

Marc

CORRES. CONTROL
OUTGOING LTR. NO.

EG&G ROCKY FLATS

90 RF 1427

EG&G ROCKY FLATS, INC.
ROCKY FLATS PLANT, P.O. BOX 464, GOLDEN, COLORADO 80402-0464 • (303) 966-7000

DIST.	ENCL
ALLHOFF, F.H.	<input checked="" type="checkbox"/>
BREEN, J.H.	<input checked="" type="checkbox"/>
BRETZKE, J.C.	<input checked="" type="checkbox"/>
BURLINGAME, A.H.	<input type="checkbox"/>
DAVIS, J.G.	<input type="checkbox"/>
FERRERA, D.W.	<input type="checkbox"/>
FERRIS, L.B.	<input type="checkbox"/>
FRANCIS, G.E.	<input type="checkbox"/>
GOODWIN, R.	<input checked="" type="checkbox"/>
HEALY, T.J.	<input type="checkbox"/>
HECKER, E.H.	<input type="checkbox"/>
KERSH, J.M.	<input checked="" type="checkbox"/>
KIRBY, W.A.	<input type="checkbox"/>
MAJESTIC, J.R.	<input type="checkbox"/>
MCKINLEY, K.B.	<input checked="" type="checkbox"/>
MELLEN, J.B.	<input type="checkbox"/>
PARNELL, R.F.	<input type="checkbox"/>
POTTER, G.L.	<input checked="" type="checkbox"/>
RHODES, J.L.	<input type="checkbox"/>
RISNER, V.L.	<input type="checkbox"/>
SANFORD, T.H.	<input type="checkbox"/>
SHANNON, W.M.	<input type="checkbox"/>
VAN LEUVEN, D.B.	<input type="checkbox"/>
WARNER, B.P.	<input checked="" type="checkbox"/>
YOUNG, E.R.	<input type="checkbox"/>
<i>N. Morgan</i>	<input checked="" type="checkbox"/>
BETCHER, D.H.	<input type="checkbox"/>
CARNIVAL, G.J.	<input type="checkbox"/>
HARMAN, L.K.	<input type="checkbox"/>
HEBERT, J.L.	<input type="checkbox"/>
HOFFMAN, R.B.	<input type="checkbox"/>
KLAMMAN, R.L.	<input type="checkbox"/>
KREG, D.M.	<input type="checkbox"/>
LOUDENBERG, G.E.	<input type="checkbox"/>
NAIMON, E.R.	<input type="checkbox"/>
NEWBY, R.L.	<input type="checkbox"/>
TURNER, H.L.	<input type="checkbox"/>
VELASQUEZ, R.N.	<input type="checkbox"/>
<i>K.C. Levene</i>	<input checked="" type="checkbox"/>
<i>J. In. Arnold</i>	<input checked="" type="checkbox"/>
<i>L. Hickie</i>	<input checked="" type="checkbox"/>
<i>D. Baas</i>	<input checked="" type="checkbox"/>
<i>D. Hobbs</i>	<input checked="" type="checkbox"/>
CORRES. CONTROL	<input checked="" type="checkbox"/>
CONTRACT ADMIN.	<input checked="" type="checkbox"/>
<i>E. Baldwin</i>	<input checked="" type="checkbox"/>
<i>J.G. Hildie</i>	<input checked="" type="checkbox"/>
<i>L. Schubert</i>	<input checked="" type="checkbox"/>
<i>G. Peter</i>	<input checked="" type="checkbox"/>

April 6, 1990



90-RF-1427

000025427

Gregory Fess
General Counsel
DOE, RFO

RESPONSES TO GAO INQUIRY

I am enclosing for Department of Energy handling responses to GAO inquiries of March 26, 1990. These responses are based on our good faith investigation of relevant files. However, if new information is discovered or GAO's questions were misinterpreted, EG&G Rocky Flats, Inc. (EG&G RF) reserves the right to amend these answers. In this regard, we note that it would have been helpful if GAO's requests were more precise. In two cases, inquiries call for conclusions pertaining to the applicability of environmental laws to RFP pondcrete activities. Because EG&G Rocky Flats was not onsite during the period covered by such inquiries and because the questions seek conclusions on complex issues which reasonable men may differ, we felt that a response to these inquiries would be inappropriate.

We are continuing to prepare responses to Question Nos. 5, 14, 20, 21, 22, 23, 29, 32, 33, 34, 37, 38, 39 and 43. Responses to these questions will be provided to you as soon as practical.

Please contact me at 966-2342 if you have any questions concerning this submittal.

Robert Goodwin
Robert Goodwin
General Counsel

Iss

Enclosure:
As Stated

CC:
G. G. Duffy - DOE/RFO
J. Comins-Rick - DOE/RFO

CLASSIFICATION:	
UNCLASSIFIED	<input type="checkbox"/>
CONFIDENTIAL	<input type="checkbox"/>
SECRET	<input type="checkbox"/>
AUTHORIZED CLASSIFIER SIGNATURE	

Date:
IN REPLY TO LTR NO.

RG
LTR APPROVALS:
RG
CRG & TYPIST INITIALS

ADMIN RECCRD

SW-A-002913

EG&G ROCKY FLATS, INC.
RESPONSE TO GAO INQUIRY

Question 1:

Update the # of waste sites that have been identified to date at Rocky Flats.

Response to Question 1:

To the best of our present knowledge there are 216 Solid Waste Management Units and other regulated units.

Question 2:

Storage of pondcrete at NTS - does it include burial?

Response to Question 2:

The pondcrete is stored in burial pits and covered with 1 foot of earth cover as an interim measure. When the final permit is issued, the final burial configuration will be established.

Question 3:

Date of the EPA, DOE and CDH compliance agreement.

Response to Question 3:

July 31, 1989.

Question 4:

- a. Was the storage of pondcrete on Pads 750 and 904 in conformance with RCRA regulations?
- b. If so, how?
- c. If not, who approved the storage and why?
- d. Should the storage have come under RCRA regulations?
- e. Did the State and EPA know and approve the storage of pondcrete on Pads 750 and 904?

Response to Question 4:

- a. This inquiry seeks to elicit an expert opinion on a complex legal and factual matter. EG&G simply is not in a position to provide a suitable response.
- b. See response to (a) above.
- c. Without commenting on whether or not the storage of pondcrete on Pads 750 and 904 was in conformance with RCRA regulations, the storage was with the knowledge, consent, and approval of the United States Government acting through the Department of Energy.
- d. See response to (a) above.
- e. At all times relevant hereto the State and EPA were aware of pondcrete storage. Both entities inspected these areas on many occasions.

Question 6:

What does inadequate control or varying concentrations of solids in the sludge feed to the pug mill mean?

Response to Question 6:

The strength of the final waste form depends on the water/cement ratio in the waste matrix, with the amount of water (or solids) present in the sludge feed determining the ratio. Depending on factors such as the depth of the pond sludge, the location of the sludge and the settling characteristics of the sludge, the amount of solids in the sludge will vary accordingly. Given that the pug mill process had no means of determining the solids content of the sludge, there was inadequate control of the water/cement ratio.

Question 7:

What is the star valve?

Response to Question 7:

The star valve is an electrically operated rotary valve situated at the discharge of the cement hopper. The valve rotates at a predetermined speed and delivers cement into the pug mill.

Question 8:

- a. Are pondcrete blocks or processing subject to RCRA standards?
- b. If so, when or what date did they become subject to RCRA standards?

Response to Question 8:

- a. See response to 4(a).
- b. See response to 4(a) above.

Duplicate

Response to Question 4:

- a. This inquiry seeks to elicit an expert opinion on a complex legal and factual matter. EG&G simply is not in a position to provide a suitable response.
- b. See response to (a) above.
- c. Without commenting on whether or not the storage of pondcrete on Pads 750 and 904 was in conformance with RCRA regulations, the storage was with the knowledge, consent, and approval of the United States Government acting through the Department of Energy.
- d. See response to (a) above.
- e. At all times relevant hereto the State and EPA were aware of pondcrete storage. Both entities inspected these areas on many occasions.

Question 6:

What does inadequate control or varying concentrations of solids in the sludge feed to the pug mill mean?

Response to Question 6:

The strength of the final waste form depends on the water/cement ratio in the waste matrix, with the amount of water (or solids) present in the sludge feed determining the ratio. Depending on factors such as the depth of the pond sludge, the location of the sludge and the settling characteristics of the sludge, the amount of solids in the sludge will vary accordingly. Given that the pug mill process had no means of determining the solids content of the sludge, there was inadequate control of the water/cement ratio.

Question 7:

What is the star valve?

Response to Question 7:

The star valve is an electrically operated rotary valve situated at the discharge of the cement hopper. The valve rotates at a predetermined speed and delivers cement into the pug mill.

Question 8:

- a. Are pondcrete blocks or processing subject to RCRA standards?
- b. If so, when or what date did they become subject to RCRA standards?

Response to Question 8:

- a. See response to 4(a).
- b. See response to 4(a) above.

Response to Question 12:

- a. NTS criteria stated that the waste must be a solid, contain no free liquids and no particulates. In order to satisfy these requirements, the Waste Certification criteria was somewhat subjective and consisted of an inspector feeling the surface of the pondcrete to determine if it was a solid.
- b. No.

Question 13:

What were the acceptable control limits that pondcrete waste boxes would have to have in order to meet performance criteria?

Response to Question 13:

Assuming GAO's use of the phrase "pondcrete waste boxes" to mean "pondcrete", pondcrete met the performance criteria as determined by inspection of the final blocks. In other words, production of acceptable blocks as determined by the quality inspectors was used by the process operators to determine acceptable sludge and cement flows in later boxes.

Question 15:

- a. Procedures developed for all activities associated with the reprocessing of failed pondcrete boxes and approved on August 5, 1988. What do they include? Obtain a copy.
- b. Implemented yet?
- c. If not, when will they be implemented?

Response to Question 15:

The procedure which addresses reprocessing of failed pondcrete is WO-3054. This procedure is in a draft form and will be used during the development testing of the remix process. After the process has been developed, a finalized procedure will be issued (mid April). Draft is attached (#1).

Question 16:

- a. Qualification standards for pondcrete operations developed September 1, 1988. Initial operator training began on September 16, 1988 and documentation of training established by October 7, 1988. What are they? Obtain copies of standards.
- b. Are these standards in operation now or are they being revised by EG&G?

Duplicate

Response to Question 12:

- a. NTS criteria stated that the waste must be a solid, contain no free liquids and no particulates. In order to satisfy these requirements, the Waste Certification criteria was somewhat subjective and consisted of an inspector feeling the surface of the pondcrete to determine if it was a solid.
- b. No.

Question 13:

What were the acceptable control limits that pondcrete waste boxes would have to have in order to meet performance criteria?

Response to Question 13:

Assuming GAO's use of the phrase "pondcrete waste boxes" to mean "pondcrete", pondcrete met the performance criteria as determined by inspection of the final blocks. In other words, production of acceptable blocks as determined by the quality inspectors was used by the process operators to determine acceptable sludge and cement flows in later boxes.

Question 15:

- a. Procedures developed for all activities associated with the reprocessing of failed pondcrete boxes and approved on August 5, 1988. What do they include? Obtain a copy.
- b. Implemented yet?
- c. If not, when will they be implemented?

Response to Question 15:

The procedure which addresses reprocessing of failed pondcrete is WO-3054. This procedure is in a draft form and will be used during the development testing of the remix process. After the process has been developed, a finalized procedure will be issued (mid April). Draft is attached (#1).

Question 16:

- a. Qualification standards for pondcrete operations developed September 1, 1988. Initial operator training began on September 16, 1988 and documentation of training established by October 7, 1988. What are they? Obtain copies of standards.
- b. Are these standards in operation now or are they being revised by EG&G?

Question 19:

Dates needed

- a. NTS revised its criteria for package acceptance and changes in DOE Order 5820.2A requiring a compressive strength of 400 psf.

Response to Question 19:

NTS published criteria (NVO-325) that contained new criteria for package acceptance in October, 1988. The old criteria document (NVO-185 rev. 4) had undergone several draft revisions prior to October, 1988. The criterion #2.1.2.B states the 400 lbs/ft² is required to support other waste packages and earth cover without crushing during stacking and covering operations. The safety during stacking operations, and not pondcrete itself, cause the criteria to be revised. The previous document had no compressive strength requirements for the package.

Question 24:

What happens to pondcrete at NTS and Rocky Flats when NTS goes from an interim storage permit to a final RCRA permit?

Response to Question 24:

Depending on the final permit conditions, nothing should happen to the pondcrete at NTS when NTS goes from interim status to a final permit. The current plans call for waste that is in the burial pit and covered with one foot of earth to be covered with an additional 18 feet of earth cover upon issue of a final permit.

Question 25:

Why is it believed it will take 2-5 years before NTS is granted a final RCRA permit?
Why will it take so long?

Response to Question 25:

It may take 2-5 years before being granted a final permit because the permitting process requires extended review, commenting, response and approval durations.

Question 26:

Need information on saltcrete:

- a. Where it is coming from.
- b. Number of blocks involved.
- c. Has any been shipped to NTS yet?
- d. Cost estimate and estimate of how many will be involved.

Duplicate

Question 19:

Dates needed

- a. NTS revised its criteria for package acceptance and changes in DOE Order 5820.2A requiring a compressive strength of 400 psf.

Response to Question 19:

NTS published criteria (NVO-325) that contained new criteria for package acceptance in October, 1988. The old criteria document (NVO-185 rev. 4) had undergone several draft revisions prior to October, 1988. The criterion #2.1.2.B states the 400 lbs/ft² is required to support other waste packages and earth cover without crushing during stacking and covering operations. The safety during stacking operations, and not pondcrete itself, cause the criteria to be revised. The previous document had no compressive strength requirements for the package.

Question 24:

What happens to pondcrete at NTS and Rocky Flats when NTS goes from an interim storage permit to a final RCRA permit?

Response to Question 24:

Depending on the final permit conditions, nothing should happen to the pondcrete at NTS when NTS goes from interim status to a final permit. The current plans call for waste that is in the burial pit and covered with one foot of earth to be covered with an additional 18 feet of earth cover upon issue of a final permit.

Question 25:

Why is it believed it will take 2-5 years before NTS is granted a final RCRA permit?
Why will it take so long?

Response to Question 25:

It may take 2-5 years before being granted a final permit because the permitting process requires extended review, commenting, response and approval durations.

Question 26:

Need information on saltcrete:

- a. Where it is coming from.
- b. Number of blocks involved.
- c. Has any been shipped to NTS yet?
- d. Cost estimate and estimate of how many will be involved.

Response to Question 26:

- a. Saltcrete is produced by mixing portland cement with salt produced by the Building 374 evaporator, which treats plant aqueous process wastes.
- b. There are approximately 3000 triwall boxes of saltcrete on the outdoor storage pads.
- c. None has been shipped since September, 1986. An application has been made to NTS for permission to ship.
- d. There is no estimate at this time of how many saltcrete boxes will require reprocessing since none are being repackaged.

Question 27:

What was NTS's package strength before it was revised to 400 psf? What caused the criteria to be revised?

Response to Question 27:

See answer to #19.

Question 28:

Obtain a copy of the 3rd-3rd rules EPA standards for characteristic wastes.

Response to Question 28:

Attached are copies of the specific pages from the Proposed Rule regarding 3rd-3rd Land Disposal Restrictions and characteristic wastes, from the November 22, 1989 Federal Register (Attachment #3).

Question 30:

Obtain a copy of DOE's agreement with the Governor of Colorado to get the existing pondcrete blocks out of the State of Colorado and to finish cleaning up the pondcrete problem in Colorado by September 1991.

Response to Question 30:

Attached are copies of the 1986 Compliance Agreement and the June 1989 Agreement in Principle. The pages referencing pondcrete and solar evaporation pond operations are marked with tabs and highlighted (Attachments #4 & #5).

Question 31:

What were the trace levels of RCRA regulated constituents that caused pondcrete to be reclassified as mixed waste in September, 1986?

Response to Question 31:

Methylene Chloride was found at concentrations of 7.2 and 35 ppm; Acetone was found at concentrations of 180, 52, 43 and 80 ppm; Tetrachloroethene was found at concentrations of 160, 73, 6.6 and 46 ppm.

Question 35:

The established schedules for processing pond sediments after shipments to NTS were stopped.

Response to Question 35:

See Attachment #6.

Question 36:

Copy of letter signed by Bruce Twining laying out what it would cost over the next several years to take care of the pondcrete problems.

Response to Question 36:

Since DOE is the originator of the letter, it is a more appropriate source.

Question 40:

When pondcrete was first made what criteria or procedures were used and who approved the procedure or was involved?

Response to Question 40:

Procedure WO-4036 was used to describe operation of the pug mill process and the manufacture of pondcrete. Representatives from Waste Operations, Traffic, Waste Certification, HS&E and the user approved the procedure.

Question 41:

- a. After the slumping problem the procedures were changed from what to what?
- b. Who approved or was involved with the decision?

Response to Question 41:

Procedure WO-4036 was changed to reflect the addition of a sludge flowmeter and a flow rate display computer. These changes resulted in improved process control and a better waste form. There has not been an effort to approve this new procedure because the pug mill process will probably never be used again. It is anticipated that future processing of solar pond sludge will occur with a batch mixer which exists at Building 788.

Question 42:

- a. When EG&G took over they reviewed the procedures and revised them. How have they changed from what to what and why?
- b. Who approved and was involved in the decision?
- c. Have they been implemented yet? If not, when will they?

Response to Question 42:

EG&G's emphasis on overall plant safety and health prompted stricter requirements on the repackaging processes.

Question 44:

- a. Has Rocky Flats coordinated with any other facilities that may have problems with pondcrete or saltcrete?
- b. How many DOE facilities do you know of have pondcrete or saltcrete problems?

Response to Question 44:

- a. After the saltcrete problem was discovered, Savannah River Plant was consulted in an effort to understand the failure mechanism. Their opinion was that not enough cement was being added to enable the saltcrete to endure long term outdoor storage conditions. SRP does not have similar problems with their cemented salts.
- b. Since this question concerns other DOE facilities, DOE is in a better position to respond.

Question 45:

Would like a copy of the paper work that is associated with a box of pondcrete known as their (sic) quality check program. It shows the certifications of the penetrometer tests and other tests or checks done before the box is shipped out. (as an example)
When did the process begin?

Response to Question 45:

See Attachment #7.

Question 46:

What are the parameters of the penetrometer tests. I was told it was about 75 lbs. per inch, but the person was not sure of this figure.

Response to Question 46:

The actual requirement is 1000 pounds per square foot, but we impose a minimum of 1500 to allow for any error which may exist in the penetrometer spring constant.

Question 47:

Who will pay for the pondcrete softening problem? If DOE, what is their rationale?

Response to Question 47:

Costs associated with solving the "pondcrete softening problem" are allowable costs under the DOE/EG&G Rocky Flats, Inc. management and operating contract.

Question 48:

Because of the concern associated with the water run-off from pad 750 possibly affecting the Broomfield community water supply have any tests been done to ascertain the possibility of contamination. If so, what were the results? If not, why not?

Response to Question 48:

This will be addressed in response to question number 43.

Question 49:

Copy of the FBI subpoena. (If possible)

Response to Question 49:

We are uncertain what GAO means by "FBI subpoena" since the FBI does not issue subpoenas. We can provide you with the search warrant, the affidavit in support of the search warrant, and the subpoena issued to EG&G, Inc. by the U.S. Attorney.