



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street  
San Francisco, CA 94105-3901

SOUND RECORDS CTR  
2096051

APR 26 1999

**CERTIFIED MAIL**  
**RETURN RECEIPT REQUESTED**

Republic Disposal Urban Maintenance Processing Company, Inc.  
Harris W. Hudson, President  
110 S.E. 6th St., 28th Floor  
Ft. Lauderdale, FL 33301

Certified Mail No.  
Z 246 515 518

Republic Silver State Disposal, Inc.  
James H. Cosman, President  
110 S.E. 6th St., 28th floor  
Ft. Lauderdale, FL 33301

Certified Mail No.  
Z 246 515 519

Republic Industries, Inc.  
H.W. Huizenga, President  
516 Mola Avenue  
Ft. Lauderdale, FL 33301

Certified Mail No.  
Z 246 515 520

Clark County Public Works Department  
Martin J. Manning, Director  
500 S. Grand Central Parkway  
Las Vegas, NV 89155-4000

Certified Mail No.  
Z 246 515 517

Re: Sunrise Mountain Landfill  
Findings of Violation and Order for Compliance  
Docket No. CWA-309-9-99-14

Dear Addressees:

As you know, in September 1998 a series of storm events resulted in a significant washout and discharge of pollutants from the Sunrise Mountain Landfill ("Landfill") into the Las Vegas Wash near Lake Mead in Nevada. In November 1998, EPA conducted an inspection of the Landfill and noted numerous environmental problems including the absence of, and inadequate storm water controls. In light of the potential impact on waters of the United States and the continuing threat of pollutant discharges, the United States Environmental Protection Agency ("EPA") hereby issues the

enclosed Findings of Violation and Order for Compliance, pursuant to Sections 308 and 309 of the Clean Water Act ("CWA"), 33 U.S.C. §§ 1318 and 1319 ("Administrative Order").


This Administrative Order sets forth violations of the Nevada General Permit for Storm Water Discharges Associated with Industrial Activity (GNV0022233) including the failure to develop and implement a Storm Water Pollution Prevention Plan ("SWPPP"). The Administrative Order then requires certain work to be performed to bring the Landfill into compliance with the permit and the Clean Water Act. Work required includes, *inter alia*, interim measures to protect the site in the near term, development of an appropriate SWPPP for long term storm water control, implementation of the SWPPP, and the repair and redesign of storm water run-on and run-off control systems.

Failure to comply with the terms of the enclosed Administrative Order could subject you to a civil action for appropriate relief pursuant to Section 309(b) of the CWA, 33 U.S.C. § 1319(b) and/or civil penalties not to exceed \$27,500 per day for each violation under Section 309(d) of the CWA, 33 U.S.C. § 1319(d). In addition, Section 309(c) of the CWA, 33 U.S.C. § 1319(c), provides criminal penalties for either negligent or knowing violations of the CWA.

EPA is concerned about the potential impact of pollutants discharged from the Landfill into the Las Vegas Wash and potentially Lake Mead. A comprehensive solution is required to address the environmental concerns and therefore this Administrative Order is being issued simultaneously with a Unilateral Administrative Order (Docket No. RCRA 7003-09-99-0005) pursuant to section 7003 of the Resource Conservation and Recovery Act ("RCRA"), 42 U.S.C. § 6973. EPA has and will continue to coordinate these enforcement actions.

The Clean Water Act Administrative Order is effective upon signature. If you have any questions regarding the technical requirements of this Administrative Order, please contact David W. Basinger of my staff at (415) 744-1973. For any legal questions, please contact Laurie Kermish, Assistant Regional Counsel at (415) 744-1344.

Sincerely,

  
for  
Alexis Strauss  
Acting Director  
Water Division

Enc.

cc: A. Biaggi, NDEP  
J. Williams, NDEP  
R. Holmes, Clark County

J. Schlegal, Clark County Comprehensive Planning  
M. Dwyer, BLM  
A. Gaddy, Republic DUMPCo  
G. Walsh, Republic

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 9**

**IN THE MATTER OF:**

Republic Disposal Urban Maintenance	)	Docket No. CWA-309-9-99-14
Processing Co., Inc., Republic Silver State	)	
Disposal, Inc., Republic Industries, Inc.	)	
and	)	
Clark County Public Works Department,	)	
Respondents	)	
	)	
Proceedings under Section 308(a)	)	FINDINGS OF VIOLATION
and 309(a)(3), (a)(4), and (a)(5)(A)	)	AND
Clean Water Act, as amended,	)	ORDER FOR COMPLIANCE
33 U.S.C. Sections 1318(a), and	)	
1319(a)(3), (a)(4), (a)(5)(A)	)	

**STATUTORY AUTHORITY**

The following Findings are made and Order is issued pursuant to the authority vested in the Administrator of the U.S. Environmental Protection Agency ("EPA") by sections 308(a) and 309 (a)(3), (a)(4), and (a)(5)(A) of the Clean Water Act, as amended ("Act"), 33 U.S.C. §§ 1318 (a), 1319 (a)(3), (a)(4), and (a)(5)(A). This authority has been delegated to the Regional Administrator of EPA, Region 9, and re-delegated by the Regional Administrator to the Director of the Water Division of EPA, Region 9.

**FINDINGS OF VIOLATION**

On the basis of the following facts, the Director of the Water Division of EPA, Region 9, finds that Republic Disposal Urban Maintenance Processing Co., Inc. (Republic Dumpco), Republic Silver State Disposal, Inc. ("RSSD"), Republic Industries, Inc. ("RII"), and Clark County Public Works ("CCPW") are in violation of National Pollutant Discharge Elimination System (NPDES) General Permit No. GNV0022233, and in violation of Section 301(a) of the Act, 33 U.S.C. § 1311(a):

1. Clark County Public Works Department (CCPW) is a political subdivision of the State of Nevada and is therefore a person pursuant to section 502(5) of the Act. 33 U.S.C. § 1362(5). CCPW leases approximately 720 acres of land from the U.S. Bureau of Land Management (BLM) upon which is located significant portions of the Sunrise Mountain Landfill. According to the terms of the lease, CCPW is required

to comply with all local, State and Federal laws and regulations.

2. Republic Disposal Urban Maintenance Processing Co., Inc. ("Republic DUMPCo") and Republic Silver State Disposal, Inc. ("RSSD") are each a corporation organized under the laws of the State of Nevada and are or were wholly-owned subsidiaries of Republic Industries, Inc., ("RII"), a Delaware corporation. Republic DUMPCo, RSSD, and RII (hereinafter collectively "Republic") are therefore each a person pursuant to section 502(5) of the Act, 33 U.S.C. § 1362(5). Republic is obligated under a contract with CCPW to conduct activities at the Sunrise Mountain Landfill, including but not limited to, compaction, cover, final closure, and maintenance.
3. The Sunrise Mountain Landfill accepted industrial, municipal and other solid waste from at least the early 1960's until October 1993. The areas comprising the "Landfill" for purposes of this Order are illustrated on the map, included as Attachment A-1 to the NPDES compliance inspection report (referred to and incorporated below in paragraph 16), and include the 720 acres leased by CCPW as well as the other areas where trash has been disposed, specifically including, the Northeast Canyon Area, the Eastern Perimeter Area, the South Wash Area, and the West Burn Pits Area.
4. Storm water runoff from the Landfill and the adjacent area discharges to an unnamed tributary of the Las Vegas Wash, which itself is a tributary to Lake Mead, a primary source of drinking water for Southern Nevada including the Las Vegas Metro Area, as well as for the Phoenix Metro Area and Southern California. Each of these tributaries is a "navigable water" as defined by Section 502(7) of the Act, 33 U.S.C. § 1362(7), and "waters of the United States" as defined by EPA regulations at 40 C.F.R. § 122.2.
5. Section 301(a) of the Act, 33 U.S.C. § 1311(a), prohibits the discharge of any pollutants to waters of the United States except as in compliance with certain sections of the Act, including Section 402, 33 U.S.C. § 1342. Section 402 of the Act authorizes EPA, or delegated States, to issue National Pollutant Discharge Elimination System (NPDES) permits allowing for the discharge of pollutants into waters of the United States. Compliance with Section 301(a) of the Act, 33 U.S.C. § 1311 (a), therefore requires, inter alia, compliance with a valid NPDES permit.
6. A pollutant as defined under section 502(6) of the Act, 33 U.S.C. § 1362(6), includes, but is not limited to, municipal waste, sewage, solid waste, and rock.
7. Section 402(p) of the Act, 33 U.S.C. § 1342 (p), sets forth requirements for the issuance of NPDES permits for the discharge of storm water. Section 402(p) requires, in part, that the discharge of storm water associated with industrial activity must conform with any NPDES permit requirements issued pursuant to Section 301

of the Act.

8. 40 C.F.R. § 122.26(b)(14)(v) includes in the definition of storm water discharge associated with industrial activity “[l]andfills, . . . and open dumps that receive or have received any industrial wastes (waste that is received from any of the facilities described under this subsection) including those that are subject to regulation under subtitle D of RCRA.”
9. 40 C.F.R. § 122.26(c) provides that “Dischargers of storm water associated with industrial activity are required to apply for ... a permit ... or seek coverage under a promulgated storm water general permit.”
10. EPA has authorized the State of Nevada to implement the NPDES program within the State’s jurisdiction.
11. On April 28, 1993, the Nevada Department of Conservation and Natural Resources, Division of Environmental Protection (NDEP) adopted NPDES Permit No. GNV0022233, the General Permit for Stormwater Discharges Associated with Industrial Activity (“Industrial Storm Water General Permit”).
12. On July 10, 1993, a Notice of Intent (“NOI”) to be covered by the Industrial Storm Water General Permit was submitted to NDEP for the Sunrise Landfill. Republic and CCPW were therefore subject to the terms of the Industrial Storm Water General Permit.
13. In the alternative, if an NOI was not filed for the Landfill, Republic and CCPW are and have been in violation of section 301(a) of the Act, 33 U.S.C. § 1311(a), for discharging pollutants without an NPDES permit.
14. The Industrial Stormwater General Permit, GNV0022233, requires the following:
  - a. Part I, provisions C.1.a and C.3 require that a Storm Water Pollution Prevention Plan (“SWPPP”) which includes specific required minimum elements of facility information, Best Management Practices (BMPs), and periodic evaluations, be developed, implemented, and submitted to NDEP.
  - b. Part I, provisions C.1.b and C.1.c, and Part III, provision A.2 require that annual storm water inspections and storm water compliance certifications signed by a duly authorized facility representative be completed and submitted to the NDEP.
  - c. Part I, provisions C.1.e and D.14 require that records of the SWPPP, with annual storm water inspections and compliance certifications, be maintained

for a period of at least three years.

- d. Part I, provision C.4 requires that written annual stormwater reports be submitted to the NDEP.
  - e. Part I, provision D.8 and Part II, provision A.4 prohibit a pollutant discharge to the waters of the United States not in compliance with the permit.
  - f. Part I, provision D.13 requires that any storm water noncompliance or discharge which may seriously endanger health or the environment be orally reported to the NDEP within 24-hours and a written report to follow within 10 days which includes a description of the cause, exact duration, and any corrective actions taken.
  - g. Part II, provision A.2 requires that storm water controls or facilities be maintained at all times in good working condition.
15. On September 11, 1998, several large rain events resulted in significant washout of parts of the Landfill and the discharge of pollutants to the unnamed wash and to Las Vegas Wash, both waters of the United States.
16. On November 19 and 20, 1998, inspectors from EPA Region 9 and NDEP staff conducted a compliance inspection of the Landfill and made the following observations:
- a. The Landfill lacked a storm water control program. A SWPPP was not provided or available.
  - b. The existing surface water drainage controls that had been installed in 1995 were poorly maintained and/or inoperable, and the Landfill was not prepared to control runoff from rain. The main surface water drainage channel, which crosses the main landfill cells, had failed during the storm in September. The riprap which originally held down the liner of the drainage channel and the cover dirt had not been reinstalled. Drainage culverts were found partially filled with sediment and were deeply undermined along both edges, with joints poorly connected or disconnected.
  - c. There were deep erosion gullies on the side slopes of the Landfill, imbedded waste was exposed across the surface of the Landfill, and waste mixed with gravel (which originated from the failed main drainage channel) was observed along the bottom of the approximately 2-mile unnamed wash leading to Las Vegas Wash.

- d. No measures were in place to control storm water running onto the Landfill and there was no effort to divert storm water around the Landfill. Evidence that storm water was not being controlled at the Landfill was seen by the significant ponding on the Landfill north of the failed main drainage channel and at other points on the Landfill. In addition, seepage was surfacing at the southeast corner of the Landfill, indicating that storm water had gone through the waste beneath the failed main drainage channel and resurfaced at the lower elevation.
- e. At the Northeast Canyon Area of the Landfill, there was exposed sewage sludge and municipal refuse uncovered and there were no storm water control measures in place.

A copy of EPA's NPDES compliance inspection report is attached and incorporated herein by reference to these Findings of Violation as Attachment 1.

- 17. There is evidence of at least five other storm events since 1995 which resulted in problems similar to those found during the November 1998 inspection. These occurred during approximately the following time frames: 1) May and June 1995, 2) July 1996, 3) November 1996, 4) February through April and September through October 1997, and 5) June through July 1998.
- 18. Republic and CCPW violated the Industrial Storm Water General Permit and thus section 301(a) of the Act, 33 U.S.C. § 1311(a), as follows:
  - a. Part I, provisions C.1.a and C.3 were violated in that no SWPPP was developed, implemented, or submitted to NDEP. With regards to specific required minimum elements:
    - i. Required facility information was not developed, including:
      - (1) A facility site map showing the location and types of stormwater controls, including drainage areas, reportable spill and leak locations, buildings, and material handling areas.
      - (2) A list of individuals or positions responsible for SWPPP implementation, with a description of responsibilities.
      - (3) A material inventory identifying sources or activities with potential for storm water pollutant potential.
      - (4) A list of reportable spills and leaks for the previous three years.



- ii. **Best Management Practices (BMPs, or any procedure or facility used to minimize exposure of pollutants to storm water) were not identified or implemented. Further,**
  - (1) **Existing surface water control structures which might have been considered storm water control structures proved to be ineffective.**
  - (2) **Training for good storm water control practices was not developed or established, including practices for good housekeeping, regular visual inspections or preventative maintenance of BMPs, material handling in uncovered areas, spill prevention and response, and record keeping with annual reports and certifications, with inspector names and resulting actions.**
- iii. **Periodic Evaluations, with written summaries to NDEP, were not conducted, including evaluation of BMP effectiveness, scheduling BMP modifications and revising the SWPPP to include changes.**
- b. **Part I, provisions C.1.b and c. 1.c and Part III, provision A.2 were violated in that no annual storm water inspections or annual compliance certifications were completed or submitted to NDEP.**
- c. **Part I, provisions C.1.e and D.14 were violated in that no SWPPPs, annual storm water inspections, or annual compliance certifications were maintained.**
- d. **Part I, provision C.4 was violated in that no annual storm water reports were submitted to the NDEP.**
- e. **Part I, provision D.8 and Part II, provision A.4 were violated in that there were numerous noncompliant storm water discharges since at least 1995, including the September 11, 1998 storm water discharge.**
- f. **Part I, provision A.2 was violated in that no reports, either oral or written, were made to the NDEP for any of the noncompliant discharges.**
- g. **Part II, provision A.2 was violated in that even the minimal existing surface water drainage control structures were inadequate for operation, based on the visible evidence of ponding, drainage culverts filled with sediment and with failing connections, and inadequate debris control. Existing structures were found in poor repair even months after the major storm.**

## ORDER FOR COMPLIANCE

Taking these Findings into consideration and considering the potential environmental and public health effects of the violations, EPA has determined that compliance in accordance with the following requirements is reasonable. Pursuant to the authority of Sections 308 and 309 of the Act, 33 U.S.C. §§ 1318 and 1319, it is hereby ordered that Republic and CCPW comply with the following requirements:

19. Within 45 days, but no later than June 11, 1999, complete and submit for approval to the EPA a full report on the hydrologic and hydrogeological conditions of the Landfill, certified, stamped, and signed by a qualified and appropriately licensed professional engineer or hydrogeologist which provides sufficient information to support the following:
  - a. Reassessment and selection of site-specific design criteria for storm water events using all available meteorological data, including capacity to handle the intense, short duration storms which occurred at the Landfill from 1995 to the present,
  - b. Identification of Best Management Practices (BMPs) necessary for compliance with the Industrial Storm Water General Permit as outlined in paragraph 22 below,
  - c. A technical evaluation and analysis of slope erosion stability for materials used or proposed to be used as part of any BMP or in the final cover at the Landfill, and
  - d. Characterization of the potential for leachate surface seep discharge.
20. Within 45 days, but no later than June 11, 1999, submit to the EPA for approval, an interim plan for conducting repairs to the existing surface water controls and for additional storm water controls to minimize noncompliance with the Industrial Storm Water General Permit pending completion of the requirements set forth in paragraphs 19 and 22. This interim plan shall include an implementation schedule, estimated costs for each action, and provisions for reporting any additional noncompliance with the Industrial Storm Water General Permit to the NDEP and EPA as soon as the discharger becomes aware of the noncompliance. Upon approval, implement the interim plan in accordance with the schedule set forth therein.
21. Within 45 days, but no later than June 11, 1999, clean up any remaining exposed trash and debris on the Landfill, along the large unnamed wash, tributary to the Las

Vegas Wash, and within 500 yards of the lease boundary within the South Wash Area, continuing in any continuous wash as required to remove visible pocketed accumulations, and certify the completion of this task to the EPA. All debris shall be disposed of in accordance with all federal, state, and local laws and regulations.

22. Using information in the report required by paragraph 19, above, take all actions necessary to comply fully with all Industrial Storm Water General Permit requirements for the Landfill, including, but not limited to, the following:
- a. Within 175 days, but no later than October 19, 1999, develop and submit for approval to EPA a Storm Water Pollution Prevention Plan (SWPPP) including all elements of facility information, Best Management Practices (BMPs), and periodic evaluations as specified in the Industrial Storm Water General permit, including an implementation schedule for BMPs with estimated costs. Upon approval, implement the SWPPP in accordance with the schedule set forth therein. Acceptable BMPs shall include, but not be limited to:
    - i. Relocation of the main drainage channel around the Landfill on native material and reconstruction of the existing main drainage channel bottom and side slopes to isolate any unavoidable contact with refuse, using non-erodible material where bedrock is absent,
    - ii. A new sediment/flow-equalizing basin with easy clean-out access prior to entering the main water drainage channel,
    - iii. Other new drainage structures as required to divert storm water run-on around the Landfill, as well as structures to drain storm water runoff from the Landfill, with sediment basins accessible for clean-out having properly engineered capacities and inlet/outlet structures, including energy dissipater devices,
    - iv. Minimum 2% slope on the Landfill top,
    - v. Maximum 3:1 slope on side slopes combined with erosion control blankets or other equally effective erosion controls,
    - vi. Stabilization of haul roads and unstable cover areas using gravel or other equally effective stability controls,
    - vii. Reduction of long runoff distances across the Landfill to less than 600 feet by increasing the number of dikes/swales, benches, and/or drainage conveyances as necessary,

- viii. Prevention of sediment buildup in drainage conveyances by using non-destructive clean-out methods, increasing the size and/or number, and/or by increasing the gradient, and
  - ix. A debris control plan, including quarterly perimeter inspections within at least 500 yards of the lease boundary, and continuing further downstream as required to remove visible pocketed accumulations in any continuous wash, with collection and proper disposal of any accumulated waste.
- b. Within 175 days, but no later than October 19, 1999, develop and submit for approval to the EPA a new inspection and maintenance plan, including ongoing surveys of BMPs, of settlement during dry weather periods, and of erosion immediately after rains. This plan shall include provisions to document timely corrective actions taken. Upon approval, implement the inspection and maintenance plan.
  - c. Conduct and record annual storm water inspections including a certification of compliance signed by a duly authorized facility representative, with the first inspection occurring no later than December 3, 1999.
  - d. Maintain records of the SWPPP, annual inspections and compliance certifications for a period of at least three years.
  - e. Submit written annual stormwater reports to the NDEP and EPA, with the first report no later than December 17, 1999.
  - f. Report storm water noncompliance or discharge which may threaten or endanger health or the environment to the NDEP and EPA, orally within 24 hours followed by a 10-day written report including the probable cause, estimated duration, and any corrective actions taken.
  - g. Within 180 days after approval, but no later than March 31, 2000, fully implement the approved SWPPP and submit a report with a certification of compliance to the EPA that all approved BMP structures are installed and the approved SWPPP is fully implemented.
  - h. Within 60 days after certification as required in paragraph 22.g, but no later than May 26, 2000, submit actual costs to complete and estimated costs to maintain the BMPs.
23. All reports submitted pursuant to this Order must be signed by a principal executive

officer, ranking elected official or duly authorized representatives of Republic and CCPW [as specified by 40 C.F.R. § 122.22 (b)(2)] and shall include the following statement:

"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, I certify that 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."

24. All submissions requested by this Order shall be mailed to the following addresses:

David W. Basinger (WTR-7)  
Water Division  
U.S. Environmental Protection Agency  
75 Hawthorne Street  
San Francisco, CA 94105-3901

Mike Dwyer, Field Manager  
(Attention: Mike Moran)  
Bureau of Land Management  
4765 Vegas Drive  
Las Vegas, NV 89108

All telephone inquiries should be made to David Basinger, Environmental Engineer, at (415) 744-1973.

25. This Order does not waive or modify or in any way relieve Republic or CCPW of their obligations imposed by the Act or any other local, State, or Federal law. EPA reserves the right to seek any and all remedies available under Section 309(b), (c), (d), or (g) of the Act, 33 U.S.C. § 1319(b), (c), (d), or (g) for any violation cited in this Order.
26. This Order is not and shall not be interpreted to be an NPDES permit under section 402 of the Act, 33 U.S.C. § 1342, nor shall it in any way relieve Republic or CCPW of obligations imposed by the Act, or any Federal, State, or local law.
27. Issuance of this Order for Compliance shall not be deemed an election by EPA to

forego any administrative, civil, or criminal action to seek penalties, fines, or other appropriate relief under the Act.

- 28. EPA has notified the State of Nevada of the above Findings of Violation and this Order for Compliance.
- 29. This Order shall become effective upon signature.

26 April 1999  
Date

Laura Tom Boer  
for Alexis Strauss, Acting Director  
Water Division

# ATTACHMENT 1

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 9  
WATER MANAGEMENT DIVISION  
CLEAN WATER ACT COMPLIANCE EVALUATION INSPECTION REPORT

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Facility : **Sunrise Mountain Landfill - See Order, Attachment A-1 (map)**  
Clark County, NV, about four miles east of Las Vegas  
SIC Code 4953

Applicable Permit: Nevada General Industrial Storm Water Permit # GNV0022233  
Applicable Regulations: Clean Water Act (CWA), 40 CFR 122.26

Inspection Dates: Thursday and Friday, November 19 and 20, 1998

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Weather      November 19: generally clear, cool (estimated 40-50 degree's F at the start to 60-70 degree's F at the end), estimated wind speed about 15 mph out of the North northeast.  
November 20: clear at beginning/cloudy at the end, slightly warmer with less wind than on 19<sup>th</sup>.

Records      November 19: Photos and video tape by Bellamy and Wall - see Attachment A-4 photo excerpts  
November 20: Photos and index by Hillenbrand - see Attachments A-2 and A-3

**Participants:**

November 19	US EPA:	David Basinger, Clean Water Act (CWA) Compliance Kandice Bellamy, Resource Conservation and Recovery Act (RCRA) Susanna Trujillo, Solid Waste Program Steve Wall, Solid Waste Program John Hillenbrand, CWA Compliance, after 2:00 P.M.
	NDEP:	David Emme, Chief, Bureau of Waste Management
	CCHD:	Ed Wojcik, Environmental Health Engineer/Manager Howard Murphy
	Republic:	Alan Gaddy, Vice President Jim Rankin, Landfill Operations Gregory Walch, Esq., Outside counsel
	BLM:	Mike Moran, Environmental Specialist
November 20	US EPA:	Basinger, Hillenbrand
	Others:	Moran, Gaddy, and Rankin

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Report Prepared by: David W. Basinger, Environmental Engineer  
April 23, 1999



## **Section 1**

### **Scope & Purpose**

On November 19 and 20, 1999, inspectors from the United States Environmental Protection Agency (US EPA) Region 9, accompanied by representatives from the Nevada Department of Conservation and Natural Resources, Division of Environmental Protection (NDEP) and the Clark County Health District (CCHD), conducted a compliance evaluation inspection of the Sunrise Mountain Landfill in Clark County, Nevada, to review compliance with Federal and State regulations regarding storm water control and landfill closure. Representatives from the Landfill Operator, Republic DUMPCo, and the United States Bureau of Land Management (BLM) were also in attendance.

Names of inspection participants are listed on the title page of this report. Basinger was the lead inspector for Clean Water Act compliance, the subject of this report. Bellamy was the lead inspector for Resource Conservation Recovery Act (RCRA) compliance, covered in a separate report.

## **Section 2**

### **Facility Description**

Sunrise Mountain Landfill ("the Landfill") is a closed, unlined, Municipal Solid Waste Landfill (MSWL) located at the end of Vegas Valley Drive in Clark County, Nevada, approximately 4 miles east of Las Vegas city limits (see map Attachment A-1). The Landfill ceased receiving waste October 8, 1993 and a partial closure was completed in March of 1995. 720 acres of the site is leased by Clark County from the Bureau of Land Management (BLM). Republic DUMPCo, Republic Silver State Disposal, and Republic Industries, Inc. operate and maintain the Landfill under contract to Clark County Public Works Department (CCPW). Republic Industries, Inc. purchased the previous operators DUMPCo and Silver State Disposal Services (SSDS) in 1997. DUMPCo/SSDS and other various corporate predecessors operated the landfill prior to 1997, also under contract to Clark County.

For the purposes of this inspection, the Landfill includes all areas where trash was disposed of. In addition to the 720 acres leased by Clark County, other areas are shown on the map and are labeled as the Northeast Canyon Area, the Eastern Perimeter Area, the Southern Wash Area, and the Western Burn Pit Area.

The Landfill consists of mostly unlined waste cells containing partial segregation between municipal waste, sewage sludge, medical waste, animal carcasses, and construction and demolition debris including asbestos. A unit treating petroleum contaminated soil was permitted by the NDEP and operated at the site between 1989 and 1994. An estimated 47 million cubic yards of waste were disposed of at the Landfill, which has a total design capacity of 61 million cubic yards.

Storm water runoff primarily drains across the Landfill toward the southeast corner of the property, discharging to an approximately two mile-long unnamed tributary of the Las Vegas Wash (east of the Southern Wash Area), which itself is a tributary to Lake Mead. Prominent gullies south of the Landfill receive lesser amounts of runoff, and also lead to the Las Vegas Wash or its tributaries. Beneficial uses of the Las Vegas Wash and Lake Mead include irrigation, livestock watering, non-contact water recreation, industrial supply, wildlife propagation, and aquatic life propagation. In addition, the Las Vegas Wash maintains freshwater marshes and contains archeological/historical Indian sites, and Lake Mead provides hydroelectric power, municipal water and maintains a warmwater fishery. Lake Mead is a primary drinking water source to millions of people in the Las Vegas, Nevada and Phoenix, Arizona metropolitan areas and in southern California.

The Landfill is located on the eastern edge of Las Vegas Valley, on the south end of Frenchman Canyon, on an alluvial fan of unknown hydrologic properties, above sedimentary bedrock. The Frenchman Mountain fault zone, the most active tectonic fault in Las Vegas Valley, splits the Landfill site. The area has been previously used for sand and gravel operations, and several mining claims have been filed in the area. An abandoned livestock well exists on the property, which has contained a limited amount of water. The nearest residences are located approximately one mile from the western facility boundary and Las Vegas High School is about one and one quarter miles north of the site. Nellis Air Force Base is about 6.5 miles northwest, and McCarran airport is about 8 miles southwest.

The local climate is semi-arid, with annual rainfall of between four and five inches per year, mostly concentrated in four to five high intensity, short duration storms occurring from about May to September each year.

### **Section 3**

#### **Background and History**

Clark County Health District (CCHD) has local authority for MSWL management in Clark County. The Nevada Department of Conservation and Natural Resources, Division of Environmental Protection (NDEP) has been authorized to implement the NPDES program under the federal Clean Water Act in Nevada.

Since about 1946, when Clark County built an access road to the area, the Landfill area has apparently been used for trash disposal. From 1952 through 1962, the BLM granted a special land use permit #09352, which allowed waste disposal on 320 acres. In 1962, the BLM leased the land to the County to operate a landfill. Around 1985, 400 additional acres were leased.

In 1990, US EPA published Phase I storm water regulations requiring that facilities associated with industrial activity, including landfills, apply for coverage under a storm water permit by October 1, 1992. In 1991, US EPA published new landfill solid waste regulations (40 CFR 258) containing more stringent requirements for landfill closure and control, including existing landfills which

continued to operate after October 8, 1993 or were not fully closed by October 8, 1994. On April 28, 1993, the Nevada Department of Conservation and Natural Resources, Division of Environmental Protection (NDEP) adopted NPDES Permit No. GNV0022233, the General Permit for Stormwater Discharges Associated with Industrial Activity ("General Industrial Stormwater Permit"), which required the Landfill to submit a Notice of Intent (NOI) for coverage and to develop and implement a Storm Water Pollution Prevention Plan (SWPPP).

A decision was made to close the Landfill, and on April 25, 1993, a closure plan was signed by DUMPCo/SSDS, CCPW, BLM, and CCHD. As part of the closure plan, a Surface Water Control Plan was developed and installed, consisting of 24 and 36-inch diameter corrugated metal half-pipes which intercept and convey runoff from the landfill top. These pipe systems slope toward a main drainage channel or to lower elevations on the south and west sides for off-site discharge.

On April 12, 1995, a final closure agreement was signed in which DUMPCo/SSDS contracted to maintain the site for five years after closure. After the closure agreement was completed, CCPW attempted to surrender the lease to the BLM. The BLM hired a contractor to review cover status, and the contractor concluded that the final cover was inadequate. Concerns were raised including proper closure, final cap thickness, lack of groundwater or gas monitoring and control, excessive erosion and pollutant releases after storms, and off-lease dump areas. The BLM refused acceptance of the lease surrender, maintaining the terms of the lease, specifically requirements to return the land in compliance with all appropriate regulations, had not been fully met and that the closure agreement might therefore be invalid.

In May and June of 1995, several rain events resulted in pollutant discharges of municipal waste and rock to Las Vegas Wash. DUMPCo/SSDS hired a contractor to reevaluate and modify the Surface Water Control Plan, and repaired the failed areas. However, additional washouts and erosion continued to occur during the following years. On September 11, 1998, several sequential storm events resulted in a major washout and erosion failure of the Landfill. Pollutants and solid waste were discharged to waters of the U.S.

After the September rainfall and prior to this inspection, the NDEP had issued two orders and CCHD had issued one order which cumulatively required that the surface water system be evaluated and modified as necessary and that ground water monitoring be conducted. At the time of the inspection, Republic DUMPCo had appealed the requirement to monitor ground water, and compliance with either order had not occurred.

The BLM and DUMPCo/SSDS continue to dispute whether proper closure pursuant to the agreement has occurred. It remains unclear whether a valid NOI was filed to seek coverage under the General Industrial Stormwater Permit, and neither an NOI nor a SWPPP has been provided.

## Section 5

### Inspection Observations

On November 19 and 20, 1998, US EPA Region 9 conducted a site inspection with inspectors from the Clean Water Act and RCRA programs (the RCRA inspection is documented in a separate report.)

Beginning about 9:00 A.M. on November 19<sup>th</sup>, outside the Landfill facility gate on Vegas Valley Drive, EPA inspectors (identified on the title page of this report) introduced ourselves and identified the authorities for conducting a compliance investigation.

We first drove east and stopped near the southeast property corner by following an access road on the south end of the main landfill. We disembarked to inspect the area.

As we drove and upon disembarking we observed that many of the existing corrugated metal half-pipe drainage culverts used for surface water control were damaged and partially filled with sediment (Attachment A-4, photo KB-7). Soil at both edges of the drainage pipes was generally severely undermined, often exposing landfill waste. Culvert joints were commonly disconnected, dead-ended (photo KB-10), or poorly connected. It appeared that some damaged culverts had been removed, and new uninstalled culverts were laying on the ground nearby (photo KB-2).

Near the southeast corner, the bottom of the main drainage channel as it crossed the Landfill appeared to have been regraded and covered with new dirt, but remained without riprap or the HDPE (High Density Polyethylene) liner which had failed in the September rains. As the main drainage channel exited the Landfill, rock had been blasted out to form the channel which connected to a large unnamed tributary of the Las Vegas Wash (east of Southern Wash Area). The rock channel bed in this area remained scoured clean as a result of the September rains (photo SW-1).

Along the main drainage channel in the rock channel section, much exposed refuse was observed on the upper west side slopes (photos KB-3 and SW-6), although this area had been regraded since the September storms. On the east side, additional exposed refuse was noted.

Along the eastern edge of the top cell and on the east side slopes leading to the main drainage channel above the rock channel area, methane venting was observed as evidenced by discolored soil [photo SW-9], even in recently regraded areas. A strong downwind odor was noted in these areas. We observed several six-inch deep erosion gullies sloping down toward the main drainage channel on the east side slope, with larger rocks washed to the bottom of the slope (photo KB-8).

The operator informed us that final cover permeability varies from  $1 \times 10^{-5}$  to  $1 \times 10^{-3}$  centimeters per second (cm/sec), with the lower permeability in "regraded post-1991 RCRA-cap areas." We were also told that six inches of more permeable "erosion rock" was generally placed on top of the final cover material.

Walking across the top main Landfill surface, we observed large piles containing the broken liner segments (described as “rough 30 mil” HDPE by the operator) and displaced riprap from the main drainage channel, which the operator said were awaiting separation and reuse (photo KB-12). These materials had been torn loose during the September rainfalls. We observed visible waste imbedded or uncovered at various locations in the cap cover material exposed to future rainfall. We observed additional drainage culverts in various states of disrepair and large expanses of discolored soil combined with strong odors, similar to those previously described.

As we returned to our vehicles, on the southern slope to the main upper landfill, in an area actively being regraded during the inspection, we observed four to six-inch deep erosion furrows, but without evidence of exposed waste (photo SW-18).

At about 11:00 A.M., we drove north along the west side of the main drainage channel (see map). The main drainage channel was installed above covered landfill waste for most of its total length (about one mile long, photo JH-2).

Both the operator and the BLM told Inspectors that the main drainage channel ran on the eastern lease boundary of the Landfill. The horizontal extent of refuse in the Eastern Perimeter Area on the east side of the drainage channel increased as we moved north. The waste in this area was acknowledged by the operator and the BLM as outside the formal lease boundary although part of regular landfill operations.

Several collection channels directing runoff from east-side canyons crossed the final landfill cover to reach the main drainage channel (photo JH-1). These channels still contained visible waste. As previously mentioned, the liner, riprap, and dirt cover along the entire drainage channel had been broken up, torn apart, and washed out by the September rains. At the time of the inspection, only a temporary dirt cover layer had been placed and compacted. A large gabion drop structure (a wire mesh basket dam filled with stone, used to dissipate energy) in the main drainage channel was distorted but intact.

North of the main drainage channel and the main landfill (south end of the Northeast Canyon Area), a large depressed area appeared to have acted as an unengineered sediment basin prior to runoff entering the main channel (photo JH-3). The bottom of this basin was covered with dry silt deposits, mixed with loose refuse which was more concentrated at the north end of the basin (photo SW-11). Both BLM and operator representatives felt that several feet of additional refuse probably existed under the silted areas. Evidence was noted of probable percolation from the south edge of this basin into the north edge of the main Landfill, which appeared to have acted as a dam for the basin.

We drove further north up the Northeast Canyon Area following a rough trail, stopping and getting out to observe at several points along the way. Multiple areas were found containing exposed and uncontrolled municipal waste and sewer septage (as indicated by characteristic snail shells and white lime-treatment residue, photos SW-13, JH-14, 15, and 20). We observed several apparent landfill cells estimated to be as deep as 10-15 feet relative to neighboring exposed bedrock (photo JH-4).

Along the center of the Northeast Canyon Area we discovered an area where municipal waste under a thick layer of septage sludge had been washed-out and exposed. This area was likely the main source for most of the loose trash in the silt basin previously described. We found trash dating from the late 50's to the early 70's (photos SW-14, JH-21, and 22). No form of drainage or storm water control was observed.

Further upstream in the higher reaches of the Northeast Canyon Area, inspectors were told of, and found evidence consistent with, an abandoned sand and gravel operation. An old pit still containing a small amount of water was found. A limited number of discrete metal pieces were found, mostly in the gullies on the west side of the canyon which flow down the canyon toward the main landfill (photo SW-12). A silver-leafed plant in this area, the "Golden Bear Poppy," was identified by the operator as a previously-studied potentially endangered or endangered species, and the operator estimated about ten of these plants existed in the upper canyon area, with probably more in the area of the large tributary on the southeast corner of the Landfill.

At about 12:00 P.M., we returned in our vehicles to the southeast corner of the Landfill. We climbed several hundred feet down the bare rock bed section of the main drainage channel, and the operator identified a three-foot diameter patch of moist earth (photo SW-15) as the location of the largest seep found after the September storm. The operator believed this resulted from storm runoff entering the Landfill along an approximately 150-foot long length of the main channel immediately above the rock bed where landfill waste had been exposed (which has since been regraded), circling around the rock area along the eastern edge inside the Landfill, and finally, exiting the base of the Landfill and reentering the main drainage channel in the moist area indicated. Although this area of the main drainage channel had been regraded since the September storms it remained moist as of the date of the inspection.

Inspectors Bellamy and Basinger walked in a southerly direction along the bottom of the unnamed tributary leading to the Las Vegas Wash on the east side of the Southern Wash Area beyond the southeast corner for a distance of about one-quarter to one-half mile. The channel bottom in this area was about 10-15-feet wide, and appeared to be consistently covered with medium-sized rock gravel (1-2"). Heavy equipment tracks were evident in the gravel. The operator identified the gravel in the wash as originating from the failed main drainage channel at the Landfill, and also told us that what we observed in this area was the same for the approximate four-mile total length of the tributary from the Landfill to the Las Vegas Wash. The operator told us the entire tributary had been cleaned, despite the visible refuse still mixed with the gravel, but acknowledged that no cleanup was performed in the Las Vegas Wash. Several "potentially endangered" plants like those found in the Northeast canyon area were found, and one was flowering (photo SW-17).

Around 2:00 P.M. on November 20, Inspector Hillenbrand arrived at the site.

Part of the group walked and part drove as we traveled next along the south property line. Inspectors Hillenbrand and Basinger observed a lot of dispersed and pocketed debris (photos KB-19, 20, and SW-20) in prominent gullies (photos SW-21, JH-24) extending toward the Las Vegas Wash in the Southern Wash Area. This debris appeared more concentrated in gullies which reached the southern

lease boundary than in gullies that did not, suggesting the debris had been discharged from leased property during rain events.

We continued to walk west along the south and southwest edges of the Landfill. The operator informed us that the final cover to the municipal waste cells in these areas had not been regraded since the storm. We observed six-inch deep furrows oriented down the landfill slope for the majority of this area and up to 24-inch deep furrows between the landfill and the south edge of the lease, although no exposed waste was observed (photo SW-24). Several large areas of apparent ponding were evidenced by remnants of float material along the edges of areas which were dry at the time of the inspection (photo SW-22). Inspectors also saw some evidence of regrading to apparently allow drainage off-site toward Las Vegas Wash on the south and southwest from these areas.

At about 3:00 P.M., we drove to the western side of the Landfill. In the construction/asbestos area along the west edge of the top cell, inspectors found several exposed waste bags and large animal bones imbedded in the cover material.

While in the same area, we walked to the Western Burn Pit Area, just outside the west lease boundary, which contained several ponds characterized as "black lagoons," with a dry tar-like residue on the bottoms. We were told by several parties that the County had operated a burn pit in this area at one time. At the edge of one pit, inspectors observed an empty, corroded, partially-buried drum (photo SW-25). No stormwater or drainage controls were evident.

Inspectors and other participants left the Landfill site about 4:00 P.M. on November 19.

Inspectors Basinger and Hillenbrand returned at about 11:00 A.M. on Friday November 20, to allow Inspector Hillenbrand to survey areas he had not yet seen.

We first drove to the Northeast Canyon Area above the main Landfill, beginning at the far north and with the abandoned sand and gravel operation, then traveling south down the canyon. Inspector Hillenbrand took extensive photos of this area (Attachments A-2 and A-3). Heavy erosion and exposure of municipal refuse was discovered on one of the large covered cells (photos JH-4, 5, and 9). Several areas of ponding were found which had been created by refuse dams (photos JH-10, JH-11 through 13, and JH-17 through 19). The operator told us of an old road which he said at one time had provided separate access to the upper canyon area, stating that this road had been covered during Landfill operations. Inspectors saw no sign of this road.

We next drove south along the west edge of the main drainage channel to the southeast corner. We reviewed the observations in this area of the previous day with Inspector Hillenbrand. A poor-quality concrete pipe apron was observed in the area (photo JH-23).

Finally, we drove to the construction/asbestos cell area on the west side of the Landfill, and walked north along the west edge of this canyon. We found a cup-shaped area in the west canyon wall on the upper Landfill surface which appeared to receive stormwater runoff directly without diversion or control. The general locations of three on-site rain gauges were identified by the operator: on the

north edge of the top main cell, on the edge of the access road near the southeast corner, and on the west side access road near the asbestos cell.

## Section 6

### Conclusions and Recommendations

From our inspection observations, US EPA concludes the following:

1. Pollutants from the Landfill were discharged to waters of the U.S. as a result of the September 11, 1998 storm, in violation of the Clean Water Act. Pollutants discharged were municipal wastes including industrial and medical wastes, septic sewage, and solids including sediment, gravel, and rock. These pollutants were discharged to the large unnamed tributary on the southeast which leads directly to Las Vegas Wash and Lake Mead, as well as to large gullies on the south and west sides of the Landfill.
2. Existing surface water controls have proved inadequate for storm water control, and the Landfill is currently in a condition in which new storms could likely discharge additional pollutants. We believe other pollutant discharges have occurred at this site from storm events during the past several years. Many of the failures observed would have occurred with storms of lesser intensity than the September 1998 storm. It is likely the wrong design criteria were used given the specific characteristics of this site. Interim repairs for existing surface controls were not yet completed, even though more than two months had passed since failure.
3. Large uncovered and uncontrolled piles of exposed septic sludge and municipal waste were found in the Northeast Canyon Area, in smaller pockets along the east side of the south end of the main drainage channel in the Eastern Perimeter Area, and also on the west side of the main drainage channel near the southeast corner. Municipal waste was observed imbedded throughout the cover material, mixed with gravel originating from the Landfill in the large unnamed tributary, and in large gullies in the Southern Wash Area.
4. Structural or procedural Best Management Practices (BMPs) were not designed or implemented as required by the General Industrial Stormwater Permit. No diversion of stormwater run-on or treatment of stormwater runoff occurs. The main drainage channel is located across the top of the main landfill cover, resulting in potential stormwater exposure to pollutants. In the Northeast Canyon Area, a low depression acts as a non-engineered sediment basin. This basin is likely on top of otherwise uncontrolled landfill waste, and probably provides a pathway for percolation of runoff into the main landfill. No surface water controls existed in the Northeast Canyon Area. As a result, the main drainage channel catastrophically failed, runoff washing out the large rip-rap rock and gravel along with the HDPE liner, as well as much of the soil cover, in some areas exposing waste cells beneath. Culverts designed to convey water to the main drainage channel or off-site were undermined



to an extent that they could not function and this waste at the edges and beneath the culverts was exposed. Significant, unacceptable side slope erosion was also evident. No SWPPP was available, provided, or implemented.

Based on these conclusions, we suggest the following:

1. Repair existing surface water controls on an interim basis.
2. Develop and submit a new NOI with appropriate information for the entire Landfill.
3. Develop and submit for approval a SWPPP for the entire Landfill, including structural and procedural BMPs.
4. Install approved BMPs, which should include the following
  - a. Relocate the main drainage channel to bedrock and divert the side drainage to avoid crossing the Landfill,
  - b. Engineer sediment and/or flow-equalizing basins both upstream and downstream of the Landfill,
  - c. Assess and complete removal, control and closure of exposed wastes,
  - d. Redesign and resize the main drainage channel with liner and riprap, culverts, and side channels,
  - e. Remove debris in Southern Wash Area and develop a future litter control program,
  - f. Develop and implement a BMP inspection and maintenance plan,
  - g. Begin regular inspections, reports, certifications, and record keeping programs,
  - h. Monitor, and remove, or collect and control, surface seeps,
  - i. Calculate slope stability for cover materials, and provide additional cover for any areas of thin cover.

U.S. EPA believes that the surface water system requires a thorough evaluation, including a redesign using more appropriate storm design criteria, and development and implementation of a SWPPP is required.

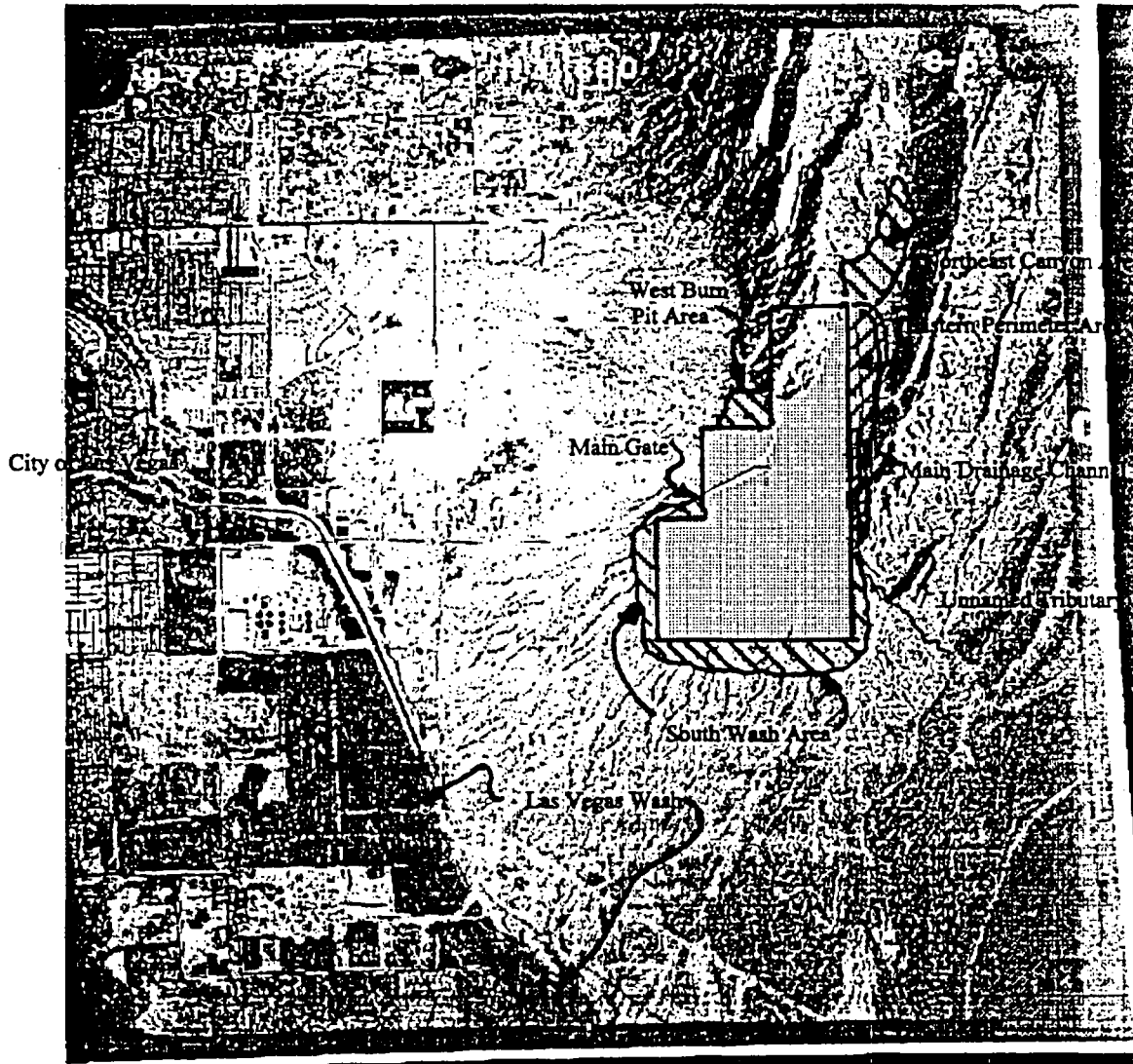
#### OTHER CONCERNS

Other issues were also observed during this inspection which may require correction. Appropriate final cap permeability, thickness, and extent was unclear. Surface soil discoloration, cracks, and strong odors indicated a possible need for gas monitoring and control. Groundwater needs further investigation.

# MAP ATTACHMENT A-1

Sunrise Landfill  
Las Vegas, NV

Nellis Air Force Base



McCarran Airport

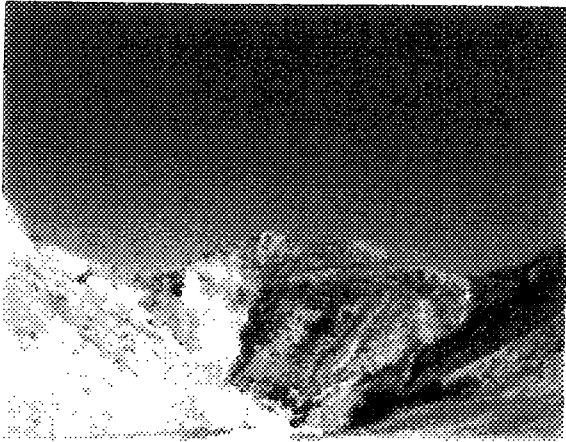
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Scale: 1:47,874

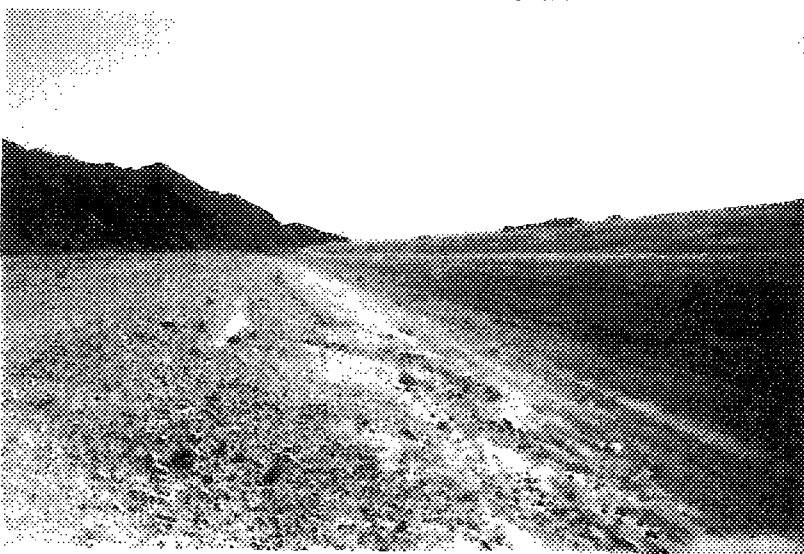
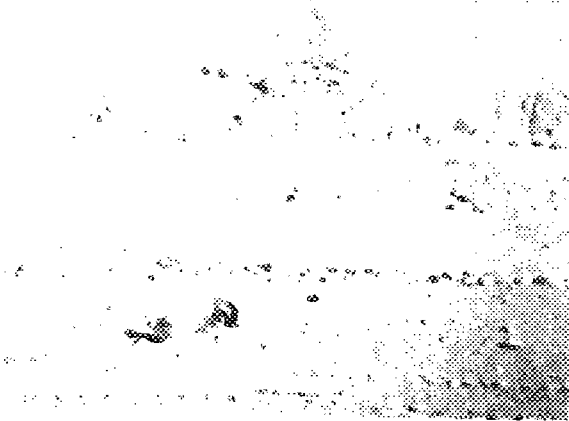
Legend	
	Drainage
	Landfill



Attachment A-2  
PHOTOS TAKEN BY INSPECTOR JOHN HILLENBRAND, with additional description in  
Attachment A-3)

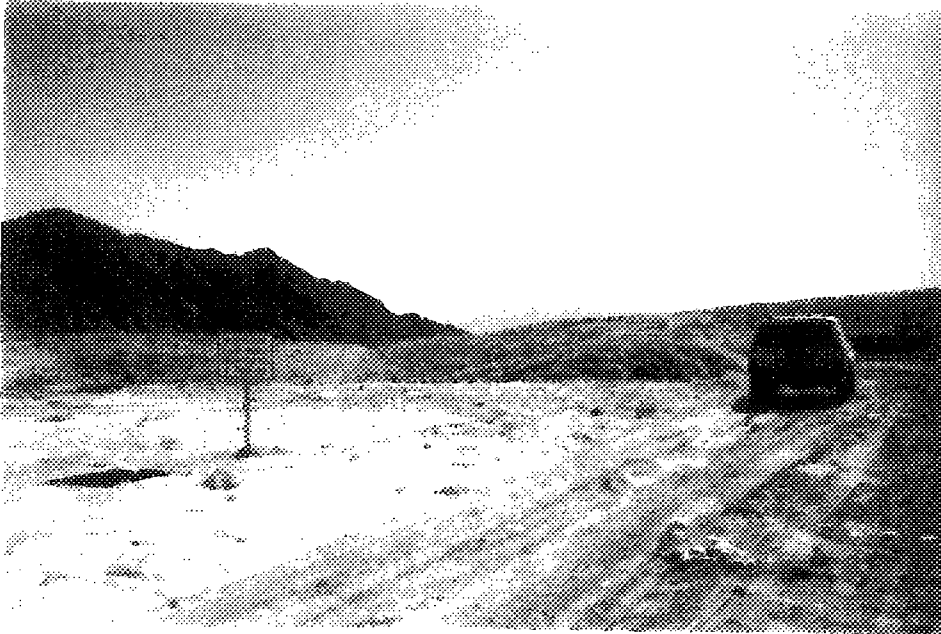


JH-1 WEST SIDE OF MAIN DRAINAGE  
CHANNEL LOOKING EAST - drainage  
from side canyon crossing main landfill  
deck to connect with main drainage channel



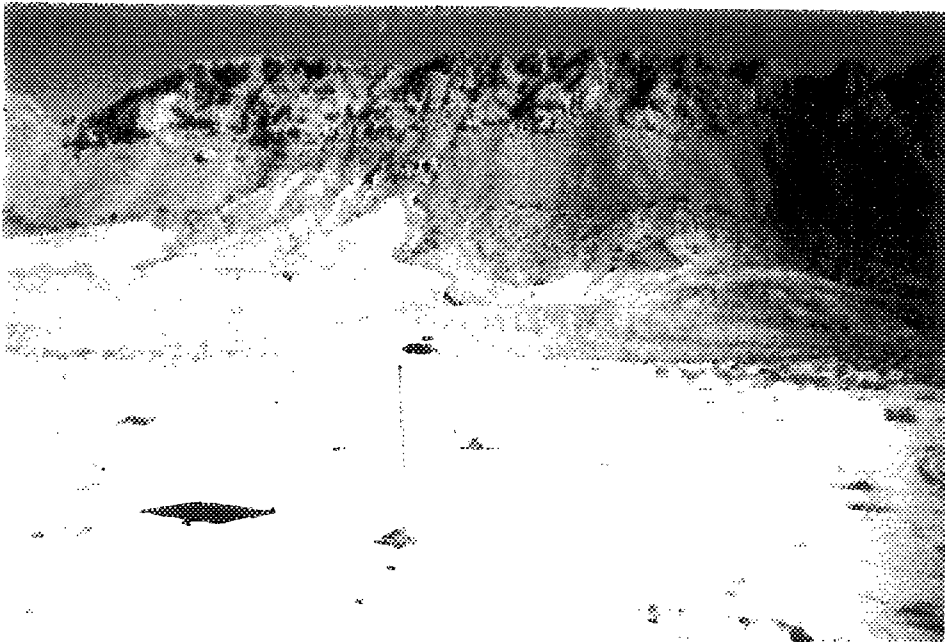
JH-2

LOOKING SOUTH AT NORTH ENTRANCE TO THE MAIN DRAINAGE CHANNEL -  
channel is cut into landfill deck above refuse



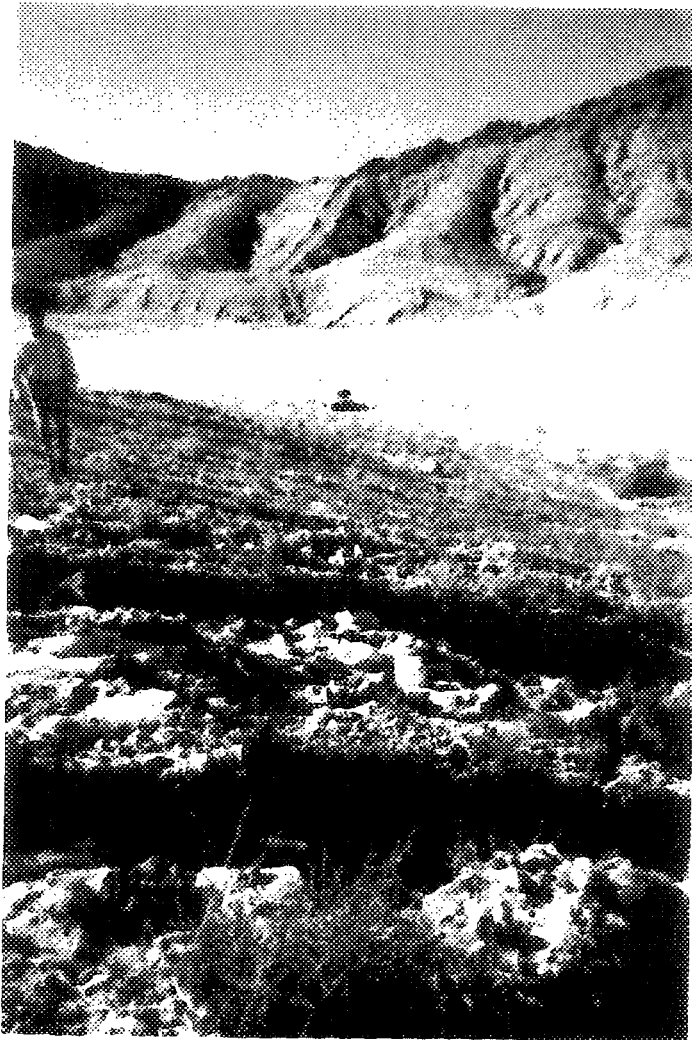
JH-3

NORTH MAIN DRAINAGE CHANNEL LOOKING SOUTH - silt bottom of acting settling/flow-equalizing basin. Refuse probably exists under the silt.



JH-4

NORTH OF MAIN DRAINAGE CHANNEL LOOKING EAST - truck in distance is parked at the base of a refuse cell shown in more detail in following photos JH-5 through JH-9.



JH-5 FROM TOP OF CELL SHOWN PREVIOUSLY IN JH-4 - shows erosion and exposed refuse

JH-6



JH-7



JH-8



JH-9



PANORAMIC OF CELL SHOWN IN JH-4 FROM NORTH LOOKING SOUTHWEST TO SOUTH - large acting sediment basin at right in JH-6 (in the distance), and exposed refuse at the top of a cell is at left in JH-9.



JH-10 LOOKING EAST AT  
APPARENT SETTLEMENT  
BASIN RESULTING FROM  
REFUSE DAM



JH-11

JH-12

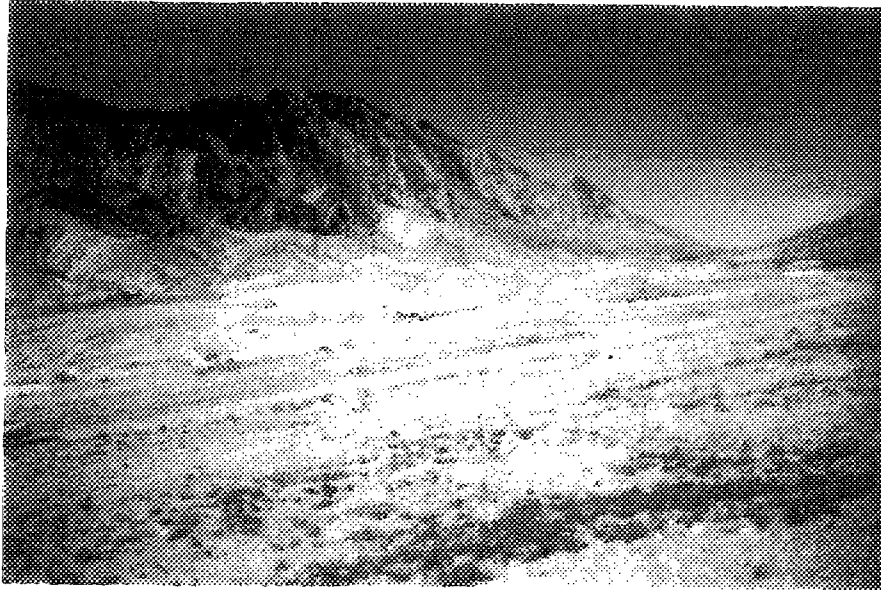


JH-13

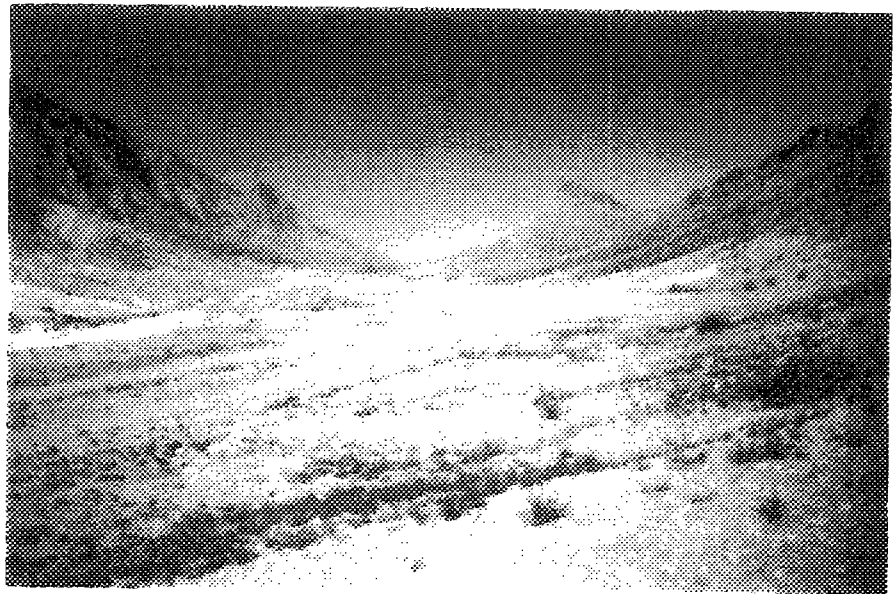


PANORAMIC VIEW OF SMALL SEDIMENT BASIN LOOKING SOUTH TO SOUTHWEST FROM NORTH SIDE - east canyon wall at left in JH-11 to refuse dam at right in JH-13 (shown from below in JH-10)





JH-14

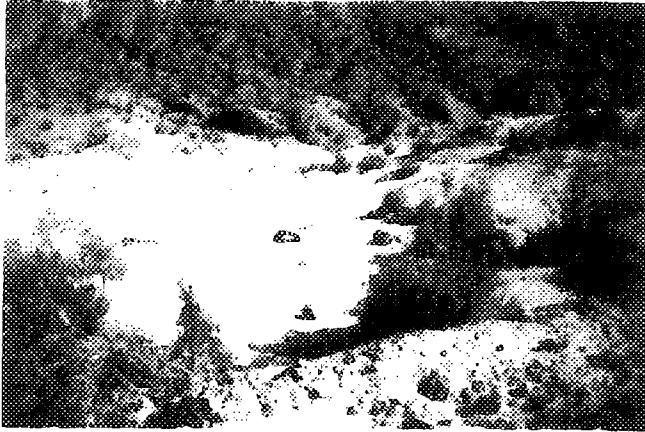


JH-15

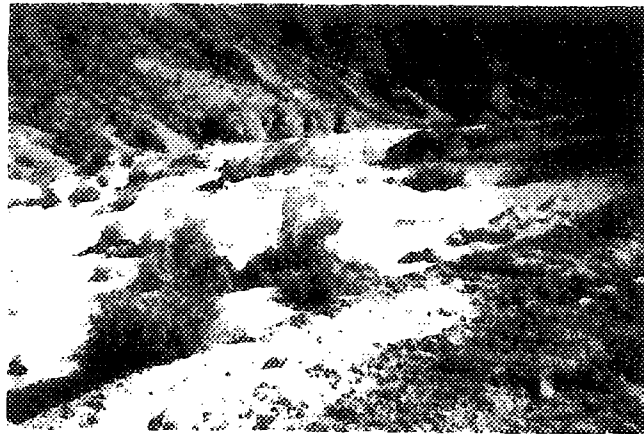
PANORAMIC VIEW OF REFUSE POCKETED ALONG EAST SIDE IN NORTH CANYON  
- areas between photographer and white areas are landfill. White areas appear to be limed septic sludge.



JH-16 FROM TOP OF FILL SHOWN IN JH-14 AND JH-15 LOOKING NORTH AT NORTH EDGE OF FILL - sludge detail in JH-20 is of brown cliffs to left of vehicles



JH-17



JH-18



JH-19

PANORAMIC VIEW TAKEN FROM NORTH EDGE OF DISPOSAL AREA IN NORTH CANYON NEAR FRONT OF VEHICLES IN JH-16 LOOKING SOUTHEAST - looking towards the location from which JH-16 was taken. The debris on the road is likely from spillover of a deep pool above the landfill area after a rain.



JH-20 DETAIL OF SEWAGE SLUDGE AT THE NORTHERNMOST EDGE OF THE NORTH CANYON DISPOSAL - as referred to in JH-16. The municipal waste shown in JH-21 and JH-22 was just to the south of this and was apparently underneath this sludge

JH-21



JH-22

JH-21 AND JH-22 ARE A PANORAMIC VIEW LOOKING SOUTH AND EAST FROM THE TOP OF THE SLUDGE SHOWN IN JH-20



JH-23

PIPE APRON AT SOUTHEASTERN CORNER OF TOP LANDFILL DECK - no side eddy protection, reinforcement, or anchorage. Probably a temporary structure to replace failed original



JH-24

LOOKING NORTH TOWARDS LANDFILL ACROSS SOUTH BOUNDARY - taken from the deep gullies which contain debris. Deep rill erosion on the south side slope is visible. No runoff control structures exist.

## ATTACHMENT A-3

### Sunrise Landfill Photo descriptions November 19, 20, 1998 inspection - John Hillenbrand

All map grid references from Drawing C13, Final Cover Plan, Harding Lawson Assoc, dated 4-12-94

Photo 1. North 16,000, East 15,500. Photo taken standing on west side of drainage channel looking due east. This side drainage runs on to upper deck of landfill across refuse with no liner visible. The ability of this swale to contain a flash storm from the canyon in the distance is doubtful. A newly constructed main diversion channel should be moved from the foreground to the base of the steep terrain in the distance, thereby preventing water from unnecessarily flowing over refuse.

Photo 2. N 17,750, E 15,250. Photo taken at the entrance to the main drainage channel looking due south (photo 1 taken approximately 1800 feet down this channel). This photo shows graded main drainage channel inadequately protected from both scour and infiltration. This channel was inadequately designed to withstand the flash-flood type of high intensity rainfall experienced in the area. This channel should be moved to the east on native material against the hills where failure would occur on native ground instead of over refuse. Movement of this channel would also entail construction of a settling/equalizing basin upstream, off of refuse.

Photo 3. N 18,000, E 15,125. Photo taken standing near quarter section marker (BLM lease boundary) north of the main drainage channel mouth looking due south (photo 2 taken 300 feet in the distance). This area where the photo is taken is over a basin that serves as a settling/ flow equalizing basin before the flow enters the main drainage channel shown in photo 2. It is unclear whether or not refuse is located under basin. This basin provides a percolation area for runoff that could contribute to leachate production or movement. If there is refuse under this basin the settling/flow equalizing basin should be moved upstream.

Photo 4. N 18,000, E 15,125. Photo taken in similar location as photo 3 but looking approximately east. Truck in distance is parked at the base of a refuse disposal area that is shown more detailed in photos 5 through 9. The next photo is taken at the top of the hill above the vehicle.

Photo 5. N 18,000 E, 15,700. Photo taken looking due west towards previous photo. This off-lease refuse disposal area has thin cover material (~ 6 inches) which is easily eroded and has not been repaired at the time of the photo.

Photos 6 through 9. N 18100, E 15700. Panoramic of off-lease fill with eroded refuse flowing towards settling basin to the right in photo 6. The on-lease landfill is in the distance of photos 6,7 and 8. Dark rows of soil on deck of on-lease landfill are material that has been removed from drainage channel between time of storm event and inspection. Photo taken standing on native material.

Photo 10 approximately N 19,000, E 16,000. Photo looking due east up the drainage that ends in a settling basin that is constructed of refuse. Ponded water in this basin would percolate through refuse. This photo is taken from the spot where the two men are walking in photo 13. The edge of the surface from which the photo is taken drops off into the basin shown on photos 11, 12 and 13.

Photos 11, 12 and 13. Off map. Panoramic near previous photo. Photos looking south to southeast. Basin has contained a large amount of water in the past as seen by the fine grained sediments and the ring of vegetation resulting from floating seeds. The drainage shown in these photos and in photo 10 should be rerouted to drain only on native material instead of on refuse.

Photos 14 and 15. Off map. Panoramic photo further up the canyon of off-lease refuse along the canyon edge. Photo looking northeast. Refuse is found in discontinuous pockets along the east side of the canyon. White piles scattered across the valley in distance are limed sewage sludge. All area between the photographer and the white areas is landfill.

Photo 16. Off map. Photo of the northern edge of the refuse seen in the previous photo, looking north. Photo taken from on top of fill. Debris on road is evidence of large overtopping of road by flood waters. Sewage sludge can be seen to the left of the vehicles as dark brown cliff-like features. A close up of this sewage sludge can be seen in photo 20. More limed sewage sludge can be seen to the upper right. This photo indicates no engineered drainage design.

Photo 17, 18 and 19. Off map. Panoramic photo of northern edge of northern off-lease disposal mass. Photo taken looking southeast from near front of vehicles in photo 16. This photo indicates a deep pooling of stormwater against the landfill before and during spillover across the road in the foreground and to the right. The debris on the road was left behind as the waters receded. The white plastic bag seen along the road in the distance at the far upper right of the panorama marks the width of the flow across the road. The depth of the pool left behind is marked by the light colored sandy deposits and can be seen up against the limed sewage sludge in the distance. Some areas of the sandy deposits have their original desiccation cracks but most have been modified by wind erosion. The white plastic bag mentioned above is the location from which photo 16 was taken.

Photo 20. Off map. Close up view of sewage sludge which forms the road base and was eroded/exposed as a result of stormwater overflowing the road. Northernmost edge of northern off-lease fill mass. This is a close up of the sewage sludge seen in photo 16. The sludge is characterized by containing a large amount of conical shells approximately 5 mm in length.

Photo 21 and 22. Off map. Panoramic taken from on top of the sewage sludge in photo 20, looking south and east towards the on-lease landfill. Vehicles are to left just out of picture. Main body of northern, off-lease fill is seen as the topographically higher area to the upper left of the panorama. Note the cutting of the fill and the road base on the far left of the panorama resulting from stormwaters flowing over the road. The plunge pool formed by cascading water to

the right of the road was excavated into sewage sludge and municipal refuse. The right side of the photo is loose refuse that was mobilized from the excavation as little buried refuse was found upstream of this site in the drainage. The width of the flood area is approximately 50 feet as it crossed the road and is marked by debris in the tumble weed to the right and the eroded edge to the limed area to the left.

Photo 23. N 13,500, E 14,500. This photo is on the southeastern corner of the top deck of the on-lease landfill. This drop structure indicates the lack of engineered design observed during the inspection. The pipe has an inadequate apron to protection from intake eddies on the sides and no reinforcement at the base of the mouth and is not anchored. The original intake structure probably failed and this temporary structure put in as a replacement.

Photo 24. N 9,500 E 12,750. Photo looking north towards landfill showing deep rill erosion of cover. This stormwater deeply eroded the edge of the landfill as it left the lease area and flowed onto BLM land without any engineered drop structure. The small side canyons in this photo and nearby that did not reach the landfill had minimal refuse in them while the main channels that reached and drained the main fill area contained refuse, indicating a good proportion of waste flowed in runoff off the site instead of being blown off site.



Attachment A-4  
Excerpted photos from Kandice Bellamy and Steve Wail



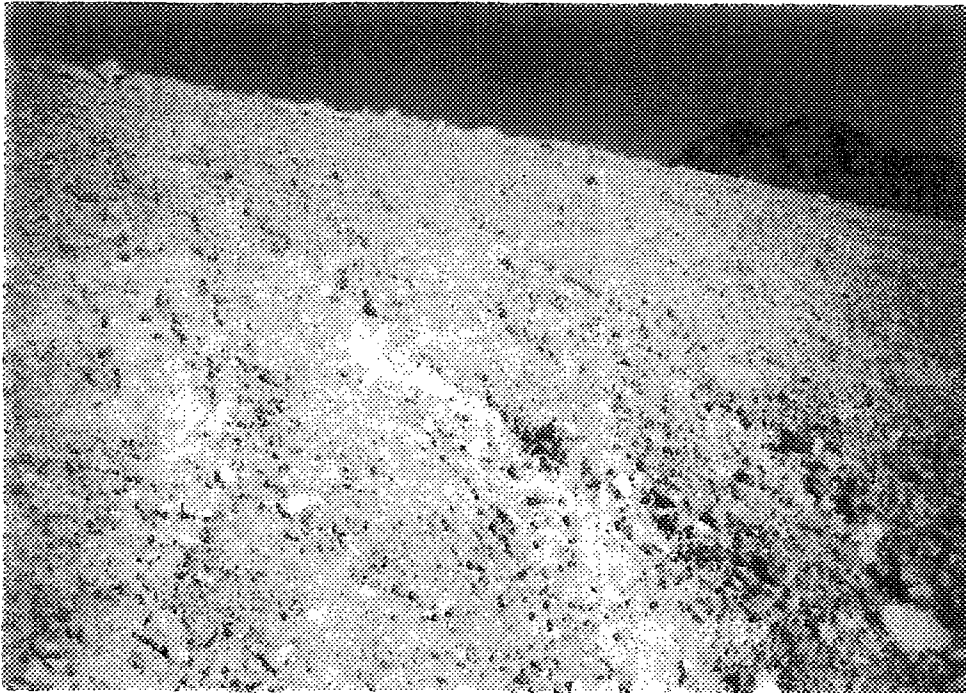
KB-2 LOOKING NORTHWEST TOWARDS MAIN LANDFILL FROM SOUTHEAST CORNER - bent half-pipe out, new half-pipes not installed; exposed trash in foreground



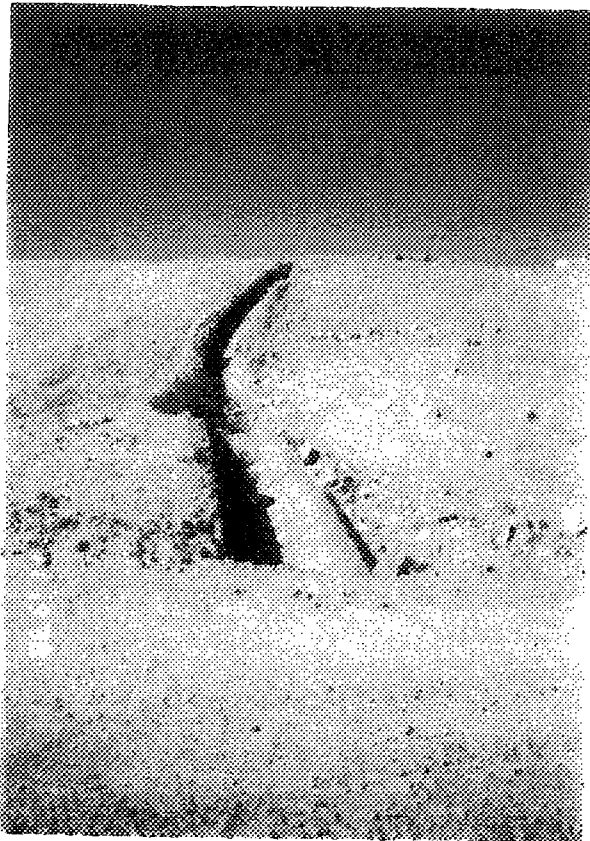
KB-3 LOOKING WEST TO LAS VEGAS FROM SAME AREA AS KB-2 - exposed trash even after regrading



KB-7 LOOKING EAST SOUTHEAST ALONG EXISTING HALF-PIPES - bent, partially sedimented, poor joints, undermining at edges



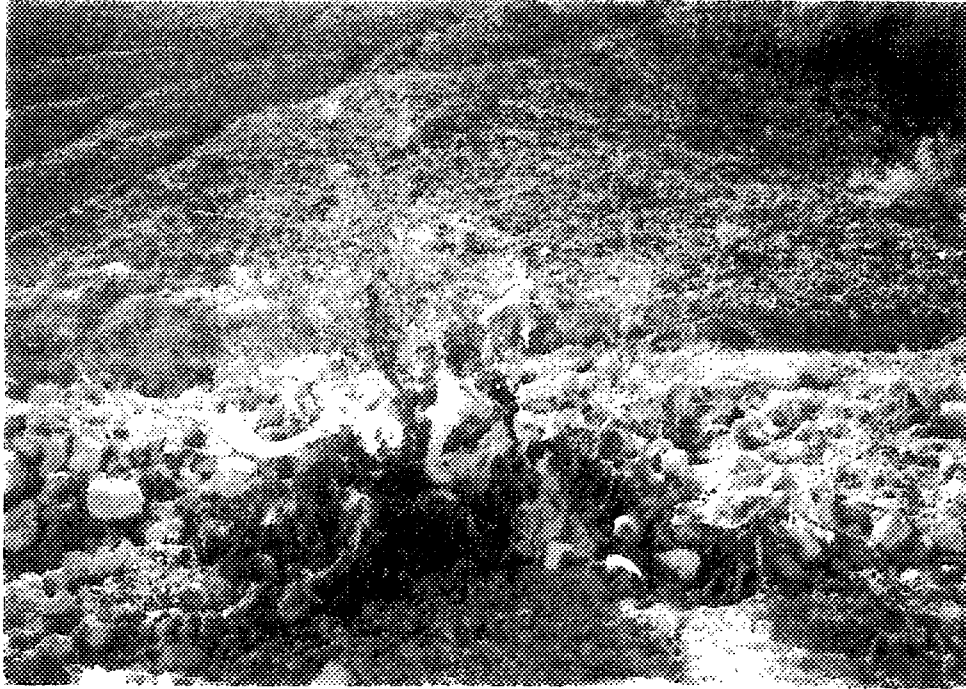
KB-8 SLOPE AT SOUTHEAST CORNER ON MAIN LANDFILL - big rocks at bottom, deep rilling



KB-10 AT SOUTHEAST CORNER,  
LOOKING WEST ACROSS  
LANDFILL - installed half-pipe with  
undermined edges, partially sedimented,  
dead-ended by regrade road



KB-12 RIP-RAP AND LINER PILES - on top of main landfill deck



KB-19 DEBRIS ALONG SOUTH BOUNDARY



KB-20 EMBEDDED DEBRIS ALONG SOUTH BOUNDARY - including needles



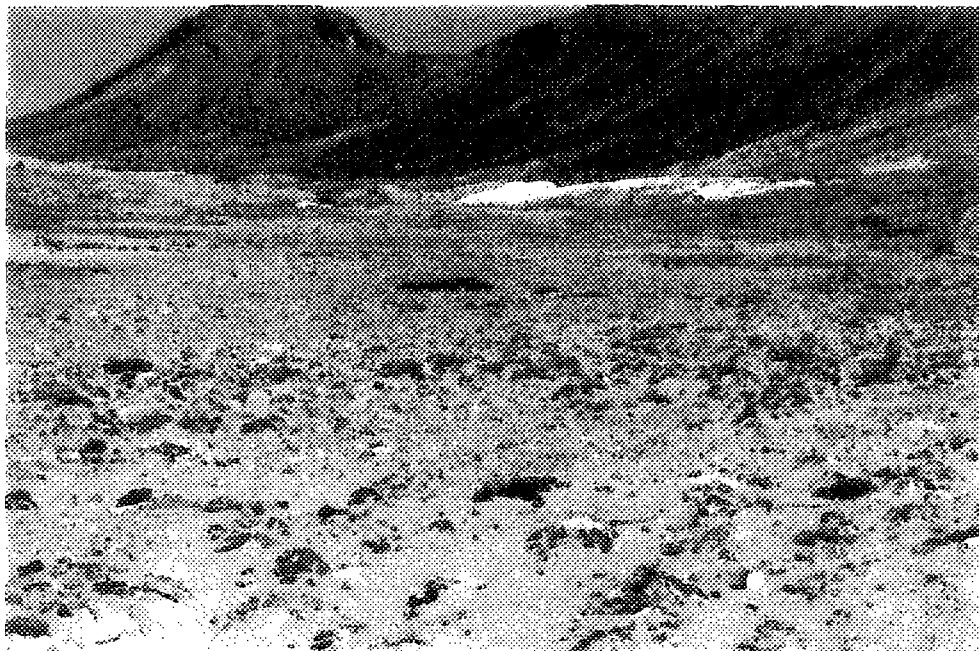
SW-1 SOUTHEAST OUTLET LOOKING SOUTH TOWARDS HENDERSON - through scoured rock channel, exposed trash in SW-6 on top, upper right



SW-6 WEST SIDE OF DRAINAGE CHANNEL AT TOP OF SIDE SLOPE, LOOKING WEST ACROSS SOUTHEAST CORNER OF UPPER LANDFILL - exposed trash in regraded area



SW-9 SOUTHEAST QUARTER OF TOP LANDFILL DECK - discolored soil, area of methane venting in recently regraded area



SW-11 LOOKING AT NORTHEAST CANYON AREA FROM NORTH END OF ACTING SETTLEMENT BASIN - white areas are exposed limed sewage sludge, dispersed refuse in silt bottom of basin, foreground



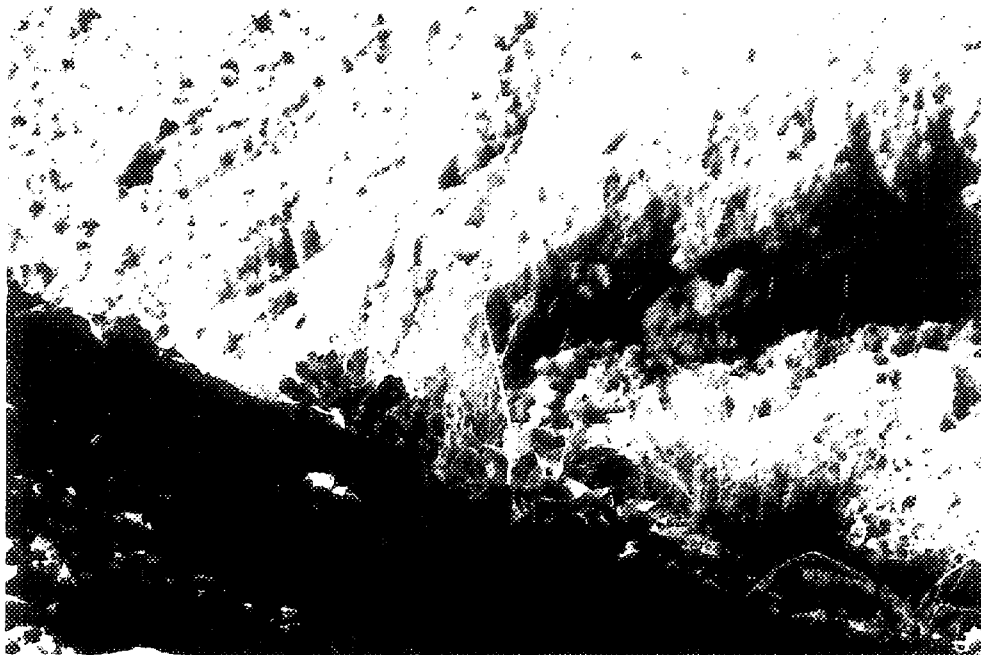
SW-12 DRUMS EAST SIDE OF UPPER NORTHEAST CANYON - above limed sludge areas in SW-11



SW-13 NORTHEAST CANYON AREA - lime sludge pile just north of wash-out area in SW-14, shows erosion

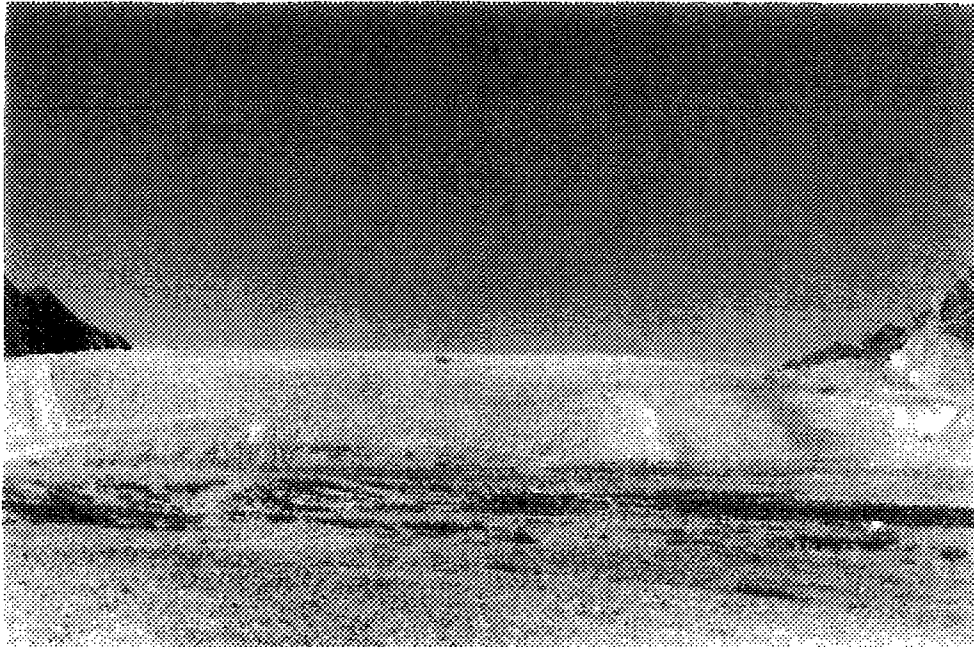


SW-15 LOOKING SOUTH FROM BOTTOM OF SOUTHEAST OUTLET DROP - visible seep, remnant of larger seep after rain storm (in same area), after regrading

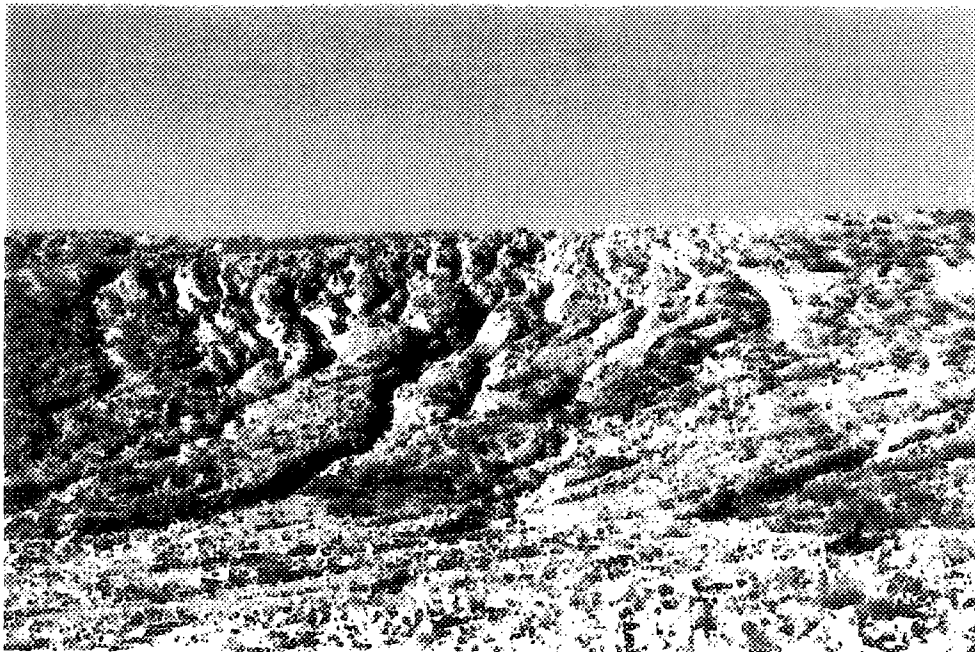


SW-17 IN LARGE UNNAMED TRIBUTARY ON THE EAST SIDE OF THE SOUTHERN WASH AREAS - several hundred feet south of the seep shown in SW-15. Flowering golden poppy, characterized as a potentially threatened species





SW-18 LOOKING AT MAIN LANDFILL SOUTH SLOPE FROM SOUTH LEASE BOUNDARY AREA - being actively reworked during inspection



SW-20 LOOKING NORTH FROM SOUTH LEASE BOUNDARY AT SOUTH LANDFILL SLOPE - deep gullies on south slope, trash including medical waste at toe of slope



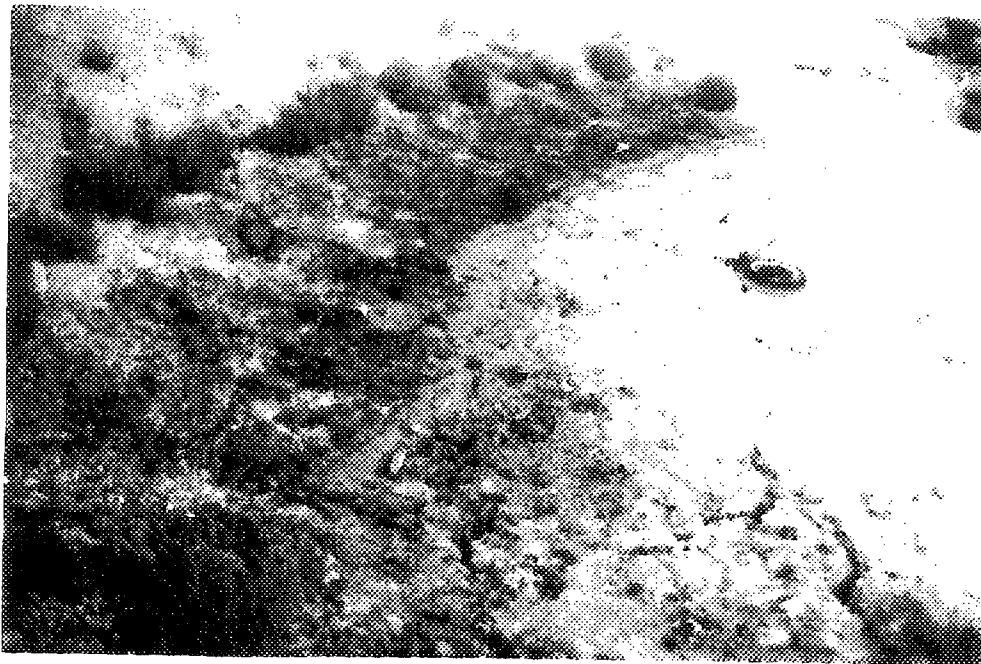
SW-21 LOOKING WEST ALONG SOUTH LEASE BOUNDARY - deep gullies



SW-22 LOOKING AT TOE OF LOW PERMEABILITY COVER IN SOUTHWEST AREA - deep rills on slope, with evidence of previous ponding from float remnant



SW-24 LOOKING EAST SOUTHEAST AT EROSION ON FACE OF PRE-91 COVER IN SOUTHWEST CORNER



SW-25 LOOKING NORTH FROM SOUTH EDGE OF PREVIOUSLY PONDED AREA IN WEST BURN PIT AREA - tire, tarry bottom