

QUARTERLY UPDATE

FOR APRIL 1, 1994 THROUGH
JUNE 30, 1994

HISTORICAL RELEASE REPORT (HRR)

PREPARED BY

**ENVIRONMENTAL RESTORATION
FACILITIES OPERATIONS MANAGEMENT**

EG&G ROCKY FLATS INC

JULY 1994

QUARTERLY UPDATE

FOR APRIL 1, 1994 THROUGH
JUNE 30, 1994

HISTORICAL RELEASE REPORT (HRR)

PREPARED BY

**ENVIRONMENTAL RESTORATION
FACILITIES OPERATIONS MANAGEMENT**

EG&G ROCKY FLATS, INC.

JULY 1994

ADMIN RECORD

**DOCUMENT CLASSIFICATION
REVIEW WAIVER PER
CLASSIFICATION OFFICE**

A-SW-001193

**HRR QUARTERLY UPDATE
AGENCY ACCEPTANCE FORM**

HRR QUARTERLY UPDATE _____ 8 _____

The recommendations of the Department of Energy (DOE) with regard to the need for future actions, or the lack of the need for future actions, are included in each PAC narrative description included in this quarterly update. Any PACs for which a decision is deferred will be addressed in future HRR quarterly updates.

Please note any exceptions to the recommended actions below or attach comments to this form as needed.

Please provide comments or acceptance within two weeks from receipt of quarterly update submittal.

DOE Signature	CDH Signature	EPA Signature
	<input type="checkbox"/> CDH agrees with recommendations <input type="checkbox"/> CDH disagrees with recommendations, see comments	<input type="checkbox"/> EPA agrees with recommendations <input type="checkbox"/> EPA disagrees with recommendations, see comments
_____ DOE Signature and Position	_____ CDH Signature and Position	_____ EPA Signature and Position

TABLE OF CONTENTS

DESCRIPTION	PAGE
HRR QUARTERLY UPDATE AGENCY ACCEPTANCE FORM	2
1.0 INTRODUCTION	4
2.0 NEW PAC NARRATIVES	8
PAC REFERENCE NUMBER 300-713 (Caustic Spill North of Building 331)	9
PAC REFERENCE NUMBER 400-814 (Air Conditioner Compressor Release, Building 444 Roof)	12
PAC REFERENCE NUMBER 400-815 (RCRA Tank Release in Building 460)	15
3.0 REVISED PAC NARRATIVES	20
PAC REFERENCE NUMBER 400-812 (RCRA Unit # 40 09, Tank T-2 in Building 460)	21
PAC REFERENCE NUMBER 900-1309 (OU2 Field Treatability Unit)	24
4.0 REVISED IHSS AND PAC MAPS	28

1.0 INTRODUCTION

This Eighth Quarterly Update to the Historical Release Report (HRR) provides a variety of information pertaining to spills and releases of contaminants at the Rocky Flats Environmental Technology Site (RFETS), formerly known as the Rocky Flats Plant (RFP). This information includes

- HRR Quarterly Update Agency Acceptance Form,
- releases to the environment identified during April 1, 1994, through June 31, 1994,
- revised Potential Area of Concern (PAC) narratives for PACs 400-812 and 900-1309 which incorporate validated analytical data,
- an up-to-date Individual Hazardous Substance Site (IHSS) map, and
- an up-to-date PAC map

Table 1 provides a list of all PACs identified since the June 1992 HRR. It also provides a cross-reference for the Operable Unit (OU) in which the spill occurred, IHSS numbers for spills occurring within an IHSS, a Resource Conservation and Recovery Act (RCRA) Contingency Plan Implementation Report (CPIR) cross-reference number and the number of the quarterly update in which the PAC was originally identified. Narrative descriptions of PACs identified in the Eighth Quarterly Updates are included in this document.

Revisions to PAC narratives 400-812 and 900-1309 are included in Section 3.0. These narratives have been modified to reflect validated analytical data which have become available since the PACs were identified in previous quarterly updates.

Up-to-date copies of IHSS and PAC maps are included in Section 4.0. The IHSS map reflects the most current boundaries of IHSSs based on work to date at the various operable units. The PAC map includes all PACs identified to date, as well as Under Building Contamination (UBC) sites. Up-to-date maps will continue to be issued with each quarterly report.

**TABLE 1
NEW PACS IDENTIFIED IN QUARTERLY UPDATES**

IHSS ¹	OU ¹	CPIR Cross-Reference ²	PAC	PAC NAME ³	Original Quarterly Update #
142 6	6	NA	NE-1404	Diesel Spill at Pond B-2 Spillway	2
NA	2	NA	NE-1405	Diesel Fuel Spill at Field Treatability Unit (<i>formerly NE-1404</i>)	3
NA	4	NA	NE-1406	771 Hillside Sludge Release	4
NA	2	93-002	NE-1407	OU 2 Treatment Facility	4
NA	2	93-005	NE-1408	OU 2 Test Well (<i>formerly NE-1406</i>)	4
NA	4	93-007	NE-1409	Modular Tanks and 910 Treatment System Spill (<i>formerly 000-503</i>)	5
NA	2	NA	NE-1410	Diesel Fuel Spill at Field Treatability Unit	7
NA	2	NA	NE-1411	Diesel Fuel Overflowed from Tanker at OU 2 Field Treatability Unit	7
NA	10	NA	NW-1500	Diesel Spill at PU&D Yard (<i>formerly NW-175</i>)	2
NA	10	NA	NW-1501	Asbestos Release at PU&D Yard (<i>formerly NW-176</i>)	2
114	7	92-021	NW-1502	Improper Disposal of Diesel Contaminated Material at Landfill (<i>formerly NW-177</i>)	2
114	7	92-004	NW-1503	Improper Disposal of Fuel Contaminated Material at Landfill	1
114	7	94-002	NW-1504	Improper Disposal of Thorosilane Contaminated Material at Landfill	7

TABLE 1 (Continued)
NEW PACS IDENTIFIED IN QUARTERLY UPDATES

IHSS ¹	OU ¹	CPIR Cross-Reference ²	PAC	PAC NAME ³	Original Quarterly Update #
NA	NA	94-005	000-503	Solar Pond Water Spill Along Central Avenue	7
NA	NA	93-003	100-613	Asphalt Surface in Lay Down Yard North of Building 130 <i>(formerly identified as 000-501)</i>	4
NA	NA	93-003	300-711	Ni-Cad Battery Spill Outside of Building 373	1
NA	NA	92-002	300-712	1/2 gal Antifreeze Spilled by Street Sweeper Outside of Building 373	1
NA	NA	94-006	300-713	Caustic Spill North of Building 331	8
NA	NA	NA	400-811	Transformer 443-2, Building 443	2
NA	NA	93-009	400-812	Tank T-2 Spill in Building 460	6
NA	NA	94-001	400-813	RCRA Tank Leak in Building 460	7
NA	NA	94-007	400-814	Air Conditioner Compressor Release, Building 444 Roof	8
NA	NA	94-008	400-815	RCRA Tank Leak in Building 460	8
NA	NA	93-004	500-906	Asphalt Surface Near Building 559	4

**TABLE 1 (Continued)
NEW PACS IDENTIFIED IN QUARTERLY UPDATES**

IHSS ¹	OU ¹	CPIR Cross-Reference ²	PAC	PAC NAME ³	Original Quarterly Update #
152, 157 1, 172	12	NA	600-1004	Central Avenue Ditch Cleaning Incident <i>(formerly identified as 400-820)</i>	6
NA	NA	NA	600-1005	Former Pesticide Storage Area	7
NA	NA	92-005	800-1212	Building 866 Sump Spill	5
NA	NA	NA	900-1308	Gasoline Spill Outside of Building 980	6
NA	2	93-010	900-1309	OU 2 Field Treatability Unit Spill	6
NA	NA	92-023	900-1310	ITS Water Spill <i>(formerly identified as 000-502)</i>	2
NA	NA	NA	900-1311	Septic Tank East of Building 991	7
NA	2	94-004	900-1312	OU-2 Water Spill	7

¹NA = Not applicable Not all PACs are located in Individual Hazardous Substance Sites (IHSSs) or Operable Units (OUs) Likewise, not all PACs are identified in RCRA Contingency Plan Implementation Reports (CPIRs)

²RCRA Contingency Plan Implementation Reports (CPIRs) identified during the Eighth Quarter included CPIRs 94-006 through 94-008 Each incident involved a release to the environment and is therefore identified as a PAC

³Several PAC numbers have been revised to reflect a more accurate location on the PAC map Former PAC numbers are identified in parentheses within italics

SECTION 2 0
NEW PAC NARRATIVES
(PACS IDENTIFIED DURING APRIL 1 1994 THROUGH JUNE 30 1994)

PAC REFERENCE NUMBER: 300-713

IHSS Number NA
Unit Name Caustic Spill North of Building 331
CPIR No 94-006
Approx Location N749,545, E2,081,891

Date(s) of Operation or Occurrence

May 17, 1994

Description of Operation or Occurrence

At approximately 3 45 p m on May 17, 1994, one to two cups of a liquid characterized as a hazardous waste due to corrosivity leaked from a trash compactor truck onto pavement north of Building 331. The spill was identified when a green liquid was observed to be leaking from a parked truck onto the asphalt outside of the Garage¹. The location of this spill is shown on Figure 1 following this narrative as well as on the PAC map in Section 4 0.

Physical/Chemical Description of Constituents Released

The green liquid was identified by its color and smell as Mariko[®], a caustic detergent. Measurements determined the pH to be 13.28, which classified the material as being a hazardous waste due to corrosivity (D002 waste). The quantity of material spilled was one to two cups. An additional three to four cups of material were collected from the truck but were not released to the asphalt¹.

Responses to Operation or Occurrence

After the leak was identified, a bucket was placed under the truck to capture the remaining liquid that was leaking out of the truck. Because it was first reported that a quart had been released, the RCRA Contingency Plan was implemented due the release reported being greater than one pint/one pound of Mariko[®]. The route taken by the truck from the dumpster which contained the Mariko[®] to the parking place was inspected, but no area other than the Garage parking area was observed to have been affected by the release. Oil-Dri[®] was used to absorb the Mariko[®] from the pavement. The used Oil-Dri[®] was placed into a drum pending disposal as non-hazardous waste because the Mariko[®] no longer exhibited the characteristic of corrosivity when absorbed by the Oil-Dri[®]. The remaining Mariko[®] collected in the bucket is being used as product and is not considered to be a waste¹.

On Wednesday, May 18, 1994, the trash compactor truck was taken to the landfill and the trash was emptied onto plastic sheeting while waste technicians searched for the leaking container. The

empty container was recovered and identified as a five-gallon bucket of Mariko®. It was later determined that this five gallon bucket had been used at Tent 1 for cleaning several months earlier. The bucket had approximately four to six cups of solution remaining in it when it had been transferred to a storage cargo near Building 554. The bucket was stored in a plastic bag inside the storage cargo. During the winter, the Mariko® had built up residue on the bag and had been set outside the cargo on a pallet so that the bag and container could be cleaned up. The Mariko® was still considered to be product rather than waste at that time. It has not been determined how the container was placed in the trash. The dumpster in the area of Building 554 will be replaced with a locking dumpster and the key will be controlled by the responsible shift foreman.¹

Fate of Constituents Released to Environment

One to two cups of Mariko® was released to the pavement. Typically asphalt and road surfaces are not free of cracks or gaps and are not considered to be adequate secondary containment due to the possibility of a migration path to the environment. However, in this case, the small amount of RCRA-regulated hazardous waste material that was released to the asphalt surface was adequately absorbed by Oil-Dri® and therefore no longer presents a significant actual or potential hazard to human health or the environment.¹

Action/No-Action Recommendation

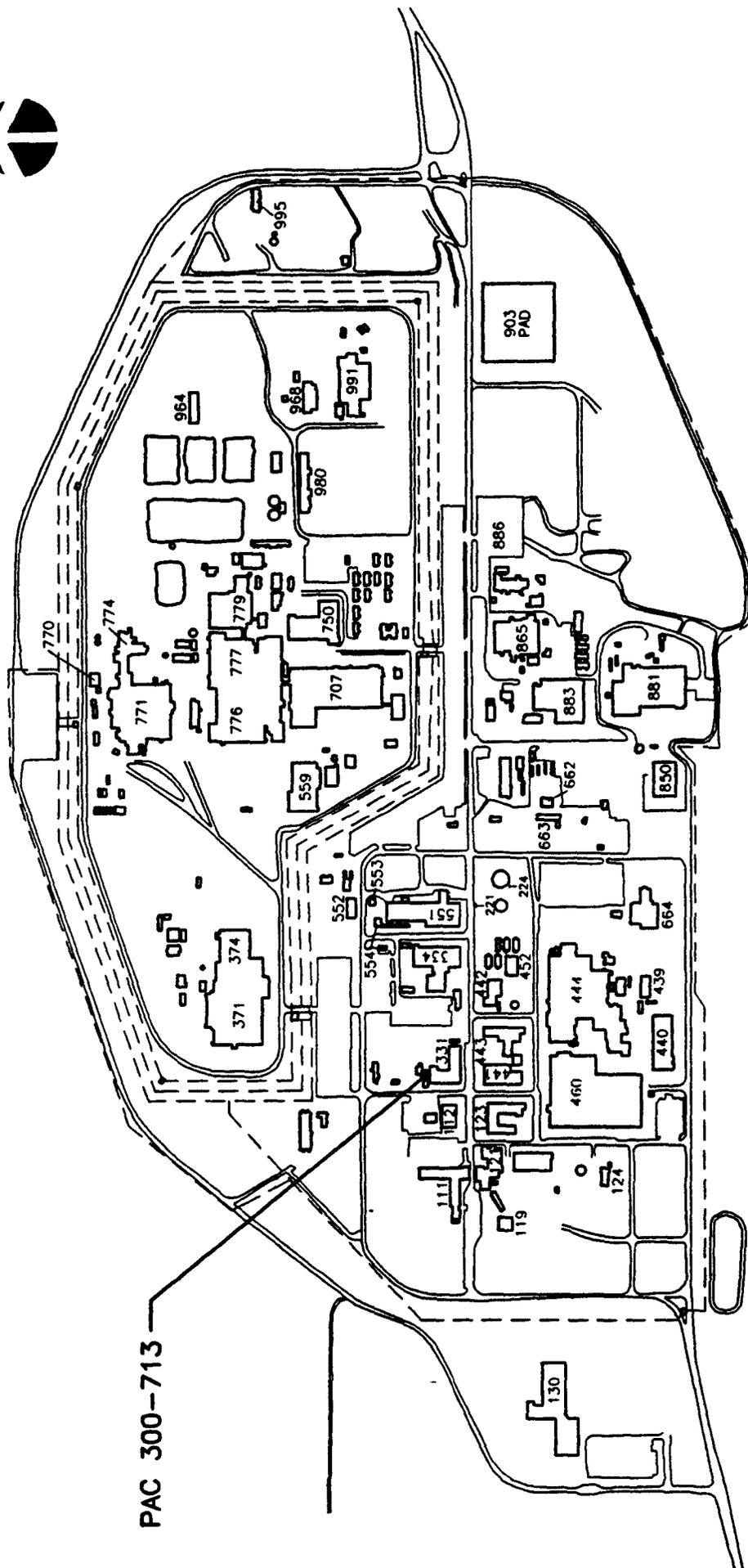
No further action is recommended for this incident based on the small quantity of Mariko® released and its recovery by absorption with Oil-Dri®.¹

Comments

None

References

¹RCRA Contingency Plan Implementation Report No 94-006 May 27, 1994



PAC 300-713

FIGURE 1
PAC 300-713

PREPARED FOR
U.S. DEPARTMENT OF ENERGY
 ROCKY FLATS PLANT
 GOLDEN, COLORADO
 BY
WRIGHT WATER ENGINEERS, INC
 2490 W. 26TH AVE SUITE 100A
 DENVER, CO 80211 (303)480-1700

PROJ. NO	931-082 000	DWG NO	-
DESIGN BY	JKC	CHECKED	JKC
DRAWN BY	KAL	APPROVED	-
DATE	JULY 27, 1994	SCALE	1" = 800'

PAC REFERENCE NUMBER: 400-814

IHSS Number NA
Unit Name Air Conditioner Compressor Release, Building 444 Roof
CPIR 94-007
Approx Location N748,867, E2,082,124

Date(s) of Operation or Occurrence

May 17, 1994

Description of Operation or Occurrence

At approximately 12 00 p m on May 17, 1994, a Stationary Operating Engineer (SOE) noticed the presence of oil under an air conditioning unit on the roof of Building 444 Upon further investigation of the compressor cabinet unit, the SOE found additional oil The total volume detected totalled approximately two gallons This oil was suspected to be contaminated with levels of cadmium and lead above Toxicity Characteristic Leaching Procedure (TCLP) regulatory limits based on results from laboratory samples previously taken from other air conditioning equipment The source of the leak was determined to be a hole in a copper line to a pressure control device The hole was at a point where another copper line crossed at a 90 degree angle directly on top of the lower line The hole apparently was due to abrasion from vibration between the two lines An undetermined amount of Freon 22, a non-hazardous waste, was also released¹ The location of this spill is shown on Figure 2 following this narrative as well as on the PAC map in Section 4 0

Physical/Chemical Description of Constituents Released

Approximately two gallons of compressor oil and an undetermined amount of Freon 22 were released to the roof of Building 444 Validated analytical results from a sample of the refrigerant compressor oil released to the roof indicate that the released material is not a hazardous waste These data are contained in Table 1 on the following page

**TABLE 1
BUILDING 444 AIR CONDITIONER RELEASE SAMPLE RESULTS²**

Analyte	Concentration (mg/L)	Regulatory Limit (mg/L)
Arsenic	3.20	5.0
Barium	0.28	100.0
Cadmium	0.10	1.0
Chromium	0.20	5.0
Lead	1.6	5.0
Silver	0.15	5.0

Responses to Operation or Occurrence

Waste Regulatory Programs and the Air Quality Division were notified of the release of oil and Freon 22 and the RCRA Contingency Plan was implemented as a precaution. The released oil was cleaned up by removing loose gravel, applying 200 pounds of Oil-Dri[®] absorbent material to the area of release (twice) and sweeping up the absorbent material. The cleanup material was placed in 55 gallon black and white drums and then placed in RCRA 90-day Accumulation Area #442414. The drums were managed as hazardous waste with Environmental Protection Agency (EPA) waste codes for cadmium (D006) and lead (D008) until the waste determination proved that the waste was non-hazardous^{1,2}. The cleanup material was then disposed of at the sanitary landfill as sanitary waste³.

Fate of Constituents Released to Environment

Cleanup of the spill from the roof and the non-hazardous characterization of the spill eliminates the threat of an actual or potential hazard to the environment. The roof was periodically inspected after the cleanup to verify the adequacy of the cleanup¹.

Action/No-Action Recommendation

No further action is recommended at this site based on the non-hazardous characterization of the spill material and prompt cleanup.

Comments

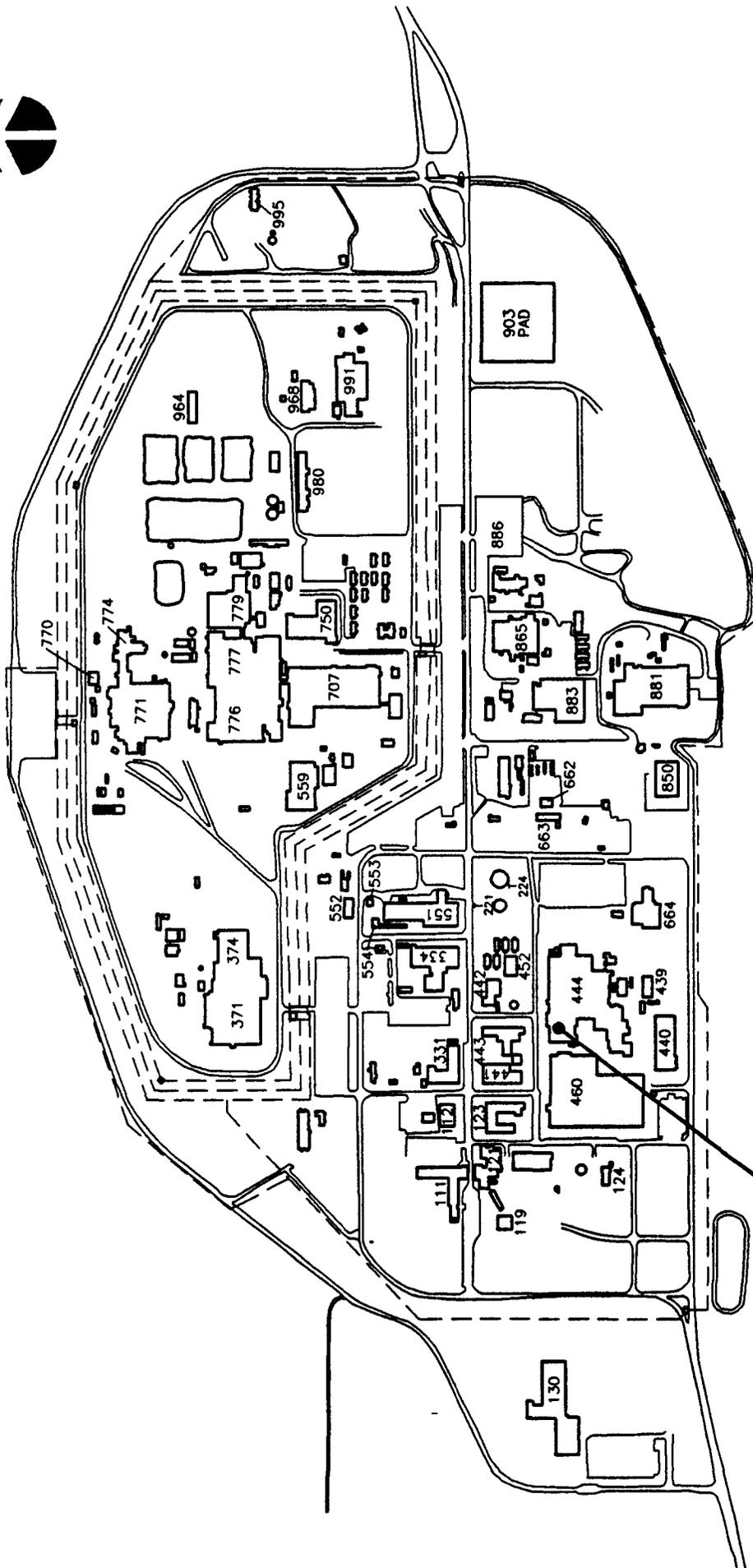
None

References

¹RCRA Contingency Plan Implementation Report No. 94-007, May 27, 1994

²Analytical Results of Samples for Resource Conservation and Recovery Act (RCRA) Contingency Plan Implementation Report No. 94-007, June 29, 1994

³Personal Communication with D.M. Foster, EG&G, August 10, 1994



PAC 400-814

FIGURE 2
PAC 400-814

PREPARED FOR
US DEPARTMENT OF ENERGY
ROCKY FLATS PLANT
GOLDEN, COLORADO

BY
WRIGHT WATER ENGINEERS, INC
2490 W 26TH AVE SUITE 100A
DENVER, CO 80211 (303)480-1700

PROJ NO	931-082.000	DWG NO	-
DESIGN BY	JKC	CHECKED	JKC
DRAWN BY	KAL	APPROVED	-
DATE	JULY 27, 1994	SCALE	1" = 800'

PAC REFERENCE NUMBER: 400-815

IHSS Number NA
Unit Name RCRA Tank Release in Building 460
CPIR 94-008
Approx Location N748,720, E2,081,958

Date(s) of Operation or Occurrence

June 29, 1994

Description of Operation or Occurrence

At 3 05 p m on June 29, 1994, a maintenance person discovered a release of approximately 1,800 gallons of process waste water into the secondary containment pit of Sump Tank ST-5 (RCRA Unit 40 15) located in Room 140 of Building 460. Initial surveillance indicated that the Hypalon liner in the pit leaked, filling the associated leak-detection sight tube three-fourths full of hazardous process waste water. In addition, approximately one-half to three-fourths inches of water were present in the surrounding bermed area. No leakage had been observed during the RCRA custodian's inspection on the previous day, June 28, at 9 30 a m ¹

Sump Tank ST-5 collects Building 460 process waste waters which are initially collected in Tank T-3 and then pumped to a roll filter table that filters the process waste water prior to their collection in Sump Tank ST-5. Sump Tank ST-5 waters are then pumped to collection Tank T-1. These tanks, as well as collection Tank T-2, are all contained within a concrete bermed area. The concrete is coated with epoxy with the exception of Pit #5 surrounding Sump Tank ST-5, which is lined with a two-ply continuous 0.036 millimeter thick Hypalon liner with glued seams. The sight tube associated with this pit is a 12-inch diameter piece of plastic pipe. It is located in the northwest corner of the pit and is slightly offset from the concrete floor to allow collection of any liquid beneath the liner and to serve as a leak detection device for a breach of secondary containment ¹. The location of this spill is shown on Figure 3 following this narrative as well as on the PAC map in Section 4.0.

Physical/Chemical Description of Constituents Released

Initially, the released material was believed to be non-hazardous based on process knowledge of production cleaning area activities ongoing at the time and analytical information on the cleaning processes. However, based on analytical sample results, it was later determined that the spilled material was hazardous waste. Samples of the waste water inside and outside the pit liner were taken at 5 00 p m on June 29, 1994. Additional samples were taken from the roll filter tank and Tank #3 on the following morning ¹. Validated analytical data for these samples are contained in Table 1 ².

TABLE 1
TOTAL METALS ANALYSIS
Concentration Units mg/L

ANALYTE	TCLP ¹ Limit	Pit	Sight Tube	Roll Filter Table	Tank 3
Aluminum	NA ²	0 457	1 430	0 665	0 432
Antimony	NA	<0 026	<0 026	<0 026	<0 026
Arsenic	5 0	<0 162	<0 162	<0 162	<0 162
Barium	100	0 0057B ³	0 0134B	0 0101B	0 0036B
Beryllium	NA	<0 001	<0 001	<0 001	<0 001
Cadmium	1 0	3 670	2 370	0 600	0 975
Calcium	NA	3 55B	4 950B	3 140B	<1 450
Chromium	5 0	0 284	0 365	1 930	0 165
Cobalt	NA	0 0066B	0 0062B	0 0135B	0 0074B
Copper	NA	0 146	0 365	0 460	0 105
Iron	NA	1 450	2 150	9 910	1 100
Lead	5 0	<0 071	0 135B	<0 071	<0 071
Magnesium	NA	0 432B	0 753B	0 747B	<0 262
Manganese	NA	0 0383	0 0654	0 1780	0 0223
Molybdenum	NA	0 0178B	0 0306B	0 0236B	0 0395B
Nickel	NA	0 221	0 306	0 850	0 887
Potassium	NA	720	575	204	234
Selenium	1 0	<0 054	<0 054	<0 054	<0 054
Silicon	NA	<1 54	<1 24	<1 11	<3 79
Silver	5 0	0 632	0 581	0 694	0 0528
Sodium	NA	72 8	141 0	20 0	22 5
Strontium	NA	0 0137B	0 0279B	0 138B	0 0062B
Thallium	NA	<0 099	<0 099	<0 099	<0 099
Titanium	NA	<0 004	0 0264	0 0119B	<0 004
Total Uranium	NA	<0 074	<0 074	<0 074	0 0763B
Vanadium	NA	<0 004	0 205	0 143	<0 004
Zinc	NA	<0 206	<0 403	<0 0911	<0 143
Corrosivity ⁴ (pH)	<2 or >12 5	8 9	10 3	5 27	5 98

¹TCLP Toxicity Characteristic Leaching Procedure maximum concentration of contaminants for the toxicity characteristic.

²NA TCLP limit not applicable to the analyte

³B Analyte detected in method blank

⁴Corrosivity as measured in standard pH units

Preliminary sample results indicated that cadmium levels were likely present above RCRA regulatory levels for toxicity. The validated analytical data confirmed that cadmium exceeded the TCLP limit for toxicity in both the pit and the sight tube. Based on the analytical data, no other RCRA metals exceeded TCLP limits or exhibited the characteristic of corrosivity.² The source of the cadmium is believed to be from residual Non-Destructive Testing film developer process waste which was last placed into the process waste system on June 28, 1994. The developer waste water drains to the tank in Pit #2. Since Sump Tank ST-2 pumping is automatic, it is unknown when the solution from this tank was transferred to Tank T-3.¹

Responses to Operation or Occurrence

The maintenance person who observed the leak notified a Building 460 RCRA custodian who in turn notified the 400 Area Shift Manager. The RCRA Contingency Plan was implemented as a precautionary measure due to the possibility of a release of hazardous waste from secondary containment to the soil beneath the building. Measurements of the pit were taken which indicate that the total quantity released was approximately 1,800 gallons.¹

In response to the spill, cessation of all process waste activities in Building 460 occurred by 4:00 p.m. on June 29, 1994, approximately one hour after the leak was detected. Building 460 Maintenance pumped the tank, pit and bermed area of as much water as possible and then vacuumed the remaining waste. This water was collected in RCRA collection Tanks T-1 and T-2 in Building 460. The final removal of all liquid from under the liner was completed by noon on June 30, 1994.¹

On June 30, 1994, maintenance tested the hypalon liner in the pit for leakage. Three small areas in the liner indicated leakage paths. The liner was also visually inspected and two additional small areas were found near the top of the pit where the liner had separated.¹

Due to the relatively low level of cadmium found in the released liquid and the minimal risk to the environment, the following corrective actions are planned: the Hypalon liner will be repaired, an additional tank will be placed inside the existing tank for double containment and a person will be stationed at the tank during liquid transfer operations to immediately identify any abnormal conditions. After production is shut down (estimated September 1994), the pit liner will be removed to allow inspection of the concrete surfaces for cracks and gaps. A written report will be issued to Colorado Department of Health (CDH) documenting the results of the inspection of the concrete pit upon removal of the liner and subsequent actions.¹

Fate of Constituents Released to Environment

It is currently unknown whether pathways to the environment exist such as cracks or gaps in the containment pit. Assuming that there are no migration pathways to the environment, the prompt removal of the liquid should have contained the release within the pit. If a migration pathway is discovered at the time of post-production inspection, an assessment will be required to determine the extent of the release to the environment.¹

Action/No-Action Recommendation

It is recommended that further action at this site be post-poned until post-production status is attained in Building 460, expected to be September of 1994. Based on the results of the planned post-production inspection of the pit, further action may be required at that time ¹

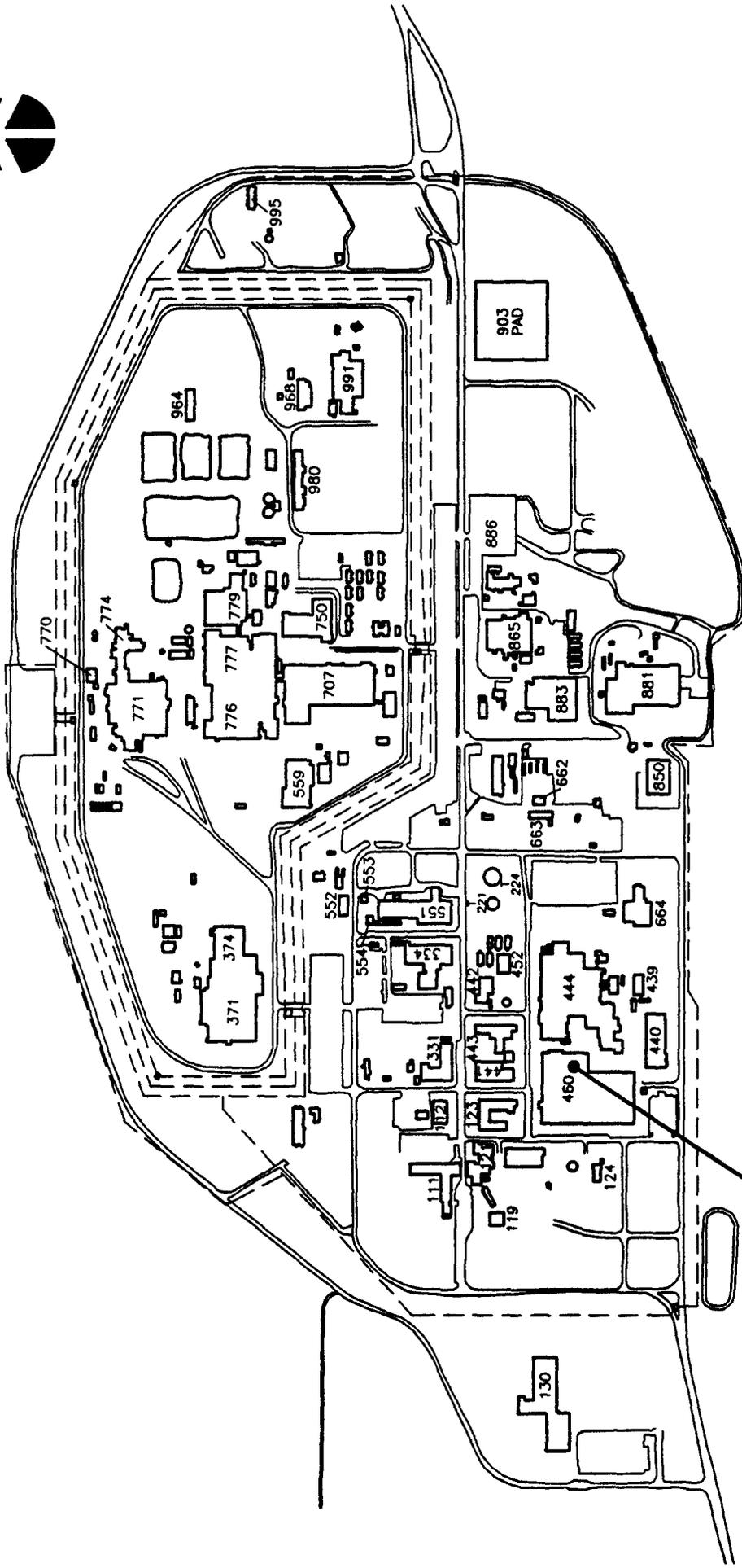
Comments

None

References

¹RCRA Contingency Plan Implementation Report 94-008 July 8, 1994

²EG&G, 1994 Validated Analytical Data for Sample Numbers for Four Containment Samples, Batch No 94X-0039 July 27, 1994



PAC 400-815

FIGURE 3
PAC 400-815

PREPARED FOR
U.S. DEPARTMENT OF ENERGY
 ROCKY FLATS PLANT
 GOLDEN, COLORADO
 BY
WRIGHT WATER ENGINEERS, INC.
 2490 W 26TH AVE SUITE 100A
 DENVER, CO 80211 (303)480-1700

PROJ. NO.	931-082 000	DWG. NO	-
DESIGN BY	JKC	CHECKED	JKC
DRAWN BY	KAL	APPROVED	-
DATE	JULY 27, 1994	SCALE	1" = 800'

SECTION 30
REVISED PAC NARRATIVES

PAC REFERENCE NUMBER: 400-812

IHSS Number N/A
Unit Name RCRA Unit # 40 09, Tank T-2 in Building 460
Approx Location N748,720, E2,081,958
CPIR 93-009

Date(s) of Operation or Occurrence

November 10, 1993

Description of Operation or Occurrence

A release of process aqueous waste water occurred on November 10, 1993, when Liquid Waste Operations (LWO) personnel were transferring 3,500 gallons of process aqueous water, which were generated in Building 460 and contained in Tank T-2, to a 4,000 gallon tanker truck for transport to Building 374. The spill was noticed 90 minutes into the operation when LWO personnel observed material coming from an air vent on top of the tanker. Approximately 25 gallons of liquid were released onto the pavement and dock area outside of Door 5, north of Building 460.¹

Physical/Chemical Description of Constituents Released

The 25 gallons of material released to the pavement and dock were initially characterized as potentially containing the characteristic hazardous waste chromium (D007). A field pH test was performed and the released material was determined to have a pH of 6.0 to 6.5. Based on preliminary analytical screening results completed on November 11, 1994, the released material did not contain arsenic, barium, cadmium, lead or selenium. Levels of chromium were detected but were well below the regulatory limit for the characteristic of toxicity due to chromium (5.0 parts per million).¹ The validated analytical data for soil and tanker samples are contained in Tables 1 and 2 below. These data confirm that the released material was not a hazardous waste.³

**TABLE 1
BUILDING 460 AQUEOUS RELEASE SAMPLE
ANALYTICAL RESULTS FROM SOIL³**

Analyte	Concentration (mg/L)	Regulatory Limit (mg/L)
Barium	0.031	100.0
Cadmium	0.002	1.0
Chromium	0.018	5.0
Lead	<0.004	5.0
Silver	<0.004	5.0

**TABLE 2
BUILDING 460 AQUEOUS RELEASE SAMPLE
ANALYTICAL RESULTS TAKEN FROM TANKER³**

Analyte	Concentration (mg/L)	Regulatory Limit (mg/L)
Barium	0.036	100.0
Cadmium	0.190	1.0
Chromium	2.08	5.0
Lead	<0.060	5.0
Silver	<0.007	5.0

Responses to Operation or Occurrence

The RCRA Contingency Plan was implemented as described in CIPR 93-009, and CDH and EPA were notified of the occurrence. LWO personnel immediately shut down the pumps from Building 460 and secured the discharge valves from Tank T-2 to prevent additional waste from entering the tanker. Building 460 personnel took immediate action to contain the spread of material to the immediate area by laying down absorbent socks to block the flow of material. The Rocky Flats General Labs Sample Team collected samples of the material inside the tanker, the material released onto the ground around the tanker and the soil under the tanker. The Rocky Flats Haz-Mat team collected approximately 12 gallons of free liquids into a shop vacuum after the material was sampled and placed it back into the Building 460 process waste system. The

absorbent socks and disposable personal protective equipment and the disposable equipment used by the sample team were drummed and placed in the Building 460 RCRA 90-day accumulation area. On November 11, 1993, the affected soil was excavated and drummed as a precautionary measure to prevent the spread of possible contamination due to a threatening snowstorm. All clean-up activities were conducted under the guidance of the Rocky Flats Haz-Mat Team ¹

Fate of Constituents Released to Environment

Of the 25 gallons released to the environment, approximately 12 gallons of material were recovered and placed back in the Process Waste System of Building 460. The remainder evaporated from the pavement and/or soaked into the soil in the vicinity of the tanker. The soil affected by the release was recovered and drummed, generating 8 drums of material which were stored in the temporary 90-day accumulation area for Building 460 ¹. Upon receipt of data for samples collected for the drummed soil, EG&G Waste Regulatory Programs declared the material non-hazardous, and it was redistributed in the immediate vicinity of the release ².

Action/No-Action Recommendation

No further action is recommended for this incident based on the non-hazardous nature of the spill.

Comments

This narrative updates and supersedes the PAC 900-1309 narrative submitted in the Sixth Quarterly Update to the Historical Release Report.

References

¹Resource Conservation and Recovery Act (RCRA) Contingency Plan Implementation Report (CPIR) No 93-009 November 19, 1993

²Personal Communication with M L Johnson, EG&G Waste Regulatory Programs January 31, 1994

³Data Validated Analytical Results of Sample for Resource Conservation and Recovery Act (RCRA) Contingency Plan Implementation Report (CPIR) No 93-009

PAC REFERENCE NUMBER: 900-1309

IHSS Number N/A
Unit Name OU 2, Field Treatability Unit
CPIR No 93-010
Approx Location N750,000, E2,082,000

Date(s) of Operation or Occurrence

December 4, 1993

Description of Operation or Occurrence

On December 4, 1993, approximately 10 gallons of potentially contaminated water from an influent pipe system leading from Walnut Creek to the OU 2 treatment system were released to the environment. The release was detected when a contractor responded to an alarm indicating that the release had occurred. The contractor identified a slow leak coming from a connection in the secondary containment portion of the influent pipeline. The source of the leak was a hole in the primary pipeline which resulted from the separation of two pipes which make up the secondary pipeline. Thirty to forty gallons of the water were contained by the secondary containment structure. The 10 gallon release estimate was based on visual observation of the wetted soil area.¹

Physical/Chemical Description of Constituents Released

Approximately 10 gallons of contaminated water designated as an "F001" listed hazardous waste were released. The sources of the water being collected for treatment were SW59, SW61, and SW132, which contain mostly surface water runoff from the Protected Area (PA). This water is treated for removal of volatile organics, soluble metals and radioactive constituents and is sampled weekly for characterization.¹ Sampling activities closest to the time of the incident took place on November 30, 1990, and on December 9, 1993. Validated analytical data for constituents detected in samples analyzed on November 30, 1993 and December 9, 1994 are contained in Table 1 below. Concentrations of trichloroethene, carbon tetrachloride and tetrachloroethene exceeded one or more standards on December 9, 1994, and tetrachloroethene exceeded Segment 5 stream standards on November 30, 1994.⁴ In addition, F001 listed contaminants including carbon tetrachloride, methylene chloride, trichloroethene and tetrachloroethene have been detected in the influent water at low levels based on over 100 sampling events that occurred from May 29, 1991 to December 3, 1993. Additionally, chromium and 1,2-dichloroethene, chloroform, 1,1-dichloroethane, and 1,1-dichloroethene have been detected in the influent water at low levels. Other contaminants that have been tested for but not detected include acetone, vinyl chloride, barium, cadmium, lead and mercury. Water potentially contaminated with previously detected wastes is normally treated in a Chemical Precipitation/Microfiltration/Granular Activated Carbon system to remove these contaminants from the water before being returned to the creek.¹

TABLE 1
VOLATILE ORGANIC COMPOUNDS DETECTED IN
THE OU 2 COLLECTION SYSTEM WATER SAMPLES
NOVEMBER 30, 1993 AND DECEMBER 9, 1993

Volatle Organic Analytes in Water Samples	Value Detected on November 30, 1993 ¹ (mg/L)	Value Detected on December 9, 1993 ¹ (mg/L)	SDWA ² MCLs ^{3,4} (mg/L)	RCRA TCLP Regulatory Limit ⁴ (mg/L)	CO Water Quality Standards Big Dry Creek Segment 5 (mg/L)
Trichloroethene F001, D040	0 001	0 064	0 005	0 50	0 066
Carbon Tetrachloride F001, D019	0 003	0 140	0 005	0 70	0 018
Tetrachloroethene F001, D039	0 002	0 054	0 005	0 50	0 0008
Cis-1,2-dichloroethene	0 009	0 060	0 070	NA	0 170
1,1-Dichloroethane	0 001	0 002	NA	NA	NA
1,1,1-Trichloroethane	0 0004	0 009	NA	NA	NA
Chloroform D022	0 0004	0 024	NA	6 00	006

¹Sample dates closest to the December 4, 1993, spill included November 30, 1993, and December 9, 1993

²SDWA--Safe Drinking Water Act

³MCLs-- Maximum Contaminant Levels

⁴NA--Not Applicable

Responses to Operation or Occurrence

The RCRA Contingency Plan was implemented as described in CPIR No 93-010. The pumps were immediately shut down and the contractor personnel visually inspected the line for the release. An emergency work package was initiated to repair the line, which was returned to service on December 8, 1993. The released material was not directly recoverable because it soaked into the soil. Based on previous analytical results of the contaminated water, the immediate removal of the affected soil was not required because the contaminant concentrations in the soil should not pose an unacceptable risk to human health and the environment¹. On January 7, 1994, a risk assessment was completed using the influent water data and acceptable risk between 10^{-4} and 10^{-6} was verified². A second risk assessment using CDH methodology was conducted in late March, 1994, which resulted in an even a lower cancer risk of 10^{-7} to 10^{-8} ³. This revised risk assessment was provided in the Seventh Quarterly Update to the Historical Release Report.

Fate of Constituents Released to Environment

Ten gallons of contaminated water leaked into the soil. The point of release was located under a road culvert. The contaminated soil was not removed. No IHSS area was involved in this incident¹.

Action/No-Action Recommendation

It is recommended that this area be included for remediation under the final response action plan for OU 2 along with PACs NE-1407 and 900-1312⁵.

Comments

This narrative updates and supersedes the PAC 900-1309 narrative which was presented in the Sixth Quarterly Update to the Historical Release Report.

References

¹December 16, 1993 Resource Conservation and Recovery Act (RCRA) Contingency Plan Implementation Report (CPIR) No 93-010

²January 31, 1994 Personal Communication with N S Demos, EG&G Environmental Restoration Management

³Revised Bounding Risk Assessment for OU2 Treatability System Spill March 29, 1994

⁴Validated Analytical Data for the OU2 Field Treatability Unit for Volatile Organic Analytes from October 5, 1993, through January 25, 1994

⁵Correspondence between M L Johnson, Waste Regulatory Programs, to G L Potter, Facility Management and Operations re Documentation of Cleanup Response to releases occurring at Building 460 and OU 2 April 20, 1994

SECTION 4 0
REVISED IHSS AND PAC MAPS