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Mr. Tim Rehder
U.S. Environmental Protection Agency, Region VIII
999 18th Street, Suite 500 8EPR-FT
Denver, Colorado 80202-2466

Dear Mr. Rehder:

Enclosed please find a copy of the *Quarterly Report for Consolidated Water Treatment Facility and OU 7 Passive Seep Interception and Treatment System* for July-September 1998, including data summary for April-June 1998. This report is being transmitted to your agencies for information purposes only.

If you should have any questions regarding this report, please contact me at 303-966-5918, or contact Norma I. Castaneda at 303-966-4226.

Joseph A. Legare
Assistant Manager
for Environmental Compliance

Enclosure

cc w/Enc:
A. Rampertaap, EM-45, HQ
J. Lillich, EPA
C. Spreng, CDPHE
Administrative Record

cc w/o Enc:
R. Tyler, ERWM, RFFO
N. Castaneda, ERWM, RFFO
L. Butler, K-H

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Reviewed for Addressee
Corres. Control RFP

11/24/98
Date By

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DOE ORDER # 5400.1



ADMIN RECORD

QUARTERLY REPORT
CONSOLIDATED WATER TREATMENT FACILITY
AND
OU7 PASSIVE SEEP INTERCEPTION AND
TREATMENT SYSTEM

FOR JULY THROUGH SEPTEMBER 1998
INCLUDING DATA SUMMARY FOR
APRIL THROUGH JUNE 1998

Rocky Mountain Remediation Services, L.L.C.

OCTOBER 1998

COPY

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SECTION A - CONSOLIDATED WATER TREATMENT FACILITY (CWTF)

1.0 INTRODUCTION

The CWTF went on-line February 29, 1996. The CWTF was designed as a comprehensive facility which combined individual IM/IRA treatment activities in order to reduce cost, increase efficiency, and offer treatment options to the Rocky Flats Environmental Technology Site (RFETS) in support of on-going Environmental Restoration (ER) activities and remediation.

The Consolidated Water Treatment Facility (CWTF) consists of the following specific unit operations:

- Chemical precipitation (T-900A/T-900B);
- Cross-flow membrane microfiltration (T-900A/T-900B);
- Ultraviolet Light/Hydrogen Peroxide Oxidation (Building 891);
- Granular Activated Carbon (Building 891); and
- Ion Exchange (Building 891).

A clay absorbent media drum is available for a pretreatment of oily wastewaters during water transfers from tanker trucks to influent storage tanks. Waters are processed through the various CWTF unit treatment operations based on knowledge of the influent water characteristics in order to maximize treatment and reduce handling costs and waste generation.

The CWTF currently treats contaminated water from the following sources:

- Operable Unit (OU)1 groundwater
- Decontamination water from the Main Decontamination Facility (MDF) and Protected Area Decontamination Facility (PADF)
- Other ER waters (e.g., purge water, water pumped from containments, etc.)

The CWTF flowpath is flexible enough to allow waters to be treated through particular unit processes as necessary, and to allow for re-treatment if necessary.

2.0 CWTF OPERATIONS (July, August, September 1998)

2.1 QUANTITIES OF WATER COLLECTED AND TREATED

Table 2-1 summarizes the quantities of water treated at the CWTF for the period July through September 1998. During this period the CWTF accepted water from the following sources:

- OUI French Drain Sump
- OUI Collection Well
- Snow melt/rain water pumped from CWTF containments
- MDF and PADF Water
- 903 Pad Decontamination Activities
- B881 Roof leak
- B371 Excavation
- Building 123 equipment decontamination
- Plant Power electrical containments
- PU&D
- Groundwater Monitoring Well Purge
- Mound Treatment System Decontamination Water

Table 2-1, shows that a total of approximately 127,300 gallons of water were treated through the Building 891 Ion Exchange Columns from July 1, 1998 through September 30, 1998. Approximately 132,400 gallons of the total water volume were treated through the chemical precipitation/microfiltration trailers.

Please note that because the CWTF is equipped with three Influent Tanks, the amount of water treated may be less than or greater than the amount of water collected for any given period.

During the period from July through September 1998, 126,000 gallons of treated water were released to the South Interceptor Ditch (SID).

As of September 30, 1998, the total water processed through the Ion Exchange Columns is approximately 4,658,000 gallons.

TABLE 2-1
 CONSOLIDATED WATER TREATMENT FACILITY
 APPROXIMATE QUANTITIES OF WATER COLLECTED AND PROCESSED a/

Month/Year	Gallons Collected from French Drain Sump b/	Gallons Collected from the OU1 Collection Well b/	Gallons Accepted at Bldg 891 from the MDF and Other Sources c/	Gallons Pumped from Bldg. 891 Containments	Gallons Collected from the OU2 SW-59	Gallons Processed through T900A/T900B	Gallons Processed through GAC at Bldg 891	Gallons Processed through IX at Bldg 891
Jan-98	21,105	1,860	3,754	1,448	2,367	24,531	0	20,780
Feb-98	20,475	1,270	0	511	0	23,720	12,200	31,766
Mar-98	31,913	1,530	0	10,811	2,380	45,957	44,836	42,824
1st Quarter Totals	73,493	4,660	3,754	12,768	4,747	94,208	56,836	95,170
Apr-98	95,014	1,120	6,450	18,931	0	37,440	124,799	123,287
May-98	32,114	1,680	4,733	8,738	2,435	60,791	54,097	51,477
Jun-98	4,335	1,880	6,301	3,020	880	15,090	20,982	20,231
2nd Quarter Totals	131,463	4,480	17,504	30,689	3,315	113,321	199,878	194,995
Jul-98	6,850	1,995	3,881	110	0	12,585	11,365	10,434
Aug-98	16,465	1,465	14,738	0	0	42,865	40,168	38,806
Sep-98	660	390	11,588	0	0	76928*	76928*	76928*
3rd Quarter Totals	23,975	3,850	30,205	110	0	55,460	52,033	50,340
Oct-98								
Nov-98								
Dec-98								
4th Quarter Totals	0	0	0	0	0	0	0	0
Year-to-Date Totals	228,931	12,990	51,463	43,567	8,082	262,869	308,747	340,505

a/ Please note that because the CWTF is equipped with Influent Tanks, the quantity of water collected will not necessarily equate to the quantity of water processed. Also note that a 15,000 gallon surge tank (T-203) is in-line between the UV/GAC unit processes and IX #1, and therefore the quantity of water processed through UV/GAC will not equate to the quantity of water processed through IX.

b/ This ground water is collected each operating day (i.e., 5 days per week).

c/ Other sources may include purge water, ER Accelerated Action Project water, 903 Pad Decon, or other water collected.

d/ No UV/H₂O₂ effluent was treated through the GAC.

* Water retreated, not included in Year-to-Date Totals

2.2 CHEMICAL USAGE

The following chemicals are utilized during wastewater treatment operations at the CWTF:

- Building 891
 - Hydrogen peroxide (UV oxidation)
 - Hydrochloric acid (ion exchange regeneration and pH adjustment)
 - Sodium hydroxide (ion exchange regeneration)

- T-900A/T-900B trailers
 - Sulfuric acid (pH adjustment: TK-1 and effluent)
 - Calcium hydroxide (precipitation)
 - Ferric sulfate (precipitation)
 - Hydrogen peroxide (chemical cleaning of filter modules)
 - Sodium hydroxide (pH adjustment: TK-2)

Table 2-2 summarizes the quantities of chemicals utilized during the period of July through September 1998.

2.3 WASTE GENERATION

The following types of waste are generated during normal wastewater treatment operations at Building 891 and the T-900A/T-900B trailers:

- Building 891
 - Used filter socks
 - Neutralized ion exchange regenerant
 - Personnel protective equipment
 - Clay filter media

- T-900A/T-900B trailers
 - Filter press sludge cake
 - Personnel protective equipment
 - Used filter membranes

Table 2-3 summarizes the types and quantities of the waste generated during wastewater treatment operations at the CWTF for the third quarter of 1998. From July 1, 1998 through September 30, 1998, 7,369 gallons of neutralized regenerant water from Tank 210 were sent to the Building 374 evaporator for processing.

TABLE 2-2
 CONSOLIDATED WATER TREATMENT FACILITY
 CHEMICAL USAGE

Month/Year	Building 891					T-900A/T-900B				
	Hydrochloric Acid 36% (gallons)	Sodium Hydroxide 50% (gallons)	Hydrogen Peroxide 50% (gallons)	Sulfuric Acid a/ 98% (gallons)	Calcium Hydroxide (pounds)	Ferric Sulfate (pounds)	Hydrogen Peroxide 35% (gallons)	Sodium Hydroxide 50% (gallons)	Sodium Hypochlorite (gallons)	
Jan-98	74.8	74.8	0.4	3.9	78.0	15.9	8.6	4.1	0.0	
Feb-98	199.0	102.0	1.4	3.8	90.0	11.5	7.9	4.6	0.0	
Mar-98	0.0	0.0	0.0	8.5	161.0	21.0	15.6	8.8	0.0	
1st Quarter Totals	273.8	176.8	1.8	16.1	329.0	48.4	32.1	17.5	0.0	
Apr-98	294.0	178.0	3.0	6.4	141.0	18.0	10.7	6.9	0.0	
May-98	106.0	60.0	1.4	9.4	240.0	26.0	7.3	13.7	0.0	
Jun-98	0.0	0.0	0.0	2.5	54.0	6.0	4.9	2.5	0.0	
2nd Quarter Totals	400.0	238.0	4.4	18.4	435.0	50.0	22.9	23.1	0.0	
Jul-98	0.0	60.0	0.0	1.8	48.0	6.0	4.8	1.7	0.0	
Aug-98	181.0	61.0	0.0	4.7	180.0	17.5	14.9	3.2	0.0	
Sep-98	0.0	119.0	5.3	1.4	30.0	4.0	0.4	1.7	0.0	
3rd Quarter Totals	181.0	240.0	5.3	7.8	258.0	27.5	20.1	6.5	0.0	
Oct-98										
Nov-98										
Dec-98										
4th Quarter Totals	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Year-to-Date Totals	854.8	654.8	11.5	42.3	1022.0	125.9	75.0	47.1	0.0	

a/ In addition to the sulfuric acid quantity listed in this column, occasionally a small amount (approximately 1 gallon per effluent tank) of sulfuric acid is used in Building 891 for effluent pH adjustment.

TABLE 2-3
 CONSOLIDATED WATER TREATMENT FACILITY
 WASTE GENERATION

Month/Year	Building 891			T-900A/T-900B				Bldg 891/T-900A/T-900B	
	Filter Socks (55-gal drum)	Neutralized Regenerant to 374 (gallons)	Spent Media (drums)	Sludge Production (55-gal drum)	Spent GAC (pounds)	Used Filter Membranes (55-gal drum)	Personal Protective Equip. (55-gal drum)	a/	
Jan-98	--	4,565	0	2	0	0	--		
Feb-98	--	0	0	0	0	0	--		
Mar-98	--	0	1	2	0	0	--		
1st Quarter Totals	0	4,565	1	4	0	0	--	b/c/	
Apr-98	--	0	0	0	0	0	--		
May-98	--	0	0	0	0	0	--		
Jun-98	--	0	0	0	0	0	--		
2nd Quarter Totals	0	0	0	0	0	0	--		
Jul-98	0	0	0	0	0	0	0		
Aug-98	0	2,632	0	0	0	0	--		
Sep-98	0	4,737	0	2	0	0	--		
3rd Quarter Totals	0	7,369	0	2	0	0	--		
Oct-98									
Nov-98									
Dec-98									
4th Quarter Totals	0	0	0	0	0	0	0		
Year-to-Date Totals	0	11,934	1	6	0	0	0	0	

a/ PPE is monitored for radiological contaminants, and if determined to be acceptable for unrestricted release, is sent to the Rocky Flats landfill for disposal. Until the acceptance of water from an ER Accelerated Action Project in February 1996, no PPE from Building 891 or the T-900A/T-900B trailers had been found to be radiologically contaminated.

b/ PPE is collected from water treatment operations, MDF decontamination operations, etc., and is drummed collectively.

c/ These drums are filled gradually, and therefore only quarterly totals are reported.

d/ Used filter socks are drummed with other compatible wastes generated onsite, therefore the drums generated cannot be tracked.

SECTION A - CONSOLIDATED WATER TREATMENT FACILITY

3.0 INFLUENT AND EFFLUENT SAMPLING (April through June 1998)

3.1 OUI FRENCH DRAIN SUMP, COLLECTION WELL, AND BUILDING 881 FOOTING DRAIN CHARACTERISTICS

Collection Well water is now collected separately from the French Drain Sump water, and collection and treatment of water from the Building 881 Footing Drain was discontinued in December 1994. Therefore the current French Drain Sump data is representative of only those waters that seep from the groundwater table into the French Drain. Quarterly sampling was performed at the French Drain Sump and the Collection Well on June 10, 1998. The Building 881 Footing Drain was sampled on June 19, 1998. The groundwater group (Tierra) is conducting the sampling. The results of the sampling are reported in the Quarterly Groundwater Report.

SECTION A - CONSOLIDATED WATER TREATMENT FACILITY

3.2 OU2 SURFACE WATER CHARACTERISTICS

Collection of water from SW-59 was stopped on June 25, 1998, due to the installation of the Mound plume treatment system. Effective May 6, 1994, the collection and treatment of SW-61 and SW-132 was discontinued as per the authorization obtained on April 24, 1994 from the Environmental Protection Agency (EPA) and the Colorado Department of Public Health and the Environment (CDPHE). Surface water is sampled on a quarterly basis from SW-59, SW-61, and SW-132. The surface water group (Commodore Advanced Sciences) began collecting samples from SW-61 and SW-132 on May 19, 1998. The results of sampling from these locations are reported in the Quarterly Environmental Monitoring Report. The groundwater group is conducting sampling of SW-059 on June 4, 1998. The results of the sampling are reported in the Quarterly Groundwater Report.

3.3 TREATED EFFLUENT CHARACTERISTICS

Treated effluent from the CWTF is stored in one of three Effluent Storage Tanks prior to discharge. An Effluent Storage Tank is sampled and is discharged if the data show that ARARs have not been exceeded. 126,000 gallons of treated water were discharged during the third quarter of 1998.

4.0 ENVIRONMENTAL COMPLIANCE

4.1 PERIODS OF NON-COLLECTION

All collections were performed for the third quarter of 1998.

4.2 AIR MONITORING

Air monitoring was performed with no readings found above background during process runs and transfers of incidental waters. Air monitoring for H₂S was also conducted during maintenance on the degas sump bulkhead at the CWTF. No H₂S readings above background were detected.

SECTION A - CONSOLIDATED WATER TREATMENT FACILITY

5.0 ANTICIPATED OPERATIONS FOR NEXT QUARTER

Collection and treatment of water from the French Drain Sump will continue as normal. Water from the Collection Well will continue to be collected using the portable trailer and transported to the CWTF for off-loading and treatment. Purge, incidental, and decontamination pad waters will continue to be accepted and treated.

The CWTF will continue to accept and treat waters from Environmental Restoration Projects. Projects being supported with water treatment activities include the 903 Pad Characterization. The CWTF will need to package filter cake from the sludge press system.

Sampling of OU1 and OU2 locations will continue to be performed by groundwater and surface water groups.

SECTION B - OU7 PASSIVE SEEP INTERCEPTION AND TREATMENT SYSTEM

6.0 INTRODUCTION, OPERATIONS, AND SAMPLING

The OU7 Passive Seep Interception and Treatment System (PSITS) is designed to collect and treat OU7 seep water and thereby eliminate, to the extent practicable, the discharge of the FO39-listed waste contained in this seep water to the East Landfill Pond. The collection and treatment system is comprised of the following items:

- A seep interception system.
- A settling basin to remove total suspended solids.
- A bag filtration system consisting of two filters operated in parallel (currently 25 micron bags are in use in the system).
- Two 55-gallon drums of granular activated carbon (GAC) are operated in series to remove volatile organic compounds (VOCs) and semivolatile organic compounds (SVOCs).

During the third quarter of 1998 the bag filters were changed July 7, August 10 and September 9. During the bag filter replacement on April 23, 1998 the flow meter became clogged with sediment and flow is now being visually estimated. Repairs to the flow meter have not been initiated since it is anticipated the treatment method may be reconfigured in the near future. The polish GAC vessel went offline August 10, due to a damaged nipple. The pipefitting was repaired and the vessel was returned to service September 9.

A brief period of system bypass occurred during GAC change out, each bypass lasted less than half an hour. The EPA and CDPHE will be notified immediately in any instance where bypass continues longer than 72 hours. Periods of bypass less than 72 hours will be documented in this report.

The OU7 Treatment system will be modified in the fourth quarter of 1998. The new system will allow passive aeration of OU7 waters. The waters will exit the landfill and flow through existing piping without GAC treatment. The water will arrive at land surface and flow over stepped flagstones and a gravel bed to encourage volatilization of contaminants. The water before and after aeration will be sampled for volatiles and semivolatiles. The aeration effluent will also be sampled for Metals, Isotopic plutonium, uranium and americium, Gross Alpha and Beta and Tritium. The analytical suites may be revised after three months of sampled results.

On April 22, 1998, samples were collected at the landfill outfall (SW00196). No constituents were detected which exceeded the Treatment System Performance Objectives for the second quarter of 1998.