waste to be disposed of in the Mixed Waste Cell, which includes low-level radioactive waste, an evaluation of indicater isotopes, and the Ground Water Quality Standards (GWQS); ground water protection levels (GWPL) defined as either the GWQS or the Background Concentration, whichever is greater as listed in Table 1E and 1F of this Permit. In all cases, ground water quality in any compliance monitoring well at the Mixed Waste Cell shall comply with the GWPLs found in Table 1E, unless other GWPLs have been cited on a well and radiologic parameter-specific basis in Table 1F, below.

4 Revision of Ground Water Protection Levels

After submittal of additional ground water quality data, the ground water protection levels may be revised by the Executive Secretary.

Table 1A: Ground Water Protection Levels (GWPL) – Universal to All LARW, ~~Class A,~~ Class A West~~North, and~~ Evaporation Pond Wells

Parameter	GWPL [1]	Parameter	GWPL [1]
Field and Inorganic Parameters (mg/l)		*Radiologic Parameters – Alpha Emitters [9] (pCi/l)*	
Cyanide	0.2	Adjusted Gross Alpha [10]	15
Fluoride	4.0	Neptunium-237 [11]	7
Total Nitrate/Nitrite (as N)	10.0	Strontium-90	42
pH (units)	6.5 – 8.5	Thorium-230	83
Dissolved Metals (mg/l)		Thorium-232	92
Antimony[16]	0.006	Uranium-233	26
Arsenic	NA [2]	Uranium-234	26
Barium	2.0	Uranium-235	27
Beryllium [3]	0.004	Uranium-236	27
Cadmium	0.005	Uranium-238	26
Chromium	0.1		
Copper	1.3	*Radiologic Parameters – Beta/Gamma Emitters [12] (pCi/l)*	
Lead	0.015	Carbon-14	3,200
Mercury	0.002	Iodine-129 [13]	21
Molybdenum	NA [2]	Technetium-99	3,790
Nickel [3]	0.10	Tritium	60,900
Selenium	0.05		
Silver	0.1	*Combined Radiologic Parameters (pCi/l)*	
Thallium[16]	0.002		
Uranium – total [4]	0.03	Radium-226 + Radium-228 [14]	5
Zinc	5.0		
Organic Parameters (mg/l)			
Acetone [5]	0.7	1,2-Dichloroethane	0.005

Parameter	GWPL [1]	Parameter	GWPL [1]
2-Butanone [15]	4.0	Methylene Chloride [7]	0.005
Carbon Disulfide [5]	0.7	1,1,2-Trichloroethane [8]	0.005
Chloroform [6]	0.08	Vinyl Chloride	0.002

1. All ground water protection levels (GWPLs) derived from Ground Water Quality Standards (GWQS, see UAC R317-6-2), except as noted.
2. Due to naturally elevated concentrations of arsenic and molybdenum in the Class IV saline aquifer at Clive, Utah, these constituents are poor indicators of cell leakage and therefore will not be used as compliance parameters with ground water protection levels. However, the Permittee will continue to sample, analyze, and report arsenic and molybdenum data in all compliance monitoring wells at Permit and License renewal as a best management practice.
3. Beryllium and Nickel GWQS derived from EPA drinking water Maximum Contaminant Levels (MCL), as published in the July 17, 1992 Federal Register, Vol. 57, No. 138, pp. 31776 – 31849, Table 1.
4. Total uranium GWQS of 0.03 mg/l from EPA final MCL in National Primary Drinking Water Regulations Final Rule for Radionuclides (December 7, 2000 Federal Register, Vol. 65, No. 236, p. 76708).
5. GWQS for acetone, and carbon disulfide determined by DWQ staff from reference doses available in the technical literature, see August 8, 1994 DWQ Staff Report: Ground Water Quality Conditions and Proposed Revision to Ground Water Protection Levels, Envirocare of Utah Inc., Low-Level Radioactive Waste and 11e.(2) Waste Disposal Facility, near Clive, Tooele County, Utah, p. 3.
6. GWQS for chloroform derived from a 1998 EPA final drinking water MCL for total trihalomethane compounds in "Drinking Water Standards and Health Advisories", EPA 822-B-00-001, Summer 2000.
7. GWQS for methylene chloride derived from EPA drinking water MCL (ibid.).
8. GWQS for 1,1, 2-Trichloroethane from final EPA MCL in "Drinking Water Regulations and Health Advisories", EPA 822-B-96-002, October 1996.
9. All GWPL values for alpha-emitting radionuclides based on 1E-4 lifetime cancer mortality risk concentration levels provided in 1991 EPA draft MCL values for drinking water (July 18, 1991 Federal Register, Vol. 56, No. 138, pp. 33078-9, 33100-3, and Appendix C).
10. Adjusted Gross alpha activity excludes radon, radium-226, and uranium alpha particle activity. Gross alpha activity to be determined by co-precipitation, EPA Method 00-02.
11. Neptunium-237, as determined by Total Radioactive Neptunium, EPA Method 907.0.
12. All GWPL values for beta/gamma emitting radionuclide parameters based on a 4 millirem/year equivalent dosage, as per 1991 EPA draft MCL values for drinking water (July 18, 1991 Federal Register, Vol. 56, No. 138, pp. 33078, 33103, and Appendix B).
13. Iodine-129, as determined by Total Radioactive Iodine, EPA Method 902.0.
14. GWQS of 5 pCi/l for combined radium-226 + radium-228 from final EPA MCL in National Primary Drinking Water Regulations Final Rule for Radionuclides (December 7, 2000 Federal Register, Vol. 65, No. 236, p. 76708).
15. GWQS for 2-Butanone (methyl ethyl ketone) derived from Life-time health advisory value in "2006 Edition of the Drinking Water Standards and Health Advisories", EPA 822-R-06-013, August 2006.
16. Antimony and Thallium GWPL were recently established by the Utah Water Quality board. EnergySolutions is in the process of establishing baseline GWPL for these parameters, see Part I.I.4 for details.

Table 1C: Ground Water Protection Levels – Universal for all 11e.(2) Wells

Parameter	GWPL [1]	Parameter	GWPL [1]
Field and Inorganic Parameters [2] (mg/l)		*Organic Parameters – Specific to 11e.(2) (mg/l)*	
Cyanide	0.2	Acetone [5]	0.7
Fluoride	4.0	2-Butanone [11]	4.0
Total Nitrate/Nitrite (as N)	10.0	Carbon Disulfide [5]	0.7
pH (units)	6.5 – 8.5	Chloroform [6]	0.08
Dissolved Metals [2] (mg/l)		1,2-Dichloroethane	0.005
Arsenic	NA [3]	Methylene Chloride [7]	0.005
Barium	2.0	Naphthalene [8]	0.02
Beryllium [4]	0.004	Diethyl Phthalate [9]	5.0
Cadmium	0.005	2-Methylnaphthalene [10]	0.004
Chromium	0.1		
Copper	1.3		
Lead	0.015		
Mercury	0.002		
Molybdenum	NA [3]		
Nickel [4]	0.10		
Selenium	0.05		
Silver	0.1		
Uranium – total	0.03		
Zinc	5.0		
Combined Radiologic Parameters (pC/l)			
Radium-226+radium-228	5		
Radiologic Parameters (pC/l)			
Thorium-230	83		
Thorium-232	92		

1. All field, inorganic, dissolved metals, and organic indicator organic parameters and corresponding GWPLs for the 11e.(2) wells are equivalent to those for the LARW wells in Table 1A, above.
2. All ground water protection levels (GWPL) derived from Ground Water Quality Standards (GWQS, see UAC R317-6-2), except as noted.
3. Due to naturally elevated concentrations of arsenic and molybdenum in the Class IV saline aquifer at Clive, Utah, these constituents are poor indicators of cell leakage and therefore will not be used as compliance parameters with ground water protection levels. However, the Permittee will continue to sample, analyze, and report arsenic and molybdenum data in all compliance monitoring wells at Permit and License renewal as a best management practice.
4. Beryllium and Nickel GWQS derived from EPA drinking water Maximum Contaminant Levels (MCL), as published in the July 17, 1992 Federal Register, Vol. 57, No. 138, pp. 31776 – 31849, Table 1.
5. GWQS for acetone, and carbon disulfide determined by DWQ staff from reference doses available in the technical literature, see August 8, 1994 DWQ Staff Report: Ground Water Quality Conditions and Proposed Revision to Ground Water Protection Levels, Envirocare of Utah Inc., Low-Level Radioactive Waste and 11e.(2) Waste Disposal Facility, near Clive, Tooele County, Utah, p. 3.
6. GWQS for chloroform derived from a 1998 EPA final drinking water MCL for total trihalomethane compounds in "Drinking Water Standards and Health Advisories", EPA 822-B-00-001, Summer 2000.
7. GWQS for methylene chloride derived from EPA drinking water MCL (ibid.).
8. Naphthalene GWQS derived from final EPA drinking water LHA (ibid.).

4) A 6-inch lower filter zone consisting of sandy gravel material with a minimum permeability of 3.5 cm/sec,

5) A 2-foot thick clay radon barrier measured perpendicular to the slope. Said radon barrier will be divided into two layers:

   i. An upper layer, 1 foot thick, with a field hydraulic conductivity of 5.0E-8 cm/sec or less, and

   ii. A lower layer, 1 foot thick with a field hydraulic conductivity of 1.0E-6 cm/sec or less.

Top slope of the embankment shall be between 2% and 4%, as specified on the approved engineering drawings, and side slopes shall be no steeper than approximately 5:1. The outside toe of the clay radon barrier/liner shall extend outward and beyond the outermost edge of the waste layer and shall merge with the bottom clay liner.

b) Waste Layer – the waste layer shall not exceed a final thickness of 43 feet above the top of the bottom clay liner.

c) Clay Bottom Liner – the bottom clay liner shall be constructed below natural grade on slopes no greater than 0.12% north to south and 0.2% east to west. Final grade and elevation for the base of the clay liner will comply with the approved engineering design (Table 2A). This liner will be constructed after excavation of the site to the total design depth, followed by placement of imported clay materials, which meet the approved specifications for material and construction. The new clay liner shall be graded to prevent the accumulation of leachate over the existing 1-foot thick clay liner. The clay liner shall be a minimum of 2 feet thick, measured perpendicular to the slope, constructed in accordance with the approved LLRW and 11e.(2) CQA/QC Plan (Radioactive Materials License, Condition 44), and have a field hydraulic conductivity of 1.0E-6 cm/sec or less.

Table 2A: Approved LARW Cell Engineering Design Drawings

Drawing	Last Revision Date	Subject
9407-2, Rev. E	July 28, 1998	LARW Disposal Cell – Cell Location and Excavation Limits
9407-4, Rev. V	February 1, 2005	LARW Disposal Cell – LARW Cell Closure
9407-4A, Rev. L	May 16, 2003	LARW Disposal Cell – LARW Cell Closure
9407-4B, Rev. J	May 16, 2003	LARW Disposal Cell – LARW Cell Closure
9407-5, Rev. I	February 4, 1999	LARW Disposal Cell – Site Layout
9407-6, Rev. E	July 28, 1998	LARW Disposal Cell – Site Layout
9407-7, Rev. A	June 27, 1994	Drainage Plan – Plan View
9407-7A, Rev. A	June 27, 1994	Drainage Plan – Details
9407-8, Rev. C	October 16, 1998	LARW Disposal Cell Wedge Expansion Cross Section
03046-VO1, Rev. 0	May 16, 2003	LARW Disposal Cell – Radon Barrier Design Sections and Details
03046A-VO1 Rev. -	August 1, 2003	LARW Disposal Cell Closure – Plan and Details
03046A-VO2 Rev. 1	August 1, 2005	LARW Disposal Cell Closure – Sections and Details

Moisture Content shall be the asymptotic value measured by ASTM Methods D-3152 and D-2325 at soil tensions above 15 bars, If the fines content (#200 sieve) of the sacrificial soil is greater than or equal to 15%, residual moisture content testing is not required,

4) A 6-inch lower (Type B) filter zone consisting of sandy gravel material with a minimum permeability of 3.5 cm/sec,

5) A 2-foot thick clay radon barrier measured perpendicular to the slope. Said radon barrier will be divided into two layers:

   i. an upper layer, 1 foot thick, with a field hydraulic conductivity of 5.0E-8 cm/sec or less, and

   ii. a lower layer, 1 foot thick with a field hydraulic conductivity of 1.0E-6 cm/sec or less.

Top slope of the embankment shall be between 2% and 4%, as specified on the approved engineering drawings, and side slopes shall be no steeper than approximately 5:1. The outside toe of the clay radon barrier/liner shall extend outward and beyond the outermost edge of the waste layer and shall merge with the bottom clay liner.

b) Waste Layer – the waste layer shall not exceed a final thickness of 75.3~~54~~ feet above the top of the bottom clay liner.

c) Clay Bottom Liner – the bottom clay liner shall be constructed below natural grade. Final grade and elevation for the base of the clay liner will comply with the approved engineering design (Table 2C). This liner will be constructed after excavation of the site to the total design depth, followed by placement of imported clay materials, which meet the approved specifications for material and construction. The clay liner shall be a minimum of 2 feet thick, measured perpendicular to the slope, constructed in accordance with the approved LLRW and 11e.(2) CQA/QC Plan (Radioactive Materials License, Condition 44), and have a field hydraulic conductivity of 1.0E-6 cm/sec or less.

Table 2C: Approved ~~Class A and~~ Class A West~~North~~ Cell Engineering Design Drawings

Drawing	Last Revision	Subject
Class A Disposal Embankment		
10014-C019~~821-01~~, Rev. 0~~-J~~	42/119/1109	Class A West Embankment~~Disposal Cell~~ – Embankment Features and Controls~~Layout Plan and Cover Details~~
100149~~821~~-C02, Rev. 0~~D~~	42/119/1109	Class A West Embankment~~Disposal Cell~~ – Cross Sections
100149~~821~~-C03, Rev. 0~~D~~	47/118/1109	Class A West Embankment~~Disposal Cell~~ – Sections and Details 1 of 2~~Ditch Details~~
100149~~821~~-C04, Rev. 0~~A~~	47/1125/1100	Class A West Embankment~~Disposal Cell~~ – Sections and Details 2 of 2~~Updated Drainage System~~
~~Class A North Disposal Embankment~~		
1001~~404080~~-C05~~,1~~ Rev. 03	42/119/1109	Class A West Embankment~~North Disposal Cell~~ – Active CWF and LC Areas~~Layout Plan and Cover Details~~
1001~~404080~~-C062, Rev. 04	47/118/1109	Class A West Embankment~~North Disposal Cell~~ – Large Component Area Plan & Details~~Cross Sections~~

Table 2C: Approved ~~Class A and~~ Class A West~~North~~ Cell Engineering Design Drawings

1001~~404080~~-C07~~3~~, Rev. 0~~3~~	~~4~~7/11~~8~~/11~~09~~	Class A West Embankment~~North Disposal Cell~~ – CWF Area Plan & Details~~Ditch Details~~
1001~~404080~~-C09~~4~~, Rev. 0~~3~~	~~410~~/11~~26~~/11~~09~~	Class A West~~North~~ Embankment~~Proposed~~ – CWF Cross Sections~~CWF & LC Area, Area & Haul Road Layout~~
1001~~408080~~-U~~C~~01~~6~~, Rev. 04	~~410~~/11~~26~~/11~~09~~	Class A West~~North~~ Embankment - Embankment Location, Map and Buffer Zone~~Proposed CWF Area, CWF Area Plan and Details~~
1001~~408080~~-U~~C~~02~~6A~~	~~410~~/11~~29~~/11~~09~~	Class A West~~North~~ Embankment – Environmental Monitoring~~Proposed CWF area, CWF Area Plan and Details~~

5. Disposal Cell Location Restrictions

The LARW, 11e.(2), ~~Class A,~~ and Class A West~~North~~ disposal cells shall be restricted to the following locations in Section 32, Township 1 South, Range 11 West, SLBM, as specified on the currently approved engineering plans, drawings, and the approximate Latitude and Longitude Coordinates provided in Table 3 below:

Table 3: Authorized LARW, 11e.(2), ~~Class A,~~ and Class A West~~North~~ Disposal Cell Locations

Disposal Cell	Edge of Waste Position	Coordinates	
		Latitude	Longitude
LARW	NW Corner	40° 41' 11.382" N	113° 06' 51.318" W
	SW Corner	40° 40' 52. 908" N	113° 06' 51. 203" W
	SE Corner	40° 40' 52. 960" N	113° 06' 36. 734" W
	NE Corner	40° 41' 11.434" N	113° 06' 36. 848" W
11e.(2)	NW Corner	40° 41' 12. 590" N	113° 07' 24. 545" W
	SW Corner	40° 40' 55. 055" N	113° 07' 24. 761" W
	SE Corner	40° 40' 54. 845" N	113° 06' 55. 564" W
	NE Corner	40° 41'12.380" N	113° 06' 55.346" W
Class A West	NW Corner	40° 41' 39~~28~~.609~~061~~" N	113° 07' 24.76~~535~~" W
	SW Corner	40° 41' 14. 230" N	113° 07' 24. 702" W
	SE Corner	40° 41' 14.191" N	113° 06' 55.369" W
	NE Corner	40° 41' 28.022" N	113° 06' 55.403" W
~~Class A North~~	~~NW Corner~~	~~40° 41' 38. 509" N~~	~~113° 07' 24. 752" W~~
	~~SW Corner~~	~~40° 41' 30. 527" N~~	~~113° 07' 24. 740" W~~
	~~SE Corner~~	~~40° 41' 30.550" N~~	~~113° 06' 57.211" W~~
	~~NE Corner~~	~~40° 41' 38. 532" N~~	~~113° 06' 57.222" W~~

This description does not include the Mixed Waste facility, located east of the LARW Cell, which is authorized under a separate State-issued Part B Permit from the Utah Division of Solid and Hazardous Waste.

6. Definition of LARW Waste

For purposes of this Permit, Low-Activity Radioactive Waste (LARW) is defined as radioactive wastes, which meet the definition of Class A Low-Level Radioactive Waste (LLRW) under the Utah Radiation Control Rules, UAC R313-

15-1008, or are defined as Naturally Occurring and Accelerator Produced Radioactive Materials under the Utah Radiation Control Rules, UAC R313-12-3.

7. Definition of Mobile Waste

Any waste containing any of the following isotopes shall be considered a mobile waste and subject to special provisions or requirements under this Permit: aluminum-26, berkelium-247, calcium-41, californium-249, californium-250, carbon-14, chlorine-36, iodine-129, neptunium-237, rhenium-187, sodium-22, technetium-99, terbium-157, terbium-158, or tritium.

8. Definition of PCB/Radioactive Waste

For purposes of this Permit, PCB/Radioactive Waste to be accepted for disposal shall meet the criteria specified in R315-315-7(2)(a) or (3)(b)(i-vi) of the rules designated for disposal in a municipal or non-municipal non-hazardous landfill.

9. Definition of 11e.(2) Waste

For purposes of this Permit, 11e.(2) Waste is defined as "... tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content", as defined in Section 11e.(2) of the U.S. Atomic Energy Act of 1954, as amended.

10. Collection Lysimeters for Future Construction at the ~~Class A and~~ Class A West~~North~~ Cell~~s~~

Future construction of the clay bottom liner of the ~~Class A and~~ Class A West~~North~~ Cell~~s~~ shall include the installation of collection lysimeters below the bottom clay liner, in accordance with the CQA Plan for Collection Lysimeter Construction currently approved by the Executive Secretary and included herein as Appendix C. The Permittee shall also comply with the currently approved Operation, Maintenance and Closure Plan for Collection Lysimeters, also included herein as Appendix C. In addition, the Permittee shall comply with the following requirements:

a) Collection Lysimeter "As-Built" Report – within 30 days of completion of the construction of each lysimeter, the Permittee shall submit an "As-Built" Report for Executive Secretary approval.

b) Future Collection Lysimeter Construction Notification – the Permittee shall submit a notice of construction of additional lysimeters in the ~~Class A and~~ Class A ~~w~~West~~North~~ Cell~~s~~. Said notice shall be submitted at least one week prior to construction in order to allow the Executive Secretary to inspect lysimeter construction.

c) Future Collection Lysimeter Construction – in addition to any design or construction requirements found in the currently approved Appendix C, the Permittee shall construct all future collection lysimeters in a manner that will allow the lysimeter to be operated in compliance with all performance standards mandated by Part I.E.11 or monitoring requirements dictated by Part I.F.6 of this Permit. Any changes to the approved design or construction

specifications in Appendix C shall require prior Executive Secretary approval.

11. Future Modification of Disposal Cell Engineering Design or Specifications

Any change in the approved engineering design or specifications which causes a significant adverse effect to the infiltration performance of a disposal cell shall require prior submittal and Executive Secretary approval of infiltration and contaminant transport analysis of the proposed change. Said changes must be submitted to the Executive Secretary as a written request with the revised engineering drawings, specifications, ground water flow and contaminant transport models, or any other documentation deemed necessary by the Executive Secretary, at least 180 days prior to the effective date desired by the Permittee.

12. Final Authorized Engineering Design and Specifications for Waste and Wastewater Related Facilities

Best available technology design standards for related facilities at the disposal site shall be defined by, and construction conform to the engineering plans and specifications summarized in Table 5, below:

Table 5: Approved Engineering Design Drawings for Waste/Wastewater Related Facilities

Related Facility	Drawing No.	Last Revision	Subject / Title
Track 2 Railcar Decontamination Pad	9513-1, Rev. B	May 26, 1996	Plan, Section, and Details
Track 4 Railcar Decontamination Pad	T-100, Rev. 3	Aug. 14, 1999	Foundation
	T-101, Rev. 3	Aug. 16, 1999	Foundation Details
	9906-02, Rev. H	Feb 26, 2007	Wash Water System As-Built
	9906-02A, Rev. H	Feb. 26, 2007	Wash Water System As-Built
Class A West~~North~~ Containerized Waste Facility and Large Component Area Evaporation Basin	1001~~404080~~-C05, Rev. 0~~3~~	April 11~~July 14~~, 2011~~08~~	Class A West Embankment - Active CWF & LC Areas: Area and Haul Road Layout~~Plan and Section~~
	1001~~404080~~-C06, Rev. 0 ~~4~~	April 11~~October 26~~, 2011~~09~~	Class A West~~North~~ Embankment Large Component Area Plan & Details~~Proposed CWF Area, CWF Area Plan & Details~~
	1001~~408080~~-C0~~76A~~, Rev. 0~~1~~	April 11~~October 26~~, 2011~~09~~	Class A West~~North~~ Embankment ~~Proposed CWF Area,~~ CWF Area Plan & Details
1995 Evaporation Pond	9718-1, Rev. C	March 13, 2007	Facility Layout
	9504-3, Rev. E	Oct. 28, 1999	Storage Pond
	9504-3A, Rev. A	Oct. 28, 1999	Leak Detection System Details, As-Built
	9504-4, Rev. E	Oct. 28, 1999	Facility Details
	9718-4, Rev. A	Aug. 17, 1998	Piping Diagrams and Pump Station
	08007-C01, Rev. 1	June 26, 2008	1995 Evaporation Pond HDPE Repairs, New 60 mil HDPE Liner
1997 Evaporation Pond	9718-1, Rev. C	March 13, 2007	Facility Layout
	9718-2, Rev. D	Feb. 25, 1999	Evaporation and Storage Pond
	9718-2a, Rev. B	Feb. 25, 1999	Leak Detection System Details, As-Built
	9718-3, Rev. -	Sept. 17, 1997	Details
	9718-4, Rev. A	Aug. 17, 1998	Piping Diagrams and Pump Station

Table 5: Approved Engineering Design Drawings for Waste/Wastewater Related Facilities

Related Facility	Drawing No.	Last Revision	Subject / Title
2000 Evaporation Pond	0009-00, Rev. A	July 10, 2000	Site Plan and Facility Layout
	0009-01, Rev.E	Feb. 22, 2008	Plan View
	0009-02, Rev. A	Jan. 29, 2001	Cross Sections
	0009-03, Rev. B	Jan. 29, 2001	Details
	0009-04, Rev. A	Jan. 29, 2001	Sump/Side Slope Cross-Section
	0009-05, Rev. A	Jan. 29, 2001	Leak Detection Details
	0009-06, Rev. A	Feb. 22, 2008	Water Transfer Piping Details
Mixed Waste Evaporation Pond	9802-1, Rev. D	Dec. 22, 1999	Facility Layout
	9802-2, Rev. F	Dec. 22, 1999	Water Storage Facility
	9802-3, Rev. D	Dec. 22, 1999	Facility Details As-Built
	9802-4, Rev. B	Dec. 4, 1998	Water Storage Facility
	9802-5, Rev. A	Dec. 22, 1999	Leak Detection System Details, As-Built
	9803-2, Rev. -	Feb. 11, 1998	Storage Pad Drain Line As-Built
Box Washing Facility	9621-1, Rev. C	July 20, 1998	Site Plan As-Built Drawing
	9621-2, Rev. B	July 20, 1998	Foundation Plan As-Built Drawing
	9621-3, Rev. B	July 20, 1998	Elevation Views As-Built Drawing
	9621-4, Rev. B	July 20, 1998	Elevation Views As-Built Drawing
	9621-5, Rev. B	July 20, 1998	Wall Detail As-Built Drawing
Intermodal Unloading Facility	9705-1, Rev. A	July 31, 1998	Plan View
	9705-2, Rev. A	July 31, 1998	Cross Section Drawings
	9813-01, Rev. B	March 13, 2007	Layout
	9813-02, Rev. A	July 31, 1998	Layout (and Details)
	0701-G03, Rev. 1	June 8, 2007	Site Layout and Facility Legend
Railcar Rollover Facility	0221-01	March 26, 2002	Site Layout and Drain Line
	0221-02	March 26, 2002	Fabric Cover Frame Layout
	0221-03	March 26, 2002	Rollover Cover South Elevation
	0221-04, Rev. A	April 24, 2002	Cover Run-off Collection and Drainage
	07013-C0, Rev 0	March 31, 2008	Drainage repair plan
Rail Digging Facility	0107-01, Rev. B	April 25, 2002	Site Layout
	0107-02, Rev. B	April 19, 2002	Digging Track Plan
	0107-03, Rev. B	April 12, 2002	Track and Pad Details
	0107-04A, Rev. A	April 25, 2002	Excavator Ramp
Container Storage Pad	9514-1, Rev. C	March 13, 2007	Plan, Sections and Details
East Truck Unloading Facility	05023-C104, Rev. 9	April 26, 2007	New Site Layout
	05023-C301, Rev. 4	Sept. 22, 2005	Cross Sections
	05023-C401, Rev. 5	Dec. 12, 2005	Truck Unloading Area Plan View
	05023-C402, Rev. 5	De. 12, 2005	Truck Unloading Dock Plan View
	05023-C403, Rev. 7	April 26, 2007	Enlarged Dock Plan View
	05023-C501, Rev. 5	Dec. 12, 2005	Truck Unloading Area Details
	05023-C502, Rev. 4	Dec. 12, 2005	Truck Dock Details
	05023-C503, Rev. 4	Dec. 12, 2005	Truck Dock Details
	05023-S1, Rev. 1	Sept. 22, 2005	Concrete Container Holding Pad Safety Protection
Shredder Facility	05056-F13, Rev._	09/30/06	Shredder Facility; Outfeed Pad Plan and Pad Details (As-Constructed)
	05056-F13A, Rev._	09/30/06	Shredder Facility; Shredder Pad Plan (As-Constructed)
	05056-F13B, Rev._	09/30/06	Shredder Facility; Shredder Pad Details (As-Constructed)

PCB/Radioactive Waste, the currently approved State-issued Part B Permit.

Table 6: Maximum Allowable Concentrations in 11e.(2) Waste

Parameter	TCLP Leachate Regulatory Limit (mg/l)	Total Waste Concentration (mg/kg)
Volatile Organic Compounds		
Acetone	n/a	10.0
2-Butanone	200.0	10.0
Carbon Disulfide	n/a	10.0
Chloroform	6.0	10.0
1,1-Dichloroethane	0.5	10.0
Diethyl Phthalate	n/a	80.0
Methylene Chloride	n/a	70.0
2-Methylnaphthalene	n/a	80.0
Naphthalene	n/a	80.0
1,1,2-Trichloroethane	n/a	7.27
Vinyl Chloride	0.2	0.66

b) Liquid Waste – acceptance of liquids and liquid content of all wastes shall be in accordance with the Radioactive Materials License.

c) Chelating Agents – the disposal of any waste containing chelating agents shall be limited to the Mixed Waste Cell and is prohibited in the ~~Class A,~~ Class A West~~North,~~ and 11e.(2) Disposal Cells. The disposal of any waste in the Mixed Waste Cell containing chelating agents in excess of 22% by weight is prohibited.

3. Failure to Construct as per Approval

Failure to construct any portion of the facility in compliance with the approved engineering design and specifications or in a manner inconsistent with the LLRW and 11e.(2) CQA/QC Plan (Radioactive Materials License UT 2300249, Condition 44) shall be cause for the Executive Secretary to require excavation of the materials and remedial construction, retrofit of the embankment or any other mitigative action to prevent the release of pollutants to soil or ground water.

4. Unsaturated Soil Moisture Content Monitoring

The Permittee shall conduct soil moisture content monitoring to verify performance of the engineered containment systems for the LARW, 11e.(2), ~~Class A,~~ and Class A West~~North~~ Disposal Cells in accordance with the requirements of Part 1.H.17 of this Permit and Radioactive Material License Condition 28. This monitoring shall consist of instrumentation, as approved by the Executive Secretary, installed in the Cover Test Cell.

The Permittee shall maintain and replace all soil moisture instrumentation as directed by the Executive Secretary.

The Executive Secretary reserves the right to require similar soil moisture content monitoring in the radon barrier at the 11e.(2) Cell. The Permittee shall install and make operational any soil moisture instrumentation in compliance with the schedule to be determined by the Executive Secretary.

5. Allowable Heavy Metal Waste Concentration Limits

Waste containing any of the following non-radionuclide metals: Arsenic, Barium, Cadmium, Chromium, Copper, Lead, Mercury, Selenium, Silver, and Zinc can be disposed of in the ~~Class A,~~ Class A West~~North,~~ or 11e.(2) Cells at any concentrations.

6. Open Cell Time Limitation

For each open portion of any disposal cell, final cover construction shall be completed in accordance with the approved engineering plans and specifications (Part I.D.2 and 4) and the approved Construction Quality Assurance / Quality Control Plan requirements under the Radioactive Materials License on or before the end of 18 years after the date of initial placement of the first lift of any LLRW waste in that portion of the open cell. Final cover construction shall include but is not limited to completion of the following:

a. Riprap Layer
b. Type A Filter Layer
c. Sacrificial Soil Layer
d. Type B Filter Layer
e. Upper Radon Barrier Layer
f. Lower Radon Barrier Layer
g. Temporary cover layer
h. Settlement stand installation and all monitoring necessary to demonstrate waste platform is stable and ready for final cover construction.

Any modification of this 18 -year limitation shall require submittal of detailed justification including but not limited to ground water flow and contaminant transport modeling of open cell conditions or other technical information as necessary, and prior Executive Secretary approval. Said modeling report or other studies must be submitted in their entirety to the Executive Secretary 180 days prior to the expiration date of the respective 18-year open cell time limit. Failure to secure Executive Secretary approval prior to expiration of the 18 -year deadline shall not be cause for the Permittee to postpone construction of the cover of any cell in accordance with the currently approved engineering design and specifications in Part I.D.2 or 4 of this Permit.

7. General Stormwater Management Requirements

The Permittee shall contain all stormwater runoff at the ~~Class A,~~ Class A West~~North,~~ and 11e.(2) Disposal Cells which has contacted the waste (i.e.,

contact stormwater). The Permittee shall not begin pumpage or removal of stormwater that falls inside the restricted area that has not contacted the waste (i.e., non-contact stormwater) before beginning removal of contact stormwater. This includes runoff from waste disposed in excavated, below grade areas of the ~~Class A,~~ Class A West~~North,~~ and 11e.(2) Disposal Cells, additionally, and:

a) Within 24 hours of discovery of an accumulation of contact stormwater, the Permittee shall immediately begin pumpage and removal of said wastewater in compliance with the following priority schedule, ranked from highest to lowest priority:

1) Contact stormwater inside the footprint of the ~~Class A,~~ Class A West~~North,~~ and 11e.(2) Disposal Cells,

2) Contact stormwater at the Rollover and Rotary Dump Facility, and

3) Contact stormwater at the Intermodal Unloading Facility.

The Permittee shall pump and remove contact stormwater in an uninterrupted manner until it is completely removed from said location. Under no circumstance will the Permittee begin pumpage and removal of contact stormwater at a lower priority location without first completing removal at all higher priority location(s).

b) All contact stormwater accumulated and pumped shall be disposed of in the evaporation ponds only as explicitly approved by the Executive Secretary. However, contact stormwater from the ~~Class A,~~ Class A West~~North,~~ and 11e.(2) disposal cells may be used for minimal engineering and dust control purposes on the waste in the ~~Class A and~~ Class A West~~North~~ disposal cell~~s~~.

c) Class A West~~North~~ Containerized Waste Facility and Large Component Evaporation Basin – precipitation that falls on the Class A West~~North~~ Containerized Waste Facility and Large Component Area shall be allowed to accumulate in an engineered evaporation basin constructed in accordance with the following conditions:

1) The evaporation basin shall be constructed in accordance with the design specifications in engineering drawings listed in Table 5 for the Class A West~~North~~ Embankment and the requirements of the currently approved LLRW and 11e.(2) CQA/QC Plan.

2) Fluid head in the evaporation basin shall not exceed a 1-foot level above the lowest point of the bottom clay liner of the basin. The occurrence of fluid levels above this 1-foot maximum allowable head limit shall constitute a violation of this Permit.

3) The Permittee shall ensure that the physical integrity of the clay liner is not compromised by desiccation or freeze/thaw cycles by implementing quality assurance/quality control requirements in the currently approved LLRW and 11e.(2) CQA/QC Plan.

8. 11e.(2) Waste Management Requirements

The Permittee shall manage the 11e.(2) Waste and related activities at the facility in accordance with all applicable requirements of the currently approved Radioactive Materials License, No. UT2300478, for the following activities and procedures:

a) Spill response and prevention

b) Runon and runoff containment

c) Decontamination of vehicles, equipment, and containers

d) Unloading procedures

e) Waste storage time limits

f) Stormwater/wastewater collection and disposal

g) Leaking waste shipments

In addition, the Permittee shall manage 11e.(2) waste storage and handling in compliance with the containment and spill prevention requirements of Part I.E.10.a of this Permit.

9. 11e.(2) Waste Storage

Storage of 11e.(2) waste at the facility shall be explicitly limited to areas within the confines of the 11e.(2) Disposal Cells having completed and approved clay liner.

10. LLRW Waste Management Performance Requirements

The Permittee shall operate and maintain all facilities in compliance with the following performance requirements:

a) Contaminant Containment and Spill Prevention – the Permittee shall manage all site operations to:

1) Prevent contact of wastes with the ground surface.

2) Prevent spills of wastes or liquids contained therein from any contact with the ground surface or ground water.

3) Prevent contact of surface water or stormwater run-on with the waste.

4) Control any runoff, which may have contacted the waste from subsequent contact with the ground surface or ground water by means of approved engineering containment. Any accumulations of such contact runoff or leachates shall be removed and managed in accordance with Part I.E.7.

5) Prevent wind dispersal of wastes.

6) Minimize the time any waste is held in temporary storage without disposal in a disposal cell or embankment. In no case shall any waste be in temporary storage beyond 365 days after the date of waste entry into the controlled area. Once the waste is removed from temporary

12. Stormwater Drainage Works Performance Criteria

All stormwater drainage works constructed and operated at the LARW, ~~Class A,~~ Class A West~~North~~, and 11e.(2) facilities shall perform in accordance with the following criteria:

a) Seepage Control to Prevent Ground Water Mounding – all drainage works at the facility shall be constructed of either low-permeability clay liner materials or of an impermeable man-made conveyance in order to control and prevent any alteration of local natural ground water hydraulic gradients or velocities. This infiltration control shall address seepage during periods of storm water storage in the drainage system.

b) Free Drainage – all stormwater drainage works shall be free draining and under gravity conditions shall convey stormwater from the contributing facilities to an off-site location, except as follows:

1. The stormwater culvert at the southeast margin of the 11e.(2) cell, as found on the Permittee's engineering drawing 9420-7D as listed in Table 5 of this Permit. Said construction includes an engineered catch basin and lift station.

c) Temporary Stormwater Drainage Works – plans and specifications for any temporary stormwater drainage works shall be submitted for Executive Secretary review and approval prior to installation. As-Built reports shall be submitted for Executive Secretary approval within 30 days following installation. Prior to site closure, the Permittee shall remove all temporary stormwater drainage works (e.g., drainage grates, piping, ditches, etc. not approved under Part I.D.4) as part of the site Decontamination and Decommissioning Plan required under Radioactive Material License, Condition 74.

13. Reserved

14. Wastewater Management Requirements

The Permittee shall operate and maintain all wastewater storage, treatment, and disposal facilities in accordance with Best Available Technology requirements approved by the Executive Secretary, as follows:

a) 1995, 1997, 2000, Mixed Waste, and Northwest Corner Evaporation Ponds – the Permittee shall operate and maintain the 1995, 1997, 2000 , and Northwest Corner evaporation ponds and the Mixed Waste evaporation pond to prevent release of fluids to subsurface soils or groundwater, in accordance with the following requirements:

1) Leak Detection System Pumping and Monitoring Equipment Continuous Operation – the Permittee shall provide continuous operation of the leak detection system pumping and monitoring equipment, including, but not limited to, the submersible pump, pump controller, head/pressure transducer, and flow meter equipment approved by the Executive Secretary. Failure of any pumping or

monitoring equipment not repaired and made fully operational within 24 hours of discovery shall constitute failure of Best Available Technology and a violation of this Permit.

2) Maximum Allowable Daily Leakage Volumes – the Permittee shall measure the daily volume of all fluids pumped from the respective leak detection systems of the 1995, 1997, 2000, Mixed Waste, and Northwest Corner evaporation ponds. Under no circumstance shall the daily leak detection system flow volume, as determined pursuant to Part I.F. a.3, exceed the following limits:

i. 1995 Evaporation Pond:	162 gallons/day
ii. 1997 Evaporation Pond:	171 gallons/day
iii. Mixed Waste Evaporation Pond:	171 gallons/day
iv. 2000 Evaporation Pond:	382 gallons/day
v. Northwest Corner Evaporation Pond:	326 gallons/day

Daily leak detection system flow volumes in excess of these limits shall constitute failure of Best Available Technology and a violation of this Permit.

3) Maximum Allowable Head – the Permittee shall measure fluid head in the respective leak detection sumps of the 1995, 1997, 2000, the Mixed Waste, and Northwest Corner evaporation ponds by use of pressure transducer equipment approved by the Executive Secretary. Under no circumstance shall fluid head in the leak detection system sump exceed a 1-foot level above the lowest point in the lower flexible membrane liner. The occurrence of leak detection system fluid levels above this 1-foot limit shall constitute failure of Best Available Technology and a violation of this Permit.

4) 2-foot Minimum Vertical Freeboard Criteria – the Permittee shall operate and maintain at least 24 inches of vertical freeboard in the 1995, 1997, 2000, Mixed Waste, and Northwest Corner evaporation ponds to ensure total containment of fluids. This vertical distance shall be determined by use of a gauging station approved by the Executive Secretary. If at any time the Permittee operates the pond with less than 24 inches of vertical freeboard, such operation shall constitute failure of Best Available Technology and a violation of this Permit.

b) Box-Washing Facility – the Permittee shall operate and maintain the Box-Washing Facility to ensure:

1) Free draining conditions exist across the floor to the wastewater collection sumps.

2) The integrity of the concrete working surface to prevent discharge.

The Permittee shall repair or otherwise seal and render impermeable any and all cracks, ruptures, damage, or porous areas prior to resuming use of the facility. At least one week prior to the annual inspection, the Permittee shall submit written notice to allow the Executive Secretary the opportunity to have a DRC representative present.

d) To ensure that free draining conditions exist in all wastewater transfer pipes without release or discharge to subsurface soils or ground water.

e) To ensure the leak detection annulus of the sediment basin is free of fluids.

f) To ensure the water level in the sediment basin is below the level of the grate covering the pump sump.

g) The dual-walled pipe used to transfer fluids from the sediment basin is free draining, and the leak detection annulus within the secondary pipe is free of fluids.

22. Intermodal Container Wash Building

The Permittee shall operate and maintain the Intermodal Container Wash Building:

a) In accordance with the currently approved BAT Performance Monitoring Plan and BAT Contingency Plan in Appendices J and K, respectively of this Permit.

b) To ensure free draining conditions exist:

i. Within each wash bay and trench drain to the sediment basin, and

ii. From each boot wash station to the sediment basin.

c) To ensure the integrity of all concrete surfaces to prevent discharge of waste water to subsurface soils or ground water.

d) To ensure the sediment basin provides a total containment system and does not cause a direct or in-direct discharge to subsurface soils or ground water.

e) To ensure the water level in the sediment basin is always maintained below the grate located over the pump sump.

f) To ensure the leak detection annulus of the sediment basin is free of liquids.

g) To ensure the dual-walled pipe used to transfer fluids from the sediment basin is free draining, and the leak detection annulus within the secondary pipe is free of fluids.

23. Decontamination Access Control Building

The Permittee shall operate and maintain the Decontamination Access Control Building:

a) In accordance with the currently approved BAT Performance Monitoring Plan and BAT Contingency Plan in Appendices J and K, respectively of this Permit.

d) Deep Aquifer Monitoring Wells– the Permittee shall monitor heads in all deep aquifer monitoring wells, including, but not limited to monitoring wells I-1-100, I-3-100, GW-19B, GW-27D, and GW-148~~139~~D.

e) Well Construction Criteria – any ground water monitoring well used as a compliance monitoring point shall be:

1) Located hydrologically downgradient of waste disposal,

2) Completed exclusively in the uppermost aquifer,

3) Located as close as practicable to the waste and no more than 90 feet from edge of waste,

4) Constructed in conformance to guidelines found in the EPA RCRA Ground Water Monitoring Technical Enforcement Guidance Document, 1986, OSWER-9950.1.

f) Well Network Early Warning Requirement – any network of ground water monitoring wells used as points of compliance shall be adequately constructed, both in location and spacing, to provide early warning of a contaminant release from a waste embankment before the contaminant leaves the embankment's 100-foot wide buffer zone, as defined in Table 7, below. For purposes of this Permit, early warning shall be provided by a compliance monitoring well network with an inter-well spacing distance to be approved by the Executive Secretary.

g) Buffer-Zone Requirements– waste disposal is prohibited inside the buffer zone, as described in Tables 3 and 7 of this Permit.

Table 7: Buffer Zone Boundary Locations

Disposal Cell	Edge of Buffer Zone Position	Coordinates	
		Latitude	Longitude
LARW	NW Corner	40° 41' 12.366" N	113° 06' 52.622" W
	SW Corner	40° 40' 51.915" N	113° 06' 52.494" W
	SE Corner	40° 40' 51.976" N	113° 06' 35.429" W
	NE Corner	40° 41' 12.427" N	113° 06' 35.556" W
Class A West	NW Corner	40° 41' 4~~029~~.599~~052~~" N	113° 07' 26.06~~537~~" W
	SW Corner	40° 41' 13. 245" N	113° 07' 25. 996" W
	SE Corner	40° 41' 13.201~~2~~" N	113° 06' 54.167~~069~~" W
	NE Corner	40° 41' 4~~029~~.556~~008~~" N	113° 06' 54.464~~109~~" W
~~Class A North~~	~~NW Corner~~	~~40° 41' 39. 496" N~~	~~113°0 7' 26.051" W~~
	~~SW Corner~~	~~40° 41' 29. 536" N~~	~~113° 07' 26.035" W~~
	~~SE Corner~~	~~40° 41' 29. 563" N~~	~~113° 06' 55.911" W~~
	~~NE Corner~~	~~40° 41' 39. 521" N~~	~~113° 06' 55.926" W~~
11e.(2)	NW Corner	40° 41' 13.587" N	113°0 7' 25.832" W
	SW Corner	40° 40' 54.077" N	113° 07' 26.070" W
	SE Corner	40° 40' 53.849" N	113° 06' 54.279" W
	NE Corner	40° 41' 13.359" N	113° 06' 54.037" W

h) Protection of Monitoring Network – all compliance monitoring wells must be protected from damage due to surface vehicular traffic or contamination due to surface spills. All monitoring wells shall be maintained in full operational condition for the life of this Permit.

The criteria for determining full operational condition are:

1) Accessibility – each well must be accessible for sampling and shall not be located in an area of standing water.

2) Casing Measuring Point – each well shall have a permanent surveyed reference point such as the top of the protective casing.

3) Physical Integrity – any physical disturbance to any well, which may alter the surveyed water level measuring point, is prohibited. In addition, all wells shall have an adequate surface seal around the well casing to prevent surface or storm water from entering the well.

4) Chemical Integrity – all well and sampling materials shall be constructed of inert materials to prevent the introduction of contaminants from leaching or corrosion.

5) Silt Content – if the measured water column of any well is less than 90% of the theoretical water column, the monitoring well shall be redeveloped prior to sampling.

Any well that becomes damaged beyond repair or is rendered unusable for any reason will be replaced by the Permittee within 90 days or as directed by the Executive Secretary.

i) Notification of Ground-water Monitoring Event

At least 30 calendar days prior to the annual Ground Water Monitoring event required under Part I.H.1, the Permittee will submit a written notice and schedule, with approximate dates the wells will be sampled, to the Executive Secretary to allow the DRC the opportunity to collect duplicate or split ground-water samples from the same wells at the same time as the Permittee's staff during a regularly scheduled sampling event for independent laboratory analysis.

2. <u>BAT Compliance Monitoring Points</u>

The Permittee shall inspect, sample, analyze, or otherwise monitor other points of compliance in order to confirm compliance with this Permit. These points or instruments shall include:

a) East Truck Unloading Area – including monitoring of free draining conditions to the stormwater collection troughs, water level in the collection troughs, and physical condition/integrity of all exposed asphalt and concrete surfaces.

2) Presence or absence of fluids in the Sediment Basin leak detection annulus,

3) Water level in the sediment basin,

4) Free draining conditions in all wastewater transfer piping, and

5) Presence or absence of fluids in the leak detection annulus within the secondary pipe of all dual-walled wastewater transfer piping systems.

k) Intermodal Container Wash Building – including monitoring to determine:

1) Free draining conditions, physical condition, and integrity of concrete floor and floor trenches,

2) Presence or absence of fluids in the sediment basin leak detection annulus,

3) Fluid level in the sediment basin, and

4) Presence or absence of fluids in the leak detection annulus within the secondary pipe of all dual-walled wastewater transfer piping systems.

l) Decontamination Access Control Building – including monitoring to determine:

1) Free draining conditions in all wastewater transfer piping,

2) Presence or absence of fluids in the gray water collection tank leak detection annulus,

3) Water level in the gray water collection tank, and

4) Presence or absence of fluids in the leak detection annulus within the secondary pipe of all dual-walled wastewater transfer piping systems.

m) East Side Drainage Project - including monitoring to determine the presence or absence of fluids in the leak detection annulus within the secondary piping of all dual-wall wastewater transfer systems. All dual-walled pressurized pipe connected to the East Side Drainage Project, that does not gravity drain to a leak detection port, including both primary and secondary piping, shall be pressure tested annually by an independent Professional Engineer registered in the State of Utah.

3. Future Modification of Compliance Monitoring Systems or Equipment

If at any time the Executive Secretary determines that additional systems, mechanisms or instruments are necessary to monitor ground water quality or Best Available Technology compliance at the facility, the Permittee shall submit within 30 days of receipt of notification, a plan and compliance schedule to modify the compliance monitoring equipment, for Executive Secretary approval. Any failure to construct the required compliance monitoring system or equipment in accordance with the approved plan and schedule shall constitute a violation of this Permit.

maintain a written record of these inspections on site. All daily inspection records shall comply with the requirements of Part II.G of this Permit.

13. Evaporation Ponds Monitoring

a) 1995, 1997, 2000, Mixed Waste, and Northwest Corner Evaporation Pond Daily Monitoring – the Permittee shall conduct daily inspections of the 1995, 1997, 2000, Mixed Waste, and Northwest Corner evaporation ponds to determine compliance with the Best Available Technology requirements of Part I.E.14.a of this Permit, including:

1) Visual observation of pond water level, relative to pond spillway centerline, to evaluate pond freeboard compliance against BAT performance criteria.

2) Determination of operational status of leak detection system pump, pump controller, head/pressure transducer, and flow meter equipment.

3) Measurement of daily leak detection system flow volume. For BAT compliance monitoring purposes for the 1995, 1997, 2000, Mixed Waste, and Northwest Corner evaporation ponds, the Permittee shall calculate an average daily leakage volume across a consecutive 7-day period. The Permittee shall perform this calculation for each evaporation pond weekly.

4) Measurement of daily leak detection system head. For BAT compliance monitoring purposes for the 1995, 1997, 2000, Mixed Waste, and Northwest Corner evaporation ponds, the Permittee shall determine the maximum head limit to be measured by the approved head/pressure transducer construction that complies with the 1-foot BAT head performance standard of Part I.E.14.a.3. On a daily basis, the Permittee shall compare the daily measured head against the maximum head limit for each evaporation pond.

The Permittee shall maintain written records of the findings of these daily inspections on site. All daily inspection records shall comply with the requirements of Part II.G of this Permit.

b) 1995, 1997, 2000, Mixed Waste, and Northwest Corner Evaporation Pond Leak Detection System Pump Tests – the Permittee shall conduct a pump test of the evaporation pond's leak detection sump within 5 days of discovery that the average daily leak detection system flow volume (Part 1.F.2.d)exceeds the following limits:

1)	1995 Evaporation Pond:	155 gallons/day
2)	1997 Evaporation Pond:	160 gallons/day
3)	Mixed Waste Evaporation Pond:	160 gallons/day
4)	2000 Evaporation Pond:	355 gallons/day
5)	Northwest Corner Evaporation Pond:	300 gallons/day

21. Reserved

22. BAT Performance Monitoring Plan

The Permittee shall demonstrate compliance with the BAT requirements and performance standards and Best Management Practices in Parts I.D and I.E of this Permit by implementing the most current BAT Performance Monitoring Plan approved by the Executive Secretary and provided in Appendix J of this Permit.

23. BAT Contingency Plan

In the event that BAT failure occurs at any facility, the Permittee shall implement the most current BAT Contingency Plan approved by the Executive Secretary and provided in Appendix K of this Permit to regain the BAT requirements and performance standards and Best Management Practices specified in Parts I.D and I.E of this Permit.

24. Stormwater Monitoring

The Permittee shall demonstrate compliance with stormwater removal requirements of Part I.E.7 of this Permit by maintaining daily written records for the following stormwater management activities:

a) Date, time, and location of discovery of stormwater accumulation

b) Date and time when stormwater removal activities were initiated at each location

c) Date and time when stormwater removal was completed at each location

d) First and last name(s) of all personnel involved with stormwater removal activities

e) Unique identity of locations of where stormwater was removed

f) Type of stormwater removed: contact or non-contact stormwater

g) Identify equipment used to remove contact and non-contact stormwater

h) Volumes of stormwater removed at each location

i) Location(s) where stormwater was disposed

25. Shredder Facility

The Permittee shall conduct daily monitoring of the Shredder Facility to demonstrate compliance with the Best Available Technology requirements of Part I.E.20 of this Permit in accordance with the currently approved BAT Performance Monitoring Plan and BAT Contingency Plan in Appendices J and K of this Permit, respectively, including:

a) Free draining conditions

b) Physical integrity of concrete surfaces

c) Absence of discharge to the ground or ground water

d) Horizontal Hydraulic Gradient Reporting – on a monthly basis the Permittee shall calculate the following and provide within the annual monitoring report as required by Part I.H.1:

1) A site-wide summary of maximum, minimum, and average horizontal hydraulic gradient for all wells located in Section 32 based on saline and fresh water equivalent ground water elevations and

2) Individual disposal cell summary of maximum, minimum, and average horizontal hydraulic gradient based on saline and fresh water equivalent ground water elevations for the Class A West~~, Class A North~~ LARW, 11e.(2), and Mixed Waste disposal facilities. Determination of these individual hydraulic gradients shall be made after division of each disposal cell into smaller sub-areas for purposes of hydraulic gradient comparisons through time, as approved by the Executive Secretary. On an individual cell basis, the Permittee shall identify the cell sub-areas where the monthly maximum, minimum, and average hydraulic gradients occurred, as summarized in the August 31, 2004 letter response from Envirocare of Utah Inc. to DRC comments regarding the 2003 2nd Semi-Annual Ground Water Report.

In the event that the average fresh water equivalent horizontal hydraulic gradient of any sub-area exceeds the cell-specific Permit limit listed below, the Permittee shall report and identify the sub-area in which the exceeded limit occurred within the annual ground water monitoring report required by Part I.H.1 of this Permit.

Disposal Cell	Fresh Water Equivalent Horizontal Hydraulic Gradient Limit
~~Class A~~	~~1.00E-3~~
Class A West~~North~~	1.00E-3
LARW	9.67E-4
Mixed Waste	9.67E-4
11e.(2)	3.29E-3

3. Ground Water and Pore Water Quality Sampling

Reporting will include:

a) Field Data Sheets – or copies thereof, including the field measurements, required in Part I.F.5(c)(2) of this Permit, and other pertinent field data, such as:

1) Ground Water Monitoring – well name/number, date and time, names of sampling crew, type of sampling pump or bail, measured casing

volume, volume of water purged before sampling, volume of water collected for analysis.

b) Results of Ground Water, Pore Water, and Surface Water Analysis – including date sampled, date received; and the results of analysis for each parameter, including: value or concentration, units of measurement, reporting limit (minimum detection limit for the examination), analytical method, the date of the analysis, counting error for each radiochemical analysis, and total anions and cations for each inorganic analysis.

c) Quality Assurance Evaluation – with every sampling report the Permittee shall include a quality assurance evaluation of the reported ground water and pore water data. Said report shall evaluate the sample collection techniques, sample handling and preservation, and analytical methods used in sampling with the objective of verifying the accuracy of the compliance monitoring results.

d) Electronic Data Files and Format – in addition to written results required for every sampling report, the Permittee shall provide an electronic copy of all laboratory results for ground water, pore water, and surface water quality sampling. Said electronic files shall consist of a Comma Separated Values (CSV) file format, or as otherwise approved by the Executive Secretary.

4. Spill Reporting

The Permittee shall report as per UAC 19-5-114, any spill or leakage of waste or waste liquids which come in contact with native soil or ground water in compliance with Part II.I of this Permit. For spills of solid waste greater than 100 kg, the spill must be reported to the Division of Radiation Control within 7 calendar days of discovery.

5. Post-Closure Monitoring

Reporting of post-closure monitoring shall comply with the requirements of the currently approved Post-Closure Monitoring Plan in Appendix F of this Permit.

6. Annual "As-Built" Report

The Permittee shall submit an annual "As-Built" Report to document interim construction of the ~~Class A,~~ Class A West~~North~~, and 11e.(2) Disposal cells in compliance with the currently approved design and specifications and LLRW and 11e.(2) Construction Quality Assurance/Quality Control Plan (Radioactive Materials License, Condition 44). These reports will be submitted for the Executive Secretary's approval on or before December 1of each calendar year and will be prepared in accordance with the LLRW and 11e.(2) Construction Quality Assurance/Quality Control Plan..

7. Waste Characterization Reporting

In the event that a new contaminant is detected in any waste at the facility, which has not been authorized by Part I.E.1, or if concentrations of approved

contaminants are detected above the limits established in Part I.E.2 of this Permit, the Permittee shall notify the Executive Secretary in writing within 7 calendar days from the date of discovery.

8. Collection Lysimeter Reporting

The Permittee shall provide a verbal report to the Executive Secretary within 24 hours of discovery of the presence of any fluid in the standpipe of the collection lysimeters. The Permittee shall provide a written report of the incident to the Executive Secretary within 7 calendar days of discovery. The Permittee shall provide a report of the annual video log survey of the lysimeter's drainpipe, as required by the currently approved Appendix C of this Permit, on or before December 31 of each calendar year.

9. Reporting of Mechanical Problems or Discharge System Failures

The Permittee shall verbally notify the Executive Secretary within 24 hours of initial discovery of any mechanical or discharge system failure that could affect the chemical characteristics or volume of the discharge. The Permittee shall submit a written report of the failure within 7 calendar days of said failure.

10. Meteorological Reporting

On or before March 1 of each calendar year, the Permittee shall submit an annual meteorological report for the previous meteorological year (January 1 to December 31) for Executive Secretary approval.

The objective of this report shall be to show that the meteorological assumptions made in the infiltration and unsaturated zone modeling used to support issuance of the Permit were conservative or representative of the actual conditions at the site. In addition, and in conjunction with an application for permit renewal, 180 days before expiration of the Permit, the Permittee shall submit a summary report of all meteorological data collected since issuance of the last Permit (minimum of 4 years of data). Said report shall compare the data observed against regional normal values, as available, and provide summary statistics of all meteorological data collected.

11. Containerized Waste Storage Area Reporting

The Permittee shall report the following events in accordance with the requirements of Part I.E.10:

a) Failure of sump pump or other equipment to provide removal of stormwater and free and uninterrupted drainage of the pad, and

b) Any container spill or leakage that may have caused a release to the subsurface soils or ground water via cracks or other damage to the asphalt surface.

12. Evaporation Ponds Reporting

a) Annual Water Quality Sampling –annual water quality samples collected and analyzed shall be reported in conjunction with the ground water quality monitoring report required by Part I.H.1 of this Permit.

23. Reserved.

24. Revised Hydrogeologic Report

180 days prior to Permit expiration, the Permittee shall submit for Executive Secretary approval a revised hydrogeologic report for the disposal facility and surrounding area. In submittal of this report the Permittee shall provide a comprehensive and thorough description of hydrogeologic conditions at the facility current through the time of report submittal. This report will include, but is not limited to an evaluation of:

a) Ground-water hydraulics, including ground-water flow directions, velocities, and hydraulic gradients, in both the horizontal and vertical directions, and will include equipotential maps, cross-sections, and related calculations, and

b) An updated evaluation and reinterpretation of the site hydrogeology using all available data including new or additional data acquired since Executive

c) Secretary approval of the last revised hydrogeologic report dated September 1, 2004.

I. Compliance Schedule

1. Ground Water Institutional Control Plan

The Permittee shall submit a ground water institutional control plan for Executive Secretary approval at the time the site Decontamination and Decommissioning Plan required under Radioactive Materials License Condition 74 is submitted. In submittal of this plan the Permittee shall eliminate future inadvertent intrusion into potentially contaminated ground water at the disposal facilities and subsequent routes of exposure to the public and the environment. Said plan shall include at least one of the options listed in the July 27, 1998 Utah Division of Radiation Control Request for Information.

2. Revision of the Water Monitoring Quality Assurance Plan (QAP).

By the time of and in conjunction with the annual Ground-Water Monitoring Report for 2009 (due on March 1, 2010) the Permittee shall submit for Executive Secretary review a redline-strikeout version, and for approval, a final version of the Water Monitoring Quality Assurance Plan (QAP), Appendix B of the Permit. This version of the QAP will reflect the annual sampling frequency to ensure sufficient, reliable, acceptable and quality data are generated in water monitoring at the site.

provide all information requested and resolve all issues raised by a deadline approved by the Executive Secretary.

5. DU Storage Building

Prior to using the DU Storage Building to store any waste, the Permittee shall submit for Executive Secretary review and receive approval of the following:

a) As built Report detailing final construction of the DU Storage Building. The As Built Report shall also document:

   1. Any deviation in design and specifications authorized by any portion of any drawing listed in Table 5 of this Permit.

   2. Inspection, testing, test results, measurements, and other quality control/quality assurance activities.

b) Revised Best Available Technology (BAT) Performance Monitoring Plan (Appendix J of this Permit), and Best Available Technology (BAT) Contingency Pan (Appendix K of this Permit).