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Division of Solid & Hazardous Waste  
Utah Department of Environmental Quality

**FINAL PERMIT RENEWAL**

**CLASS IV PERMIT APPLICATION**

**MOAB CLASS IV LANDFILL**

**March 2002**

**Prepared by**

**Grand County Solid Waste Management Special Service District #1  
1000 E. Sand Flats Road  
P. O. Box 980  
Moab UT 84532**

**UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY  
DIVISION OF SOLID AND HAZARDOUS WASTE**

**APPLICATION FOR A PERMIT TO OPERATE A CLASS IV LANDFILL**

The applicant shall submit, in duplicate, an original permit application, a general report, and a technical report to:

Dennis R. Downs, Director  
Division of Solid and Hazardous Waste  
Utah Department of Environmental Quality  
PO Box 144880  
Salt Lake City, Utah 84114 – 4880

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Division of Solid & Hazardous Waste  
Utah Department of Environmental Quality

**PART I – GENERAL DATA**

1. Name of Facility: Moab Class IV Landfill
2. Site Location: Two miles east of the intersection of Center and Main in Moab, Utah on Sand Flats Road
3. Facility Owner: City of Moab, Utah and Grand County, Utah
4. Facility Operator: Grand County Solid Waste Management Special Service District #1
5. Contact Person: Jane S. Jones, District Manager  
Grand County Solid Waste Management Special Service District #1  
P. O. Box 980  
Moab Utah 84532  
(435) 259-3867
6. Type of Facility: Non-Commercial Class IV Landfill
7. Type of Application: Permit Renewal, Original Permit Number 9704
8. Property Ownership: Operated by Applicant for property owners:  

City of Moab, Utah	<u>and</u>	Grand County, Utah
155 West 200 South		125 East Center
Moab UT 84532		Moab UT 84532
435-259-5121		435-259-1321

9. Certification of Submitted Information by Applicant, Grand County Solid Waste Management Special Service District #1:

Jane S. Jones, District Manager  
Jane S. Jones

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

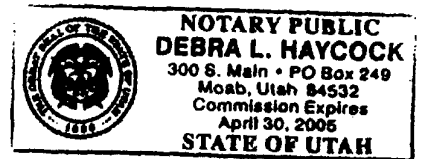
Signature: Jane S. Jones Date 3/11/02

SUBSCRIBED AND SWORN to before me this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

My commission expires on the 11 day of March, 2002.

Debra L. Haycock  
Notary Public in and for

(SEAL) Grand County, Utah.



## **PART II – GENERAL REPORT**

### **1. General Description of Facility**

The Moab Class IV Landfill (the "Landfill") opened March 27, 1997 and is located approximately 2 miles east of the intersection of Center and Main in the City of Moab on East Sand Flats Road, as shown on Attachment 4. The Landfill occupies the area around the old Moab landfill, which had been accepting Class I wastes since as early as the 1950's and which was closed in 1997. A new municipal waste landfill, the Klondike Class I Landfill, was opened March 27, 1997 approximately 20 miles north of Moab. It is not open to the public and accepts waste from franchised haulers only.

The Landfill accepts construction and demolition debris and yard waste. That waste material is being used to bring the closed Class I facility up to final (finished) grades, as described in the Closure Plan.

The service area of the Landfill is Grand County. Class IV waste is accepted at the Landfill from citizens, businesses, and local haulers for a tipping fee on a cubic yard basis.

The site is located on a hill approximately 400 feet above the City of Moab. A dry wash lies immediately east of the site between the Landfill and the Slick Rock Trails area. The dry wash drains southward to Mill Creek. Waste is placed on the east slope of the hill facing away from the City of Moab and toward the dry wash and Slick Rock Trails areas. Elevations at the site range from 4,350 to 4,480 feet. A layout of the facility is included as Attachment 1. Geology consists mainly of Navajo sandstone and loose sands from excavations. The little vegetation which is present at the site consists of low-lying scrub brush near the wash.

### **2. Relationship to County Solid Waste Management Plan**

The District completed a Solid Waste Management Plan in 1990. A Solid Waste Management Feasibility Study completed in March 1994 amended the 1990 plan. The 1994 Feasibility Study recommended closing the old Moab landfill as a Class I facility and constructing a new facility at the Klondike site. Closure of the old Moab landfill would require recontouring for stability and maintenance purposes. The study found that recontouring the entire Landfill site with Class IV wastes would be more economically feasible to the District than recontouring with clean fill. The District is currently closing the Landfill by capping with 2' of soil. The District intends to reach final grades at the Landfill with the placement of Class IV wastes in accordance with the study.

### **3. Legal Description and Proof of Ownership**

The City of Moab and Grand County own the Landfill property. The majority of the Landfill lies on a 50-acre site owned by the City of Moab. The City property deed is enclosed in Attachment 2 and includes a legal description of the site. The City of Moab has given the District authorization to operate the landfill on the property and the written authorization is included in Attachment 2.

Attachment 3, the Final Closure Plan, shows approximately 0.8 acres of Class IV waste fill off the north landfill boundary on Grand County property. This Class IV waste fill is required to obtain 3:1 side slopes without moving existing waste. The County has given the District authorization to fill Class IV waste on the property. Attachment 1, the Existing Contour Map, shows two waste fill areas encompassing approximately 2.3 acres on Grand County and BLM land. These areas have already been closed and are not a part of this permit.

### **4. Plan of Operation**

#### **a. Schedule of Construction**

The District closed the old landfill with 2' of soil and constructed the new Klondike Landfill in March of 1997. The District opened this Landfill as a Class IV landfill the same day that the Klondike Landfill opened. The Klondike Landfill accepts household waste and this Landfill accepts Class IV wastes.

The Landfill will be filled in two phases. In Phase 1, the lower portion of the landfill will be brought up to an elevation of 4,420 feet mean sea level (msl) by placing Class IV wastes in lifts along the eastern and southern sides of the closed Class I facility. In Phase 2, the entire landfill will be brought up to a final elevation of approximately 4,475 feet msl by placing Class IV wastes in lifts around the south, east, and north sides of the closed Class I facility. In January of 2003, the entire landfill site was fenced with a 6' chain link fence.

#### **b. Solid Waste Handling Procedures**

A gate attendant will check-in all incoming loads of waste at the Landfill gatehouse. The gate attendant will visually inspect each load for prohibited wastes. For the first six months of 2002, the Landfill averaged 250 loads per month. Based on a 1% waste inspection schedule, a more thorough inspection of one randomly selected load, where the entire contents of the load are inspected, will occur three times a month (see Attachment 10, Random Load Inspection form). Loads containing prohibited wastes such as household waste, conditionally exempt small quantity generator hazardous waste, any other hazardous waste, special waste, and liquids will be rejected. The driver of the waste vehicle will be required to remove prohibited wastes if they are unloaded at the Landfill. The gate attendant will record the volume of waste by measuring the quantity of the waste in the vehicle by cubic yards. An example of the forms the District uses to track incoming volumes of waste is included

in Attachment 5. The gate attendant will direct the driver to dump at the working face. The driver of the vehicle will be responsible for unloading the waste. Waste will be unloaded by hand or automatically from a dump truck or waste collection vehicle.

All waste will be covered with a minimum of 6" of on-site soil or crushed asphalt as intermediate cover at least once per quarter (UDEQ correspondence dated September 23, 1999). The limits of the active area will be delineated by cones and other barricades as required to prevent public access. Active area is defined as any waste area that has not been covered by final or intermediate cover. Only one active area will be utilized at any one time. The active area will not exceed 10,000 square yards. When waste elevations reach final grades, the waste will be covered with an additional 18" or more of soil to meet the final cover requirements for cover thickness and slopes.

**c. Fire Contingency Plan**

Waste fires at the Landfill will be contained by the use of on-site sand (which is always available from nearby stockpiled cover) and fire extinguishers kept in the gatehouse and on equipment. The likelihood of a fire spreading outside the active area is minimal since little to no vegetation is present on site. The City of Moab fire department will serve the site if a fire becomes uncontrollable. The fire department can be accessed by calling 911. The gatehouse attendant has access to a mobile phone at all times. Loads containing burning waste will be rejected.

**d. Alternative Waste Handling**

Other than fire, no events can be predicted when the Landfill would not be capable of following the waste handling procedures described above. No equipment is required for daily operations. Wet weather will not prevent operation since the site is sandy and well drained. If a fire occurs the District will open another active area. The Landfill will be closed and waste routed to the Klondike Landfill or a transfer station in town in the unlikely case that the Landfill could not dispose of Class IV wastes.

**e. Plan for Excluding the Receipt of Prohibited Wastes**

The gate attendant will visually inspect each load for prohibited wastes. Loads containing prohibited wastes such as household waste, conditionally exempt small generator hazardous waste, other hazardous waste, special waste, and liquids will be rejected. The driver of the waste vehicle will be required to remove prohibited wastes if they are unloaded at the Landfill. At least 3 times per month, a random load inspection will be performed, which will help continue the education process for the public on its responsibility to not bring prohibited wastes mixed with their loads.

**f. Inspections and Monitoring**

District personnel will perform the following monitoring and inspections:

<u>Type of Monitoring/ Inspection</u>	<u>Frequency</u>	<u>Description of Monitoring</u>
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Landfill Gas	Quarterly	Field measurements of landfill at ground surface around the landfill perimeter and inside landfill structures with combustible gas meter.
Drainages, Roads, Intermediate and Final Cover Areas	Quarterly	Visual inspection for needed repairs to stormwater run-off/run-on controls, soil cover, and site roads due to erosion, etc.
Prohibited Waste	3X Monthly	1% Random load inspection schedule.
Disease Vectors	Monthly	Visual inspection for signs of vector or rodent activity. Weed control.
Site Control	Monthly	Perimeter fence integrity.
Site Control	Daily	Main gate integrity and litter control.
Opacity	Daily	Visual inspection for opacity to ensure that procedures are controlling fugitive dust.

The form used to record inspections and monitoring is included in Attachment 9.

**g. Personnel Training**

The District will ensure that all personnel responsible for operation of the Landfill have adequate training to comply with this Plan of Operation. At least one District employee will be trained and certified under the Manager of Landfill Operations (MOLO) program sponsored by the Solid Waste Association of North America (SWANA). Landfill operators will receive on-the-job training from certified staff, and will receive an 8-hour refresher training annually covering landfill operations and waste screening. The District will maintain records of this training in its personnel files.

**h. Safety**

The following safety equipment and protective gear will be stored on-site at the Landfill:

<u>Equipment</u>	<u>Location</u>
5-pound Power-Sentry Fire Extinguisher(s)	Each piece of equipment
20-pound “	On-site
Earplugs	“ “
Safety Glasses	“ “
Gloves	“ “
Cellular Phone	“ “

Hard Hat	“	“
Dust Mask	“	“
Safety Vest	“	“

The District and its contractors are responsible for training their respective employees in the location and use of this safety equipment, as well as safety requirements for heavy equipment. The District will conduct quarterly safety meetings to discuss general and specific safety issues. Attendance at these meetings will be mandatory for all landfill employees.

A single utility ground line connects the gatehouse with 120-v power. The line is protected from damage by placement, and also clearly marked and set away from traffic areas. The utility line is adjusted as the gatehouse shifts position within the active area.

The following emergency numbers must be posted in a prominent location in the landfill gatehouse:

Emergency	911
Fire Department (non-emergency)	259-5557
Highway Patrol	259-5441
Sheriff's Department	259-8115
Hospital	259-7191
District Manager	259-3867

**i. Disease Vector Control**

The District will control insect, rodent, and bird populations by controlling the wastes disposed of in the Landfill, and by use of cover. Bird scavengers have not been a problem when the old landfill accepted municipal solid wastes in the past, and should be less important to consider for this Class IV landfill.

By excluding food wastes and other putrescible wastes from the Class IV landfill, the District will discourage active and viable populations of most insects and rodents. Intermediate cover should further reduce the habitat for these disease vectors. If additional measures are needed the District will contract with a professional exterminator to establish a protocol for control of these pests.

**j. Fugitive Dust**

Dust is caused by traffic on unpaved roads, heavy equipment and vehicles operating to dump and compact at the Landfill, and wind. The County-improved road to the Landfill from Sand Flats Road is unpaved and is the major dust source other than the Landfill itself. If fugitive dust is observed, the District will contract for water truck deliveries to control dust as conditions require.



#### **k. Methane Gas Monitoring**

The Landfill will be monitored on a quarterly basis for methane gas releases using a hand-held photo ionization detector (PID). A PID will be made available upon request by contracting David Ariotti, the District Engineer for the UDEQ, at (435-637-3671). The District will coordinate the monitoring events, and will arrange for interpretation of the monitoring results if combustible gases are detected.

The procedure will be to walk the perimeter of the Landfill and record PID readings at each corner of the fence line, and also inside the gatehouse. If methane releases are detected in excess of 25 percent of the lower explosive limit (LEL) in the gatehouse, or more than 100 percent LEL at the property boundary, this procedure should be followed:

- Halt Landfill operations immediately. If personnel or the gatehouse appears to be threatened, evacuate the Landfill.
- If gas is detected in the gatehouse, open the doors and windows to allow the gas to escape.
- If off-site buildings or structures appear to be threatened, call the fire department, evacuate the property, and notify the property owners.
- Call the District Manager. Monitor the release and determine temporary corrective action as soon as possible. Implement permanent corrective action as soon as practicable.
- Notify the UDEQ immediately and submit a written report within 14 days of detecting the release.

If at any time concentrations of combustible gases exceed the standard set in UDEQ Rules, the District will implement the requirements imposed on the District by UDEQ regulations in effect at the time of the permit or revisions of the permit.

#### **l. Stormwater**

Assuming a 25-yr, 24-hr storm of 2.0 inches (from NOAA Atlas), a soil runoff Curve Number of 85 (fine sand soils, no vegetation) and a total of 9 acres (top slope and side slopes), the maximum runoff would be 1.7 cubic feet per second. Based on a V shaped channel (no bottom width) with 3:1 side slopes, minimum slope in the flowline of 1%, and a Manning "n" of 0.04 (dirt channel), the maximum water depth would be 0.60 feet. Therefore, a 2' berm should be adequate and has been constructed along the bottom and sides of the Landfill to control stormwater run-off (shown on Attachment 8). Topographically, the ground slopes away from the Landfill on all sides, so no stormwater run-on occurs.

### **5. Financial Assurance Plan**

#### **a. Cost Estimates for Closure**

Closure of the Landfill will only require placing and compacting 2' of on-site sand over the Landfill. All waste areas of the closed Class I facility were covered by 2' of soil before this facility opened as a Class IV landfill. In January of 2003, fill and grade work was completed on top of the old portion of the landfill, and slopes less

than 2% received additional fill dirt. Additional soil cover will be placed as needed to reach final slopes of 2% or greater. The landfill will be operated so that the active area does not exceed 10,000 square yards in size. Attachment 6 presents estimates of the costs for closure and post-closure care of the Landfill. These costs estimates were calculated using UDEQ spreadsheets developed for this purpose.

**b. Financial Assurance Mechanism**

The Landfill is owned jointly by the City of Moab and Grand County and is financially assured by them jointly through the Local Government Financial Test (see Joint Resolution, Attachment 7).

**6. Closure Plan**

**a. Installation of Final Cover**

Final cover will consist of a minimum of 2' of on-site soil. Modeling has confirmed that this final cover meets UDEQ's requirements for an alternative landfill cap (UDEQ correspondence dated October 11, 2001.) Slopes on top of the Landfill will be 2% or greater to promote runoff of precipitation. Final contours are shown on Attachment 3. Approximately 770,000 cy of Class IV wastes and cover soil will be placed to achieve the final contours. Final side slopes will be graded at 3:1 slopes. All areas requiring final cover at one time will be 10,000 square yards. Final cover will be placed as waste reaches final grades. Asphalt received at the Landfill is used as road base. It also may be used as daily cover, but will not be used as final cover material.

For erosion control, the final cover will be reseeded as follows:

1. Seed will either be broadcast or drilled, using whichever option will produce the best vegetative cover. The seed mixture shall meet the following specifications and have no noxious weeds:

Indian Rice Grass:	10 lbs PLS/acre broadcast 5 lbs PLS/acre drilled
4 Wing Saltbush:	4 lbs PLS/acre broadcast 2 lbs PLS/acre drilled

2. Seed will be applied prior to snowfall when possible. When seed must be applied and no snowfall is anticipated, prepared areas will be moistened before planting if soil is dry. Area will be watered thoroughly and surface moisture will be allowed to dry before planting, avoiding muddy soil conditions. After seed has been applied, the surface will be lightly worked (with harrow or tracked equipment) to maximum depth of about 1 inch.

**b. Capacity of Site**

The net airspace remaining at the site is 733,000 cy. Assuming a 3:1 waste to cover soil ratio and 2' of final cover, the remaining waste volume capacity is approximately 496,000 cy. Assuming a waste density of 400 #/cy, the remaining weight capacity of the Landfill is approximately 99,000 tons.

**c. Closure Implementation Schedule**

Closure of the Landfill will occur in stages as waste reaches final elevations. Final cover will be placed over all areas that have reached final grades once per year.

Final contours will be achieved in two phases. In the first phase, waste will be placed on the lower side slopes near the dry wash. Waste will be placed on the slopes up to the elevation of the first tier at 3:1 slopes. The City accepted approximately 17,000 cy of construction and demolition debris and yard waste in 1996. At a Class IV waste acceptance rate of 17,000 cy/year, reaching final grades in Phase 1 will take between 5 and 10 years. During Phase 2, waste will be placed to the top of the second tier. Waste will be placed on the sides at 3:1 slopes. Reaching final grades in Phase 2 will take between 15 and 20 years. Final closure is projected for 2027.

**d. Closure Cost Estimates**

The closure cost estimate for the Landfill as described in the financial assurance plan is \$30,626 in 2002 dollars.

**e. Final Inspection by Regulatory Agencies**

The District has filed a certification with the Grand County Recorder's Office that the old landfill site was closed in accordance with the approved closure plan.

Upon closure of this Landfill in the future, the District will provide an additional certification that the site has been closed in accordance with the approved closure plan in this permit. The UDEQ will have the opportunity to inspect the Landfill before it closes as a Class IV facility.

**f. Changes to Records of Title, Land Use, and Zoning Restrictions**

The District will notify the UDEQ and the Grand County Recorder's Office if there is a change in records of title, land use, or zoning restrictions at the site.

**7. Commercial Class IV Landfill Requirements**

Not Applicable

**8. Post-Closure Plan**

**a. Monitoring**

Landfill gas monitoring will be performed for 30 years after Landfill closure to assess potential impacts of the Landfill on the environment. The possible lateral migration of landfill gasses will be monitored quarterly at each corner of the Landfill perimeter fence, as described in Section 4(k). The percent of explosive gas (expressed as a

percent of the lower explosive limit (LEL) for methane) will be recorded at each location. If readings exceeding 100 percent of the LEL are noted at any location, the regulatory agencies will be notified and corrective action will be initiated.

**b. Maintenance of Monitoring Systems and Facility Structures**

After closure, no landfill facilities or physical monitoring systems will remain at the site. The Landfill perimeter fence and gate will be inspected when conducting quarterly Landfill gas monitoring.

**c. Maintenance of Cover and Drainage Systems**

A post-closure maintenance program will be implemented at the Landfill in order to maintain the integrity of the Landfill's final cover. The final cover areas will be inspected quarterly for evidence of erosion, ponded water, odor, exposed refuse, cracks, settlement, slope failure, and leachate seeps. The Landfill's final grades will be inspected and maintained in order to maintain their integrity. Areas where water has collected (ponded) will be re-graded. Erosion damage resulting from heavy rainfall will be repaired.

Cracks in the final cover will be scarified and re-compacted or sealed with bentonite slurry. Any erosion damage, which may be caused by extremely heavy rainfall, will be repaired. Temporary berms, ditches, and straw mulch will be used to prevent further erosion damage to soil cover areas until site conditions permit the final cover to be re-established and vegetation to be re-seeded. Preventative maintenance for the final cover should preclude problems regarding leachate generation from infiltration of surface water, gas venting through the cover, and vectors attracted by exposed refuse.

**d. Schedule of Post-Closure Care**

After closure, the Landfill will be monitored and maintained quarterly as discussed in Sections 8a through 8c.

**e. Post-Closure Costs**

The estimated annual post-closure maintenance cost for the closed Landfill is \$948 in 2002 dollars. The total estimated 30-year post-closure maintenance cost is \$28,426. The cost estimate is broken down on Attachment 6.

**9. Contact Person/Office**

During the post-closure period, correspondence should be directed to:

District Manager  
Solid Waste Special Service District #1  
P.O. Box 980  
Moab, UT 84532

## PART III – TECHNICAL DATA

### 1. Topographic Map

Attachment 4 is an original USGS 7.5 minute series topographic map showing the Landfill. The map shows the facility property boundary, the latitude and longitude coordinates of the front gate, the land use and zoning of the surrounding area, surface drainage channels, direction of prevailing winds, and a typical location of the gatehouse (its location is adjusted incrementally as the active area changes). The direction of prevailing winds was determined by observation by District employees. There are no structures within one-fourth mile of the site.

There is an overhead electric power line that terminates on the eastern edge of the second tier of the landfill, with a ground line that connects to the gatehouse to provide 120v power (shown on Attachment 8). The gatehouse is approximately 100 sf in size and is placed on skids to allow relocation as needed.

### 2. Engineering Report

#### a. Facility Design and Operation

The facility design consists of 2' of cover soil over all existing wastes at the site (as of March 1997) and 2' of cover over Class IV wastes at final grades and closure. Existing and final grades are shown on Attachments 1 and 3. Additional fill will be placed in areas where existing grades are currently less than 2%. Daily operation of the site will consist of screening incoming loads and directing the unloading of wastes. Daily operation is discussed in detail in the Plan of Operation.

The District will either self-perform or contract with a private contractor for earthwork at the facility. 6" of on-site soil cover will be placed over Class IV wastes at least once per quarter. Each year an additional amount of soil cover, sufficient to bring the total cover depth to 2' over the waste, will be placed over waste that is at final grades. Cover depth will be monitored closely, using wooden stakes and test holes as quality control measures, while final cover is placed. Final cover material will consist of sand and will be obtained from the sandstone slope at the south and west ends of the site. Excavation requires ripping the sandstone. The active area will not exceed 10,000 square yards in size. The active area will be graded at a minimum 2% slope to one end to promote drainage.

#### b. Stormwater Control

A stormwater control berm approximately 2' tall has been constructed along the southern and eastern boundaries of the Landfill (shown on Attachment 8). It will provide run-off and run-on control between the Landfill and the dry wash. Stormwater running off the active area of the Landfill will collect against the inside of the berm and will be allowed to evaporate. Average annual rainfall at the landfill is approximately 9 inches.

**c. Equipment**

Either the District or the contractor will provide the equipment to compact waste and to place cover and build berms. If the District is providing earthwork, it will have appropriate equipment on-site (currently a D-6 Caterpillar dozer and a FR 20B Turbo Fiat Allis wheel loader), stored securely on a non-active portion of the Landfill when not in use.

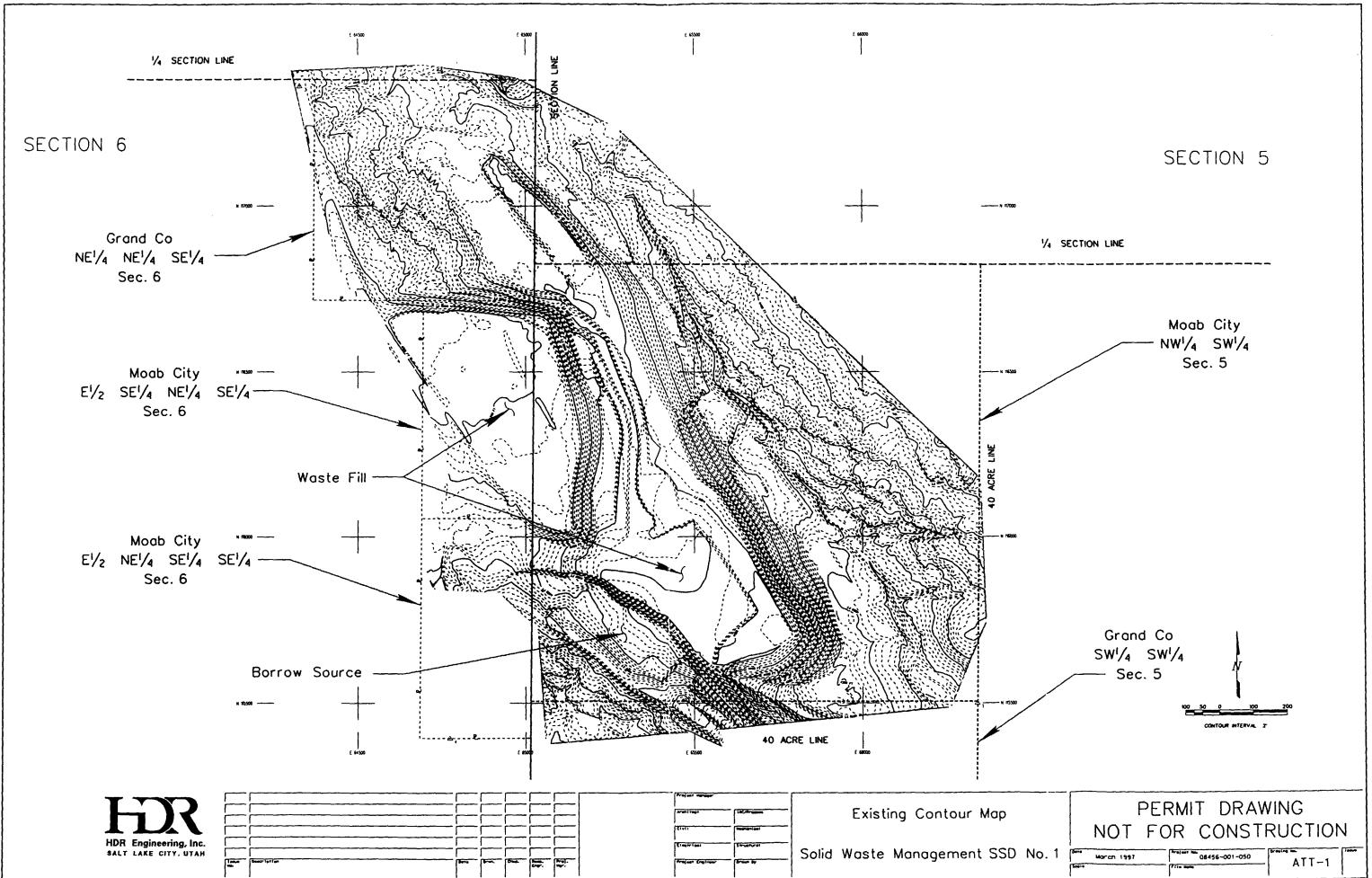
**d. Erosion Control**

Final cover, placed and reseeded as specified in Section 6.a., will provide erosion control. Erosion will also be addressed by frequent monitoring and repair by the District, so that proper slopes and vegetation are maintained on the top and sides of the Landfill.

**e. Closure Design, Construction, Maintenance, and Land Use**

The facility will be closed in accordance with the final closure plan. Final grades will be achieved by placing Class IV wastes. Final cover will consist of 2' of on-site soils. Final cover will be placed in stages as the waste reaches final grades once per year. No stormwater structures or monitoring facilities are located on-site which will require maintenance after closure. The Landfill will be used as open space after closure.

**ATTACHMENT 1**  
**EXISTING CONTOUR MAP**



**HDR**  
 HDR Engineering, Inc.  
 SALT LAKE CITY, UTAH

NO.	DESCRIPTION	DATE	BY	CHECKED BY	REVISION

Existing Contour Map  
 Solid Waste Management SSD No. 1

PERMIT DRAWING  
 NOT FOR CONSTRUCTION

DATE: March 1997	PROJECT NO: 08456-001-050	SCALE: ATT-1
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**ATTACHMENT 2**

**LEGAL DESCRIPTION AND PROOF OF OWNERSHIP**

)

)

Utah 017015

4-1048

Entry No. 288844 10:30  
Filed 5-29 1959 AM  
Recorded B. 3X Page 11-54  
\$4.00

# The United States of America

Esther Somerville

E. E. Somerville  
Grand County Recorder

Ab: BK 9A Pg 1 Sec 5 T 26 S R 22 E Lm 3  
Ab: BK 9A Pg 24 Sec 6 T 26 S R 22 E Lm 21

To all to whom these presents shall come, Greeting:

WHEREAS, a Certificate of the Land Office at Salt Lake City, Utah, is now deposited in the Bureau of Land Management, whereby it appears that full payment has been made by the City of Moab, Utah, according to the provisions of the Act of Congress of June 14, 1926 (44 Stat. 741; 43 U.S.C. 869), as amended by the Act of June 4, 1954 (68 Stat. 173), for the following described land:

Salt Lake Meridian, Utah.  
T. 26 S., R. 22 E.,  
Sec. 5, NW $\frac{1}{4}$ SW $\frac{1}{4}$ ;  
Sec. 6, E $\frac{1}{2}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$ , E $\frac{1}{2}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$ .

The land above described contains 50 acres, according to the Official Plat of the Survey of the said Land, on file in the Bureau of Land Management:

NOW KNOW YE, That the UNITED STATES OF AMERICA, in consideration of the premises, and in conformity with the said Acts of Congress, HAS GIVEN AND GRANTED and by these presents DOES GIVE AND GRANT unto the said City of Moab, Utah, the tract of Land above described, for garbage disposal site purposes only; TO HAVE AND TO HOLD the same, together with all the rights, privileges, immunities, and appurtenances, of whatsoever nature, thereunto belonging, unto the said City of Moab, Utah, and to its successors forever, subject, however, to the following reservations, conditions and limitations:

Subject to any vested and accrued water rights for mining, agricultural, manufacturing, or other purposes, and rights to ditches and reservoirs used in connection with such water rights, as may be recognized and acknowledged by the local customs, laws, and decisions of courts; and there is reserved from the lands hereby granted, a right-of-way thereon for ditches or canals constructed by the authority of the United States.

There is, also, reserved to the United States, all mineral deposits in the land above described, and the right to prospect for, mine, and remove the same under such rules and regulations as the Secretary of the Interior may prescribe.

Document Number 1181065

Utah 017015

4-1014  
(July 1952)

Provided, that, for a period of twenty-five years from date hereof, if the patentee or its successor attempts to transfer title to or control over the lands to another or the lands are devoted to a use other than that for which the lands were conveyed, without the consent of the Secretary of the Interior or his delegate, or prohibits or restricts, directly or indirectly, or permits its agents, employees, contractors, or subcontractors (including without limitation, lessees, sublessees and permittees), to prohibit or restrict, directly or indirectly, the use of any part of the patented lands or any of the facilities thereon by any person because of such person's race, creed, color, or national origin, title shall revert to the United States. All restrictions, limitations, and conditions, contained in this patent, concerning the use of the land, the transfer of title thereto, the control thereover, and nondiscrimination of the users of the land and facilities thereon, shall cease to be in effect upon the expiration of twenty-five years from the date of this patent.



IN TESTIMONY WHEREOF, the undersigned officer of the Bureau of Land Management, in accordance with section 1 of the act of June 17, 1948 (62 Stat., 476, 43 U. S. C. sec. 15), has, in the name of the United States, caused these letters to be made Patent, and the Seal of the Bureau to be hereunto affixed.

GIVEN under my hand, in the District of Columbia, the  
NINTH day of APRIL in the year of  
our Lord one thousand nine hundred and FIFTY-EIGHT  
and of the Independence of the United States the one hundred and  
EIGHTY-SECOND.

For the Director, Bureau of Land Management.

By Rose M. Beall  
Chief, Patents Section.

RECORD OF PATENTS: Patent Number **1181065**

U. S. GOVERNMENT PRINTING OFFICE: 19-282906-2

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 TERRY WARNER  
 MANAGER: DONNA METZLER  
 RECORDER: JOHN W. WEST  
 TREASURER: MARGET SNYDER, CMFA



POLICE CHIEF:  
 ALAN WEST (801) 259-8938  
 PUBLIC WORKS DIRECTOR:  
 BRENT WILLIAMS (801) 259-7485  
 WATER & SEWER LEADMAN:  
 LARRY JOHNSON (801) 259-7485  
 PARKS LEADMAN:  
 TIM SHEETS (801) 259-7485  
 STREETS LEADMAN:  
 JACOB LYNN ZUFELT (801) 259-7485  
 COMMUNITY DEV. COORDINATOR:  
 DAVID OLSEN (801) 259-5129  
 CITY PLANNER:  
 ROBERT KATZENSON (801) 259-5129  
 ZONING ADMINISTRATOR:  
 DEBBIE GILGER (801) 259-1343

# City of Moab

115 WEST 200 SOUTH  
 MOAB, UTAH 84532  
 (801) 259-5121 • FAX (801) 259-4135

January 15, 1997

Steve Russell  
 Grand County Law and Justice Center  
 394 West 4th North  
 Moab, Utah 84532

Subject: Moab Landfill

Dear Steve:

This letter is to confirm that the Grand County Solid Waste Special Service District has an implied consent from the City of Moab to operate the Moab Landfill on City-owned property. In 1993, upon creation of the Special Service District, the City relinquished its responsibility to manage and operate the Moab Landfill to the District. The City recognizes the jurisdiction and authority of the District to utilize City property for the purposes of operating a Class IV Landfill until such time as closure of the Landfill is complete.

I hope this information is helpful.

Sincerely,

*Donna J. Metzler*  
 Donna J. Metzler  
 City Manager

DJM:kh

**ATTACHMENT 3**  
**FINAL CLOSURE PLAN**

1/4 SECTION LINE

-----

SECTION 6

SECTION 5

N 17000 -----

Grand Co  
NE1/4 NE1/4 SE1/4  
Sec. 6

SECTION LINE

-----

Moab City  
NW1/4 SW1/4  
Sec. 5

N 16300 -----

Moab City  
E1/2 SE1/4 NE1/4 SE1/4  
Sec. 6

-----

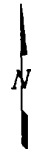
N 16000 -----

Moab City  
E1/2 NE1/4 SE1/4 SE1/4  
Sec. 6

-----

Grand Co  
SW1/4 SW1/4  
Sec. 5

N 16500 -----



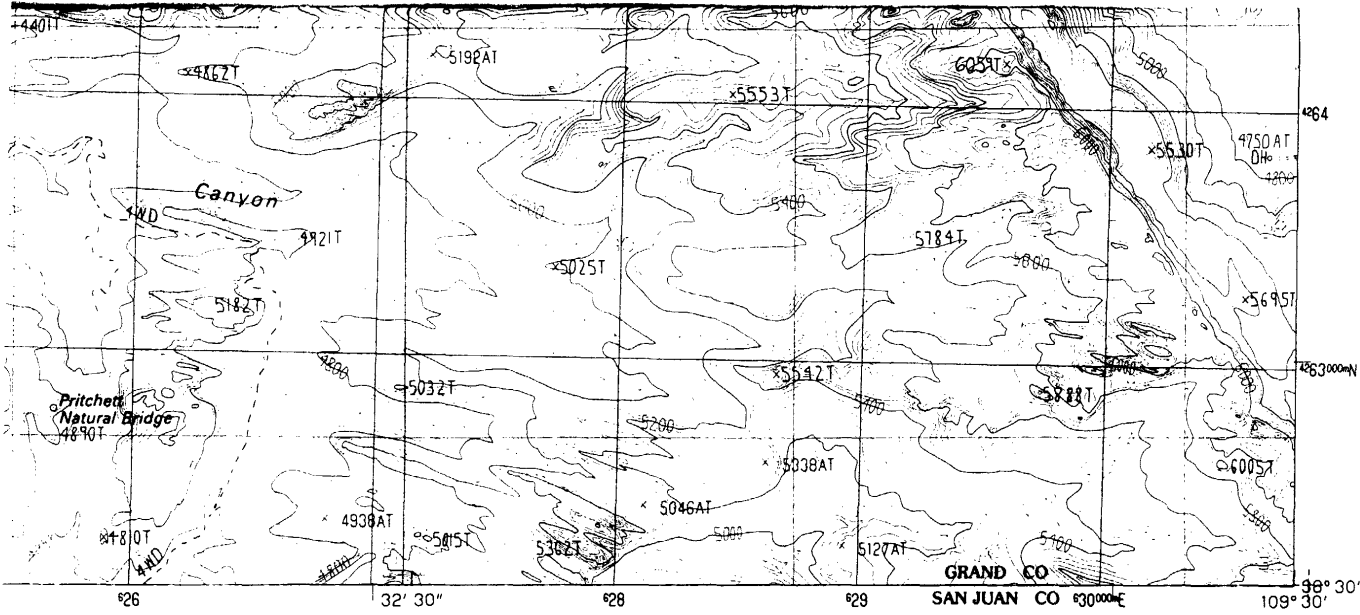
CONTOUR INTERVAL 2'

**HDR**  
HDR Engineering, Inc.  
SALT LAKE CITY, UTAH


**PERMIT DRAWING  
NOT FOR CONSTRUCTION**

Sheet No. 1	Date March 1997	Project No. 08456-001-050	Drawing No. ATT 3	Title

**ATTACHMENT 4**  
**USGS TOPOGRAPHIC MAP**



ATTACHMENT 4  
 GRAND COUNTY SOLID WASTE MAN.  
 SPECIAL SERVICE DISTRICT  
 CLASS IV LANDFILL PERMIT APPLICATION  
 MARCH 1997



AT 40 FEET

1. MAP ACCURACY STANDARDS  
 F.Y. DENVER, COLORADO 80225  
 6/19/82



1	2	3	1 Merrimac Butte
			2 The Windows Section
			3 Big Bend
4		5	4 Gold Bar Canyon
			5 Rill Creek
			6 Shafer Basin
			7 Through Spring Canyon
6	7	8	8 Kane Springs

ADJOINING 7.5' QUADRANGLE NAMES

ROAD LEGEND

Improved Road . . . . .

Unimproved Road . . . . .

Trail . . . . .

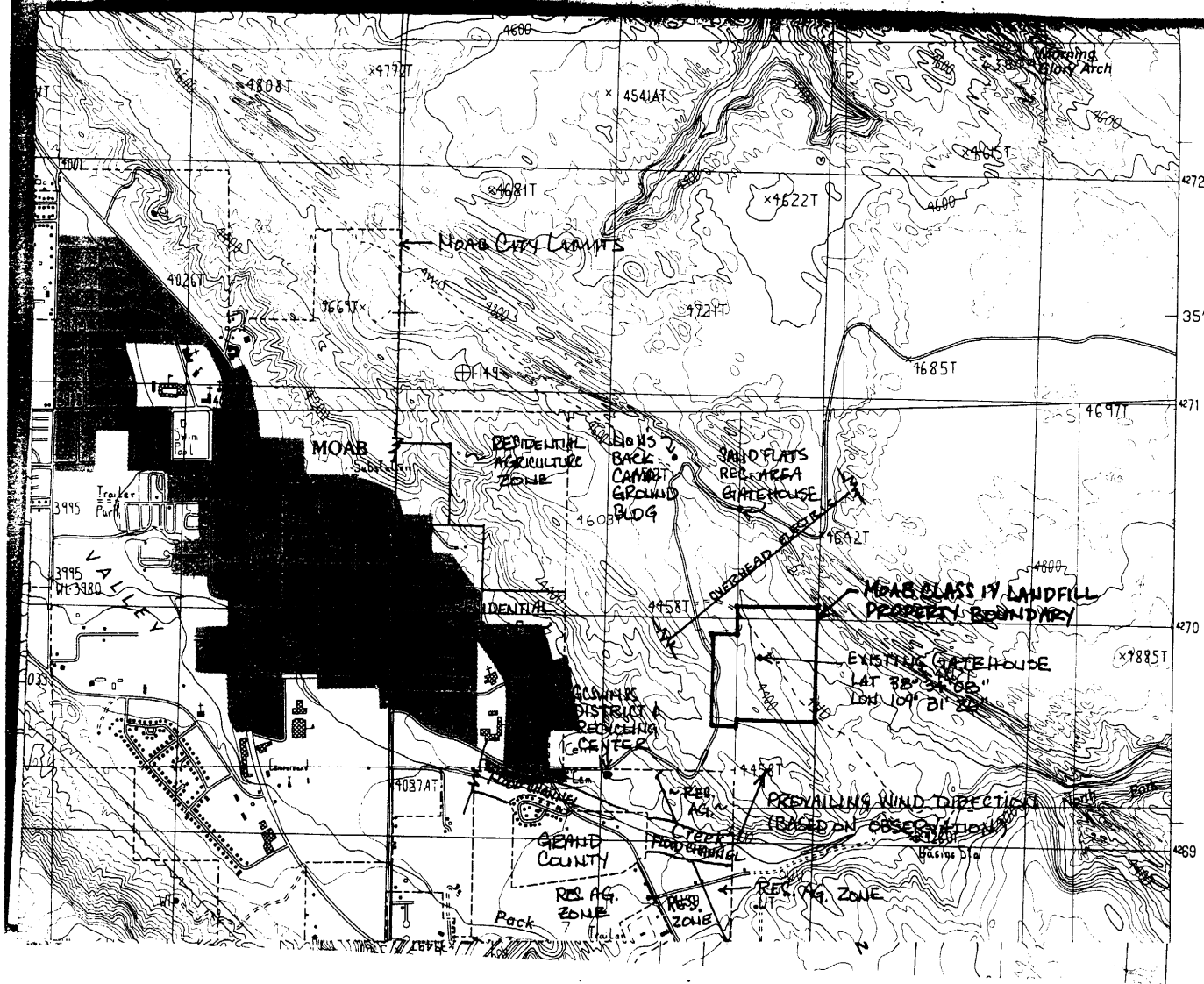
○ Interstate Route    ⊕ U.S. Route    ○ State Route

MOAB, UTAH  
 PROVISIONAL EDITION 1985

38109-E5-TT-024







**ATTACHMENT 5**  
**INCOMING WASTE VOLUME FORM**

Grand Co. Solid Waste Mgmt. SSD#1 -- Moab Landfill Daily Log

No 42677

Date 2/19/02 Operator [Signature] TOTAL Cu. Yds. 2.22 TOTAL Fee \$ 22.25

Time 9/12 Plate Number 299 KLV County \_\_\_\_\_ State UT

- Special Residential
- Regular
- MLTC Tire Cu. Yd.
- MLTE Tires Each

Notes: 10x6x1 = 60  
Demo

Account Name or Number check

Waste Type:

- Yard Waste
- Constr/Demo Waste
- Other \_\_\_\_\_

To the best of my knowledge, I have not disposed of any hazardous or prohibited waste.

Driver's Signature: [Signature]

**VOID**

**ATTACHMENT 6**  
**CLOSURE AND POST-CLOSURE CARE ESTIMATES**

GRAND COUNTY SOLID WASTE MANAGEMENT SPECIAL SERVICE DISTRICT #1  
MOAB CLASS IV LANDFILL  
ESTIMATED CLOSURE COST -- For 2002 Permit Renewal  
Final

ITEM NO.	ITEM	UNITS	\$/UNIT	QUANTITY	COST
<b>1.0</b>	<b>ENGINEERING</b>				
1.1	Topographic Survey				
1.2	Boundary Survey				
1.3	Site Evaluation				
1.4	Development of Plans				
1.5	Contract Administration, Bidding, and Award				
1.6	Administration Costs for Certification of Final Cover and Affidavit to Public				
1.7	Project Management, Construction Observation, and Testing				
1.8	Monitor Well				
1.9	Other Environmental Permit Costs				
	<b>Subtotal</b>				
	<b>Contingency</b>				
	<b>Total -- Engineering</b>				
<b>2.0</b>	<b>CONSTRUCTION</b>				
2.1	Final Cover System	Sq Yd		10,000	
2.1.1	Completion of Sidewall Liner				
2.1.1a	Soil Placement				
2.1.1b	Soil Processing				
2.1.1c	Soil Amendment				
2.1.1d	Soil Purchase				
2.1.1e	Soil Transportation				
2.1.2	Drainage Layer on Sidewall				
2.1.2a	Geotextile Filter Fabric				
2.1.2b	Geonet/Geotextile Composite				
2.1.2c	Geomembrane Sidewall Liner				
2.2	Completion of Top Cover				
2.2.1	Infiltration Layer				
2.2.1a	Soil Placement	Cu. Yd.	\$6.00	10,000	\$60,000
2.2.1b	Soil Processing				
2.2.1c	Soil Amendment				
2.2.1d	Soil Purchase				
2.2.1e	Soil Transportation				
2.2.2	Flexible Membrane Cover				
2.2.2a	Drainage Layer on Top				
2.2.2b	Sand Layer				
2.2.2c	Geotextile Filter Fabric				
2.2.3	Drainage Layer				
2.2.3a	Geonet/Geotextile				
2.2.3b	Collection Pipe				
2.2.3c	Soil Cover				
2.2.3d	Geonet/Geotextile Composite				
2.2.3e	Gravel Capillary Barrier				
2.3	Erosion Layer Placement				
2.4	Revegetation				

GRAND COUNTY SOLID WASTE MANAGEMENT SPECIAL SERVICE DISTRICT #1  
MOAB CLASS IV LANDFILL  
**ESTIMATED CLOSURE COST -- For 2002 Permit Renewal**  
Final

2.4.1	Seeding Included in 2.4			
2.4.2	Fertilizer Included in 2.4			
2.4.3	Mulch Included in 2.4			
2.5	Site Grading and Drainage			
2.6	Site Fencing and Security			
2.7	Leachate Collection System Completion			
2.8	Completion of Gas Monitoring System			
	<b>Subtotal</b>			<b>\$60,000</b>
	<b>Contingency</b>	10%		<b>\$6,000</b>
	<b>Total Construction</b>			<b>\$66,000</b>
3.0	<b>GAS COLLECTION SYSTEM</b>			
3.1	System Design			
3.2	Equipment Installation			
	<b>Subtotal</b>			<b>\$0</b>
	<b>Contingency</b>	10%		<b>\$0</b>
	<b>Total Gas Collection</b>			<b>\$0</b>
4.0	<b>MONITOR WELL INSTALLATION COST</b>			
4.1	Monitoring Well Installation			
4.2	Piezometer and Monitor Well Plugging			
	<b>Subtotal</b>			<b>\$0</b>
	<b>Contingency</b>	10%		<b>\$0</b>
	<b>Total -- Ground Water Installation</b>			<b>\$0</b>
	<b>Calculation of Total Closure Costs</b>			
	<b>Total -- Engineering</b>			<b>\$0</b>
	<b>Total -- Construction</b>			<b>\$66,000</b>
	<b>Total -- Gas Collection</b>			<b>\$0</b>
	<b>Total -- Monitor Well</b>			<b>\$0</b>
	<b>Performance Bond</b>	2.50%		<b>\$1,650</b>
	<b>Subtotal</b>			<b>\$67,650</b>
	<b>Legal Fees</b>	2.50%		<b>\$1,691</b>
	<b>Total Closure Cost</b>			<b>\$69,341</b>

GRAND COUNTY SOLID WASTE MANAGEMENT SPECIAL SERVICE DISTRICT #1  
MOAB CLASS IV LANDFILL  
ESTIMATED POST-CLOSURE CARE COST -- for 2002 Permit Renewal  
Final

ITEM NO.	ITEM	UNITS	\$/UNIT	QUANTITY	COST
<b>1.0</b>	<b>ENGINEERING</b>				
1.1	Post-Closure Plan				
1.2	Site Inspection and Recordkeeping				
1.3	Correctional Plans and Specifications				
1.4	Site Monitoring (semi-annual)				
1.4.1	Groundwater Monitoring				
1.4.1a	Groundwater Sample Collection				
1.4.1b	Groundwater Sample Analysis				
1.4.1c	Groundwater Sample Analysis and Review				
1.4.1d	Reporting				
1.4.2	Landfill Gas Monitoring	LS	\$100	120	\$12,000
1.4.2a	Gas Monitoring Data Collection				
1.4.2b	Gas Monitoring Data Review and Reporting				
<b>2.0</b>	<b>MAINTENANCE COSTS</b>				
2.1	Cover Maintenance Costs	LS	\$ 250	60	\$ 15,000
2.1.1	Soil Replacement				
2.1.2	Vegetation Replacement				
2.2	Equipment Maintenance	LS	\$ 1,026	1	\$ 1,026
2.2.1	Groundwater Well Maintenance and Replacement				
2.2.2	Gas Collection System Operation				
2.2.3	Gas Collection System Maintenance and Repair				
2.2.4	Leachate Collection System Operation				
2.2.5	Leachate Collection System Maintenance and Repair				
<b>3.0</b>	<b>LEACHATE DISPOSAL</b>				
<b>4.0</b>	<b>SITE MAINTENANCE</b>				
4.1	Repair of Surface Water Diversion Structures				
4.2	Repair of Fences and Gates	Day	\$ 127.20	30	\$ 3,816
4.3	Other Site Maintenance				
<b>Calculation of Total Post-Closure Care Costs</b>					
<b>Subtotal</b>					<b>\$ 31,842</b>
<b>Contingency</b>					<b>\$ 3,184</b>
					10%
<b>Total -- Post-Closure Care</b>					<b>\$ 35,026</b>
<b>TOTAL CLOSURE AND POST-CLOSURE CARE COSTS</b>					
<b>Total Closure Costs</b>					<b>\$ 69,341</b>
<b>Total Post-Closure Costs</b>					<b>\$ 35,026</b>
<b>Total Cost</b>					<b>\$ 104,368</b>

**ATTACHMENT 7**  
**JOINT RESOLUTION OF FINANCIAL ASSURANCE**



**City of Moab Resolution #24-98**  
**Grand County Resolution # 2411**

**GRAND COUNTY, UTAH and MOAB CITY**  
**JOINT RESOLUTION OF FINANCIAL ASSURANCE**  
**OF THE MOAB LANDFILL**

WHEREAS, Grand County (the "County" is a county of the State of Utah and, as such, may provide municipal-type services to the residents of unincorporated Grand County;

WHEREAS, the City of Moab (the "City") is a municipal corporation of the State of Utah and, as such, provides municipal-type services to its residents;

WHEREAS, waste generated in unincorporated Grand County and in the City of Moab is delivered to the Moab Landfill, which is owned by the County and the City and operated by Grand County Solid Waste Management Special Service District #1 (the District);

WHEREAS, the Moab Landfill is operated pursuant to a Class IV Landfill Solid Waste Permit (the "Permit") issued by the Utah Solid and Hazardous Waste Control Board (the "Board");

WHEREAS, as a condition of the Permit, the District is required to provide financial assurances regarding closure and post-closure care and corrective action, if required, for the Moab Landfill;

WHEREAS, satisfying financial assurance requirements may be prohibitively expensive to the District, and that expense may be passed on to the residents of the County and the City;

WHEREAS, pursuant to the requirements of Rule 315-309-3(7) entitled "Local Government Financial Test" of the Utah Administrative Code, the County and the City as owners of the Moab Landfill may demonstrate financial assurances up to the current cost estimate for closure and post-closure care and corrective action, if required, thereby facilitating the District's satisfaction of the financial assurance requirements of its Permit and significantly reducing the cost that might be passed on to the residents of the County and the City;

WHEREAS, the current cost estimate for closure and post-closure care and corrective action, if required, for the Moab Landfill is estimated to be \$20,000, and the County and the City each agree to be responsible for up to one-half of the required amount; and

WHEREAS, the County and the City desire to deliver information pertaining to the Local Government Financial Test to the Board through its Executive Secretary to establish financial assurance for the Moab Landfill.

NOW, THEREFORE, be it resolved by Grand County and the City of Moab as follows:

1. The County and the City acknowledge and agree that as owners of the Moab Landfill, they are financially responsible for the costs of providing closure and post-closure care and corrective action, if needed, as required by the Permit.

2. That the County and the City shall demonstrate financial assurance through the Local Government Financial Test to the Board and its Executive Secretary in satisfaction of the District's financial assurance Permit requirements concerning closure and post-closure care and corrective action, if needed, at the Moab Landfill.

3. That the signatures of the Chair of the Grand County Council and of the Mayor of the City of Moab be attested by the appropriate officials of the County and of the City, respectively, before the Resolution is delivered to the Board.

4. That approval of this Resolution was placed upon the agenda of a meeting of the Grand County Council and upon the agenda of a meeting of the Moab City Council prior to action by those bodies and that this Resolution was adopted in compliance with the Utah Open and Public Meetings Act.

5. That this Resolution shall take effect immediately upon its passage.

APPROVED AND PASSED by the Grand County Council and by the Moab City Council on the dates set forth below.

GRAND COUNTY

By: Harvey Merrill  
Title: \_\_\_\_\_  
Date: 10-19-98

Attest: Tracy J. Janssen

CITY OF MOAB

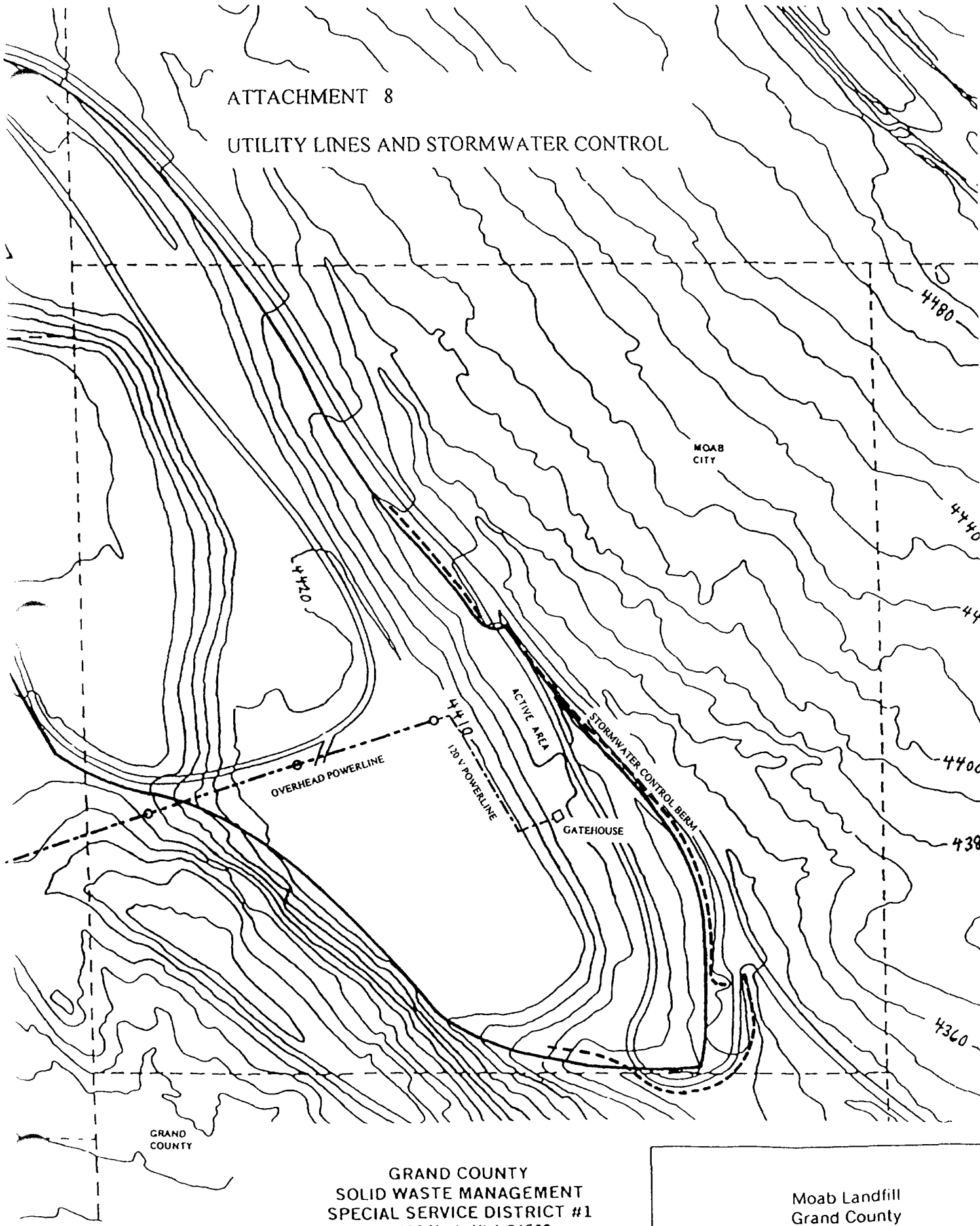
By: Karla R. Hancock  
Karla R. Hancock  
Mayor  
Approved : October 20, 1998

Attest: Rachel Ellison  
Rachel Ellison  
Moab City Recorder

**ATTACHMENT 8**  
**UTILITY LINES AND STORMWATER CONTROL**

ATTACHMENT 8

UTILITY LINES AND STORMWATER CONTROL



GRAND COUNTY  
SOLID WASTE MANAGEMENT  
SPECIAL SERVICE DISTRICT #1  
Box 980 Moab, Utah 84532  
(435) 259-3867

Moab Landfill  
Grand County  
Solid Waste Management SSD No.

**ATTACHMENT 9**  
**MONTHLY INSPECTION FORM**

# Grand County Solid Waste Management Special Service District # 1

7 Mar 2002

## Monthly Inspection Checklist

Performed by \_\_\_\_\_ Date \_\_\_\_\_

### Moab Class IVb Landfill

### Old Moab Landfill (closed)

Satisfactory

Needs Work

Satisfactory

Needs Work

1. Tickets and Log-in Procedure
2. Inspect any waste dumped but not yet covered

3. Random Load Inspection Done  
License # \_\_\_\_\_ Driver \_\_\_\_\_

4. Special Wastes/Diversion Areas
  - a. Tires
  - b. Bulky Items
  - c. Animal Carcasses
  - d. Metal or Recyclables

5. Run On Diversion System
  - a. Berms/Ditches
  - b. Dams/Ponds

- Run Off Control System
  - a. Berms/Ditches
  - b. Dams/Ponds

7. Roads
8. Excavations
9. Litter and Weed Control
10. Security

- a. Gates
  - b. Fences/Barriers

11. Safety Equipment  
Fire Extinguishers \_\_\_\_, Radio or Phone \_\_\_\_,  
Ear Plugs \_\_\_\_, Safety Glasses \_\_\_\_, Gloves \_\_\_\_,  
Hard Hat \_\_\_\_, Safety Shoes \_\_\_\_, Overalls or  
Long Sleeve Shirt & Full Length Pants \_\_\_\_.

12. Final Cover/Intermediate Cover
  - a. Settling
  - b. Vegetation
  - c. Final Cover Integrity

Specify recommended repairs and/or actions taken (by item line #)

**ATTACHMENT 10**  
**RANDOM LOAD INSPECTION FORM**

Grand County Solid Waste Management  
Special Service District #1  
1000 E. Sand Flats Road, P. O. Box 980, Moab Utah 84532  
Phone 435-259-3867 ~ Fax 435-259-5218

**Random Load Inspection – MOAB CLASS IV LANDFILL**

Date \_\_\_\_\_ Landfill Operator \_\_\_\_\_

License # \_\_\_\_\_ Driver Name \_\_\_\_\_

Comments \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

---

Grand County Solid Waste Management  
Special Service District #1  
1000 E. Sand Flats Road, P. O. Box 980, Moab Utah 84532  
Phone 435-259-3867 ~ Fax 435-259-5218

**Random Load Inspection – MOAB CLASS IV LANDFILL**

Date \_\_\_\_\_ Landfill Operator \_\_\_\_\_

License # \_\_\_\_\_ Driver Name \_\_\_\_\_

Comments \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

---

Grand County Solid Waste Management  
Special Service District #1  
1000 E. Sand Flats Road, P. O. Box 980, Moab Utah 84532  
Phone 435-259-3867 ~ Fax 435-259-5218

**Random Load Inspection – MOAB CLASS IV LANDFILL**

Date \_\_\_\_\_ Landfill Operator \_\_\_\_\_

License # \_\_\_\_\_ Driver Name \_\_\_\_\_

Comments \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_