

FILED
FIFTH JUDICIAL DISTRICT

MAY 22 1989

Karen D. Quilter, Nye County Clerk

ARTE ROBB

Deputy

Case No. 11178

Department No.

IN THE FIFTH JUDICIAL DISTRICT COURT OF THE STATE OF NEVADA
IN AND FOR THE COUNTY OF NYE

THE STATE OF NEVADA, EX REL.
ROLAND D. WESTERGARD, DIRECTOR OF
THE DEPARTMENT OF CONSERVATION AND
NATURAL RESOURCES,

Plaintiff,

vs.

REYNOLDS ELECTRICAL AND ENGINEERING
COMPANY, A Texas Corporation,

Defendant.

ORDER

Pursuant to the Consent for the Issuance of a Decree which has been entered into by and between the Plaintiff and Defendant,

IT IS HEREBY ORDERED:

1. Defendant is subject to a civil penalty and damages, and shall:

(a) Pay the amount of fifteen thousand dollars (\$15,000.00) by check made payable to the Nevada Commission for the Preservation of Wild Horses.

(b) Coordinate, cooperate, and consult with the Bureau of Land Management (BLM), the federal agency with management authority on the Nevada Wild Horse Range, to develop and/or reconstruct three (3) water sources for use by wild horses. The specific locations for development and/or reconstruction

1 are to be determined by the BLM in coordination and concurrence with the Nellis
2 Range Complex Five Party Group and will be identified by name and incorporated
3 into this document as Exhibit "A". Exhibit "A" shall be provided to Plaintiff
4 and approved by Plaintiff within ninety (90) days from execution of this
5 Agreement.

6 (c) Complete development and/or reconstruction within one (1) year
7 according to all BLM guidelines and directions and provide project maintenance
8 for a period of three (3) years subsequent to completion.

9 (d) Subsequent to completion of the development and/or reconstruction,
10 Defendant shall provide Plaintiff with a written statement from the BLM cer-
11 tifying completion of the work according to BLM guidelines for Plaintiff's
12 approval.

13 (e) Subsequent to completion of maintenance, Defendant shall provide
14 Plaintiff with a written statement from the BLM certifying completion of the
15 maintenance according to BLM guidelines for Plaintiff's approval.

16 (f) Submit a request to the Department of Energy or Department of
17 Defense to allow an independent representative designated by Plaintiff to
18 inspect the designated springs prior to construction, after construction and
19 annually to verify proper development and maintenance of the springs.

20 4. Upon payment of such sums and the completion of the tasks outlined
21 above, Defendant REECO, shall be released by Plaintiff from any further action
22 or proceeding of any nature, administrative or judicial by Plaintiff as to
23 violations alleged herein.

24 Consent Decree entered in accordance with the foregoing this 22 day
25 of May, 1989.

26 **WILLIAM P. BEKO**

27 _____
28 District Judge

1 Case No. 11178
2 Department No.

FILED
FIFTH JUDICIAL DISTRICT
MAY 22 1989
Teresa D. Quiter, Nye County Clerk
By ARTE ROBB Deputy

6 IN THE FIFTH JUDICIAL DISTRICT COURT OF THE STATE OF NEVADA
7 IN AND FOR THE COUNTY OF NYE

10 THE STATE OF NEVADA, EX REL.
11 ROLAND D. WESTERGARD, DIRECTOR OF
12 THE DEPARTMENT OF CONSERVATION AND
NATURAL RESOURCES,

13 Plaintiff,

14 vs.

15 REYNOLDS ELECTRICAL AND ENGINEERING
COMPANY, A Texas Corporation,

16 Defendant.

CONSENT FOR THE
ISSUANCE OF A DECREE

18 Plaintiff, State of Nevada, Ex Rel. Roland D. Westergard, Director of
19 the Department of Conservation and Natural Resources ("DCNR") through the
20 Division of Environmental Protection ("DEP") having filed the Complaint herein
21 alleging that Defendant Reynolds Electrical and Engineering Company ("REECO")
22 unlawfully discharged urea into waters of the State without a permit in viola-
23 tion of the provisions of the Nevada Water Pollution Control Law ("NWPCCL"),
24 NRS 445.131 to 445.354.

25 Plaintiff and Defendant, with no admission of liability, have agreed
26 that all matters arising from or related to the above incident, including those
27 set forth in the said Complaint should be settled without trial.

1 And Plaintiff and Defendant, having carefully considered the allega-
2 tions of the Complaint herein, hereby agree and stipulate as follows:

3 STIPULATIONS

4 1. This Court has jurisdiction of the subject matter herein and of the
5 parties consenting for the purpose of entering this Consent Decree.

6 2. The provisions of the Consent Decree shall apply to and be binding
7 upon all the parties to this action, their officers, directors, agents, ser-
8 vants, employees, successors and assigns, and all persons, firms, and cor-
9 porations having notice of the Consent Decree and who are or will be acting in
10 concert and privity with the Defendants to this action or their officers,
11 agents, servants, employees, successors and assigns.

12 3. The State of Nevada DCNR, DEP under the authority of
13 NRS 445.214(1) has the power and duty to administer and enforce the provisions
14 of the NWPCL.

15 4. Defendant REECO is a Texas corporation authorized to do business in
16 Nevada as a contractor for the U.S. Department of Energy at the Tonopah Test
17 Range.

18 5. NRS 445.221 provides in pertinent part that
19 except as authorized by a permit issued by the Department
20 under the provisions of NRS 445.131 to 445.354 inclusive
21 and regulations promulgated under such sections by the
22 commission it is unlawful for any person to discharge
23 from any point source any pollutant into any waters of
24 the State.

25 6. "Pollutant" within the meaning of the NWPCL, NRS 445.178 includes
26 the chemical waste urea.

27 7. NRS 445.331 provides that any person who unlawfully discharges or
28

1 aids and abets in the unlawful discharge of pollutants into waters of the State
2 shall pay a civil penalty of up to \$25,000 for each day of violation and for the
3 payment of damages including compensation for any loss or destruction of
4 wildlife, fish or aquatic life.

5 8. On or about November 2, 1988, REECO employees rinsed and flushed
6 waste urea from a spreader hopper onto the ground over a period of approximately
7 1.5 hours.

8 9. The urea and water formed several small ponds or catchments
9 including one which measured 30' by 25'. Low soil permeability prevented the
10 water from soaking into the ground.

11 10. On or about November 3, 1988, a Nye County Sheriff's Deputy
12 discovered a dead horse in the vicinity of the reservoir referenced in paragraph
13 10 and observed several horses drinking from the 30' by 25' pool.

14 11. On or about November 5, 1988, a total of sixty-one (61) wild
15 horses were found dead in an area radiating out from the reservoir.

16 12. During November, 1988, autopsies of dead horses were per-
17 formed by Dr. Alan Ruegamer under the direction of the U.S. Bureau of Land
18 Management wild horse and burro specialist, Robert Stager and samples of tissue,
19 body fluids and water from the small ponds were taken to the APL Veterinary Lab
20 in Las Vegas for analysis.

21 13. On or about November 11, 1988, the lab test results confirmed that
22 the horses died of acute ammonia toxicity and calculations based on the urea
23 concentrations in the pond water samples showed that ingestion of 3.5 to 4.0
24 gallons of the contaminated water would provide a lethal dose of ammonia to a
25 horse.

1 14. The Administrator of the DEP found REECO in violation of
2 NRS 445.221 for the unlawful discharge of urea into waters of the state
3 resulting in the death of sixty-one horses. However, Defendant disputes the
4 contention that REECO violated the subject provision and further denies that it
5 is subject to any fine or penalty under said statute.

6 15. Without any admission of liability, the parties agree that this
7 Consent Decree is intended to compromise a disputed claim and that Defendant in
8 full and final settlement of all matters arising out of the alleged unlawful
9 discharge of urea into waters of the state shall be subject to a civil penalty
10 and damages, and shall:

11 (a) Pay the amount of fifteen thousand dollars (\$15,000.00) by check
12 made payable to the Nevada Commission for the Preservation of Wild Horses.

13 (b) Coordinate, cooperate, and consult with the Bureau of Land
14 Management (BLM), the federal agency with management authority on the Nevada
15 Wild Horse Range, to develop and/or reconstruct three (3) water sources for use
16 by wild horses. The specific locations for development and/or reconstruction
17 are to be determined by the BLM in coordination and concurrence with the Nellis
18 Range Complex Five Party Group and will be identified by name and incorporated
19 into this document as Exhibit "A". Exhibit "A" shall be provided to Plaintiff
20 and approved by Plaintiff within ninety (90) days from execution of this
21 Agreement.

22 (c) Complete development and/or reconstruction within one (1) year
23 according to all BLM guidelines and directions and provide project maintenance
24 for a period of three (3) years subsequent to completion.

1 (d) Subsequent to completion of the development and/or reconstruction,
2 Defendant shall provide Plaintiff with a written statement from the BLM cer-
3 tifying completion of the work according to BLM guidelines for Plaintiff's
4 approval.

5 (e) Subsequent to completion of maintenance, Defendant shall provide
6 Plaintiff with a written statement from the BLM certifying completion of the
7 maintenance according to BLM guidelines for Plaintiff's approval.

8 (f) Submit a request to the Department of Energy or the Department of
9 Defense to allow an independent representative designated by Plaintiff to
10 inspect the designated springs prior to construction, after construction and
11 annually to verify proper development and maintenance of the spring.

12 16. Each party will pay its own attorneys' fees and costs of settlement.

13 17. Plaintiff may submit this Consent for the Issuance of a Decree to
14 the Fifth Judicial District Court in Nye County for the issuance of an
15 appropriate Order.

16 18. In the event the Court does not approve the above terms and con-
17 ditions, this Consent for the Issuance of a Decree and stipulations contained
18 herein will cease to be binding, shall be null and void, and shall not be
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1 offered into evidence by either party in any proceeding. The State shall
2 thereafter be permitted to amend its Complaint to amend its relief requested and
3 the Defendant shall be permitted to file its answer or other response.

4 DATED: 5/15/89.

5 Respectfully submitted,

6 BRIAN MCKAY
7 Attorney General

8 By Marta Adams
9 Marta Adams
10 Deputy Attorney General

11 Division of Environmental Protection
12 201 South Fall Street, Room 221
13 Carson City, Nevada 89710
14 (702) 885-4670

15 Attorneys for Plaintiff

16 DATED: 5/8/89.

17 Reynolds Electrical and Engineering
18 Company

19 By Arthur L. Williams, Jr.
20 Arthur L. Williams, Jr.
21 General Counsel

22 Reynolds Electrical and Engineering
23 Company
24 P.O. Box 14400
25 Las Vegas, Nevada 89114

BOB MILLER
Acting Governor

STATE OF NEVADA

TERRI JAY
Executive Director



**COMMISSION FOR THE
PRESERVATION OF WILD HORSES**

**Stewart Facility
Capitol Complex
Carson City, Nevada 89710
(702) 885-5589**

COMMISSIONERS

Deloyd Satterthwaite, *Chairman*
Spanish Ranch
Tuscarora, Nevada 89834

Dawn Lappin
15640 Sylvester Road
Reno, Nevada 89511

Michael Kirk, D.V.M.
P.O. Box 5896
Reno, Nevada 89513

MEMORANDUM

TO: Wild Horse Commissioners
FROM: Terri Jay, Executive Director *Jay*
SUBJECT: REECo Check
DATE: June 6, 1989

We received the check from REECo today. The pertinent correspondence is enclosed.

The check and the original letter was forwarded to Tracy Raxter, at the Department of Administration. He has informed me that the check will be deposited in the grant account.



Reynolds Electrical & Engineering Co., Inc.

OPERATIONS AND MAINTENANCE
ENVIRONMENTAL HEALTH SECTION

INTERNAL PROCEDURE

TITLE:

STORAGE, USE AND DISPOSAL
OF UREA BY O&M AT TTR

NO.

EH 6.10

PAGE 1

of 1

APPROVED:

A. R. Church 1-13-89
DATED

PURPOSE

To define the methods of storage, use and disposal of urea at Tonopah Test Range by O&M Operations.

POLICY

To ensure compliance with REECO, Environmental Protection Agency (EPA) and Air Force directives in the handling of urea to accomplish work requirements as outlined in the Statement of Work (SOW).

METHODS

Storage

Urea is stored under the control of O&M warehousing operations and is located in the warehouse nine-acre storage yard. It is received and stored in 100-pound bags on pallets and covered with tarps. During the snow and ice season, a urea spreader with hopper is placed in the back of a five-ton dump truck and the spreader is filled with urea to approximately 4,000 pounds. This truck is parked in Building 186 with the rest of the snow removal equipment.

Use

Urea is only used as a de-icer in the airfield area (ie, runways, taxiways and aircraft parking areas) which is controlled and completely fenced.

Only the Snow Control Manager, his/her assistant, or the designated Snow Control Superintendent are authorized to direct the use of urea for ice control and removal.

Disposal

At the end of the snow and ice season, all urea left in the spreader with hopper on the five-ton dump truck is disposed of in the sanitary landfill.



Reynolds Electrical & Engineering Co., Inc.

COMPANY PROCEDURE
PROPERTY AND SUPPLY SECTION

TITLE

RESPONSE TO SPILLS AND LEAKS
OF HAZARDOUS MATERIALS

NO

3,2,53

PAGE 1

of 6

APPROVED:

[Signature]

General Manager

1-12-87

DATED

This supersedes Procedure 3.2.53, dated November 14, 1983.

PURPOSE

To describe the responsibilities and procedures to enable quick coordinated response to accidental spills of hazardous materials in a manner which minimizes actual or threatened human endangerment, property loss, environmental impact, or adverse public opinion.

POLICY

To minimize the impact of accidental spills of hazardous materials on NTS activities by contingency planning which considers effective and efficient use of resources, logical order of response activity, and applicable rules and regulations.

METHOD

Coordinate through formal procedures a response to onsite or offsite spills of hazardous materials which: 1) can be adjusted to satisfy the demands of the situation; 2) considers priorities for life saving, threat reduction, property protection, control, containment, abatement and cleanup; and 3) directs response activities in a manner which minimizes the risk of aggravating a given situation.

In addition to response as directed from within the responsible department, further assistance may be required. The following personnel control, operate or have access to technical resources which may be required to deal with an emergency. This technical advisory group may be called upon collectively or singly to report to the accident scene or to be available for consultation. An extensive listing of emergency response resources (material and services) are identified and located in Annex H of the NTS Emergency Preparedness Plan. The Technical Advisory Group shall consist of:

Chief, Industrial Hygiene Section or designee

Fire Protection Engineer

Manager, Environmental Sciences Department or designee

Chief, Traffic Section or designee

METHOD (Continued)

Public Information Officer or designee

Chief, Fire Protection Services

RESPONSIBILITIES

A. DEPARTMENT HAVING CUSTODY OR SPONSORSHIP OF THE MATERIAL

1. Responds or designates a representative to coordinate at the scene after notification through these procedures.
2. Assembles those elements of the Technical Advisory Group and other resources as necessary to manage the situation.
3. Directs activities and be in charge of the response effort, unless other assignment is made by the General Manager or his NTS representative.
4. Identifies the material involved by shipping papers, bills of lading, marking and labeling, or use of other resources.
5. Takes actions required to reduce immediate danger to life, property, and the environment.
6. Makes notification required in Appendix B through appropriate channels.
7. Terminates the response when appropriate.

B. INDUSTRIAL HYGIENE SECTION

1. Develops and maintains a hazardous materials spill/leak response advisory capability consistent with these procedures.
2. Coordinates annual training activities necessary to successfully implement these procedures for serious spills/leaks.
3. Establishes and maintains an information file on hazardous materials used, stored, handled, transported, and disposed of on the NTS.
4. Identifies and records names, phone numbers, addresses, etc., of groups and agencies who may be able to provide pertinent information on hazardous chemicals.
5. Identifies and prescribes protective equipment required for abatement, cleanup, and disposal of spills.
6. Refines the determination of the nature of the hazard, if required.
7. Estimates probable behavior of the material.
8. Assists the on-scene coordinator in directing abatement, cleanup, and disposal activities.

RESPONSIBILITIES (Continued)

9. Reviews and approves department spill contingency plans before adoption.
10. Reviews department spill contingency plans and audits key functional elements biennially.

C. TECHNICAL ADVISORY GROUP

1. Assists the on-scene coordinator as directed, including furnishing other personnel and services under their control.
2. Assists the on-scene coordinator in making control, containment, abatement, and cleanup decisions.

D. EMERGENCY COORDINATOR (1-2-3/MAYDAY)

1. Notifies the cognizant/responsible department manager.
2. Activates emergency services such as medical, fire protection, etc.

E. ENVIRONMENTAL SCIENCES DEPARTMENT TRAINING SECTION

1. Develops scenarios and exercises and manages such exercises to test the procedures for serious spills/leaks.
2. Makes formal recommendations based on test exercise results to the Industrial Hygiene Section for modifying this plan.

F. PUBLIC INFORMATION OFFICE

Assumes responsibility for making all public statements concerning the response.

G. BASIC REQUIREMENTS

1. ACCIDENTAL SPILLS OF HAZARDOUS MATERIALS: (considerations in the management of spills of hazardous materials, see appendix A).

Departments using, storing, handling, and disposing of hazardous materials are responsible for developing their own spill contingency plans. All departmental plans will be reviewed and approved by the Industrial Hygiene Section for adequacy before adoption. Thereafter, each plan shall be reviewed and key functional elements audited biennially by the department and the Industrial Hygiene Section. One copy of each plan will be kept in the immediate area for which it was written. Additional copies of the plan shall be kept on file by the department office and the Industrial Hygiene Section. Such plans should include fundamental activities such as storing breakable containers in areas where spills can be contained; eliminating potential ignition sources in the area of a spill; controlling employee exposure; proper abatement techniques; proper use of personal protective equipment during abatement and clean-up; notification of others as required; where to get assistance when needed; etc. When it is the judgment of the competent supervisor that the requirements for

RESPONSIBILITIES (Continued)

proper handling of a spill of hazardous material exceed the capability of the department, section or branch plan, etc., the following procedures shall be initiated.

2. SERIOUS SPILLS/LEAKS

a. Reporting

Consistent with the NTS Emergency Preparedness Plan and REECO Safety Codes A-9 and A-10, serious spills of hazardous materials governed by these procedures shall be reported by the existing emergency reporting system (1-2-3/Mayday). The Emergency Coordinator (1-2-3/Mayday) will notify the department manager having custody or sponsorship of the spilled material. The responsibility for control and amelioration shall lie with the specified department manager. The Manager, Occupational Safety & Fire Protection Services, will serve as the NTS representative of the General Manager for emergency situations at the NTS and for situations requiring commitment of REECO resources from the NTS for emergency responses offsite. The minimum information conveyed should be:

The nature of the spill or leak

The location

The cognizant/responsible department manager

The hazardous material involved

The material's physical state (gas, liquid, solid, etc.)

Initial impact (injury, damage)

An estimate of the magnitude of the leak or spill

How and where the person doing the reporting can be reached

APPENDIX A

Considerations in the management of serious spills of hazardous materials:

A. Initial Actions

1. Rapid coordinated response.
2. Treat the injured; prevent further injury, property damage, or environmental impact.
 - a. Warn road users.
 - b. Restrict access as appropriate for hazard.
 - c. Evacuate personnel or movable property as indicated.
 - d. Prevent initial, primary or secondary fires/explosions.
 - e. Eliminate ignition sources.
3. Identify hazardous material as soon as possible and assess the hazard.
4. Reduce the immediate danger to life, property or the environment.
5. Control the hazard.
6. Contain the material.
7. Assess the residual hazard.
8. Make reports to appropriate REECo and DOE offices as required.

B. Secondary Actions

1. Get additional information if necessary.
2. Refine assessment of the hazard and risk.
3. Begin amelioration based on refined data:
 - a. Think through approach.
 - b. Organize required resources.
 - c. Consider economics.
 - d. Improve containment if necessary.
 - e. Select effective, efficient clean-up methods.
 - f. Select proper disposal method.

APPENDIX B

Notifications required under 49, CFR, Transportation, in conjunction with spills/leaks of hazardous materials in transport. See DOE Order NV5484.1-4 and REECO Safety Code A-10 for reporting protocol.

A. Report materials other than etiologic agents to DOT telephone number (800) 424-8802; report etiologic agents to the Center for Disease Control (CDC) telephone number (404) 633-5313. The necessity for reports shall be verified by the Chief, Traffic Section.

B. Reports, 49 CFR, Chapter 1, Paragraph 177:

1. Carrier must report as early as possible:

- a. When someone is killed.
- b. When someone is hospitalized for injuries.
- c. Damage exceeds \$50,000.
- d. When fire, spillage, breakage, or suspected contamination involves radioactive material or etiologic agents.
- e. When a continuing danger exists even though Items a, b, and c above are not yet involved.

2. Verbal reports should provide:

- a. Name of reporter.
- b. Name and address of carrier.
- c. A phone number where the caller can be reached.
- d. The date, time, and location of accident.
- e. The extent of injuries involved.
- f. The class or name of the hazardous material.
- g. Information regarding the type accident.

3. Written reports should:

- a. Be made within 15 days on DOT Form F5800.1.
- b. Provide information on the disposition of the accident.

4. Report to Coast Guard:

When navigable waters or shoreline are involved, report to the Coast Guard National Response Center telephone number (800) 424-8802.



DIRECTIVE

APPROVED:

Harold Cunningham
General Manager

1/24/86
DATED

This supersedes Directive 83-50, dated December 12, 1983.

REECO's environmental, safety and health protection responsibilities at the Tonopah Test Range are assigned as follows:

OCCUPATIONAL SAFETY

1. Provide adequately documented staff support and monitoring by Occupational Safety Professional to include jobsites of REECO personnel and jobsites of subcontractors for which REECO has subcontract administration responsibilities.
2. Review technical packages for capital equipment acquisitions by REECO to ensure adequate inclusion of safety considerations when such equipment will be operated by REECO personnel. Advise of safety requirements when acquisitions are effected by a user.
3. Participate in review of subcontract packages to ensure adequate inclusion of safety considerations when such subcontracts will be administered by REECO.
4. Review requisitions for excess property to ensure inclusion of safety considerations if requisitioned by REECO and is to be operated by REECO personnel.

FIRE PROTECTION (The Users have responsibility for fire fighting and fire protection engineering of fire alarm/detection/suppression systems.)

1. Participate in conducting and properly documenting routine fire prevention inspections through shops, offices, and other facilities occupied by REECO personnel.
2. Provide all maintenance and repair of fire alarm/detection/suppression systems up to the point where such systems tie into communication lines. Conduct and properly document periodic tests of these systems.

OPERATIONS AND MAINTENANCE SECTION (TTR)

1. Conduct and properly document sanitation inspections as follows:
 - a. Feeding facilities - bimonthly
 - b. Housing, recreation facilities, and REECO-occupied facilities - annually
 - c. Sanitary landfill operations - monthly

OPERATIONS AND MAINTENANCE SECTION (Continued)

2. Conduct and properly document potable water sampling and analyses as follows:
 - a. Distribution systems, bacteriological analyses - monthly
 - b. Well heads, radiological analyses - every two years
 - c. Well heads, chemical analyses - every three years
3. Conduct and properly document monthly sampling of sewage systems.
4. Update the five-year plan for the Sanitary Landfill for yearly submittal to the Air Force representative.
5. Provide technical assistance on storage, packaging, and transportation of hazardous wastes.
6. Provide pest control services by or under the direction of a certified pest control applicator.
7. Check well log maintained at each chlorinator or iodinator, monthly.
8. Check and document monthly tests of residual chlorine or iodine in potable water distribution systems.

INDUSTRIAL HYGIENE

1. Conduct and properly document quarterly industrial hygiene inspections of REECo-occupied shops.
2. Evaluate and document REECo employees exposures to chemical and physical agents.
3. Prescribe and evaluate the performance of exposure control measures.
4. Provide support as requested for special operations.
5. Provide respirator training and fitting to REECo employees who wear respirators and to employees of other TTR agencies as requested.
6. Identify to DOE/NV those affected facilities controlled or operated by REECo and REECo subcontractors that require permits, review or approval under applicable environmental regulations.

RADIOLOGICAL SAFETY

1. Conduct and document semi-annually, surveys at the fence lines of Clean Slate Areas 1, 2, and 3, and the Double Track Area.

RADIOLOGICAL SAFETY (Continued)

2. Surveillance and maintenance of the fences surrounding Clean Slate and Double Track Areas to ensure the fences are intact and posted with appropriate radiation warning signs.
3. Perform and document radiological swipe and instrument surveys of selected REECo-occupied shops.
4. Provide support for special operations as requested.

HDC:WRW:bm

B, M



Reynolds Electrical & Engineering Co., Inc.

COMPANY PROCEDURE
PROPERTY AND SUPPLY SECTION

TITLE

HAZARDOUS MATERIAL
CONTROL

NO

3.2.51

PAGE 1

of 6

APPROVED

[Signature]
General Manager

1-7-87
DATED

This supersedes Procedure 3.2.51, dated December 3, 1984.

PURPOSE

To describe the responsibilities for controlling substances designated as hazardous materials.

POLICY

To use and store hazardous materials in accordance with prescribed codes, standards, and regulations governing transportation, storage, use, and disposal of hazardous materials (see DOT Regulation 49 CFR entitled Classification of Hazardous Material, and Appendix A attached).

RESPONSIBILITIES

A. Requester

Identifies those special order line items on the Purchasing Requisition, RE-1253; Request for Stock Item, Issue and Delivery, RE-1254; or the Pre-expensed Stock Item Request, RE-1700, which are hazardous materials as described in DOT Regulation 49 CFR and Appendix A, where possible.

B. Supply and Property Management Department

1. Supply Support

- a. Screens all special order Purchasing Requisitions for hazardous materials and stamps those requisitions containing orders for such material with the hazardous material (H M) stamp.
- b. Forwards to the Industrial Hygiene Section a copy of each Purchasing Requisition with an item(s) that is identified as or that is suspected to be hazardous. A copy of a Purchasing Requisition with an item(s) of doubt for hazardous identification is also forwarded to the Industrial Hygiene Section.
- c. Processes all Purchasing Requisitions, including those with hazardous materials, in a normal manner.

2. Receiving and Shipping Branch

- a. Reviews Receiving Form, RE-0858, for incoming special order material shipments identified as hazardous materials.

RESPONSIBILITIES (Continued)

- b. Compares incoming paperwork, i.e., freight bills, packing lists, etc., to the physical packaging and labeling of incoming hazardous materials or shipments suspected of being hazardous for compliance with requirements set forth in 49 CFR - Transportation Subtitle B Chapter I, Part 172. Contacts Industrial Hygiene and/or Traffic Section for the proper classification and disposition of unmarked or questionable material shipments.
- c. Prepares and processes a Discrepancy Report, RE-1630, for improperly packaged and/or labeled shipments of hazardous materials.
- d. Repackages and/or relabels hazardous material items when required to insure compliance with current DOT regulations and the Hazard Communication Program prior to releasing items for delivery to onsite or offsite location.
- e. Provides temporary, segregated storage for incoming material items that are classified or suspected of being hazardous materials, i.e., flammable, explosive, toxic, corrosive, etc.
- f. Develops and implements leak and spill contingency plans when required. (Reference: Material Safety Data Sheets and Company Procedure 3.2.53, Response to Spills and Leaks of Hazardous Materials.)
- g. Prepares a Warehouse Bill of Lading - Hazardous Material, RE-0173, for special order hazardous materials prior to releasing the material for delivery to an on/offsite location via the NTS shuttle service.
- h. Forwards one copy of Receiving Form and one copy of Warehouse Bill of Lading - Hazardous Material, RE-0173, to the Industrial Hygiene Section for each special order hazardous material item(s) received.
- i. Dispatches a qualified driver who has been trained and certified by REECo for the transportation of hazardous materials. The driver is responsible for the proper loading, segregation of hazardous items, securing and protection of materials during loading/off-loading operations and while in transit from the warehouse to the delivery site.
- j. The driver is responsible for assuring that the shipping papers have been properly prepared in accordance with CFR 49 regulations. The driver is responsible for making sure the shipping papers contain complete information regarding the description of shipment, proper shipping name, proper hazard class, quantity/weight and exception information. The driver is responsible for making certain each package of hazardous materials is marked appropriately and in the proper shipping containers. If there are any questions regarding the way the shipment is packaged or labeled, THE DRIVER WILL NOT ACCEPT THE SHIPMENT until all questions have been answered.

RESPONSIBILITIES (Continued)

- k. Notifies DOE or the REECo/DOE designate of all non-REECo hazardous material that is received for supply processing.
 - l. Forwards any Material Safety Data Sheets (MSDS) received with incoming material to the Industrial Hygiene Section.
3. General Stores/Equipment Parts Warehouse (Receiving and Issuing)
- a. Ensures that the packaging and labeling of hazardous material stock items is consistent with the classification of the material and 49 CFR requirements.
 - b. Provides segregated storage space, as required, for stock items that are classified as hazardous materials, i.e., flammable, explosive, toxic, corrosive, etc.
 - c. Forwards to the Industrial Hygiene Section one copy of Receiving Form, Request for Stock Issue, Material Recap Sheet for Over-the-Counter Issues, RE-1475, the Pre-Expensed Stock Item Request and the Warehouse Bill of Lading - Hazardous Materials for each hazardous material stock item(s) received and subsequently issued from Stores Inventory.
 - d. Prepares a Warehouse Bill of Lading - Hazardous Materials for hazardous material stock items issued from Stores Inventory in preparation for delivery to an on/offsite NTS location.
 - e. Develops and implements leak and spill contingency plans as required. (Reference: Material Safety Data Sheets and Company Procedure 3.2.53, Response to Spills/Leaks of Hazardous Materials.)

C. Fleet Operations Department

Provides departments and users with qualified drivers who have been trained and certified for the transportation of hazardous materials at the NTS.

D. Using Organization

1. Segregates and stores hazardous materials properly when such material is at the job site.
2. Maintains records of receipt, usage, and disposal of hazardous materials.
3. Uses hazardous materials in accordance with guidelines contained in the Material Safety Data Sheet (MSDS) and/or instruction furnished by the Industrial Hygiene Section.
4. Notifies the Industrial Hygiene Section when a hazardous material is received for use before the user has received a MSDS and equivalent information.

RESPONSIBILITIES (Continued)

5. Disposes of hazardous materials and hazardous material waste in accordance with guidelines established by the Industrial Hygiene Section.
6. Retains identification of containers holding or having held hazardous materials.
- *7. Furnishes use, disposal, and transfer records to the Industrial Hygiene Section upon request.
- *8. Ensures that hazardous materials in their custody are transferred, transported, documented, packaged and labelled as required for use and transportation, are transported only by REECO certified drivers and that the Industrial Hygiene Section is notified of the change in custody and location.
9. Develops and implements leak and spill contingency plans as required. (Reference: MSDS and Company Procedure 3.2.53, Response to Spills/Leaks of Hazardous Material.)

E. Industrial Hygiene Section

1. Reviews copies of Purchasing Requisitions and/or Purchase Orders screened by Supply Support Section and/or the Procurement Department, and classifies or verifies proper classification of line items as hazardous material.
2. Requests, files, and forwards to concerned groups and users, the MSDS, or its equivalent, for hazardous material.
3. Maintains a computerized file of hazardous material MSDS.
4. Creates a life cycle file containing such pertinent information as the quantity of hazardous material, its location, precautions, and users. This file shall be updated as information required is received in accordance with this procedure.
5. Reviews spill and leak procedures for adequacy.
6. Provides technical advice, etc., relating to the application of CFR 49 Regulations as requested.

F. Environmental Health Branch

Disposes of or approves disposal methods for hazardous chemicals and wastes.

*Denotes those items to be implemented at a later date.

RESPONSIBILITIES (Continued)**G. Procurement Department****1. Purchasing Section**

- a. Informs the seller that items that are hazardous materials are to be packaged, labeled, and shipped in accordance with applicable regulations.
- b. Forwards to the Industrial Hygiene Section a copy of the Purchase Order for hazardous material when purchased.

2. Traffic Section

Provides technical advice, etc., relating to the application of 49 CFR Regulations as requested.

H. Information Systems Department

Codes the Receiving Form with "yes or no" under the H M Column.

RESPONSIBILITIES (Continued)

APPENDIX A

TYPES OF HAZARDOUS MATERIAL COMMODITIES

Commodities that may be classified as Hazardous Materials for transportation (DOT regulations).

1. Solvents, thinners (flammable and nonflammable)
2. Paints, coating, adhesives
3. Resins (epoxy, urethane, gas plug, cable gas-blocking, etc.)
4. Blasting agents and explosives
5. Corrosives (acids, caustics, cleaners, descalers)
6. Pesticides, herbicides, fungicides
7. Compressed gases (flammable and nonflammable)
8. Chemicals ordered by generic name (acetone, methylethyl ketone, toluene, ether, nitrogen tetroxide, hydrazine, etc.)
9. Radioactive materials

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BEFORE THE
NEVADA ENVIRONMENTAL COMMISSION

In the Matter of:)
)
REYNOLDS ELECTRICAL &)
ENGINEERING CO., INC.)

PETITION FOR HEARING

To: L.H. Dodgion
Executive Secretary
Nevada Environmental Commission

COMES NOW Reynolds Electrical & Engineering Co., Inc. ("REECO"), a corporation, and respectfully requests a hearing on the Finding of Alleged Violation and Order issued by the State Department of Conservation and Natural Resources, Division of Environmental Protection. In support whereof, the following is asserted:

1. On December 14, 1988 REECO was served by the State Division of Environmental Protection with a document entitled "Finding of Alleged Violation and Order" dated December 2, 1988. (The Finding and Order are appended to this Petition, and are made a part hereof.)

2. REECO wishes a hearing on the matter to challenge the Division's charge that the facts identified in the Findings of Fact of December 2, 1988 entail a violation of NRS 445.221. It is REECO's position the facts of the matter do not constitute an actionable pollution of the waters of the State of Nevada, specifically NRS 445.131-354.

. . .

1 3. It is presently anticipated that the time
2 necessary for the presentation of REECO's evidence is four (4)
3 hours.

4 4. The undersigned is hereby designated as the agent
5 authorized by REECO to receive service or notice of all further
6 proceedings in this matter.

7 5. This hearing is requested pursuant to NRS
8 445.324, and is sought on behalf of REECO, a corporation
9 licensed to do business in the State of Nevada.

10 WHEREFORE, Reynolds Electrical & Engineering Co.,
11 Inc. respectfully requests a hearing before the Commission.

12 Respectfully submitted,
13 REYNOLDS ELECTRICAL &
14 ENGINEERING CO., INC.

15 By: Arthur L. Williams, Jr.
16 ARTHUR L. WILLIAMS, JR. (A.L.W.)
17 General Counsel
18 P. O. Box 98521
19 Las Vegas, Nevada 89193-8521
20 (702) 295-2226

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CERTIFICATE OF MAILING

I hereby certify that on January 9, 1989, I served the foregoing Petition for Hearing by depositing a copy in the United States mail, postage prepaid, addressed to:

L. H. DODGION
Executive Secretary
State of Nevada
Environmental Commission
201 South Fall Street
Capitol Complex
Carson City, Nevada 89710

his last known business address.

Michelle Hale
An Employee of REECO

RICHARD H. BRYAN, Governor

Administration 702/885-4670
Air Quality 885-5065
Construction Grants 885-5870

REECO STATE OF NEVADA
CENTRAL FILE

Groundwater 702/885-4670
Waste Management 885-5872
Water Pollution 885-4670

DEC 14 10 12 AM '88



DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL PROTECTION

201 South Fall Street
Carson City, Nevada 89710

December 2, 1988

RECEIVED

DEC 14 10 12 AM '88

REECO
CENTRAL FILE

Reynolds Electrical and Engineering Company
ATTN: Dale L. Fraser, President
2501 Wyandotte Street
Las Vegas, NV 89101

Certified Mail# P 568 575 302
Return Receipt Requested

Dear Mr. Fraser:

The enclosed Finding of Alleged Violation and Order issued by the Administrator of the Division of Environmental Protection, pursuant to Nevada Revised Statutes (NRS) 445.317 and 445.324, requires compliance by Reynolds Electrical and Engineering Company (REECO) with the terms and conditions of the Order by the dates specified.

The Finding and Order were developed as a result of information obtained from the U.S. Bureau of Land Management regarding the death of 61 wild horses at the Tonopah Test Range. It is the Division's position that the entrainment of urea into water pumped from a small reservoir and the subsequent discharge of that polluted water into an area where it formed several small ponds of standing water, constitutes an illegal discharge of pollutants to waters of the state.

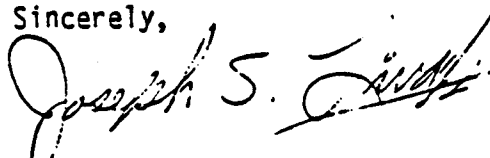
Any violation of the terms of this order could subject Reynolds Electrical and Engineering Company (REECO) to an action for appropriate relief pursuant to NRS 445.327, NRS 445.331 or NRS 445.334.

This order is final and not subject to review unless, within thirty (30) days after the date such order is served, a request by written petition for a hearing is received by the State Environmental Commission, 201 South Fall Street, Capitol Complex, Carson City, Nevada 89710.

Reynolds Electrical and
Engineering Company
Certified Mail # P 568 575 302
December 2, 1988
Page 2 of 2

If you have any questions concerning this matter, please contact me at
(702) 885-4670.

Sincerely,



Joseph S. Livak
Water Enforcement Officer

- srb
Enclosures
cc: Roland Westergard
L.H. Dodgion
Marta Adams
Environmental Commission
Terri Jay, Wild Horse Commission
EPA, Region IX
Len Sims, BLM
A.W. Marrs, REECO
Robert B. Tyrrell, DOE Site Manager
Frank Bingham, DOE Environmental Division

FINDING OF ALLEGED VIOLATION

I. This Finding is made on the basis of the following facts, to wit:

A. The State of Nevada Department of Conservation and Natural Resources, Division of Environmental Protection, under the authority of Nevada Revised Statutes (NRS) 445.214 subsection 1 has the power and duty to administer and enforce the provisions of NRS 445.131 to 445.354 inclusive and all rules, regulations and standards promulgated by the Commission and all orders and permits promulgated by the Department.

B. NRS 445.221 Unlawful discharge of a pollutant without a permit.

Except as authorized by a permit issued by the Department under the provisions of NRS 445.131 to 445.354 inclusive and regulations promulgated under such sections by the Commission, it is unlawful for any person to discharge from any point source any pollutant into any waters of the State.

C. NRS.445.178 "Pollutant" defined.

"Pollutant" means dredged soil, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal and agricultural waste discharged into water.

D. NRS 445.191 "Waters of the state" defined.

"Waters of the state" means all waters situated wholly or partly within or bordering upon this state, including but not limited to:

1. All streams, lakes, ponds, impounding reservoirs, marshes, water courses, waterways, wells, springs, irrigation systems and drainage systems; and
2. All bodies or accumulations of water, surface and underground, natural or artificial.

E. Reynolds Electrical and Engineering Company (REECO) is a contractor working for the U.S. Department of Energy (DOE). REECO provides support services to the DOE at the Sandia National Laboratory facility located in Cactus Flat within the Tonopah Test Range. In an area near the Range Operations Center, REECO maintains a small fenced reservoir and pump to supply water for construction projects and dust control. The pump provides water at a rate of approximately 3000 gpm.

REECO uses chemical urea as a runway deicer. The urea is supplied in a granular prill form and is applied to the runway by means of a spreader box mounted on a truck. Urea is a compound synthesized from ammonia and carbon dioxide. Due to its hygroscopic nature, the prill tends to consolidate into a crusted mass if left exposed for an extended period of time.

The Hazardous Materials Information System Basic Publication specifies the appropriate procedure for disposal of urea as follows:

"Waste may be spread on farmland as fertilizer, or buried in approved landfill. Follow federal, state, local regs."

- F. On November 2, 1988 REECO decided to clean out a spreader box containing an estimated 1,000 to 1,600 pounds of urea. The material had hardened as a result of being left in the spreader hopper since January of 1988. Although REECO personnel discussed disposing of the material by taking it to a landfill for burial, it was decided that flushing it out with water would be easier. This procedure was then approved by appropriate supervisory personnel and by the REECO sanitarian whose primary responsibility is waste management.

Two REECO employees then proceeded with the spreader truck to the pump site at the small reservoir and washed the urea out of the hopper. The urea was removed from the hopper within a period of 10 minutes but the water was pumped for approximately 1.5 hours in an attempt to dilute the solution. Some of this water formed several small ponds or catchments, one of which measured 30' x 25' x 18". Some of the water appears to have flowed under the fence and back into the reservoir. Low soil permeability prevented the water from soaking into the ground.

On the morning of November 3, 1988 a Nye County Sheriff's Deputy discovered a dead horse in the vicinity of the reservoir and several horses were observed drinking from the 30' x 25' pool. During the day REECO created a fresh water supply to lure the horses away from the contaminated ponds and covered most of the standing water in the vicinity of the reservoir.

By November 5, 1988 a total of 61 wild horses had been found dead in an area radiating out from the reservoir. Several horned larks had also been found dead in the immediate vicinity of the contaminated water.

On November 3, 1988 autopsies of several dead horses were conducted by Dr. Alan Ruegamer under the direction of the BLM wild horse and burro specialist, Robert Stager. Samples of tissue, body fluids and water from the small ponds were taken to the APL Veterinary Lab in Las Vegas for analysis.

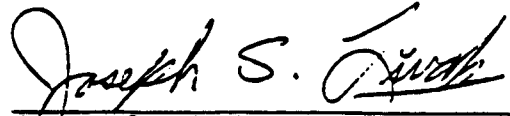
Finding of Alleged Violation
Reynolds Electrical and
Engineering Company
December 2, 1988
Page 3 of 3

On November 11, 1988 the lab test results confirmed that the horses died of acute ammonia toxicity. Ammonia concentrations in the ocular fluid of two horses eyes were found to be 1000 times normal and calculations based on the urea concentrations in the pond water samples showed that ingestion of 3.5 to 4.0 gallons of the contaminated water would have provided a lethal dose of ammonia to a horse.

- II. On the basis of the facts listed above, the Administrator of the Division of Environmental Protection finds that Reynolds Electrical and Engineering Company violated NRS 445.221 by discharging a pollutant into waters of the state without authorization.

Dated

12/2/88



Joseph S. Livak
Water Quality Enforcement Officer

IN THE MATTER OF)
REYNOLDS ELECTRICAL AND)
ENGINEERING COMPANY)

ORDER

The following order is issued this date pursuant to the powers and duties vested in the Director of the Department of Conservation and Natural Resources by Nevada Revised Statutes (NRS) Chapter 445.214, subsection 1 and 445.216, subsection 8, delegated to the Division of Environmental Protection pursuant to NRS Chapter 445.216 subsection 9, and in accordance with NRS Chapter 445.307, NRS 445.317 subsection 1 (a) and NRS 445.324.

On the basis of the Finding of Alleged Violation attached hereto and made a part of this Order, the Administrator of the Division of Environmental Protection, pursuant to authority delegated to him by the Director, Department of Conservation and Natural Resources, has determined that Reynolds Electrical and Engineering Company (REECO) is in violation of NRS 445.221 as outlined in the Finding of Alleged Violation.

IT IS HEREBY ORDERED:

That REECO complete the following acts by the dates specified:

1. By December 31, 1988 submit to the Division of Environmental Protection a report which includes the following:
 - a. A narrative description of the events leading up to the poisoning of the wild horses.
 - b. Results of any water sampling that was conducted by REECO or the Department of Energy.
 - c. Hydrogeologic evidence that the urea did not and will not contaminate groundwater underlying the wastewater disposal area.
 - d. Results of the investigation of any human health consequences of the urea spill .
2. By December 31, 1988 submit to the Division a plan for the proper handling, storage, control and disposal of chemicals used for deicing runways and for washing equipment, vehicles or aircraft.
3. By January 15, 1989 show cause why the Division of Environmental Protection should not commence a civil action to recover civil penalties and damages as provided for under NRS 445.331. A meeting for this purpose may be arranged by contacting Joe Livak or Wendell McCurry at 885-4670.

DATED

12/7/88

L.H. Dodgion
L.H. Dodgion, Administrator
Division of Environmental Protection



5

STATE OF NEVADA
OFFICE OF THE ATTORNEY GENERAL

ENVIRONMENTAL DIVISION

Capitol Complex

Carson City, Nevada 89710

BRIAN McKAY
Attorney General

MARTA ADAMS
Deputy Attorney General
(702) 885-4670

February 2, 1989

Arthur L. Williams, Jr., Esq.
General Counsel
Reynolds Electrical and Engineering
Company, Inc.
P. O. Box 14400
Las Vegas, Nevada 89114

Re: State v. REECO (Enforcement Action)

Dear Mr. Williams:

Please find enclosed copies of a Complaint and Order and an Original Consent Decree in the above-entitled matter. In order for the State to collect a civil penalty and damages in a civil enforcement context, the Nevada Water Pollution Control Law (NRS 445.131 to 445.354) requires the Department to file a civil Complaint in the appropriate district court. Where, as here, the parties have settled the matter, the Complaint, the Consent Decree and Order can be filed contemporaneously with the Court.

If the enclosed Consent Decree conforms to your understanding of our agreement, please sign it and return it to me. I will file the Complaint in the Fifth Judicial District Court in Tonopah. Under a separate letter, I will request that Judge Beko sign the Order and forward both the Order and the signed Consent Decree to the court clerk for filing. Please remit payment of the check of \$15,000.00 to the State of Nevada. I will then forward file-stamped copies of each of the documents to you for your files. Thank you for your cooperation in helping to resolve this matter.

Sincerely,

A handwritten signature in cursive script that reads "Marta Adams".

Marta Adams
Deputy Attorney General

MA:mlw
Enclosures
cc: Lew Dodgion
Joe Livak

A handwritten signature in cursive script, likely belonging to Lew Dodgion or Joe Livak.

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Case No.
Department No.

IN THE FIFTH JUDICIAL DISTRICT COURT OF THE STATE OF NEVADA
IN AND FOR THE COUNTY OF NYE

THE STATE OF NEVADA, EX REL.)
ROLAND D. WESTERGARD, DIRECTOR OF)
THE DEPARTMENT OF CONSERVATION AND)
NATURAL RESOURCES,)

Plaintiff,)

vs.)

REYNOLDS ELECTRICAL AND ENGINEERING)
COMPANY, A Texas Corporation,)

Defendant.)

COMPLAINT

The State of Nevada, on behalf of the Director of the ("DCNR"), brings this action for the unlawful discharge of urea into waters of the state without a permit in violation of the provisions of the Nevada Water Pollution Control Law ("NWPCL"), NRS 445.131 to 445.354.

1. This civil action is instituted by DCNR pursuant to NRS 445.317(1)(b), 445.327 and 445.331 to impose a civil penalty and for mandatory injunctive relief for violations of NRS 445.221.
2. Authority to bring this action is vested with the Attorney General of the State of Nevada by NRS 445.314.
3. This Court has subject matter jurisdiction over this action and

1 venue properly lies in this district court in that the violations occurred at
2 the Tonopah Test Range, Nye County, Nevada.

3 4. The State of Nevada DCNR through the Division of Environmental
4 Protection ("DEP") under the authority of NRS 445.214(1) has the power and duty
5 to administer and enforce the provisions of the NWPCL.

6 5. Defendant Reynolds Electrical and Engineering Company ("REECO") is
7 a Texas corporation authorized to do business in Nevada as a contractor working
8 for the U.S. Department of Energy at the Sandia National Laboratory located in
9 Cactus Flat within the Tonopah Test Range.

10 CLAIM FOR RELIEF

11 6. NRS 445.221 provides, in pertinent part, that
12 Except as authorized by a permit issued by the
13 Department under the provisions of NRS 445.131
14 to 445.354 inclusive and regulations promulgated
15 under such sections by the commission, it is
16 unlawful for any person to discharge from any
17 point source any pollutant into any waters of
18 the State.

19 7. "Pollutant" within the meaning of the NWPCL, NRS 445.178, includes
20 the chemical waste urea.

21 8. NRS 445.331 provides that any person who unlawfully discharges or
22 aids and abets in the unlawful discharge of pollutants into waters of the State
23 shall pay a civil penalty of up to \$25,000 for each day of violation and for the
24 payment of damages including compensation for any loss or destruction of
25 wildlife, fish or aquatic life.

26 9. On or about November 2, 1988, REECO employees rinsed and flushed
27 waste urea from a spreader hopper onto the ground over a period of approximately
28

1 1.5 hours.

2 10. The urea and water formed several small ponds or catchments
3 including one which measured 30' by 25' and some of it flowed into a reservoir
4 used to supply water for construction projects and dust control. Low soil per-
5 meability prevented the water from soaking into the ground.

6 11. On or about November 3, 1988, a Nye County Sheriff's Deputy disco-
7 vered a dead horse in the vicinity of the reservoir referenced in paragraph 10
8 and observed several horses drinking from the 30' by 25' pool.

9 12. On or about November 5, 1988, a total of sixty-one (61) wild hor-
10 ses and numerous horned larks were found dead in an area radiating out from the
11 reservoir.

12 13. On or about November 3, 1988, autopsies of dead horses were per-
13 formed by Dr. Alan Ruegamer under the direction of the U.S. Bureau of Land
14 Management wild horse and burro specialist, Robert Stager, and samples of tissue,
15 body fluids and water from the small ponds were taken to the APL Veterinary Lab
16 in Las Vegas for analysis.

17 14. On or about November 11, 1988, the lab test results confirmed that
18 the horses died of acute ammonia toxicity and calculations based on the urea
19 concentrations in the pond water samples showed that ingestion of 3.5 to 4.0
20 gallons of the contaminated water would provide a lethal dose of ammonia to a
21 horse.

22 15. The Administrator of the DEP found REECO in violation of
23 NRS 445.221 for the unlawful discharge of urea into waters of the state
24 resulting in the death of sixty-one horses.

25 RELIEF REQUESTED

26 Plaintiff Roland D. Westergard, Director of the Nevada Department of
27 Conservation and Natural Resources prays for judgment as follows:

1 (a) For payment to the State of Nevada a civil penalty in an amount
2 not to exceed \$25,000 for the discharge of urea into waters of the state in
3 violation of NRS 445.221.

4 (a) For payment to the State of Nevada actual damages, expenses, and
5 compensation for the violations alleged in this Complaint.

6 (c) For an order requiring Defendant to develop three springs for use
7 by wild horses, namely, Cedar Pass Spring, Cactus Spring and Northern Spring and
8 to maintain these springs for a period of three years.

9 (d) For whatever other relief the Court deems just and proper.

10 DATED: _____

11 Respectfully submitted,

12 BRIAN MCKAY
13 Attorney General

14
15 By

16 _____
17 Marta Adams
18 Deputy Attorney General
19 Division of Environmental Protection
20 201 South Fall Street, Room 221
21 Carson City, Nevada 89710
22 (702) 885-4670

23 Attorneys for Plaintiff
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Case No.

Department No.

IN THE FIFTH JUDICIAL DISTRICT COURT OF THE STATE OF NEVADA
IN AND FOR THE COUNTY OF NYE

THE STATE OF NEVADA, EX REL.
ROLAND D. WESTERGARD, DIRECTOR OF
THE DEPARTMENT OF CONSERVATION AND
NATURAL RESOURCES,

Plaintiff,

vs.

REYNOLDS ELECTRICAL AND ENGINEERING
COMPANY, A Texas Corporation,

Defendant.

CONSENT FOR THE
ISSUANCE OF A DECREE

Plaintiff, State of Nevada, Ex Rel. Roland D. Westergard, Director of the Department of Conservation and Natural Resources ("DCNR") through the Division of Environmental Protection ("DEP") having filed the Complaint herein alleging that Defendant Reynolds Electrical and Engineering Company ("REECO") unlawfully discharged urea into waters of the State without a permit in violation of the provisions of the Nevada Water Pollution Control Law ("NWPCL"), NRS 445.131 to 445.354.

And Plaintiff and Defendant, with no admission of liability, having agreed that all matters set forth in the said Complaint should be settled without trial.

1 And Plaintiff and Defendant, having carefully considered the allega-
2 tions of the Complaint herein, hereby agree and stipulate as follows:

3 STIPULATIONS

4 1. This Court has jurisdiction of the subject matter herein and of the
5 parties consenting for the purpose of entering this Consent Decree.

6 2. The provisions of the Consent Decree shall apply to and be binding
7 upon all the parties to this action, their officers, directors, agents, ser-
8 vants, employees, successors and assigns, and all persons, firms, and cor-
9 porations having notice of the Consent Decree and who are or will be acting in
10 concert and privity with the Defendants to this action or their officers,
11 agents, servants, employees, successors and assigns.

12 3. The State of Nevada DCNR, DEP under the authority of
13 NRS 445.214(1) has the power and duty to administer and enforce the provisions
14 of the NWPCCL.

15 4. Defendant REECO is a Texas corporation authorized to do business in
16 Nevada as a contractor working for the U.S. Department of Energy at the Sandia
17 National Laboratory facility located in Cactus Flat in the Tonopah Test Range.

18 5. NRS 445.221 provides in pertinent part that
19 except as authorized by a permit issued by the Department
20 under the provisions of NRS 445.131 to 445.354 inclusive
21 and regulations promulgated under such sections by the
22 commission it is unlawful for any person to discharge
23 from any point source any pollutant into any waters of
24 the State.

25 6. "Pollutant" within the meaning of the NWPCCL, NRS 445.178 includes
26 the chemical waste urea.

27 7. NRS 445.331 provides that any person who unlawfully discharges or
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1 aids and abets in the unlawful discharge of pollutants into waters of the State
2 shall pay a civil penalty of up to \$25,000 for each day of violation and for the
3 payment of damages including compensation for any loss or destruction of
4 wildlife, fish or aquatic life.

5 8. On or about November 2, 1988, REECO employees rinsed and flushed
6 waste urea from a spreader hopper onto the ground over a period of approximately
7 1.5 hours.

8 9. The urea and water formed several small ponds or catchments
9 including one which measured 30' by 25' and some of it flowed into a reservoir
10 used to supply water for construction projects and dust control. Low soil per-
11 meability prevented the water from soaking into the ground.

12 10. On or about November 3, 1988, a Nye County Sheriff's Deputy
13 discovered a dead horse in the vicinity of the reservoir referenced in paragraph
14 10 and observed several horses drinking from the 30' by 25' pool.

15 11. On or about November 5, 1988, a total of sixty-one (61) wild hor-
16 ses and numerous horned larks were found dead in an area radiating out from the
17 reservoir.

18 12. On or about November 3, 1988, autopsies of dead horses were per-
19 formed by Dr. Alan Ruegamer under the direction of the U.S. Bureau of Land
20 Management wild horse and burro specialist, Robert Stager and samples of tissue,
21 body fluids and water from the small ponds were taken to the APL Veterinary Lab
22 in Las Vegas for analysis.

23 13. On or about November 11, 1988, the lab test results confirmed that
24 the horses died of acute ammonia toxicity and calculations based on the urea
25 concentrations in the pond water samples showed that ingestion of 3.5 to 4.0
26 gallons of the contaminated water would provide a lethal dose of ammonia to a
27 horse.

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1 14. The Administrator of the DEP found REECO in violation of
2 NRS 445.221 for the unlawful discharge of urea into waters of the state
3 resulting in the death of sixty-one horses.

4 15. Without any admission of liability, the parties agree that this
5 Consent Decree is intended to compromise a disputed claim and that Defendant in
6 full and final settlement of all matters arising out of the alleged unlawful
7 discharge of urea into waters of the state shall:

8 (a) Pay a civil penalty and damages in the amount of fifteen thousand
9 dollars (\$15,000.00) by check made payable to the State of Nevada.

10 (b) Develop according to applicable Bureau of Land Management guideli-
11 nes Cedar Pass Spring, Cactus Pass Spring and Northern Unit Spring for the bene-
12 fit of wild horses and other wildlife.

13 (c) Maintain these springs for a period of three years from the date
14 of completion of the development of the springs and to obtain whatever security
15 clearance is necessary to allow an independent representative designated by
16 Plaintiff to annually verify proper development and maintenance of the spring.

17 16. Each party will pay its own attorneys' fees and costs of settle-
18 ment.

19 17. Plaintiff may submit this Consent for the Issuance of a Decree to
20 the Fifth Judicial District Court in Nye County for the issuance of an
21 appropriate Order.

22 18. In the event the court does not approve the above terms and con-
23 ditions, this Consent for the Issuance of a Decree and stipulations contained
24 herein will cease to be binding and shall be null and void and the State shall
25 be permitted to amend its Complaint to amend its relief requested and the
26 Defendant shall thereafter file its answer or other responsive pleading.

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DATED: _____.

Respectfully submitted,

BRIAN McKAY
Attorney General

By

Marta Adams
Deputy Attorney General
Division of Environmental Protection

201 South Fall Street, Room 221
Carson City, Nevada 89710
(702) 885-4670

Attorneys for Plaintiff

DATED: _____.

Reynolds Electrical and Engineering
Company

By

Arthur L. Williams, Jr.
General Counsel

Reynolds Electrical and Engineering
Company
P.O. Box 14400
Las Vegas, Nevada 89114

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Case No.

Department No.

IN THE FIFTH JUDICIAL DISTRICT COURT OF THE STATE OF NEVADA
IN AND FOR THE COUNTY OF NYE

THE STATE OF NEVADA, EX REL.
ROLAND D. WESTERGARD, DIRECTOR OF
THE DEPARTMENT OF CONSERVATION AND
NATURAL RESOURCES,

Plaintiff,

vs.

REYNOLDS ELECTRICAL AND ENGINEERING
COMPANY, A Texas Corporation,

Defendant.

ORDER

Pursuant to the Consent for the Issuance of a Decree which has been entered into by and between the Plaintiff and Defendant,

IT IS HEREBY ORDERED:

1. Defendant agrees to pay a civil penalty and damages in the amount of fifteen thousand dollars (\$15,000.00) by check made payable to the State of Nevada.

2. Defendant agrees to develop according to applicable BLM guidelines ^{Falling owns} Cedar Pass Spring, Cactus Pass Spring, and Northern Unit Spring for the benefit of wild horses and other wildlife.

3. Defendant agrees to maintain these springs for a period of three

Miss Spring

1 years from the date of completion of the development of the springs and to
2 obtain whatever security clearance is necessary to allow an independent repre-
3 sentative designated by Plaintiff to annually verify proper development and
4 maintenance of these springs.

5 4. Upon payment of such sums and the completion of the tasks outlined
6 above, Defendant shall be released by Plaintiff from any further action or pro-
7 ceeding of any nature, administrative or judicial by Plaintiff as to violations
8 alleged herein.

9 Consent Decree entered in accordance with the foregoing this ____ day
10 of _____, 1989.

11
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13 _____
14 District Judge
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REECO

WELLS

Form 1541-1
(May 1967)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SHORT NOTE TRANSMITTAL

September 6, 1988
(Date)

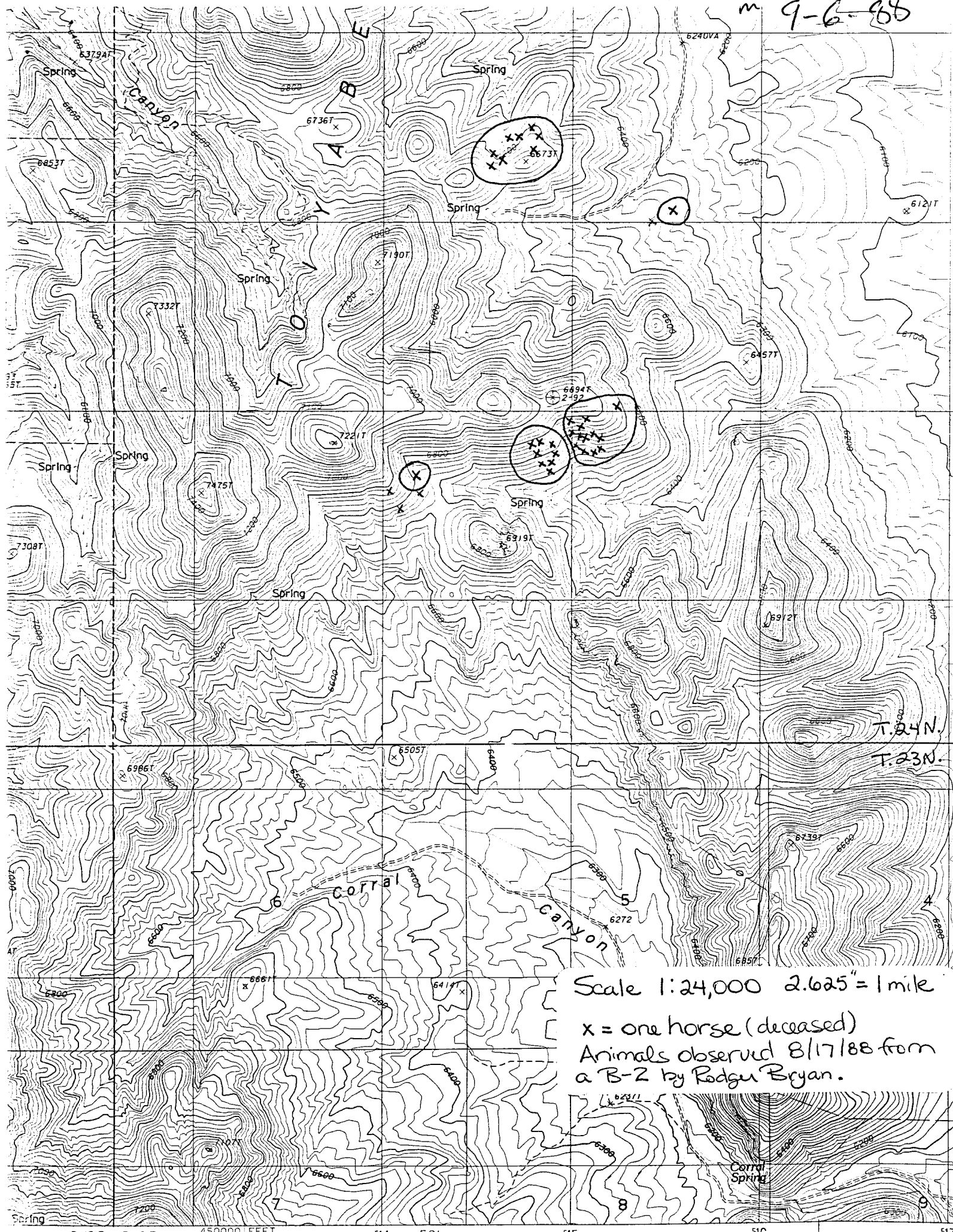
TO : Terri Jay
FROM : Rodger Bryan
SUBJECT: Map Transmittal

Terri,

Here's the maps you requested. I have to apologize for taking so long to get them in the mail. Last week was really hectic. The State Office has requested that we keep people out of the area until the investigation is over. Thanks.

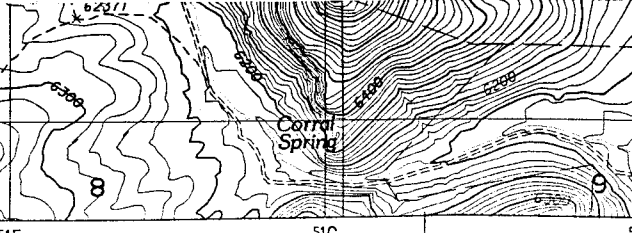
Rodger

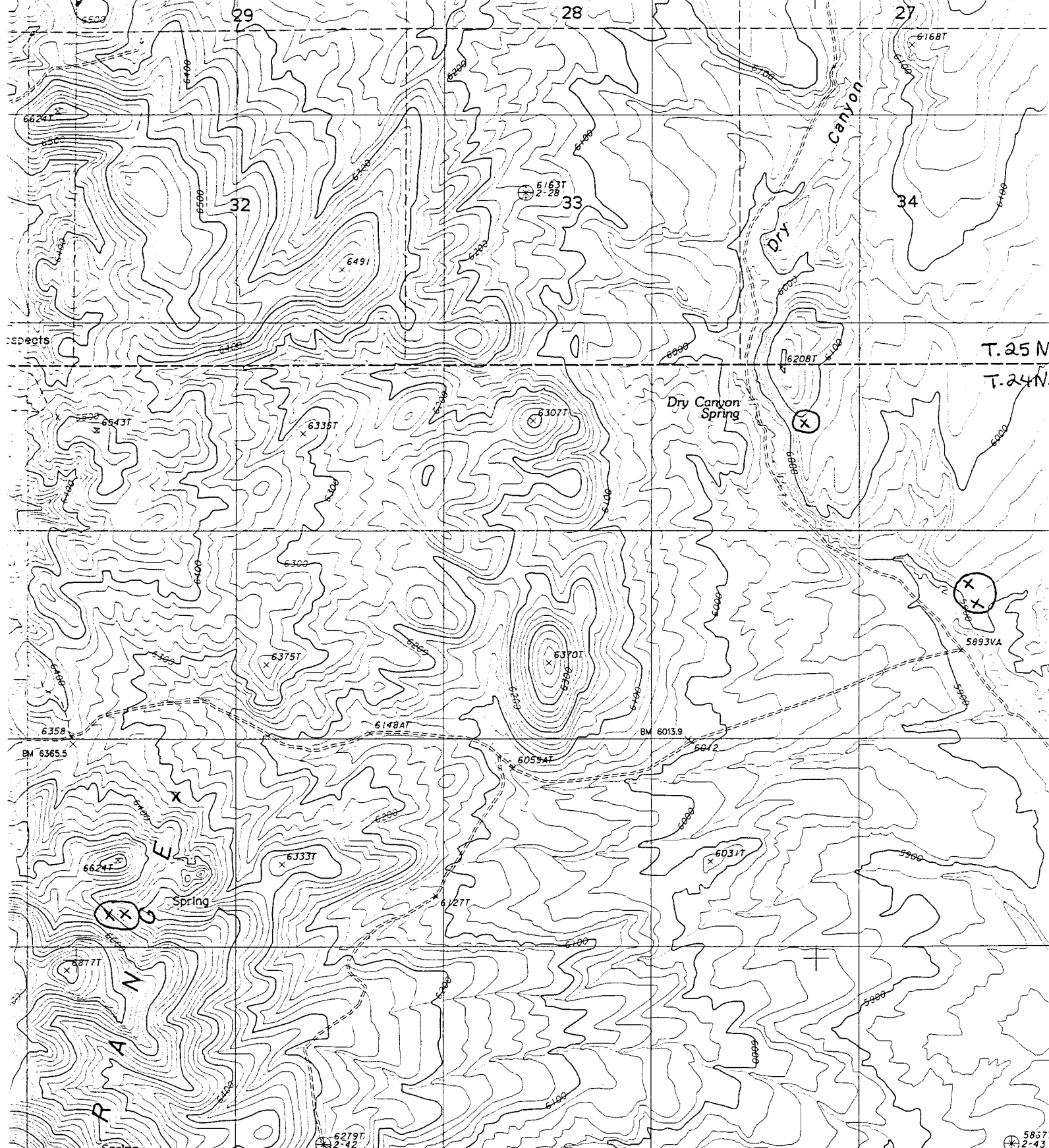
m 9-6-88



Scale 1:24,000 2.625" = 1 mile

x = one horse (deceased)
Animals observed 8/17/88 from
a B-Z by Rodgu Bryan.

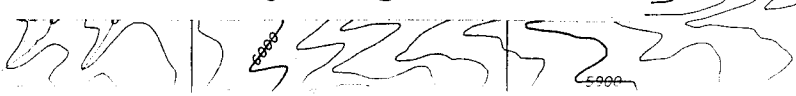




Scale 1:24,000 2.625" = 1 mile

x = one horse (deceased)

Animals observed 8/17/88 from a B-2 by Rodger Bryan.





m 12-2-88

Reynolds Electrical & Engineering Co., Inc.

Post Office Box 98521 • Las Vegas, NV 89193-8521

IN REPLY REFER TO:

500-02-112

L. H. Dodgion, Administrator
Division of Environmental Protection
Nevada Department of Conservation
and Natural Resources
201 South Fall Street, Room 221
Carson City, Nevada 89710

Re: Urea Incident/Settlement Proposal

Dear Mr. Dodgion:

Set forth below is REECO's Settlement Proposal.

SETTLEMENT PROPOSAL

On December 2, 1988, a Finding of Alleged Violation and Order was issued by the Administrator of the Division of Environmental Protection, pursuant to Nevada Revised Statutes (NRS) 445.317 and 445.324, requiring compliance by Reynolds Electrical & Engineering Co., Inc. (REECO), with the terms and conditions of the Order by the dates specified.

The Finding of Alleged Violation and Order alleged that REECO had violated NRS 445.221 which states:

"Except as authorized by a permit issued by the Department under the provisions of NRS 445.131 to 445.354 inclusive and regulations promulgated under such sections by the Commission, it is unlawful for any person to

REECO

AN  **EG&G** COMPANY



L. H. Dodgion, Administrator
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discharge from any point source any
pollutant into any waters of the State."

On November 2, 1988, REECO decided to clean out a truck-mounted spreader box containing an estimated 4,000 pounds of urea. REECO uses chemical urea as a runway deicer. Urea is also used on farmlands as a fertilizer and food supplement for cattle. The urea used by REECO is supplied in a granular prill form and is applied to the runway by means of a spreader box mounted on a truck. Urea is a compound synthesized from ammonia and carbon dioxide. Due to its hygroscopic nature, the prill tends to consolidate into a crusted mass if left exposed for an extended period of time. In deciding how to dispose of the material, REECO personnel discussed several methods such as burying it in a land fill or flushing it out with water. REECO supervisory personnel, with the approval of the REECO sanitarian whose primary responsibility is waste management, approved disposing of the urea by flushing the spreader truck with water thereby causing it to dissolve and be dispersed on the desert soil. REECO personnel proceeded to dilute the material with large quantities of water. However, unknown to the sanitarian, a sump covered by brush had been created by a REECO



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subcontractor, causing the water to accumulate rather than disperse over the desert floor.

On the morning of November 3, 1988, a Nye County Sheriff's Deputy discovered a dead horse in the vicinity of the sump, and several more were observed drinking from it. By November 5, 1988, a total of sixty-one wild horses had been found in an area radiating from the ponded water. On November 3, REECO personnel immediately took action to create a fresh pond of water to lure the horses away from the suspected contaminated water.

During the morning of November 3, 1988, water samples were collected by REECO's Environmental Department from the sump and standing pools of water. A portion of these samples were given to the BLM to be sent to a laboratory for analysis. Autopsies were performed on some of the dead horses and fixed the cause of death as ammonia toxicity.

All of the foregoing facts are set forth more fully in a report submitted to the State in response to an Order by the State issued December 2, 1988.

In the spirit of cooperation with the State, REECO desires amicably to settle this matter without the expense and complexities of protracted litigation. In attempting to reach a



L. H. Dodgion, Administrator
500-02-112
Page 4

reasonable settlement on this matter, we would suggest taking into account factors used by the Federal Government in assessing payments for alleged environmental violations.

The Federal EPA Administrator has discretion in the assessment of the penalty. Federal Water Pollution Control Act Amendments of 1972, Sections 101(a), 311(b)(5,6), (f,k,l), 33 U.S.C.A. Sections 1251(a), 1321(b)(5,6)(f,k,l); note to 40 C.F.R. Section 117.22 (penalties).

"Note: The Administrator will take into account the gravity of the offense and the standard of care manifest by the owner, operator, or person in charge in determining whether a civil action will be commenced under section 311(b)(6)(B). The gravity of the offense will be interpreted to include the size of the discharge, the degree of danger or harm to the public health, safety, or the environment, including consideration of toxicity, degradability, and dispersal characteristics of the substance, previous spill history, and previous violation of any spill prevention regulations. Particular



L. H. Dodgion, Administrator
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emphasis will be placed on the standard of care and the extent of mitigation efforts manifest by the owner, operator, or person in charge."

In this instant case, in determining whether to assess REECO for compensatory damages, fines or penalties, we also ask that the State consider that this was an unfortunate accident due to human error in trying to cope with an extremely complex multiple statutory scheme involving both State and Federal statutes. In addition to the statutes, there are thousands of pages of regulations and judicial interpretations. Further, there are hundreds of pages of lists of chemicals that require specific disposal techniques. Given this setting, it is virtually impossible for any entity, State, Federal or private, to not at some point in time, run afoul of environmental statutes and regulations.

Moreover, REECO considered this a maintenance task rather than a disposal task. None of the REECO personnel involved had the slightest notion that the urea would pose a danger to any type of species. As a matter of fact, many of the personnel were familiar with urea since it had been used as a deicer for runways, sidewalks, driveways, and on their own farms



L. H. Dodgion, Administrator
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as a fertilizer and food supplement to cattle. Hence, little consideration was given to special disposal techniques because none were thought to be required.

But, as fate would have it, several unexpected forces came together at an inopportune moment, that is, a large amount of crusted urea in a truck, an unknown sump covered by brush dug by a subcontractor, washing the large amount of crusted urea out of the truck and wild horses searching for water in that area at that time. And further, even though a large quantity of water had been used to dilute the urea, the level of toxicity was still enough to cause the death of the wild horses how unbeknownst to REECO personnel, have some peculiar sensitivity to urea. Upon identifying the probable problem, REECO personnel moved quickly to immediately confine and eradicate the contaminated water to a small area.

Moreover, the discharge never posed a threat or any danger to the public health or safety of any human population or hardly any other animal or plant species. As the report by Dr. Eberling states, the travel time of urea in this situation would be such that there was not then or now a danger of any ground water or wells being contaminated. As Dr. Eberling's report



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further notes, urea is easily and quickly degradable in the soil or atmosphere to relieve it of any harmful characteristics.

In all previous occasions where there have been a few other environmental violations by REECO at the NTS, REECO has always cooperated fully with the State in any type of cleanup or remedial action. REECO always tries to maintain the highest standards of care and professionalism within its organization regarding environmental concerns. REECO has recently created a new division to deal exclusively with environmental and health matters. This division is already staffed with many highly educated, well trained environmental professionals and others are steadily being hired. We have also instituted a position of an Environmental Compliance Officer. The General Manager of REECO has dedicated a great deal of money, manpower and equipment to this area of concern. Dozens of environmental compliance procedures have already been written. In-house and outside training is constantly taking place.

In view of the foregoing actions by REECO in managing environmental compliance and the quick action taken to ameliorate this unfortunate accident, damages assessed against REECO should be minimal. It is suggested that REECO pay compensatory damages to the State of \$100.00 per horse which




L. H. Dodgion, Administrator
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Page 8

would total \$6,100.00. This value is based on the State's auction price of \$125.00 per horse which find few buyers. Because of the nature and all the surrounding circumstances of this unfortunate accident, REECO should not be assessed any fine or penalty.

REECO, as in the past, will continue to cooperate fully with the State in environmental compliance matters.

Kindest regards,


Arthur L. Williams, Jr.
General Counsel

ALW:mh

1-13-89



Reynolds Electrical & Engineering Co., Inc.

Post Office Box 98521 • Las Vegas, NV 89193-8521

IN REPLY REFER TO:
500-02-95

JAN 13 1989

L. H. Dodgion, Administrator
Division of Environmental Protection
Nevada Department of Conservation
and Natural Resources
201 South Fall Street, Room 221
Carson City, Nevada 89710

Re: Urea Incident/Order of December 2, 1988

Dear Mr. Dodgion:

Enclosed please find the following packets of documents which we present in response to the referenced Division Order:

1. A narrative description of the events eading up to the incident of November 2, 1988; results of water samplings taken; a hydrogeological report; and information regarding human health consequences.
2. REECo plans and procedures for the proper handling of hazardous substances, as well as Company procedures for the proper handling of urea in the future.

As our representatives discussed with you at the meeting of December 20 in Carson City, REECo sincerely regrets that this unfortunate accident ever occurred, and is willing to work with the State to resolve the problem in an appropriate manner. To this end, you will be receiving under separate cover a REECo proposal which we hope the State will accept as alternative to pursuing further litigation in the matter.

Finally, as you have already discussed with Greg McKenna of our Legal Department, we are filing a Petition for Hearing with the State Environmental Commission on the matter. We have enclosed a copy of the Petition for your Division records. Again, please understand that by this action we do not intend to adopt an adversarial position with the State, but only to generally protect REECo's interests until the present situation is resolved.



L. H. Dodgion, Administrator
500-02-95
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JAN 13 1989


I look forward to meeting you on January 23 and discussing all of these mutual concerns in greater detail. Should you have any questions in the interim, do not hesitate to contact me or Arthur Williams, REECo General Counsel, at (702) 295-2225.

Very truly yours,

D. L. Fraser
D. L. Fraser
General Manager

DLF:FGM:dm

Enclosures
As stated

cc: Terri Jay, w/encl. 
Commission for the Preservation
of Wild Horses
Stewart Facility
Capitol Complex
Carson City, Nevada 89710

FILED
Humane Society of Southern Nevada

CLINICAL AND DIAGNOSTIC VETERINARY TOXICOLOGY

William B. Buck, Gary D. Osweiler, and Gary A. Van Gelder

Toxicology Section
Veterinary Diagnostic Laboratory
Iowa State University
Ames, Iowa



KENDALL/HUNT PUBLISHING COMPANY
DUBUQUE IOWA

UREA AND NONPROTEIN NITROGEN

Urea and other nonprotein nitrogen compounds are used as substitutes for natural protein in ruminant feeds. Although urea and related compounds are considered to be feed ingredients, if not used properly and under certain nutritional conditions, they can become toxicants that are highly lethal. This section will be concerned primarily with urea, since problems associated with its use have been the most prominent.

Source

The more common sources of nonprotein nitrogen (NPN) include urea, biuret, and diammonium phosphate. Ammonium chloride also is used to reduce the incidence of urolithiasis in cattle and sheep and as an expectorant for swine.

Urea is generally recommended in ruminant rations at a rate of approximately 3 percent of the grain ration or about 1 percent of the total ration. More recently, however, formulations increasing these levels have been recommended and appear to be in general use.

Biuret is recommended in ruminant rations at levels approximating 3 percent of the total ration. Ammonium chloride may be used at a rate of 0.75-1.5 ounces for cattle and 0.25 ounces for sheep/head/day to reduce urolithiasis. Diammonium phosphate may be used to furnish about one-third of the nitrogen requirements for ruminants.

Toxicity

The toxicity of urea and other NPN formulations is dependent upon their hydrolysis to ammonia. Cattle and other ruminants are the most susceptible because their rumen contains urease and is an ideal environment for hydrolysis of urea, releasing carbon dioxide and ammonia. Horses are mildly susceptible to urea but are more susceptible to ammonium salts. Monogastric animals are not susceptible to urea poisoning but are susceptible to poisoning by ammonium salts.

Circumstances which usually result in urea toxicosis often involve (1) improper mixing or formulation of NPN rations; (2) feeding urea to ruminants unaccustomed to NPN or animals which have

been starved; (3) using high levels of urea in rations low in energy and protein and high in fiber; and (4) giving animals free access to a palatable source of urea concentrate.

In ruminants, urea usually is lethal at 1-1.5 gm/kg body weight; 0.3-0.5 gm/kg may be toxic. Urea phosphate usually is toxic at 1 gm/kg. Ammonium salts and diammonium phosphate may be lethal at 1-2 gm/kg (Singer, 1969).

In horses, urea is lethal at approximately 4 gm/kg body weight (Hintz *et al.*, 1970). Ammonium salts may be lethal at 1.5 gm/kg body weight.

In monogastric animals, urea and biuret have very low toxicity. Ammonium salts are toxic at approximately 1.5 gm/kg body weight (Bicknell, 1965).

Urea toxicity varies with the age of ruminant animals. The very young ruminant has very low susceptibility because its rumen flora have not developed. After rumen development, the younger animals appear to be more susceptible than older animals. Cattle and sheep adapt to the feeding of urea rather quickly but also quickly lose their adaptation. By slowly increasing the amount of urea fed, the ruminant can tolerate as much as 1 gram urea/kg body weight daily. In practice, however, the feeding of very high levels of urea may be dangerous because animals may go off feed during adverse weather conditions or digestive upsets and quickly lose their tolerance for urea. Then after coming back on full feed, they may be poisoned by the high levels of urea.

Some predisposing factors for urea toxicosis in ruminants include (1) fasting, (2) high roughage diets, (3) lack of conditioning to high NPN diets, (4) high ruminal pH, (5) high rumen and body temperature, and (6) dehydration or low-water intake.

It is often imperative to be able to calculate the concentration of urea in a feed. Pure urea equals 292 percent protein equivalent; however, commercial urea equals 262-280 percent protein equivalent. Thus, 1 pound of pure urea is equivalent to 2.92 pounds of NPN protein. If a label indicates 64 percent protein from a urea or NPN source, the concentration of urea is $64/292$ equals 22 percent urea. If a feed contains 10 percent urea, the NPN protein is $10 \times 2.92 = 29.2$ percent.

Mechanism of Action

Toxicosis from NPN formulations results from the absorption of NH_3 from the gastrointestinal tract. Ammonia from urea and ammonium salts is absorbed into the bloodstream more rapidly when rumino-reticulum pH is high (8.0 or above). An alkaline reaction also enhances urease-ureolysis to NH_3 and CO_2 . At a pH of 7.0 or below, the ammonia is in the form of ammonium ion (NH_4^+) and, thus, would not readily be absorbed through the gastrointestinal wall nor would it be available in the gaseous form for eructation.

Although alkalosis of the rumen occurs during urea toxicosis, a systemic alkalosis does not occur. In fact, a metabolic acidosis develops but is not the probable cause of death. Lloyd (1970) has shown that blood pH drops from 7.4 to 7.0 at the time of urea-induced death. There is an apparent inhibition of the citrate cycle with resulting compensatory anaerobic glycolysis. Highly significant increases in packed cell volume, blood ammonia, blood glucose, blood urea nitrogen, serum potassium and phosphorus, blood lactate, SGOT, SGPT, and rumen pH occur during urea toxicosis in cattle and sheep. There are concomitant decreases in blood pH and urine excretion. Death probably is due to hyperkalemic cardiac blockage and cessation of respiration (Lloyd, 1970).

Some workers have theorized that since urea is hydrolyzed into ammonia in the rumen, it follows that it would be eructated by the ruminant and aspirated into the respiratory tract, causing irritation and increased susceptibility to respiratory infections. While it is true that urea is hydrolyzed into ammonia under normal conditions of digestion, over 99 percent of the released ammonia is in the form of NH_4OH which is nongaseous. Also, that NH_3 which is present is soluble in the liquid portion of the rumen contents and would also be nongaseous. Therefore, unless the rumen pH was elevated to 8-9, no gaseous NH_3 would be available for eructation. If the rumen pH becomes this high, the animal will show overt signs of ammonia toxicosis. It is plausible to assume that if ammonia were present in the gaseous form in the rumen, it could be aspirated into the respiratory tract, since Dougherty and Cook (1962) have shown that a major percentage of the ruminal gases are aspirated into the respiratory system at the time of eructation.

Clinical Signs

Toxic manifestations usually occur in ruminants when the concentrations of ammonia reach

50 mg/100 ml in rumen fluid and 2 mg/100 ml in serum or whole blood. The clinical course of urea toxicosis usually is rapid and acute, from 10 minutes to as much as 4 hours after consumption. Clinical signs, indicating abdominal pain, include frothy salivation, grinding of the teeth, and kicking at the abdomen. There usually is polyuria, muscle tremors, incoordination, weakness, forced rapid breathing, bloat, violent struggling and bellowing, and terminal tetanic spasms. There usually is a marked jugular pulse. Respiration often is forced and rapid. Toward the terminal stages, vomiting is especially common in sheep. Hyperthermia and anuria usually are evident just prior to death.

Physiopathology

Upon opening the rumen of an animal which has recently died of urea toxicosis, one occasionally can detect the odor of ammonia. There are no characteristic lesions of urea-NPN poisoning. Pulmonary edema, congestion, and petechial hemorrhages are fairly common findings. There may be a mild bronchitis, and commonly rumen ingesta is found in the trachea and bronchi, especially in sheep. There may be a catarrhal gastroenteritis.

Animals dead of urea toxicosis often are extremely bloated, and the carcass appears to decompose quite rapidly. Body tissues taken for diagnostic purposes should be obtained from an animal which has recently died. As a carcass is allowed to decompose, the breakdown of the natural protein in the tissues and stomach contents will result in a buildup of ammonia, which would tend to lead one diagnostically astray.

Diagnosis

Diagnosis of urea or NPN poisoning is based on the history of acute illness following consumption of feed containing urea or other NPN formulations. It usually is very important that the feed be analyzed for urea content and calculations be made to determine the possibility of poisoning under the conditions of consumption. If the clinical signs and necropsy findings are compatible with urea toxicosis, the diagnosis may be confirmed by analysis for ammonia in whole blood, serum, ruminal fluid, and urine. The specimens should be frozen immediately and thawed only at the time of analysis or preserved by the addition of saturated mercury chloride to stop enzymatic action on the natural protein. If the specimens are not frozen or preserved, proteolytic enzymes will break down the amino acids and tissue proteins, releasing ammonia.

Thus, the longer a cadaver decomposes, the higher will be the ammonia content.

In most cases of urea poisoning, the rumen ammonia content will be greater than 80 mg/100 ml and may be as high as 2,000 mg/100 ml. It is important to take samples from several areas in the rumen and reticulum for ammonia analysis because it is possible that an animal may die before the urea that has been consumed has a chance to evenly distribute throughout the rumen and reticulum. Blood or serum ammonia nitrogen concentrations between 2-4 mg/100 ml or greater would be compatible with a diagnosis of NPN (ammonia) poisoning.

Conditions that may be confused with urea toxicosis include acute encephalitic diseases such as thromboembolic meningoencephalitis and polioencephalomalacia, grain engorgement, acute nitrate and cyanide poisoning, organophosphorous and chlorinated hydrocarbon insecticide poisoning, and enterotoxemia.

Treatment

The best treatment for urea poisoning is to give several gallons of cold water orally. As much as 5-10 gallons should be given to an adult cow. If 5 percent acetic acid or vinegar is available, 1 gallon should be given along with the cold water. The rationale for this treatment is that the cold water will reduce the temperature of the rumen and lower the pH, thereby slowing down hydrolysis of the urea to ammonia. In addition, the water tends to dilute the ammonia already present, lessening the concentration available for absorption into the bloodstream. The water also acts as a diuretic. Lloyd (1970) has shown that as long as an animal had adequate urine output, death did not occur during urea toxicosis.

If bloat accompanies urea toxicosis, it should be relieved; and Lloyd (1970) has suggested the administration of normal saline with magnesium and calcium solutions intravenously.

Case History

An Iowa farmer lost eight black Angus stock cows 8-10 hours after giving them a supplement containing urea. The herd of registered Angus cows consisted of 61 adults and 5 calves. They had been pastured in a cornstalk field for at least two months, and the owner decided they needed some pelleted supplement since it was midwinter. He inquired with the local feed dealer as to what supplement he should use. He was given a pelleted supple-

ment called "Beef 64," which the label indicated contained 61 percent protein from a nonprotein nitrogen source. The instructions on the label recommended that it not be fed by itself but that it be mixed thoroughly with the grain ration before feeding. It also recommended that no more than 1 lb/head/day be fed. A warning on the label suggested that the supplement was designed for fattening cattle on full feed of grain. However, contrary to the recommendations on the label, the feed representative told the farmer that he could safely feed these pellets to the cattle by pouring the pellets on the ground in the cornfield. On January 15, the owner fed 60 pounds of these pellets to 60 cows and 5 calves. No problems were noted. The next day he did not feed the cows. On January 17, he fed the same amount as on January 15. Eight to ten hours later, eight animals had died. A veterinarian was called and noted the following signs: staggering, unstable walk, foaming at the mouth, rapid breathing, and hyperirritability. Those animals which died went down on their side in tetanic convulsive seizures. The following day, all surviving animals appeared normal. Samples of the pelleted feed were submitted for chemical analysis and found to contain 24 percent urea. Rumen fluid specimens taken from an animal which had recently died contained an average of 120 mg ammonia nitrogen per 100 ml. Whole blood from an affected animal was found to contain 4.5 mg ammonia nitrogen per 100 ml.

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REECo fined \$86,000 in horse deaths

By Caryn Shetterly
Review-Journal

The state Division of Environmental Protection has told a Nevada Test Site contractor it must pay \$86,000 in fines for the ammonia poisoning of 61 wild horses last November on the Tonopah Test Range.

Representatives from the department, Reynolds Electrical and Engineering Co. Inc. and the Nevada Commission for the Preservation of Wild Horses will meet Monday in Carson City to discuss the fines.

REECo attorneys also have applied for a hearing before the state environmental commission.

Terri Jay, executive director of the wild horse preservation commission, said Saturday that the \$86,000 figure includes a \$25,000 fine for pollution of water, plus a civil penalty of \$1,000 per horse

killed after the chemical urea flowed into the animals' water source.

At least some of the money would go to the preservation commission.

The wild horse preservation commission, meanwhile, wants the 1989 Legislature to make it a felony to kill the animals, some 28,000 of which roam Nevada lands. Killing a wild horse is a gross misdemeanor under Nevada law.

Federal and state laws impose financial penalties or prison time or both for harassing or killing wild horses.

The three-member commission met Saturday and discussed the REECo incident as well as the proposed statute change.

Commission Chairman Deloyd Satterthwaite said he had assurances from state Sen. Dean Rhoads a bill changing the law would be

introduced this session.

Lew Dodgion, administrator of the Division of Environmental Protection, met with REECo officials last month after the 61 wild horses died from drinking urea, a chemical used as a de-icing agent on test range roads.

A REECo employee washed the chemical from a truck, sending the poisonous liquid into a pond and creating standing pools from which the wild horses drank. The animals died of ammonia poisoning.

Satterthwaite, who also is president of the Nevada Cattlemen's Association, made a prediction on Monday's meeting in Carson City.

"I'm sure REECo will claim this was an accident and will say there was no malicious intent," he said. "It is my belief it was an accident."

The incident at the test range further incensed officials of the Humane Society of Southern Ne-

vada, who discovered bets of \$1 had been made by 17 Advance Security guards on the number of horses that would die. Thirty-one horses died within two days, and 30 more were discovered during the weekend of Nov. 5.

Dart Anthony, chairman of the Humane Society board, attended Saturday's commission meeting, and said his organization was conducting its own investigation of the deaths. The guards, who have since apologized for the betting, should be fired, Anthony said.

REECo also faces federal criminal charges from the U.S. Bureau of Land Management, which oversees wild horse herds across the state. The bureau continues to investigate the November deaths, but makes none of the information available to the public until the probe is concluded.

1-22-89

m 10-31-89
IN REPLY REFER TO:



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

CALIENTE RESOURCE AREA

P.O. Box 237

Caliente, Nevada 89008

4700
(NV-055.14)

(702) 726-3141

OCT 31 1989

Marta Adams
Deputy Attorney General
Division of Environmental Protection
201 South Fall Street, Room 221
Carson City, NV 89710

Dear Ms. Adams,

This letter is to inform you that the three spring sources for redevelopment by REECO have been chosen. They are: Cliff Spring and an unnamed spring located at NWNE, Sec 13, R 52 E, T 5 S; and Silver Bow Spring located at NWNE, Sec 9, R 49 E, T 1 S. The water rights have been researched, the water survey, preparation of the environmental assessment, and project survey and design are all in progress.

If you need any further information or have any questions or comments, please contact Jule Durfee, Wild Horse and Burro Specialist.

Sincerely,

Curtis G. Tucker
Area Manager

Gold Butte

a: gold butte, gat 4-3-97



United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Las Vegas District Office
4765 Vegas Drive
Las Vegas, Nevada 89108

4700
NV-052

1997 Gold Butte Gather File

04-01-97

28 Day Notice

received
4/3

Dear Interested Public:

The Bureau of Land Management will gather excess wild burros from public lands in the State of Nevada within 28 days from the date of this letter.

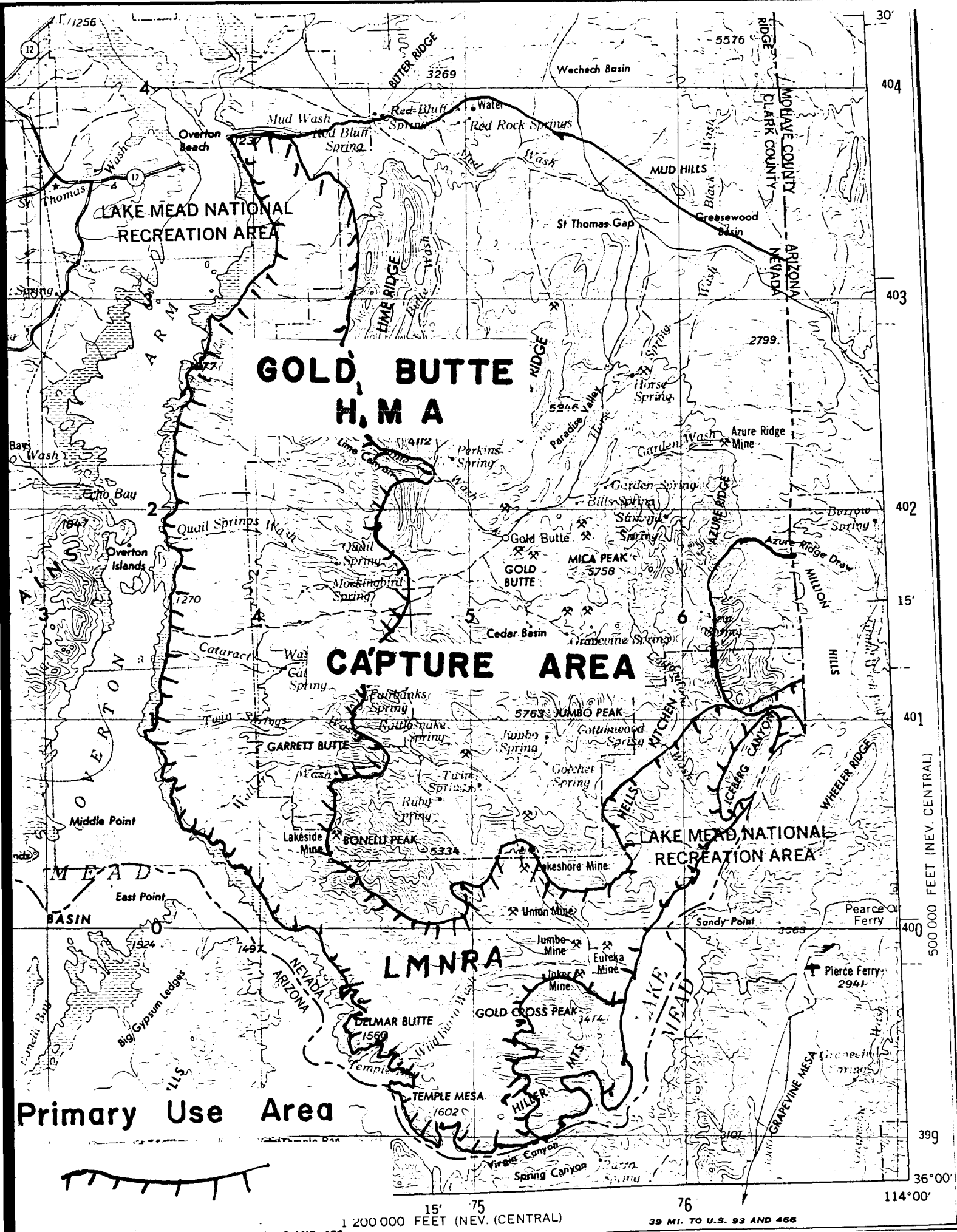
The gathering will be conducted in the Las Vegas District on the Gold Butte Herd Management Area (HMA). The areas scheduled to be gathered are shown on the enclosed map and as described below.

<u>Herd Management Area/Herd Area Name</u>	<u>Environmental Analysis Record Number</u>	<u>Reason for Gathering</u>	<u>Approximate Number to be Removed</u>	<u>Approximate Number to Remain</u>
Gold Butte	NV-053-0-30	Achieve AML	130	43

The gather is continuing efforts to reduce populations of burros to within the established A.M.L. of 22 to 98 animals. A current census (03-24-97) was conducted and revealed animals in excess of AML. In an effort protect the animals and their environment it is necessary accomplish this action prior to the hot season in Las Vegas. The AML and gather plan were previously implemented by decision. This letter is meant to state the current situation and is not a decision document. This action can not be contested by the appeal process.

Sincerely,

Marvin Dan Morgan
Assistant District Manager
Renewable Resources



**GOLD BUTTE
H, M A**

CAPTURE AREA

LMNRA

Primary Use Area

24 MI. TO U. S. 93 AND 466

1 200 000 FEET (NEV. CENTRAL)

39 MI. TO U.S. 93 AND 466

500 000 FEET (NEV. CENTRAL)

BOB MILLER
Governor

STATE OF NEVADA

CATHERINE BARCOMB
Executive Director



**COMMISSION FOR THE
PRESERVATION OF WILD HORSES**

1105 Terminal Way
Suite 209

Reno, Nevada 89502
(702) 688-2626

April 21, 1997

Mr. Martin Dan Morgan
Las Vegas District
Bureau of Land Management
4765 Vegas Drive
Las Vegas, Nevada 89108

Subject: Gold Butte Gather

Dear Mr. Morgan:

Thank you for the notice to gather wild burros from the Gold Butte Herd Management Area. It is our understanding that the appropriate management level was established by a Biological Opinion for the protection of the federally listed desert tortoise.

In light that burros in southern Nevada foaled year round, we have no objection to gathers during this time of year. We hope the management to this level will protect tortoise habitat and contribute to the de-listing of this species.

Sincerely,

A handwritten signature in cursive script that reads "Catherine Barcomb".

CATHERINE BARCOMB
Executive Director