CORRES CONTROL
OUTGOING LTR NO

93RF4636

DIST.	LTR	ENC
BENEDETTI, R.L		
BENJAMIN, A		
BERMAN, H.S		
BRANCH, D.B		
CARNIVAL, G.J		
DAVIS, J.G.		
FERRERA, D.W		
HANNI, B.J		
HARMAN, L.K		
HEALY, T.J		
HEDAHL, T	X	
HILBIG, J.G		
IDEKER, E.H		
KIRBY, W.A		
KUESTER, A.W		
LEE, E.M		
MANN, H.P.		
MARX, G.E.		
McDONALD, M.M		
McKENNA, F.G		
MONTROSE, J.K		
MORGAN, R.V.		
POTTER, G.L.	X	
PIZZUTO, V.M		
RILEY, J.H		
SANDLIN, N.B		
SHEPLER, R.L		
STEWART, D.L		
SULLIVAN, M.T.		
SWANSON, E.R		
WILKINSON, R.B		
WILLIAMS, S (ORC)		
WILSON, J. M.		
ZANE, J. O.		
[illegible] D.P.	X	X
[illegible]	X	X
[illegible]	X	X
[illegible] R.L.	X	X
Lee, E.D.	X	X
Ferrier, D.P.	X	X
[illegible]	X	X
[illegible] K.	X	X
[illegible] K	X	X
[illegible]		
CORRES CONTROL	X	
TRAFFIC		

CLASSIFICATION:

UCNI	X	X
UNCLASSIFIED	X	X
CONFIDENTIAL		
SECRET		

AUTHORIZED CLASSIFIER SIGNATURE
George H. Setlock
UNU
DATE 4/15/93

IN REPLY TO RFP CC NO:

ACTION ITEM STATUS
☐ OPEN ☐ CLOSED
☐ PARTIAL

LTR APPROVALS
GHS

ORIG & TYPIST INITIALS
RMG:kjl

RF-46469 (Rev. 9/92)

EG&G ROCKY FLATS

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

April 15, 1993

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93-RF-4636

M. S. Karol
Assistant Manager for Facility Operations
DOE, RFO

SOLAR POND EVAPORATOR PERMIT NUMBER 91JE316(1) MODIFICATION REQUEST - GHS-176-93

Attachments 1 and 2 to this letter justify a modification to condition #13 of the Solar Pond Evaporator Permit Number 91JE316(1). This modification is being requested to allow fulfillment of the condition by testing and analysis methods that already exist. This information is provided as per guidance received at a March 2, 1993 meeting between the Colorado Department of Health, Air Pollution Control Division (CDH, APCD), the Department of Energy, Rocky Flats Office (DOE, RFO), and personnel from the Air Quality Division (AQD). Attachment 3 is a separate issue that addresses a proposed carbon dioxide blasting process in Building 865 and is also provided as per guidance received in the same March 2, 1993 meeting.

Please transmit the enclosed attachments to R. D. Fox of the CDH, APCD at your earliest convenience. If you have any questions regarding the attached information, please contact R. M. Garren at 966-8512 or digital page 4281, or D. R. Maxwell at 966-8590 or digital page 1869, both of the Air Quality Division.

George H. Setlock

G. H. Setlock, Director
Environmental Protection Management

RMG:kjl

Original and 3 cc - M. S. Karol

Attachments:
As Stated (3)

cc:
S. A. Duletsky - DOE, RFO
F. Lockhart - DOE, RFO
T. E. Lukow - DOE, RFO

APR 1993
RECEIVED
Pondcrete
Project

AIR QUALITY DIVISION - SOLAR POND PROJECT
REQUEST FOR MODIFICATION TO CONDITION #13 OF SOLAR POND PERMIT NUMBER 91JE316(1)

INTRODUCTION

The Department of Energy, Rocky Flats Office (DOE, RFO) is planning to begin operation of the Rocky Flats Plant (RFP) Building 910 evaporator facility for acceptance testing on or about June 16, 1993. This facility is part of the remedy selected in the Interim Measure/Interim Remedial Action (IM/IRA) Decision Document of April, 1992. This remedy addresses pond water from Pond 207A, 207B-North, 207B-Center, and 207B-South, and water from the Interceptor Trench System (ITS) down gradient from the ponds. All of the conditions from the initial approval of Permit Number 91JE316(1) issued by the Colorado Department of Health, Air Pollution Control Division (CDH, APCD) July 31, 1992, have been addressed with the exception of condition #13. Condition #13 from the initial permit states:

- The liquid being evaporated shall be sampled on a quarterly basis for volatiles and solids, and the results shall be reported to the Division (CDH, APCD). A testing procedure shall be submitted to and approved by the Division prior to final approval being issued.

DOE, RFO requests a modification to this condition, and requests that the start up of the Building 910 facility be allowed to proceed under the modification.

REQUEST FOR MODIFICATION TO PERMIT CONDITION #13

DOE, RFO requests that the requirement for quarterly samples be replaced by the feed sampling and analysis required under the IM/IRA Decision Document, and that the requirement for approval of the testing procedure be replaced by approval of the testing requirements. DOE, RFO further requests that the existing Colorado Department of Health, Hazardous Waste Facilities Unit approval of the IM/IRA Decision Document be sufficient to fulfill this approval. The modification request is based on (1) CDH has already provided written approval of the Building 910 testing requirements and (2) existing data provides sufficient characterization of the feed.

In support of the modification request, further information on the composition of the feed to Building 910 is included in this attachment. In considering the modification to the approval requirement, please note that DOE, RFO is preparing approximately nineteen operating procedures for the Building 910 facility, and will also utilize several existing procedures for

plant support activities. The Colorado Department of Health, Air Pollution Control Division's goals may be achieved in a less burdensome manner by review of the test sampling, analysis, and reporting requirements, rather than review of procedures.

JUSTIFICATION FOR MODIFICATION TO PERMIT CONDITION #13

- Composition of Pond Water

DOE, RFO has data available on the water stored in the Solar Ponds and on the ITS water, which has been a primary source of water in the ponds. The trench water has been routed from the trench sump to the ponds and subsequently to Building 374 for treatment. The IM/IRA requires that the trench water will be routed from the trench sump to the new modular tanks and subsequently to Building 374 or Building 910 for treatment. This diversion of the trench water has begun. Priority will be given to treating excess water in the ponds, with trench water treated as capacity allows or trench flow rates dictate.

Data on the trench and pond waters are included in the IM/IRA appendices. DOE, RFO has also sampled the ponds more recently as part of Halliburton NUS characterization and treatability studies. The mean values of selected analytes are briefly summarized as follows:

INTERCEPTOR TRENCH SYSTEM WATER, sampling events in 1990, 1991, and 1992

- Dissolved Radiochemistry (pCi/l):

gross alpha	59
gross beta	83
Pu 239	not detected
tritium	1686

- Total Metals (Contract Lab Protocol (CLP) and non-CLP)

  Ca, Fe, Li, Mg, Mn, K, Se, Si, Na, Sr, Zn routinely detected
  (See also analysis of a November, 1992 spill of trench water, RCRA CPIR No. 92-023, which found "undetected" for Cd, Pb, Ag, and Hg; below quantitative limit for Cr; and well below regulatory limit for Ba)

- Water Quality Parameters (mg/l):

pH	7.6
Total Organic Carbon (TOC)	5.8
Nitrate/Nitrite	305

- CLP Volatiles (ug/l):

  Predominately "not detected", with an occasional "below detection" (See also analysis of a November, 1992 spill of trench water, RCRA CPIR No. 92-023, which found "undetected" or "below quantitative limit" for Volatile Organics)

- CLP Semi-Volatiles (ug/l): (EPA Method 625)

  Not detected

- Selected organics (ug/l): one sampling event (EPA Method 502.2)

  Four hits below the CLP detection limits; one hit above CLP detection limit (for methylene chloride)

- Organochlorine Herbs (ug/l): one sampling event (EPA Method 8150)

  Not detected

- CLP Pesticides (ug/l):

  Not detected

- Other Compounds (ug/l): one sampling event (EPA Method 610)

  Not detected

B-SERIES POND WATER, June, 1990 sampling event

- Dissolved Radiochemistry (pCi/l):

gross alpha (total)	1430
gross beta (total)	541
Pu 239 (dissolved)	0.0265

- CLP Volatiles (ug/l):

  Not detected

B-SERIES POND WATER, 1991 composite (sometimes called the "Roy F. Weston data")

- Dissolved Radiochemistry (pCi/l):

gross alpha	2000

gross beta	3100
Pu 239	0.25

- Total Metals (mg/l):

  As, B, Ca, Cr, Cu, Li, Mg, Mn, Hg, Mo, Ni, K, Si, Na, Sr, Sn, Zn detected

- Water Quality Parameters (mg/l):

pH	9.15
TOC	212
Nitrate	1700

- Volatiles and Semi-Volatiles (ug/l):

  Not detected

- Pesticides (ug/l):

Atrazine	7.7

B-SERIES POND WATER, HNUS 1992

- Dissolved Radiochemistry (pCi/l):

gross alpha	1400
gross beta	2000

- Total Metals (mg/l):

  As, B, Ba, Ca, Cd, Cr, K, Mg, Na, Ni, Se

- Water Quality Parameters (mg/l):

pH	8.9
TOC	94
Nitrate	1300

- Volatiles and Semi-Volatiles (ug/l):

  Not detected

(In using these data to estimate the current pond water composition, please note that we are proceeding to consolidate the water and sludge from the A/B Ponds into B-South.)

- Feed to Building 910

Building 910 has obtained a Resource Conservation and Recovery Act (RCRA) permit to operate via the mechanism of the IM/IRA. The only feeds allowed to Building 910 per the IM/IRA are pond water and trench water. Additional feeds can not be introduced without obtaining approval from the CDH. Further, all DOE, RFO's internal procedures for operating the facility allow only pond water and trench water as feed, which precludes the inadvertent introduction of any other feed.

CDH personnel also perform inspections of the facility, and can observe operations at their convenience.

- Feed to the Interceptor Trench System and the Solar Ponds

The trench system collects water from a drain system installed down gradient of the Solar Ponds. Run-off and some storm-drain flows can also enter the trench. There are no inlets for adding feed to the trench system, and any spills that might add to the system via the run-off route would be managed and responded to in accord with RCRA and the Colorado Hazardous Waste Act (CHWA).

The Solar Ponds are undergoing closure under interim status. As such, the introduction of wastes into the units is not allowed. Most of the lines that once fed the Solar Ponds have been abandoned in place. These lines are included in Operable Unit No. 9 and are scheduled for interim action in 1998, and final removal and remediation starting in 2001.

Documentation of past and present feeds to the ponds is provided in the Historical Release Report, which is updated quarterly, and in DOE, RFO's proposed Closure Plan of July, 1988. Although the Interagency Agreement (IAG) is now being used as the closure plan for the ponds, the 1988 closure plan did incorporate CDH comments and was formally submitted to CDH.

CDH personnel also perform inspections of the ponds, and can observe operations at their convenience.

SUMMARY

DOE, RFO feels the data indicate that volatile compounds are essentially not present in the feed to the Building 910 evaporators. Metals, radionuclides, and water quality constituents are present and are the constituents that the facility is designed to treat. DOE, RFO feels the feeds are adequately characterized and sufficiently constant to remove the need for further, quarterly sampling in favor of the IM/IRA testing requirements.

EG&G's initial discussions with the CDH, APCD indicate that the documentation justifying the requested modification is acceptable if Appendix B of the Final Proposed IM/IRA Decision

Document for the Solar Evaporation Ponds Operable Unit No. 4, April, 1992, is included along with this attachment. If the modification is unacceptable or more information is required, please contact R. M. Garren of the EG&G Air Quality Division, 966-8512, or K. C. London of the EG&G Solar Pond Project, 966-8585, as soon as possible.

Please provide your response on the proposed fulfillment of condition #13 of the Solar Pond Permit Number 91JE316(1) presented above by Friday, May 7, 1993. Your response is needed to allow DOE, RFO to complete the acceptance test in June, 1993, and begin Building 910 production operation by the end of July, per the current schedule estimate.

APPENDIX B

WASTE ANALYSIS PLAN
PORTABLE EVAPORATOR, BUILDING 910

APPENDIX B

WASTE ANALYSIS PLAN
PORTABLE EVAPORATOR, BUILDING 910

B.1 OBJECTIVE

This waste analysis plan covers the analytical requirements and procedures necessary to demonstrate that the quality level of product water from the Building 910 Evaporators meets the criteria of the "reuse" exclusion defined by the State of Colorado - 6 CCR 1007-3 Part 261.2(e)(ii). As a result of the information obtained from this plan, Waste Operations will be able to determine that the product water is suitable for reuse as make-up water to cooling towers or steam plant and the concentrate can be processed by HNUS or by Building 374, Unit 42.

B.2 WASTE STREAM SOURCE

Two main sources of liquid will be treated by the portable evaporator and be analyzed according to this analysis plan. The first liquid stream will be from the Solar Evaporation Ponds 207-A, 207-B North,.207-B Center and 207-B South. The second liquid stream will be the Interceptor Trench System water which will be collected by the three modular holding tanks.

B.3 ANALYSIS PLAN

This plan provides information necessary for permitted treatment of the waste streams defined in section 2.0, as required by 6 CCR 1007-3, section 264.13 (General waste analysis). These waste streams have been characterized and tested as required for waste generators by 6 CCR 1007-3, section 262.11 (Hazardous waste determination) see Tables 2A and 2B. The performance standard specified for the waste analysis plan is as follows: the analysis must, at a minimum, contain all the information which is known to treat the waste in accordance with the requirements of 6 CCR 1007-3, parts 264 and 268. The product water quality level will meet the general characteristics of commercially available raw water and the applicable requirements specified in 40 CFR 141 Subpart B with exception of turbidity and microbiological contamination. In addition, this plan covers the general requirements for pretreatment of the feed streams for mitigation of scale forming in the evaporator system. This plan will be implemented in two phases: Initial acceptance phase and production phases. Detailed requirements are listed in the tables as follows:

- Table 1A: Pretreatment Test, Acceptance Phase
- Table 1B: Treatment Test, Acceptance Phase
- Table 1C: Pretreatment Test, Production Phase
- Table 1D: Treatment Test, Production Phase

B.3.1 PRETREATMENT TEST

The pretreatment tests summarized in Table 1A and 1C are designed to chelate the chelatable ions in the incoming waste water with ethylenediaminetetraacetic acid (EDTA). The addition rate of EDTA will be based on the total hardness of the water. Water treatment analyses per Tables 1A and 1C, and treatment calculations will be performed for development of an EDTA addition rate curve which will be used by the operator in the production phase.

B.3.2 TREATMENT TEST

The treatment tests summarized in Table 1B and 1D are designed to assure that waste treatment is complete prior to transfer product or by-product to the next step. The procedure described below will be used to monitor incoming pre-treated waste water and to determine whether or not a waste process is complete. The treatment tests are implemented by RFP approved procedures written according to the following minimum requirements:

1. The operator shall collect a sample prior to treatment of a waste and after completion of a treatment step. Samples will be collected from a specified location per Tables 1B and 1D.

2. Treatment test will be completed prior to the next treatment step to transfer to a storage unit. Each batch shall be sampled and tested per requirements specified in Tables 1B and 1D.

3. After the treatment tests are completed the operator will determine whether the product or by-product may be sent to the next treatment step or to storage. If treatment is not complete the product or by-product shall be recycled per the action alternatives specified in Tables 1B and 1D.

4. The accepted product or by-product is then transferred to the next step or shipped to the assigned storage unit.

B.3.3 PRODUCT WATER ACCEPTANCE

During the acceptance phase, a representative number of samples will be collected from batch tanks D-2, D-6, and D-7 for analyses as listed in Table 2. The number of samples will be statistically determined based on the total volume of water to be processed. If test results do not meet the general characteristic of commercially available raw water, the process will be evaluated, adjustments made, and the water will

be resampled and tested again. Analysis of organic compounds listed in Table 2 will not be required beyond the acceptance phase if these compounds are not detected. The product water will be returned to SEPs during the acceptance testing.

B.3.4 PRODUCT WATER PRODUCTION

After the product water has been proven to meet the general characteristics of commercially available raw water, production will be started. During the production phase, weekly samples of product water will be collected from upstream of the Batch Tanks D-2, D-6, and D-7 per Table 1D, and will be analyzed per requirements listed in Table 1D. In addition, a monthly sample will be collected from the return line of T-215D per Table 1D and will be analyzed per requirements listed in Table 2. The analytical requirements for the monthly samples will be continuously evaluated to satisfy regulatory and economic purposes.

Should there be any occasional process upset which causes the weekly analytical results to exceed the allowable limits, the off limit analyte(s) will be verified immediately and the problem corrected. With a continuous monitoring of conductivity and pH plus acceptable weekly analytical results of the product water, it should be indicative of an acceptable monthly analytical result.

B.4 QUALITY CONTROL

The existing laboratory QA/QC plan will be used to assure compliance with approved Rocky Flats laboratory procedures in the areas of sample management, analytical methodology, data handling, and reporting.

B.5 ANALYTICAL RESULTS

Results generated from on-line automatic detection will be used for engineering evaluation. All results and data including test performance data, operator log, on-line detection, daily analysis, and monthly analysis will be entered in a computer database and be kept for at least three years.

B.6 ANALYTICAL METHODS

The required analytical work can be performed on site at the Rocky Flats Plant or by an off-site certified laboratory. The analytical test methods for an on-site laboratory will be in accordance with the Work Quality Assurance Plan No. 002.89, Revision No. 1, of the General Laboratory, Building 881. The analytical test methods for the off-site certified laboratory, where appropriate, will be per CLP methods.

TABLE 1A

PRETREATMENT TEST FOR FEED, PRODUCT WATER AND CONCENTRATE
BUILDING 910, PORTABLE EVAPORATOR
ACCEPTANCE PHASE

Stream	Sample Location	Sample Type	Test	Rationale	Action Criteria	Action Alternative
Feed stream	Main feed header	Automatic flow detector (continuous)	Volumatic feed rate	Determine EDTA feed rate	> 1% free chelant	Reset EDTA controller
Feed stream	Preheated feedline to Vapor Compression Unit (VC)	Manual, grab (as required)	Conductivity (silica, chloride, total hardness, Ca hardness, Alkalinity pH)	Determine baseline reference	> results of characterization	Caution
VC product water discharge totally 3 streams	Pump P-4002 discharge	Automatic analyzer (continuous)	Conductivity	Determine EDTA controller setpoint	> 150 µmho/cm	Retest
MEMS product water charge totally 3 streams	Pump P-4009 discharge	Automatic analyzer (continuous)	Conductivity	Determine EDTA controller setpoint	> 150 µmho/cm	Retest
Concentrate to: VC concentrate tank D 6005 totally 3. MEMS concentrate tank D-6005 totally 3.	Tank D-6001 and Tank D-6005	Manual, grab (as required)	Silica, chloride, total hardness, calcium hardness, alkalinity, pH	Determine EDTA controller setpoint	> 1% of chelating agents as per NVO-325	Retest

TABLE 1B

TREATMENT TEST FOR FEED, PRODUCT WATER
BUILDING 910, PORTABLE EVAPORATOR
ACCEPTANCE PHASE

Stream	Sample Location	Sample Type	Test	Rationale	Action Criteria	Action Alternative
Pond water 207-A Pond water 207-BN Pond water 207-BC Pond water 207-BS	Downstream of duplex filter station	Manual, grab (each change of stream)	Total alpha, pH, and TDS	Preprocess verification	> 13,500 pCi/l pH < 6.0 TDS > 16,000 mg/l	Caution
Product water discharge totally 3 streams	Pump P-4002 discharge	Automatic analyzer (continuous)	Conductivity	Determine next treatment step	> 150 µmho/cm	Recycle to tank D6001 automatically
MEMS product water discharge totally 3 streams	Pump P-4009 discharge	Automatic analyzer (continuous)	Conductivity	Determine next treatment step	> 150 µmho/cm	Recycle to VC feedline automatically
Product water to batch tank D-2 or D-6 or D-7	Upstream of tank D-2 or D-6 or D-7	Automatic composite samples S-1 or S-2 or S-3 (each batch)	Tests specified in Table 2	Determine process acceptance	Exceeds drinking water standard 40CFR 141 subpart B (except turbidity & microbiological contamination)	Recycle product water to SEPS and resample
Concentrate to: tank D-9 D-18	Pump P-11 or P-12 discharge	Manual, grab	Total alpha, total beta, TS, density plus others TBDy	Verify concentrate characteristics	total activity >600,000 pCi/l	Stop process and obtain direction from Nuclear Safety Engineering

TABLE 1C

PRETREATMENT TEST FOR FEED, PRODUCT WATER AND CONCENTRATE
BUILDING 910, PORTABLE EVAPORATOR
PRODUCTION PHASE

Stream	Sample Location	Sample Type	Test	Rationale	Action Criteria	Action Alternative
Feed stream	Main feed header	Automatic flow detector (continuous)	Volumetric feed rate	Determine EDTA feed rate	Base on conductivity analyzer output	Retune controller per curve
VC product water discharge (totally 3 streams)	Pump P-4002 discharge	Automatic analyzer (continuous)	Conductivity	Verify EDTA controller setpoint	> 150 µmho/cm	Reset EDTA controller (if results are not acceptable retest per Table 1A)
MEMS product water discharge (totally 3 streams)	Pump P-4009 discharge	Automatic analyzer (continuous)	Conductivity	Verify EDTA controller setpoint	> 150 µmho/cm	Reset EDTA controller (if results are not acceptable retest per Table 1A)

TABLE 1D

TREATMENT TEST FOR FEED, PRODUCT WATER AND CONCENTRATE
BUILDING 910, PORTABLE EVAPORATOR
PRODUCTION PHASE

Stream	Sample Location	Sample Type	Test	Rationale	Action Criteria	Action Alternative
Pond water 207-A Pond water 207-BN Pond water 207-BC Pond water 207-BS Interceptor trench water	Downstream of duplex filter station	Manual, grab (each change of stream)	Total alpha, pH, and TDS	Preprocess verification	> 13,500 pCi/l pH < 6.0 TDS > 16,000 mg/l	Caution
VC product water discharge totally 3 streams	Pump P-4002 discharge	Automatic analyzer (continuous)	Conductivity	Determine next treatment step	> 150 µmho/cm	Recycle to tank D6001 automatically
MEMS product water discharge totally 3 streams	Pump P-4009 discharge	Automatic analyzer (continuous)	Conductivity	Determine next treatment step	> 150 µmho/cm	Recycle to VC feedline automatically
Product water to holding Tank T 215 D	Return line to T 215 D	Manual composite samples (once per month)	Tests specified in Table 2	Determine product water quality (one test per month)	Exceeds drinking water standard 40 CFR 141 subpart B (except turbidity & microbiological contamination	Stop production and resample
Product water to batch Tanks D-2 or D-6 or D-7	Upstream of Tank D-2 or D-6 or D-7	Automatic composite sample S-1 or S-2 or S-3 (once per week)	Total alpha, total beta, nitrate, and pH	Determine product water quality (one test per combined composite sampling of the week)	>150 µmho/cm	Check conductivity analyzers and monitor the potential trouble system for following day
Concentrate to tanks D-9 and D-18	Pump P-11 or P-12 discharge	Manual, grab once per shipment	Total alpha, total beta, plus others TBD	Verify concentrate activity level and characteristics	Total activity >600,000 pCi/l	Obtain direction form Nuclear Safety Engineering

TABLE 2
PRODUCT WATER
MONTHLY TEST PARAMETERS

The product water is analyzed monthly by the General Laboratory or certified laboratory for the following parameters:

pH	Field Measurements
Cyanide, Total (mg/l)	L-6238
Nitrate as N (mg/l)	L-6225
Metals Digestion ICP	L-6219
Metals Analysis ICP	L-6219
Metals Digestion AA	No L-Procedure, Follow CLP
Metals Analysis AA	No L-Procedure, Follow CLP
Mercury, Cold Vapor	L-6206
Total α, Total ß	L-6240

Metals:

Magnesium
Manganese
Mercury
Molybdenum
Calcium
Sodium
Nickel
Chromium
Strontium
Copper
Zinc
Arsenic
Selenium
Potassium
Boron
Lithium
Silicon

Anion:

Ammonia
Carbonate/Bicarbonate
Chloride
Phosphate, Ortho
Phosphate, Total
Sulfate
Sulfide
Fluoride

Organics*:

Acetone
Atrazine
Bis(2-ethylhexyl)phthalate
Carbon tetrachloride
Chloroform
Diethyl phthalate
Di-n-butyl phthalate
Methylene chloride
Nitrophenol
Pentachlorophenol
Trichloroethene

Miscellaneous:

Alkalinity
Total Dissolved Solid
Total Organic Carbon

Non-Routine[1]:

Plutonium-239
Americium-241
Uranium-234,235
Uranium-238

[1] When total α, ß > weekly Action Criteria of 13,500 pCi/l as shown in Table 1D

* Analysis not required beyond acceptance phase if compounds not detected.

AIR QUALITY DIVISION
NOTICE OF PROPOSED CARBON DIOXIDE BLASTING IN BUILDING 865

DESCRIPTION

Building 865 personnel are planning to begin operation of a carbon dioxide (CO_2) blasting process used to decontaminate unclassified, low-level contaminated metal in June, 1993. The decontamination process will convert existing waste forms to more manageable waste forms that are more easily disposed of or salvageable (i.e. scrap metal).

The blasting action involves using a CO_2 pellet nozzle to disperse the CO_2 pellets onto the surface to be decontaminated (for example, pieces of equipment or duct work, etc.). The CO_2 pellets penetrate the outer layers of the surface and "explode" upon impact, releasing CO_2 gas. The stripped material (dirt, grease, paint, etc.), follows an air stream that passes through several filters before entering the building plenum system.

The CO_2 blasting will be accomplished in a 20' x 16' x 10' containment structure within Building 865. Direct ventilation of this structure occurs through a bank of four pre-filters and two-stage High Efficiency Particulate Air (HEPA) filters before exiting to the building exhaust plenum. CO_2 is the only significant byproduct of the blasting process that will enter the building ventilation system. The solids removed from the surfaces will be collected by the filtering process. Building personnel estimate that the blasting process will produce a 55 gallon drum of waste (stripped material) per week. No discernible dust results from the blasting operation due to the air moving system. The operators will wear full-face respirators and anti-contamination clothing for health and safety precautions. An operating procedure is being developed and will be available for review upon request.

The CO_2 blasting is planned to take place over the next year and a half. Approximately 40,000 gallons of CO_2 will be consumed each month.

SUMMARY

The Air Quality Division anticipates that the proposed CO_2 blasting will have no impact on the air quality in Building 865. An Air Pollutant Emission Notice will not be submitted due to the description and the operating conditions of the process unless otherwise notified by the Colorado Department of Health, Air Pollution Control Division.