

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

ORDER NO. 92-013

WASTE DISCHARGE REQUIREMENTS
FOR
UNITED STATES MARINE CORPS
AIR GROUND COMBAT CENTER
CLASS III LANDFILL
Twentynine Palms - San Bernardino County

The California Regional Water Quality Control Board, Colorado River Basin Region, finds that:

1. The United States Marine Corps Air Ground Combat Center (hereinafter referred to as the discharger), Twentynine Palms, California 92278, submitted a Report of Waste Discharge dated September 4, 1991 to update waste discharge requirements for an existing solid waste management facility (WMF) located in the S $\frac{1}{4}$ of Section 8 and NE $\frac{1}{4}$ of Section 17, T2N, R9E, SBB&M, as shown in Attachments A, B, C and D incorporated herein and made a part of this Board Order. This property is owned by the United States Navy (hereinafter also referred to as the discharger).
2. The WMF has been subject to waste discharge requirements under Board Order No. 88-139 which was adopted by the Regional Board on November 30, 1988. The waste discharge requirements are being updated to comply with Section 13263 of the California Water Code.
3. The discharger submitted a Solid Waste Assessment Testing (SWAT) report dated May 1988 as required by Section 13273 of the California Water Code. The SWAT report contains technical information describing the site hydrogeology, topography, disposal operations and waste classification required in Chapter 15, Division 3, Title 23 of the California Code of Regulations (hereinafter also referred to as Chapter 15).
4. In view of the technical information in Finding No. 3, above, it is appropriate that the Regional Board adopt revised waste discharge requirements for this WMF to include more stringent requirements to protect the quality of the ground water in the vicinity of the site.
5. The SWAT data indicates that ground water downgradient of the site contains volatile organics above background levels. The WMF characteristics listed in Section 2533(b)(1) of Chapter 15 are not sufficient to ensure protection of the quality of ground water in the vicinity of the site. It is not feasible to remove the wastes already in place and retrofit the site with clay or synthetic liners or leachate collection and removal systems as specified in Article 4 of Chapter 15. In order to protect the ground water from further degradation, all new waste disposal cells must have adequate liners and leachate collection and removal systems.

*Replaced
by
95-006*

*Adopted
9-15-93
emended
B.O.
93-071*

6. The active landfill presently receives 175 cubic yards per day of non-hazardous solid waste, as defined in Chapter 15 which includes domestic waste, and construction/demolition waste. The facility was opened in 1972 and has received only wastes generated at the base and is not open to the public. The site is 48 acres. The active area is approximately 34.4 acres.
7. The total volume of material disposed at this landfill is 980,000 cubic yards. It has a total remaining capacity of 480,000 cubic yards and an estimated remaining life of 12 years, with the liner restriction stated in Discharge Specification #2 below. However, the base Director of Installations and Logistics in correspondence dated December 24, 1991 proposed to use only cells No. 21 and 22 through 1997, to stair step over those cells and previously used cells #19 and 20, at a maximum slope ratio of 3.1 and is in the process of conducting a site selection study for a new landfill. Assuming a new landfill is ready to accept waste by 2004, this proposal is expected to meet the base disposal needs through the year 2004, and would preclude the need for a liner at this landfill.
8. Waste disposal at the site is accomplished by the area method. Lifts are formed by covering trash with fill from the adjacent borrow area. The borrow area will eventually be filled and a new borrow area formed downgradient. The operation consists of a working face of about 150 feet. Lifts are built up to approximately 50 feet. One to two feet of cover is applied to the working face and top of the active lift at the end of each day.
9. Land within 1,000 feet of this site is natural desert.
10. The discharger submitted the fourth quarterly monitoring report on June 20, 1991. Groundwater could not be reached at this site. Wells at landfill No. 3 were used for downgradient sampling. Three 4-inch lysimeters were constructed to a depth of 100 feet at 15 degrees to the vertical to detect leachates that may escape from the landfill. They remain dry, and have been grouted. The location of the monitoring wells and lysimeters are shown in Attachment C.
11. Depth-to-groundwater at the site could not be determined although boreholes were drilled as deep as 347.5 feet below grade. Landfill No. 3 (Site 16) was found to have ground water between 397 and 411 feet below grade (See Attachment B).
12. Average annual precipitation has been calculated at 4.11 inches with an average annual evaporation rate of 120 inches.
13. Determining total dissolved solids (TDS) at this site was not possible since no groundwater samples were procured. TDS values at Site 16 (nearest available data point) ranged from 920 to 1,830 ppm.
14. Attachments "A", "B", "C" and "D", showing the location and describing the site, are part of this Board Order.
15. The WMF lies on the southern boundary of the Mojave Desert in San Bernardino County and is considered part of the Mojave Desert Geomorphological Province. The site is bounded on the northeast by the

northwest-trending Bullion Mountain range, on the south by the Pinto and Little San Bernardino Mountains, on the west by the San Bernardino and San Gabriel Mountains, and on the north by numerous northwest-trending smaller ranges and faults. Elevation of the site is approximately 2,000 feet above mean sea level.

16. The landfill lies within a steep-walled canyon which drains to the south onto a broad alluvial fan.
17. The WMF is underlain by Tertiary basement rock with overlying Quaternary alluvial and playa deposits. The alluvial valley fill that overlies the crystalline bedrock is a major water-bearing unit in the area. These units yield water freely to wells when saturated.
18. The Water Quality Control Plan for the Colorado River Basin Region of California was adopted May 15, 1991 and designates the beneficial uses of ground and surface waters in this Region.
19. The beneficial uses of ground waters in the Dale Hydrologic Unit are:
 - a. Municipal supply (MUN)
 - b. Industrial supply (IND)
 - c. Agricultural supply (AGR)
20. The Board has notified the discharger and all known interested agencies and persons of its intent to update waste discharge requirements for this discharge.
21. The Board in a public meeting heard and considered all comments pertaining to this discharge.
22. In accordance with Section 15301, Chapter 3, Title 14 of the California Code of Regulations, the issuance of these waste discharge requirements, which govern the operation of an existing facility involving negligible or no expansion of use beyond that previously existing, is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 21000 et seq.).

IT IS HEREBY ORDERED, that the discharger shall comply with the following:

A. Discharge Specifications

1. By January 30, 1993 the discharger shall submit an acceptable proposal to conduct a monitoring and response program in accordance with Article 5, Chapter 15.
2. New waste management units constructed after July 1, 1997 on top of virgin land (land which does not contain solid waste) must have adequate liners and leachate collection and removal systems as specified in Chapter 15. The discharger shall not utilize more than two new cells before this date without consent of the Executive Officer. These two cells are Nos. 21 and 22 as shown on Attachment D.
3. New lined waste management units and expansion of existing units shall not be located on a known Holocene fault. The discharger shall conduct a

geological survey mapping all Holocene faults within the vicinity of the landfill. The results of said survey shall be submitted by July 1, 1993. The geological survey shall be conducted under the direct supervision of a California registered geologist.

4. The treatment or disposal of wastes at this facility shall not cause pollution or nuisance as defined in Sections 13050(1) and 13050(m) of Division 7 of the California Water Code.
5. Waste materials shall be confined to the waste management facility as described on the attached site maps.
6. Waste material shall not be discharged on any ground surface which is less than five feet above the highest anticipated ground water level.
7. This discharge shall not cause degradation of any water supply.
8. The waste management units shall be designed, constructed, operated, and maintained to prevent inundation or washout due to floods having a predicted frequency of once in 100 years.
9. Surface drainage from tributary areas, and internal site drainage from surface or subsurface sources, shall not contact or percolate through the wastes discharged at this site.
10. The exterior surfaces of the disposal area, including the intermediate and final landfill covers, shall be graded and maintained to promote lateral runoff of precipitation and to prevent ponding.
11. The discharger shall remove and relocate any wastes which are discharged at this site in violation of these requirements.
12. Water used for site maintenance shall be limited to amounts necessary for dust control.
13. The discharger shall provide a final cover for closure of the landfill units in conformance with the requirements of Chapter 15.
14. The discharger shall maintain a hazardous waste-load checking program at the WMF. The discharger shall report the findings of said program in the quarterly monitoring reports submitted in accordance with Provision C.3 of this Order.

B. Prohibitions

1. The discharge or deposit of hazardous waste (as defined in Chapter 15) at this site is prohibited.
2. The discharge or deposit of designated waste (as defined in Chapter 15) at this site is prohibited.
3. The discharge of liquid or semi-solid waste (i.e., waste containing less than 50 percent solids) to the landfill units is prohibited unless approved by the Regional Board's Executive Officer.

4. The discharge of wastes to surface waters, surface water drainage courses, or to ground waters is prohibited.
5. The discharge or deposit of waste to land not owned or controlled by the discharger is prohibited.
6. The co-disposal of incompatible wastes is prohibited.

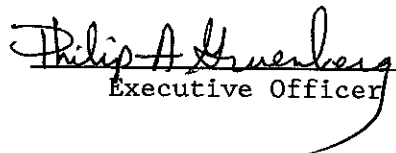
C. Provisions

1. The discharger shall ensure that all site operating personnel are familiar with the contents of this Board Order.
2. The discharger shall notify the Regional Board of any material change or proposed change in the character, location, or volume of the wastes discharged and of any proposed expansion plans. This notification shall be accompanied by an amended report of waste discharge and any additional information as may be required by the Regional Board's Executive Officer.
3. The discharger shall comply with "Monitoring and Reporting Program No. 92-013", and future revisions thereto, as specified by the Regional Board's Executive Officer.
4. The discharger shall maintain legible records on the volume and type of each waste discharged at the site. These records shall be available for review by representatives of the Regional Board at any time during normal business hours. At the beginning of the post-closure maintenance period, copies of these records shall be sent to the Regional Board.
5. The discharger shall maintain visible monuments identifying the boundary limits of the entire waste management facility.
6. One year prior to the anticipated closure of the facility or any unit (portion) thereof, the discharger shall submit to the Regional Board, for review and approval by the Executive Officer, a closure and post-closure maintenance plan in accordance with Article 8 of Chapter 15.
7. The discharger shall immediately notify the Regional Board of any flooding, slope failure or other change in site conditions which could impair the integrity of waste containment facilities or of precipitation and drainage control structures.
8. Prior to any change in ownership or management of this operation, the discharger shall transmit a copy of this Board Order to the succeeding owner/operator, and forward a copy of the transmittal letter to the Regional Board.
9. The discharger shall comply with all applicable provisions of Chapter 15 that are not specifically referred to in this Order.
10. All containment structures and erosion and drainage control systems shall be designed and constructed under direct supervision of a California registered civil engineer and shall be certified by the individual as meeting the prescriptive standards and performance goals of Chapter 15.

11. Materials used to construct liners shall have appropriate physical and chemical properties to ensure containment of wastes over the operating life, closure and post-closure maintenance period of the landfill.
12. In-place permeabilities of liners shall be determined in the field using techniques approved by the Executive Officer. Construction methods and quality assurance procedures shall be sufficient to ensure that all parts of the liners are adequate to contain landfill leachate.
13. Each lined disposal cell shall have a leachate collection and removal system. Leachate collection sumps shall be designed and operated to keep leachate levels at the minimum needed to ensure efficient pump operation. Leachate collected shall be disposed of in accordance with local, state and federal regulations.
14. Materials used to construct leachate collection and removal systems shall have appropriate physical and chemical properties to ensure the required transmission of leachate through the system over the operating life, and closure and post-closure maintenance period of the landfill. Materials shall have sufficient strength and thickness to prevent collapse under the pressures exerted by overlying wastes, waste cover materials and equipment used on the landfill.
15. The discharger shall maintain in good working order, and operate as efficiently as possible, any facility or control system installed by the discharger to achieve compliance with the waste discharge requirements.
16. This Board Order is subject to Regional Board review and updating, as necessary, to comply with changing State or Federal laws, regulations, policies, or guidelines, or changes in the discharge characteristics, in three year increments from the effective date of this Board Order.
17. The Regional Board considers the property owner to have a continuing responsibility for correcting any problems which may arise in the future as a result of this waste discharge.

IT IS FURTHER ORDERED THAT, Board Order No. 88-139 be superseded by this Order.

I, Philip A. Gruenberg, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, Colorado River Basin Region, on January 22, 1992.


Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
COLORADO RIVER BASIN REGION

MONITORING AND REPORTING PROGRAM NO. 92-013
FOR
UNITED STATES MARINE CORPS
AIR GROUND COMBAT CENTER
CLASS III LANDFILL
Twentynine Palms - San Bernardino County

Location of Discharge: S $\frac{1}{2}$, Section 8 and NE $\frac{1}{4}$, Section 17, T2N, R9E, SBB&M

MONITORING

The discharger shall monitor all wastes discharged to the disposal site and report to the Regional Board the following:

1. WASTE MONITORING

<u>Item</u>	<u>Unit</u>	<u>Reporting Frequency</u>
a. Quantity Discharged	Cubic Yards	Quarterly
b. Type of Materials Discharged	-	Quarterly
c. Remaining Capacity of Waste Management Unit	Cubic Yards	Annually
d. Any Discharge of Wastes Other Than Those Allowed by this Board Order	Type, Volume and Location	Immediately upon becoming aware that the waste has been discharged together with action for immediate correction and prevention of recurrence.

2. GROUND WATER MONITORING

Ground water monitoring wells (MW15-1, MW15-2, MW15-3, MW15-4, MW15-5, MW16-2, MW16-3) shall be sampled quarterly during March, June, September and December. Ground water samples shall be analyzed for the following:

<u>Parameter</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Reporting Frequency</u>
a. Total Dissolved Solids	mg/l	Grab	Quarterly
b. Sulfate	mg/l	Grab	Quarterly
c. Chloride	mg/l	Grab	Quarterly
d. Nitrate	mg/l	Grab	Quarterly

<u>Parameter</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Reporting Frequency</u>
e. Total Organic Carbon	mg/l	Grab	Quarterly
f. Purgeable Halocarbons (EPA Method 601)	mg/l	Grab	Quarterly
g. Purgeable Aromatics (EPA Method 602)	mg/l	Grab	Quarterly
h. pH	Number	Grab	Quarterly
i. Ground Water Elevations	Feet	Grab	Quarterly

REPORTING

1. Quarterly monitoring reports shall be submitted to the Regional Board by January 15, April 15, July 15, and October 15 of each year. Annual monitoring reports shall be submitted by January 15 of each year.
2. Monitoring reports shall be certified to be true and correct and shall contain the required information at the frequency designated in this monitoring program.
3. Monitoring data shall be arranged in tabular form so that the date, the constituents, the concentrations and the units are readily discernible.

Submit monitoring reports to:

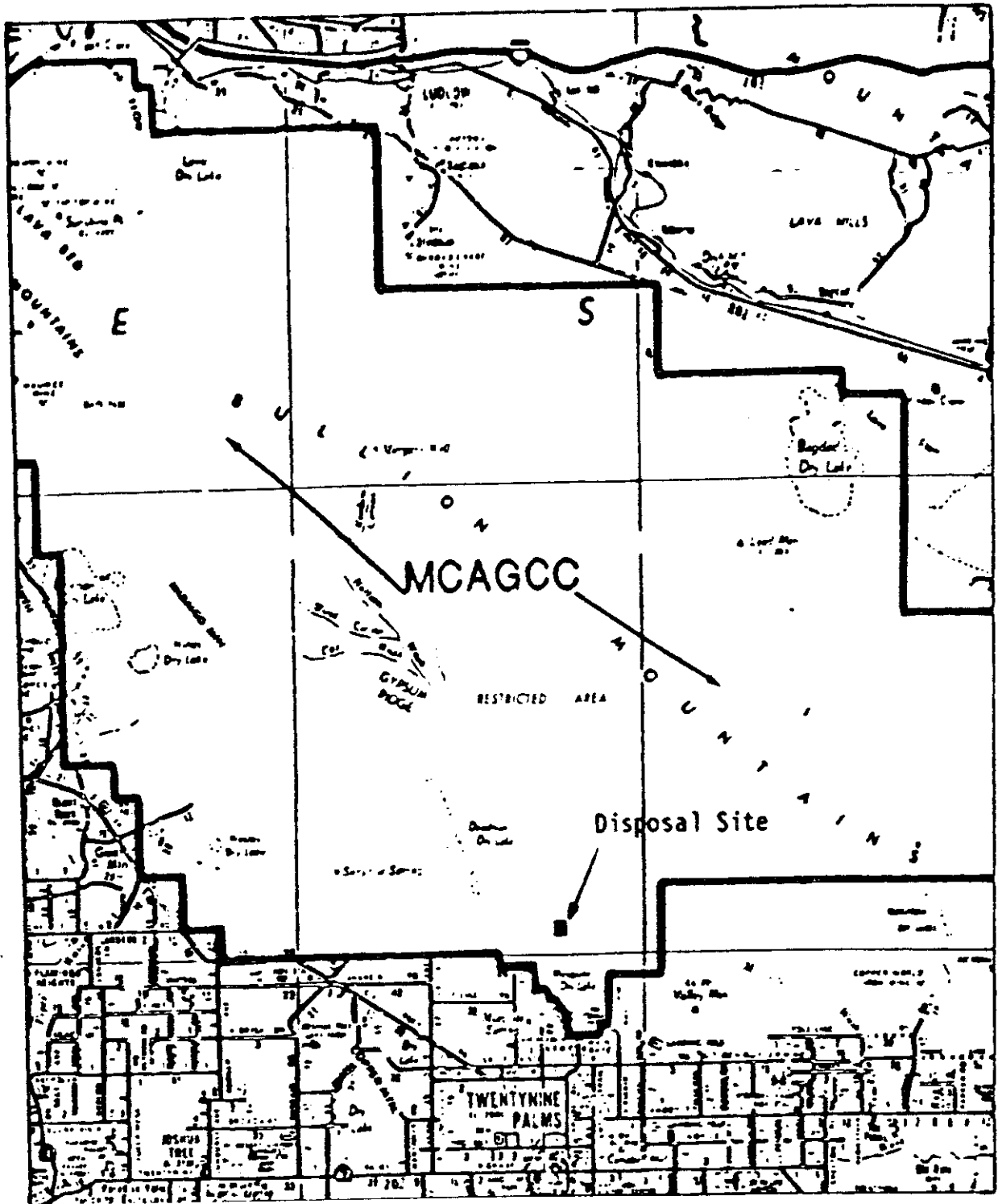
California Regional Water Quality Control Board
Colorado River Basin Region
73-271 Highway 111, Suite 21
Palm Desert, CA 92260

ORDERED BY:

Philip A. Guenher
Executive Officer

January 22, 1992

Date



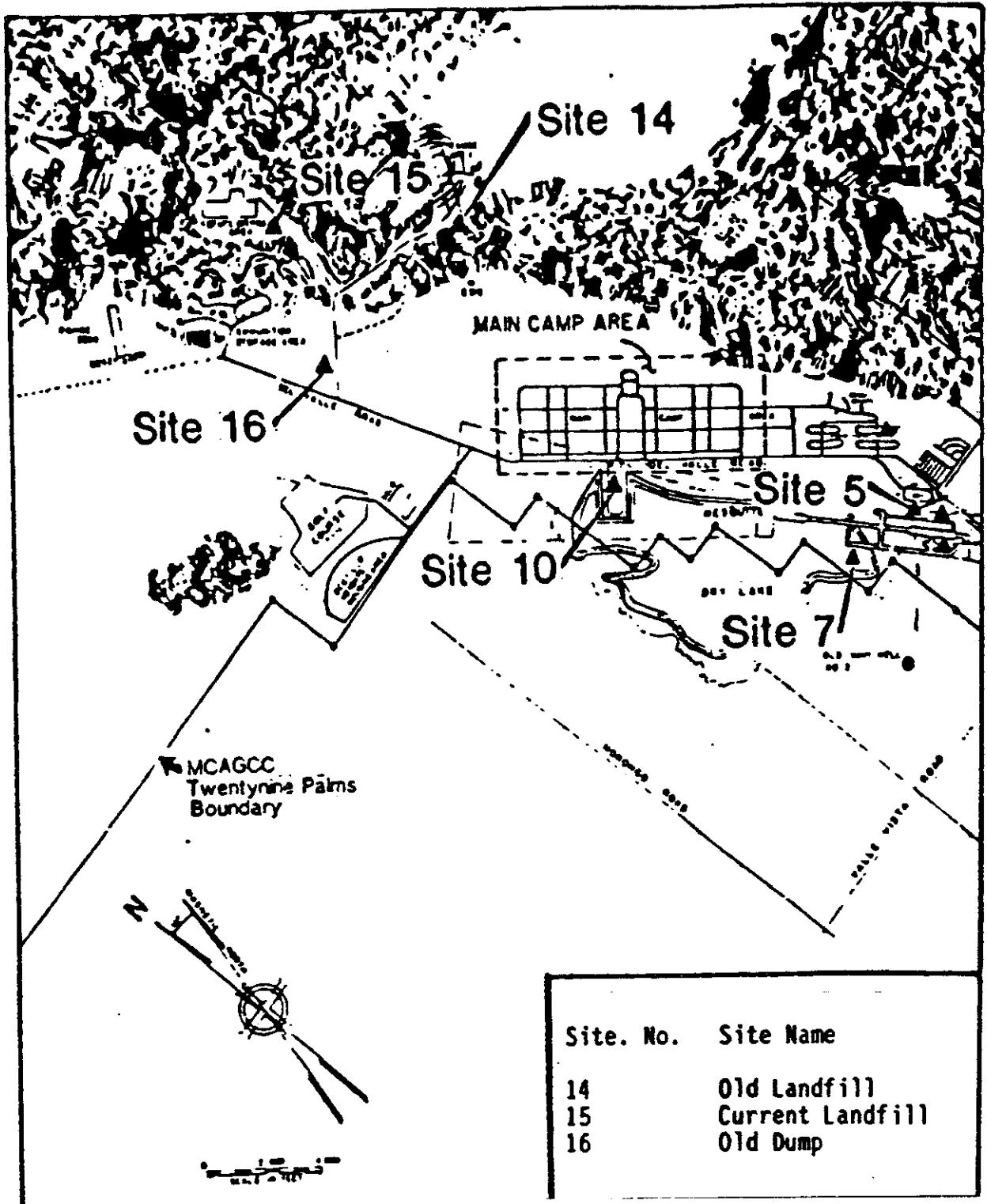
Attachment A

SITE MAP

UNITED STATES MARINE CORPS
AIR GROUND COMBAT CENTER
CLASS III LANDFILL
Twentynine Palms - San Bernardino County
S $\frac{1}{2}$, Section 8, NE $\frac{1}{4}$, Section 17, T2N, R9E, SBB&M

SCALE: 1 $\frac{1}{2}$ " = 10 miles

Board Order No. 92-013



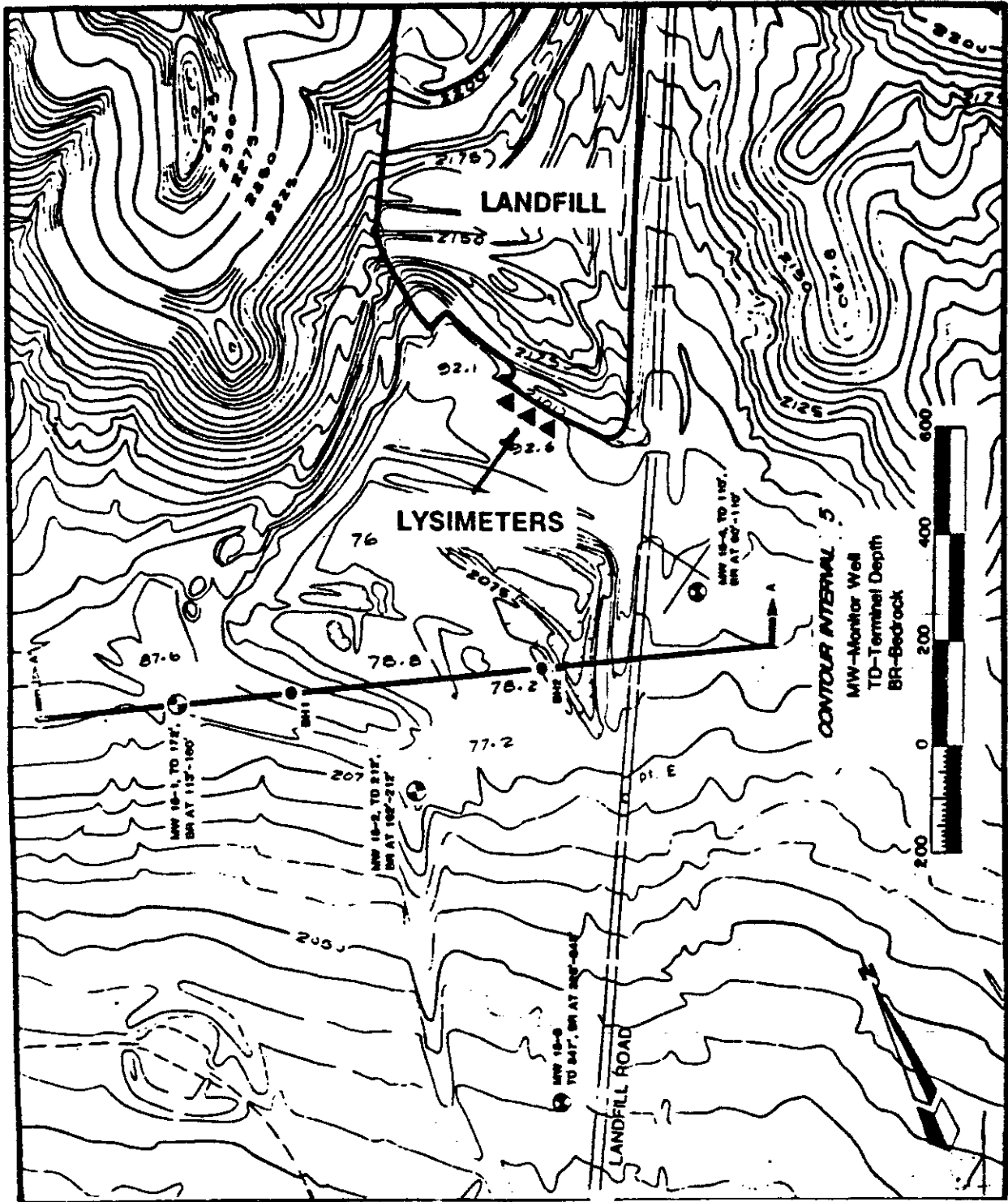
Attachment B

SITE MAP

UNITED STATES MARINE CORPS
 AIR GROUND COMBAT CENTER
 CLASS III LANDFILL
 Twentynine Palms - San Bernardino County
 S½, Section 8, NE¼, Section 17, T2N, R9E, SBB&M

SCALE: 1" = 4,000'

Board Order No. 92-013

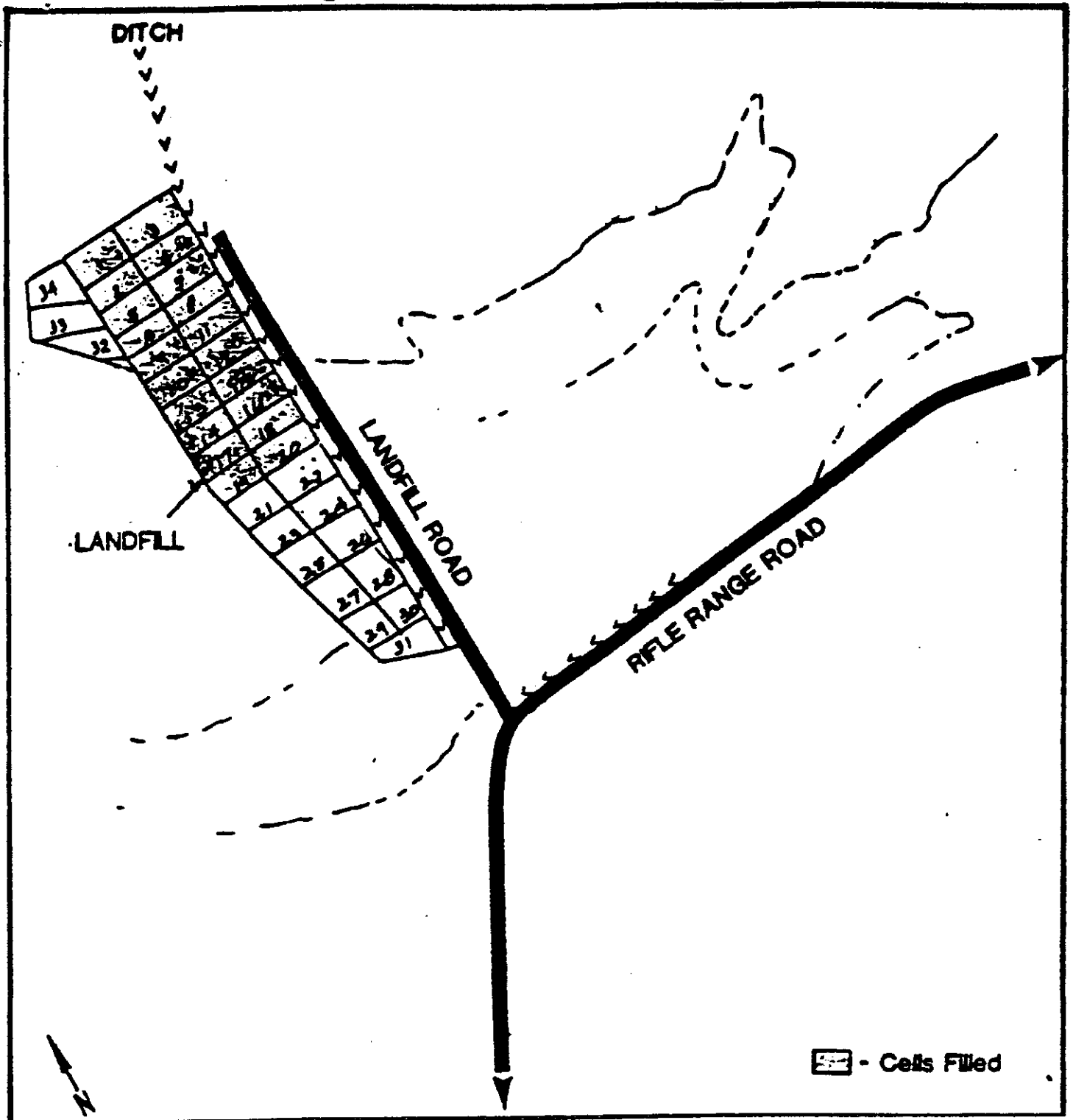


Attachment C

SITE MAP

UNITED STATES MARINE CORPS
AIR GROUND COMBAT CENTER
CLASS III LANDFILL
Twentynine Palms - San Bernardino County
S½, Section 8, NE¼, Section 17, T2N, R9E, SBB&M

Board Order No. 92-013



Attachment D

SITE MAP

UNITED STATES MARINE CORPS
AIR GROUND COMBAT CENTER
CLASS III LANDFILL
Twentynine Palms - San Bernardino County
S½, Section 8, NE¼, Section 17, T2N, R9E, SBB&M

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