NOTICE

All drawings located at the end of the document.

FINAL

PROPOSED INTERIM MEASURE/INTERIM REMEDIAL ACTION DECISION DOCUMENT FOR THE SOLAR EVAPORATION PONDS OPERABLE UNIT NO. 4

U.S. DEPARTMENT OF ENERGY
Rocky Flats Plant
Golden, Colorado

April 1992

ENVIRONMENTAL RESTORATION PROGRAM

FINAL

PROPOSED
INTERIM MEASURE/INTERIM REMEDIAL ACTION
DECISION DOCUMENT FOR
THE SOLAR EVAPORATION PONDS
OPERABLE UNIT NO. 4

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ENVIRONMENTAL RESTORATION PROGRAM

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EXECUTIVE SUMMARY

This document is the Proposed Interim Measure/Interim Remedial Action (IM/IRA) Decision Document for Operable Unit No. 4 (OU4), the Solar Evaporation Ponds (SEPs). This document was prepared in accordance with the Rocky Flats Interagency Agreement (IAG), dated January 22, 1991, and applicable regulatory guidance documents. This IM/IRA document incorporates the United States Environmental Protection Agency (EPA) and Colorado Department of Health (CDH) comments on the draft IM/IRA Decision Documents dated July 1991 and August 1991.

Approximately 8 million gallons of excess liquids need to be removed from the 207-A and 207-B SEPs before the remaining sludges can be removed for solidification. Natural evaporation of pond liquids accounts for only 2 million gallons per year. Furthermore, water collected by an Interceptor Trench System (ITS), approximately 4 million gallons per year, is currently pumped into Pond 207-B North. Changes to the current operation of the SEPs are required to allow closure and remedial activities to proceed. Specifically, the addition of water to the ponds through precipitation and collection from the ITS must cease, an alternate means of storing and treating collected water is needed, and an accelerated means of removing excess pond liquids is required to allow removal of sludge and sediments from the SEPs. Additional activities beyond the scope of this IM/IRA, such as removal and solidification of sludges into pondcrete, further investigation, characterization, and remedial activities, will continue to occur at OU4.

The major components of the selected remedy include:

- The construction and utilization of three temporary surge tanks and associated piping to contain and transfer water collected by the ITS
- Three portable flash evaporators and associated tanks to treat excess liquids contained in the 207-A and 207-B SEPs, and to treat future ITS collected waters.

The selected remedy is expected to pose a minimal risk to the health of workers, the general public, and the environment. The risk of the remedy is considered low because the proposed system operates as a closed loop. The risk due to the surge tanks is low because of the low concentration of contaminants in the ITS water. The risk to the public due to exposure to contaminated ground water is also low because there are no completed exposure pathways. Currently, this IM/IRA is anticipated to operate through 1995.

1.0 INTRODUCTION

This document is the Proposed Interim Measure/Interim Remedial Action (IM/IRA) Decision Document for Operable Unit No. 4 (OU4), the Solar Evaporation Ponds (SEPs). This document was prepared in accordance with the Rocky Flats Interagency Agreement (IAG), dated January 22, 1991, and applicable regulatory guidance documents. This IM/IRA document incorporates the United States Environmental Protection Agency (EPA) and Colorado Department of Health (CDH) comments on the draft IM/IRA Decision Documents, dated July 1991 and August 1991. This IM/IRA is expected to operate through 1995.

This IM/IRA document for OU4, the SEPs, is intended to facilitate implementation of the SEPs' RCRA partial closure actions. As such, the IM/IRA is being taken as an enabling activity to facilitate removal and solidification of pond sludges and site closure. This IM/IRA document is not related to the IM/IRA as referenced in the IAG. The IAG IM/IRA, scheduled in 1994, follows the Phase I RFI/RI report and would be presented only after the RFI/RI was completed and approved. The distinction between this IM/IRA and the IAG IM/IRA are the activities associated with pondcrete operations. Pondcrete operations are addressed in the Agreement In Principle (AIP), not the IAG, and thus this IM/IRA presents information regarding actions necessary before pondcrete operations can continue to be implemented. Thus, the IM/IRA actions presented in this decision document are focused only on operations relating to the flash evaporator and surge tank systems. Also, this IM/IRA is a mechanism for permitting the use of the proposed treatment (i.e., use of surge tanks and flash evaporators) as directed by EPA and CDH.

1.1 SITE NAME AND LOCATION

Rocky Flats Plant, United States Department of Energy (DOE), Golden, Colorado.

1.2 STATEMENT OF BASIS AND PURPOSE

This IM/IRA is necessary to stabilize wastes in the SEPs, so that subsequent characterization and remediation can be completed for this site. This decision document presents the selected interim remedial action for OU4, the SEPs, which was chosen to permit the required SEP closure activities to proceed, in accordance with the IAG, the Colorado Hazardous Waste Act (CHWA), the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), the Resource Conservation and Recovery Act (RCRA), and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision is based on the administrative record for OU4, the SEPs, and is deemed a necessary component for continued closure activities of the SEPs.

1.3 ASSESSMENT OF THE SITE

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in this IM/IRA Decision Document, may present an imminent and substantial endangerment to public health, welfare or the environment.

1.4 IM/IRA PROJECTS

The SEPs are RCRA interim status regulated units that are currently undergoing closure activities. The removal of liquids and sludge is required to fulfill the intent of the AIP, which states in part "several past disposal sites (i.e., solar ponds) on the plant pose a high risk for further spread of contaminants into surface water, ground water and the soil. The . . . site(s) require(s) special and accelerated actions by the DOE" (DOE, 1989b). A "no action" alternative to this IM/IRA is inconsistent with the AIP and the IAG, and was not considered for these activities because the ponds must be dewatered in order to proceed with partial closure activities and final remediation of the SEPs.

The objectives of this IM/IRA are to cease the addition of liquids (intercepted or trench water) to Pond 207-B North, and to remove excess liquids from the SEPs (207-A and 207-B North, 207-B Center and 207-B South) as expeditiously as possible in order to proceed with closure activities for the ponds consistent with state and federal laws, the IAG, the AIP and the protection of human health and the environment.

1.5 DESCRIPTION OF THE SELECTED REMEDY

The SEPs were formerly used to store and treat liquid process waste. Emplacement of process waste material into these ponds ceased in 1986. Present ongoing activities include evaporation of the liquids currently held in the ponds, removal and solidification of pond sludge, and site monitoring and characterization activities. The 207-B ponds (primarily the North impoundment) continue to be used for storage of water collected by the ITS.

Approximately 8 million gallons of excess liquids need to be removed from the 207-A and 207-B ponds before the remaining sludges can be removed for solidification. Pond 207-C is not included in this IM/IRA because the entire contents of the pond will be solidified. Natural evaporation of pond liquids accounts for only 2 million gallons per year. Furthermore, water collected by an ITS (approximately 4 million gallons per year) is currently pumped into Pond 207-B North. Changes to the current operation of the SEPs are required to allow closure and remedial activities to proceed. Specifically, the addition of collected water to the ponds must cease, an alternate means of storing and treating collected water is needed, and an accelerated means of removing excess pond liquids is required to allow removal of sludge and sediments from the SEPs. Additional activities beyond the scope of this IM/IRA, such as the removal and solidification of sludges into pondcrete, further investigation, characterization, and remedial activities, will continue to occur at OU4.

The major components of the selected remedy include:

- The construction and utilization of three temporary surge tanks and associated piping to contain and transfer water collected by the ITS
- Three portable flash evaporators and associated tanks to treat excess liquids contained in the 207-A and 207-B SEPs and to treat collected waters.

1.6 DECLARATION

The interim action selected in this IM/IRA Decision Document is protective of human health and the environment, complies with federal and state applicable or relevant and appropriate requirements (ARARs) for this limited-scope action, and is cost-effective. Although this interim action is not intended to address fully the statutory mandate for permanent solutions, to the maximum extent practicable, this interim action does utilize treatment and thus is in furtherance of that statutory mandate. Because this action does not constitute the final remedy for the solar ponds, the statutory preference for remedies that employ treatment that reduces toxicity, mobility, or volume as the principal element, although partially addressed in this remedy, will be addressed by the final response action. Subsequent actions are planned to address fully the threats posed by the conditions at the solar ponds. Because this is an interim measure/interim remedial action, review of the solar ponds will be ongoing as EPA, CDH and DOE continue to develop final remedial alternatives for the solar ponds under the IAG.

1.7 EPA AND CDH SUPPORT AND ACCEPTANCE OF THE SELECTED REMEDY

The IM/IRA Decision Document shall be final upon conclusion of the 60-day public comment period and EPA and CDH approval.

2.0 SITE CHARACTERIZATION

2.1 SITE NAME, LOCATION AND DESCRIPTION

The Rocky Flats Plant (RFP) is a government-owned and contractor-operated facility. The facility is part of a nationwide nuclear weapons research, development, production and plutonium reprocessing complex administered by the Rocky Flats Operations Office of the DOE. The operating contractor for the RFP is EG&G Rocky Flats, Inc. The facility manufactures components for nuclear weapons and conducts plutonium reprocessing. It has been in operation since 1951. The RFP fabricates components from plutonium, uranium, beryllium, and stainless steel. Historically, production activities have included metal fabrication, machining, and assembly. Both radioactive and nonradioactive wastes are generated in the process. Current waste handling practices involve on-site and off-site recycling of hazardous materials and off-site disposal of solid radioactive materials at another DOE facility.

The RFP is located in northern Jefferson County, Colorado approximately 16 miles northwest of Denver and 9 to 12 miles from the neighboring communities of Boulder, Broomfield, Golden, and Arvada (see Figure 2-1). The immediate area around the RFP is primarily undeveloped and agricultural land. The RFP is bounded on the north by State Highway 128, on the west by a parcel of land east of State Highway 93, on the south by a parcel of land north of State Highway 72, and on the east by Jefferson County Highway 17. Access to the plant is from an east access road exiting from Jefferson County Highway 17, or a west access road exiting from State Highway 93.

The facility is situated at an elevation of approximately 6,000 feet above mean sea level (msl). It is on the eastern edge of a geological bench known locally as Rocky Flats. The bench is approximately 5 miles wide and flanks the eastern edge of the foothills of the Rocky Mountains. The RFP consists of approximately 6,500 acres of federally-owned land in Sections 1 through 4, and Sections 9 through 15 of T2S, R70W, 6th Principal Meridian. Major buildings are located within the RFP Protected Area (PA) of approximately 400 acres. The PA is surrounded by a buffer zone of approximately 6,150 acres. The PA is within the controlled/security area (see Figure 2-2).

The SEPs are located in the central portion of the RFP on the northeast side of the PA. The SEP Waste Management Unit includes Ponds 207-A, 207-B North, 207-B Center, 207--B South, 207-C, and the ITS (see Figure 2-3). The SEPs are RCRA interim status regulated units that are currently undergoing closure activities. Activities associated with this IM/IRA would occur totally within the facility boundaries and

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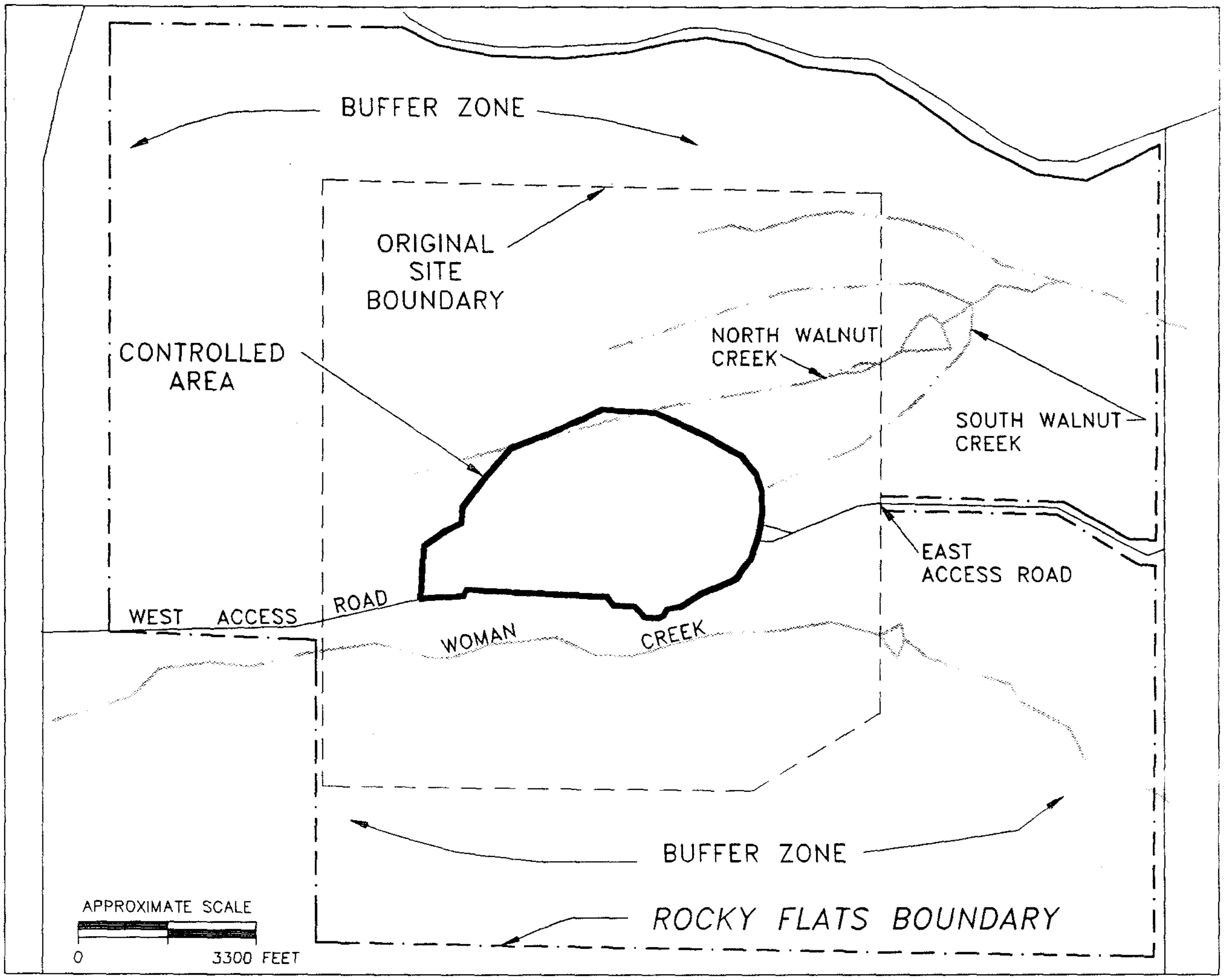


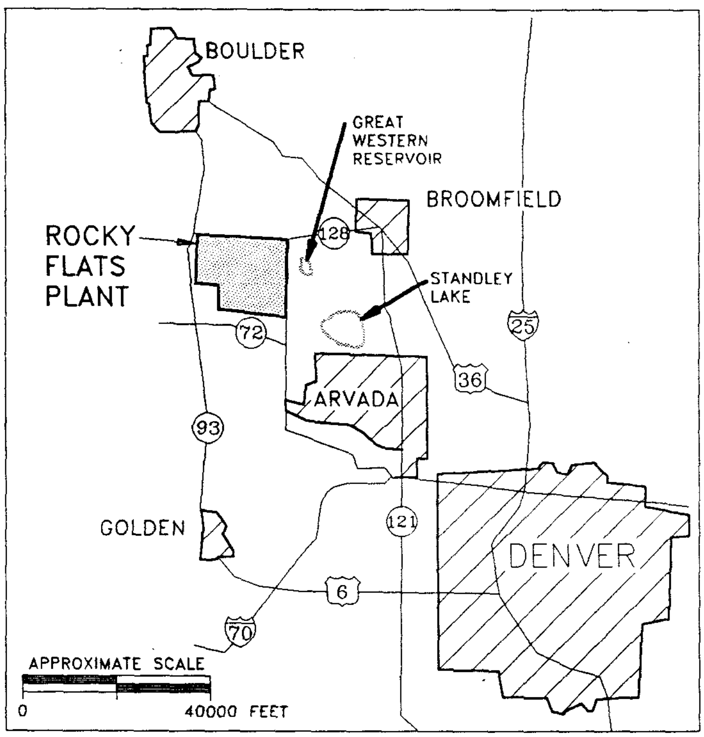
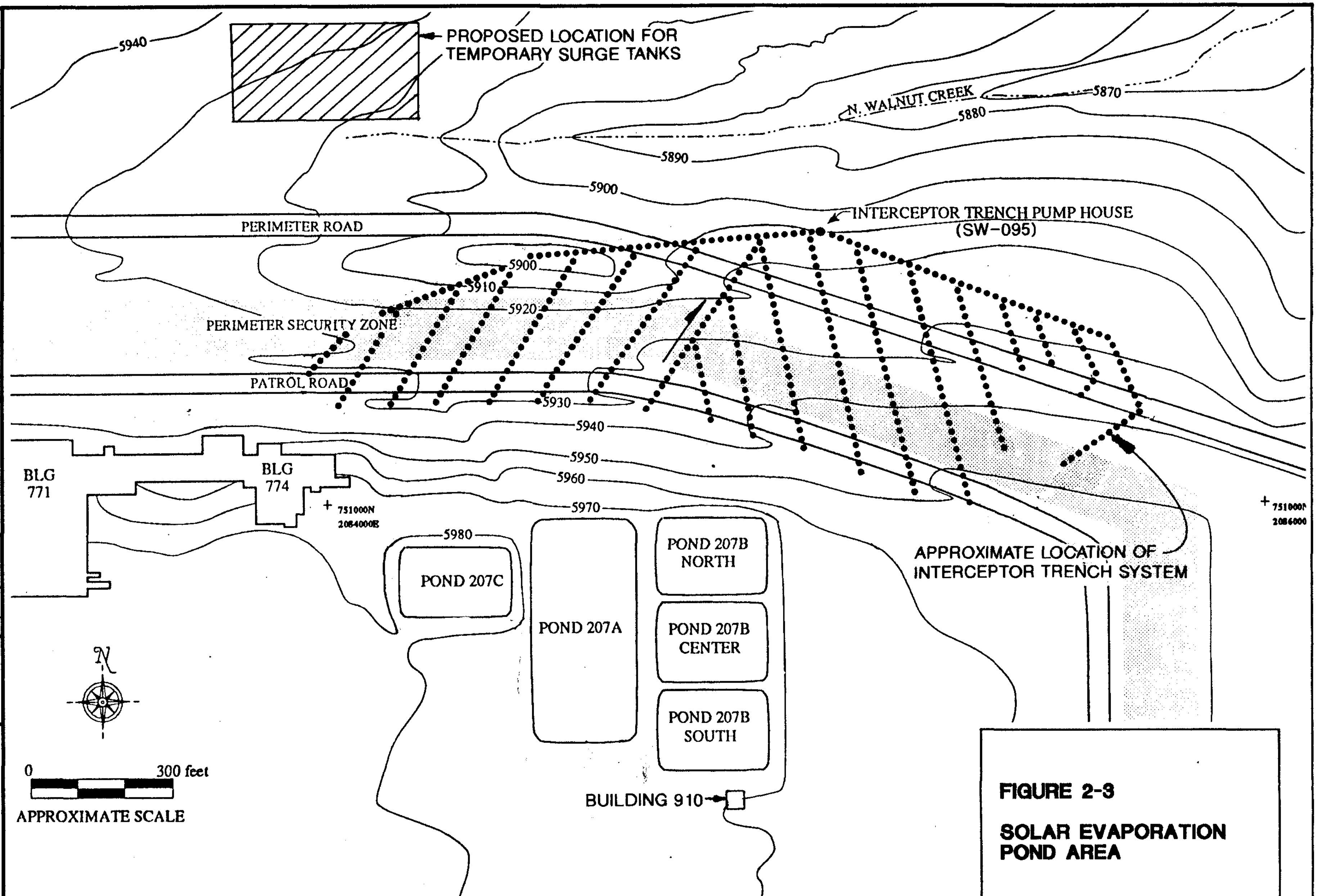


FIGURE 2-1

ROCKY FLATS LOCATION MAP

ADAPTED FROM: FIG. 1-1, E.G. & G. DRAFT GEOLOGIC CHARACTERIZATION REPORT, JAN. 3, 1990.



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	7/31/91	APPROVED BY	GWB	8-13-91		

REFERENCE: ASI, ZERO OFFSITE DISCHARGE STUDY,
SOLAR EVAPORATION PONDS, FIGURE 3,
INTERCEPTOR TRENCH PUMP HOUSE SYSTEM, FIGURE 5, JANUARY 15, 1991.

FIGURE 2-3

SOLAR EVAPORATION POND AREA

would be controlled by standard facility procedures in compliance with the appropriate environmental regulations.

The SEPs are currently configured as a series of five evaporation ponds (see Figure 2-3). Pond 207-A was placed into service in August 1956. Ponds 207-B, North, Center, and South were placed into service in June 1960. Pond 207-C was constructed in 1970 to provide additional storage capacity and to allow the transfer and storage of liquids from the other ponds in order to perform pond repair work. These ponds were formerly used to store and treat liquid process waste having less than 100,000 picocuries per liter (pCi/l) of total long-lived alpha activity (DOE, 1980). These process wastes also contained high concentrations of nitrates as well as treated acidic wastes containing aluminum hydroxide. The ponds are also known to have received other wastes, including sanitary sewer sludge, lithium chloride, lithium metal, sodium nitrate, ferric chloride, sulfuric acid, ammonium persulfates, hydrochloric acid, nitric acid, hexavalent chromium, tritium, and cyanide solutions (Rockwell International, 1988).

Sludges from the SEPs have been removed from time to time to implement repair work on the pond liners and as part of routine waste management activities. As the sludges were removed, they were mixed with Portland cement and solidified as a mixture of sludge and concrete (pondcrete) for shipment to an off-site low-level radioactive waste disposal site.

Emplacement of process waste material into these ponds ceased in 1986 because of changes in RFP waste treatment operations. Present ongoing activities include evaporation of the liquids currently held in the ponds, and site monitoring and characterization activities. The 207-B ponds (primarily the North impoundment) continue to be used for storage of intercepted seepage water collected by the ITS.

Construction of interceptor trenches during the period from October 1971 through April 1974 was initiated to prevent natural seepage and pond leakage from entering North Walnut Creek. This system has been replaced by the current ITS (see Figure 2-3).

The ITS (also known as the French Drain System) was installed in the hillside north of the SEPs. It became active in April 1981 and is currently in use. The depths of the drain system ranges from approximately 1 to 27 feet below the ground surface, with typical depths of 4 to 16 feet (Rockwell International, 1988).

Water collected in the ITS flows by gravity to the interceptor trench pump house (see Figure 2-3). The water from the pump house is currently pumped to Pond 207-B North. The current amount of intercepted seepage collected by the ITS is estimated to be approximately 4 million gallons per year. The maximum amount of water collected in any one week was 700,000 gallons in June 1987 (Rockwell International 1988).

2.1.1 Topography

The RFP is located along the eastern edge of the southern Rocky Mountain region immediately east of the Colorado Front Range. The plant site is located on a broad, eastward sloping pediment that is capped by alluvial deposits of Quaternary age (Rocky Flats Alluvium). The pediment surface has a fan-like form with its apex near the mouth of Coal Creek Canyon and distal margins approximately 2 miles east of the RFP. The tops of alluvial-covered pediments are nearly flat but slope gently eastward at 100 to 50 feet per mile (EG&G, 1991d). At the RFP the pediment surface is dissected by a series of east-northeast trending stream-cut valleys. The valleys containing Rock Creek, North and South Walnut Creeks, and Woman Creek lie 50 to 200 feet below the level of the older pediment surface. These valleys are incised into the bedrock underlying alluvial deposits, but most bedrock is concealed beneath colluvial material accumulated along the gentle valley slopes.

A topographic map of OU4 (see Figure 2-4) illustrates the area surrounding the SEPs and the proposed location for the temporary surge tanks. The siting for the temporary surge tanks is explained in Section 3.1.2 of this document.

2.1.2 Meteorology

The area surrounding the RFP has a semiarid climate characteristic of much of the central Rocky Mountain region. Based on precipitation recorded between 1953 and 1976, the mean annual precipitation at the plant is 15 inches. Approximately 40 percent of the precipitation falls during the spring season, much of it as wet snow. Thunderstorms (June to August) account for an additional 30 percent of the annual precipitation. Autumn and winter are drier seasons, accounting for 19 and 11 percent of the annual precipitation, respectively. Snowfall averages 85 inches per year, falling from October through May (DOE, 1980).

Winds at the RFP, although variable, are predominantly from the west-northwest. Stronger winds occur during the winter, and the area occasionally experiences Chinook winds with gusts up to 100 miles per hour. The canyons along the Front Range tend to channel the air flow during both upslope and downslope conditions, especially when there is strong atmospheric stability (DOE, 1980).

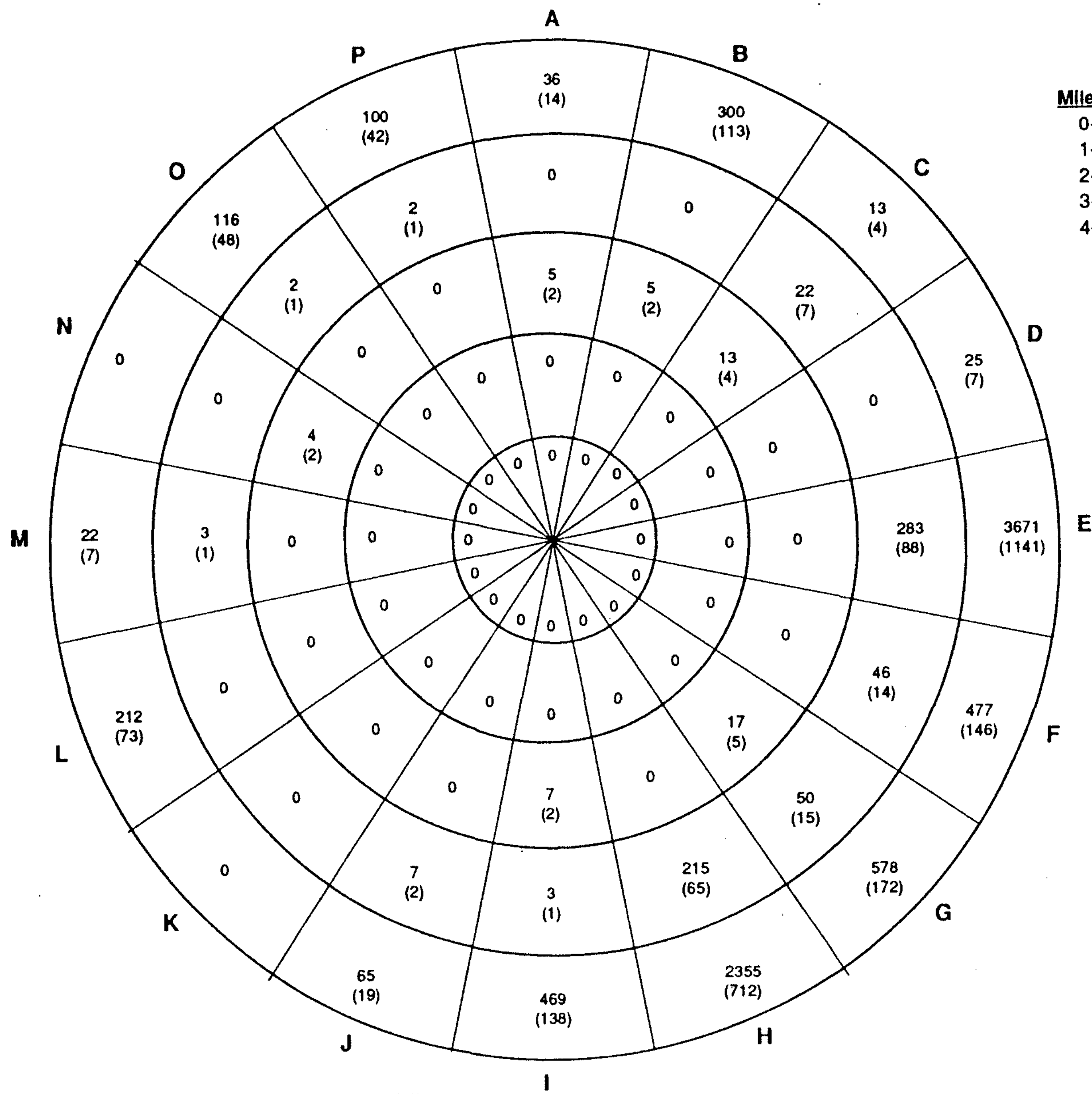
Rocky Flats meteorology is strongly influenced by the diurnal cycle of mountain and valley breezes. Two dominant flow patterns exist, one during daytime conditions and one at night. During daytime hours, as the earth heats, the mountains receive more direct sunlight than the plain and valleys. The result is a general trend for air flow to travel toward the higher elevation (upslope). The general air flow pattern during upslope conditions for the Denver area is typically north to south, with flow moving up the South Platte River Valley and then entering the canyons into the Front Range. After sunset, the air against the mountain side is cooled and begins to flow toward the lower elevations (downslope). During downslope conditions, air flows down the canyons of the Front Range onto the plain. This flow converges with the South Platte River Valley flow moving toward the north-northeast.

Temperatures at the RFP are moderate. Extremely warm or cold weather is usually of short duration. On average, daily summer temperatures ranges from 55 to 85 degrees Fahrenheit (°F), and winter temperatures range from 20 to 45°F. Temperature extremes recorded at the plant range from 102°F on July 12, 1971, to -26°F on January 12, 1963. The 24-year daily average maximum temperature for the period 1952 to 1976 is 76°F, the daily minimum is 22°F, and the average mean is 50°F. Average relative humidity is 46 percent (DOE, 1980).

2.1.3 Nearby Populations, Uses of Adjacent Land and Natural Resources

The population, economics, and land use of the areas surrounding the RFP are described in a 1989 Rocky Flats vicinity demographics report by DOE (DOE, 1990b). This report divides general use of areas within zero to 10 mi (zero to 16 km) of the RFP into residential, commercial, industrial, parks and open spaces, agricultural and vacant, and institutional classification, and considers current and future land use near the plant.

The majority of residential use within 5 miles (8 km) of the RFP is located immediately north and southwest of Standley Lake (IHSS 201). Single family residents are also located immediately east and south of the RFP. Figure 2-5 shows the 1989 population distribution within areas up to 5 miles from the RFP. Commercial development is concentrated near the residential developments north and southwest of Standley Lake, and around the Jefferson County Airport approximately 3 miles (4.8 km) northeast of the RFP. Industrial land use within 5 miles (8 km) of the plant is limited to quarrying and mining operations. Open Space lands are located northeast of the RFP near the City of Broomfield, and in small parcels adjoining major drainages and small neighborhood parks in the cities of Westminster and Arvada. Standley Lake is surrounded by Standley Lake Park. Irrigated and non-irrigated croplands, producing primarily wheat and barley, are located northeast of the RFP near the cities of Broomfield, Lafayette, and Louisville, north of the RFP near Louisville and Boulder, and in scattered parcels adjacent to the eastern boundary of the



Miles	Sector Name
0-1	Sector 1
1-2	Sector 2
2-3	Sector 3
3-4	Sector 4
4-5	Sector 5

SOURCE: DOE, "1989 POPULATION, ECONOMIC AND LAND USE DATA BASE FOR ROCKY FLATS PLANT", AUGUST 1990.

FIGURE 2-5

1989 POPULATIONS AND (HOUSEHOLDS), SECTORS 1-5

DRAWN BY	KRONER 7/31/91	CHECKED BY / APPROVED BY	GNB / GNB	8-2-91 / 8-13-91	DRAWING NUMBER	304903-A47

plant. Several horse operations and small hay fields are located south of the RFP. The demographics report characterizes much of the vacant land adjacent to the RFP and the reservoirs as rangeland (DOE, 1990b).

This proposed action would be within the existing RFP boundaries and would not adversely impact adjacent agricultural areas or recreation areas. The action would tend to enhance the subsurface environment in the vicinity of the SEPs and limit potentially adverse environmental effects from contaminant migration off-site.

The land use immediately adjacent to OU4 consists of plant process areas and the buffer zone for the facility.

2.1.4 Site and Local Surface Hydrology

Several ephemeral streams flow through the RFP area. Three of these streams (North Walnut Creek, South Walnut Creek, and Woman Creek) originate within the RFP boundary and flow generally eastward from the plant site. The Walnut Creek and Woman Creek drainages within the boundary of the RFP are being investigated under the IAG as OU5 and OU6, respectively. A fourth ephemeral stream, Rock Creek, originates in the Buffer Zone northwest of the main production facility and flows northwest from the RFP (see Figure 2-6). Other surface water features in the vicinity of the plant included a complex network of manmade diversions and impoundments. Flow into and within the surface water features results from direct surface runoff, base flow from ground water, and diversions and wastewater from human-related activities.

Surface water drainage from the SEPs area is toward North Walnut and South Walnut Creeks. A series of retention ponds known as the A-series ponds are located on North Walnut Creek, and a series of retention ponds known as the B-series ponds are located on South Walnut Creek (see Figure 2-6). South Walnut Creek joins North Creek and an unnamed tributary coming from the landfill area, approximately 0.7 mile downstream of the eastern edge of the plant security area, within the buffer zone. The Walnut Creeks then flow eastward approximately 1 mile to Great Western Reservoir. North Walnut Creek is an eastward flowing stream located north of the SEPs area. Surface runoff patterns indicate flow enters the drainage from the SEPs area, the 700 Building Complex, the 300 Building Complex, and general surface runoff from the north and west sides of the plant (Rockwell International, 1988).

The A-series ponds on North Walnut Creek are designated A-1, A-2, A-3, and A-4, from west to east. Ponds A-1 and A-2 are used only for spill control, and North Walnut Creek stream flow is diverted around them through an underground pipe. Until 1980, Ponds A-1 and A-2 were used for storage and evaporation of laundry water. Pond A-3 receives the North Walnut Creek stream flow and runoff from the northern portion of the Plant. Pond A-4 is designed for surface water control and for additional storage capacity for overflow from Pond A-3.

The discharge from the ponds are regularly monitored to document compliance with National Pollutant Discharge Elimination System (NPDES) permit requirements. In addition to NPDES monitoring requirements, all discharges are monitored for plutonium, americium, uranium, and tritium concentrations.

2.1.5 Site and Local Hydrogeology

Two hydraulically-connected ground water systems exist in the RFP area: the shallow system which is present is saturated surficial deposits (the upper hydrostratigraphic unit) in many areas of the RFP, and the deeper system in claystones and sandstones of the underlying Arapahoe Formation (the lower hydrostratigraphic unit). The shallow unconfined system is recharged by infiltration from incident precipitation and from surface and base flow water (such as drainages and reservoirs). Ground water flow is generally to the east and toward drainages. Ground water locally discharges as seeps or springs in drainages, especially where the surficial deposit/bedrock contact is exposed. Large water table fluctuations may occur in the shallow system in response to seasonal variations in recharge and discharge, with the highest water levels generally occurring during the months of May and June and the lowest water levels generally occurring in January and February. As a result of these fluctuations, the lateral and vertical extent of saturated surficial deposits varies seasonally. Recent work has estimated hydraulic conductivities for the RFP geologic units at 10^{-5} cm/sec in the Rocky Flats Alluvium, 10^{-5} cm/sec in subcroppings Arapahoe Formation sandstones, 10^{-6} cm/sec in unweathered Arapahoe Formation sandstones, and 10^{-7} cm/sec in both weathered and unweathered Arapahoe Formation claystones (DOE, 1991e; EG&G, 1991b).

Ground water in the lower hydrostratigraphic unit exists primarily in lenticular sandstone bodies within claystone. Ground water flow in the upper hydrostratigraphic unit occurs in the unconsolidated Quaternary surficial deposits and the shallow sandstone within the bedrock. Recharge to this unit consists of infiltration from streams and precipitation. The lower hydrostratigraphic unit is found in the deeper bedrock sandstones which exhibit confined conditions. Recharge to this unit occur primarily from base flow and leakage from the overlying claystone. Ground water in the lower hydrostratigraphic unit flows east towards a regional discharge area along the South Platte River some 20 miles (32 km) east of the RFP. Local seeps occur along the sides of drainages where the bedrock crops out. Calculated horizontal linear flow velocities for the bedrock system's average 0.1 ft/day (0.03 m/day) in the sandstone and approximately 9 x 10^{-4} ft/day (2.7 x 10^{-4} m/day) in the claystone.

Ground water generally flows toward the east in the SEPs area in the surficial materials and weathered bedrock portions of the shallow ground water system. In the surficial materials, ground water flow diverges somewhat in two directions: to the northeast toward North Walnut Creek and to the east-southeast toward South Walnut Creek. In weathered bedrock, like surficial materials, ground water flows to the northeast and southeast. This ground water system is locally influenced by topography, the configuration of the top of bedrock, and the ITS north of the ponds. Consistent with regional recharging of the Arapahoe Formation in this locality, it is assumed that ground water flows eastward within the subcropping sandstones.

Estimates of the vertical hydraulic gradient between surficial materials and weathered bedrock revealed downward saturated flow between surficial materials and weathered bedrock. Water levels needed for the calculations were obtained from ground water elevation data measured in 1990. Upward vertical flow has been reported in previous investigations.

The first and third quarters of 1990 represented the high and low flow regimes, respectively, for the vicinity. Alluvial ground water enters the SEPs area from the west and flows east and then northeast or southeast. Downgradient of the ponds to the north, most of the colluvial materials on the hill slope were removed during construction of the ponds and the ITS. Alluvial ground water in this area seeps into weathered bedrock where it is collected by the ITS or consumed by evapotranspiration. North Walnut Creek and the waste management area are separated by a region of unsaturated alluvium or the absence of surficial materials above the water table. Although this region is extensive north of the ponds, flow toward North Walnut Creek is evident northeast of the ponds. Additionally, small regions of absent or unsaturated alluvium are evident west, east, and south of the solar ponds. These regions do not appear to impede ground water flow to the southeast. (DOE, 1991e; EG&G, 1991b).

2.1.6 Ecology

Ecosystems in the RFP buffer zone and surrounding areas are typical for the foothill ravine and High Plains portions of Colorado. Aquatic ecosystems include perrenial and intermittent streams, and several types of man-made ditches, canals, ponds and reservoirs. Terrestrial ecosystems include grasslands, shrublands and woodlands, areas of reseeded and barren lands, and horticultural plantings. The Ecology Standard Operating Procedures desribe 6 aquatic and 17 terrestrial habitat types. Many areas east and south of RFP have been converted to uses like commercial and residential development, agricultural, and grazing land, and water control and storage. Within the RFP Buffer Zone, there has been extensive grazing by both native wildlife and domestic livestock. Domestic livestock have been excluded for more than 20 years from most of the buffer zone. In the west side of the buffer zone is a relict stand of plants including big bluestem, little bluestem and other plants of the tallgrass prairie. Virgin stands of grass like this, located in areas dominated by shortgrass steppe plants are rare. Because of the elevation, water regime and location between the High Plain and Intermontane physiographic regions, many species of plants and animals usually found in different habitats intermingle in the RFP buffer zone. The result is an extremely rich and diverse population of native plants and animals.

A variety of vegetation is found within the buffer zone surrounding RFP. Included are species of flora representative of tall-grass prairie, short-grass plains, lower montane, and foothill ravine regions. Riparian vegetation exists along the site's drainages and wetlands. None of these vegetative species present at RFP have been reported to be on the endangered species list (EG&G, 1991f). Since acquisition of RFP property, vegetative recovery has occurred, as evidenced by the presence of disturbance-sensitive grass species such as big bluestem (*Andropogon gerardii*) and side oats grama (*Bouteloua curtipendula*) (DOE, 1980).

The fauna inhabiting the RFP and its buffer zone consists of species associated with western prairie regions. The most common large mammal is the mule deer (*Odocoileus hemionus*), with an estimated 100 to 125 permanent residents. There are a number of small carnivores, such as the coyote (*Canis latrans*), red fox (*Vulpes fulva*), striped skunk (*Mephitis mephitis*), and long-tailed weasel (*Mustela frenata*). Small herbivores can be found throughout the plant complex and buffer zone, including species such as the pocket gopher (*Thomomys talpoides*), cottontail (*Sylvilagus sp.*), white-tailed jackrabbit (*Lepus townsendii*), and the meadow vole (*Microtus pennsylvanicus*) (DOE, 1980).

Commonly observed birds include western meadowlarks (*Sturnella neglecta*), horned larks (*Eremophila alpestris*), mourning doves (*Zenaidura macroura*), and vesper sparrows (*Pooecetes gramineus*), western kingbirds (*Tyrannus vociferans*), black-billed magpies (*Pica pica*), American robins (*Turdus migratorius*), and yellow warblers (*Dendroica magnolia*). Killdeer (*Charadrius vociferus*), and red-winged black birds (*Agelaius phoeniceus*) are seen in areas adjacent to ponds. Mallards (*Anas platyrhynochos*) and other ducks (*Anas sp.*) frequently nest and rear young on several of the ponds. Common birds of prey in the area include marsh hawks (*Circus cyaneus*), red-tailed hawks (*Buteo jamaicensis*), ferruginous hawks (*Buteo regalis*), rough-legged hawks (*Buteo lagopus*), and great horned owls (*Bubo virginianus*) (DOE, 1980).

Bull snakes (*Pituophis melanoleucus*) and rattlesnakes (*Crotalus sp.*) are the most frequently observed reptiles. Eastern yellow-bellied racers (*Coluber constrictor flaviventris*) have also been seen. The eastern short-horned lizard (*Phrynosoma douglassi brevirostre*) has been reported on the site, but these and other lizards are not commonly observed. The western painted turtle (*Chrysemys picta*) and the western plains garter snake (*Thamnophis radix*) are found in and around many of the ponds (DOE, 1980).

Two procedures which concern identification and management of threatened and endangered species at RFP currently are being prepared by the EG&G National Environmental Policy Act (NEPA) Group. These are the draft "Identification and Reporting of Threatened and Endangered and Special Concern Species," administrative procedure NEPA.12, Rev. 0, and the draft "Protection of Threatened and Endangered and Special Concern Species," operations procedure FO.21, Rev. 0.

2.2 SITE HISTORY AND ENFORCEMENT ACTIVITIES

Past and current waste handling practices at the Rocky Flats Plant dictate that environmental restoration at the facility be conducted in accordance with two environmental laws: the Resource Conservation and Recovery Act (RCRA) as amended by the Hazardous and Solid Waste Amendments Act; and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

RCRA regulations apply to currently operating hazardous waste treatment, storage and disposal facilities, and the RCRA corrective action provisions are implemented to remediate releases of hazardous materials from these facilities. CERCLA regulations apply when hazardous substances have been released from abandoned or uncontrolled hazardous waste sites as well as releases at federal facilities. CERCLA regulations also apply to releases from operating facilities that may pose a threat to human health and/or the environment. DOE, EPA, and the State of Colorado signed a Federal Facilities Agreement (also known as the IAG) under both RCRA and CERCLA which governs the environmental restoration activities at RFP, including this IRA. The environmental restoration activities at the RFP fall under the jurisdiction of both laws.

The SEPs are RCRA interim status regulated units that are currently undergoing partial closure activities. Leakage from the ponds has contaminated soils and ground water with nitrates, heavy metals, and radioactive material. A closure plan submitted to the regulatory agencies on July 1, 1988, called for in-place closure of contaminated liners and subsoils. A proposal was submitted to the regulatory agencies in February 1989 to modify the closure plan for removal of contaminated liners and subsoils to achieve residual contaminant concentrations protective of human health. Closure activities include: dewatering the impoundments; removing, solidifying, and disposing the pond sludges and sediments at the Nevada Test Site; capping the area with a RCRA cap; and collection and treatment of contaminated ground water (Rockwell International, 1988).

This IM/IRA will facilitate the dewatering of the impoundments and allow closure activities to fulfill the intent of the AIP.

2.3 SUMMARY OF CONTAMINANTS ASSOCIATED WITH THIS IM/IRA

The scope of this IM/IRA is limited to the managing and treatment of liquids contained in ponds 207-A, 207-B North, 207-B Center, 207-B South, and the water collected by the ITS. Pond 207-C is not included in this IM/IRA because the pond does not require dewatering.

Detailed characterizations of the pond wastes were performed during 1986, 1987, 1988, and 1991. A selected summary of these characterizations is included in Tables 2.1 through 2.5 of this document. The tables are a compilation of the analytical results from 1986-1991. A complete listing of analytical data is contained in Appendix C.

At present, Pond 207-A is nearly empty and contains water transferred from the 207-B series ponds, and water derived from incident precipitation (Rockwell International, 1988). Pond 207-A was completely cleaned of sludge and water in 1988.

2.3.1 Ponds 207-B North, Center, and South

Ponds 207-B North, Center, and South contained process wastes until 1977 when the ponds were cleaned and the linings replaced. Waste materials from these ponds were disposed of at an off-site low level radioactive waste disposal site. Since 1977 these ponds have held treated sanitary effluent, treated water from the reverse osmosis facility, backwash brine from the reverse osmosis facility, and ground water pumped back from the SEPs' ITS. Ponds 207-B North and Center generally have low concentrations of nitrates, metals, and radionuclides. Nitrate concentrations in the pond liquids were at or below drinking water standards during the same time period (Rockwell International, 1988). All 207-B ponds are currently used to store intercepted water collected by the ITS north of the ponds.

2.3.2 Pond 207-C

Pond 207-C was constructed to provide additional storage capacity and to enable the transfer and storage of liquids from the other ponds while the latter were repaired. Pond 207-C is not included in this IM/IRA because the entire contents of the pond will be solidified. The data in Table 2.5 is presented for informational purposes only.

2.3.3 Interceptor Trench System (ITS)

The ITS was constructed on the hillside north of the SEPs to prevent natural ground water seepage and pond leakage from entering North Walnut Creek. Water collected in the system flows by gravity to the ITS pump house and currently is pumped to the 207-B ponds.

Sampling station SW-095 is located within the wet well of the ITS pump house and is representative of the water quality which is currently pumped to the 207-B ponds. A summary of ITS water quality is contained in RFEDs and the data is currently being validated. A summary of select analytical data of ITS water quality (SW-095) is presented in Table 2.6. The complete data for SW-095 is included in Appendix A.

TABLE 2.1

SOLAR EVAPORATION POND 207-A
SUMMARY OF LIQUID SAMPLING RESULTS

Compound	Units	207-A Liquid	
		1986-1988 Range	1991 Composite
ANIONS			
Ammonia	ppm	NA	0.43
Bicarbonate	ppm	NA	35
Carbonate	ppm	NA	47
Chloride	ppm	NA	416
Cyanide, Total	ppm	ND - 1.7	0.478
Fluoride	ppm	NA	ND
Nitrate, N	ppm	ND - 21,739	1000
Nitrite	ppm	NA	39
Phosphate, Ortho	ppm	NA	ND
Phosphate, Total	ppm	NA	ND
Sulfate	ppm	NA	409
Sulfide	ppm	NA	ND
TKN-N	ppm	NA	ND
RADIONUCLIDES			
Americium -241	pCi/l	ND - 200	0.42
Plutonium -239	pCi/l	ND - 660	0.71
Uranium -234	pCi/l	14000-20000	310
Uranium -235	pCi/l	NA	11
Uranium -238	pCi/l	21000-28000	340
Tritium	pCi/l	240-3000	NA
Gross Alpha	pCi/l	32-80000	300
Gross Beta	pCi/l	2-40000	930
MISCELLANEOUS TESTS			
Alkalinity, Total	ppm	NA	110
Conductivity @ 25C	μMHOs	NA	8800
Total Dissolved Solids	ppm	127000-127000	7600
Total Organic Carbon	ppm	NA	67.8
Total Suspended Solids	%	NA	23
pH	ppm	8.3-11	9.9
METALS			
Aluminum	ppm	2.31-2.64	ND
Antimony	ppm	NA	ND

TABLE 2.1

SOLAR EVAPORATION POND 207-A
SUMMARY OF LIQUID SAMPLING RESULTS
(continued)

Compound	Units	207-A Liquid	
		1986-1988 Range	1991 Composite
Arsenic	ppm	0.15-0.15	ND
Barium	ppm	ND	NA
Beryllium	ppm	ND-0.1	NA
Bismuth	ppm	NA	ND
Boron	ppm	NA	1.26
Cadmium	ppm	0.070-0.150	ND
Calcium	ppm	ND	60.4
Cobalt	ppm	0.200-0.500	NA
Chromium, Total	ppm	13.7-16.7	ND
Copper	ppm	1.61-1.8	ND
Iron	ppm	1.5-8.0	ND
Lead	ppm	ND	0.004
Lithium	ppm	NA	1.42
Magnesium	ppm	ND	121
Manganese	ppm	0.095-0.115	ND
Mercury	ppm	ND-0.0002	ND
Molybdenum	ppm	NA	ND
Nickel	ppm	1.9-2.0	ND
Potassium	ppm	13200-14300	376
Selenium	ppm	ND	0.015
Silicon	ppm	NA	0.846
Silver	ppm	NA	ND
Sodium	ppm	36300-42900	1610
Strontium	ppm	NA	2.35
Thallium	ppm	NA	ND
Tin	ppm	7-13	ND
Vanadium	ppm	0.10-0.20	NA
Zinc	ppm	0.62-0.78	0.028
VOLATILE ORGANICS			
Acetone	ppb	100-260	ND
Methylene Chloride	ppb	ND	ND
Tetrachloroethene	ppb	ND	ND

TABLE 2.1

SOLAR EVAPORATION POND 207-A
SUMMARY OF LIQUID SAMPLING RESULTS
(continued)

Compound	Units	207-A Liquid	
		1986-1988 Range	1991 Composite
SEMIVOLATILE			
Acenaphthene	ppb	NA	ND
Bis(2-ethylhexyl) phthalate	ppb	NA	ND
4-Chloro-3-methylphenol	ppb	NA	ND
2-Chlorophenol	ppb	NA	ND
1,4-Dichlorobenzene	ppb	NA	ND
2,4-Dinitrotoluene	ppb	NA	ND
Di-n-butyl phthalate	ppb	NA	ND
Fluoranthene	ppb	NA	ND
N-Nitroso-di-propylamine	ppb	NA	ND
Phenol	ppb	NA	ND
Phenols, Total	ppb	13-35	NA
Pyrene	ppb	NA	ND
1,2,4-Trichlorobenzene	ppb	NA	ND
PESTICIDES/PCBs			
Atrazine	ppb	NA	3.5
Diazinon	ppb	NA	ND
Simazine	ppb	NA	ND

References: Rockwell International, 1988, Solar Evaporation Ponds Closure Plan.

EG&G, 1991e, Internal Report, Sampling and Analysis of Solar Pond Water and Sludge, July 1991.

NA = Not Analyzed
ND = Not Detected

TABLE 2.2

SOLAR EVAPORATION POND 207-B (NORTH)
SUMMARY OF LIQUID SAMPLING RESULTS

Compound	Units	207-B (North) Liquid	
		1986-1988 Range	1991 Composite
ANIONS			
Ammonia	ppm	NA	ND
Bicarbonate	ppm	NA	ND
Carbonate	ppm	NA	ND
Chloride	ppm	NA	147
Cyanide, Total	ppm	NA	37.8
Fluoride	ppm	NA	ND
Nitrate, N	ppm	212 - 1367	39
Nitrite	ppm	NA	ND
Phosphate, Ortho	ppm	NA	ND
Phosphate, Total	ppm	NA	0.04
Sulfate	ppm	NA	155
Sulfide	ppm	NA	ND
TKN-N	ppm	NA	ND
RADIONUCLIDES			
Americium -241	pCi/l	ND	0.14
Plutonium -239	pCi/l	ND	ND
Uranium -234	pCi/l	50 - 53	40
Uranium -235	pCi/l	NA	1.7
Uranium -238	pCi/l	31 - 33	26
Tritium	pCi/l	1200 - 1300	NA
Gross Alpha	pCi/l	13 - 323	59
Gross Beta	pCi/l	5 - 200	110
MISCELLANEOUS TESTS			
Alkalinity, Total	ppm	NA	75
Conductivity @ 25C	µMHOs	NA	3380
Total Dissolved Solids	ppm	NA	3200
Total Organic Carbon	ppm	NA	7.6
Total Suspended Solids	%	NA	18
pH	ppm	7.5 - 9.6	8.5
METALS			
Aluminum	ppm	ND - 1.00	ND
Antimony	ppm	ND	ND

TABLE 2.2

SOLAR EVAPORATION POND 207-B (NORTH)
SUMMARY OF LIQUID SAMPLING RESULTS
(continued)

Compound	Units	207-B (North) Liquid	
		1986-1988 Range	1991 Composite
Arsenic	ppm	ND	ND
Barium	ppm	ND - 0.22	ND
Beryllium	ppm	ND - 0.06	NA
Bismuth	ppm	ND	ND
Boron	ppm	0.09 - 0.31	0.173
Cadmium	ppm	ND - 0.01	ND
Calcium	ppm	20 - 290	189
Cerium	ppm	ND	NA
Cesium	ppm	ND	NA
Cobalt	ppm	ND	NA
Chromium, Total	ppm	ND	ND
Copper	ppm	ND	ND
Germanium	ppm	ND	NA
Iron	ppm	ND - 0.29	ND
Lead	ppm	ND - 0.004	ND
Lithium	ppm	0.37 - 6	0.332
Magnesium	ppm	66 - 120	79.3
Manganese	ppm	ND - 0.015	ND
Mercury	ppm	ND	ND
Molybdenum	ppm	ND - 0.0069	ND
Nickel	ppm	ND - 0.05	ND
Niobium	ppm	ND	NA
Phosphorous	ppm	ND	NA
Potassium	ppm	56 - 120	58.8
Rubidium	ppm	ND	NA
Selenium	ppm	ND - 0.024	0.008
Silicon	ppm	ND - 5.6	1.02
Silver	ppm	ND - 0.082	ND
Sodium	ppm	363 - 820	403
Strontium	ppm	0.14 - 3.5	2.22
Tantalum	ppm	ND	NA
Tellurium	ppm	ND	NA

TABLE 2.2

SOLAR EVAPORATION POND 207-B (NORTH)
SUMMARY OF LIQUID SAMPLING RESULTS
(continued)

Compound	Units	207-B (North) Liquid	
		1986-1988 Range	1991 Composite
Thallium	ppm	ND	ND
Thorium	ppm	ND	NA
Tin	ppm	ND	ND
Titanium	ppm	ND	NA
Tungsten	ppm	ND	NA
Vanadium	ppm	ND	NA
Zirconium	ppm	ND	NA
Zinc	ppm	ND - 0.022	0.048
VOLATILE ORGANICS			
Acetone	ppb	ND	ND
Methylene Chloride	ppb	19-71	ND
Tetrachloroethene	ppb	ND	ND
SEMIVOLATILE			
Acenaphthene	ppb	NA	ND
Bis(2-ethyl hexyl) phthalate	ppb	NA	ND
4-Chloro-3-methylphenol	ppb	NA	ND
2-Chlorophenol	ppb	NA	ND
1,4-Dichlorobenzene	ppb	NA	ND
2,4-Dinitrotoluene	ppb	NA	ND
Di-nbutyl phthalate	ppb	NA	ND
Fluoranthene	ppb	NA	ND
N-Nitroso-di-propylamine	ppb	NA	ND
Phenol	ppb	NA	ND
Pyrene	ppb	NA	ND
1,2,4-Trichlorobenzene	ppb	NA	ND
PESTICIDES/PCBs			
Atrazine	ppb	NA	1.1
Diazinon	ppb	NA	ND
Simazine	ppb	NA	ND

TABLE 2.2

SOLAR EVAPORATION POND 207-B (NORTH)
SUMMARY OF LIQUID SAMPLING RESULTS
(continued)

References: Rockwell International, 1988, Solar Evaporation Ponds Closure Plan

EG&G, 1991e, Internal Report, Sampling and Analysis of Solar Pond Water and Sludge, July 1991.

NA = Not Analyzed
ND = Not Detected

TABLE 2.3

SOLAR EVAPORATION POND 207-B (CENTER) SUMMARY OF LIQUID SAMPLING RESULTS

Compound	Units	207-B (Center) Liquid	
		1986-1988 Range	1991 Composite
ANIONS			
Ammonia	ppm	NA	0.5
Bicarbonate	ppm	NA	ND
Carbonate	ppm	NA	280
Chloride	ppm	NA	763
Cyanide, Total	ppm	NA	0.555
Fluoride	ppm	NA	73
Nitrate, N	ppm	ND - 1220	1600
Nitrite	ppm	NA	75
Phosphate, Ortho	ppm	NA	ND
Phosphate, Total	ppm	NA	3.1
Sulfate	ppm	NA	736
Sulfide	ppm	NA	ND
TKN-N	ppm	NA	ND
RADIONUCLIDES			
Americium -241	pCi/l	NA	5.5
Plutonium -239	pCi/l	NA	0.4
Uranium -234	pCi/l	NA	780
Uranium -235	pCi/l	NA	36
Uranium -238	pCi/l	NA	900
Gross Alpha	pCi/l	4 - 2500	2400
Gross Beta	pCi/l	8 - 1500	3900
MISCELLANEOUS TESTS			
Alkalinity, Total	ppm	NA	1000
Conductivity @ 25C	µMHOs	NA	1350
Total Dissolved Solids	ppm	NA	13000
Total Organic Carbon	ppm	NA	126
Total Suspended Solids	%	NA	15
pH	ppm	7.3-11.3	9.1
METALS			
Aluminum	ppm	ND - 2.00	ND
Antimony	ppm	ND	ND
Arsenic	ppm	ND	0.014

TABLE 2.3

SOLAR EVAPORATION POND 207-B (CENTER)
SUMMARY OF LIQUID SAMPLING RESULTS
(continued)

Compound	Units	207-B (Center) Liquid	
		1986-1988 Range	1991 Composite
Barium	ppm	ND	ND
Beryllium	ppm	ND	ND
Bismuth	ppm	ND	ND
Boron	ppm	0.071 - 0.67	2.77
Cadmium	ppm	ND-0.01	ND
Calcium	ppm	2.9- 95	22.6
Cerium	ppm	ND	NA
Cesium	ppm	ND - 0.35	NA
Cobalt	ppm	ND	NA
Chromium, Total	ppm	ND	0.094
Copper	ppm	ND - 0.037	0.035
Germanium	ppm	ND	NA
Iron	ppm	ND - 0.2	ND
Lead	ppm	ND - 0.002	ND
Lithium	ppm	0.052 - 3.5	2.6
Magnesium	ppm	3.9 - 91	181
Manganese	ppm	ND - 0.022	ND
Mercury	ppm	ND	ND
Molybdenum	ppm	0.004 - 0.037	ND
Nickel	ppm	ND - 0.016	ND
Niobium	ppm	ND	NA
Phosphorous	ppm	ND - 0.2	NA
Potassium	ppm	30 - 110	729
Rubidium	ppm	ND	NA
Selenium	ppm	ND - 0.019	ND
Silicon	ppm	1.4 - 5.5	1.41
Silver	ppm	ND - 0.015	ND
Sodium	ppm	67 - 800	2440
Strontium	ppm	0.14 - 0.52	2.13
Tantalum	ppm	ND	NA
Tellurium	ppm	ND	NA
Thallium	ppm	ND	ND

TABLE 2.3

SOLAR EVAPORATION POND 207-B (CENTER) SUMMARY OF LIQUID SAMPLING RESULTS
(continued)

Compound	Units	207-B (Center) Liquid	
		1986-1988 Range	1991 Composite
Thorium	ppm	ND	NA
Tin	ppm	ND	0.109
Titanium	ppm	ND	NA
Tungsten	ppm	ND	NA
Vanadium	ppm	ND - 0.0081	NA
Zirconium	ppm	ND - 0.004	NA
Zinc	ppm	ND - 0.041	ND
VOLATILE ORGANICS			
Acetone	ppb	NA	ND
Methylene Chloride	ppb	NA	ND
Tetrachloroethene	ppb	NA	ND
SEMIVOLATILE			
Acenaphthene	ppb	NA	ND
Bis(2-ethyl hexyl) phthalate	ppb	NA	ND
4-Chloro-3-methylphenol	ppb	NA	ND
2-Chlorophenol	ppb	NA	ND
1,4-Dichlorobenzene	ppb	NA	ND
2,4-Dinitrotoluene	ppb	NA	ND
Di-n-butyl phthalate	ppb	NA	ND
Fluoranthene	ppb	NA	ND
N-Nitroso-di-propylamine	ppb	NA	ND
Phenol	ppb	NA	ND
Pyrene	ppb	NA	ND
1,2,4-Trichlorobenzene	ppb	NA	ND
PESTICIDES/PCBs			
Atrazine	ppb	NA	9
Diazinon	ppb	NA	ND
Simazine	ppb	NA	ND

TABLE 2.3

SOLAR EVAPORATION POND 207-B (CENTER)
SUMMARY OF LIQUID SAMPLING RESULTS
(continued)

References: Rockwell International, 1988, Solar Evaporation Ponds Closure Plan

EG&G, 1991e, Internal Report, Sampling and Analysis of Solar Pond Water and Sludge, July 1991.

NA = Not Analyzed
ND = Not Detected

TABLE 2.4

SOLAR EVAPORATION POND 207-B (SOUTH) SUMMARY OF LIQUID SAMPLING RESULTS

Compound	Units	207-B (South) Liquid	
		1986-1988 Range	1991 Composite
ANIONS			
Ammonia	ppm	NA	0.97
Bicarbonate	ppm	NA	ND
Carbonate	ppm	NA	190
Chloride	ppm	NA	745
Cyanide, Total	ppm	NA	0.509
Fluoride	ppm	NA	72.5
Nitrate, N	ppm	NA	1800
Nitrite	ppm	NA	100
Phosphate, Ortho	ppm	NA	ND
Phosphate, Total	ppm	NA	2.6
Sulfate	ppm	NA	784
Sulfide	ppm	NA	1.0
TKN-N	ppm	NA	ND
RADIONUCLIDES			
Americium -241	pCi/l	NA	0.1
Plutonium -239	pCi/l	NA	0.1
Uranium -234	pCi/l	NA	760
Uranium -235	pCi/l	NA	31
Uranium -238	pCi/l	NA	870
Gross Alpha	pCi/l	NA	1600
Gross Beta	pCi/l	NA	2300
MISCELLANEOUS TESTS			
Alkalinity, Total	ppm	NA	860
Conductivity @ 25C	µMHOs	NA	23000
Total Dissolved Solids	ppm	NA	16000
Total Organic Carbon	ppm	NA	297
Total Suspended Solids	%	NA	6.0
pH	units	NA	9.2
METALS			
Aluminum	ppm	NA	ND
Antimony	ppm	NA	ND
Arsenic	ppm	NA	0.0164

TABLE 2.4

SOLAR EVAPORATION POND 207-B (SOUTH)
SUMMARY OF LIQUID SAMPLING RESULTS
(continued)

Compound	Units	207-B (South) Liquid	
		1986-1988 Range	1991 Composite
Barium	ppm	NA	ND
Bismuth	ppm	NA	ND
Boron	ppm	NA	2.77
Cadmium	ppm	NA	ND
Calcium	ppm	NA	18.9
Chromium, Total	ppm	NA	0.0228
Copper	ppm	NA	0.037
Iron	ppm	NA	ND
Lead	ppm	NA	ND
Lithium	ppm	NA	2.670
Magnesium	ppm	NA	180
Manganese	ppm	NA	0.0182
Mercury	ppm	NA	0.001
Molybdenum	ppm	NA	0.122
Nickel	ppm	NA	0.040
Potassium	ppm	NA	791
Selenium	ppm	NA	ND
Silicon	ppm	NA	0.952
Silver	ppm	NA	ND
Sodium	ppm	NA	2940
Strontium	ppm	NA	2.37
Thallium	ppm	NA	ND
Tin	ppm	NA	ND
Zinc	ppm	NA	0.037
VOLATILE ORGANICS			
Acetone	ppb	NA	ND
Methylene Chloride	ppb	NA	ND
Tetrachloroethene	ppb	NA	ND
SEMIVOLATILE			
Acenaphthene	ppb	NA	ND
Bis(2-ethyl hexyl)phthalate	ppb	NA	ND
4-Chloro-3-methylphenol	ppb	NA	ND

TABLE 2.4

SOLAR EVAPORATION POND 207-B (SOUTH)
SUMMARY OF LIQUID SAMPLING RESULTS
(continued)

Compound	Units	207-B (South) Liquid	
		1986-1988 Range	1991 Composite
2-Chlorophenol	ppb	NA	ND
1,4-Dichlorobenzene	ppb	NA	ND
2,4-Dinitrotoluene	ppb	NA	ND
Di-n-butyl phthalate	ppb	NA	ND
Fluoranthene	ppb	NA	ND
N-Nitroso-di-propylamine	ppb	NA	ND
Phenol	ppb	NA	ND
Pyrene	ppb	NA	ND
1,2,4-Trichlorobenzene	ppb	NA	ND
PESTICIDES/PCBs			
Atrazine	ppb	NA	13
Diazinon	ppb	NA	ND
Simazine	ppb	NA	ND

References: Rockwell International, 1988a, Solar Evaporation Ponds Closure Plan

EG&G, 1991e, Internal Report, Sampling and Analysis of Solar Pond Water and Sludge, July 1991.

NA = Not Analyzed
ND = Not Detected

TABLE 2.5

SOLAR EVAPORATION POND 207-C
SUMMARY OF LIQUID SAMPLING RESULTS

Compound	Units	207-C Liquid	
		1986-1988 Range	1991 Composite
ANIONS			
Ammonia	ppm	NA	ND
Bicarbonate	ppm	NA	4000
Carbonate	ppm	NA	25000
Chloride	ppm	NA	18300
Cyanide, Total	ppm	ND-1.9	9650
Fluoride	ppm	NA	ND
Nitrate, N	ppm	0.4-21400	2600
Nitrite	ppm	NA	2500
Phosphate, Ortho	ppm	NA	390
Phosphate, Total	ppm	NA	431
Sulfate	ppm	NA	12200
Sulfide	ppm	NA	10
TKN-N	ppm	NA	ND
RADIONUCLIDES			
Americium -241	pCi/l	ND-13000	8.6
Plutonium -239	pCi/l	210-2100	670
Uranium -234	pCi/l	NA	2600
Uranium -235	pCi/l	NA	120
Uranium -238	pCi/l	NA	3900
Tritium	pCi/l	ND-6400	NA
Gross Alpha	pCi/l	10000-46000	72000
Gross Beta	pCi/l	405-44000	170000
MISCELLANEOUS TESTS			
Alkalinity, Total	ppm	NA	45000
Conductivity @ 25C	μMHOs	NA	610000
Total Dissolved Solids	ppm	93900-175800	400000
Total Organic Carbon	ppm	NA	54.9
Total Suspended Solids	%	NA	76
pH	ppm	7.7-12.5	10.2
METALS			
Aluminum	ppm	NA	ND
Antimony	ppm	NA	ND

TABLE 2.5

SOLAR EVAPORATION POND 207-C
SUMMARY OF LIQUID SAMPLING RESULTS
(continued)

Compound	Units	207-C Liquid	
		1986-1988 Range	1991 Composite
Arsenic	ppm	NA	ND
Barium	ppm	NA	ND
Beryllium	ppm	ND-0.6	ND
Bismuth	ppm	NA	ND
Boron	ppm	NA	360
Cadmium	ppm	NA	0.312
Calcium	ppm	NA	ND
Chromium, Total	ppm	NA	2.36
Copper	ppm	NA	6.79
Iron	ppm	NA	ND
Lead	ppm	NA	ND
Lithium	ppm	NA	ND
Manganese	ppm	NA	ND
Mercury	ppm	NA	ND
Molybdenum	ppm	NA	ND
Nickel	ppm	NA	5.09
Potassium	ppm	NA	78700
Selenium	ppm	NA	ND
Silicon	ppm	NA	30.1
Silver	ppm	NA	ND
Sodium	ppm	NA	102000
Strontium	ppm	NA	ND
Thallium	ppm	NA	ND
Tin	ppm	NA	ND
Zinc	ppm	NA	ND
VOLATILE ORGANICS			
Acetone	ppb	NA	43
Methylene Chloride	ppb	NA	ND
Tetrachloroethene	ppb	NA	ND
SEMIVOLATILE			
Acenaphthene	ppb	NA	ND
Bis(2-ethyl hexyl)phthalate	ppb	NA	ND

TABLE 2.5

SOLAR EVAPORATION POND 207-C
SUMMARY OF LIQUID SAMPLING RESULTS
(continued)

Compound	Units	207-C Liquid	
		1986-1988 Range	1991 Composite
4-Chloro-3-methylphenol	ppb	NA	ND
2-Chlorophenol	ppb	NA	ND
1,4-Dichlorobenzene	ppb	NA	ND
2,4-Dinitrotoluene	ppb	NA	ND
Di-n-butyl phthalate	ppb	NA	ND
Fluoranthene	ppb	NA	ND
N-Nitroso-di-propylamine	ppb	NA	ND
Phenol	ppb	NA	ND
Phenols, Total	ppb	13-35	NA
Pyrene	ppb	NA	ND
1,2,4-Trichlorobenzene	ppb	NA	ND
PESTICIDES/PCBs			
Atrazine	ppb	NA	ND
Diazinon	ppb	NA	2.8
Simazine	ppb	NA	7.5

References: Rockwell International, 1988, Solar Evaporation Ponds Closure Plan

EG&G, 1991e, Internal Report, Sampling and Analysis of Solar Pond Water and Sludge, July 1991.

NA = Not Analyzed
ND = Not Detected

TABLE 2.6

SUMMARY OF SELECT ANALYTICAL DATA (SW-095)
INTERCEPTOR TRENCH SYSTEM WATER*

Analyte	Units	Range
Americium -241	pCi/l	ND-2.2
Gross Alpha	pCi/l	40-340
Gross Beta	pCi/l	100-250
Plutonium -239	pCi/l	ND-10
Radium -226	pCi/l	ND-4.4
Radium -228	pCi/l	1.6-5.3
Tritium	pCi/l	1600-3200
Uranium -233, 234	pCi/l	43-122
Uranium -235, 236	pCi/l	2.093
Uranium -238	pCi/l	25-84.8
Nitrate	mg/l	1859-3205
Nitrate/Nitrite	mg/l	190-724
pH	standard units	6.99-7.8
Total dissolved solids	mg/l	1500-4560
Acetone	µg/l	ND-80
Bis(2-ethylhexyl)phthalate	µg/l	ND-24 (B)
Carbon tetrachloride	µg/l	ND-11
Chloroform	µg/l	ND-2 (J)
Diethyl phthalate	µg/l	ND-4 (J)
Di-n-butyl phthalate	µg/l	ND-4 (BJ)
Methylene chloride	µg/l	ND-5 (B)
Pentachlorophenol	µg/l	ND-20 (J)
Trichloroethene	µg/l	ND-5

* From Appendix A.

NOTE: These data have not been 100 percent verified. Validation and QA/QC are currently underway.

pCi/l = picocuries per liter
mg/l = milligrams per liter
µg/l = micrograms per liter
ND = compound was analyzed but not detected.
B = compound was found in the blank and in the sample.
J = indicates an estimated value for an analyte that meets the identification criteria but had a result less than the specified detection limit.

Water quality analyses of ITS water indicate the presence of inorganic constituents (particularly nitrate), radionuclides, and sporadic detections of low-level volatile organic compounds (VOCs). Inorganic constituents and radionuclides are typically present in the general solar pond area and are present in both ground water and seepage flows. Sporadic VOCs detections are thought to be predominately contributed by the flow from the West Collector of the ITS. The West Collector intercepts ground water flow, surface runoff, and flow from the Building 774/771 drain area (ASI, 1991).

2.4 COMMUNITY PARTICIPATION

In accordance with the Interagency Agreement (IAG), DOE has prepared this IM/IRA Decision Document to allow the public an opportunity to review and comment on the selected remedy.

DOE will open a 60-day comment period. DOE will hold a public hearing on this Proposed IM/IRA Decision Document, if requested to do so by the public, EPA or the State. The Proposed IM/IRA Decision Document is a concise document that (a) indicates the objective of the IM/IRA; (b) discusses the selected remedy; (c) provides the rationale for the selected remedy; (d) presents an ARAR analyses, and; (e) discusses how the interim remedy selected will be consistent with the final remedy for the OU4.

After receipt of EPA, State and/or public comments concerning the Proposed IM/IRA Decision Document, DOE will prepare a Final IM/IRA Decision Document for EPA and State review and approval in accordance with paragraph 150 of the IAG, which will include a response to comments received. As stated in the IAG, "DOE will not commence any remedial/corrective activities associated with an IM/IRA until EPA and the State have approved the Final IM/IRA Decision Document and Responsiveness Summary." DOE will make the EPA and State approved Final IM/IRA Decision Document and Responsiveness Summary available to all interested parties 10 days prior to commencing the operation of remedial/corrective activities associated with the IM/IRA.

The Final Decision Document for this IM/IRA will include deadlines for implementation of the IM/IRA and shall be supported by the Administrative Record. The supporting Administrative Record shall be consistent with CERCLA and shall include, but not be limited to, significant facts and studies supporting the initial decision to conduct this IM/IRA, all comments received concerning the final decision on the action, EPA and State comments concerning the IM/IRA, and the DOE response to those comments.

2.5 SCOPE AND ROLE OF THE IM/IRA

The Solar Evaporation Ponds are currently undergoing partial closure activities. Water collected by the ITS is currently discharged into the 207-B ponds. The ponds (except for 207-C) must be dewatered to a state which will allow the removal of the sludges for solidification into pondcrete. In order to facilitate the dewatering of the ponds in an expedited fashion the addition of ITS water must cease. Therefore, storage and treatment of the intercepted water and treatment of excess pond liquids must occur in an alternate fashion. The most effective means of storage of the intercepted water is storage in temporary tanks. The most effective means of treatment of the excess pond liquids and the intercepted water is through the use of three portable flash evaporators. A complete description of the process is included in Section 3.0 of this document.

This IM/IRA is intended to be consistent with the final remedy for the Solar Evaporation Ponds. In fact, if the three portable flash evaporators and temporary surge tanks are not installed and operated, the removal and solidification of the sludges into pondcrete cannot occur. The removal of liquids and sludge is required to fulfill the intent of the AIP, which states, "several past disposal sites (i.e., solar ponds) on the plant pose a high risk for further spread of contaminants into surface water, ground water and the soil. The . . . site(s) require(s) special and accelerated actions by the DOE." Such actions will be performed in full compliance with state and federal environmental laws (DOE, 1989b).

2.6 SUMMARY OF SITE RISKS

The OU4 IM/IRA is intended to facilitate implementation of the SEPs' partial closure actions and to stabilize the operable unit by removing the source materials. As such, the IM/IRA is being taken as an enabling activity to facilitate pondcrete operations, site closure, and remedial action. The proposed actions are not being taken in response to Agency guidance which directs interim actions to be taken in response to an immediate site threat to or to take advantage of an opportunity to reduce site risk quickly (EPA, 1991a).

The implications of this determination affect the summary of site risk to be performed below. In a July 12, 1991 letter, CDH and EPA provided guidance to DOE for issuing the Proposed Decision Document for this IM/IRA. This guidance instructed the Summary of Site Risks to "focus on the risks that the interim action is intended to address and should provide rationale for the limited scope of the action." As indicated above, the IM/IRA is not being proposed in response to site hazards. The action is being proposed as an enabling activity to facilitate pondcrete operations, site closure, and remedial action. The Summary of Site Risks will focus on the potential public health and environmental health impacts associated with operation of the flash evaporator system.

A key assumption of this pathway-based qualitative risk assessment is that the ground water pathway is not complete. This is a matter of fact that should be taken into consideration regardless of the presumed efficiency of the collection system (ITS). Specifically, there currently is no human receptor exposed to ground water containing contaminants released from the SEPs. This is because the plume is contained on the RFP. As a result, there are no domestic users of ground water in the vicinity of the SEPs contaminant plume. Additionally, the distance from the SEPs to the nearest potential receptor is very significant which suggests a low probability that contaminated ground water from the SEPs would be available for a human to access in any reasonable foreseeable time. Municipally supplied domestic water is readily available in the vicinity of RFP. Since no drinking water is available, the assessment that exposure to contaminants emanating from the SEPs via a ground water pathway is improbable.

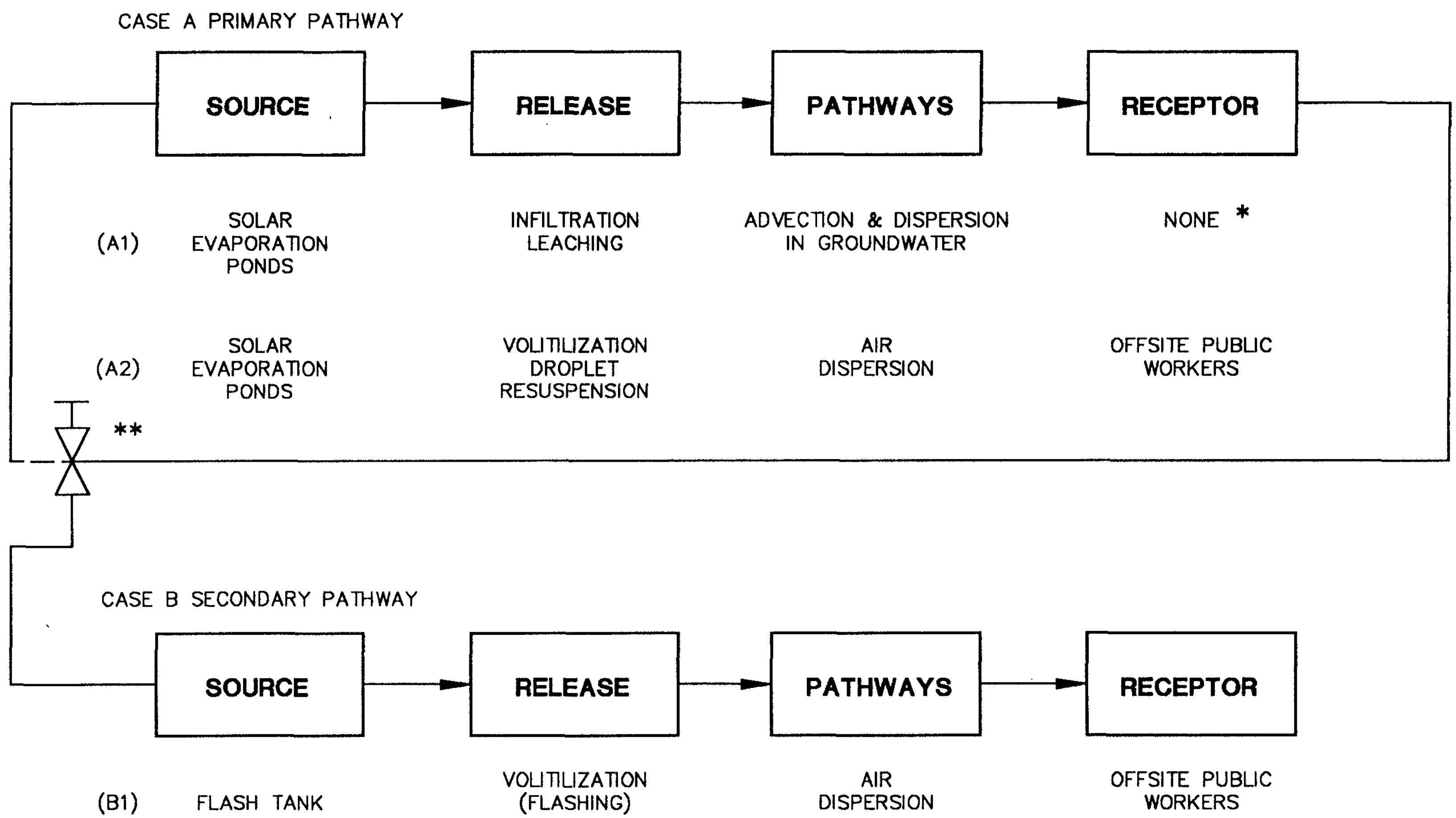
The information provided in this section is included for the general understanding of the site risks, and are not quantifiable statements. It is not the intent of this paragraph to imply that the IM/IRA will characterize and remediate all ground water contamination which originated from the SEPs. As stated previously, characterization of the ground water/surface water interrelations shall be performed during the RFI/RI activities.

Whatever the ITS efficiency, implementation of the proposed IM/IRA will not significantly alter the ground water pathway relative to potential human exposure. Assuming 100 percent efficiency of the ITS is less important than the suggestion that the ground water pathway is incomplete. Additionally, future and more detailed risk assessment evaluations both qualitative and quantitative will be performed in the continuing Phase I and Phase II evaluation/investigations of the SEPs (OU4).

2.6.1 Pathway Exposure Assessment

The conceptual environmental exposure pathway resulting from the proposed IM/IRA is provided in Figure 2-7. Pertinent features of the exposure pathway include:

- Case A: This block model illustrates the primary exposure pathway associated with conditions as they currently exist. This includes two principal exposure pathways. Pathway A1 is the ground water contamination exposure route. As indicated on Figure 2-7, there is no contaminant receptor; rather, ground water is intercepted in the interceptor ditch and returned to the SEPs (Pond 207-B). Case A also includes an air pathway (A2) by which compounds can be released from the SEPs and distributed by airborne transport to off-site receptors, workers, or ecological receptors. Pathway A2 is considered to be a negligible exposure mechanism because of the (1) very low contaminant concentrations in the pond waters, (2) the small flux of contaminants released from the pond waters, and (3) the large dispersion and dilution factors associated with airborne transport.



* GROUNDWATER IS COLLECTED IN THE INTERCEPTOR DITCH AND RECIRCULATED BACK TO THE SOLAR EVAPORATION PONDS (POND 207B).

** GROUNDWATER IS COLLECTED IN THE INTERCEPTOR DITCH AND SHUNTED TO THE FLASH EVAPORATOR SYSTEM.

FIGURE 2-7

CONCEPTUAL EXPOSURE PATHWAYS

DRAWN BY	RITA HYNA	CHECKED BY	G.W.B	8-2-91	DRAWING NUMBER	304903-A42
	7/31/91	APPROVED BY	G.W.B	8-13-91		

- Case B: Case B conceptually illustrates how the proposed IM/IRA will modify the primary pathway (Case A) through introduction of a secondary pathway. The secondary pathway truncates the recirculation loop and shunts the contaminated ground water from the interceptor ditch to the flash evaporator system. The secondary pathway introduces a new exposure pathway (B1) which originates at the flash tank. Volatile and possibly nonvolatile compounds may be "flashed" (vaporization or particulate aerosolization) as they encounter the pressure differential of the flash tank. Once released, aerosolized compounds can enter the atmosphere by passing through the system vent apparatus. Once in the atmosphere, aerosolized compounds could be transported to off-site receptors, nearby workers, or ecological receptors in the immediate vicinity by dispersion in the atmosphere.

A very important physical system that is included as a design feature of the IM/IRA that interrupts the secondary pathway is not featured on Figure 2-7. This is a high efficiency particulate air (HEPA) filter on the system vent to remove any aerosolized particulate matter before discharge to the atmosphere.

A review of Figure 2-7 indicates that only pathways A2 and B1 are potentially complete. As discussed above, neither potentially complete pathway is expected to present an appreciable exposure source to the off-site public, workers, or ecological receptors.

2.6.2 Chemicals of Concern

The SEPs, as indicated on Figure 2-7, are the source of chemical compounds that may enter any of the exposure pathways. Chemicals of concern (COCs) (from Tables 2.1 through 2.5) are the compounds that would most likely present significant human health hazards in the event that sufficient exposure conditions and concentrations were met. A review of available analytical data suggests that very few compounds, characteristic of the SEPs, are notably toxic to humans. Additionally, those compounds that could potentially pose a human health threat are generally at very low concentrations. A brief discussion of potential COCs follows.

The potential contaminants of concern for this qualitative assessment can be summarized as: (1) certain radionuclides such as Pu^{-239} and Am^{-241}, (2) certain heavy metals such as beryllium, cadmium and chromium, and (3) a limited number of VOCs such as carbon tetrachloride and trichloroethylene.

2.6.2.1 Radionuclides

Pu^{-239} and Am^{-241} have been detected in the SEP waters. Aqueous concentrations of Pu^{-239} of 0 to 660 pCi/l have been reported. Am^{-241} has been detected at 200 pCi/l. Additionally, tritium and uranium have been detected in waters from the SEPs.

2.6.2.2 Metals

Metals, including beryllium, cadmium and chromium have been detected in the SEP waters at concentrations greater than background. Aqueous concentrations (from Tables 2.1 through 2.5) reported for some metals associated with the solar evaporation ponds are listed below:

TABLE 2.7

CONCENTRATIONS OF SELECTED METALS

Compound	Aqueous (mg/l)
Beryllium	ND to 0.1
Cadmium	0.07 to 0.15
Chromium	13.7 to 16.7
Iron	1.5 to 8.0
Nickel	1.9 to 2.0
Zinc	0.62 to 0.78

2.6.2.3 Organics

Organic chemicals have been reported occasionally in samples (near the detection levels) obtained from the ITS water. The data does not show consistent occurrence of organics. Organics reported to occur infrequently that are notable from a human health perspective include carbon tetrachloride and trichloroethylene. Other organics (such as phenols) occur sporadically and are also in low concentrations in the data. This occurrence does not suggest that they should be considered as COCs. Sporadically occurring detections of organics have been used in this risk assessment, therefore this assessment is considered conservative.

2.6.3 Toxicity Assessment

The groups of compounds identified as contaminants of concern have the potential for producing adverse health effects in humans under certain conditions of exposure. A brief summary of the more relevant human toxicity information on the groups of compounds identified as contaminants of concern follows.

2.6.3.1 Radionuclides

EPA regards radionuclides as human carcinogens. Normally, carcinogenicity is the principal human toxicity concern.

2.6.3.2 Metals

Heavy metals, such as those associated with the SEPs, are reported to produce systemic toxic effects in humans. Additionally, EPA regards some heavy metals (e.g., beryllium, cadmium, chromium) as possible human carcinogens.

2.6.3.3 Volatile Organics

VOCs such as those associated with the ITS water, are reported to produce systemic toxic effects in humans. Additionally, EPA regards some VOCs (e.g., carbon tetrachloride and trichlorethylene), as possible human carcinogens.

The qualitative pathway model employed in this analysis indicates that neither exposure concentration or duration of exposure would be sufficient to produce adverse health effects from chronic exposure.

2.6.4 Risk Characterization

From a qualitative perspective, operation of the flash evaporator system will not introduce any additional risks to workers or the off-site public nor will it appreciably reduce the existing site risks. Observations that support this evaluation are:

- There is no complete ground water pathway (see Figure 2-7). Rerouting contaminated ground water to the flash evaporator system does not affect the risk associated with exposure pathway A1.
- The potentially completed airborne pathway from the SEPs to off-site receptors and workers (exposure pathway A2) will be truncated as a result of implementation of the IM/IRA. This is because, as recirculation of contaminated ground water (back to the SEPs) ceases, the source term (i.e., SEP water) will diminish. As the source term diminishes, the potential for exposure to contaminants through the airborne pathway will also decrease. As noted previously, exposure pathway A2 is considered to be a negligible source of exposure to the off-site public and workers.
- Implementation of the IM/IRA introduces the secondary B2 pathway. Conceptually, this results in a translocation of the exposure pathway A2 to the flash evaporator system vents (see Figure 2-7). As noted previously, exposure pathway A2 is considered to be a negligible source of exposure to the off-site public and workers. The potential risks of this pathway are further reduced by application of the physical systems design feature of the IM/IRA that interrupts the secondary pathway. The HEPA system is capable of an approximately 99.9 percent removal efficiency for aerosolized particulates.

3.0 DESCRIPTION AND ANALYSIS OF SELECTED REMEDY

The selected remedy for this IM/IRA includes the use of temporary surge tanks and three portable flash evaporators. The "No Action" alternative was dismissed because the ponds must be dewatered in order to proceed with partial closure activities and final remediation of the ponds. Furthermore, the consequence of the "No Action" alternative is inconsistent with the AIP and IAG.

3.1 DESCRIPTION OF SELECTED REMEDY

The selected remedy is the use of three portable flash evaporators to accelerate the removal of liquids from the 207-A and 207-B SEPs. The three portable evaporators are also needed to treat water that is currently discharged into the 207-B Pond from the ITS located north of the ponds. In order to prevent additional accumulation of water in the 207-B Pond, temporary surge tanks will be built in the vicinity of the pond to hold the ITS water before it is sent to the three portable evaporators.

Water will be pumped from the ponds and the surge tanks to the three portable evaporator systems located within a building near the solar ponds (Building 910). The final concentrate from the evaporators will be cemented in the pondcrete and/or saltcrete processes to meet defense waste acceptance criteria for disposal of low level mixed waste. Distillate from the evaporators will be discharged into one of the three 7,000-gallon batch tanks for sampling. Section 3.1.1.4 and Appendix B of this document explains the sampling and analytical requirements. Distillate exceeding the allowable conductivity limit (150 micro mho/cm) will be reprocessed. Distillate meeting the general characteristics of commercially available raw water will be reused as makeup water in the raw water or condensate systems on plant site. A 500,000-gallon tank will serve as a distillate holding tank from which water will be supplied on demand into the raw water or condensate systems.

3.1.1 Treatment System Components

Three mechanical/thermal forced evaporator systems will be installed. Each system consists of a vapor compression (VC) unit installed in series with a multiple-effect multiple-stage (MEMS) flash evaporator. The distillate from both the VC and MEMS is moved by differential pressure into a surge tank. The system, including VC and MEMS bodies is maintained at a vacuum by an eductor system which has as its motive force, the recirculation of distillate. During system operations over pressure protection is provided by a temperature sensor (which equates to saturation pressure) which shuts the entire unit down when temperature reaches 205° to 210°F. As a further precaution to prevent particulate air emissions from the system, the concentrate tank is vented to atmosphere via a HEPA filter, thus, there will be no contaminated air emission from these units.

Operators of the evaporation units will be formally trained and qualified. The training will include theory of operations, system components, principles of operations, system interrelationships, protective devices, and practical factors. The training and qualification will be validated in accordance with existing plant procedures.

3.1.1.1 Location and Equipment Description

Building 910, located south of Pond 207-B South, will be used to house the forced evaporation equipment. This building was originally constructed for a reverse osmosis (RO) system to treat RFP sanitary effluent.

The location of Building 910 and its existing tank storage capacity made it the optimal location for the evaporation equipment. Building 910 is a concrete structure with concrete floors and roof. On the main floor of Building 910, there are three rooms that will be used: the Process Room, Chemical Prep/Make-up Room and Operating Personnel Room. The lower level (basement) of Building 910 contains holding tanks, transfer pumps and ancillary equipment for the evaporator products. Some equipment in Building 910 is being stripped out to accommodate the evaporation equipment. All existing equipment that will be reused for the evaporation project will be inspected and/or tested.

Main Floor Building 910

Process Room: The Process Room is located at the west side of the main floor of Building 910. There will be three vapor compression (VC) units and three multiple-effect, multiple-stage (MEMS) flash evaporators centrally located. A duplex filter station, EDTA injection tank and nitric acid injection tank will be located at the northwest corner inside a bermed area. Three natural gas-fired generators located outside and east of Building 910 will provide electrical power to compressors, pumps and some ancillary equipment, and exhaust heat to the MEMS. All of the doorways into this room will have berms across them and the basement floors will be coated to provide secondary containment. See Figure 3-1 for the main floor layout. Both the main floor and lower level will be equipped with a wet fire suppression system.

Chemical Prep/Make-up Room: The Chemical Prep/Make-up Room is located at the main floor of the south corner of Building 910. The room contains the nitric acid make-up tank and will be used for the pH adjustment. The east side of this room will be used as a general laboratory, containing nitrate analysis equipment, a pH and conductivity meter. The emergency showers and eye wash are located in this room.

All of the doorways will have berms across them, and the floors will be coated with a sealant to provide secondary containment. See Figure 3-1 for the main floor lay-out.

Lower Level Building 910

Six existing tanks on this level will be used as temporary holding tanks for the evaporation products. These tanks will be structurally and seismically qualified for the new application. All six tanks have been inspected for RCRA compliance in accordance with 6 CCR Section 265-191 and for seismic qualification by a qualified professional engineer. Required actions have been incorporated into the installation plan and certification will be issued when the installation has been completed. The distillate will be held in Tanks D-2, D-6, and D-7. The concentrate (brine) from the MEMS units will be held in Tanks D-9 and D-18. Tank D-10 will be used as a surge tank for the distillate system. In addition, a new 600 gallon stainless steel tank D-50 will be used for brine flushing. Pumps for recirculation and transfer of materials will be located on this level. The floor and sump of the lower level will be coated with a sealant to serve as secondary containment for all the equipment within the building. The sump will have one layer of 60 mil high density polyethylene liner on top of the sealant leak detection device. The sump will be lined to meet the requirements of 6 CCR 1007-3 and piping will ensure sump liquids are not discharged outside the containment of Building 910. The containment volume will be 110 percent of the volume of the largest tank located within Building 910. See Figure 3-2 for the lower level floor lay-out.

Auxiliary Equipment

Each of the 207-A and 207-B Solar Ponds will have a pump inside the Pond berm connected to a double containment pipe with leak detection to supply water to the evaporators.

A 2500 gallon stainless steel tank located north of the building 910 will be used to hold scale inhibitor EDTA.

Tank 215-D, which has a capacity of 500,000 gallons, is located to the west of Building 910, north of Building 928. This tank will be used as a holding tank from which the distillate will be supplied on demand into the raw water or condensate systems.

A 500-gallon stainless steel tank located to the east of building 910, will be used to hold nitric acid for pH adjustment.

Three portable cooling towers, which will provide cooling water to the three portable evaporation system, will be located to the north of Building 910.

3.1.1.2 Process Description

A conceptual flow diagram of the three portable evaporators is provided in Figure 3-3. The water from Pond 207-A and Ponds 207-B North, Center, and South and ITS water will be pumped via a double-pipe transfer line which will connect to a manifold station equipped with duplex strainers and duplex filters. The duplex strainers will trap the material of a size that cannot pass through 1/8" to 3/16" perforations. An in-line 100 micron duplex filter will trap the sediments that occasionally are picked up by the transfer pumps. The strained and filtered material will be handled as low level mixed waste as specified by existing RFP waste guidance. The brine produced by the VC unit will be fed to the preheater of the MEMS flash evaporator. The preheated pond water or ITS water will be fed to the VC unit for evaporation.

The distillate will be collected from the VC unit and the MEMS flash evaporator unit into two separate small surge tanks. From the surge tanks, distillate below a conductivity of 150 micro mho/cm will be discharged into one of three 7,000-gallon batch tanks. Distillate exceeding 150 micro mho/cm will be recycled, by a solenoid operated valve actuated by the conductivity probe, back to the feed stream for reprocessing. An automatic composite sampling process will be initiated at the beginning of discharge into the 7000 gallon batch tanks. When the accumulated distillate level reaches the high-level setpoint on the batch tank, the composite samples will be collected and sent to the laboratory for analysis as specified in the Waste Analysis Plan (WAP). Sections 3.1.1.3 and 3.1.1.4 of this document explains the sampling and analytical requirements in detail. The distillate will then be transferred to the 500,000-gallon distillate holding tank 215D. From Tank 215D, the distillate will be injected into the Raw Water System for plant cooling tower usage on a demand basis. The concentrate from the MEMS flash evaporator will be collected in holding tanks before being transferred to the pondcrete cementation process or Building 374 saltcrete process. A composite sample of the concentrate will be manually collected for analysis as specified by the pond sludge solidification process or the saltcrete process as applicable.

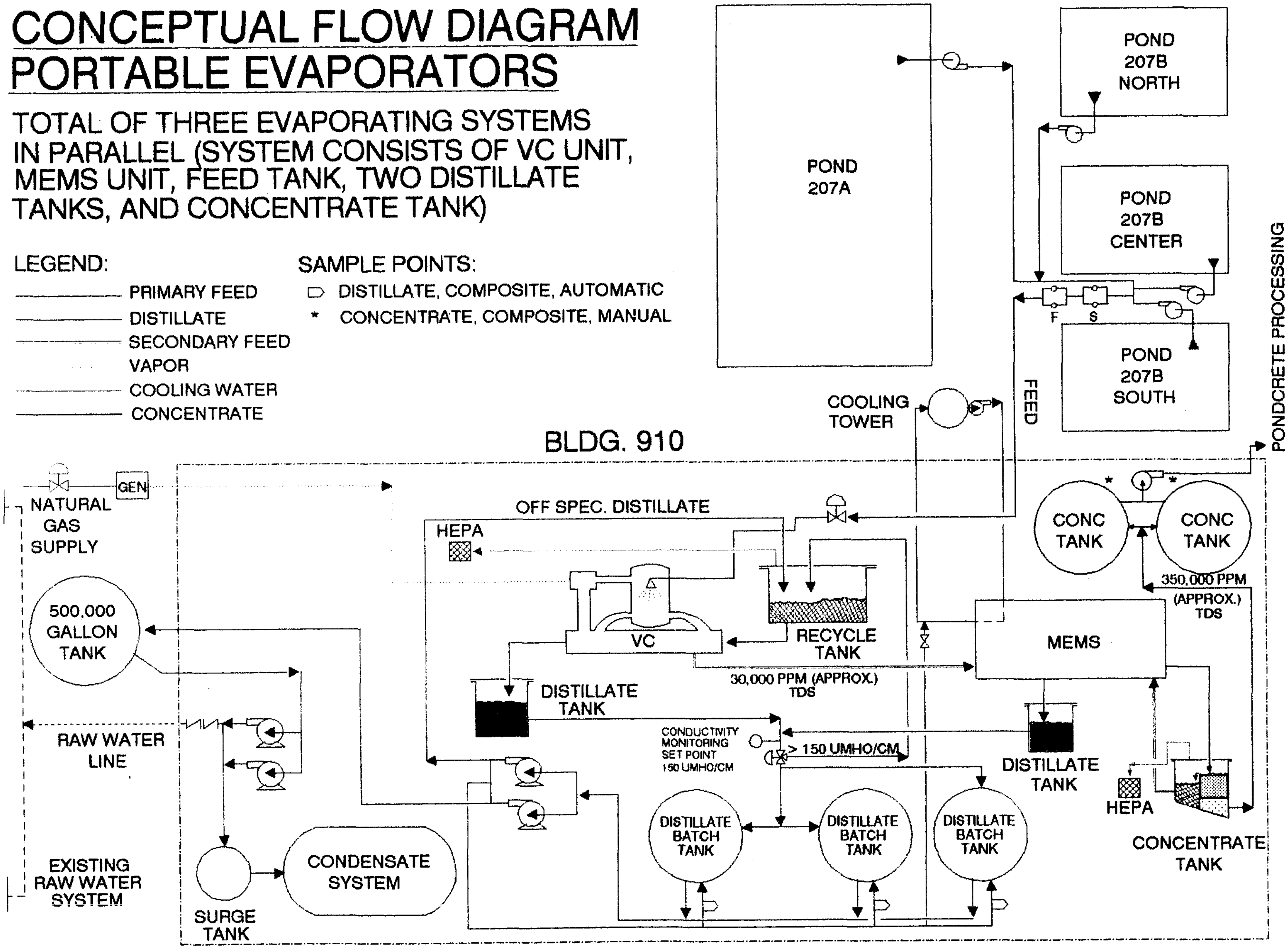
Process Performance

Each portable evaporator system (VC unit in series with MEMS flash evaporator) has a designed output of 18,000 gallons per day. There are three identical systems installed in parallel so that an operator can operate any combination of the three systems simultaneously. The system will be capable of producing a product water quality of 150 micro mho/cm or better and meeting general characteristic of commercially available raw water. The Waste Sampling Plan in this document (Appendix B) provides the specific

FIGURE 3-3

CONCEPTUAL FLOW DIAGRAM PORTABLE EVAPORATORS

TOTAL OF THREE EVAPORATING SYSTEMS IN PARALLEL (SYSTEM CONSISTS OF VC UNIT, MEMS UNIT, FEED TANK, TWO DISTILLATE TANKS, AND CONCENTRATE TANK)



constituents to be analyzed and the acceptable action levels. Final concentrate produced will be controlled to reach a total dissolved solids (TDS) level ranging between approximately 300,000 ppm and 400,000 ppm.

Logistics of Pond Water Removal

The three portable evaporator systems will have the capability to treat the water from one pond or a combination of ponds. However, neither treated pond water nor byproduct from the evaporator will be returned to any of the four ponds after the initial verification process has been completed. During initial verification, the water may be discharged to the pond from which it came.

Distillate Disposition Plan

Upon approval of analytical results from the acceptance phase, distillate will be produced on a production basis and will meet all performance specifications of the WAP prior to being transferred to the Tank 215-D (500,000 gallon capacity). From there, the distillate will be pumped into the Raw Water header on a demand basis by a centrifugal pump. The distillate pumped into the Raw Water Header will be used by plant cooling towers. The cooling tower blow down stream will be discharged to the Sanitary Treatment Plant of RFP.

The distillate from tank 215-D may be used as plant boiler feed water when the cooling tower demand falls. For use as feed, operations will pump the distillate into the condensate return receiver which is located in Building 910. This will allow the distillate to be discharged into the 300,000 gallon condensate tank located in Building 443 for supply of boiler feed water.

Concentrate Disposition Plan

The concentrate will be collected in the concentrate holding tank before being transferred to the pondcrete cementation process or to the Building 374 saltcrete cementation process by a tanker truck.

Flow, Level and Spill Control

The main feed stream, final distillate stream, and the final concentrate streams will be monitored for flow rate and will have a continuous flow indication of the total volume transferred. All collection tanks and holding tanks will be equipped with a high level alarm control and an automatic pump shut off to prevent overflow of liquid. The 500,000-gallon distillate holding tank 215D will not have secondary containment, because distillate held in Tank 215D has been proven to meet the "re-use" criteria as stated in the WAP (Appendix B) and thus there will be no release of contaminants that may threaten human life or the environment. Tank 215D will be equipped with a high level alarm and a secondary high level alarm. The high level alarm alerts the operators to stop evaporation. The secondary high level alarm will automatically shut down the transfer pumps that feed into the 500,000-gallon holding tank.

3.1.1.3 Sampling and Analytical Requirement

The purpose of the sampling plan is to ensure the distillate will be an effective substitute for water used in the raw water system and therefore demonstrate that the distillate would have no adverse impact on the quality of the water discharged from the plant or emitted from cooling tower.

Detailed characterization of pond water was recently performed and the data is presented in Tables 2.1 through 2.6. All analytical procedures follow EPA SW-846 methods. Level IV, which is characterized by rigorous QA/QC protocols and documentation, was used for analysis of all constituents. This level provides legally defensible qualitative and quantitative data. The constituents analyzed consisted of the parameters currently measured during the monthly sampling of the Building 374 evaporator distillate and the parameters required for sampling of water discharged from the plant. Distillate from the 374 evaporator is currently reused in the building 374 cooling tower. The WAP detailed in Appendix B implements the necessary actions to ensure that the distillate from these portable flash evaporators will also be an acceptable substitute for raw water.

3.1.1.4 Waste Analysis Plan (WAP)

The foundation for the development of the WAP is the characterization data presented in Tables 2.1 through 2.5 for the Solar Ponds and Table 2.6 for the ITS waters. Constituents not found within the characterization reports have been deleted from the WAP.

3.1.1.5 Facility Safety Features

Fire Protection and Safety Equipment

There will be a new wet fire suppression system installed to cover the entire building. Approximately five fire extinguishers will be provided throughout the entire building. Fire phones, safety shower(s) and eye wash equipment will be located to adequately provide for personnel safety protection.

Alarms

The following is a list of the alarms for both the process and personnel:

Process

- Over temperature alarm(s) - Audible, Visual
- High/low level alarm(s)- Audible, Visual
- Power overload alarm(s) - Audible
- Loss of vacuum alarm(s) - Audible, Visual
- Low flow alarm(s) - Audible, Visual
- Conductivity level high alarm(s) - Visual.

Personnel

Fire alarm - Audible, Visual

Inspection

Inspection requirements of the facility will comply with the appropriate procedures for operation of the system. Tanks containing RCRA regulated waste will be included in the Plant Assessment/Surveillance Program.

Operating Procedures

Operation of all equipment in this facility will follow the appropriate procedures. Procedures will be completed at the completion of equipment installation. Final walkdown of the procedures and revalidation will occur prior to equipment operation. The following is a list of procedures that will be implemented prior to equipment operation.

- WO-2210 Systems Line-up
- WO-2211 Chemical Makeup System
- WO-2212 Feed System
- WO-2213 Evaporator System 1
- WO-2214 Evaporator System 2
- WO-2215 Evaporator System 3
- WO-2216 Distillate System
- WO-2217 Concentrate System
- WO-2218 Abnormal/Emergency Response
- Alarm Response Procedure
- Site Specific Health and Safety Plan

Spill Response

The spill response will be in accordance with the plant spill response procedure as contained in the Hazardous Waste Requirements Manual 1-10000-HWRM.

Personnel Training

Rocky Flats personnel assigned to operate the Building 910 evaporators will receive the following training:

- Rocky Flats core and area-specific training
- 40-hour OSHA
- Annual RCRA Training
- On-the-Job training provided by the evaporator manufacturer during the initial trial run
- Job-specific training to include theory of operations, system components, principles of operations, system interrelationships, protective devices, and practical factors.

3.1.2 Storage Components

Water collected by the ITS is currently returned to the 207-B ponds (primarily the North impoundment). To allow pond dewatering to proceed, the ITS water will be held in three temporary surge tanks.

3.1.2.1 Location of Tanks

The three temporary surge tanks will be located well within the plant's buffer zone, north of the SEPs (see Figure 3-4).

The proposed site is not located within the 100-year floodplain, wetlands, a saltdome formation, underground cave or mine, or within 200 feet of a fault displaced by a Holocene Fault. The proposed site is not an area of known contamination and is not within a solid waste management unit. Furthermore, the proposed site would have no impact on known archaeological or historic resources and is not expected to affect the black-footed ferret or the bald eagle (DOE, 1991b).

Excavation and grading will be required to prepare the site for the temporary tanks. The site will be graded according to specifications as established in the geotechnical study of the proposed site. Excavation permits will be reviewed and approved by appropriate environmental management staff prior to any work on this site. Measures will be implemented for erosion control and soil stabilization and to facilitate restoration of the pads after the tanks are removed.

3.1.2.2 Equipment Description

Each tank will have a capacity of approximately 500,000-gallons and will be constructed of galvanized steel and high-density polyethylene (HDPE). Each tank will be approximately 112 feet in diameter with

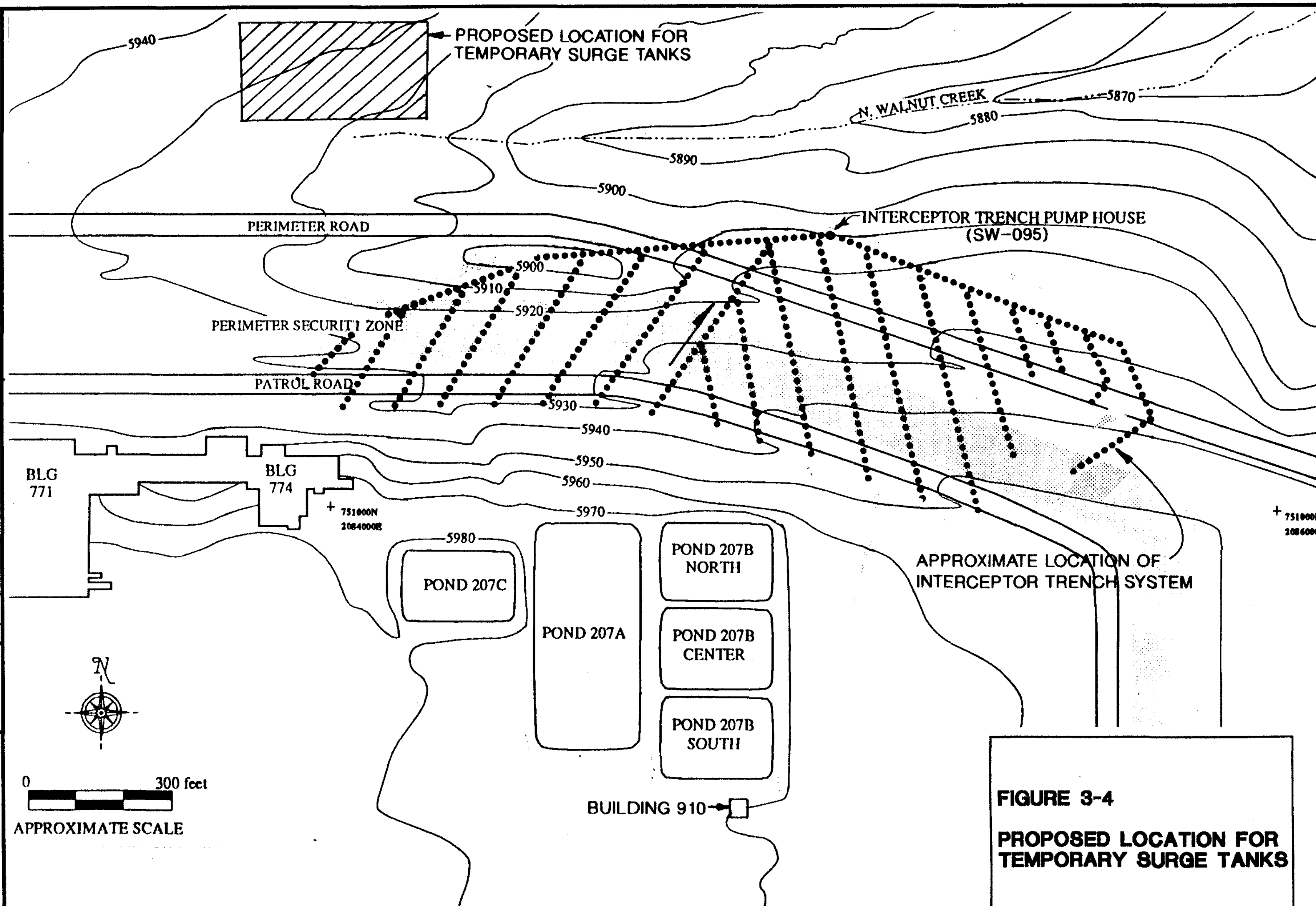


FIGURE 3-4

PROPOSED LOCATION FOR TEMPORARY SURGE TANKS

REFERENCE: ASI, ZERO OFFSITE DISCHARGE STUDY,
SOLAR EVAPORATION PONDS, FIGURE 3,
INTERCEPTOR TRENCH PUMP HOUSE SYSTEM, FIGURE 5, JANUARY 15, 1991.

DRAWN BY	CHECKED BY	DRAWING NUMBER
RITA HYNA	GNB	8-2-91
7/31/91	APPROVED BY GNB	8-13-91
		304903-A44

10 foot galvanized steel sidewalls. The bottom and inner sidewalls will be double-walled with HDPE (see Figure 3-5).

The temporary holding tanks and ancillary equipment will be designed, installed, and operated in accordance with the tank requirements of 6 CCR-1007-3 Part 264, Subpart J. The tank systems will incorporate double-wall containment features and provisions for detection and removal of primary containment leakage (EG&G, 1991a).

The subgrade will be prepared and graded to allow any leakage to be collected at the leak detection sump. Non-earthen base material (i.e., concrete and/or asphalt) will be placed over the subgrade to provide structural support for the base of each surge tank. A 100-mil geotextile will be placed over the concrete/asphalt base to protect the secondary wall from punctures or abrasions. A 80-mil HDPE secondary wall will then be placed over the geotextile. A HDPE geonet will be placed over the secondary wall to allow any leakage through the primary wall to be immediately collected in the leak detection sump. A 80-mil HDPE primary wall will then be placed over the geonet. In addition, a 20-mil HDPE liner will be placed over the primary wall to protect the primary wall from ultraviolet degradation. The leak detection sump will be located in the middle of each tank and will incorporate below grade piping to a standpipe located outside the tank which will allow the immediate detection of any leakage through the primary wall. The standpipe will be provided with a sensing device. In the event leakage occurs, an alarm will sound in Building 374 which is continuously manned 24 hours a day. If a valid leak occurs, the contents of the tank with the leak will be pumped to another tank. At least one tank will remain empty to provide this capability.

Water will be pumped from the existing ITS pump house to the tanks and then from the tanks to the three portable evaporators via double-walled piping. Above ground piping will be made of polyvinylchloride and underground piping will be made of polyethylene. All exposed portions of the piping will be heat-traced, insulated, or drained for freeze protection.

In order to prevent overfilling, each holding (surge) tank will be equipped with a high level and low level alarm. The high level alarm will activate when there is approximately 2 feet of freeboard remaining in the tank(s). The freeboard capacity will allow approximately 15 hours of normal fill time. Upon activation, the high level alarm will automatically shut down the feed pumps and begin pumping excess water to an adjacent surge tank which is not full. In addition, the alarm signal will be sent to Building 374 which is continuously manned 24 hours a day.

3.1.3 General Components

3.1.3.1 Quantity of Waste to be Treated

The largest volume solar evaporation pond (Pond 207-A) contains approximately 3 million gallons of water to be evaporated to allow pondcreting of sludges to occur. The 207-B ponds contain a total of approximately 5 million gallons of water to be evaporated. The collected ITS water, which will be stored in the temporary surge tanks and will be a continuing source of water, will require treatment through the evaporator system. The average amount of water collected by the ITS over the course of a year is estimated to be 4 million gallons, based on observations made in 1987.

As previously mentioned, each portable evaporator system has a design output of 18,000 gallons per day. Therefore the utilization of all three systems would have a treatment capacity of 54,000 gallons per day.

3.1.3.2 Treatability Testing

Treatability tests were performed using the proposed treatment system by LICON, Incorporated of Pensacola, Florida (LICON, 1990). In that LICON was not an authorized recipient of pond water, tests were conducted using surrogate pond water. Tests were conducted with feed supply prepared to simulate each of the four SEPs. The surrogate feed supplies were prepared based on the major ions contained in their respective ponds.

Test results indicated that the 10,000 ppm total dissolved solids feed supply (pond average) could be reduced to 1/50th of its present volume and produce an excellent quality of distillate averaging less than 75 µmhos/cm. According to recent pond water detailed characterization results, the heavy radionuclides such as U, Pu, and Am detected, are at a treatable level with a high performance type of demister pad. Although tritium was detected, the level was well below established drinking water standards.

A trial run (acceptance phase) of the installed system will be conducted and evaluated prior to full-scale operations. The trial run period will include extensive sampling and analysis of the distillate per the analysis plan. This trial run and testing period will also be used to adjust operations and train operators.

3.1.3.3 General Inspections

Inspections of the storage and treatment operations will be conducted in accordance with the applicable requirements of 6 CCR 1007-3 Part 264, standard plant operating procedures, and as needed. Specific inspection schedules and record keeping procedures will be developed and implemented prior to initiating operations. Inspections will be conducted at a frequency which identifies problems in time to correct them, prevents human health and environmental hazards, and ensures safe working conditions.

During operations:

- Tank leak detection systems
- Level of water and freeboard in the tanks
- Ancillary equipment
- Above-ground tank equipment (piping, valves, etc.)
- Structural integrity of the tanks
- Area surrounding the tanks
- Loading and unloading areas of hazardous waste.

Other items to be inspected will include, but not be limited to:

- Operating and structural equipment
- Safety and emergency equipment
- Monitoring equipment
- Security devices
- HEPA filters.

3.1.3.4 Management of Waste

As mentioned previously, the concentrate generated by the evaporator system will be collected in the concentrate holding tank and will also be sampled for waste characteristic data before being transferred to either the pondcrete cementation process or to the saltcrete process.

The distillate (water) generated by the evaporator system will not constitute a solid and hazardous waste because it will be used or reused as an effective substitute for a commercial product. Therefore, the distillate is not a waste based on the commercial product exclusion contained in 6 CCR 1007-3 Part 261.2 (e) (ii). The distillate (water) will be used or reused as an effective substitute for commercially available water that could or otherwise would be purchased from the Denver Water Board (DOE, 1989a).

3.1.3.5 Institutional Controls

This IM/IRA will be conducted entirely within the Rocky Flats site boundary. Since current security controls (i.e., access control, fencing, etc.) do not allow the general public into the area of this IM/IRA, additional institutional controls are not warranted.

3.1.3.6 Assumptions, Uncertainties and Contingencies

As detailed in the process description for the evaporator system, distillate not meeting specified quality requirements will be recirculated for additional treatment. In the event that specific quality requirements are not obtained by the proposed system, additional treatment units will be evaluated and incorporated into the treatment system as needed to meet or exceed performance requirements.

Each temporary surge tank will be equipped with a leak detection system. If a valid leak is detected, the tank contents will be transferred to an adjoining tank. In the unlikely event that a catastrophic failure of a tank occurs, the released water would flow into North Walnut Creek. Much of the water would percolate back into the ground water system. The remainder would be contained in Pond A-3 because ponds A-1 and A-2 are not tributary to Walnut Creek. Sampling of Pond A-3 would then occur. If so determined, the water could be collected and transferred to one or both of the remaining tanks or transferred to the SEPs.

3.1.3.7 Closure of IM/IRA Structural Components

It is anticipated that the temporary surge tanks will be utilized at least into 1995. The tanks may be utilized as part of the initial action that may be required following the Phase I RFI/RI source and soils characterization as defined in the IAG. The temporary tanks will then be replaced by permanent tanks if deemed appropriate. The temporary tanks and ancillary equipment will be closed in accordance with the closure requirements of 6 CCR 1007-3 Part 264, Subpart G.

3.1.4 Costs

The estimated total cost to conduct this IM/IRA is $8,017,000. A breakdown of the estimated capital and operating and maintenance costs associated with this IM/IRA are included in Table 3.1. This cost is only for the water evaporative efforts and does not include the cost of processing the pond sludge into pondcrete.

3.1.5 Remediation Goals and Performance Standards

The overall goal of this IM/IRA is to remove the liquids from SEPs (207-A, 207-B North, 207-B Center, and 207-B South) as expeditiously as possible in order to be able to remove and solidify the remaining sludges.

An associated goal is to implement a means to store and treat water collected by the ITS which does not include the use of the SEPs.

TABLE 3.1

ESTIMATED COSTS OF SELECTED REMEDY

Capital Costs	Estimated Costs
Storage Component	
1. Temporary Surge Tanks (3) 500,000 gallons each	$631,000
2. Associated Piping and Equipment	$227,000
3. Site preparation and installation	$378,000
Treatment Component	
1. Flash Evaporators (3) systems	$2,000,000
2. Associated Piping and Equipment	$700,000
3. Site preparation and installation	$1,690,000
Contingency Cost	$1,221,000
Operation & Maintenance Cost (Annual Cost)	
Pumping and Treatment Systems	(a) $1,170,000
FIRST YEAR TOTAL COSTS	$8,017,000

(a) The annual costs will extend at least through 1995 until the OU-4 remediation IM/IRA will assess long-term solutions

The proposed site for the three temporary surge tanks complies with all applicable siting criteria. The proposed site for the temporary tanks is not located within the 100-year floodplain, wetlands, a saltdome formation, underground cave or mine, or with 200 feet of a fault displaced by a Holocene Fault. The proposed site is not an area of known contamination and is not within a solid waste management unit. Furthermore, the proposed site would have no impact on known archaeological or historic resources and is not expected to affect the black-footed ferret or the bald eagle (DOE, 1991b).

The principal compliance point is where the distillate enters the raw water system, specifically in the 7,000-gallon capacity batch tanks.

Numerical goals to be attained for the distillate include:

- The maximum contaminant levels (MCLs) as identified in 40 CFR Part 141 Subpart B with the exception of turbidity and microbiological contamination
- The surface water standards for Walnut Creek as identified in 5 CCR 1002-8, Section 3.8.6 (2), Table 2 - Site Specific Radionuclide Standards.

No numerical goals apply to the sludge concentrate. However, the concentrate will be managed within the pondcrete or saltcrete operations in accordance with RCRA regulations for hazardous waste treatment and storage facilities (6 CCR 1007-3 Part 264).

3.1.6 Proposed Schedule of Milestones

The proposed schedule has been established to allow the DOE to meet its IAG obligations for Operable Unit 4 and facilitate meeting commitments developed in the AIP. The proposed milestone schedule is provided in Table 3.2.

3.2 ANALYSIS OF SELECTED REMEDY

This section provides an analysis of the selected remedy in accordance with the NCP. The analysis consists of an assessment of nine evaluation criteria.

TABLE 3.2

**MILESTONE SCHEDULE
INTERIM MEASURE/INTERIM RESPONSE ACTION
SOLAR EVAPORATION PONDS
OPERABLE UNIT NO. 4**

	Date
Submit Proposed IM/IRA Decision Document to EPA and CDH	Aug. 15, 1991
Public Review of Proposed IM/IRA Decision Document	Sept. 1, 1991
Submit Draft Responsiveness Summary and Final IM/IRA Decision Document to EPA and CDH	Feb. 15, 1992
Begin construction of Treatment and Storage System	March 1, 1992[a]
Complete Construction of Treatment and Storage System	June 1, 1992[a]
Conduct Trial run of Treatment System	June 8, 1992[a]
Begin full-scale operations	June 15, 1992[a]

[a] Construction will not start until this decision document is approved by the regulatory agencies.

3.2.1 Overall Protection of Human Health and the Environment

The selected remedy has been assessed to determine whether it can adequately protect human health and the environment, in both the short- and long-term, from unacceptable risks posed by hazardous substances, pollutants, or contaminants present at the site by eliminating, reducing, or controlling exposures to levels consistent with the remediation goals. Overall protection of human health and the environment has considered the assessments of other evaluation criteria, especially long-term effectiveness and permanence, short-term effectiveness, and compliance with ARARs.

A summary of the site risks has been included in Section 2.6 of this document. This section assessed the potential risks to human health as a result of the flash evaporator (treatment) operation. The assessment indicated that the potential risks to the off-site general public and on-site workers would be negligible.

The implementation of this IM/IRA is not expected to pose any adverse effects to the environment. In fact, a consequence of this IM/IRA will allow the removal of potential contamination source material from the SEPs, thereby reducing the potential of further contamination of the underlying soils and ground water.

3.2.2 Compliance with ARARs

The selected remedy has been assessed to determine whether it attains ARARs under federal environmental laws and state environmental or facility siting laws or provides the grounds for invoking one of the waivers. The selected remedy will attain identified ARARs. Please refer to Section 4.0 of this document for a detailed discussion of ARARs. No waiver requests are expected at this time.

3.2.3 Long-Term Effectiveness and Permanence

The selected remedy has been assessed for the long-term effectiveness and permanence it affords along with the degree of certainty that the remedy will prove successful.

Long-term effectiveness and permanence is a key consequence of the selected remedy. The dewatering of the SEPs will allow the removal and solidification of existing sludge material to occur, thereby allowing closure activities to proceed in an expeditious manner.

The waste remaining after this IM/IRA will be the dewatered sludges left behind in the SEPs. The sludges will then be solidified in accordance with approved pondcrete operations. The removal of the liquids and sludges from the SEPs will benefit ground water quality in the long term, because the contamination sources will be removed.

The proposed treatment system and storage tanks are considered adequate and reliable to meet the objectives of this IM/IRA.

3.2.4 Reduction of Toxicity, Mobility or Volume through Treatment

The degree to which the selected remedy employs recycling or treatment that reduces toxicity, mobility, or volume has been assessed, including how treatment is used to address the principal threats posed by the site.

The proposed mechanical/thermal forced evaporation system will significantly reduce the volume of waste currently contained in the SEPs. Approximately 8 million gallons of liquid will be treated from the ponds.

The removal of this liquid will allow the pondcrete process to occur, thereby reducing the mobility of contaminants in the underlying ground water by eliminating the source.

The evaporation system produces a distillate and a concentrate. The distillate produced will be of high water quality, suitable for use in the plant's raw water supply. The volume of waste concentrate produced is estimated to be 1/50 of the present pond volume.

3.2.5 Short-Term Impacts

The short-term impacts of the selected remedy has been assessed considering potential risks to the general public, workers and the environment.

The potential risks to the general public health and safety during implementation of this IM/IRA are considered minimal.

Volatile chemical emissions from the forced evaporators are expected to be insignificant, because volatile organic concentrations in the ITS water have only been sporadically found near the detection limits. The forced evaporator process will be equipped with HEPA filters at the concentrate surge tanks thereby precluding the carry-over of radioactive particulate emissions.

The risk of a catastrophic failure of a temporary surge tank is considered minimal. In such an event, contingencies as per the Surface Water Management Plan are in place to prevent off-site migration of potentially contaminated water.

The potential risks to workers during implementation of this IM/IRA will be minimized to the maximum extent possible. Workers will be trained in and be required to comply with necessary health and safety procedures. Standard operating procedures will be developed for the evaporation process. Personnel protective equipment will be used in accordance with applicable procedures.

The potential environmental risks associated with the implementation of this IM/IRA are considered minimal.

3.2.6 Implementability

The ease or difficulty of implementing the selected remedy has been assessed by considering the technical feasibility, the administrative feasibility, and the availability of services and materials.

The technical feasibility to conduct this IM/IRA is considered very good. The construction and operation of the temporary surge tanks and the evaporator system will follow standard proven practices. Both the storage and treatment systems will be monitored in accordance with the WAP to ensure that the performance objectives are met. met. Equipment parameters will be logged and the logs retained at the facility. All RCRA tanks and the storage tanks will be included in the Plant Material Assessment Program. The treatment system can be adjusted or modified as necessary to meet the required performance standards.

No problems are anticipated relating to administrative feasibility of this IM/IRA. The necessary funds are available. Furthermore, this IM/IRA will be conducted entirely on-site.

No problems are anticipated with the availability of the needed services and materials to construct and implement this IM/IRA.

3.2.7 Cost

The types of costs associated with the selected remedy have been assessed.

The costs associated with this action are considered necessary for the protection of human health and the environment, and to meet the intent of the IAG and AIP.

A breakdown of the estimated capital and operating and maintenance costs associated with this IM/IRA have been previously included in Table 3.1.

3.2.8 State Acceptance

The assessment of State concerns will be made following the State's review and comment on this proposed IM/IRA Decision Document.

3.2.9 Community Acceptance

The assessment of community concerns will be made following the public comment period for this proposed IM/IRA Decision Document.

4.0 IDENTIFICATION AND ANALYSIS OF POTENTIAL ARARs

4.1 STATEMENT AND BASIS OF PURPOSE OF POTENTIAL ARAR ANALYSIS

The analysis of ARARs in Section 4.0 is a review of Potential ARARs for this IM/IRA only. ARARs are currently being negotiated and resolved by the DOE, EPA and CDH on a site-wide basis for the Rocky Flats Plant. Appendix D contains two documents, a letter/agreement dated August 22, 1989 from DOE to CDH concerning water recycling and reuse issues and an initially approved air emission permit number 91JE316(1) from CDH for the flash evaporators as outlined in this IM/IRA. These documents as agreed to by DOE, EPA and CDH are compliance related ARARs for this IM/IRA. Also, Maximum Concentrations Limits (MCL) for radioactive constituents as presented in Table 4-3 shall be observed as compliance ARARs for the IM/IRA.

4.2 SCOPE OF INTERIM MEASURES/INTERIM REMEDIAL ACTION

The overall objectives of this IM/IRA for the 207- Solar Evaporation Ponds and ITS is to facilitate pondcrete operations and to facilitate the closure of the 207- Solar Ponds. ARARs are used in defining the remediation goals for the interim action.

4.3 COMPLIANCE WITH APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS (ARARs) AND PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT

The NCP [FR Vol 55, No. 46, 8848; 40 CFR 300.430 (e)] requires that, in development of remediation goals, the following be considered:

1. ARARs
2. For systemic contaminants, concentration levels that will not cause adverse effects to the human population and sensitive subgroups over a lifetime of exposure
3. For carcinogens, exposure levels represent an upper bound lifetime cancer risk between 10^{-4} and 10^{-6}. The 10^{-6} risk level is to be used as a point of departure when ARARs are not available or are not sufficiently protective because of multiple contaminants or multiple exposure pathways.
4. Factors related to detection limits
5. For current or potential sources of drinking water, attainment of Maximum Contaminant Level Goals (MCLGs) or Maximum Contaminant Levels (MCLs), if MCLGs are zero
6. Attainment of Clean Water Act (CWA) water quality criteria where relevant and appropriate.

The IAG, in paragraph 150, states "Interim Remedial Actions/Interim Measures shall, to the greatest extent feasible, attain ARARs." Also for interim actions, the NCP [40 CFR 300.430(f)] specifically notes that an ARAR can be waived if the action is to become part of the final remedy that will attain ARARs. It may not be practicable to attain all ARARs for this interim action and ARAR waivers or alternate concentration limits may be requested.

This section identifies and analyzes ARARs relevant to the solar evaporator ponds 207-A and 207-B and the surface and ground water from the underground ITS and discusses how the action will be protective of human health and the environment. This remedial action is considered an on-site IM/IRA to be administered under RCRA; therefore, both substantive and administrative requirements of the RCRA regulations (such as RCRA permitting requirements) apply. The CERCLA-based ARAR process for this IM/IRA is required under the IAG.

4.3.1 <u>ARARs</u>

"Applicable requirements," as defined in 40 CFR 300.5, means "those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance found at a CERCLA site. Only those state standards that are identified by a state in a timely manner and that are more stringent than federal requirements may be applicable." "Relevant and appropriate requirements," also defined in 40 CFR 300.5, means "those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws, that, while not "applicable" to a hazardous substance, pollutant, contaminant, remedial action, location, or other circumstance at a CERCLA site, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to the particular site. Only those state standards that are identified in a timely manner and are more stringent than federal requirements may be relevant and appropriate."

According to CERCLA Section 121(d)(2), in order to be considered an ARAR, a state requirement must be "promulgated". As defined in 40 CFR 300.400(g)(4) of the NCP, the term "promulgated" means that the requirement is of general applicability and is legally enforceable.

4.3.2 TBCs

In addition to ARARs, advisories, criteria, or guidance may be identified "to be considered" (TBC) for a particular release. As defined in 40 CFR 300.400(g)(3), the TBC category consists of advisories, criteria, or guidance developed by EPA, other federal agencies, or states that may be useful in developing remedies. Use of TBCs is discretionary rather than mandatory as is the case with ARARs.

4.3.3 ARAR Categories

In general, there are three categories of ARARs. These categories are:

- Ambient or chemical-specific requirements
- Location-specific requirements
- Performance, design, or other action-specific requirements.

Each category is discussed in more detail below.

4.4 AMBIENT OR CHEMICAL-SPECIFIC REQUIREMENTS

Ambient or chemical-specific requirements set health- or risk-based concentration limits in various environmental media for specific hazardous substances or pollutants. These requirements set protective clean-up levels for the chemicals of concern in the designated media, or may act as action-related requirements in indicating a safe level of air emission or wastewater discharge. The chemical-specific ARARs identified herein are used in defining the remediation goals for clean up of contaminated surface water and discharge of treated water.

ARARs are derived primarily from federal and state health and environmental statutes and regulations. The following may be considered when establishing clean-up standards, but are not considered ARARs: health effects assessments, health advisories, chemical advisories, and guidance document criteria. These and any proposed standards are classified as items to be considered, or TBCs. Where background concentrations for constituents are above the ARAR for that constituent, a waiver from the ARAR may be appropriate. A summary of ARARs for the contaminants found in the surface and ground water of OU4 are presented in Tables 4.1 through 4.3. Table 4.3 presents ARARs for volatile organics, metals, conventional pollutants, and radionuclides and will be applied to operations involving treated water.

As discussed in 55 FR 8741 (Preamble to the NCP), when more than one ARAR has been identified for a contaminant, the most stringent standard has been identified as the ARAR which the IM/IRA will attain to the greatest extent practicable. Where no ARAR standard exists, a TBC standard has been identified which the IM/IRA will treat as a goal to achieve. Federal and state ARAR spreadsheets used in the ARAR analysis for volatile organics, metals, conventional pollutants, and radionuclides are presented in Tables 4.1 and 4.2. The standards identified in Table 4.3 are based on the most stringent standards found in the Safe Drinking Water Act (SDWA) MCLs and Water Quality Control Commission (WQCC) statewide surface water standards. As described in Sections 4.3.1 through 4.3.5, the standards mentioned above were found to be applicable or relevant and appropriate to RFP Solar Ponds 207-A and 207-B and the ITS waters.

The standards and criteria identified as TBC in Table 4.3 are based on the most stringent standards found in WQCC Site-Specific Surface Water Standards and criteria in Tables I, II, and III of 3.1.16 in the Basic Standards for Surface Water. Additionally, CWA Ambient Water Quality Criteria (AWQC) were applied whenever more appropriate ARARs or TBCs were not identified. Overall, TBC standards were identified in Table 4.3 only when no ARAR standards were found.

As presented in Tables 4.1 and 4.2, the ARARs and TBCs summarized in Table 4.1 were developed using the ARARs rationale described above and were identified by examining the following standards and criteria:

- SDWA MCLs
- Colorado WQCC Standards for Surface Water
- CWA AWQC.

ARARs were not considered for the distillate from the evaporator. The distillate is not a solid or hazardous waste because it is excluded from regulation pursuant to 6 CCR 1007-3, Part 261.2 (e)(ii).

This IM/IRA is limited in scope and only those ARARs associated with the activities and goals of the IM/IRA are evaluated. The ARARs associated with the effluent, sludge, air discharges, and construction and operation of the treatment units and tanks were considered. All other ARARs will be addressed in the forthcoming record of decision for OU4.

4.4.1 Safe Drinking Water Act MCLs

SDWA MCLs represent the maximum permissible level of a contaminant in water that is delivered to the free-flowing outlet of the ultimate user of a public water system [40 CFR 141.2(c)]. The OU 4 water to be treated according to this IM/IRA will be reused as an effective substitute for commercially available raw water. As directed by CDH, OU 4 treated water will be required to meet MCLs because CDH has determined that this water must meet the same water quality (drinking water quality, except for turbidity and microbiological contamination) as water provided from the Denver Water Board (DOE, 1989a).

Consequently, MCLs are regarded as ARARs. Furthermore, the NCP [40 CFR 300.430(e)] requires that, in development of remediation goals for evaluating alternatives for final remediation, the following be considered for current or potential sources of drinking water: attainment of MCLGs or MCLs, if MCLGs are zero, where relevant and appropriate; and attainment of CWA AWQC, where such criteria are relevant and appropriate. CWA AWQC are discussed in Section 4.3.5. It should be noted that on January 30, 1991, and June 7, 1991, (56 FR 3526 and 56 FR 26460, respectively) EPA published final rules amending MCLs and MCLGs for a number of the constituents identified in Table 4.3. These standards are effective July 30, 1992, and November 6, 1991, respectively, and will be regarded as applicable at that time. For purposes of this work plan, the new MCLs (MCLGs are zero or equal to the MCLs, except in the case of copper), are, therefore, relevant and appropriate and are identified as such in Table 4.3.

4.4.2 Colorado WQCC Standards for Surface Water

The Colorado WQCC has established both state-wide and stream segment-specific standards for the protection of state surface waters. State-wide standards exist for certain radioactive materials as well as organic standards adopted for all state sources of drinking water and areas requiring protection for aquatic life (see Section 3.1.11, 5 CCR 1002-8). These standards are consequently of general applicability. The state-wide standards are enforceable through the state's NPDES permitting process. Having apparently met the NCP state ARAR requirements of enforceability and general applicability [40 CFR 300.400(g)(4)], the state-wide surface water standards have been applied as ARAR in Table 4.3.

Site-specific surface water standards also exist for certain organics, metals, inorganics, and radioactive constituents in the form of goals for Segment 5. Accordingly, these standards do not appear to satisfy the NCP requirements for state ARARs since all segment 5 standards and classifications are goals. These standards have not been generally applied to the surface waters of Colorado. Furthermore, the site-specific standards for radioactive constituents are significantly more stringent than any standards applied to the surface waters of the State of Colorado. Consequently, the site-specific organic, metal, inorganic, and radionuclide surface-water standards cannot be ARAR. These standards have been applied as TBC in Table 4.3 because they reflect the degree of protectiveness determined to be necessary for Rocky Flats Plant surface waters by the Colorado WQCC.

4.4.3 CWA Ambient Water Quality Criteria (AWQC)

The CWA AWQC are non-enforceable guidance developed under CWA Section 304, and are used by states in conjunction with designated stream segment usages to establish water quality standards for the protection of aquatic life and for the protection of human health. Standards include those established for drinking water and fish consumption, fish consumption only, as well as standards for the protection of aquatic life. CERCLA Section 121(d) requires that CWA AWQC be considered in the development of remediation goals in the FS process, where relevant and appropriate. Relative to this IM/IRA, AWQC are generally considered relevant and appropriate. Pursuant to the preamble of the NCP and EPA guidance (55 FR 8754; EPA, 1990), AWQC will generally not be considered relevant and appropriate whenever other standards exist that are specific to the constituents and the use of the affected water. Consequently, since the WQCC has designated RFP surface waters as drinking water usage and aquatic life protection stream reaches with associated standards, the AWQC were used as ARAR in Table 4.3 only when more appropriate Federal or Colorado standards were unavailable.

4.4.4 Protection of Human Health and the Environment

As illustrated by the hazard quotients and carcinogenic risks listed in Table 4.3, achieving the ARARs should result in a clean-up action that is protective of human health and the environment. For non-carcinogens, the protectiveness goal is a hazard index of 1. The hazard index is the sum of the hazard quotients [i.e., the estimated daily intake (dose) to reference dose ratios] for all of the contaminants combined, which have been computed and are presented in Table 4.3. In assessing non-carcinogenic risk, a hazard index of one or less is considered to be acceptable. If the hazard index exceeds one, it indicates that there might be the potential for adverse non-carcinogenic health effects occurring. Unlike the method used to evaluate the potential for carcinogenic toxicity, the hazard index does not indicate the probability of adverse health effects occurring, but it is used as a benchmark for determining where there is a potential concern. With respect to carcinogens, cumulative cancer risk should be less than 10^{-6}, but no greater than 10^{-4} (individual cancer risks shown in Table 4.3 are considered additive). As noted in Table 4.3, the calculated incremental cancer risks exceed 10^{-4} for some of the organic carcinogens as well as for beryllium. However, the cancer risks are computed on the basis of the detection limit and therefore can only be considered a possible maximum carcinogenic risk; the actual risk is unknown but likely to be considerably lower. Removing these contaminants to non-detectable levels and attaining, to the extent practicable, the other ARARs, the IM/IRA is considered protective of human health and the environment.

4.5 LOCATION SPECIFIC REQUIREMENTS

Location-specific ARARs are limits placed on the concentration of hazardous substances or the conduct of activities solely because they occur in certain locations. These may restrict or preclude certain remedial actions or may apply only to certain portions of a site. Examples of location-specific ARARs which pertain to the IM/IRA are federal and state siting laws for hazardous waste facilities (40 CFR 264.18, fault zone and floodplain restrictions), and federal regulations requiring that actions minimize or avoid adverse effects to wetlands (40 CFR Part 6 Appendix A and 40 CFR Parts 230-231).

More specifically, in addition to the requirements described above, pertinent location-specific ARARs include: Colorado requirements for siting of hazardous waste facilities and wastewater treatment facilities (Colorado Revised Statute 25-15-101, 203, 208, 302 and 25-8-292, 702, respectively), National Historic Preservation Act requirements for preservation of significant articles and historic properties (36 CFR Parts 65 and 800, respectively), federal critical habitat protection requirements (50 CFR Parts 200, 402 and 33 CFR Parts 320-330), and federal requirements for the protection of fish and wildlife resources (40 CFR 6.302).

A summary of location-specific ARARs which the IM/IRA will attain to the greatest extent practicable is presented in Table 4.4.

4.6 PERFORMANCE, DESIGN, OR OTHER ACTION SPECIFIC REQUIREMENTS

Performance, design, or other action-specific requirements set controls or restrictions on particular kinds of activities related to management of hazardous substances or pollutants. These requirements are not triggered by the specific chemicals present at a site, but rather by the particular IM/IRA evaluated as part of this plan. Action-specific ARARs are technology-based performance standards, such as the Best Available Technology (BAT) standard of the Federal Water Pollution Control Act. Other examples include RCRA treatment, storage, and disposal standards. Action-specific ARARs, which the IM/IRA will attain to the greatest extent practicable, are included in Table 4.5. Solar pond sludges and precipitate from the Building 910 flash evaporators will be treated under pondcrete operations. Therefore, RCRA LDR [40 CFR Part 268.40] requirements are not relevant and appropriate to the scope of this IM/IRA. RCRA LDR requirements will be considered in the final SEP remediation decision process.

As explained in the National Contingency Plan (see 55 FR 8666) OSHA requirements for worker protection in hazardous waste operations and emergency response (29 CFR 1910.120) are applicable to workers involved in hazardous substance-related activities, as well as other OSHA requirements related to specific circumstances or activities. These requirements must be satisfied, however, the requirements are not environmental in nature, and therefore are not considered ARARs.

TABLE 4-1 POTENTIAL CHEMICAL SPECIFIC ARARs/TBCs FOR PARAMETERS AT OPERABLE UNIT NO.4, SOLAR EVAPORATION PONDS AND INTERCEPTOR TRENCH SYSTEM STATE SURFACE WATER QUALITY STANDARDS

NOTE: Units are ug/l, unless otherwise specified

		Statewide Standards (a)							Segment 5 Classification and Water Quality Standards (b)(7)			
		Tables A,B Carcinogenic/ Noncarcinogenic (2)	Table C Aquatic Life			CDH/WQCC Tables I,II,III (9)			Table 1 Additional Organic Chemical Standards	CDH/WQCC Stream Segment Table		Table 2 Radionuclides
Parameter	Type		Acute Value	Chronic Value	State-Wide Radionuclide Standards	Acute Value (2)	Chronic Value (2)	Domestic/ Agricultural Std (3)/(6)		Acute Value	Chronic Value	
Total Dissolved Solids	Indicator											
Bicarbonate	Anion											
Chloride	Anion							250000/		3	3	
Cyanide	Anion					5	5	1000/200				
Fluoride	Anion							2000				
N as Nitrate+Nitrite	Anion							10000/				
N as Nitrite	Anion					SS	SS	1000/10000		1,000	1,000	
Sulfate	Anion							250000/		250,000	250,000	
Aluminum	Metal					950	150					
Antimony	Metal											
Arsenic	Metal					360	15	50/100		50		
Barium	Metal									1,000		
Beryllium	Metal							100				
Cadmium	Metal					10.78(1)	1.21(1)	10/10		10.78(1)	1.21(1)	
Calcium	Metal											
Cesium	Metal											
Chromium	Metal											
Chromium III	Metal					1,850.9(1)	220.6(1)	50/100		50		
Chromium VI	Metal					16	11	50/100		16	11	
Copper	Metal					19.09(1)	12.64(1)	200		19.09(1)	12.64(1)	
Iron	Metal						1,000				300 (diss)	
Lead	Metal					108.7(1)	4.34(1)	50/100		108.7(1)	4.34(1)	
Lithium	Metal											
Magnesium	Metal											
Manganese	Metal						1,000	50 (dis)/200			50 (diss)	
Mercury	Metal					2.4	0.1		2.0/			
Molybdenum	Metal											
Nickel	Metal					978.5(1)	101.4(1)	200 ug/l		978.5(1)	101.4(1)	

TABLE 4-1 POTENTIAL CHEMICAL SPECIFIC ARARs/TBCs FOR PARAMETERS AT OPERABLE UNIT NO.4, SOLAR EVAPORATION PONDS AND INTERCEPTOR TRENCH SYSTEM STATE SURFACE WATER QUALITY STANDARDS

NOTE: Units are ug/l, unless otherwise specified

		Statewide Standards (a)							Segment 5 Classification and Water Quality Standards (b)(7)			
		Tables A,B	Table C Aquatic Life			CDH/WQCC Tables I,II,III (9)			Table 1	CDH/WQCC Stream Segment Table		Table 2
Parameter	Type	Carcino-genic/ Noncarcin-ogenic (2)	Acute Value	Chronic Value	State-Wide Radionuclide Standards	Acute Value (2)	Chronic Value (2)	Domestic/ Agricul-tural Std (3)/(6)	Additional Organic Chemical Standards	Acute Value	Chronic Value	Radionuclides
Potassium	Metal											
Selenium	Metal					135 ug/l	17 ug/l	10/20 ug/l		10 ug/l		
Silver	Metal					TVS	TVS	50/		TVS	TVS	
Sodium	Metal											
Strontium	Metal											
Tin	Metal											
Vanadium	Metal											
Zinc	Metal					231.9(1)	45(1)	5000/2000		231.9(1)	45(1)	
Atrazine	Pesticide										3	
Americium 241	Radionuclide											0.05pCi/l
Cesium 137	Radionuclide											
Gross Alpha	Radionuclide											11 pCi/l
Gross Beta	Radionuclide											19 pCi/l
Plutonium 238+239+240	Radionuclide				15pCi/l							0.05pCi/l
Radium 226	Radionuclide											
Radium 228	Radionuclide											
Strontium 89,90	Radionuclide				8pCi/l							8 pCi/l
Tritium	Radionuclide				20,000pCi/l							500 pCi/l
Uranium (total)	Radionuclide					2,617.6 ug/l(1)	1,635 ug/l(1)					10 pCi/l
Uranium 233,234	Radionuclide											
Uranium 235	Radionuclide											
Uranium 238	Radionuclide											
Acetone	Volatile											
Carbon Tetrachloride	Volatile	5	35,200									
Methylene Chloride	Volatile											
Trichloroethylene	Volatile	5	45,000	21,900								

TABLE 4-1 POTENTIAL CHEMICAL SPECIFIC ARARs/TBCs FOR PARAMETERS AT OPERABLE UNIT NO.4, SOLAR EVAPORATION PONDS AND INTERCEPTOR TRENCH SYSTEM STATE SURFACE WATER QUALITY STANDARDS

NOTE: Units are ug/l, unless otherwise specified

		Statewide Standards (a)								Segment 5 Classification and Water Quality Standards (b)(7)			
		Tables A,B	Table C Aquatic Life		CDH/WQCC Tables I,II,III (9)				Table 1	CDH/WQCC Stream Segment Table		Table 2
Parameter	Type	Carcinogenic/ Noncarcinogenic (2)	Acute Value	Chronic Value	State-Wide Radionuclide Standards	Acute Value (2)	Chronic Value (2)	Domestic/ Agricultural Std (3)/(6)	Additional Organic Chemical Standards	Acute Value	Chronic Value	Radionuclides

EXPLANATION OF TABLE

CDH = Colorado Department of Health
TVS = Table Value Standard (hardness dependent), see Table III in (a)
WQCC = Water Quality Control Commission

(1) Calculated using an estimated average hardness of 108.1 mg/l of CaCO , based on the Background Geotechnical Characterization Report, EG&G, 1989.
(2) In the absence of specific, numeric standards for non-naturally occurring organics, the narrative standard is interpreted as zero with enforcement based on practical quantification levels (PQLs) as defined by CDH/WQCC or EPA
(3) All are 30-day standards except for Nitrate & Nitrite.
(4) Standard is for total trihalomethanes: chloroform, bromoform, bromodichloromethane, dibromochloromethane
(6) Ammonia, sulfide, chloride, sulfate, copper, iron, managanese, and zinc are 30-day standards, all others are 1-day standards.
(7) Segment 5 standards are goals
(9) Table I = physical and biological parameters
Table II = inorganic parameters
Table III = metal parameters
Values in Tables I, II, and III for recreational uses, cold water biota and domestic water supply are not included.

(a) CDH/WQCC, Colorado Water Quality Standards 3.1.0 (5 CCR 1002-8) 1/15/1974; amended 9/30/1989
(b) CDH/WQCC, Classifications and Numeric Standards for S. Platte River Basin, Laramie River Basin, Republican River Basin, Smoky Hill River Basin 3.8.0 (5 CCR 1002-8) 4/6/1981; amended 2/15/1990

TABLE 4-2 POTENTIAL CHEMICAL SPECIFIC ARARs/TBCs FOR PARAMETERS AT OPERABLE UNIT NO.4, SOLAR EVAPORATION PONDS AND INTERCEPTOR TRENCH SYSTEM FEDERAL SURFACE WATER QUALITY STANDARDS

NOTE: Units are ug/l, unless otherwise specified

		SDWA Maximum Contaminant Level (a)	SDWA Maximum Contaminant Level Goal (a)	CWA AWQC for Protection of Aquatic Life (d)		CWA Water Quality Criteria for Protection of Human Health (d)	
Parameter	Type			Acute Value	Chronic Value	Water and Fish Ingestion	Fish Consumption Only
Total Dissolved Solids	Indicator			SS	SS	250,000	
Bicarbonate	Anion						
Chloride	Anion						
Cyanide	Anion			2.2	5.2	200	
Fluoride	Anion	4,000; 2,000*	4,000				4,000
N as Nitrate+Nitrite	Anion	10,000(b)	10,000(b)				
N as Nitrite	Anion	1,000(b)	1,000(b)				
Sulfate	Anion						
Aluminum	Metal						
Antimony	Metal			9000	1600	146	45000
Arsenic	Metal	50				0.0022	0.0175
Barium	Metal	1,000				1,000	
Beryllium	Metal			130	5.3	0.0068	0.117
Boron	Metal						
Cadmium	Metal	10/5(b)	5(b)	3.9(3)	1.1(3)	10	
Calcium	Metal						
Chromium	Metal	50/100(b)	100(b)				
Chromium III	Metal			1,700	210	170,000	3,433,000
Chromium VI	Metal			16	11	50	
Cesium	Metal						
Copper	Metal		1,300(c)	18(3)	12(3)		
Iron	Metal				1,000	300	
Lead	Metal	50*	0(c)	82(3)	3.2(3)	50	
Lithium	Metal						
Magnesium	Metal						
Manganese	Metal					50	100
Mercury	Metal	2	2	2.4	0.012	0.144	0.146
Molybdenum	Metal						

TABLE 4-2 POTENTIAL CHEMICAL SPECIFIC ARARs/TBCs FOR PARAMETERS AT OPERABLE UNIT NO.4, SOLAR EVAPORATION PONDS AND INTERCEPTOR TRENCH SYSTEM FEDERAL SURFACE WATER QUALITY STANDARDS

NOTE: Units are ug/l, unless otherwise specified

		SDWA Maximum Contaminant Level (a)	SDWA Maximum Contaminant Level Goal (a)	CWA AWQC for Protection of Aquatic Life (d)		CWA Water Quality Criteria for Protection of Human Health (d)	
Parameter	Type			Acute Value	Chronic Value	Water and Fish Ingestion	Fish Consumption Only
Nickel	Metal			1,400(3)	160(3)	13.4	100
Potassium	Metal						
Selenium	Metal	10/50(b)	50(b)	260	36	10	
Silver	Metal	50	100*	4.1(3)	0.12	50	
Sodium	Metal						
Strontium	Metal						
Tin	Metal						
Vanadium	Metal						
Zinc	Metal			120(3)	110(3)		
Atrazine	Pesticide						
Americium 241	Radionuclide						
Cesium 137	Radionuclide						
Gross Alpha	Radionuclide	15 pCi/l					
Gross Beta	Radionuclide	4 mrem/yr					
Plutonium 238+239+240	Radionuclide						
Radium 226	Radionuclide	5					5
Radium 228	Radionuclide	5					5
Strontium 89,90	Radionuclide						
Tritium	Radionuclide						
Uranium (total)	Radionuclide						
Uranium 233,234	Radionuclide						
Uranium 235	Radionuclide						
Uranium 238	Radionuclide						
Acetone	Volatile						
Carbon Tetrachloride	Volatile	5	0	35,200(1)		0.4**	6.94**
Methylene Chloride	Volatile						
Trichloroethylene	Volatile	5	0	45,000(1)	21,900(1)	2.7**	80.7**

TABLE 4-2 POTENTIAL CHEMICAL SPECIFIC ARARs/TBCs FOR PARAMETERS AT OPERABLE UNIT NO.4, SOLAR EVAPORATION PONDS AND INTERCEPTOR TRENCH SYSTEM FEDERAL SURFACE WATER QUALITY STANDARDS

NOTE: Units are ug/l, unless otherwise specified

				CWA AWQC for Protection of Aquatic Life (d)		CWA Water Quality Criteria for Protection of Human Health (d)	
Parameter	Type	SDWA Maximum Contaminant Level (a)	SDWA Maximum Contaminant Level Goal (a)	Acute Value	Chronic Value	Water and Fish Ingestion	Fish Consumption Only

EXPLANATION OF TABLE

* MCL for lead was deleted in (c), effective November 1991

** Human health criteria for carcinogens reported for three risk levels. Value presented is the 10-5 risk level.

AWQC = Ambient Water Quality Criteria
CWA = Clean Water Act
SDWA = Safe Drinking Water Act
SS = species specific

(1) criteria not developed; value presented is lowest observed effects level (LOEL)
(2) total trihalomethanes: chloroform, bromoform, bromodichloromethane, dibromochloromethane
(3) hardness dependent criteria
(4) pH dependent criteria (7.8 pH used)
(5) Criteria is for dichloroethene

(a) EPA National Primary and Secondary Drinking Water Regulations, 40 CFR 141 and 40 CFR 143 (as of May 1990)
(b) EPA National Primary and Secondary Drinking Water Regulations, 40 CFR Parts 141, 142 and 143, Final Rule (1/30/91), effective July 30, 1992
(c) EPA National Primary Drinking Water Regulations, 40 CFR Parts 141 and 142, Final Rule (6/7/91), effective November 6, 1991
(d) EPA, Quality Criteria for Protection of Aquatic Life, 1986

TABLE 4-3 PROPOSED CHEMICAL SPECIFIC ARARs/TBCs FOR PARAMETERS AT OPERABLE UNIT NO.4, SOLAR EVAPORATION PONDS AND INTERCEPTOR TRENCH SYSTEM

NOTE: Units are ug/l, unless otherwise specified; Radionuclides are pCi/l

Parameter	Type	Maximum Concentration in Surface Water(1)	ARAR	TBC	ARAR Reference	Comment	Hazard Quotient/ Cancer Risk*
Total Dissolved Solids	Indicator	16,000 mg/l	250 mg/l		CWA AWQC Water and Fish Ingestion Standard.		No oral RFD/not considered an oral carcinogen
Bicarbonate	Anion	350 mg/l			No Standard		No oral RFD/not considered an oral carcinogen
Chloride	Anion	763 mg/l		0.005U mg/l	WQCC Surface Water Standard; Site-Specific Inorganic Standard is TBC.	Standard (3.0) is below detection limit. TBC defaults to detection limit.	No oral RFD/not considered an oral carcinogen
Fluoride	Anion	73 ppm					
Cyanide	Anion	37.8 mg/l		0.005 mg/l	WQCC Surface Water Standard; Site-Specific Inorganic Standard is TBC.		HQ < 1.0
N as Nitrate+Nitrite	Anion	3,205 mg/l		10 mg/l(1)	SDWA MCL [40 CFR 141.51(b)] is TBC		No oral RFD/not considered an oral carcinogen
N as Nitrite	Anion	724 mg/l		1 mg/l	WQCC Surface Water Standard; Site-Specific Inorganic Standard is TBC.		2.9E-01/not considered an oral carcinogen
Sulfate	Anion	784 mg/l		250 mg/l	WQCC Surface Water Standard; Site-Specific Inorganic Standard is TBC.		No oral RFD/not considered an oral carcinogen
Aluminum	Metal	5,000		150	WQCC Surface Water Standard; Aquatic Life Standard is TBC		No oral RFD/not considered an oral carcinogen
Antimony	Metal	142	146		CWA AWQC Water and Fish Ingestion Standard.		HQ = 1 @ 11 ug/l
Arsenic	Metal	16.4	50		SDWA MCL [40 CFR 141.11(b)]		HQ = 1 @ 35 ug/l
Barium	Metal	202	1,000		SDWA MCL [40 CFR 141.11(b)]		4.1E-01/not considered an oral carcinogen
Beryllium	Metal	100	5U		CWA AWQC Water and Fish Ingestion Standard.	Proposed ARAR Standard C0.0068 (ug/l) is below detection limit. ARAR defaults to detection limit.	2.9E-02/8.4E-05
Cadmium	Metal	150	10	5(2)	SDWA MCL [40 CFR 141.11(b)]		2.9E-01/not considered an oral carcinogen
Calcium	Metal	462 mg/l			No Standard		No oral RFD/not considered an oral carcinogen
Cesium	Metal	50			No Standard		
Chromium	Metal	30.30	50		SDWA MCL [40 CFR 141.11(b)]	Analytical result is total chromium	No oral RFD/not considered an oral carcinogen
Chromium III	Metal	----		50	WQCC Surface Water Standard; Site-Specific Metal Standard is TBC.	Analytical result is total chromium	1.4E-03/not considered an oral carcinogen
Chromium VI	Metal	----		11	WQCC Surface Water Standard; Site-Specific Metal Standard is TBC.	Analytical result is total chromium	1.6E-02/not considered an oral carcinogen
Copper	Metal	308		25U	WQCC Surface Water Standard; Site-Specific Metal Standard is TBC.	Standard (12.6ug/l)(3) is below detection limit. ARAR defaults to detection limit.	No oral RFD/not considered an oral carcinogen

TABLE 4-3 PROPOSED CHEMICAL SPECIFIC ARARs/TBCs FOR PARAMETERS AT OPERABLE UNIT NO.4, SOLAR EVAPORATION PONDS AND INTERCEPTOR TRENCH SYSTEM

NOTE: Units are ug/l, unless otherwise specified; Radionuclides are pCi/l

Parameter	Type	Maximum Concentration in Surface Water(1)	ARAR	TBC	ARAR Reference	Comment	Hazard Quotient/ Cancer Risk*
Iron	Metal	1,550.00		1,000(300)	WQCC Surface Water Standard; Site-Specific Metal Standard is TBC.	Dissolved iron in parentheses.	No oral RFD/not considered an oral carcinogen
Lead	Metal	3.6	50	5U(4)	SDWA MCL [40 CFR 141.11(b)]	Standard (4.34ug/l)(3) is less than detection limit. ARAR defaults to detection limit.	No oral RFD/not considered an oral carcinogen
Lithium	Metal	84.10 mg/l			No Standard		No oral RFD/not considered an oral carcinogen
Magnesium	Metal	181 mg/l			No Standard		No oral RFD/not considered an oral carcinogen
Manganese	Metal	334		1,000(50)	WQCC Surface Water Standard; Site-Specific Metal Standard is TBC.	Dissolved manganese in parentheses.	2.9E-01(1.4E-02)not considered an oral carcinogen
Mercury	Metal	0.4	2		SDWA MCL [40 CFR 141.11(b)]		HQ = 1 @ 11 ug/l
Molybdenum	Metal	122			No Standard		HQ = 1 @ 140 ug/l
Nickel	Metal	200		101.4(3)	WQCC Surface Water Standard; Site-Specific Metal Standard is TBC.		1.4E-01/not considered an oral carcinogen
Potassium	Metal	791 mg/l			No Standard		No oral RFD/not considered an oral carcinogen
Selenium	Metal	17.0	10		SDWA MCL [40 CFR 141.11(b)]		No oral RFD/not considered an oral carcinogen
Silver	Metal	82	50		SDWA MCL [40 CFR 141.11(b)]		
Sodium	Metal	2,940 mg/l			No Standard		No oral RFD/not considered an oral carcinogen
Strontium	Metal	3,870			No Standard		No oral RFD/not considered an oral carcinogen
Tin	Metal	155			No Standard		
Vanadium	Metal	8.4			No Standard		4.1E-01/not considered an oral carcinogen
Zinc	Metal	116		45	WQCC Surface Water Standard; Site-Specific Metal Standard is TBC.		6.4E-03/not considered an oral carcinogen
Americium 241	Radionuclide	5.5		0.05 pCi/l	WQCC Surface Water Standard; Site-Specific Radionuclide Standard is TBC		No oral RFD/3.3E-07
Cesium 137	Radionuclide	0.2+/-0.5			No Standard		/170 ug/l=1E-4 Risk
Gross Alpha	Radionuclide	2,400	15 pCi/l		SDWA MCL [40 CFR 141.15(b)]		No oral RFD/NA
Gross Beta	Radionuclide	3,900	4 mrem/yr		SDWA MCL [40 CFR 141.16]		No oral RFD/NA
Plutonium 239	Radionuclide	240	15 pCi/l		WQCC Surface Water Standard; State-Wide Radionuclide Standard		No oral RFD/8.8E-05
Radium 226	Radionuclide	4.4+/-0.8	5 pCi/l		SDWA MCL [40CFR 141.15(a)]	SDWA MCL is for Radium 226 & 228	/1E-5 Risk
Radium 228	Radionuclide	5.3+/-4.0	5 pCi/l		SDWA MCL [40CFR 141.15(a)]	SDWA MCL is for Radium 226 & 228	/1E-5 Risk
Strontium 90	Radionuclide	0.44+/-0.62	8 pCi/l		WQCC Surface Water Standard; State-Wide Radionuclide Standard		No oral RFD/5.5-06

TABLE 4-3 PROPOSED CHEMICAL SPECIFIC ARARs/TBCs FOR PARAMETERS AT OPERABLE UNIT NO.4, SOLAR EVAPORATION PONDS AND INTERCEPTOR TRENCH SYSTEM

NOTE: Units are ug/l, unless otherwise specified; Radionuclides are pCi/l

Parameter	Type	Maximum Concentration in Surface Water(1)	ARAR	TBC	ARAR Reference	Comment	Hazard Quotient/ Cancer Risk*
Tritium	Radionuclide	3,200	20,000 pCi/l		WQCC Surface Water Standard; State-Wide Radionuclide Standard		No oral RFD/2.3-05
Uranium (total)	Radionuclide	206.8		40 pCi/l	WQCC Surface Water Standard; State-Wide Radionuclide Standard		No oral RFD/1.1-04
Uranium 233,234	Radionuclide	780					
Uranium 235	Radionuclide	36					
Uranium 238	Radionuclide	900					
Atrazine	Pesticide	13 ppb					
Acetone	Volatile	80			No Standard		2.9E-03/not considered an oral carcinogen
Carbon Tetrachloride	Volatile	11	5		SDWA MCL [40 CFR 141.61(a)]		2.0E-01/7.6E-06
Methylene Chloride	Volatile	71 ppb					
Trichloroethylene	Volatile	5	5		SDWA MCL [40 CFR 141.61(a)]		No oral RFD/6.5E-07

EXPLANATION OF TABLE

(1) Maximum compound concentrations determined from available data
(2) EPA National Primary and Secondary Drinking Water Regulations, 40 CFR Parts 141, 142 and 143, Final Rule (1/30/91), effective July 30, 1992
(3) Calculated using and estimated average hardness of 108.1 mg/l of CaCO , based on the Background Geotechnical Characterization Report, EG&G, 1989
(4) Current MCL for Lead (50 mg/l) was deleted in 56 FR 26560, 6/7/91 (effective 11/6/91)

* Hazard Quotient is calculated with the following equation: (ARAR or TBC ug/l)*(0.001 mg/ug)*(2 liters/day)/(70 kg)*(Chronic Oral Reference Dose mg/kg/day)
Carcinogen risk = (ARAR or TBC ug/l)*(0.001 mg/ug)*(2 liters/day)*(Carcinogenic Slope Factor kg-days/mg)*(350 days/year)*(30 years)/(70 kg)*(365 days/year)*(70 years)
Radionuclide carcinogenic risk = (ARAR or TBC pCi/l)*(2 liters/day)*(Carcinogenic Slope Factor (1 pCi/l))*(350 days/year)*(30 years)
Chronic oral reference doses (RFDs) and Carcinogenic Slope Factors taken from EPA 1990

TABLE 4.4
ANALYSIS OF LOCATION-SPECIFIC ARARs
FOR INITIAL REMEDIAL ACTIONS AT OPERABLE UNIT NO. 4, SOLAR EVAPORATION PONDS AND INTERCEPTOR TRENCH SYSTEM

LOCATION	CITATION	REQUIREMENT	ARAR TYPE*	COMMENTS
Fault zones	40 CFR 264.18(a)	RCRA regulations specify that hazardous waste treatment, storage, or disposal must not take place within 200 feet of a Holocene fault.	R&A	No faults displaced during Holocene times exist within 200 feet of this site.
Flood plain	40 CFR 264.18(b)	Any RCRA treatment, storage, or disposal facility which lies within a 100-year floodplain must be designed, constructed and operated to avoid washout.	R&A	This site is not located within a 100-year floodplain.
Siting of hazardous waste disposal sites	Colorado Hazardous Waste Act, Sections 25-15-101, 203, 208, 302	Outlines siting criteria for hazardous waste disposal sites.	R&A	Although the proposed action involves the treatment of water rather than disposal of hazardous wastes, these criteria are considered in the siting of the unit.
Siting of wastewater treatment facilities	Colorado Water Quality Control Act Section 25-8-202 and 25-8-702	CDH Water Quality Control Division must approve locations of wastewater treatment facilities.	R&A	Applicable to domestic wastewater treatment facilities, relevant and appropriate to the proposed action.
Siting within an area where action may cause irreparable harm, loss, or destruction of significant articles.	36 CFR Part 65, National Historic Preservation Act	Planned actions must avoid threatening significant scientific, prehistorical, historical, or archeological data.	Applicable	Proposed activities will not threaten significant scientific, historic, prehistoric, or archeological artifacts.
Siting on or near historic property owned or controlled by Federal agency.	36 CFR Part 800, National Historic Preservation Act	Action to preserve historic properties; planning of action to minimize harm to National Historic Landmarks, included in or eligible for the National Register of Historic Places	Applicable	Proposed activities will not disturb known or suspected historic sites.

TABLE 4.4 (continued)
ANALYSIS OF LOCATION-SPECIFIC ARARs
FOR INITIAL REMEDIAL ACTIONS AT OPERABLE UNIT NO. 4, SOLAR EVAPORATION PONDS AND INTERCEPTOR TRENCH SYSTEM

LOCATION	CITATION	REQUIREMENT	ARAR TYPE*	COMMENTS
Siting on critical habitat of endangered or threatened species, includes the Migratory Bird Treaty Act (MTBA) and the Bald and Golden Eagle Protection Act (BEPA).	50 CFR Parts 200, 402 33 CFR Parts 320-330 50 CFR Ch.1 (10.13) 50 CFR Part 22	Action to conserve endangered or threatened species.	Applicable	Proposed activities will not adversely affect endangered or threatened species. There are no potential Platte River drainage impacts regarding activities related to the Interim Measure/Interim Remedial Action (IM/IRA) at Operable Unit 4 (OU4). Related activities for the OU4 IM/IRA consist of changing the present evaporation system (i.e., use of the solar evaporation ponds) to the use of forced evaporation utilizing flash evaporators in the 910 building. Ground water will continue to be collected by the interceptor trench system (ITS) and instead of being discharged to the solar ponds will be routed to temporary storage tanks and subsequently treated by the flash evaporators. No net changes in discharge to the Platte River Drainage system are anticipated from implementation of the IM/IRA for OU4.
Wetlands	40 CFR Part 6, Appendix A	Actions must minimize the destruction, loss, or degradation of wetlands, as defined by Executive Order 11990, Section 7. .	Applicable	Proposed activities will not adversely affect wetlands.

TABLE 4.4 (continued)
ANALYSIS OF LOCATION-SPECIFIC ARARs
FOR INITIAL REMEDIAL ACTIONS AT OPERABLE UNIT NO. 4, SOLAR EVAPORATION PONDS AND INTERCEPTOR TRENCH SYSTEM

LOCATION	CITATION	REQUIREMENT	ARAR TYPE*	COMMENTS
	40 CFR Parts 230, 231	Actions must not discharge dredged or fill material into wetlands without permit.	Applicable	Proposed activities will not adversely affect wetlands.
Area affecting stream or river.	40 CFR 6.302	Action must protect fish or wildlife.	Applicable	Proposed action will be protective of potentially affected fish and wildlife resources.

* The ARAR types designated reflect the application status of each requirement when preparation of this IM/IRA began. In response to these requirements, investigations were performed and the results are indicated in the Comments column which reflect the lack of any location-specific ARAR requirements which would preclude the proposed activity.

TABLE 4-5
ANALYSIS OF ACTION SPECIFIC ARARs
FOR REMEDIAL ACTIONS AT OPERABLE UNIT 4, SOLAR EVAPORATION PONDS AND INTERCEPTOR TRENCH SYSTEM

Action	Requirement	Prerequisite	Citation	ARAR	Comments
Treatment	Hazardous Waste must be treated to meet treatment standard or using specific technology.	Waste must be identifiable as hazardous per 40 CFR Part 261	RCRA Sections 3004(d)(3), (e)(3) 42 U.S.C. 6924(d)(3), (e)(3)	Applicable	Placement of excavated soil (from storage tanks implacement location) on-site or transportation of soil off-site for disposal must be treated to attain levels achievable by best demonstrated available treatment technologies before being land-disposed. If soil and debris and not hazardous waste, EPA policy is that LDR is generally not relevant and appropriate, per EPA.
Hazardous Waste Generation	Standards applicable to generators including waste accumulation, recordkeeping, container labelling, manifesting, etc.	Waste must be identifiable as hazardous per 40 CFR Part 261	40 CFR Part 262	Applicable	Wastes generated in proposed action may be identifiable as hazardous wastes. An example may include excavated soils from storage tanks implacement location. R&A if wastes are not hazardous.
Hazardous Waste Transportation	Hazardous waste shipment off-site is subject to DOT regulations, manifesting, recordkeeping, and discharge cleanup, etc.	Wastes must be identifiable as hazardous per 40 CFR Part 261.	40 CFR Part 263	Applicable	Wastes identifiable as hazardous must comply with applicable hazardous waste requirements for off-site shipment. R&A if not hazardous.
Excavation/ Consolidation	Consolidation in storage piles/storage tanks will trigger storage requirements.	Movement of hazardous waste (listed or characteristic) from one unit or area of contamination into another. Consolidation within a unit or area of contamination does not trigger applicability.	40 CFR Part 264 Subpart L/40 CFR Part 264 Subpart J	Applicable	RCRA requirements for storage in waste piles or tanks are applicable to interim storage of excavated soil destined for consolidation or off-site disposal.
	Placement on or in land outside unit boundary or area of contamination will trigger land disposal requirements and restrictions.		40 CFR 268 (Subpart D)	R&A	Soil excavated during installation is subject to land disposal restrictions for wastes if placement occurs outside the area of contamination. Requirements are applicable for RCRA hazardous waste; R&A if not RCRA hazardous waste.
Treatment or Storage in Tanks	Tanks must have sufficient shell strength (thickness), and, for closed tanks, pressure controls, to assure that they do not collapse or rupture.	RCRA hazardous waste (listed or characteristic), held for temporary period before treatment, disposal, or storage elsewhere, (40 CFR 264.10) in a tank.	40 CFR 264.190	R&A	Applicable to treatment and storage tanks used in treating or containing water contaminated with hazardous waste. R&A if units would be excluded under RCRA, such as wastewater treatment units or if wastes are not RCRA hazardous waste.
	Waste must not be incompatible with the tank material unless the tank is protected by a liner or by other means.		40 CFR 264.191	R&A	
	New tanks or components must be provided with secondary containment.		40 CFR 264.193	R&A	

TABLE 4-5 (continued)
ANALYSIS OF ACTION SPECIFIC ARARs
FOR REMEDIAL ACTIONS AT OPERABLE UNIT 4, SOLAR EVAPORATION PONDS AND INTERCEPTOR TRENCH SYSTEM

Action	Requirement	Prerequisite	Citation	ARAR	Comments
Treatment or Storage in Tanks (cont.)	Tanks must be provided with controls to prevent overfilling, and sufficient freeboard maintained in open tanks to prevent overtopping by wave action or precipitation.		40 CFR 264.194	R&A	
	Inspect the following: overfilling control, control equipment, monitoring data, waste level (for uncovered tanks), tank condition, above-ground portions of tanks, (to assess their structural integrity) and the area surrounding the tank (to identify signs of leakage).		40 CFR 264.195	R&A	
	Repair any corrosion, crack, or leak.		40 CFR 264.196	R&A	
	At closure, remove all hazardous waste and hazardous waste residues from tanks, discharge control equipment and discharge confinement structures.		40 CFR 264.197	R&A	
	Store ignitable and reactive waste so as to prevent the waste from igniting or reacting. Ignitable or reactive wastes in covered tanks must comply with buffer zone requirements in "Flammable and Combustible Liquids Code," Tables 2-1 through 2-6 (National Fire Protection Association, 1976 or 1981).		40 CFR 264.198	R&A	
Container Storage (On-Site)	Containers of hazardous waste must be: • Maintained in good condition;	RCRA hazardous waste (listed or characteristic) held for a temporary period before treatment, disposal, or storage elsewhere, in a container (i.e., any portable device in which a material is stored, transported, disposed of, or handled) (40 CFR 264.10).	40 CFR 264.171	Applicable	RCRA container storage requirements are applicable if hazardous wastes are stored, R&A if stored wastes are not RCRA hazardous wastes.
	• Compatible with hazardous waste to be stored; and		40 CFR 264.172		
	• Closed during storage (except to add or remove waste).		40 CFR 264.173		

TABLE 4-5 (continued)
ANALYSIS OF ACTION SPECIFIC ARARs
FOR REMEDIAL ACTIONS AT OPERABLE UNIT 4, SOLAR EVAPORATION PONDS AND INTERCEPTOR TRENCH SYSTEM

Action	Requirement	Prerequisite	Citation	ARAR	Comments
Container Storage (On-Site) (cont.)	Inspect container storage areas weekly for deterioration.		40 CFR 264.174		
	Place containers on a sloped, crack-free base, and protect from contact with accumulated liquid. Provide containment system with a capacity of 10% of the volume of containers of free liquids. Remove spilled or leaked waste in a timely manner to prevent overflow of the containment system.		40 CFR 264.175		
	Keep containers of ignitable or reactive waste at least 50 feet from the facility's property line.		40 CFR 264.176		
	Keep incompatible materials separate. Separate incompatible materials stored near each other by a dike or other barrier.		40 CFR 264.177		
	At closure, remove all hazardous waste and residues from the containment system, and decontaminate or remove all containers, liners.		40 CFR 264.178		
Off-Site Treatment Storage or Disposal	In the case of any removal or remedial action involving the transfer of any hazardous substance or pollutant or contaminant off-site, such hazardous substance or pollutant or contaminant shall only be transferred to a facility which is operating in compliance with section 3004 and 3005 of the Solid Waste Disposal Act (or where applicable, in compliance with the Toxic Substances Control Act or other applicable Federal law) and all applicable State requirements. Such substance or pollutant or contaminant may be transferred to a land disposal facility only if the President determines that both of the following requirements are met:		SARA section 121(d)(2)(C)	Applicable	Applicable to the off-site treatment, storage, or disposal of wastes generated during on-site remedial actions.

TABLE 4-5 (continued)
ANALYSIS OF ACTION SPECIFIC ARARs
FOR REMEDIAL ACTIONS AT OPERABLE UNIT 4, SOLAR EVAPORATION PONDS AND INTERCEPTOR TRENCH SYSTEM

Action	Requirement	Prerequisite	Citation	ARAR	Comments
Off-Site Treatment Storage or Disposal (cont.)	• The unit to which the hazardous substance or pollutant or contaminant is transferred is not releasing any hazardous waste, or constituent thereof, into the ground water or surface water or soil. • All such releases from other units at the facility are being controlled by a corrective action program approved by the Administrator under subtitle C of the Solid Waste Disposal Act.				
	Wastes must be treated using technology or to concentration level by best demonstrated available technology (BDAT) for each hazardous constituent in the waste, prior to land disposal.	Wastes must be identifiable as hazardous per 40 CFR Part 261	40 CFR Part 268	Applicable	Applicable to wastes, other than treated effluent, such as treatment sludge, excavated soils, used treatment materials. Also applicable to on-site land disposal or "placement" outside the area of contamination. R&A if not RCRA hazardous waste.
Discharge of Treatment System Effluent	Use of best available technology (BAT) economically achievable is required to control toxic and non-conventional pollutants. Use of best conventional pollutant control technology (BCT) is required to control conventional pollutants. Technology-based limitations may be determined on a case-by-case basis.		40 CFR 122.44	R&A	
U.S. EPA Ground-Water Protection Strategy	The strategy includes guidelines on classifying ground water for EPA decisions affecting ground water protection and corrective actions. Criteria include ecological importance, replaceability, and vulnerability consideration.	The protection strategy does not involve applicable ARARs but does contain policy statements to be considered.		TBC	This strategy is to be considered regarding ground water remedial alternatives for Operable Unit 4.

TABLE 4-5 (continued)
ANALYSIS OF ACTION SPECIFIC ARARs
FOR REMEDIAL ACTIONS AT OPERABLE UNIT 4, SOLAR EVAPORATION PONDS AND INTERCEPTOR TRENCH SYSTEM

Action	Requirement	Prerequisite	Citation	ARAR	Comments
National Ambient Air Quality	National ambient air quality standards have been set to attain and maintain primary and secondary standards to protect public health and the environment. Requirements include a major-source permit, prevention of significant deterioration permit, non-attainable area permit, and visibility permit.		CAA Section 109 and 40 CFR 50	R&A	Remedial actions at Operable Unit 4 that may result in new sources of air emissions include natural gas emissions from heat source for flash evaporator and excavation.
Radionuclide NESHAP	National Emission Standards for Hazardous Air Pollutants have been established to protect public health and the environment. Requirements include a permit for emissions of rads greater than 10% of the standards monitoring and inclusion in the effective dose equivalent calculation.		40 CFR 61 Subpart H	Applicable	It is highly likely that neither a permit nor monitoring will be required because the emissions of radionuclide will be too small.
New Source Performance Standards	Standards for new sources of air emissions. Requirements are source-specific.	Need to determine if these standards apply to potential remedial actions.	CAA Section III	R&A	
Transportation of Hazardous Materials	Specific DOT requirements exist for labeling, packaging, shipping papers/manifesting, and transporting by rail, aircraft, vessel, and highway.		49 CFR 100-199	Applicable	Applicable to wastes or materials shipped off-site.
Worker Safety	Occupational Safety and Health program for DOE contractor employees at government-owned contractor-operated facilities.		OSHA, 29 CFR 1910.120; DOE 5483.1A	TBC	
Emergency Planning, Preparedness, and Response for Operations	Provide coordination direction of planning, preparedness, and response to operational emergencies in which there is a potential for personal injury, destruction of property, theft, or release of toxic, radioactive, or other hazardous material which present a potential threat to health, safety, or the environment.		NCP, 40 CFR 300;' DOE 5500.2	TBC	

ANALYSIS OF ACTION SPECIFIC ARARs FOR REMEDIAL ACTIONS AT OPERABLE UNIT 4, SOLAR EVAPORATION PONDS AND INTERCEPTOR TRENCH SYSTEM

Action	Requirement	Prerequisite	Citation	ARAR	Comments
General Environmental Protection Program	Establishes environmental protection program requirements, authorities,and responsibilities for DOE operations for ensuring compliance with federal and state environment protection laws and regulations, federal executive orders, and internal department policies.		DOE 5400.1	TBC	
Environmental Compliance Issue Coordination	Establishes DOE requirements for coordination of significant environmental compliance issues.		DOE 5400.2A	TBC	
Hazardous and Radioactive Mixed Waste Program	Establishes DOE hazards and radioactive mixed waste policies and requirements and implements RCRA.		DOE 5400.3	TBC	
Radiation Protection	Establishes radiation protection standards and requirements including occupationally related exposure of individuals in controlled areas.		DOE 5480.1	TBC	
Packaging and Transportation of Hazardous Materials, Hazardous Substances, hazardous wastes, and radioactive materials	Establishes requirements for packaging and transportation.		DOE 5480.3	TBC	
Comprehensive Environmental Response, Compensation and Liability Act Program	Establishes basic requirements for implementation of the Superfund at DOE facilities.		DOE 5480.14	TBC	
Environmental Protection Safety, and Health Protection Information Reporting Requirements	Establishes requirements and procedures for reporting information having environmental protection, safety, or health significance for DOE operations.		DOE 5484.1	TBC	

TABLE 4-5 (continued)
ANALYSIS OF ACTION SPECIFIC ARARs
FOR REMEDIAL ACTIONS AT OPERABLE UNIT 4, SOLAR EVAPORATION PONDS AND INTERCEPTOR TRENCH SYSTEM

Action	Requirement	Prerequisite	Citation	ARAR	Comments
Radioactive Waste Management	Establishes policies and guidelines by which DOE manages radioactive waste, waste byproducts, and radioactively contaminated surplus facilities.		DOE 5820.2A	TBC	

5.0 EXPLANATION OF SIGNIFICANT CHANGES TO THE IM/IRA

Significant changes which change or alter this IM/IRA may result based on comments received by the public, EPA or the State. DOE will respond to comments which change or alter the selected remedy and will included those responses in the Final Decision Document for this IM/IRA. Comments have not been received that require a change in the selected remedy.

6.0 PUBLIC COMMENT AND RESPONSIVENESS SUMMARY

6.1 COMMUNITY INVOLVEMENT

The Rocky Flats Plant is developing a Community Relations Plan to involve the public in the decision-making process as it relates to the environmental restoration activities. The plan will meet the community relations requirements of the Resource Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), and the DOE/EPA/CDH draft Inter-Agency Agreement (IAG) for Environmental Restoration (ER) Program activities. Activities under the plan are also intended to meet requirements of the National Environmental Policy Act (NEPA).

While RCRA, CERCLA, and the IAG provide the basis for the Community Relations Plan, the plan is tailored to the concerns and needs of the community expressed during a series of interviews with nearly 100 local citizens. The interview participants also suggested community relations activities that would help the public become better informed about environmental cleanup at the plant and ensure early citizen involvement in the decision making process.

In the meantime, the plant continues efforts already in place to inform the public and to solicit input regarding environmental restoration activities. For the Proposed Interim Measures/Interim Remedial Action Plan (IM/IRA) for the Solar Evaporation Ponds (SEPs) (Operable Unit No. 4) specifically, presentations were made to the surrounding municipalities and to the Rocky Flats Environmental Monitoring Council. A public comment period for the IM/IRA was open from September 9 to November 9, 1991. A presentation of the proposed plan was also provided at the public comment meeting on October 30, 1991, at the Westminster City Park Recreation Center, Westminster, Colorado.

Citizens were notified of the availability of the document, the 60-day public comment period, and the public comment meeting through newspaper, radio, and direct mail announcements. A fact sheet describing the remediation area and the proposed plan was also mailed to approximately 1,500 individuals and organizations on the Rocky Flats mailing list.

Other ongoing public information efforts include the periodic Rocky Flats Environmental Restoration Update, an active speakers bureau for civic and educational organizations and tour programs for groups and individual citizens. The Community Relations Division also responds to numerous inquiries and requests for information about plant activities.

Four public reading rooms, which provide public access to environmental restoration documents, are maintained by the DOE, the EPA, the CDH, and the Rocky Flats Environmental Monitoring Council. The DOE Public Reading Room is located in the Front Range Community College Library in Westminster, Colorado.

6.2 RESPONSES TO COMMENTS RECEIVED DURING THE PUBLIC COMMENT PERIOD

The public comment period for the OU4 IM/IRA Plan for the SEPs was from September 9 to November 9, 1991. Written comments were received during this period. In addition, a Public Comment Meeting was held on October 30, 1991, at the Westminster Recreation Center. The table below lists the major IM/IRA issues addressed in the comments and provides a reference to the comment numbers by issue. In addition, each issue listed in the table is briefly summarized below to provide the reader with an overview of public concerns with regard to the Proposed OU4 IM/IRA.

ISSUE	COMMENTS REFERRING TO ISSUE
Basis for Decision Document	63
Site History and Enforcement Activities	11
Contaminants of Concern	21, 30, 60, 61, 62, 66, 73, 79, 80, 82, 85, 86, 87, 89, and 99
Community Participation	15 and 105
Scope/Role of IM/IRA	4, 8, 24, 42, 65, and 97
Site Risks	7, 9, 19, 20a, 20b, 29, 44, 46a, 52, 70, 72, 74, 83, 84, 92, 100, 101, 107, 110, 111, 112, and 113
Selected Remedy	16, 2a, 2b, 6, 10, and 25
ARARs	46b, 47a, 47b, 48, 49, 50, 51, 53, 55, 67, 106, 114, and 115
Performance & Design Requirements	1a, 3, 5, 14, 15, 26, 27, 28, 31, 32, 33, 34, 36, 37, 38, 39, 40, 45, 57, 58, 59, 64, 68, 69, 76, 77, 78, 81, 90, 98, 102, and 103
General Comments	12, 13, 16, 17, 18, 20a, 20c, 22, 23, 35, 41, 43, 54, 56, 71, 75, 88, 91, 93, 94, 95, 96, 108, and 109

Basis for Decision Document

The purpose for this IM/IRA decision document is to present pertinent information for the selected remedy activities needed to comply with the Agreement in Principle, concerning closure of the SEPs. The decision is based on the administrative record for OU4 and is deemed a necessary component for continued closure activities of the SEPs.

Concern was expressed by EPA over some of the terminology used in the document. Recommended terminology changes have been made.

Site History and Enforcement Activities

Several commentors suggested rewording to clarify the regulatory jurisdictions that apply to the environmental restoration activities at the Rocky Flats Plant, and the SEPs in particular. Appropriate rewording has been incorporated into the document.

Contaminants of Concern

Commentors requested more information concerning site characteristics and characterization of the ITS and SEPs liquids. In response to these comments, additional site characterization data have been included, and all available waste stream characterization data have been summarized or provided.

There were also several commentors who were concerned about the use of current analytical data. While DOE shares these concerns, the risks associated with not implementing the IM/IRA remedy are far greater than the risks associated with utilizing the existing data for treatment system selection. Monitoring of treatment system effluent and emissions will provide the necessary degree of monitoring necessary to ensure on-site worker and off-site public safety.

Community Participation

EPA suggested some rewording to reflect that no remedial action will commence at the SEPs without approval of this document. These wording changes have been incorporated.

Scope of IM/IRA

There was a significant amount of confusion among commentors on the scope of this IM/IRA document. The activities proposed in this IM/IRA are necessary to meet the requirements of the AIP for closure of the SEPs. This IM/IRA addresses only the treatment system for dewatering of the SEPs, and does not address the pondcrete operations (other than for informational purposes) or the remediation of OU4.

Another IM/IRA may be needed to comply with the IAG requirements pertaining to remediation of OU4. Several sections of the document have been reworded to better define the scope of this IM/IRA.

Site Risks

Numerous commentors requested that additional risk characterization and assessment work be performed to address migration of contaminants in ground water, surface water and in air. These additional activities are to be performed as part of the IAG mandated RFI/RI activities. The IM/IRA risk characterizations only need to address risks associated with the treatment system.

Selected Remedy

The comments were directed predominantly at the pondcrete process and the handling of sludges. The IM/IRA is not intended to address pondcrete operations, establishes conditions to allow those operations to commence. Information was provided on the handling of sludges under wet conditions. This provides an efficient means of handling and reduces potential exposure to dust.

ARARs

Commentors had questions on the intent of the IM/IRA to meet ARARs, and the categories in which certain standards may fall. The responses indicate that it is generally the intent of this document to meet ARARs. Information is provided concerning where certain standards may be categorized.

Performance & Design Requirements

Numerous comments were received concerning performance and design requirements. Many addressed the function of the system and its relation to the environment. Information is provided describing the function of the system. Specific questions on design elements were presented to address issues of performance or safety. A Waste Analysis Plan is provided that addresses analytical issues.

General

General comments spanned a broad range of issues. Many addressed language changes or requested more information that was generally readily implemented. Most comments and resolutions resulted in a clarification of the IM/IRA.

6.2.1 Verbal Comments Received During the Public Meeting

Several comments were presented at the public meeting. Most of them were also presented in writing later in this document. The verbal comments include the name and address of the person presenting the comment along with their comment(s) and corresponding responses.

Commentor: Jim Stone
1160 Pierce Street, #316
Lakewood, Colorado

Comment 1a:

". . . why aren't they operating as solar evaporation ponds?"

Response to Comment 1a:

The SEPs are no longer in operation because they have leaked in the past. The SEPs must now be dried out so that closure activities can proceed.

Comment 2a:

Summary - It seems the ponds should be dry if you aren't continuing to recharge them with continued operations.

Response to Comment 2a:

Pond 207-A is essentially dry. The only addition of water to Pond 207-A is through precipitation. ITS water is stored in Pond 207-B North, until the IM/IRA is approved.

Commentor: Ken Korkia
Rocky Flats Cleanup Commission
1738 Wynkoop, Suite 302
Denver, Colorado 80202

Comment 1b:

Perhaps what we see as the most glaring defect in this document is that it doesn't make a distinct discussion of the pondcrete situation at the plant and we would have liked to have seen some data included as to exactly how much pondcrete will be produced by this evaporation process. And, we tried to use what information was included in the summary and it said that there would be a 1/50 reduction factor and that was listed. We applied that to the approximately 8 million gallons of water to be sent to the evaporators and that would give us approximately 160,000 gallons of waste that would be generated. Then, we would add this to the amount of residues that would be generated from the interceptor trench system water. Then, we also have to add that to the pondcrete that will be produced from the residues that are actually in the solar ponds right now. And, so that we would like to see these figures and we would appreciate it if they would have been included with the plan because we still have problems with this pondcrete system.

Response to Comment 1b:

Pondcrete operations are not thoroughly discussed in the OU4 IM/IRA since this document presents information regarding actions required **before** such operations can continue to be implemented. This information is stated in Section 1.0 of the OU4 IM/IRA.

Comment 2b:

And, we understand that you have called in experts through Halliburton & Associates to come in and help you with this situation and we hope that pondcrete will be a solution and that it if is not, then we would like to see some other alternative and maybe a discussion of alternatives. In the light of alternatives, we also understand that there's still a problem with the Nevada Test Site as being a receptacle for the pondcrete wastes and we were wondering if there would be any type of an alternative plan for the storage of the pondcrete waste should the Nevada Test Site not be available.

Response to Comment 2b:

At this time, information is not available which supports an alternative site to the Nevada Test Site for disposition of pondcrete waste. Again, this IM/IRA is not for the pondcrete operations, but for actions required to allow pondcrete operations to resume.

Comment 3:

There was also not adequate reference in the plan as to how long it will take to accomplish. And, I did see in the presentation tonight that it would be approximately five to seven years that this system would be operational.

Response to Comment 3:

This IM/IRA is expected to operate through 1995.

Comment 4:

One of the other things that's curious about this is the fact that this is called an Interim Measure/Interim Remedial Action, but then we are to distinguish it from the interim measure that was described in the IAG, and we were just wondering why this sort of false label was given to this action and we would like further comment on this. The fact that there was mention made in the plan if there would be a no action alternative, but then nothing was said about any other alternatives and we had assumed for an interim measure for any type of remedial action when you have these proposals come out that there would be some mention of alternatives. But, you do eventually mention alternatives, but you state, "In the event that specific quality requirements are not obtained by the proposed system, additional treatment units will be evaluated and incorporated into the treatment system as needed to meet or exceed performance requirements." Well, this leads us to believe that the alternatives may not be available at this time and thus explaining their lack of inclusion in this plan and we would like some clarification on that, whether there really are alternatives to this program, and if there are not, then it doesn't seem like it's a true interim remedial action because these alternatives have not been explained.

Response to Comment 4:

This IM/IRA document was prepared in accordance with the Rocky Flats Interagency Agreement and applicable State and Federal guidance. This IM/IRA is for the necessary dewatering of the SEPs. The IM/IRA referenced in the IAG is for remediation of applicable environmental media in OU4, and is more encompassing than this IM/IRA document. Consideration of a "No Action" alternative is inconsistent with the AIP and IAG, and was dismissed for these activities because the ponds must be dewatered in order to proceed with partial closure activities and final pond remediation.

Comment 5:

We also have a problem with the treatability studies that were conducted on the system. The fact that they were tested using simulated water and these tests were conducted down at the manufacturer in Florida. And, so we were wondering about how exactly the simulated water was established. And then, we saw that the only data—or the most current data that was found in the plan was found on Table 2-1 which was the 1988 data. So, we were wondering how we can have full confidence in this treatability system when it was using 1988 data. We would like to have seen it done using 1991 data. So, we will be very interested to see the results of the treatability and performance studies that are conducted once the system is operational at the plant site.

Response to Comment 5:

Further treatability system data, of pond characterization (liquids and sludges) will be available at a future date. This data will be made available to the Rocky Flats Commission.

Comment 6:

We also are curious about the discussion of the risk characterization that no mention was made about the possible public and worker exposure due to windblown dispersion of sediments from the ponds once they are dry. We've had it explained to us before that actually there is still some moisture left in the ponds, but then we can imagine the system as the water begins to recede, that surely there must be some dry areas exposed on the embankments and what is preventing the wind from coming up and driving sediments into the air and dispersing them both on the plant site to the workers and then off the plant site to the general public? And, so we would like to see discussion of this risk included in the plan.

Just a minor technical point, there was a statement made that there will be "a vapor compression unit and three multiple effect/multiple stage flash evaporators." And then, the diagram on Figure 3-1 shows that there are three of the VC units and then three of the MEMS units and that would be one VC and one MEMS acting as a pair. And, so that's just a minor point, but it was rather confusing at first because you got the impression there was one VC unit, then there were three MEMSs coming off of it.

And, as I said, we will be submitting formal written comments, but I would like at this time to enter these as oral.

Response to Comment 6:

Section 2.6.1 provides an scenario of exposure pathways for ground water and airborne exposure routes for the proposed OU4 IM/IRA, by which compounds can be released from the SEPs and distributed to off-site receptors, or to workers. Assessment findings show the A2 pathway to be a negligible exposure route because of:

- Very low contaminant concentrations in the pond waters
- The small flux of contaminants released from pond waters
- The dispersion and dilution factors associated with airborne transport.

A second pathway, B1, shows that volatile and potentially nonvolatile compounds may be "flashed" (vaporization or particulate aerosolization) as they encounter the pressure differential of the flash evaporator tank. Once released, aerosolized compounds can enter the atmosphere by passing through the system vent apparatus. Once in the atmosphere, aerosolized compounds could be transported to off-site receptors or nearby workers by atmospheric dispersion. A high efficiency particulate air filter (HEPA) on the system vent is designed to remove aerosolized particulate matter before discharge to the environment.

Neither pathway is expected to present an appreciable exposure to the off-site public or workers. In addition, the process is performed on wet material, reducing particulate emissions.

Commentor: Ron Harlan
Boulder County

Mr. Harlan's comments did not require a response.

6.2.2 Written Comments Received During the Public Comment Period

Written comments were received from public agencies, private organizations and individual citizens, during the public comment period for the OU4 IM/IRA. Written comments were received from the EPA and its contractor PRC, CDH, the City of Arvada, the Rocky flats Cleanup Commission, and two individual citizens. The following sections provide responses to the written comments.

6.2.2.1 EPA Comments

Comment 7 - Executive Summary:

> *The last sentence of this section mentions that this remedy is expected to pose a minimal risk to the health of workers, the general public, and the environment. An explanation of why this is expected needs to be included.*

Response to Comment 7:

The text has been modified to further explain the lack of risk to workers, the public and the environment based on the closed loop system of the flash evaporator, the very low concentrations of contaminants present, the lack of completed exposure pathway, etc.

Comment 8 - Section 1.2, Statement of Basis and Purpose:

> *Elaborate on why this IM/IRA is necessary. Suggest adding the following: "This IM/IRA is necessary to stabilize the operable unit to allow for subsequent remediation of Operable Unit 4."*

Response to Comment 8 - Section 1.2, Statement of Basis and Purpose:

This IM/IRA is a necessary prerequisite to removing and stabilizing the wastes which are currently in the SEPs, and to prevent additional liquids from accumulating in the SEPs. Additional explanation has been incorporated into the document. Section 1.2 will begin with; "This IM/IRA is necessary to stabilize waste in the SEPs so that subsequent characterization and remediation can be completed for this site."

Comment 9 - Section 1.3, Assessment of the Site:

This section needs to discuss the risks associated with the solar ponds prior to any remedial action taking place. This should include identification of pathways, receptors and the risks associated with the nature of contamination. The ponds constitute a current source of contaminant migration to ground water and one of the reasons for conducting this IM/IRA is to remove the source so as to prevent continuation of ground water contamination.

Response to Comment 9:

It is out of the scope of this document to discuss the risks associated with the solar ponds prior to any remedial action taking place. This will be performed in the RFI/RI document for the Solar Ponds.

Comment 10 - Section 1.5, Description of the Selected Remedy:

It is our understanding that Pond 207-C also requires dewatering. If this is not the case, please present this reasoning.

Response to Comment 10:

Pond 207-C will not be dewatered because of the high level of salts in the water. All water and sludge will be solidified for disposal by the subcontractor.

Comment 11 - Section 2.2, Site History and Enforcement Activities:

Revise as follows: ". . . CERCLA regulations apply when hazardous ~~materials~~ substances have been released from abandoned or uncontrolled hazardous waste sites as well as releases at Federal Facilities. CERCLA regulations also apply to releases from operating facilities that may pose a threat to human health and/or the environment. DOE, EPA, and the State of Colorado signed a Federal Facilities Agreement (also known as the IAG) under both RCRA and CERCLA which governs the environmental restoration activities at RFP, including this IRA. The environmental restoration activities ~~Some cleanup areas~~ at the RFP fall under the jurisdiction of both laws.

Response to Comment 11 - Section 2.2, Site History and Enforcement Activities:

The comment as stated above has been incorporated into Section 2.2.

Comment 12 - Table 2.1:

Pond 207-B South should be portrayed on this table.

Response to Comment 12 - Table 2.1:

Based on data recently obtained in June 1991, solar pond liquid and sludge characterization for Pond 207-B South has been included in Table 2.1. This data was not available at the time of publication of the IM/IRA document. The data was originally summarized in the 1988 closure plan information which did not include information the 207-B South pond.

Comment 13 - Section 2.3.2, Ponds 207-B North, Center, and South:

The ultimate disposition of the sludge and liners should be presented.

Response to Comment 13 - Section 2.3.2, Ponds 207-B North, Center, and North:

Please refer to Section 2.1 of the OU4 IM/IRA for comment resolution. Disposal of 207-B North, Center, South liner and sludge wastes were disposed to an off-site low-level radioactive waste disposal site.

Comment 14 - Section 2.3.3, Pond 20-7-C:

Show the data supporting the conclusions regarding concentrations in Pond 207-C.

Response to Comment 14:

The specific density data is:

- Nitrate 57,000-66,000 mg/L
- Specific gravity 1.316-1.348
- Total dissolved solids 300,000-510,000 mg/L

The data have been added to Section 2.33.

Comment 15 - Section 2.4, Community Participation:

Revise the following sentence to be consistent with §1.B.10 of Appendix I of the IAG: "DOE will not commence any ~~the operation of~~ remedial/corrective activities associated with this IM/IRA . . ."

Response to Comment 15 - Section 2.4, Community Participation:

In keeping with §I.B.10 of the IAG, the IM/IRA will be changed to precisely reflect its intent as follows: "DOE shall not commence any remedial/corrective activities associated with an IM/IRA until EPA and the State have approved the Final IM/IRA Decision Document and Responsiveness Summary."

Comment 16 - Table 2-2:

Where does this data values come from? A reference of the source of this data or the actual data needs to be presented.

Response to Comment 16 - Table 2-2:

These data were summarized from the data contained in the RFEDS, which are presented in Appendix A. The updates of the RFEDs data is in progress.

Comment 17 - Section 2.5, Scope and Role of the IM/IRA:

The first sentence of the second paragraph should read instead, "This IM/IRA is intended to be consistent with the final remedy . . ."

Response to Comment 17 - Section 2.5, Scope and Role of the IM/IRA:

Response stated above has been incorporated into OU4 IM/IRA Section 2.5 text.

Comment 18 - Section 2.5.1, Site and Local Hydrogeology:

This section needs to include more specifics regarding the following:
a. Classification of the ground water in both aquifers;
b. Use of the aquifer as a drinking water source and future potential; and
c. Leaching of the 207 ponds into the upper aquifer.

Response to Comments 18a, b, and c:

Issues of site characterization are not in the scope of the IM/IRA, but will be addressed in the RFI/RI Report for OU4.

Comment 19a - Section 2.6, Summary of Site Risks:

The risks being discussed are supposed to be those which the interim action addresses and reduces. The health effects associated with the operation of the flash evaporator system are incorrectly characterized as the site risks. Because this is an interim action, a qualitative risk analysis of the risks associated with the solar ponds is all that is required. This should include all the hazards posed if no remediation activity is conducted. Pathways, receptors and the nature of contamination need to be identified.

Response to Comment 19a:

Operation of the flash evaporator is a site risk and the health effects associated with its operation are appropriately included. Pathway analysis is provided by Figure 2-7. The risks associated with the solar ponds will be performed in its RFI document.

Comment 19b:

Revise 1st paragraph as follows: ". . . of the SEPs partial closure actions and to stabilize the operable unit by removing the source materials. As such, the IM/IRA . . . facilitate pondcrete operations, ~~and~~ site closure, and remedial action. The proposed actions . . ."

Response to Comment 19b:

Response stated above has been incorporated into text.

Comment 19c:

Revise 2nd paragraph as follows: ". . . to facilitate pondcrete operations, ~~and~~ site closure, and remedial action. The Summary of Site Risks . . ."

Response to Comment 19c:

Response stated above has been incorporated into text.

Comment 19d:

The discussion in 3rd paragraph raises many more questions than it answers. What is the basis for DOE's assumption regarding the ground water pathway? Where is the data? What about ground water interface with surface water. What about potential receptors? This paragraph should be dropped in favor of an acknowledgement that this IM/IRA is not intended to characterize or remediate the ground water, other than the ground water intercepted by the ITS. Ground water will be fully characterized and remediated as part of the full RI/FS process for OU4.

Response to Comment 19d:

The information provided in this section is included for the general understanding of the site risks, not as quantifiable statements. It is not the intent of this paragraph to imply that the IM/IRA will characterize and remediate all ground water origination in the solar ponds. As stated previously, characterization of the ground water/surface water interface shall be performed during the RFI/RI stage.

Comment 19e:

Revise 4th paragraph by deleting the first two sentences (see above comment).

Response to Comment 19e:

Response stated above will be incorporated into OU4 IM/IRA text.

Comment 20a - Section 2.6.1, Pathway Exposure Assessment:

The ITS is not capturing all the ground water flow. Ground water is migrating beyond the ITS. There may be a potential for on-site and off-site receptors. Therefore, the conceptual exposure pathways in figure 2-7 must address the ground water pathway as potential risk to on-site or off-site receptors.

Response to Comment 20a:

It is out of the scope of this document to address the ground water pathway as a potential risk to on-site or off-site receptors. Figure 2-7 describes the potential pathways created by the IM/IRA. Ground water will be fully characterized as part of the RFI/RI report.

Comment 20b:

If the HEPA filters for the system are installed on the building and not on the treatment units, then there may be a potential for workers exposure to any aerosolized particulate released from the units. This needs to be addressed and explained in this section.

Response to Comment 20b:

HEPA filters are to be installed on the process water holding tanks. The flash evaporator does not require a HEPA filter because it is a closed loop system.

Comment 20c:

Revise first sentence as follows: "The conceptual environmental exposure pathway for resulting from the proposed IM/IRA . . ."

Response to Comment 20c:

Response stated above has been incorporated into OU4 IM/IRA text.

Comment 20d - Figure 2-7:

Acknowledge that the ground water pathway/receptor is not determined and that the ITS only partially intercepts the contamination. Also, measures must be taken after the Case B Source to eliminate the potential for aerosol releases.

Response to Comment 20d:

The text supporting Figure 2.7 indicates that the ground water/pathway/receptor is only potentially complete. The intent of the Figure is not to indicate that the ITS is complete in intercepting all ground water. The potential for measurable aerosol release is limited by the very low concentrations of volatile organics/radionuclides present in the process water. The RFI/RI report will characterize leakage, if any.

Comment 21 - Section 2.6.2, Chemicals of Concern:

Analytical data of the pond water characterization needs to be included in this document. It is impossible to identify the chemicals of concern, radionuclides, and metals without having validated analytical data available.

Response to Comment 21 - Section 2.6.2, Chemicals of Concern:

Section 2.6.2, Table 2.1 has been revised to provide additional pond characterization data that were not available at the time the IM/IRA document was written.

Comment 22 - Section 2.6.2.2, Metals:

What is the source of the analytical values for metals presented in this table?

Response to Comment 22 - Section 2.6.2.2, Metals:

The analytical data presented in the revised tables (Tables 2.1-2.5) are from the 1988 SEPs Closure Plan and recent unpublished data collected during 1991.

Comment 23 - Section 2.6.4, Risk Characterization:

Delete the first sentence; the conclusion is not supported by data.

Response to Comment 23:

The three observations listed in this section support the qualitative statement included as the first sentence of this section.

Comment 24 - Section 3.0, Description and Analysis of Selected Remedy:

If the "No Action" alternative was evaluated, it should be discussed in much greater detail. Alternatively, delete the second and third sentences and replace with the following: "No other alternatives were evaluated since this remedy is limited in scope and is an interim action intended as a necessary initial step to facilitate remediation of OU4."

Response to Comment 24 - Section 3.0, Description and Analysis of Selected Remedy:

Agency comments as stated above, have been incorporated in Section 3.0, IM/IRA text.

Comment 25 - Section 3.1, Description of selected remedy:

What will happen to the sludges in the ponds? Describe how much will be removed, if any, and the ultimate disposition of any removed. Also describe what dust suppression measures will be taken after the ponds are dewatered.

Elaborate on the pondcrete and saltcrete processes and on what is meant by the "acceptance criteria." In addition, elaborate on what is meant by the "allowable TDS limit" and on what is meant by the "re-use criteria."

Response to Comment 25:

All sludges in the Solar Ponds will be removed and solidified by a cementation subcontractor. Approximately 5,000 cubic yards of sludge will be removed.

Comment 26 - Section 3.1.1, Treatment Systems Components:

This section needs to explain any safety/operation features of the treatment units which will be used in case of an overpressure in either the VC or the flash evaporator units. If a valve is to be used to equalize the differential pressure across the units, then there will be air emissions from the units which may contain contaminated particulates posing a potential threat to the workers' health and the environment. This needs to be addressed in this section. In addition, elaborate on the training that the operators will receive.

Response to Comment 26:

Details of these features have been added to the referenced section. The Scope of Training has also been added.

Comment 27 - Section 3.1.1.1, Lower Level Building 910:

The tanks located in this area need to meet RCRA requirements before their use for storage. This section needs to explain what modifications are needed for the tanks to meet the RCRA requirements. Also, elaborate on how land when the tanks will be structurally and seismically qualified.

Response to Comment 27:

All six tanks have been inspected for RCRA compliance in accordance with 6 CCR Section 265-191 and for seismic qualification by a qualified professional engineer. Required actions have been incorporated into the installation plan and certification will be issued when the installation has been completed.

Comment 28 - Section 3.1.1.2, Process Description:

Where and how is the material retained in the duplex strainers and duplex filters to be disposed of? How much of this material is expected to be held up in the strainers and filters? This material may need to be handled as mixed waste.

This section mentions that the distillate tanks are going to be vented to the atmosphere. Is there any need for air emissions control devices associated with these tanks?

Response to Comment 28:

The disposition of the material from the strainers and filters has been incorporated in the text. The characterization of the input feed from the ITS and the Solar Ponds has been completed and a summary has been presented in Tables 2.1 and 2.2. The WAP will systematically analyze the input waste stream to assure no changes in characterization occur.

Comment 29 - Section 3.1.1.2, Process Description:

Is there a reason to be concerned about constituents released when the distillate tanks are vented?

Response to Comment 29:

No, input waste stream characterization has shown an insignificant level of volatile constituents which could carry over to the distillate surge tanks.

Comment 30 - Section 3.1.1.2, Process Performance:

This section needs to discuss acceptable levels of organics and radioactivity in the distillate.

Response to Comment 30:

Sample and Analysis, Appendix B, provides acceptable levels for all constituents.

Comment 31 - Section 3.1.1.2, Distillate Disposition Plan:

State that the distillate will meet all performance objectives/remediation criteria (identified in the ARAR section) before it is injected into the Raw Water Header.

Response to Comment 31:

The text has been modified per the comment.

Comment 32 - Section 3.1.1.2, Concentrate Disposition Plan:

Describe the disposition of the pondcrete/saltcrete.

Response to Comment 32:

The text has been modified to reflect the disposition of the saltcrete and pondcrete.

Comment 33 - Section 3.1.1.2, Flow, Level and Spill Control:

State why there will be no secondary containment for the surge tank. Also state that the distillate in the surge tank will meet all performance objectives and therefore a catastrophic release from the surge tank will not result in a release of contaminants that might threaten human health and the environment. Also, describe whether a catastrophic release will threaten the integrity of downstream physical structures.

Response to Comment 33:

Text has been modified per the comment.

Comment 34 - Section 3.1.1.3, Flow, Level and Spill Control:

The flow level controls of the tanks need to be automatic level controls. The tanks need to be designed with automatic pumps for transfer of liquids in case of a high level control.

Response to Comment 34:

Text has been modified per the comment.

Comment 35 - Section 3.1.1.3, Sampling and Analytical Schedule:

This section needs to justify using the same analytical parameters used for the Building 374 evaporators for analysis of pond water. Pond water characteristics are different from the water being treated in Building 374.

This document needs to present a list of the analytical parameters for which the produced distillate is going to be analyzed.

Revise 1st paragraph as follows: ". . . no adverse impact on the quality of the water discharged from the plant or emitted from cooling towers."

Paragraph a: Characterization of the pond water must be included in the IM/IRA decision document.

Paragraph c: Elaborate on the modifications that may be needed.

Paragraph d: The distillate must be monitored for all relevant hazardous constituents in order to show that the performance objectives have been met. These must be specified.

Table 3.1: Elaborate on what is meant by "Routine" frequency. Elaborate on what is meant by "Per analysis plan."

Response to Comment 35:

Response for the comment has been included in Appendix B and paragraph 3.1.1.1.4.

Comment 36 - Section 3.1.1.4, Operating Procedures:

This paragraph provides exceedingly little information. Provide references and elaborate on all of the procedures identified.

Response to Comment 36:

Text has been changed to reflect specific procedures.

Comment 37 - Section 3.1.1.4, Spill response:

Provide reference and elaborate on what is meant by the "spill response procedure."

Response to Comment 37:

Text has been changed to reflect the specific procedure.

Comment 38 - Section 3.1.2.1, Location of Tanks:

DOE has expressed verbally that the location of the surge tanks has changed. Where is the new location of the tanks?

Response to Comment 38:

The location of the tanks is as originally presented. Other sites were evaluated using geotechnical analyses. The original location provides the best siting.

Comment 39 - Section 3.1.3.2, Treatability Testing:

The treatability testing conducted with simulated pond water was only intended to study the performance of the evaporators in relation to alkalinity of the water. There has not been any test conducted to evaluate the performance of the evaporators for organics and radionuclides. At this point it is premature to draw any conclusions about expected distillate purity with regard to organics and radionuclides.

Response to Comment 39:

The performance will be measured at the trial run prior to full operation.

Comment 40 - Section 3.1.3.6, Assumptions, Uncertainties and Contingencies:

Describe how there is sufficient capacity in Pond A-3 to accommodate catastrophic failure of the tanks.

Response to Comment 40 - Section 3.1.3.6, Assumptions, Uncertainties and Contingencies:

The storage capacity of each proposed temporary surge tank is approximately 500,000 gallons. In the event of a catastrophic failure of one tank, the flow would enter North Walnut Creek upstream of Ponds A-1 through A-4. Ponds A-1 and A-2 are segregated from North Walnut Creek stream flow. As a result, any tank release would flow into Pond A-3. Pond A-3 has a maximum normal capacity of 14,110,000 gallons. Pond A-3 overflows to Pond A-4 in the event the normal maximum capacity is reached. Pond A-4 has a maximum normal capacity of 30,900,000 gallons.

Comment 41 - Section 3.1.4, Costs:

Clarify how the $8M estimated cost is consistent with the $55M and $24M estimates in the 5-Year Plan and the Site Specific Plan.

Response to Comment 41:

The cost of $8 million does not include the cost of processing the pond sludge into pondcrete, nor other associated program costs. This cost figure only includes the cost of evaporating the water.

Comment 42 - Table 3.2:

Provide a footnote identifying the expected duration of the O&M costs.

Response to Comment 42:

Footnote added.

Comment 43 - Table 3.3:

The final proposed decision document needs to include a schedule showing the specific dates for each of the activities to be conducted during this remedial action.

Response to Comment 43:

The duration of the activity was provided as a footnote to Table 3.3.

Comment 44 - Section 3.2.5, Short-term Effectiveness:

The last sentence states that the forced evaporators will be equipped with HEPA filters, thereby precluding the carry-over of radioactive particulate emissions. This addresses EPA's concern for the potential of radionuclides present in the distillate. However, DOE staff indicated verbally that *the only place in the system where HEPA filters are going to placed is at the vents of Building 910. This creates confusion which needs to be resolved. If the evaporators are not equipped with the HEPAs, then this document needs to explain why it is not necessary.*

This section also states that, in the case of a catastrophic failure of a temporary surge tank, contingencies exist to prevent off-site migration of potentially contaminated water. This section needs to describe what those contingencies are. Summarize them and provide a reference.

Describe how VOAs from SEP liquids (not just from the ITS) will be addressed.

A variety of procedures are identified in paragraph 5. Specify and elaborate on these procedures. Also, identify when the standard operating procedures will be developed.

Response to Comment 44:

Information provided in the diagram is correct. Contingency provisions are in place and contained within the Surface Water Management Plan.

Comment 45 - Section 3.2.6, Implementability:

2nd paragraph: Elaborate on how the storage and treatment systems "will be easily monitored to confirm performance." Elaborate on how the treatment system can be adjusted or modified.

3rd and 4th paragraphs: Define "administrative feasibility." Why are there no anticipated administrative feasibility problems or problems with availability of needed services and materials? Has DOE streamlined its procurement process for environmental restoration projects or otherwise taken steps to assure that environmental restoration commitments are met in a timely manner?

Response to Comment 45:

The required specifics have been added.

Comment 46a - Section 4.2, Compliance with ARARs and Protection of Human Health and the Environment:

3rd bullet: The NCP specifies that "[t]he 10^{-6} risk level shall be used as the point of departure for determining remediation goals . . ." Revise accordingly.

Response to Comment 46a:

Agency comments have been incorporated in Section 4.2.

Comment 46b:

2nd paragraph: Are ARARs to be met or not? If not, which ARAR waiver will be needed? The IM/IRA decision document must detail the ARARs that will be met. If ARARs cannot be met, then the decision document must identify an ARAR waiver for EPA approval. The paragraph's ambivalence with respect to ARAR compliance is inconsistent with §3.2.2.

Response to Comment 46b:

The text clearly indicates that every effort will be made to attain ARARs. The mention of an ARAR waiver is included as a possible alternative, not a given. As stated in the WAP for process water treatment, the distillate must meet stringent limits prior to release to the plant for raw water use.

Comment 47a - Section 4.3, Ambient or Chemical-specific requirements:

5th paragraph: Since the IM/IRA anticipates releases to the air, State and federal clean air regulations should also be examined. This should also be reflected in the tables at the rear of Chapter 4.

Response to Comment 47a:

Calculations performed for worst case tritium release indicate that the exposure to the public is well below the 0.1 mrem standard which requires a permit under 40 CFR 61.96 or effluent monitoring under 40 CFR 61.93(b)(4). Thus, federal clean air regulations will be met. There are no state radionuclide air regulations.

Comment 47b:

Discuss also that the IM/IRA is limited in scope and only those ARARs associated with the IM/IRA are evaluated. Specifically, those ARARs which are related to the effluent, sludge, air discharges and construction and operation of the treatment unit and tanks. All other ARARs, such as those related to ground water, will be addressed in the forthcoming ROD for OU4.

Response to Comment 47b:

Agency comments have been incorporated into this section.

Comment 48 - Section 4.3.1, Safe Drinking Water Act MCLs:

According to EPA policy and guidance, proposed regulations yield TBCs, final regulations not yet effective yield Relevant and Appropriate requirements, and final rules which are effective are Applicable requirements. Therefore, revise as follows: " . . . and will be regarded as applicable ~~relevant and appropriate~~ at that time. For purposes of . . . are, therefore, relevant and appropriate ~~proposed TBC~~ and are identified in Table 4.3." Table 4.3 must also be revised in accordance with these revisions.

Response to Comment 48 - Section 4.3.1, Safe Drinking Water Act MCLs:

Under the Safe Drinking Water Act, MCLs are for water at the tap. While the standards are not applicable, they are relevant and appropriate. The new MCLs remain TBC until they become ARAR.

Comment 49 - Section 4.3.2, RCRA Ground Water Protection Standards:

Revise as follows: " . . . RCRA (Subpart F) regulations are considered applicable ~~ARAR~~ for ground water remediation."

Describe how background concentrations are to be determined. If they have been determined, describe what they are and how they were determined.

Response to Comment 49 - Section 4.3.2, RCRA Ground Water Protection Standards:

Section 4.3.2 has been deleted from the document.

Comment 50 - Section 4.3.3, Colorado WQCC Standards for Surface Water:

Second paragraph: The logic in this paragraph is flawed. Site-specific standards may in fact be ARARs. However, they may also be waived. Therefore, revise the document to reflect appropriate state site-specific standards as ARARs, and propose ARAR waivers if necessary.

Response to Comment 50 - Section 4.3.3, Colorado WQCC Standards for Surface Water:

The standards discussed in this section are currently "goals" established by the Water Quality Control Commission. As such, these standards are "to be considered" (TBC) by regulatory agencies when evaluating activities which may have an impact on the classified waters. These particular site specific standards are neither applicable, nor relevant and appropriate as specified in the NCP.

Comment 51 - Section 4.3.5, CWA Ambient Water Quality Criteria (AWQC):

First and Second paragraphs: Since "AWQC may be considered relevant and appropriate," AWQC must be identified as relevant and appropriate in Table 4.3.

Second paragraph: The argument that a state standard not yet of general applicability is not an ARAR is false. It is an ARAR which might be waived. Revise accordingly.

Response to Comment 51 - Section 4.3.5, CWA Ambient Water Quality Criteria (AWQC):

In Table 4.3, AWQC is referenced as ARAR.

Revisions have been incorporated in 2nd paragraph as defined above.

Comment 52 - Section 4.3.6, Protection of Human Health and the Environment:

DOE must assure that the sum of the cancer risks are less than 10^{-4} (at least for those constituents where the detection limits are greater than the 10^{-4} level) and attempt to achieve a 10^{-6} level. Therefore, revise as follows: "With respect to carcinogens, cumulative cancer risk should be less than 10^{-6}, but no greater than 10^{-4} . . ."

Response to Comment 52:

Agency comments have been incorporated into this section.

Comment 53 - Section 4.5, Performance, Design, or other Action Specific Requirements:

LDR is relevant to the disposition of precipitate and pondcrete/saltcrete. Revise accordingly.

Provide a table which identifies and summarizes the performance standards (i.e., effluent concentrations) combining the most stringent ARARs, Hazard Quotients, and Risk concentrations which are protective. These standards would be applied to the distillate and to air releases. The distillate and air must be monitored to assess compliance with these standards.

Table 4.5, Environmental Impact of Federal Actions: The comment must be revised to state that EPA, CDH, and DOE have not reached an agreement on NEPA applicability to CERCLA/RCRA actions. It is EPA's position that NEPA is not required for activities undertaken under the IAG. Additionally, since EPA makes the final determination on ARARs to be applied to the site (see IAG Paragraph 107), the "R&A" ARAR determination must be changed to "TBC."

Response to Comment 53 - Section 4.5, Performance, Design, or other Action Specific Requirements:

Section 4.5, as stated, is correct according to the regulatory interpretation of RCRA LDR (40 CFR Part 468.40). Table 4-5 defines the regulatory parameters for remedial actions at OU4. The WAP summarizes performance standards.

6.2.2.2 PRC Environmental Management, Inc. Comments (EPA Contractor)

Comment 54 - General:

Characterization of the solar pond water is inadequate and needs to be more clearly presented. The report should present a complete chemical analysis of both the solar pond water, using the most recent characterization which is referenced but is not included, and the french drain water. This analysis should determine whether either source of water is a Resource Conservation and Recovery Act (RCRA)-regulated hazardous waste.

Response to Comment 54:

Current characterization data has been included in Tables 2.1 and 2.2.

Comment 55 - General:

Several applicable RCRA regulations regarding the handling and storage of hazardous wastes have not been addressed in this decision document, other than being listed as ARARs. For instance, 4- CFR 264 Subpart J requires that structural elements for tanks (such as closed tops, leak detection, and secondary containment), tank assessments, operations and maintenance plans, and response plans for the handling of accidental releases must be addressed before the tanks are put into use.

Response to Comment 55:

RCRA subparts regulations are addressed in Section 4.0, Identification and Analysis of ARARs, action-specific ARARs. This is the appropriate section to address the tank requirements. These regulations will be followed prior to any tanks used to store hazardous wastes from OU4. Several applicable RCRA regulations regarding the handling and storage of hazardous wastes have not been addressed in this decision document, other than being listed as ARARs. For instance, 40 CFR 264, Subpart J, requires that structural elements for tanks (such as closed tops, leak detection, and secondary containment), tank assessments, operations and maintenance plans, and response plans for the handling of accidental releases must be addressed before the tanks are put into use.

Comment 56 - General:

A schedule of deliverables should be provided outlining the project strategy, including a design schedule, start-up schedule and plan, health and safety plan, sampling plan, operations and maintenance plan, and a quality assurance and quality control (QA/QC) plan.

Response to Comment 56:

Various plans and implementation documents will be provided prior to actual implementation of the IM/IRA.

Comment 57 - Section 3.1 Description of Selected Remedy:

The re-use criteria that the distillate will be required to meet should be given.

Rationale: To be complete, treatment objectives should be listed in the report if they are referenced.

Response to Comment 57:

Criterion provided.

Comment 58 - Figure 3-3:

There are a filter and strainer downstream of the solar ponds which is shown on the conceptual flow diagram and discussed. The disposal of the spent filters or of the particulate caught in the strainer is not mentioned. This should be discussed.

Rationale: The spent filters and the particulate from the strainer will likely be highly concentrated with contaminants and may potentially be classified as a hazardous waste. Whether the disposal of these wastes will take place on-site or off-site, several ARARs would be applicable. For instance, the ARARs listed could all potentially be applicable for treatment, hazardous waste generation, hazardous waste transportation, and off-site treatment storage, or disposal. If the report does not indicate how these wastes are disposed of, compliance cannot be checked.

Response to Comment 58:

Filters and particulates determined to be hazardous waste will be disposed of appropriately in accordance with the provision of this document.

Comment 59 - Section 3.1.1.3, Sampling and Analytical Schedule Part a.:

The report discusses detailed characterization of the water and the parameters sampled as ". . . a union of the parameters obtained during the monthly sampling of the Building 374 evaporation distillate and the sampling of water discharged from the plant." However, this final parameter list is not provided in the report. The list should be part of this report.

Rationale: The report should stand on its own. The reader should not be required to research to determine the parameters that were sampled.

Response to Comment 59:

Text has been modified to address the response.

Comment 60 - Section 3.1.1.3. Sampling and Analytical Schedule Part d.:

Monthly water samples are to be taken from the 500,000-gallon distillate surge tank. Sampling should be done more frequently, especially during system start-up when the reliability of the flash evaporators may be in question.

Rationale: It is normal for plants to experience periods of upset when they are first brought into operation. A period of upset could go undetected if samples are collected only once a month.

Response to Comment 60:

During system start-up, the operating parameters will be stabilized and the conductivity verified to be less than 150 micro mho/cm prior to being delivered to the distillate batch tank.

Comment 61 - Section 3.1.1.3, Sampling and Analytical Schedule Part d.:

The report discusses the continuous sampling of distillate from the water tank for "a limited number of parameters (e.g., pH and nitrates)." The entire list of measured parameters should be provided.

Rationale: The appropriateness of a sampling system that is not described in detail cannot be determined.

Response to Comment 61:

WAP has been included in Appendix B.

Comment 62 - Table 3.1, Process Sampling Plan:

The analysis plan referenced in Table 3 remains unsubmitted.

Rationale: The appropriateness of a sampling plan that is not described in detail cannot be determined.

Response to Comment 62:

The WAP is included in Appendix B.

Comment 63 - Figure 3.5, Typical Tank Construction:

The storage tanks proposed for the french drain water should meet the design requirements under RCRA for containing a hazardous waste. French drain water is most likely to be considered to be a RCRA-regulated hazardous waste.

Rationale: The determination has not been made on whether the french drain water is a RCRA-regulated hazardous waste. Depending on the results of this evaluation, it may be necessary to design the french drain water storage tanks to meet regulations. These requirements would include *closed tops, proper secondary containment, and a leak detection system. The present design has only the leak detection system.*

Response to Comment 63. Figure 3.5, Typical Tank Construction:

Current storage tank design, meets the tank requirements of 6 CCR 1007-3, Part 264, Subpart J. Further discussion is required for comment resolution on regulation of water from the ITS, also known as the French Drain System.

Comment 64 - Figure 3-5, Typing Sump Construction:

The discharge method to be used from the sump should be clarified.

Rationale: It is unclear what will happen to leakage from the tank after it reaches the sump. Since the french drain water may be a RCRA-regulated waste, it is important to know how leakage is removed from the sump and how it is disposed of.

Response to Comment 64:

The purpose of the sump is to provide leak detection via a standpipe and electronic sensor. In the event of a leak, this tank will be pumped to an empty tank. One tank will remain empty to assure this can be done.

Comment 65 - 3.1.2.1, Location of Tanks, first paragraph, and 3.1.3.7, Closure of IM/IRA Structural Components:

The report should explain why the tanks will only be used until 1995.

Rationale: The document provides no explanation concerning the way french drain water will be treated after 1995. Temporary solutions often become permanent solutions, especially if there is no clear plan to do otherwise. As long as the design of the storage tanks does not meet RCRA regulations, this would be an unacceptable possibility.

Response to Comment 65:

The tank will be used until 1995 or the remedial investigation for OU4 is completed and the permanent solution identified. This permanent solution may or may not include the interim measure as contained in this document.

Comment 66 - General - Concentrations of Contaminants of the Solar Ponds:

The report should provide an accurate and consistent presentation of concentration of contaminants in the solar ponds.

Rationale: The discussion of process performance, feed water is described as having an average total dissolved solids (TDS) concentration of 5,000 ppm. When discussing treatability, the referenced feed supply is described as having a concentration of 10,000 ppm (pond average). The TDS concentration in pond 207-A is given as 127,000 ppm. The average TDS of water from the interceptor trench system is given as 4,560 mg/L. It is not clear if these variances are due to *inconsistencies in the data or to different peratingparameters. If it is due to different operating parameters, the report should show that the flash evaporators will handle such a wide variation.*

Response to Comment 66:

The TDS data presented has been updated to current values—it is noted that the 10,000 TDS was one of 16 parameters established for the performance test at Licon.

Comment 67 - 3.1.3.4 Management Waste, Second Paragraph:

The regulation Title 6 CCR Section 1007-3 Part 261.2 (e)(ii) should be included in the report in the ARARs section.

Rationale: If the regulation does allow for an exclusion, it may require a significant change in the handling of distillate water.

Response to Comment 67. 3.1.3.4 Management Waste:

This comment has been incorporated into the report.

Comment 68 - 3.1.3.6, Assumptions, Uncertainties and Contingencies, Second Paragraph:

Water percolating back into the ground water system is not a reasonable control measure if the temporary tanks holding french drain water fail, particularly if the french drain water is a RCRA-regulated waste.

Rationale: The water from the tanks would percolate into the water table downgradient from the french drain. There is no containment method for ground water contamination downgradient of the french drain.

Response to Comment 68 - 3.1.3.6, Assumptions, Uncertainties and Contingencies, Second Paragraph:

In the unlikely event that there is a catastrophic failure of one of the temporary storage tanks during their short operational life, there would need to be an evaluation made to determine whether there is any surface water, soil and/or ground water contamination. Due to the location of the tanks within the RFP, there would not be any imminent threat of contaminated ground water migrating off-site.

Comment 69 - 3.2.5 - Short Term Effectiveness, second paragraph:

The schedule for the development of standard operating procedures for the evaporation process should be further clarified.

Rationale: Unless there are discrete deadlines for the development of standard operating procedures, they may be left undone. This schedule should state when the procedures will be developed and by whom.

Response to Comment 69:

The text of Section 3.1.1.5 has been revised to address the comment.

Comment 70 - 3.2.5 - Short Term Effectiveness, second paragraph:

The report should be more specific regarding the applicable procedure concerning personal protective equipment.

Rationale: Applicable procedures should be provided in the health and safety plan. The schedule for the development of the health and safety plan should be referenced in the decision document.

Response to Comment 70:

The text of Section 3.1.1.5 has been revised to address the comment.

Comment 71 - Performance Design, or Other Action Specific Requirements:

The text states that solar pond sludges and precipitate from the Building 910 flash evaporators will be treated under pondcrete operations. The text further states that RCRA land disposal restrictions (LDRs) are not relevant and appropriate to the scope of this IM/IRA. The decision document should be revised to clarify that although treated (stabilized/solidified) sludges and precipitate generated during the IM/IRA will be subject to RCRA LDRs, these requirements are not being considered because pondcrete operations (including disposal) are not within the scope of this IM/IRA.

Rationale: As currently presented, the text implies that LDRs are not relevant and appropriate to the sludges and precipitate generated during the IM/IRA. However, these wastes are subject to LDRs.

Response to Comment 71 - Performance Design, or Other Action Specific Requirements:

Suggested wording has been incorporated into Section 4.5.

Comment 72 - National Ambient Air Quality:

The applicability of the national ambient air quality standards and other provisions in the 1990 amendments to the Clean Air Act to open tank emissions should be considered.

Rationale: Although the enforcement of the 1990 Amendments to the Clean Air Act is not clear, there are some elements which may constrain the plan to not have a top on the french drain water storage tanks. One of the provisions of the act is to include an initial list of hazardous air pollutants. Analytes which are on this list and in Table 2.2 (Summary of Selected Analytical Data, Interceptor Trench System Water) include bis (2-ethylhexyl) phthalate, carbon tetrachloride, chloroform, methylene chloride, pentachlorophenol, and radionuclides.

Response to Comment 72. National Ambient Air Quality:

Section 2.6.1, "Pathway Exposure Assessment," provides discussion of potential airborne transport as related to on-site worker and off-site airborne exposure. Based on the low concentrations of volatile organics in the ITPH and SEPs liquids (Table 2.1), it is not expected that utilization of open top tanks will pose an emissions problem.

6.2.2.3 CDH Comments

Comment 73 - Cover Page:

The most critical piece of information missing from the Decision Document are the analytical plan and standards for "raw water." The Summary of Pond Characteristics, Tritium has been measured as high as 3,000 pCi/Liter. It is unlikely that evaporation will separate Tritium into the concentrate. Tritium is a beta emitter with a half-life of 12.26 years. Raw water is used as process makeup, boiler blowdown or in cooling towers where Tritium is likely to be aerosolized or vaporized into the air. Once in the air, Tritium is likely to be inhaled by plant personnel where it can do the most damage. The "Division" will not approve the Decision Document until the "analytical plan" alluded to is submitted and approved by the Division and EPA.

Response to Comment 73:

The WAP is included as Appendix B. CDH is correct in assuming that some of the tritium in the "raw water" will volatilize. However, since tritium is an extremely weak beta emitter, the dose equivalent received by the off-site population has been calculated to be negligible, even in RME scenarios. Therefore, it is believed that no added on-site worker risk is produced by use of the "raw water" in the cooling towers.

Comment 74 - Section 2.6.1, Pathway Exposure Assessment:

Two additional exposure pathways which were not covered are catastrophic failure of one surge tank leading the failure of all three tanks and release of the contaminants in the sediments of the A series ponds to Great Western Reservoir, and the release of Tritium, and volatile organics into the atmosphere from the evaporator distillate which has been added to the raw water system.

Response to Comment 74:

It is not within the scope of the risk assessment to include catastrophic failure of process systems as part of the assessment process. All engineered systems at the Rocky Flats Plant are subject to Design Stage Safety Analysis. Therefore, it is unnecessary to include the pathways associated with catastrophic failure. Volatile organics have been detected in the solar evaporation pond water, but the concentrations are very low. The evaporation distillate could potentially contain these same volatile organics. However, the distillate is analyzed prior to addition to the raw water system. This distillate must meet SDWA standards or it is returned and reprocessed. The EPA has set an upper bound level of 20,000 pCi/L for tritium in surface water (WQCC Surface Water Standard for the protection of human health) based on a 70-year exposure scenario. The highest measured activity of ^3H detected in the solar pond water was 5,500 pCi/L. Therefore, the ingestion pathway for ^3H is not considered significant.

Although it is possible that the volatile organics and ^3H will evaporate and potentially impact a receptor, the very low concentrations of both the organics and the ^3H makes it highly unlikely that this exposure path could be completed.

Comment 75 - Section 3.0 Introduction:

It is not necessary to include even a passing reference to the "no action" alternative since it is not fully analyzed in this section.

Response to Comment 75 - Section 3.0 Introduction:

Discussion of a "no action" alternative is included in Section 3.0 to define why this alternative is not appropriate to satisfy closure activities and pond remediation. Its inclusion provides an important comparison between the selected remedy versus results of a "no action" alternative.

Comment 76 - Section 3.1 Description of the Selected Remedy:

The term "acceptance criteria" should have been defined. Other than Total Dissolved Solids (TDS), what are the other "re-use criteria" for the makeup water? This is important since the "re-use criteria" are not stated anywhere else in the document.

Response to Comment 76 - Section 3.1 Description of the Selected Remedy:

Second paragraph, line four, has been restated as: "The concentrate from the evaporators will be cemented in the pondcrete and/or saltcrete processes to meet the acceptance criteria for process specifications."

Second paragraph, line five, refers the reader to Section 3.1.1.3, Sampling and Analytical Schedule, or the WAP, which defines acceptance criteria for water quality (for distillates). Also, refer to Table 3.1, a summary of the process sampling plan.

Second paragraph, line seven, reads, "Distillate meeting re-use criteria (Section 3.1.3.4) will be reused as makeup water in the raw condensate systems on plant site."

Comment 77 - Section 3.1.1 Treatment System Components:

It is not completely clear that the "system" consists of three multiple-effect multiple-stage flash evaporators (MEMS), and that each MEMS has its own vapor compressor. "Main Floor Building 910 Process Room states "a vapor compressor and three evaporators." Should this read three vapor compressors and three evaporators?

Response to Comment 77 - Section 3.1.1 Treatment System Components:

This statement is correct, revisions have been made to Section 3.1.1 to more clearly identify system arrangement.

Figure 3-1 depicts the correct layout of the main floor of Building 910.

Comment 78 - Lower Level Building 910:

The second to the last sentence in the paragraph would be more informative if changed to read: "The secondary containment volume provided by the sealed floor and sump will be at a minimum as large as the volume of the largest tank , as required by 6 CCR 1007-3, Part 264 Subpart J for Hazardous Waste Tanks.

Response to Comment 78:

The text has been changed to comply with the intent of the comment.

Comment 79 - Flow Level and Spill Control:

If the distillate contains hazardous waste, i.e., organics and radionuclides, the distillate tank must also have secondary containment. If it can be demonstrated that the distillate in the 500,000 gallon tank does not contain hazardous waste before it is placed in the 500,000 gallon tank, then the tank need not conform to the regulatory requirement for secondary containment.

Response to Comment 79:

The distillate in the tank meets re-use criteria as presented in the Waste Analysis Plan (Appendix B).

Comment 80 - Process Sampling Plan:

This is the most deficient portion of the document and must be corrected before the "Division" will approve this IM/IRA. The "analysis plan" submitted to EPA and CDH must contain a list of all chemical constituents and parameters which will be measured and the corresponding "re-use criteria" or ARARs which will determine whether or not the distillate will be reprocessed or released into the raw water system.

Response to Comment 80:

The Waste Analysis Plan (Appendix B) contains a list of chemical constituents.

Comment 81 - 3.1.2.2 Equipment Description:

The thickness of the HDPE should be substituted for the word "liner". There term "HDPE liner" is easily associated with plastic trash bags.

It was agreed at several meetings by EPA, DOE, and CDH, that in order to meet the regulatory definition for double-walled tanks, the floor of the tank must be constructed of primarily "non-earthen materials", which meant that the concrete around the leak detection sump must be extended beyond the wall of the tank and not just a donut of concrete filled with earth in the middle. DOE had not determined if this material would be asphalt or concrete.

Response to Comment 81:

The thickness of the HDPE liner is presented in Section 3.1.2.2. Non-earthen material will cover the entire subgrade of the floor.

Comment 82 - 3.1.3.6 Assumptions, Uncertainties and Contingencies:

Six specific parameters for gross alpha, gross beta, plutonium, americium, tritium, and uranium must be tested in each batch of distillate. It is likely that some other "treatment unit" will be called for to remove volatile organics from the distillate.

Response to Comment 82:

Analytical parameters and their frequency of collection are contained in the WAP (Appendix B).

Comment 83 - Section 3.2.5 Short-Term Effectiveness:

Either the title or the contents of this section are erroneous. The generic risk assessment of the remedy in this section has nothing to do with the "effectiveness" of the project.

Response to Comment 83 - Section 3.2.5 Short-Term Effectiveness:

Section 3.2.5 has been changed to read, "Short-Term Impacts."

The first sentence has been rewritten as: "The short-term impacts of the selected remedy have been assessed considering potential risks to the general public, worker safety, and the environment. Potential risks are considered minimal during implementation of the IM/IRA."

Paragraph, has been deleted.

6.2.2.4 City of Arvada Comments

Comment 84:

The assumption is made that there is no human receptor exposed to ground water containing contaminants released from the Solar Evaporation Ponds (SEPs). However, we have concern that the contaminated ground and surface water may interface, thus contaminating surface water in North Walnut Creek. Rocky Flats should address this possible exposure pathway.

Response to Comment 84:

The IM/IRA document addresses proposed surface treatment. The potential exposure pathway that exists from the interface of surface water/ground water will be addressed in the RFI document for the solar evaporation ponds.

Comment 85 - Case A:

The statement is presented that pathway A2 is considered negligible in part due to the very low contaminant concentration in the pond waters. This statement is erroneous and conflicts with the tone of the document. There is significant contamination in the waters, if there were not, there would not be the concern with discharging existing contaminated waters to North Walnut Creek.

Response to Comment 85:

The fact is that the pond water does contain very low concentrations of contaminants (parts per billion for volatile organics, 1-5,000 pCi/L for tritium).

Comment 86 - Chemicals of Concern:

Information is presented that states that a "review of available analytical data suggests that very few compounds, characteristic of the SEPs are notably toxic to humans." Rocky Flats should provide specific detail on the compounds and their concentrations both toxic and non-toxic to humans.

Response to Comment 86:

Since this is a qualitative assessment of the chemicals of concern it is not believed that specific detail of the compounds toxic and carcinogenic effect on humans would add to the completeness of this document. The brief discussion of the toxicity assessment for these chemicals/radionuclides is deemed adequate for the scope of this document.

Comment 87 - Organics:

Rocky Flats needs to provide information on the concentrations of organic compounds, which are referred to in the document as not relevant, rather than dismissing them from further evaluation.

Response to Comment 87:

ITS analytical data have been included in Appendix A. All current analytical data concerning pond water concentrations have either been included or summarized in the document.

Comment 88:

Rocky Flats should address its air monitoring system in more detail, e.g., number of HEPA air filters used, stack monitoring, pollutants monitored, etc.

Response to Comment 88:

The WAP included in Appendix B addresses the water pollutants monitored. Since the flash evaporator is a closed system, no air monitoring is proposed. The process water holding tanks will have HEPA filters on them, but no air sampling is planned for these tanks, as the concentrations of volatile chemicals/radionuclides are very low.

Comment 89 - Distillate Disposition Plan:

Many references are made to collecting samples and analyzing them to determine if pollutant levels are low enough to discharge distillate. We have the following questions abut the sampling plan:

A. What are the distillate sampling parameters?

B. What are the action levels for release to the plant's raw water system?

C. What is the sample turn-around time and is it short enough to guarantee enough distillate storage capacity prior to approved release of distillate?

Response to Comment 89:

The sampling parameters and action levels have been included in the WAP which is part of the IM/IRA decision document. The storage capacity supports the sampling turnaround time.

Comment 90 - Alarms:

What procedures are included in the inspection process and procedures to assure that the alarms will operate in an emergency situation?

Response to Comment 90:

Alarm response is verified as operable during initial installation prior to operation and then periodically checked as part of the plant preventative maintenance system.

Comment 91 - Personnel Training:

Will the evaporator manufacturer provide training on how to collect samples to assure distillate is suitable for use within the raw water system? Who provides training on sampling of concentrate?

Response to Comment 91:

Training in the collection of samples is part of the basic job skills for the assigned operators and is further specified by published standard operating procedures. The sampling procedure is not a responsibility of the manufacturer but of RFP operations.

Comment 92 - Assumptions, Uncertainties and Contingencies:

The assumption is made that if a catastrophic failure of a tank occurs, the water will flow into North Walnut Creek and percolate back into the ground water system. Allowing water to percolate to the ground water is unacceptable. This procedure may contaminate ground water currently not contaminated. This will lead to more work in the future to decontaminate larger volumes of ground water.

Response to Comment 92:

Process controls for spill prevention are quite stringent for the evaporator system, (such as overflow tanks, secondary containment, numerous detection equipment) as they must meet strict state and federal environmental guidance. A discussion of site risks is included in Section 2.6, and provides an assessment of what would happen in the unlikely event a tank failure were to occur.

Comment 93 - Table 3.2:

Are personnel costs contained in the Operation & Maintenance Cost for Pumping and Treatment Systems?

Response to Comment 93:

The personnel costs are a major portion of the listed Operations and Maintenance Costs.

Comment 94 - General Comment:

Solid waste generation and disposal are concerns of both Rocky Flats and Arvada. To help reduce solid waste generation, we continue to encourage the Department of Energy and EG&G to double side copies of all information published for public review. Additionally, materials should be printed on recycled paper and efforts should be made to inform the public of these practices.

Response to Comment 94:

Depending upon project specifications, every effort will be made to comply with this comment. Printing text on both sides reduces paper usage, however can result in production difficulties in preparing the original volumes as well as subsequent copies. The Department of Energy has an effective paper recycling program in which copies of draft documents are recycled. Also, the space-and-a-half is used in these documents for ease of reading.

6.2.2.5 Rocky Flats Cleanup Commission Comments

General Comments

Comment 95 - General:

Perhaps the most glaring defect in this document is its lack of description surrounding the pondcrete operation at the plant. Given the problems that this operation has had in the past, the Cleanup Commission would like to have greater assurance that all technical problems have been solved and that pondcrete is a truly viable waste management solution.

The plan needs to include data as to how much pondcrete will be produced as a result of the evaporation process. If we were to use the 1/50th reduction factor listed, and apply it to the 8 M gallons of water to be sent to the evaporators, approximately 160,000 gallons of waste would be generated. One would still need to figure in the amount of residue that will be produced from the ITS water as well as the sludge that remains in the ponds. How much pondcrete will eventually be produced? How will this waste apply towards the storage limits? What are the contingencies for storage should the Nevada Test Sit remain closed to Rocky Flats waste?

Response to Comment 95:

The specific details of the pond sludge processing are not the topic of this IM/IRA. The process details include the contribution of the concentrate from the evaporators to the total volume to be processed.

Comment 96 - General:

There is no adequate reference in the plan as to how long it will take to accomplish. It is stated that the system will operate 100 days during its first year of operation. Given the maximum treatment capacity listed of 54,000 gallons per day and a total of 12 M gallons to treat, it would take 222 days to treat all the water. What are the projections for how long this operation will take to complete?

Response to Comment 96:

The system has been sized to evaporate 4 to 6 million gallons per year which addresses the contribution from the ITS, estimated to be approximately 4 million gallons per year, each year. This system is in addition to the pond "pan" evaporation. The current inventory to be evaporated is 3.5 million gallons.

Comment 97:

Mention is made in the plan that there is a "no action" alternative for this proposal, but nothing is said about any other alternatives. It is our understanding that the purpose of these plans is to *describe all the alternatives and then state why the planned alternative was chosen. It is stated that "in the event that specific quality requirements are not obtained by the proposed system, additional treatment units will be evaluated and incorporated into the treatment system as needed to meet or exceed performance requirements." We are led to believe that alternatives may not be available at this time, thus explaining their lack of inclusion in this plan.*

Response to Comment 97:

It was clearly established that, to meet the objective of removing pond sludge from the ponds, the water from the ITS would have to be diverted and the water evaporated. The existing 374 evaporator was looked at closely and the capacity was not sufficient to do this task. Similarly, diverting the water for the ITS to plant runoff is not environmentally sound.

6.2.2.6 Specific Comments to Section 2.0

Comment 98:

In the second full paragraph, there is mention that "recent" characterization studies were not available when this report was written. Later, in the description of the treatability tests it is stated that "simulated" water was used in testing the proposed treatment system. Are we to assume that the 1988 data found in Table 2-1 was used to create the "simulated" water? Are you certain that current contaminant concentrations are still the same and that the treatability tests reflect present day conditions?

Response to Comment 98:

The tables have been updated to the most current data. There has been no change which would invalidate any tests or performance specifications established.

Comment 99:

The first full paragraph states that VOC contamination is thought to have come from the west side of the ITS. Are we to assume that this contamination is not the result of infiltration from the solar ponds? Where does this VOC contamination come from?

Response to Comment 99:

The statement in the report has been reworded to ". . . predominantly contributed by the flow from the West Collector of the ITS. The West Collector intercepts ground water flow, surface runoff and flow from the Building 774/771 drain area.

Comment 100:

The discussion regarding ground water contamination seems to state unequivocally that there is no chance of public contact with the contamination. What about seeps? Also, has there been any infiltration of contaminated ground water past the ITS?

Response to Comment 100:

There is no public access to the areas discussed as part of the IM/IRA for the SEPs. As stated on pg. 2-25, the ground water pathway is "incomplete" because there is no exposure - hence no risk. There are currently no known seeps in the area. The efficiency of the ITS will be evaluated as part of the RFI/RI activities for the SEPs, and has no relevance on the proposed IM/IRA.

Comment 101:

In the discussion of risk characterization, there is no mention made about possible public and worker exposure due to windblown dispersion of sediments form the ponds once they are dry. Is there no potential that such a situation could occur? What safeguards are there to prevent such an occurrence?

Response to Comment 101:

The implementation of the IM/IRA in handling material is a wet process. Sediment is in a slurry and not susceptible to windblown dispersion.

The processing sequence is established to make the ponds clean before they are dry.

Comment 102:

There is some confusion in the statement that there will be "a" vapor compression unit (VC) and "three" multiple-effect, multiple-stage (MEMS) flash evaporators. The diagram in Figure 3-1 shows three VCs and three MEMS, with each VC and MEMS acting as a pair. Are we correct in assuming that the diagram is correct?

More information needs to be included in the plan describing the VC and MEMS units. Without having to go into too much technical detail, it would be beneficial to include a working description of these units.

Included in a better description of the process system, greater clarification is needed when you describe the system as being "closed loop". This page speaks about the fact the VOCs might be aerosolized during their entrance in the flash tank and that an HEPA filter will be employed. This page talks about how the distillate tanks must be vented in order for the "process to operate." In light of these statements, please clarify what is meant by the system being "closed loop".

Response to Comment 102:

The text has been revised to clarify the issues presented.

Comment 103:

Mention is made in the process description of how the distillate will be used in the cooling towers and, if demand is low, as part of the steam generating system. How does the demand rate for these operations vary with production activities? Should the plant not reach full operating capacity during the time-frame when this evaporation will be taking place, will there be storage problems? Would the water then be allowed to empty directly into the sewage treatment system?

Response to Comment 103:

The usage of steam and cooling water is not greatly impacted by production activity since the principal need is driven by the weather, cooling in the summer, heating in the winter.

Comment 104:

In the alarm protocols listed, we would suggest that you employ both audible and visible alarms for all situations.

Response to Comment 104:

The text has been modified to reflect the comment.

Comment 105:

As was alluded to earlier, we are uncomfortable with the fact that the treatment units were tested using "simulated" water. We encourage you to share the results of the actual tests that will be performed, once the system in on-line at RFP. Given the lack of alternatives, we sincerely hope that the system is indeed functional once placed under exact operating conditions.

Response to Comment 105:

A performance test using the actual waste stream will be completed prior to full operations.

Specific Comments to Section 4.0

Comment 106:

In line four, the text describes the site-specific water standards for RFP as being "goals," and thus not an "applicable" standard for ARARs. What exactly is meant by this statement? We were not under the impression that the site-specific standards set by the Colorado Water Quality Control Commission are merely goals. We also have problems with the concept that ARARs may not have to be applied whenever an interim action is being carried out. We have stated this before in our comments on the IM/IRA for OU2 and still believe, regardless of what the NCP might state, that ARARs should be applied for all activities regardless of being interim or final.

Response to Comment 106:

The "goal" qualifier defined by the Colorado Water Quality Control Commission is used in specific cases where water quality standards have not been defined for a specific classified use. Table 4.3, Proposed Chemical Specific ARARs/TBCs for Parameters at OU No. 4, Solar Evaporation Ponds & ITS provides current regulatory guidance on this issue.

Comment 107:

We would like a clarification of what is meant in the bottom third of section 4.3.6 where it is stated that the cancer risks are computed on the basis of the detection limit and thus considered a maximum carcinogenic risk, while the actual risk is "unknown" but "likely" to be lower. What statements of fact do you have to back up this claim?

Response to Comment 107:

When chemicals and/or radionuclides are not detected in a certain medium, these "non-detect" areas may still be interpreted as having contaminants at the detection limit. This is one of a few methods for interpreting "non-detect" data for use in risk assessments. This sentence will be deleted instead of explaining further how data is interpreted for use.

6.2.3 Citizen Comments

Commentor: Deborah Houy
2442 Fourth Street, Apt. C
Boulder, Colorado 80302

Comment 108:

Ms. Houy included a copy of a newspaper article dated Sept. 8, 1991. The article was from the Boulder Camera, and was opposed to a restart of Rocky Flats production operations. Ms. Houy comment was that she agreed with the authors position.

Response to Comment 108:

The IM/IRA proposed for the SEPs is needed to be able to continue with environmental restoration activities and is not related to resumption of production operations.

Commentor: Mr. John Vail
3609 Meade Street
Denver, Colorado 80211

Comment 109:

Mr. Vail submitted information for an alternative treatment system for SEP liquids.

Response to Comment 109:

The proposed technology is not applicable for all of the contaminants of concern at the SEPs. DOE appreciates the interest shown by Mr. Vail.

6.2.4 U.S. Fish and Wildlife Service Comments

Comment 110 - Section 2.1.6 Ecology:

The Ecology section should be updated to reflect the occurrence of threatened and endangered species and associated habitats, as well as species which are candidates for listing as threatened or endangered. The occurrence of these species and associated habitats in relation to construction activity and/or contaminant releases associated with the proposed IM/IRA should be determined.

Response 110:

The Ecology section has been rewritten to reflect the Endangered Species Act, including a habitat survey which was done on 4 March 1992.

Comment 111 - Section 2.6 Summary of Site Risks:

This section addresses human health risks associated with the IM/IRA only and does not address ecological risks associated with the IM/IRA. If this action poses ecological risks or potential impacts, they should be documented and action taken to protect and restore species or habitats affected.

Response 111:

Related activities for the OU4 IM/IRA consist of changing the present evaporation system (i.e., use of the solar evaporation ponds) to the use of forced evaporation utilizing flash evaporators in the 910 building. Ground water will continue to be collected by the interceptor trench system (ITS) and instead of being discharged to the solar ponds will be routed to temporary storage tanks and subsequently treated by the flash evaporators. The pathway that could potentially deliver contaminants to receptors are not complete because the ground water will continue to be intercepted by the ITS. Therefore, the potential for human health and ecological risk has not changed from current conditions. The flash evaporators are no more likely to pose an ecological risk than the current treatment system.

Comment 112 - Section 2.6.1 Pathway Exposure Assessment:

The conceptual "environmental" exposure pathway for the proposed IM/IRA relates only to the human environmental and does not address the ecological environment. However, based on the conceptual model presented, there appears to be a pathway to ecological receptor(s). The significance of this pathway should be documented and action taken to protect the receptor(s).

Response 112:

The receptors for the air dispersion pathways delineated in Figure 2-7 could include ecological receptors as well as off-site public workers. The concentrations of contaminants in the SEPs do not, however, suggest an increased ecological risk from this pathway during the IM/IRA.

Comment 113 - Section 3.1.2.1 Location of Tanks:

In determining the location of storage tanks, migratory bird and threatened and endangered species and associated habitats should be considered and actions taken to protect these species and habitats. If threatened and endangered species habitats occur in the vicinity of the proposed tank location, appropriate surveys should be conducted.

Response 113:

A survey was conducted on 4 March 1992 for habitat appropriate for the recently-listed plant species Spiranthes diluvialis. No suitable habitat exists in the area proposed for the location of the tanks. A copy of the report is provided in Appendix D.

Comment 114 - Section 4.3.5 CWA Ambient Water Quality Criteria (ASOC):

For some contaminants, there are more current criteria for the protection of aquatic life than the 1986 criteria presented. These more recent criteria should be incorporated as ARARs where appropriate.

Response 114:

Only documented published legal criteria were utilized in the development of potential ARARs for this IM/IRA. To date the most current criteria identified for the IM/IRA for protection of aquatic life is the 1986 criteria presented. However, site-wide ARARs are being negotiated and resolved by DOE, EPA, and CDH and more recent information may be incorporated during the site-wide ARARs analysis.

Comment 115 - Section 4.4 Location Specific Requirements:

> *Protection of migratory birds, bald eagles and their associated habitats is required by the MBTA and the BEPA. Therefore, the requirements of these two laws should be listed as ARARs. The ESA and the FWCA are listed as ARARs; however, compliance with the requirements of these acts as well as the MBTA and BEPA should be documented.*

Response 115:

MTBA and BEPA have been added to the location specific ARAR list in the IM/IRA. Compliance with these requirements are being documented through the creation of a Resource Protection Program. The details of the RFP are presently being developed.

7.0 LIST OF REFERENCES

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APPENDIX A

ANALYTICAL DATA FOR INTERCEPTOR TRENCH SYSTEM WATER

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW88A086	1,1,1-TRICHLOROETHANE	5.0	UG/L		U	5.0		RFVO	12-JUL-88
SW095	TRG	SW095001	1,1,1-TRICHLOROETHANE	5	UG/L		U	V 5	A	RFVO	27-MAR-89
SW095	TRG	SW095003	1,1,1-TRICHLOROETHANE	5	UG/L		U	5		RFVO	08-JUN-89
SW095	TRG	SW095004	1,1,1-TRICHLOROETHANE	5	UG/L		U	5		RFVO	05-JUL-89
SW095	TRG	SW095005	1,1,1-TRICHLOROETHANE	5	UG/L		U	5		RFVO	10-AUG-89
SW095	TRG	SW095007	1,1,1-TRICHLOROETHANE	10	UG/L		U	10		RFVO	10-OCT-89
SW095	TRG	SW095008	1,1,1-TRICHLOROETHANE	5	UG/L		U	V 5	A	RFVO	02-NOV-89
SW095	TRG	SW095009	1,1,1-TRICHLOROETHANE	5	UG/L		U	5		RFVO	07-DEC-89
SW095	TRG	SW095W053090A	1,1,1-TRICHLOROETHANE	5	UG/L		U	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	1,1,1-TRICHLOROETHANE	5	UG/L		U	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	1,1,1-TRICHLOROETHANE	5	UG/L		U	5		VOCCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	1,1,1-TRICHLOROETHANE	5	UG/L		U		5	VOCCLPTCL	26-SEP-90
SW095	TRG	SW00450WC	1,1,1-TRICHLOROETHANE	5	UG/L		U	5		VOCCLPTCL	24-OCT-90
SW095	TRG	SW00551WC	1,1,1-TRICHLOROETHANE	5	UG/L		U	5		VOCCLPTCL	19-NOV-90
SW095	TRG	SW00655WC	1,1,1-TRICHLOROETHANE	5	UG/L		U	5		VOCCLPTCL	06-DEC-90
SW095	TRG	SW00963WC	1,1,1-TRICHLOROETHANE	5	UG/L		U		5	VOCCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	1,1,1-TRICHLOROETHANE	5	UG/L		U		5	VOCCLPTCL	11-APR-91
SW095	TRG	SW01172WC	1,1,1-TRICHLOROETHANE	5	UG/L		U		5	VOCCLPTCL	22-MAY-91
SW095	TRG	SW88A086	1,1,2,2-TETRACHLOROETHANE	5.0	UG/L		U	5.0		RFVO	12-JUL-88
SW095	TRG	SW095001	1,1,2,2-TETRACHLOROETHANE	5	UG/L		U	V 5	A	RFVO	27-MAR-89
SW095	TRG	SW095003	1,1,2,2-TETRACHLOROETHANE	5	UG/L		U	5		RFVO	08-JUN-89
SW095	TRG	SW095004	1,1,2,2-TETRACHLOROETHANE	5	UG/L		U	5		RFVO	05-JUL-89
SW095	TRG	SW095005	1,1,2,2-TETRACHLOROETHANE	5	UG/L		U	5		RFVO	10-AUG-89
SW095	TRG	SW095007	1,1,2,2-TETRACHLOROETHANE	10	UG/L		U	10		RFVO	10-OCT-89
SW095	TRG	SW095008	1,1,2,2-TETRACHLOROETHANE	5	UG/L		U	V 5	A	RFVO	02-NOV-89
SW095	TRG	SW095009	1,1,2,2-TETRACHLOROETHANE	5	UG/L		U	5		RFVO	07-DEC-89
SW095	TRG	SW095W053090A	1,1,2,2-TETRACHLOROETHANE	5	UG/L		U	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	1,1,2,2-TETRACHLOROETHANE	5	UG/L		U	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	1,1,2,2-TETRACHLOROETHANE	5	UG/L		U	5		VOCCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	1,1,2,2-TETRACHLOROETHANE	5	UG/L		U		5	VOCCLPTCL	26-SEP-90
SW095	TRG	SW00450WC	1,1,2,2-TETRACHLOROETHANE	5	UG/L		U	5		VOCCLPTCL	24-OCT-90
SW095	TRG	SW00551WC	1,1,2,2-TETRACHLOROETHANE	5	UG/L		U	5		VOCCLPTCL	19-NOV-90
SW095	TRG	SW00655WC	1,1,2,2-TETRACHLOROETHANE	5	UG/L		U	5		VOCCLPTCL	06-DEC-90
SW095	TRG	SW00963WC	1,1,2,2-TETRACHLOROETHANE	5	UG/L		U		5	VOCCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	1,1,2,2-TETRACHLOROETHANE	5	UG/L		U		5	VOCCLPTCL	11-APR-91
SW095	TRG	SW01172WC	1,1,2,2-TETRACHLOROETHANE	5	UG/L		U		5	VOCCLPTCL	22-MAY-91
SW095	TRG	SW88A086	1,1,2-TRICHLOROETHANE	5.0	UG/L		U	5.0		RFVO	12-JUL-88
SW095	TRG	SW095001	1,1,2-TRICHLOROETHANE	5	UG/L		U	V 5	A	RFVO	27-MAR-89
SW095	TRG	SW095003	1,1,2-TRICHLOROETHANE	5	UG/L		U	5		RFVO	08-JUN-89
SW095	TRG	SW095004	1,1,2-TRICHLOROETHANE	5	UG/L		U	5		RFVO	05-JUL-89
SW095	TRG	SW095005	1,1,2-TRICHLOROETHANE	5	UG/L		U	5		RFVO	10-AUG-89
SW095	TRG	SW095007	1,1,2-TRICHLOROETHANE	10	UG/L		U	10		RFVO	10-OCT-89
SW095	TRG	SW095008	1,1,2-TRICHLOROETHANE	5	UG/L		U	V 5	A	RFVO	02-NOV-89
SW095	TRG	SW095009	1,1,2-TRICHLOROETHANE	5	UG/L		U	5		RFVO	07-DEC-89
SW095	TRG	SW095W053090A	1,1,2-TRICHLOROETHANE	5	UG/L		U	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	1,1,2-TRICHLOROETHANE	5	UG/L		U	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	1,1,2-TRICHLOROETHANE	5	UG/L		U	5		VOCCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	1,1,2-TRICHLOROETHANE	5	UG/L		U		5	VOCCLPTCL	26-SEP-90
SW095	TRG	SW00450WC	1,1,2-TRICHLOROETHANE	5	UG/L		U	5		VOCCLPTCL	24-OCT-90
SW095	TRG	SW00551WC	1,1,2-TRICHLOROETHANE	5	UG/L		U	5		VOCCLPTCL	19-NOV-90
SW095	TRG	SW00655WC	1,1,2-TRICHLOROETHANE	5	UG/L		U	5		VOCCLPTCL	06-DEC-90
SW095	TRG	SW00963WC	1,1,2-TRICHLOROETHANE	5	UG/L		U		5	VOCCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	1,1,2-TRICHLOROETHANE	5	UG/L		U		5	VOCCLPTCL	11-APR-91
SW095	TRG	SW01172WC	1,1,2-TRICHLOROETHANE	5	UG/L		U		5	VOCCLPTCL	22-MAY-91
SW095	TRG	SW88A086	1,1-DICHLOROETHANE	5.0	UG/L		U	5.0		RFVO	12-JUL-88
SW095	TRG	SW095001	1,1-DICHLOROETHANE	5	UG/L		U	V 5	A	RFVO	27-MAR-89
SW095	TRG	SW095003	1,1-DICHLOROETHANE	5	UG/L		U	5		RFVO	08-JUN-89
SW095	TRG	SW095004	1,1-DICHLOROETHANE	5	UG/L		U	5		RFVO	05-JUL-89

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
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SW095	TRG	SW095008	1,1-DICHLOROETHANE	5	UG/L		U V	5	A	RFVO	02-NOV-89
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SW095	TRG	SW00450WC	1,1-DICHLOROETHANE	5	UG/L		U	5		VOCCLPTCL	24-OCT-90
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SW095	TRG	SW095004	1,1-DICHLOROETHENE	5	UG/L		U	5		RFVO	05-JUL-89
SW095	TRG	SW095005	1,1-DICHLOROETHENE	5	UG/L		U	5		RFVO	10-AUG-89
SW095	TRG	SW095007	1,1-DICHLOROETHENE	10	UG/L		U	10		RFVO	10-OCT-89
SW095	TRG	SW095008	1,1-DICHLOROETHENE	5	UG/L		U V	5	A	RFVO	02-NOV-89
SW095	TRG	SW095009	1,1-DICHLOROETHENE	5	UG/L		U	5		RFVO	07-DEC-89
SW095	TRG	SW095W053090A	1,1-DICHLOROETHENE	5	UG/L		U	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	1,1-DICHLOROETHENE	5	UG/L		U	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	1,1-DICHLOROETHENE	5	UG/L		U	5		VOCCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	1,1-DICHLOROETHENE	5	UG/L		U	5		VOCCLPTCL	26-SEP-90
SW095	TRG	SW00450WC	1,1-DICHLOROETHENE	5	UG/L		U	5		VOCCLPTCL	24-OCT-90
SW095	TRG	SW00551WC	1,1-DICHLOROETHENE	5	UG/L		U	5		VOCCLPTCL	19-NOV-90
SW095	TRG	SW00655WC	1,1-DICHLOROETHENE	5	UG/L		U	5		VOCCLPTCL	06-DEC-90
SW095	TRG	SW00963WC	1,1-DICHLOROETHENE	5	UG/L		U	5		VOCCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	1,1-DICHLOROETHENE	5	UG/L		U	5		VOCCLPTCL	11-APR-91
SW095	TRG	SW01172WC	1,1-DICHLOROETHENE	5	UG/L		U	5		VOCCLPTCL	22-MAY-91
SW095	TRG	SW095001	1,2,4-TRICHLOROBENZENE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	1,2,4-TRICHLOROBENZENE	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	1,2,4-TRICHLOROBENZENE	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	1,2,4-TRICHLOROBENZENE	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	1,2,4-TRICHLOROBENZENE	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	1,2,4-TRICHLOROBENZENE	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	1,2-DICHLOROBENZENE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	1,2-DICHLOROBENZENE	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	1,2-DICHLOROBENZENE	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	1,2-DICHLOROBENZENE	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	1,2-DICHLOROBENZENE	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	1,2-DICHLOROBENZENE	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW88A086	1,2-DICHLOROETHANE	5.0	UG/L		U	5.0		RFVO	12-JUL-88
SW095	TRG	SW095001	1,2-DICHLOROETHANE	5	UG/L		U V	5	A	RFVO	27-MAR-89
SW095	TRG	SW095003	1,2-DICHLOROETHANE	5	UG/L		U	5		RFVO	08-JUN-89
SW095	TRG	SW095004	1,2-DICHLOROETHANE	5	UG/L		U	5		RFVO	05-JUL-89
SW095	TRG	SW095005	1,2-DICHLOROETHANE	5	UG/L		U	5		RFVO	10-AUG-89
SW095	TRG	SW095007	1,2-DICHLOROETHANE	10	UG/L		U	10		RFVO	10-OCT-89
SW095	TRG	SW095008	1,2-DICHLOROETHANE	5	UG/L		U V	5	A	RFVO	02-NOV-89
SW095	TRG	SW095009	1,2-DICHLOROETHANE	5	UG/L		U	5		RFVO	07-DEC-89
SW095	TRG	SW095W053090A	1,2-DICHLOROETHANE	5	UG/L		U	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	1,2-DICHLOROETHANE	5	UG/L		U	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	1,2-DICHLOROETHANE	5	UG/L		U	5		VOCCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	1,2-DICHLOROETHANE	5	UG/L		U	5		VOCCLPTCL	26-SEP-90
SW095	TRG	SW00450WC	1,2-DICHLOROETHANE	5	UG/L		U	5		VOCCLPTCL	24-OCT-90
SW095	TRG	SW00551WC	1,2-DICHLOROETHANE	5	UG/L		U	5		VOCCLPTCL	19-NOV-90

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW00655WC	1,2-DICHLOROETHANE	5	UG/L		U	5		VOCCLPTCL	06-DEC-90
SW095	TRG	SW00963WC	1,2-DICHLOROETHANE	5	UG/L		U	5		VOCCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	1,2-DICHLOROETHANE	5	UG/L		U	5		VOCCLPTCL	11-APR-91
SW095	TRG	SW01172WC	1,2-DICHLOROETHANE	5	UG/L		U	5		VOCCLPTCL	22-MAY-91
SW095	TRG	SW095001	1,2-DICHLOROETHENE	5	UG/L		U V	5	A	RFVO	27-MAR-89
SW095	TRG	SW095003	1,2-DICHLOROETHENE	5	UG/L		U	5		RFVO	08-JUN-89
SW095	TRG	SW095004	1,2-DICHLOROETHENE	5	UG/L		U	5		RFVO	05-JUL-89
SW095	TRG	SW095005	1,2-DICHLOROETHENE	5	UG/L		U	5		RFVO	10-AUG-89
SW095	TRG	SW095007	1,2-DICHLOROETHENE	10	UG/L		U	10		RFVO	10-OCT-89
SW095	TRG	SW095008	1,2-DICHLOROETHENE	5	UG/L		U V	5	A	RFVO	02-NOV-89
SW095	TRG	SW095009	1,2-DICHLOROETHENE	5	UG/L		U	5		RFVO	07-DEC-89
SW095	TRG	SW095W053090A	1,2-DICHLOROETHENE	5	UG/L		U	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	1,2-DICHLOROETHENE	5	UG/L		U	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	1,2-DICHLOROETHENE	5	UG/L		U	5		VOCCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	1,2-DICHLOROETHENE	5	UG/L		U	5		VOCCLPTCL	26-SEP-90
SW095	TRG	SW00450WC	1,2-DICHLOROETHENE	5	UG/L		U	5		VOCCLPTCL	24-OCT-90
SW095	TRG	SW00551WC	1,2-DICHLOROETHENE	5	UG/L		U	5		VOCCLPTCL	19-NOV-90
SW095	TRG	SW00655WC	1,2-DICHLOROETHENE	5	UG/L		U	5		VOCCLPTCL	06-DEC-90
SW095	TRG	SW00963WC	1,2-DICHLOROETHENE	5	UG/L		U	5		VOCCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	1,2-DICHLOROETHENE	5	UG/L		U	5		VOCCLPTCL	11-APR-91
SW095	TRG	SW01172WC	1,2-DICHLOROETHENE	5	UG/L		U	5		VOCCLPTCL	22-MAY-91
SW095	TRG	SW88A086	1,2-DICHLOROPROPANE	5.0	UG/L		U	5.0		RFVO	12-JUL-88
SW095	TRG	SW095001	1,2-DICHLOROPROPANE	5	UG/L		U V	5	A	RFVO	27-MAR-89
SW095	TRG	SW095003	1,2-DICHLOROPROPANE	5	UG/L		U	5		RFVO	08-JUN-89
SW095	TRG	SW095004	1,2-DICHLOROPROPANE	5	UG/L		U	5		RFVO	05-JUL-89
SW095	TRG	SW095005	1,2-DICHLOROPROPANE	5	UG/L		U	5		RFVO	10-AUG-89
SW095	TRG	SW095007	1,2-DICHLOROPROPANE	10	UG/L		U	10		RFVO	10-OCT-89
SW095	TRG	SW095008	1,2-DICHLOROPROPANE	5	UG/L		U V	5	A	RFVO	02-NOV-89
SW095	TRG	SW095009	1,2-DICHLOROPROPANE	5	UG/L		U	5		RFVO	07-DEC-89
SW095	TRG	SW095W053090A	1,2-DICHLOROPROPANE	5	UG/L		U	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	1,2-DICHLOROPROPANE	5	UG/L		U	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	1,2-DICHLOROPROPANE	5	UG/L		U	5		VOCCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	1,2-DICHLOROPROPANE	5	UG/L		U	5		VOCCLPTCL	26-SEP-90
SW095	TRG	SW00450WC	1,2-DICHLOROPROPANE	5	UG/L		U	5		VOCCLPTCL	24-OCT-90
SW095	TRG	SW00551WC	1,2-DICHLOROPROPANE	5	UG/L		U	5		VOCCLPTCL	19-NOV-90
SW095	TRG	SW00655WC	1,2-DICHLOROPROPANE	5	UG/L		U	5		VOCCLPTCL	06-DEC-90
SW095	TRG	SW00963WC	1,2-DICHLOROPROPANE	5	UG/L		U	5		VOCCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	1,2-DICHLOROPROPANE	5	UG/L		U	5		VOCCLPTCL	11-APR-91
SW095	TRG	SW01172WC	1,2-DICHLOROPROPANE	5	UG/L		U	5		VOCCLPTCL	22-MAY-91
SW095	TRG	SW095001	1,3-DICHLOROBENZENE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	1,3-DICHLOROBENZENE	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	1,3-DICHLOROBENZENE	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	1,3-DICHLOROBENZENE	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	1,3-DICHLOROBENZENE	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	1,3-DICHLOROBENZENE	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	1,4-DICHLOROBENZENE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	1,4-DICHLOROBENZENE	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	1,4-DICHLOROBENZENE	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	1,4-DICHLOROBENZENE	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	1,4-DICHLOROBENZENE	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	1,4-DICHLOROBENZENE	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	2,4,5-TRICHLOROPHENOL	52	UG/L		U	52		RFSV	27-MAR-89
SW095	TRG	SW095002	2,4,5-TRICHLOROPHENOL	50	UG/L		U	50		RFSV	22-MAY-89
SW095	TRG	SW095007	2,4,5-TRICHLOROPHENOL	50	UG/L		U	50		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	2,4,5-TRICHLOROPHENOL	50	UG/L		U	50		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	2,4,5-TRICHLOROPHENOL	50	UG/L		U	50		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	2,4,5-TRICHLOROPHENOL	50	UG/L		U	50		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	2,4,6-TRICHLOROPHENOL	10	UG/L		U	10		RFSV	27-MAR-89

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW095002	2,4,6-TRICHLOROPHENOL	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	2,4,6-TRICHLOROPHENOL	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	2,4,6-TRICHLOROPHENOL	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	2,4,6-TRICHLOROPHENOL	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	2,4,6-TRICHLOROPHENOL	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	2,4-DICHLOROPHENOL	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	2,4-DICHLOROPHENOL	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	2,4-DICHLOROPHENOL	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	2,4-DICHLOROPHENOL	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	2,4-DICHLOROPHENOL	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	2,4-DICHLOROPHENOL	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	2,4-DIMETHYLPHENOL	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	2,4-DIMETHYLPHENOL	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	2,4-DIMETHYLPHENOL	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	2,4-DIMETHYLPHENOL	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	2,4-DIMETHYLPHENOL	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	2,4-DIMETHYLPHENOL	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	2,4-DINITROPHENOL	52	UG/L		U	52		RFSV	27-MAR-89
SW095	TRG	SW095002	2,4-DINITROPHENOL	50	UG/L		U	50		RFSV	22-MAY-89
SW095	TRG	SW095007	2,4-DINITROPHENOL	50	UG/L		U	50		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	2,4-DINITROPHENOL	50	UG/L		U	50		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	2,4-DINITROPHENOL	50	UG/L		U	50		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	2,4-DINITROPHENOL	50	UG/L		U	50		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	2,4-DINITROTOLUENE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	2,4-DINITROTOLUENE	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	2,4-DINITROTOLUENE	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	2,4-DINITROTOLUENE	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	2,4-DINITROTOLUENE	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	2,4-DINITROTOLUENE	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	2,6-DINITROTOLUENE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	2,6-DINITROTOLUENE	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	2,6-DINITROTOLUENE	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	2,6-DINITROTOLUENE	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	2,6-DINITROTOLUENE	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	2,6-DINITROTOLUENE	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW88A086	2-BUTANONE	10	UG/L		U	10		RFVO	12-JUL-88
SW095	TRG	SW095001	2-BUTANONE	10	UG/L		U R	10	A	RFVO	27-MAR-89
SW095	TRG	SW095003	2-BUTANONE	10	UG/L		U	10		RFVO	08-JUN-89
SW095	TRG	SW095004	2-BUTANONE	10	UG/L		U	10		RFVO	05-JUL-89
SW095	TRG	SW095005	2-BUTANONE	10	UG/L		U	10		RFVO	10-AUG-89
SW095	TRG	SW095007	2-BUTANONE	20	UG/L		U	20		RFVO	10-OCT-89
SW095	TRG	SW095008	2-BUTANONE	10	UG/L		U V	10	A	RFVO	02-NOV-89
SW095	TRG	SW095009	2-BUTANONE	10	UG/L		U	10		RFVO	07-DEC-89
SW095	TRG	SW095W053090A	2-BUTANONE	10	UG/L		U	10		VOCCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	2-BUTANONE	10	UG/L		U	10		VOCCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	2-BUTANONE	10	UG/L		U	10		VOCCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	2-BUTANONE	10	UG/L		U	10		VOCCLPTCL	26-SEP-90
SW095	TRG	SW00450WC	2-BUTANONE	10	UG/L		U	10		VOCCLPTCL	24-OCT-90
SW095	TRG	SW00551WC	2-BUTANONE	10	UG/L		U	10		VOCCLPTCL	19-NOV-90
SW095	TRG	SW00655WC	2-BUTANONE	10	UG/L		U	10		VOCCLPTCL	06-DEC-90
SW095	TRG	SW00963WC	2-BUTANONE	10	UG/L		U	10		VOCCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	2-BUTANONE	10	UG/L		U	10		VOCCLPTCL	11-APR-91
SW095	TRG	SW01172WC	2-BUTANONE	10	UG/L		U	10		VOCCLPTCL	22-MAY-91
SW095	TRG	SW88A086	2-CHLOROETHYL VINYL ETHER	10	UG/L		U	10		RFVO	12-JUL-88
SW095	TRG	SW095001	2-CHLORONAPHTHALENE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	2-CHLORONAPHTHALENE	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	2-CHLORONAPHTHALENE	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	2-CHLORONAPHTHALENE	10	UG/L		U	10		SVOCLPTCL	30-MAY-90

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW00450WC	2-CHLORONAPHTHALENE	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	2-CHLORONAPHTHALENE	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	2-CHLOROPHENOL	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	2-CHLOROPHENOL	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	2-CHLOROPHENOL	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	2-CHLOROPHENOL	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	2-CHLOROPHENOL	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	2-CHLOROPHENOL	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW88A086	2-HEXANONE	10	UG/L		U	10		RFVO	12-JUL-88
SW095	TRG	SW095001	2-HEXANONE	10	UG/L		U R	10	A	RFVO	27-MAR-89
SW095	TRG	SW095003	2-HEXANONE	10	UG/L		U	10		RFVO	08-JUN-89
SW095	TRG	SW095004	2-HEXANONE	10	UG/L		U	10		RFVO	05-JUL-89
SW095	TRG	SW095005	2-HEXANONE	10	UG/L		U	10		RFVO	10-AUG-89
SW095	TRG	SW095007	2-HEXANONE	20	UG/L		U	20		RFVO	10-OCT-89
SW095	TRG	SW095008	2-HEXANONE	10	UG/L		U V	10	A	RFVO	02-NOV-89
SW095	TRG	SW095009	2-HEXANONE	10	UG/L		U	10		RFVO	07-DEC-89
SW095	TRG	SW095W053090A	2-HEXANONE	10	UG/L		U	10		VOCCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	2-HEXANONE	10	UG/L		U	10		VOCCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	2-HEXANONE	10	UG/L		U	10		VOCCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	2-HEXANONE	10	UG/L		U	10		VOCCLPTCL	26-SEP-90
SW095	TRG	SW00450WC	2-HEXANONE	10	UG/L		U	10		VOCCLPTCL	24-OCT-90
SW095	TRG	SW00551WC	2-HEXANONE	10	UG/L		U	10		VOCCLPTCL	19-NOV-90
SW095	TRG	SW00655WC	2-HEXANONE	10	UG/L		U	10		VOCCLPTCL	06-DEC-90
SW095	TRG	SW00963WC	2-HEXANONE	10	UG/L		U	10		VOCCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	2-HEXANONE	10	UG/L		U	10		VOCCLPTCL	11-APR-91
SW095	TRG	SW01172WC	2-HEXANONE	10	UG/L		U	10		VOCCLPTCL	22-MAY-91
SW095	TRG	SW095001	2-METHYLNAPHTHALENE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	2-METHYLNAPHTHALENE	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	2-METHYLNAPHTHALENE	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	2-METHYLNAPHTHALENE	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	2-METHYLNAPHTHALENE	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	2-METHYLNAPHTHALENE	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	2-METHYLPHENOL	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	2-METHYLPHENOL	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	2-METHYLPHENOL	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	2-METHYLPHENOL	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	2-METHYLPHENOL	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	2-METHYLPHENOL	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	2-NITROANILINE	52	UG/L		U	52		RFSV	27-MAR-89
SW095	TRG	SW095002	2-NITROANILINE	50	UG/L		U	50		RFSV	22-MAY-89
SW095	TRG	SW095007	2-NITROANILINE	50	UG/L		U	50		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	2-NITROANILINE	50	UG/L		U	50		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	2-NITROANILINE	50	UG/L		U	50		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	2-NITROANILINE	50	UG/L		U	50		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	2-NITROPHENOL	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	2-NITROPHENOL	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	2-NITROPHENOL	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	2-NITROPHENOL	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	2-NITROPHENOL	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	2-NITROPHENOL	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	3,3'-DICHLOROBENZIDINE	21	UG/L		U	21		RFSV	27-MAR-89
SW095	TRG	SW095002	3,3'-DICHLOROBENZIDINE	20	UG/L		U	20		RFSV	22-MAY-89
SW095	TRG	SW095007	3,3'-DICHLOROBENZIDINE	20	UG/L		U	20		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	3,3'-DICHLOROBENZIDINE	20	UG/L		U	20		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	3,3'-DICHLOROBENZIDINE	20	UG/L		U	20		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	3,3'-DICHLOROBENZIDINE	20	UG/L		U	20		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	3-NITROANILINE	52	UG/L		U	52		RFSV	27-MAR-89
SW095	TRG	SW095002	3-NITROANILINE	50	UG/L		U	50		RFSV	22-MAY-89

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW095007	3-NITROANILINE	50	UG/L		U	50		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	3-NITROANILINE	50	UG/L		U	50		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	3-NITROANILINE	50	UG/L		U	50		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	3-NITROANILINE	50	UG/L		U	50		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	4,6-DINITRO-2-METHYLPHENOL	52	UG/L		U	52		RFSV	27-MAR-89
SW095	TRG	SW095002	4,6-DINITRO-2-METHYLPHENOL	50	UG/L		U	50		RFSV	22-MAY-89
SW095	TRG	SW095007	4,6-DINITRO-2-METHYLPHENOL	50	UG/L		U	50		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	4,6-DINITRO-2-METHYLPHENOL	50	UG/L		U	50		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	4,6-DINITRO-2-METHYLPHENOL	50	UG/L		U	50		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	4,6-DINITRO-2-METHYLPHENOL	50	UG/L		U	50		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	4-BROMOPHENYL PHENYL ETHER	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	4-BROMOPHENYL PHENYL ETHER	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	4-BROMOPHENYL PHENYL ETHER	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	4-BROMOPHENYL PHENYL ETHER	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	4-BROMOPHENYL PHENYL ETHER	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	4-BROMOPHENYL PHENYL ETHER	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	4-CHLORO-3-METHYLPHENOL	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	4-CHLORO-3-METHYLPHENOL	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	4-CHLORO-3-METHYLPHENOL	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	4-CHLORO-3-METHYLPHENOL	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	4-CHLORO-3-METHYLPHENOL	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	4-CHLORO-3-METHYLPHENOL	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	4-CHLOROANILINE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	4-CHLOROANILINE	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	4-CHLOROANILINE	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	4-CHLOROANILINE	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	4-CHLOROANILINE	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	4-CHLOROANILINE	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	4-CHLOROPHENYL PHENYL ETHER	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	4-CHLOROPHENYL PHENYL ETHER	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	4-CHLOROPHENYL PHENYL ETHER	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	4-CHLOROPHENYL PHENYL ETHER	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	4-CHLOROPHENYL PHENYL ETHER	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	4-CHLOROPHENYL PHENYL ETHER	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW88A086	4-METHYL-2-PENTANONE	10	UG/L		U	10		RFVO	12-JUL-88
SW095	TRG	SW095001	4-METHYL-2-PENTANONE	10	UG/L		U R	10	A	RFVO	27-MAR-89
SW095	TRG	SW095003	4-METHYL-2-PENTANONE	10	UG/L		U	10		RFVO	08-JUN-89
SW095	TRG	SW095004	4-METHYL-2-PENTANONE	10	UG/L		U	10		RFVO	05-JUL-89
SW095	TRG	SW095005	4-METHYL-2-PENTANONE	10	UG/L		U	10		RFVO	10-AUG-89
SW095	TRG	SW095007	4-METHYL-2-PENTANONE	20	UG/L		U	20		RFVO	10-OCT-89
SW095	TRG	SW095008	4-METHYL-2-PENTANONE	10	UG/L		U V	10	A	RFVO	02-NOV-89
SW095	TRG	SW095009	4-METHYL-2-PENTANONE	10	UG/L		U	10		RFVO	07-DEC-89
SW095	TRG	SW095W053090A	4-METHYL-2-PENTANONE	10	UG/L		U	10		VOCCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	4-METHYL-2-PENTANONE	10	UG/L		U	10		VOCCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	4-METHYL-2-PENTANONE	10	UG/L		U	10		VOCCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	4-METHYL-2-PENTANONE	10	UG/L		U	10		VOCCLPTCL	26-SEP-90
SW095	TRG	SW00450WC	4-METHYL-2-PENTANONE	10	UG/L		U	10		VOCCLPTCL	24-OCT-90
SW095	TRG	SW00551WC	4-METHYL-2-PENTANONE	10	UG/L		U	10		VOCCLPTCL	19-NOV-90
SW095	TRG	SW00655WC	4-METHYL-2-PENTANONE	10	UG/L		U	10		VOCCLPTCL	06-DEC-90
SW095	TRG	SW00963WC	4-METHYL-2-PENTANONE	10	UG/L		U	10		VOCCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	4-METHYL-2-PENTANONE	10	UG/L		U	10		VOCCLPTCL	11-APR-91
SW095	TRG	SW01172WC	4-METHYL-2-PENTANONE	10	UG/L		U	10		VOCCLPTCL	22-MAY-91
SW095	TRG	SW095001	4-METHYLPHENOL	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	4-METHYLPHENOL	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	4-METHYLPHENOL	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	4-METHYLPHENOL	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	4-METHYLPHENOL	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	4-METHYLPHENOL	10	UG/L		U	10		SVOCLPTCL	11-APR-91

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW095001	4-NITROANILINE	52	UG/L		U	52		RFSV	27-MAR-89
SW095	TRG	SW095002	4-NITROANILINE	50	UG/L		U	50		RFSV	22-MAY-89
SW095	TRG	SW095007	4-NITROANILINE	50	UG/L		U	50		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	4-NITROANILINE	50	UG/L		U	50		VOCCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	4-NITROANILINE	50	UG/L		U	50		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	4-NITROANILINE	50	UG/L		U	50		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	4-NITROPHENOL	52	UG/L		U	52		RFSV	27-MAR-89
SW095	TRG	SW095002	4-NITROPHENOL	50	UG/L		U	50		RFSV	22-MAY-89
SW095	TRG	SW095007	4-NITROPHENOL	50	UG/L		U	50		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	4-NITROPHENOL	50	UG/L		U	50		VOCCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	4-NITROPHENOL	50	UG/L		U	50		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	4-NITROPHENOL	50	UG/L		U	50		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	ACENAPHTHENE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	ACENAPHTHENE	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	ACENAPHTHENE	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	ACENAPHTHENE	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	ACENAPHTHENE	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	ACENAPHTHENE	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	ACENAPHTHYLENE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	ACENAPHTHYLENE	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	ACENAPHTHYLENE	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	ACENAPHTHYLENE	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	ACENAPHTHYLENE	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	ACENAPHTHYLENE	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW88A086	ACETONE	10	UG/L		U	10		RFVO	12-JUL-88
SW095	TRG	SW095001	ACETONE	10	UG/L		U V	10	A	RFVO	27-MAR-89
SW095	TRG	SW095003	ACETONE	7	UG/L		JB	10		RFVO	08-JUN-89
SW095	TRG	SW095004	ACETONE	8	UG/L		JB	10		RFVO	05-JUL-89
SW095	TRG	SW095005	ACETONE	80	UG/L			10		RFVO	10-AUG-89
SW095	TRG	SW095007	ACETONE	20	UG/L		U	20		RFVO	10-OCT-89
SW095	TRG	SW095008	ACETONE	10	UG/L		U R	10	A	RFVO	02-NOV-89
SW095	TRG	SW095009	ACETONE	10	UG/L		U	10		RFVO	07-DEC-89
SW095	TRG	SW095W053090A	ACETONE	10	UG/L		U	10		VOCCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	ACETONE	8	UG/L		JB	10		VOCCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	ACETONE	10	UG/L		U	10		VOCCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	ACETONE	10	UG/L		U	10		VOCCLPTCL	26-SEP-90
SW095	TRG	SW00450WC	ACETONE	10	UG/L		U	10		VOCCLPTCL	24-OCT-90
SW095	TRG	SW00551WC	ACETONE	10	UG/L		U	10		VOCCLPTCL	19-NOV-90
SW095	TRG	SW00655WC	ACETONE	10	UG/L		U	10		VOCCLPTCL	06-DEC-90
SW095	TRG	SW00963WC	ACETONE	14	UG/L		B	10		VOCCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	ACETONE	6	UG/L		BJ	10		VOCCLPTCL	11-APR-91
SW095	TRG	SW01172WC	ACETONE	4	UG/L		BJ	10		VOCCLPTCL	22-MAY-91
SW095	TRG	SW095001	ANTHRACENE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	ANTHRACENE	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	ANTHRACENE	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	ANTHRACENE	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	ANTHRACENE	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	ANTHRACENE	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW88A086	BENZENE	5.0	UG/L		U	5.0		RFVO	12-JUL-88
SW095	TRG	SW095001	BENZENE	5	UG/L		U A	5	A	RFVO	27-MAR-89
SW095	TRG	SW095003	BENZENE	5	UG/L		U	5		RFVO	08-JUN-89
SW095	TRG	SW095004	BENZENE	5	UG/L		U	5		RFVO	05-JUL-89
SW095	TRG	SW095005	BENZENE	5	UG/L		U	5		RFVO	10-AUG-89
SW095	TRG	SW095007	BENZENE	10	UG/L		U	10		RFVO	10-OCT-89
SW095	TRG	SW095008	BENZENE	5	UG/L		U A	5	A	RFVO	02-NOV-89
SW095	TRG	SW095009	BENZENE	5	UG/L		U	5		RFVO	07-DEC-89
SW095	TRG	SW095W053090A	BENZENE	5	UG/L		U	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	BENZENE	5	UG/L		U	5		VOCCLPTCL	30-MAY-90

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW00157WC	BENZENE	5	UG/L		U	5		VOCCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	BENZENE	5	UG/L		U	5		VOCCLPTCL	26-SEP-90
SW095	TRG	SW00450WC	BENZENE	5	UG/L		U	5		VOCCLPTCL	24-OCT-90
SW095	TRG	SW00551WC	BENZENE	5	UG/L		U	5		VOCCLPTCL	19-NOV-90
SW095	TRG	SW00655WC	BENZENE	5	UG/L		U	5		VOCCLPTCL	06-DEC-90
SW095	TRG	SW00963WC	BENZENE	5	UG/L		U	5		VOCCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	BENZENE	5	UG/L		U	5		VOCCLPTCL	11-APR-91
SW095	TRG	SW01172WC	BENZENE	5	UG/L		U	5		VOCCLPTCL	22-MAY-91
SW095	TRG	SW095001	BENZO(a)ANTHRACENE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	BENZO(a)ANTHRACENE	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	BENZO(a)ANTHRACENE	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	BENZO(a)ANTHRACENE	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	BENZO(a)ANTHRACENE	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	BENZO(a)ANTHRACENE	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	BENZO(a)PYRENE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	BENZO(a)PYRENE	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	BENZO(a)PYRENE	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	BENZO(a)PYRENE	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	BENZO(a)PYRENE	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	BENZO(a)PYRENE	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	BENZO(b)FLUORANTHENE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	BENZO(b)FLUORANTHENE	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	BENZO(b)FLUORANTHENE	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	BENZO(b)FLUORANTHENE	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	BENZO(b)FLUORANTHENE	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	BENZO(b)FLUORANTHENE	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	BENZO(ghi)PERYLENE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	BENZO(ghi)PERYLENE	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	BENZO(ghi)PERYLENE	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	BENZO(ghi)PERYLENE	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	BENZO(ghi)PERYLENE	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	BENZO(ghi)PERYLENE	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	BENZO(k)FLUORANTHENE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	BENZO(k)FLUORANTHENE	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	BENZO(k)FLUORANTHENE	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	BENZO(k)FLUORANTHENE	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	BENZO(k)FLUORANTHENE	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	BENZO(k)FLUORANTHENE	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	BENZOIC ACID	52	UG/L		U	52		RFSV	27-MAR-89
SW095	TRG	SW095002	BENZOIC ACID	50	UG/L		U	50		RFSV	22-MAY-89
SW095	TRG	SW095007	BENZOIC ACID	50	UG/L		U	50		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	BENZOIC ACID	50	UG/L		U	50		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	BENZOIC ACID	50	UG/L		U	50		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	BENZOIC ACID	50	UG/L		U	50		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	BENZYL ALCOHOL	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	BENZYL ALCOHOL	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	BENZYL ALCOHOL	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	BENZYL ALCOHOL	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	BENZYL ALCOHOL	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	BENZYL ALCOHOL	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	BIS(2-CHLOROETHOXY)METHANE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	BIS(2-CHLOROETHOXY)METHANE	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	BIS(2-CHLOROETHOXY)METHANE	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	BIS(2-CHLOROETHOXY)METHANE	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	BIS(2-CHLOROETHOXY)METHANE	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	BIS(2-CHLOROETHOXY)METHANE	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	BIS(2-CHLOROETHYL)ETHER	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	BIS(2-CHLOROETHYL)ETHER	10	UG/L		U	10		RFSV	22-MAY-89

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW095007	BIS(2-CHLOROETHYL)ETHER	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	BIS(2-CHLOROETHYL)ETHER	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	BIS(2-CHLOROETHYL)ETHER	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	BIS(2-CHLOROETHYL)ETHER	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	BIS(2-CHLOROISOPROPYL)ETHER	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	BIS(2-CHLOROISOPROPYL)ETHER	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	BIS(2-CHLOROISOPROPYL)ETHER	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	BIS(2-CHLOROISOPROPYL)ETHER	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	BIS(2-CHLOROISOPROPYL)ETHER	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	BIS(2-CHLOROISOPROPYL)ETHER	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	BIS(2-ETHYLHEXYL)PHTHALATE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	BIS(2-ETHYLHEXYL)PHTHALATE	1	UG/L		J	10		RFSV	22-MAY-89
SW095	TRG	SW095007	BIS(2-ETHYLHEXYL)PHTHALATE	24	UG/L		B	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	BIS(2-ETHYLHEXYL)PHTHALATE	1	UG/L		J	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	BIS(2-ETHYLHEXYL)PHTHALATE	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	BIS(2-ETHYLHEXYL)PHTHALATE	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW88A086	BROMODICHLOROMETHANE	5.0	UG/L		U	5.0		RFVO	12-JUL-88
SW095	TRG	SW095001	BROMODICHLOROMETHANE	5	UG/L		U V	5	A	RFVO	27-MAR-89
SW095	TRG	SW095003	BROMODICHLOROMETHANE	5	UG/L		U	5		RFVO	08-JUN-89
SW095	TRG	SW095004	BROMODICHLOROMETHANE	5	UG/L		U	5		RFVO	05-JUL-89
SW095	TRG	SW095005	BROMODICHLOROMETHANE	5	UG/L		U	5		RFVO	10-AUG-89
SW095	TRG	SW095007	BROMODICHLOROMETHANE	10	UG/L		U	10		RFVO	10-OCT-89
SW095	TRG	SW095008	BROMODICHLOROMETHANE	5	UG/L		U V	5	A	RFVO	02-NOV-89
SW095	TRG	SW095009	BROMODICHLOROMETHANE	5	UG/L		U	5		RFVO	07-DEC-89
SW095	TRG	SW095W053090A	BROMODICHLOROMETHANE	5	UG/L		U	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	BROMODICHLOROMETHANE	5	UG/L		U	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	BROMODICHLOROMETHANE	5	UG/L		U	5		VOCCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	BROMODICHLOROMETHANE	5	UG/L		U	5		VOCCLPTCL	26-SEP-90
SW095	TRG	SW00450WC	BROMODICHLOROMETHANE	5	UG/L		U	5		VOCCLPTCL	24-OCT-90
SW095	TRG	SW00551WC	BROMODICHLOROMETHANE	5	UG/L		U	5		VOCCLPTCL	19-NOV-90
SW095	TRG	SW00655WC	BROMODICHLOROMETHANE	5	UG/L		U	5		VOCCLPTCL	06-DEC-90
SW095	TRG	SW00963WC	BROMODICHLOROMETHANE	5	UG/L		U	5		VOCCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	BROMODICHLOROMETHANE	5	UG/L		U	5		VOCCLPTCL	11-APR-91
SW095	TRG	SW01172WC	BROMODICHLOROMETHANE	5	UG/L		U	5		VOCCLPTCL	22-MAY-91
SW095	TRG	SW88A086	BROMOFORM	5.0	UG/L		U	5.0		RFVO	12-JUL-88
SW095	TRG	SW095001	BROMOFORM	5	UG/L		U V	5	A	RFVO	27-MAR-89
SW095	TRG	SW095003	BROMOFORM	5	UG/L		U	5		RFVO	08-JUN-89
SW095	TRG	SW095004	BROMOFORM	5	UG/L		U	5		RFVO	05-JUL-89
SW095	TRG	SW095005	BROMOFORM	5	UG/L		U	5		RFVO	10-AUG-89
SW095	TRG	SW095007	BROMOFORM	10	UG/L		U	10		RFVO	10-OCT-89
SW095	TRG	SW095008	BROMOFORM	5	UG/L		U V	5	A	RFVO	02-NOV-89
SW095	TRG	SW095009	BROMOFORM	5	UG/L		U	5		RFVO	07-DEC-89
SW095	TRG	SW095W053090A	BROMOFORM	5	UG/L		U	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	BROMOFORM	5	UG/L		U	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	BROMOFORM	5	UG/L		U	5		VOCCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	BROMOFORM	5	UG/L		U	5		VOCCLPTCL	26-SEP-90
SW095	TRG	SW00450WC	BROMOFORM	5	UG/L		U	5		VOCCLPTCL	24-OCT-90
SW095	TRG	SW00551WC	BROMOFORM	5	UG/L		U	5		VOCCLPTCL	19-NOV-90
SW095	TRG	SW00655WC	BROMOFORM	5	UG/L		U	5		VOCCLPTCL	06-DEC-90
SW095	TRG	SW00963WC	BROMOFORM	5	UG/L		U	5		VOCCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	BROMOFORM	5	UG/L		U	5		VOCCLPTCL	11-APR-91
SW095	TRG	SW01172WC	BROMOFORM	5	UG/L		U	5		VOCCLPTCL	22-MAY-91
SW095	TRG	SW88A086	BROMOMETHANE	10	UG/L		U	10		RFVO	12-JUL-88
SW095	TRG	SW095001	BROMOMETHANE	10	UG/L		U V	10	A	RFVO	27-MAR-89
SW095	TRG	SW095003	BROMOMETHANE	10	UG/L		U	10		RFVO	08-JUN-89
SW095	TRG	SW095004	BROMOMETHANE	10	UG/L		U	10		RFVO	05-JUL-89
SW095	TRG	SW095005	BROMOMETHANE	10	UG/L		U	10		RFVO	10-AUG-89
SW095	TRG	SW095007	BROMOMETHANE	20	UG/L		U	20		RFVO	10-OCT-89

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW095008	BROMOMETHANE	10	UG/L		U V	10	A	RFVO	02-NOV-89
SW095	TRG	SW095009	BROMOMETHANE	10	UG/L		U	10		RFVO	07-DEC-89
SW095	TRG	SW095W053090A	BROMOMETHANE	10	UG/L		U	10		VOCCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	BROMOMETHANE	10	UG/L		U	10		VOCCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	BROMOMETHANE	10	UG/L		U	10		VOCCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	BROMOMETHANE	10	UG/L		U	10		VOCCLPTCL	26-SEP-90
SW095	TRG	SW00450WC	BROMOMETHANE	10	UG/L		U	10		VOCCLPTCL	24-OCT-90
SW095	TRG	SW00551WC	BROMOMETHANE	10	UG/L		U	10		VOCCLPTCL	19-NOV-90
SW095	TRG	SW00655WC	BROMOMETHANE	10	UG/L		U	10		VOCCLPTCL	06-DEC-90
SW095	TRG	SW00963WC	BROMOMETHANE	10	UG/L		U	10		VOCCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	BROMOMETHANE	10	UG/L		U	10		VOCCLPTCL	11-APR-91
SW095	TRG	SW01172WC	BROMOMETHANE	10	UG/L		U	10		VOCCLPTCL	22-MAY-91
SW095	TRG	SW095001	BUTYL BENZYL PHTHALATE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	BUTYL BENZYL PHTHALATE	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	BUTYL BENZYL PHTHALATE	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	BUTYL BENZYL PHTHALATE	10	UG/L		U	10		SVOCCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	BUTYL BENZYL PHTHALATE	10	UG/L		U	10		SVOCCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	BUTYL BENZYL PHTHALATE	10	UG/L		U	10		SVOCCLPTCL	11-APR-91
SW095	TRG	SW88A086	CARBON DISULFIDE	5.0	UG/L		U	5.0		RFVO	12-JUL-88
SW095	TRG	SW095001	CARBON DISULFIDE	5	UG/L		U V	5	A	RFVO	27-MAR-89
SW095	TRG	SW095003	CARBON DISULFIDE	5	UG/L		U	5		RFVO	08-JUN-89
SW095	TRG	SW095004	CARBON DISULFIDE	5	UG/L		U	5		RFVO	05-JUL-89
SW095	TRG	SW095005	CARBON DISULFIDE	5	UG/L		U	5		RFVO	10-AUG-89
SW095	TRG	SW095007	CARBON DISULFIDE	10	UG/L		U	10		RFVO	10-OCT-89
SW095	TRG	SW095008	CARBON DISULFIDE	5	UG/L		U R	5	A	RFVO	02-NOV-89
SW095	TRG	SW095009	CARBON DISULFIDE	5	UG/L		U	5		RFVO	07-DEC-89
SW095	TRG	SW095W053090A	CARBON DISULFIDE	5	UG/L		U	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	CARBON DISULFIDE	5	UG/L		U	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	CARBON DISULFIDE	5	UG/L		U	5		VOCCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	CARBON DISULFIDE	5	UG/L		U	5		VOCCLPTCL	26-SEP-90
SW095	TRG	SW00450WC	CARBON DISULFIDE	5	UG/L		U	5		VOCCLPTCL	24-OCT-90
SW095	TRG	SW00551WC	CARBON DISULFIDE	5	UG/L		U	5		VOCCLPTCL	19-NOV-90
SW095	TRG	SW00655WC	CARBON DISULFIDE	5	UG/L		U	5		VOCCLPTCL	06-DEC-90
SW095	TRG	SW00963WC	CARBON DISULFIDE	5	UG/L		U	5		VOCCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	CARBON DISULFIDE	5	UG/L		U	5		VOCCLPTCL	11-APR-91
SW095	TRG	SW01172WC	CARBON DISULFIDE	5	UG/L		U	5		VOCCLPTCL	22-MAY-91
SW095	TRG	SW88A086	CARBON TETRACHLORIDE	1.0	UG/L		J	5.0		RFVO	12-JUL-88
SW095	TRG	SW095001	CARBON TETRACHLORIDE	11	UG/L		V	5	A	RFVO	27-MAR-89
SW095	TRG	SW095003	CARBON TETRACHLORIDE	1	UG/L		J	5		RFVO	08-JUN-89
SW095	TRG	SW095004	CARBON TETRACHLORIDE	5	UG/L		U	5		RFVO	05-JUL-89
SW095	TRG	SW095005	CARBON TETRACHLORIDE	2	UG/L		J	5		RFVO	10-AUG-89
SW095	TRG	SW095007	CARBON TETRACHLORIDE	10	UG/L		U	10		RFVO	10-OCT-89
SW095	TRG	SW095008	CARBON TETRACHLORIDE	5	UG/L		U V	5	A	RFVO	02-NOV-89
SW095	TRG	SW095009	CARBON TETRACHLORIDE	5	UG/L		U	5		RFVO	07-DEC-89
SW095	TRG	SW095W053090A	CARBON TETRACHLORIDE	2	UG/L		J	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	CARBON TETRACHLORIDE	2	UG/L		J	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	CARBON TETRACHLORIDE	5	UG/L		U	5		VOCCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	CARBON TETRACHLORIDE	1	UG/L		J	5		VOCCLPTCL	26-SEP-90
SW095	TRG	SW00450WC	CARBON TETRACHLORIDE	5	UG/L		U	5		VOCCLPTCL	24-OCT-90
SW095	TRG	SW00551WC	CARBON TETRACHLORIDE	5	UG/L		U	5		VOCCLPTCL	19-NOV-90
SW095	TRG	SW00655WC	CARBON TETRACHLORIDE	5	UG/L		U	5		VOCCLPTCL	06-DEC-90
SW095	TRG	SW00963WC	CARBON TETRACHLORIDE	5	UG/L		U	5		VOCCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	CARBON TETRACHLORIDE	5	UG/L		U	5		VOCCLPTCL	11-APR-91
SW095	TRG	SW01172WC	CARBON TETRACHLORIDE	5	UG/L		U	5		VOCCLPTCL	22-MAY-91
SW095	TRG	SW88A086	CHLOROBENZENE	5.0	UG/L		U	5.0		RFVO	12-JUL-88
SW095	TRG	SW095001	CHLOROBENZENE	5	UG/L		U A	5	A	RFVO	27-MAR-89
SW095	TRG	SW095003	CHLOROBENZENE	5	UG/L		U	5		RFVO	08-JUN-89
SW095	TRG	SW095004	CHLOROBENZENE	5	UG/L		U	5		RFVO	05-JUL-89

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW095005	CHLOROBENZENE	5	UG/L		U	5		RFVO	10-AUG-89
SW095	TRG	SW095007	CHLOROBENZENE	10	UG/L		U	10		RFVO	10-OCT-89
SW095	TRG	SW095008	CHLOROBENZENE	5	UG/L		U A	5	A	RFVO	02-NOV-89
SW095	TRG	SW095009	CHLOROBENZENE	5	UG/L		U	5		RFVO	07-DEC-89
SW095	TRG	SW095W053090A	CHLOROBENZENE	5	UG/L		U	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	CHLOROBENZENE	5	UG/L		U	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	CHLOROBENZENE	5	UG/L		U	5		VOCCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	CHLOROBENZENE	5	UG/L		U	5		VOCCLPTCL	26-SEP-90
SW095	TRG	SW00450WC	CHLOROBENZENE	5	UG/L		U	5		VOCCLPTCL	24-OCT-90
SW095	TRG	SW00551WC	CHLOROBENZENE	5	UG/L		U	5		VOCCLPTCL	19-NOV-90
SW095	TRG	SW00655WC	CHLOROBENZENE	5	UG/L		U	5		VOCCLPTCL	06-DEC-90
SW095	TRG	SW00963WC	CHLOROBENZENE	5	UG/L		U	5		VOCCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	CHLOROBENZENE	5	UG/L		U	5		VOCCLPTCL	11-APR-91
SW095	TRG	SW01172WC	CHLOROBENZENE	5	UG/L		U	5		VOCCLPTCL	22-MAY-91
SW095	TRG	SW88A086	CHLOROETHANE	10	UG/L		U	10		RFVO	12-JUL-88
SW095	TRG	SW095001	CHLOROETHANE	10	UG/L		U R	10	A	RFVO	27-MAR-89
SW095	TRG	SW095003	CHLOROETHANE	10	UG/L		U	10		RFVO	08-JUN-89
SW095	TRG	SW095004	CHLOROETHANE	10	UG/L		U	10		RFVO	05-JUL-89
SW095	TRG	SW095005	CHLOROETHANE	10	UG/L		U	10		RFVO	10-AUG-89
SW095	TRG	SW095007	CHLOROETHANE	20	UG/L		U	20		RFVO	10-OCT-89
SW095	TRG	SW095008	CHLOROETHANE	10	UG/L		U R	10	A	RFVO	02-NOV-89
SW095	TRG	SW095009	CHLOROETHANE	10	UG/L		U	10		RFVO	07-DEC-89
SW095	TRG	SW095W053090A	CHLOROETHANE	10	UG/L		U	10		VOCCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	CHLOROETHANE	10	UG/L		U	10		VOCCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	CHLOROETHANE	10	UG/L		U	10		VOCCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	CHLOROETHANE	10	UG/L		U	10		VOCCLPTCL	26-SEP-90
SW095	TRG	SW00450WC	CHLOROETHANE	10	UG/L		U	10		VOCCLPTCL	24-OCT-90
SW095	TRG	SW00551WC	CHLOROETHANE	10	UG/L		U	10		VOCCLPTCL	19-NOV-90
SW095	TRG	SW00655WC	CHLOROETHANE	10	UG/L		U	10		VOCCLPTCL	06-DEC-90
SW095	TRG	SW00963WC	CHLOROETHANE	10	UG/L		U	10		VOCCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	CHLOROETHANE	10	UG/L		U	10		VOCCLPTCL	11-APR-91
SW095	TRG	SW01172WC	CHLOROETHANE	10	UG/L		U	10		VOCCLPTCL	22-MAY-91
SW095	TRG	SW88A086	CHLOROFORM	2.0	UG/L		J	5.0		RFVO	12-JUL-88
SW095	TRG	SW095001	CHLOROFORM	2	UG/L		J V	5	A	RFVO	27-MAR-89
SW095	TRG	SW095003	CHLOROFORM	1	UG/L		J	5		RFVO	08-JUN-89
SW095	TRG	SW095004	CHLOROFORM	5	UG/L		U	5		RFVO	05-JUL-89
SW095	TRG	SW095005	CHLOROFORM	2	UG/L		J	5		RFVO	10-AUG-89
SW095	TRG	SW095007	CHLOROFORM	10	UG/L		U	10		RFVO	10-OCT-89
SW095	TRG	SW095008	CHLOROFORM	5	UG/L		U V	5	A	RFVO	02-NOV-89
SW095	TRG	SW095009	CHLOROFORM	5	UG/L		U	5		RFVO	07-DEC-89
SW095	TRG	SW095W053090A	CHLOROFORM	1	UG/L		J	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	CHLOROFORM	1	UG/L		J	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	CHLOROFORM	1	UG/L		J	5		VOCCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	CHLOROFORM	2	UG/L		J	5		VOCCLPTCL	26-SEP-90
SW095	TRG	SW00450WC	CHLOROFORM	5	UG/L		U	5		VOCCLPTCL	24-OCT-90
SW095	TRG	SW00551WC	CHLOROFORM	2	UG/L		J	5		VOCCLPTCL	19-NOV-90
SW095	TRG	SW00655WC	CHLOROFORM	1	UG/L		J	5		VOCCLPTCL	06-DEC-90
SW095	TRG	SW00963WC	CHLOROFORM	2	UG/L		J	5		VOCCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	CHLOROFORM	1	UG/L		J	5		VOCCLPTCL	11-APR-91
SW095	TRG	SW01172WC	CHLOROFORM	1	UG/L		J	5		VOCCLPTCL	22-MAY-91
SW095	TRG	SW88A086	CHLOROMETHANE	10	UG/L		U	10		RFVO	12-JUL-88
SW095	TRG	SW095001	CHLOROMETHANE	10	UG/L		U V	10	A	RFVO	27-MAR-89
SW095	TRG	SW095003	CHLOROMETHANE	10	UG/L		U	10		RFVO	08-JUN-89
SW095	TRG	SW095004	CHLOROMETHANE	10	UG/L		U	10		RFVO	05-JUL-89
SW095	TRG	SW095005	CHLOROMETHANE	10	UG/L		U	10		RFVO	10-AUG-89
SW095	TRG	SW095007	CHLOROMETHANE	20	UG/L		U	20		RFVO	10-OCT-89
SW095	TRG	SW095008	CHLOROMETHANE	10	UG/L		U V	10	A	RFVO	02-NOV-89
SW095	TRG	SW095009	CHLOROMETHANE	10	UG/L		U	10		RFVO	07-DEC-89

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW095W053090A	CHLOROMETHANE	10	UG/L		U	10		VOCCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	CHLOROMETHANE	10	UG/L		U	10		VOCCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	CHLOROMETHANE	10	UG/L		U	10		VOCCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	CHLOROMETHANE	10	UG/L		U	10		VOCCLPTCL	26-SEP-90
SW095	TRG	SW00450WC	CHLOROMETHANE	10	UG/L		U	10		VOCCLPTCL	24-OCT-90
SW095	TRG	SW00551WC	CHLOROMETHANE	10	UG/L		U	10		VOCCLPTCL	19-NOV-90
SW095	TRG	SW00655WC	CHLOROMETHANE	10	UG/L		U	10		VOCCLPTCL	06-DEC-90
SW095	TRG	SW00963WC	CHLOROMETHANE	10	UG/L		U	10		VOCCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	CHLOROMETHANE	10	UG/L		U	10		VOCCLPTCL	11-APR-91
SW095	TRG	SW01172WC	CHLOROMETHANE	10	UG/L		U	10		VOCCLPTCL	22-MAY-91
SW095	TRG	SW095001	CHRYSENE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	CHRYSENE	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	CHRYSENE	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	CHRYSENE	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	CHRYSENE	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	CHRYSENE	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	DI-n-BUTYL PHTHALATE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	DI-n-BUTYL PHTHALATE	1	UG/L		J	10		RFSV	22-MAY-89
SW095	TRG	SW095007	DI-n-BUTYL PHTHALATE	2	UG/L		JB	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	DI-n-BUTYL PHTHALATE	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	DI-n-BUTYL PHTHALATE	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	DI-n-BUTYL PHTHALATE	4	UG/L		BJ	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	DI-n-OCTYL PHTHALATE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	DI-n-OCTYL PHTHALATE	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	DI-n-OCTYL PHTHALATE	1	UG/L		J	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	DI-n-OCTYL PHTHALATE	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	DI-n-OCTYL PHTHALATE	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	DI-n-OCTYL PHTHALATE	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	DIBENZO(a,h)ANTHRACENE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	DIBENZO(a,h)ANTHRACENE	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	DIBENZO(a,h)ANTHRACENE	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	DIBENZO(a,h)ANTHRACENE	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	DIBENZO(a,h)ANTHRACENE	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	DIBENZO(a,h)ANTHRACENE	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	DIBENZOFURAN	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	DIBENZOFURAN	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	DIBENZOFURAN	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	DIBENZOFURAN	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	DIBENZOFURAN	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	DIBENZOFURAN	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW88A086	DIBROMOCHLOROMETHANE	5.0	UG/L		U	5.0		RFVO	12-JUL-88
SW095	TRG	SW095001	DIBROMOCHLOROMETHANE	5	UG/L		U V	5	A	RFVO	27-MAR-89
SW095	TRG	SW095003	DIBROMOCHLOROMETHANE	5	UG/L		U	5		RFVO	08-JUN-89
SW095	TRG	SW095004	DIBROMOCHLOROMETHANE	5	UG/L		U	5		RFVO	05-JUL-89
SW095	TRG	SW095005	DIBROMOCHLOROMETHANE	5	UG/L		U	5		RFVO	10-AUG-89
SW095	TRG	SW095007	DIBROMOCHLOROMETHANE	10	UG/L		U	10		RFVO	10-OCT-89
SW095	TRG	SW095008	DIBROMOCHLOROMETHANE	5	UG/L		U V	5	A	RFVO	02-NOV-89
SW095	TRG	SW095009	DIBROMOCHLOROMETHANE	5	UG/L		U	5		RFVO	07-DEC-89
SW095	TRG	SW095W053090A	DIBROMOCHLOROMETHANE	5	UG/L		U	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	DIBROMOCHLOROMETHANE	5	UG/L		U	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	DIBROMOCHLOROMETHANE	5	UG/L		U	5		VOCCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	DIBROMOCHLOROMETHANE	5	UG/L		U	5		VOCCLPTCL	26-SEP-90
SW095	TRG	SW00450WC	DIBROMOCHLOROMETHANE	5	UG/L		U	5		VOCCLPTCL	24-OCT-90
SW095	TRG	SW00551WC	DIBROMOCHLOROMETHANE	5	UG/L		U	5		VOCCLPTCL	19-NOV-90
SW095	TRG	SW00655WC	DIBROMOCHLOROMETHANE	5	UG/L		U	5		VOCCLPTCL	06-DEC-90
SW095	TRG	SW00963WC	DIBROMOCHLOROMETHANE	5	UG/L		U	5		VOCCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	DIBROMOCHLOROMETHANE	5	UG/L		U	5		VOCCLPTCL	11-APR-91
SW095	TRG	SW01172WC	DIBROMOCHLOROMETHANE	5	UG/L		U	5		VOCCLPTCL	22-MAY-91

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW095001	DIETHYL PHTHALATE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	DIETHYL PHTHALATE	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	DIETHYL PHTHALATE	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	DIETHYL PHTHALATE	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	DIETHYL PHTHALATE	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	DIETHYL PHTHALATE	4	UG/L		J	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	DIMETHYL PHTHALATE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	DIMETHYL PHTHALATE	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	DIMETHYL PHTHALATE	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	DIMETHYL PHTHALATE	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	DIMETHYL PHTHALATE	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	DIMETHYL PHTHALATE	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW88A086	ETHYLBENZENE	5.0	UG/L		U	5.0		RFVO	12-JUL-88
SW095	TRG	SW095001	ETHYLBENZENE	5	UG/L		U A	5	A	RFVO	27-MAR-89
SW095	TRG	SW095003	ETHYLBENZENE	5	UG/L		U	5		RFVO	08-JUN-89
SW095	TRG	SW095004	ETHYLBENZENE	5	UG/L		U	5		RFVO	05-JUL-89
SW095	TRG	SW095005	ETHYLBENZENE	5	UG/L		U	5		RFVO	10-AUG-89
SW095	TRG	SW095007	ETHYLBENZENE	10	UG/L		U	10		RFVO	10-OCT-89
SW095	TRG	SW095008	ETHYLBENZENE	5	UG/L		U A	5	A	RFVO	02-NOV-89
SW095	TRG	SW095009	ETHYLBENZENE	5	UG/L		U	5		RFVO	07-DEC-89
SW095	TRG	SW095W053090A	ETHYLBENZENE	5	UG/L		U	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	ETHYLBENZENE	5	UG/L		U	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	ETHYLBENZENE	5	UG/L		U	5		VOCCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	ETHYLBENZENE	5	UG/L		U	5		VOCCLPTCL	26-SEP-90
SW095	TRG	SW00450WC	ETHYLBENZENE	5	UG/L		U	5		VOCCLPTCL	24-OCT-90
SW095	TRG	SW00551WC	ETHYLBENZENE	5	UG/L		U	5		VOCCLPTCL	19-NOV-90
SW095	TRG	SW00655WC	ETHYLBENZENE	5	UG/L		U	5		VOCCLPTCL	06-DEC-90
SW095	TRG	SW00963WC	ETHYLBENZENE	5	UG/L		U	5		VOCCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	ETHYLBENZENE	5	UG/L		U	5		VOCCLPTCL	11-APR-91
SW095	TRG	SW01172WC	ETHYLBENZENE	5	UG/L		U	5		VOCCLPTCL	22-MAY-91
SW095	TRG	SW095001	FLUORANTHENE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	FLUORANTHENE	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	FLUORANTHENE	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	FLUORANTHENE	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	FLUORANTHENE	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	FLUORANTHENE	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	FLUORENE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	FLUORENE	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	FLUORENE	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	FLUORENE	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	FLUORENE	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	FLUORENE	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	HEXACHLOROBENZENE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	HEXACHLOROBENZENE	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	HEXACHLOROBENZENE	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	HEXACHLOROBENZENE	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	HEXACHLOROBENZENE	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	HEXACHLOROBENZENE	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	HEXACHLOROBUTADIENE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	HEXACHLOROBUTADIENE	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	HEXACHLOROBUTADIENE	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	HEXACHLOROBUTADIENE	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	HEXACHLOROBUTADIENE	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	HEXACHLOROBUTADIENE	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	HEXACHLOROCYCLOPENTADIENE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	HEXACHLOROCYCLOPENTADIENE	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	HEXACHLOROCYCLOPENTADIENE	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	HEXACHLOROCYCLOPENTADIENE	10	UG/L		U	10		SVOCLPTCL	30-MAY-90

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW00450WC	HEXACHLOROCYCLOPENTADIENE	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	HEXACHLOROCYCLOPENTADIENE	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	HEXACHLOROETHANE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	HEXACHLOROETHANE	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	HEXACHLOROETHANE	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	HEXACHLOROETHANE	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	HEXACHLOROETHANE	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	HEXACHLOROETHANE	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	INDENO(1,2,3-cd)PYRENE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	INDENO(1,2,3-cd)PYRENE	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	INDENO(1,2,3-cd)PYRENE	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	INDENO(1,2,3-cd)PYRENE	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	INDENO(1,2,3-cd)PYRENE	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	INDENO(1,2,3-cd)PYRENE	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	ISOPHORONE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	ISOPHORONE	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	ISOPHORONE	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	ISOPHORONE	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	ISOPHORONE	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	ISOPHORONE	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW88A086	METHYLENE CHLORIDE	1.0	UG/L		J	5.0		RFVO	12-JUL-88
SW095	TRG	SW095001	METHYLENE CHLORIDE	5	UG/L		B A	5	A	RFVO	27-MAR-89
SW095	TRG	SW095003	METHYLENE CHLORIDE	2	UG/L		JB	5		RFVO	08-JUN-89
SW095	TRG	SW095004	METHYLENE CHLORIDE	4	UG/L		JB	5		RFVO	05-JUL-89
SW095	TRG	SW095005	METHYLENE CHLORIDE	2	UG/L		JB	5		RFVO	10-AUG-89
SW095	TRG	SW095007	METHYLENE CHLORIDE	10	UG/L		U	10		RFVO	10-OCT-89
SW095	TRG	SW095008	METHYLENE CHLORIDE	5	UG/L		U R	5	A	RFVO	02-NOV-89
SW095	TRG	SW095009	METHYLENE CHLORIDE	5	UG/L		U	5		RFVO	07-DEC-89
SW095	TRG	SW095W053090A	METHYLENE CHLORIDE	2	UG/L		JB	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	METHYLENE CHLORIDE	3	UG/L		JB	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	METHYLENE CHLORIDE	2	UG/L		JB	5		VOCCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	METHYLENE CHLORIDE	5	UG/L		U	5		VOCCLPTCL	26-SEP-90
SW095	TRG	SW00450WC	METHYLENE CHLORIDE	5	UG/L		U	5		VOCCLPTCL	24-OCT-90
SW095	TRG	SW00551WC	METHYLENE CHLORIDE	1	UG/L		BJ	5		VOCCLPTCL	19-NOV-90
SW095	TRG	SW00655WC	METHYLENE CHLORIDE	2	UG/L		BJ	5		VOCCLPTCL	06-DEC-90
SW095	TRG	SW00963WC	METHYLENE CHLORIDE	1	UG/L		J	5		VOCCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	METHYLENE CHLORIDE	5	UG/L		U	5		VOCCLPTCL	11-APR-91
SW095	TRG	SW01172WC	METHYLENE CHLORIDE	5	UG/L		U	5		VOCCLPTCL	22-MAY-91
SW095	TRG	SW095001	N-NITROSO-DI-n-PROPYLAMINE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	N-NITROSO-DI-n-PROPYLAMINE	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	N-NITROSO-DI-n-PROPYLAMINE	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	N-NITROSO-DI-n-PROPYLAMINE	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	N-NITROSO-DI-n-PROPYLAMINE	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	N-NITROSO-DI-n-PROPYLAMINE	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	N-NITROSODIPHENYLAMINE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	N-NITROSODIPHENYLAMINE	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	N-NITROSODIPHENYLAMINE	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	N-NITROSODIPHENYLAMINE	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	N-NITROSODIPHENYLAMINE	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	N-NITROSODIPHENYLAMINE	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	NAPHTHALENE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	NAPHTHALENE	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	NAPHTHALENE	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	NAPHTHALENE	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	NAPHTHALENE	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	NAPHTHALENE	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	NITROBENZENE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	NITROBENZENE	10	UG/L		U	10		RFSV	22-MAY-89

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW095007	NITROBENZENE	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	NITROBENZENE	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	NITROBENZENE	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW095001	PENTACHLOROPHENOL	52	UG/L		U	52		RFSV	27-MAR-89
SW095	TRG	SW095002	PENTACHLOROPHENOL	50	UG/L		U	50		RFSV	22-MAY-89
SW095	TRG	SW095007	PENTACHLOROPHENOL	50	UG/L		U	50		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	PENTACHLOROPHENOL	50	UG/L		U	50		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	PENTACHLOROPHENOL	50	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	PENTACHLOROPHENOL	20	UG/L		J	50		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	PHENANTHRENE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	PHENANTHRENE	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	PHENANTHRENE	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	PHENANTHRENE	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	PHENANTHRENE	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	PHENANTHRENE	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	PHENOL	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	PHENOL	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	PHENOL	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	PHENOL	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	PHENOL	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	PHENOL	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW095001	PYRENE	10	UG/L		U	10		RFSV	27-MAR-89
SW095	TRG	SW095002	PYRENE	10	UG/L		U	10		RFSV	22-MAY-89
SW095	TRG	SW095007	PYRENE	10	UG/L		U	10		RFSV	10-OCT-89
SW095	TRG	SW095W053090A	PYRENE	10	UG/L		U	10		SVOCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	PYRENE	10	UG/L		U	10		SVOCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	PYRENE	10	UG/L		U	10		SVOCLPTCL	11-APR-91
SW095	TRG	SW88A086	STYRENE	5.0	UG/L		U	5.0		RFVO	12-JUL-88
SW095	TRG	SW095001	STYRENE	5	UG/L		U A	5	A	RFVO	27-MAR-89
SW095	TRG	SW095003	STYRENE	5	UG/L		U	5		RFVO	08-JUN-89
SW095	TRG	SW095004	STYRENE	5	UG/L		U	5		RFVO	05-JUL-89
SW095	TRG	SW095005	STYRENE	5	UG/L		U	5		RFVO	10-AUG-89
SW095	TRG	SW095007	STYRENE	10	UG/L		U	10		RFVO	10-OCT-89
SW095	TRG	SW095008	STYRENE	5	UG/L		U A	5	A	RFVO	02-NOV-89
SW095	TRG	SW095009	STYRENE	5	UG/L		U	5		RFVO	07-DEC-89
SW095	TRG	SW095W053090A	STYRENE	5	UG/L		U	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	STYRENE	5	UG/L		U	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	STYRENE	5	UG/L		U	5		VOCCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	STYRENE	5	UG/L		U	5		VOCCLPTCL	26-SEP-90
SW095	TRG	SW00450WC	STYRENE	5	UG/L		U	5		VOCCLPTCL	24-OCT-90
SW095	TRG	SW00551WC	STYRENE	5	UG/L		U	5		VOCCLPTCL	19-NOV-90
SW095	TRG	SW00655WC	STYRENE	5	UG/L		U	5		VOCCLPTCL	06-DEC-90
SW095	TRG	SW00963WC	STYRENE	5	UG/L		U	5		VOCCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	STYRENE	5	UG/L		U	5		VOCCLPTCL	11-APR-91
SW095	TRG	SW01172WC	STYRENE	5	UG/L		U	5		VOCCLPTCL	22-MAY-91
SW095	TRG	SW88A086	TETRACHLOROETHENE	5.0	UG/L		U	5.0		RFVO	12-JUL-88
SW095	TRG	SW095001	TETRACHLOROETHENE	5	UG/L		U V	5	A	RFVO	27-MAR-89
SW095	TRG	SW095003	TETRACHLOROETHENE	5	UG/L		U	5		RFVO	08-JUN-89
SW095	TRG	SW095004	TETRACHLOROETHENE	5	UG/L		U	5		RFVO	05-JUL-89
SW095	TRG	SW095005	TETRACHLOROETHENE	5	UG/L		U	5		RFVO	10-AUG-89
SW095	TRG	SW095007	TETRACHLOROETHENE	10	UG/L		U	10		RFVO	10-OCT-89
SW095	TRG	SW095008	TETRACHLOROETHENE	5	UG/L		U V	5	A	RFVO	02-NOV-89
SW095	TRG	SW095009	TETRACHLOROETHENE	5	UG/L		U	5		RFVO	07-DEC-89
SW095	TRG	SW095W053090A	TETRACHLOROETHENE	5	UG/L		U	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	TETRACHLOROETHENE	5	UG/L		U	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	TETRACHLOROETHENE	5	UG/L		U	5		VOCCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	TETRACHLOROETHENE	5	UG/L		U	5		VOCCLPTCL	26-SEP-90
SW095	TRG	SW00450WC	TETRACHLOROETHENE	5	UG/L		U	5		VOCCLPTCL	24-OCT-90

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW00551WC	TETRACHLOROETHENE	5	UG/L		U	5		VOCCLPTCL	19-NOV-90
SW095	TRG	SW00655WC	TETRACHLOROETHENE	5	UG/L		U	5		VOCCLPTCL	06-DEC-90
SW095	TRG	SW00963WC	TETRACHLOROETHENE	5	UG/L		U	5		VOCCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	TETRACHLOROETHENE	5	UG/L		U	5		VOCCLPTCL	11-APR-91
SW095	TRG	SW01172WC	TETRACHLOROETHENE	5	UG/L		U	5		VOCCLPTCL	22-MAY-91
SW095	TRG	SW88A086	TOLUENE	5.0	UG/L		U	5.0		RFVO	12-JUL-88
SW095	TRG	SW095001	TOLUENE	5	UG/L		U A	5	A	RFVO	27-MAR-89
SW095	TRG	SW095003	TOLUENE	5	UG/L		U	5		RFVO	08-JUN-89
SW095	TRG	SW095004	TOLUENE	5	UG/L		U	5		RFVO	05-JUL-89
SW095	TRG	SW095005	TOLUENE	5	UG/L		U	5		RFVO	10-AUG-89
SW095	TRG	SW095007	TOLUENE	10	UG/L		U	10		RFVO	10-OCT-89
SW095	TRG	SW095008	TOLUENE	5	UG/L		U A	5	A	RFVO	02-NOV-89
SW095	TRG	SW095009	TOLUENE	5	UG/L		U	5		RFVO	07-DEC-89
SW095	TRG	SW095W053090A	TOLUENE	5	UG/L		U	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	TOLUENE	5	UG/L		U	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	TOLUENE	5	UG/L		U	5		VOCCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	TOLUENE	5	UG/L		U	5		VOCCLPTCL	26-SEP-90
SW095	TRG	SW00450WC	TOLUENE	5	UG/L		U	5		VOCCLPTCL	24-OCT-90
SW095	TRG	SW00551WC	TOLUENE	5	UG/L		U	5		VOCCLPTCL	19-NOV-90
SW095	TRG	SW00655WC	TOLUENE	5	UG/L		U	5		VOCCLPTCL	06-DEC-90
SW095	TRG	SW00963WC	TOLUENE	5	UG/L		U	5		VOCCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	TOLUENE	5	UG/L		U	5		VOCCLPTCL	11-APR-91
SW095	TRG	SW01172WC	TOLUENE	5	UG/L		U	5		VOCCLPTCL	22-MAY-91
SW095	TRG	SW88A086	TOTAL XYLENES	5.0	UG/L		U	5.0		RFVO	12-JUL-88
SW095	TRG	SW095001	TOTAL XYLENES	5	UG/L		U A	5	A	RFVO	27-MAR-89
SW095	TRG	SW095003	TOTAL XYLENES	5	UG/L		U	5		RFVO	08-JUN-89
SW095	TRG	SW095004	TOTAL XYLENES	5	UG/L		U	5		RFVO	05-JUL-89
SW095	TRG	SW095005	TOTAL XYLENES	5	UG/L		U	5		RFVO	10-AUG-89
SW095	TRG	SW095007	TOTAL XYLENES	10	UG/L		U	10		RFVO	10-OCT-89
SW095	TRG	SW095008	TOTAL XYLENES	5	UG/L		U A	5	A	RFVO	02-NOV-89
SW095	TRG	SW095009	TOTAL XYLENES	5	UG/L		U	5		RFVO	07-DEC-89
SW095	TRG	SW095W053090A	TOTAL XYLENES	5	UG/L		U	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	TOTAL XYLENES	5	UG/L		U	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	TOTAL XYLENES	5	UG/L		U	5		VOCCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	TOTAL XYLENES	5	UG/L		U	5		VOCCLPTCL	26-SEP-90
SW095	TRG	SW00450WC	TOTAL XYLENES	5	UG/L		U	5		VOCCLPTCL	24-OCT-90
SW095	TRG	SW00551WC	TOTAL XYLENES	5	UG/L		U	5		VOCCLPTCL	19-NOV-90
SW095	TRG	SW00655WC	TOTAL XYLENES	5	UG/L		U	5		VOCCLPTCL	06-DEC-90
SW095	TRG	SW00963WC	TOTAL XYLENES	5	UG/L		U	5		VOCCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	TOTAL XYLENES	5	UG/L		U	5		VOCCLPTCL	11-APR-91
SW095	TRG	SW01172WC	TOTAL XYLENES	5	UG/L		U	5		VOCCLPTCL	22-MAY-91
SW095	TRG	SW88A086	TRICHLOROETHENE	5.0	UG/L		U	5.0		RFVO	12-JUL-88
SW095	TRG	SW095001	TRICHLOROETHENE	4	UG/L		J A	5	A	RFVO	27-MAR-89
SW095	TRG	SW095003	TRICHLOROETHENE	3	UG/L		J	5		RFVO	08-JUN-89
SW095	TRG	SW095004	TRICHLOROETHENE	2	UG/L		J	5		RFVO	05-JUL-89
SW095	TRG	SW095005	TRICHLOROETHENE	4	UG/L		J	5		RFVO	10-AUG-89
SW095	TRG	SW095007	TRICHLOROETHENE	10	UG/L		U	10		RFVO	10-OCT-89
SW095	TRG	SW095008	TRICHLOROETHENE	5	UG/L		U V	5	A	RFVO	02-NOV-89
SW095	TRG	SW095009	TRICHLOROETHENE	5	UG/L		U	5		RFVO	07-DEC-89
SW095	TRG	SW095W053090A	TRICHLOROETHENE	3	UG/L		JB	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	TRICHLOROETHENE	5	UG/L			5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	TRICHLOROETHENE	3	UG/L		J	5		VOCCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	TRICHLOROETHENE	3	UG/L		J	5		VOCCLPTCL	26-SEP-90
SW095	TRG	SW00450WC	TRICHLOROETHENE	3	UG/L		J	5		VOCCLPTCL	24-OCT-90
SW095	TRG	SW00551WC	TRICHLOROETHENE	4	UG/L		J	5		VOCCLPTCL	19-NOV-90
SW095	TRG	SW00655WC	TRICHLOROETHENE	2	UG/L		J	5		VOCCLPTCL	06-DEC-90
SW095	TRG	SW00963WC	TRICHLOROETHENE	3	UG/L		J	5		VOCCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	TRICHLOROETHENE	3	UG/L		J	5		VOCCLPTCL	11-APR-91

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW01172WC	TRICHLOROETHENE	2	UG/L		J	5		VOCCLPTCL	22-MAY-91
SW095	TRG	SW88A086	VINYL ACETATE	10	UG/L		U	10		RFVO	12-JUL-88
SW095	TRG	SW095001	VINYL ACETATE	10	UG/L		U V	10	A	RFVO	27-MAR-89
SW095	TRG	SW095003	VINYL ACETATE	10	UG/L		U	10		RFVO	08-JUN-89
SW095	TRG	SW095004	VINYL ACETATE	10	UG/L		U	10		RFVO	05-JUL-89
SW095	TRG	SW095005	VINYL ACETATE	10	UG/L		U	10		RFVO	10-AUG-89
SW095	TRG	SW095007	VINYL ACETATE	20	UG/L		U	20		RFVO	10-OCT-89
SW095	TRG	SW095008	VINYL ACETATE	10	UG/L		U R	10	A	RFVO	02-NOV-89
SW095	TRG	SW095009	VINYL ACETATE	10	UG/L		U	10		RFVO	07-DEC-89
SW095	TRG	SW095W053090A	VINYL ACETATE	10	UG/L		U	10		VOCCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	VINYL ACETATE	10	UG/L		U	10		VOCCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	VINYL ACETATE	10	UG/L		U	10		VOCCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	VINYL ACETATE	10	UG/L		U	10		VOCCLPTCL	26-SEP-90
SW095	TRG	SW00450WC	VINYL ACETATE	10	UG/L		U	10		VOCCLPTCL	24-OCT-90
SW095	TRG	SW00551WC	VINYL ACETATE	10	UG/L		U	10		VOCCLPTCL	19-NOV-90
SW095	TRG	SW00655WC	VINYL ACETATE	10	UG/L		U	10		VOCCLPTCL	06-DEC-90
SW095	TRG	SW00963WC	VINYL ACETATE	10	UG/L		U	10		VOCCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	VINYL ACETATE	10	UG/L		U	10		VOCCLPTCL	11-APR-91
SW095	TRG	SW01172WC	VINYL ACETATE	10	UG/L		U	10		VOCCLPTCL	22-MAY-91
SW095	TRG	SW88A086	VINYL CHLORIDE	10	UG/L		U	10		RFVO	12-JUL-88
SW095	TRG	SW095001	VINYL CHLORIDE	10	UG/L		U V	10	A	RFVO	27-MAR-89
SW095	TRG	SW095003	VINYL CHLORIDE	10	UG/L		U	10		RFVO	08-JUN-89
SW095	TRG	SW095004	VINYL CHLORIDE	10	UG/L		U	10		RFVO	05-JUL-89
SW095	TRG	SW095005	VINYL CHLORIDE	10	UG/L		U	10		RFVO	10-AUG-89
SW095	TRG	SW095007	VINYL CHLORIDE	20	UG/L		U	20		RFVO	10-OCT-89
SW095	TRG	SW095008	VINYL CHLORIDE	10	UG/L		U V	10	A	RFVO	02-NOV-89
SW095	TRG	SW095009	VINYL CHLORIDE	10	UG/L		U	10		RFVO	07-DEC-89
SW095	TRG	SW095W053090A	VINYL CHLORIDE	10	UG/L		U	10		VOCCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	VINYL CHLORIDE	10	UG/L		U	10		VOCCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	VINYL CHLORIDE	10	UG/L		U	10		VOCCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	VINYL CHLORIDE	10	UG/L		U	10		VOCCLPTCL	26-SEP-90
SW095	TRG	SW00450WC	VINYL CHLORIDE	10	UG/L		U	10		VOCCLPTCL	24-OCT-90
SW095	TRG	SW00551WC	VINYL CHLORIDE	10	UG/L		U	10		VOCCLPTCL	19-NOV-90
SW095	TRG	SW00655WC	VINYL CHLORIDE	10	UG/L		U	10		VOCCLPTCL	06-DEC-90
SW095	TRG	SW00963WC	VINYL CHLORIDE	10	UG/L		U	10		VOCCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	VINYL CHLORIDE	10	UG/L		U	10		VOCCLPTCL	11-APR-91
SW095	TRG	SW01172WC	VINYL CHLORIDE	10	UG/L		U	10		VOCCLPTCL	22-MAY-91
SW095	TRG	SW88A086	cis-1,3-DICHLOROPROPENE	5.0	UG/L		U	5.0		RFVO	12-JUL-88
SW095	TRG	SW095001	cis-1,3-DICHLOROPROPENE	5	UG/L		U V	5	A	RFVO	27-MAR-89
SW095	TRG	SW095003	cis-1,3-DICHLOROPROPENE	5	UG/L		U	5		RFVO	08-JUN-89
SW095	TRG	SW095004	cis-1,3-DICHLOROPROPENE	5	UG/L		U	5		RFVO	05-JUL-89
SW095	TRG	SW095005	cis-1,3-DICHLOROPROPENE	5	UG/L		U	5		RFVO	10-AUG-89
SW095	TRG	SW095007	cis-1,3-DICHLOROPROPENE	10	UG/L		U	10		RFVO	10-OCT-89
SW095	TRG	SW095008	cis-1,3-DICHLOROPROPENE	5	UG/L		U V	5	A	RFVO	02-NOV-89
SW095	TRG	SW095009	cis-1,3-DICHLOROPROPENE	5	UG/L		U	5		RFVO	07-DEC-89
SW095	TRG	SW095W053090A	cis-1,3-DICHLOROPROPENE	5	UG/L		U	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	cis-1,3-DICHLOROPROPENE	5	UG/L		U	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	cis-1,3-DICHLOROPROPENE	5	UG/L		U	5		VOCCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	cis-1,3-DICHLOROPROPENE	5	UG/L		U	5		VOCCLPTCL	26-SEP-90
SW095	TRG	SW00450WC	cis-1,3-DICHLOROPROPENE	5	UG/L		U	5		VOCCLPTCL	24-OCT-90
SW095	TRG	SW00551WC	cis-1,3-DICHLOROPROPENE	5	UG/L		U	5		VOCCLPTCL	19-NOV-90
SW095	TRG	SW00655WC	cis-1,3-DICHLOROPROPENE	5	UG/L		U	5		VOCCLPTCL	06-DEC-90
SW095	TRG	SW00963WC	cis-1,3-DICHLOROPROPENE	5	UG/L		U	5		VOCCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	cis-1,3-DICHLOROPROPENE	5	UG/L		U	5		VOCCLPTCL	11-APR-91
SW095	TRG	SW01172WC	cis-1,3-DICHLOROPROPENE	5	UG/L		U	5		VOCCLPTCL	22-MAY-91
SW095	TRG	SW88A086	trans-1,2-DICHLOROETHENE	5.0	UG/L		U	5.0		RFVO	12-JUL-88
SW095	TRG	SW88A086	trans-1,3-DICHLOROPROPENE	5.0	UG/L		U	5.0		RFVO	12-JUL-88
SW095	TRG	SW095001	trans-1,3-DICHLOROPROPENE	5	UG/L		U V	5	A	RFVO	27-MAR-89

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW095003	trans-1,3-DICHLOROPROPENE	5	UG/L		U	5		RFVO	08-JUN-89
SW095	TRG	SW095004	trans-1,3-DICHLOROPROPENE	5	UG/L		U	5		RFVO	05-JUL-89
SW095	TRG	SW095005	trans-1,3-DICHLOROPROPENE	5	UG/L		U	5		RFVO	10-AUG-89
SW095	TRG	SW095007	trans-1,3-DICHLOROPROPENE	10	UG/L		U	10		RFVO	10-OCT-89
SW095	TRG	SW095008	trans-1,3-DICHLOROPROPENE	5	UG/L		U V	5	A	RFVO	02-NOV-89
SW095	TRG	SW095009	trans-1,3-DICHLOROPROPENE	5	UG/L		U	5		RFVO	07-DEC-89
SW095	TRG	SW095W053090A	trans-1,3-DICHLOROPROPENE	5	UG/L		U	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	trans-1,3-DICHLOROPROPENE	5	UG/L		U	5		VOCCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	trans-1,3-DICHLOROPROPENE	5	UG/L		U	5		VOCCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	trans-1,3-DICHLOROPROPENE	5	UG/L		U	5		VOCCLPTCL	26-SEP-90
SW095	TRG	SW00450WC	trans-1,3-DICHLOROPROPENE	5	UG/L		U	5		VOCCLPTCL	24-OCT-90
SW095	TRG	SW00551WC	trans-1,3-DICHLOROPROPENE	5	UG/L		U	5		VOCCLPTCL	19-NOV-90
SW095	TRG	SW00655WC	trans-1,3-DICHLOROPROPENE	5	UG/L		U	5		VOCCLPTCL	06-DEC-90
SW095	TRG	SW00963WC	trans-1,3-DICHLOROPROPENE	5	UG/L		U	5		VOCCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	trans-1,3-DICHLOROPROPENE	5	UG/L		U	5		VOCCLPTCL	11-APR-91
SW095	TRG	SW01172WC	trans-1,3-DICHLOROPROPENE	5	UG/L		U	5		VOCCLPTCL	22-MAY-91

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW88A086	ALUMINUM	0.200	MG/L		U		N	RFME	12-JUL-88
SW095	S	SW88A086	ALUMINUM	0.200	MG/L		U		N	RFME	12-JUL-88
SW095	SD	SW88A086	ALUMINUM	0.200	MG/L		U		N	RFME	12-JUL-88
SW095	TRG	SW88A086	ALUMINUM	0.200	MG/L		U		N	RFMS	12-JUL-88
SW095	SD	SW88A086	ALUMINUM	0.200	MG/L		U		N	RFMS	12-JUL-88
SW095	S	SW88A086	ALUMINUM	0.200	MG/L		U		N	RFMS	12-JUL-88
SW095	TRG	SW095001	ALUMINUM	.500	MG/L			V 200	A	RFME	27-MAR-89
SW095	TRG	SW095002	ALUMINUM	.208	MG/L			V 200	A	RFME	22-MAY-89
SW095	TRG	SW095002	ALUMINUM	.200	MG/L		U	V 200	A	RFMS	22-MAY-89
SW095	TRG	SW095003	ALUMINUM	.332	MG/L			V 200	A	RFME	08-JUN-89
SW095	TRG	SW095003	ALUMINUM	.200	MG/L		U	V 200	A	RFMS	08-JUN-89
SW095	TRG	SW095004	ALUMINUM	.386	MG/L			V 200	A	RFME	05-JUL-89
SW095	TRG	SW095004	ALUMINUM	.208	MG/L			A 200	A	RFMS	05-JUL-89
SW095	TRG	SW095005	ALUMINUM	.238	MG/L			A 200	A	RFME	10-AUG-89
SW095	TRG	SW095005	ALUMINUM	.224	MG/L			A 200	A	RFMS	10-AUG-89
SW095	TRG	SW095006	ALUMINUM	.200	MG/L		U	V 200	A	RFMS	18-SEP-89
SW095	TRG	SW095007	ALUMINUM	.293	MG/L			A 200	A	RFME	10-OCT-89
SW095	TRG	SW095007	ALUMINUM	.277	MG/L			A 200	A	RFMS	10-OCT-89
SW095	TRG	SW095008	ALUMINUM	.410	MG/L			200		RFME	02-NOV-89
SW095	TRG	SW095008	ALUMINUM	.309	MG/L			200		RFMS	02-NOV-89
SW095	TRG	SW095009	ALUMINUM	.200	MG/L		U	200		RFME	07-DEC-89
SW095	TRG	SW095009	ALUMINUM	.200	MG/L		U	200		RFMS	07-DEC-89
SW095	TRG	SW095W053090A	ALUMINUM	200	UG/L		U	200		DMETCLPTAL	30-MAY-90
SW095	TRG	SW095W053090A	ALUMINUM	200	UG/L		U	200		DMETCLPTAL	30-MAY-90
SW095	TRG	SW095W053090A	ALUMINUM	228	UG/L			200		SMETCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	ALUMINUM	553	UG/L			200		SMETCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	ALUMINUM	200	UG/L		U	200		DMETCLPTAL	26-JUN-90
SW095	TRG	SW00157WC	ALUMINUM	200	UG/L		U	200		SMETCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	ALUMINUM	107.00	UG/L		B	200		DMETCLPTAL	26-SEP-90
SW095	TRG	SW00355WC	ALUMINUM	142.00	UG/L		B	200		SMETCLPTCL	26-SEP-90
SW095	TRG	SW00963WC	ALUMINUM	124.00	UG/L		B	200		DMETCLPTAL	14-MAR-91
SW095	TRG	SW00963WC	ALUMINUM	190.00	UG/L		B	200		SMETCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	ALUMINUM	77.30	UG/L		B	200		DMETCLPTAL	11-APR-91
SW095	TRG	SW01065WC	ALUMINUM	1360.00	UG/L			200		SMETCLPTCL	11-APR-91
SW095	TRG	SW01172WC	ALUMINUM	172.00	UG/L		B	200		SMETCLPTCL	22-MAY-91
SW095	TRG	SW01172WC	ALUMINUM	128.00	UG/L		B	200		DMETCLPTAL	22-MAY-91
SW095	TRG	SW88A086	ANTIMONY	0.060	MG/L		U		N	RFME	12-JUL-88
SW095	S	SW88A086	ANTIMONY	0.060	MG/L		U		N	RFME	12-JUL-88
SW095	TRG	SW88A086	ANTIMONY	0.060	MG/L		U		N	RFMS	12-JUL-88
SW095	SD	SW88A086	ANTIMONY	0.060	MG/L		U		N	RFMS	12-JUL-88
SW095	SD	SW88A086	ANTIMONY	0.060	MG/L		U		N	RFME	12-JUL-88
SW095	S	SW88A086	ANTIMONY	0.060	MG/L		U		N	RFMS	12-JUL-88
SW095	TRG	SW095001	ANTIMONY	.0600	MG/L		U	V 60.0	A	RFME	27-MAR-89
SW095	TRG	SW095002	ANTIMONY	.0600	MG/L		U	V 60.0	A	RFME	22-MAY-89
SW095	TRG	SW095002	ANTIMONY	.0600	MG/L		U	V 60.0	A	RFMS	22-MAY-89
SW095	TRG	SW095003	ANTIMONY	.0600	MG/L		U	V 60.0	A	RFME	08-JUN-89
SW095	TRG	SW095003	ANTIMONY	.0600	MG/L		U	V 60.0	A	RFMS	08-JUN-89
SW095	TRG	SW095004	ANTIMONY	.142	MG/L			A 60.0	A	RFME	05-JUL-89
SW095	TRG	SW095004	ANTIMONY	.125	MG/L			A 60.0	A	RFMS	05-JUL-89
SW095	TRG	SW095005	ANTIMONY	.0600	MG/L		U	A 60.0	A	RFME	10-AUG-89
SW095	TRG	SW095005	ANTIMONY	.0600	MG/L		U	A 60.0	A	RFMS	10-AUG-89
SW095	TRG	SW095006	ANTIMONY	.0600	MG/L		U	V 60.0	A	RFMS	18-SEP-89
SW095	TRG	SW095007	ANTIMONY	.0600	MG/L		U	A 60.0	A	RFME	10-OCT-89
SW095	TRG	SW095007	ANTIMONY	.0600	MG/L		U	V 60.0	A	RFMS	10-OCT-89
SW095	TRG	SW095008	ANTIMONY	.0600	MG/L		U	60.0		RFME	02-NOV-89
SW095	TRG	SW095008	ANTIMONY	.0600	MG/L		U	60.0		RFMS	02-NOV-89
SW095	TRG	SW095009	ANTIMONY	.0600	MG/L		U	60.0		RFME	07-DEC-89
SW095	TRG	SW095009	ANTIMONY	.0600	MG/L		U	60.0		RFMS	07-DEC-89

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW095W053090A	ANTIMONY	60	UG/L		U	60		DMETCLPTAL	30-MAY-90
SW095	TRG	SW095W053090A	ANTIMONY	60	UG/L		U	60		DMETCLPTAL	30-MAY-90
SW095	TRG	SW095W053090A	ANTIMONY	60	UG/L		U	60		SMETCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	ANTIMONY	60	UG/L		U	60		SMETCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	ANTIMONY	60	UG/L		U	60		DMETCLPTAL	26-JUN-90
SW095	TRG	SW00157WC	ANTIMONY	60	UG/L		U	60		SMETCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	ANTIMONY	43.00	UG/L		B	60		DMETCLPTAL	26-SEP-90
SW095	TRG	SW00355WC	ANTIMONY	43.00	UG/L		B	60		SMETCLPTCL	26-SEP-90
SW095	TRG	SW00963WC	ANTIMONY	28.00	UG/L		B	60		DMETCLPTAL	14-MAR-91
SW095	TRG	SW00963WC	ANTIMONY	30.30	UG/L		B	60		SMETCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	ANTIMONY	20.90	UG/L		B	60		DMETCLPTAL	11-APR-91
SW095	TRG	SW01065WC	ANTIMONY	13.60	UG/L		B	60		SMETCLPTCL	11-APR-91
SW095	TRG	SW01172WC	ANTIMONY	80.40	UG/L		N	60		SMETCLPTCL	22-MAY-91
SW095	TRG	SW01172WC	ANTIMONY	72.30	UG/L		N	60		DMETCLPTAL	22-MAY-91
SW095	TRG	SW88A086	ARSENIC	0.010	MG/L		U		N	RFME	12-JUL-88
SW095	SD	SW88A086	ARSENIC	0.010	MG/L		U		N	RFME	12-JUL-88
SW095	TRG	SW88A086	ARSENIC	0.010	MG/L		U		N	RFMS	12-JUL-88
SW095	SD	SW88A086	ARSENIC	0.010	MG/L		U		N	RFMS	12-JUL-88
SW095	S	SW88A086	ARSENIC	0.010	MG/L		U		N	RFMS	12-JUL-88
SW095	S	SW88A086	ARSENIC	0.010	MG/L		U		N	RFME	12-JUL-88
SW095	TRG	SW095001	ARSENIC	.0100	MG/L		U	A 10.0	A	RFME	27-MAR-89
SW095	TRG	SW095002	ARSENIC	.0100	MG/L		U	V 10.0	A	RFME	22-MAY-89
SW095	TRG	SW095002	ARSENIC	.0100	MG/L		U	A 10.0	A	RFMS	22-MAY-89
SW095	TRG	SW095003	ARSENIC	.0100	MG/L		U	V 10.0	A	RFME	08-JUN-89
SW095	TRG	SW095003	ARSENIC	.0100	MG/L		U	V 10.0	A	RFMS	08-JUN-89
SW095	TRG	SW095004	ARSENIC	.0100	MG/L		U	R 10.0	A	RFME	05-JUL-89
SW095	TRG	SW095004	ARSENIC	.0100	MG/L		U	R 10.0	A	RFMS	05-JUL-89
SW095	TRG	SW095005	ARSENIC	.0100	MG/L		U	R 10.0	A	RFME	10-AUG-89
SW095	TRG	SW095005	ARSENIC	.0100	MG/L		U	R 10.0	A	RFMS	10-AUG-89
SW095	TRG	SW095006	ARSENIC	.0100	MG/L		U	R 10.0	A	RFMS	18-SEP-89
SW095	TRG	SW095007	ARSENIC	.0100	MG/L		U	V 10.0	A	RFME	10-OCT-89
SW095	TRG	SW095007	ARSENIC	.0100	MG/L		U	A 10.0	A	RFMS	10-OCT-89
SW095	TRG	SW095008	ARSENIC	.0100	MG/L		U	10.0		RFME	02-NOV-89
SW095	TRG	SW095008	ARSENIC	.0100	MG/L		U	10.0		RFMS	02-NOV-89
SW095	TRG	SW095009	ARSENIC	.0100	MG/L		U	10.0		RFME	07-DEC-89
SW095	TRG	SW095009	ARSENIC	.0100	MG/L		U	10.0		RFMS	07-DEC-89
SW095	TRG	SW095W053090A	ARSENIC	10	UG/L		U	10		DMETCLPTAL	30-MAY-90
SW095	TRG	SW095W053090A	ARSENIC	20	UG/L		U	20		DMETCLPTAL	30-MAY-90
SW095	TRG	SW095W053090A	ARSENIC	20	UG/L		U	20		SMETCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	ARSENIC	10	UG/L		U	10		SMETCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	ARSENIC	10	UG/L		U	10		DMETCLPTAL	26-JUN-90
SW095	TRG	SW00157WC	ARSENIC	10	UG/L		U	10		SMETCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	ARSENIC	1.00	UG/L		U	10		DMETCLPTAL	26-SEP-90
SW095	TRG	SW00355WC	ARSENIC	2.00	UG/L		U	10		SMETCLPTCL	26-SEP-90
SW095	TRG	SW00963WC	ARSENIC	2.00	UG/L		U	10		DMETCLPTAL	14-MAR-91
SW095	TRG	SW00963WC	ARSENIC	2.00	UG/L		U	10		SMETCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	ARSENIC	2.00	UG/L		B	10		DMETCLPTAL	11-APR-91
SW095	TRG	SW01065WC	ARSENIC	2.00	UG/L		B	10		SMETCLPTCL	11-APR-91
SW095	TRG	SW01172WC	ARSENIC	2.00	UG/L		U	10		SMETCLPTCL	22-MAY-91
SW095	TRG	SW01172WC	ARSENIC	2.00	UG/L		U	10		DMETCLPTAL	22-MAY-91
SW095	TRG	SW88A086	BARIUM	0.200	MG/L		U		N	RFME	12-JUL-88
SW095	SD	SW88A086	BARIUM	0.200	MG/L		U		N	RFMS	12-JUL-88
SW095	S	SW88A086	BARIUM	0.200	MG/L		U		N	RFMS	12-JUL-88
SW095	S	SW88A086	BARIUM	0.200	MG/L		U		N	RFME	12-JUL-88
SW095	TRG	SW88A086	BARIUM	0.200	MG/L		U		N	RFMS	12-JUL-88
SW095	SD	SW88A086	BARIUM	0.200	MG/L		U		N	RFME	12-JUL-88
SW095	TRG	SW095001	BARIUM	.200	MG/L		U	V 200	A	RFME	27-MAR-89
SW095	TRG	SW095002	BARIUM	.200	MG/L		U	V 200	A	RFME	22-MAY-89

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW095002	BARIUM	.200	MG/L		U	V 200	A	RFMS	22-MAY-89
SW095	TRG	SW095003	BARIUM	.200	MG/L		U	V 200	A	RFME	08-JUN-89
SW095	TRG	SW095003	BARIUM	.200	MG/L		U	V 200	A	RFMS	08-JUN-89
SW095	TRG	SW095004	BARIUM	.200	MG/L		U	V 200	A	RFME	05-JUL-89
SW095	TRG	SW095004	BARIUM	.200	MG/L		U	V 200	A	RFMS	05-JUL-89
SW095	TRG	SW095005	BARIUM	.200	MG/L		U	V 200	A	RFME	10-AUG-89
SW095	TRG	SW095005	BARIUM	.200	MG/L		U	V 200	A	RFMS	10-AUG-89
SW095	TRG	SW095006	BARIUM	.200	MG/L		U	V 200	A	RFMS	18-SEP-89
SW095	TRG	SW095007	BARIUM	.200	MG/L		U	V 200	A	RFME	10-OCT-89
SW095	TRG	SW095007	BARIUM	.200	MG/L		U	V 200	A	RFMS	10-OCT-89
SW095	TRG	SW095008	BARIUM	.200	MG/L		U	200		RFME	02-NOV-89
SW095	TRG	SW095008	BARIUM	.200	MG/L		U	200		RFMS	02-NOV-89
SW095	TRG	SW095009	BARIUM	.200	MG/L		U	200		RFME	07-DEC-89
SW095	TRG	SW095009	BARIUM	.200	MG/L		U	200		RFMS	07-DEC-89
SW095	TRG	SW095W053090A	BARIUM	200	UG/L		U	200		DMETCLPTAL	30-MAY-90
SW095	TRG	SW095W053090A	BARIUM	200	UG/L		U	200		SMETCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	BARIUM	200	UG/L		U	200		SMETCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	BARIUM	200	UG/L		U	200		DMETCLPTAL	30-MAY-90
SW095	TRG	SW00157WC	BARIUM	202	UG/L			200		DMETCLPTAL	26-JUN-90
SW095	TRG	SW00157WC	BARIUM	200	UG/L		U	200		SMETCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	BARIUM	151.00	UG/L		B	200		DMETCLPTAL	26-SEP-90
SW095	TRG	SW00355WC	BARIUM	151.00	UG/L		B	200		SMETCLPTCL	26-SEP-90
SW095	TRG	SW00963WC	BARIUM	151.00	UG/L		B	200		DMETCLPTAL	14-MAR-91
SW095	TRG	SW00963WC	BARIUM	157.00	UG/L		B	200		SMETCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	BARIUM	65.00	UG/L		B	200		DMETCLPTAL	11-APR-91
SW095	TRG	SW01065WC	BARIUM	86.00	UG/L		B	200		SMETCLPTCL	11-APR-91
SW095	TRG	SW01172WC	BARIUM	179.00	UG/L		B	200		SMETCLPTCL	22-MAY-91
SW095	TRG	SW01172WC	BARIUM	192.00	UG/L		B	200		DMETCLPTAL	22-MAY-91
SW095	TRG	SW88A086	BERYLLIUM	0.005	MG/L		U		N	RFME	12-JUL-88
SW095	SD	SW88A086	BERYLLIUM	0.005	MG/L				N	RFMS	12-JUL-88
SW095	S	SW88A086	BERYLLIUM	0.005	MG/L		U		N	RFMS	12-JUL-88
SW095	TRG	SW88A086	BERYLLIUM	0.005	MG/L		U		N	RFMS	12-JUL-88
SW095	S	SW88A086	BERYLLIUM	0.005	MG/L		U		N	RFME	12-JUL-88
SW095	SD	SW88A086	BERYLLIUM	0.005	MG/L		U		N	RFME	12-JUL-88
SW095	TRG	SW095001	BERYLLIUM	.0050	MG/L		U	A 5.0	A	RFME	27-MAR-89
SW095	TRG	SW095002	BERYLLIUM	0050	MG/L		U	A 5.0	A	RFME	22-MAY-89
SW095	TRG	SW095002	BERYLLIUM	.0050	MG/L		U	A 5.0	A	RFMS	22-MAY-89
SW095	TRG	SW095003	BERYLLIUM	.0050	MG/L		U	A 5.0	A	RFME	08-JUN-89
SW095	TRG	SW095003	BERYLLIUM	.0050	MG/L		U	A 5.0	A	RFMS	08-JUN-89
SW095	TRG	SW095004	BERYLLIUM	.0050	MG/L		U	A 5.0	A	RFME	05-JUL-89
SW095	TRG	SW095004	BERYLLIUM	.0050	MG/L		U	A 5.0	A	RFMS	05-JUL-89
SW095	TRG	SW095005	BERYLLIUM	.0050	MG/L		U	A 5.0	A	RFME	10-AUG-89
SW095	TRG	SW095005	BERYLLIUM	.0050	MG/L		U	A 5.0	A	RFMS	10-AUG-89
SW095	TRG	SW095006	BERYLLIUM	.0050	MG/L		U	A 5.0	A	RFMS	18-SEP-89
SW095	TRG	SW095007	BERYLLIUM	.0050	MG/L		U	A 5.0	A	RFME	10-OCT-89
SW095	TRG	SW095007	BERYLLIUM	.0050	MG/L		U	A 5.0	A	RFMS	10-OCT-89
SW095	TRG	SW095008	BERYLLIUM	.0050	MG/L		U	5.0		RFME	02-NOV-89
SW095	TRG	SW095008	BERYLLIUM	.0050	MG/L		U	5.0		RFMS	02-NOV-89
SW095	TRG	SW095009	BERYLLIUM	.0050	MG/L		U	5.0		RFME	07-DEC-89
SW095	TRG	SW095009	BERYLLIUM	.0050	MG/L		U	5.0		RFMS	07-DEC-89
SW095	TRG	SW095W053090A	BERYLLIUM	5	UG/L		U	5		DMETCLPTAL	30-MAY-90
SW095	TRG	SW095W053090A	BERYLLIUM	5	UG/L		U	5		DMETCLPTAL	30-MAY-90
SW095	TRG	SW095W053090A	BERYLLIUM	5	UG/L		U	5		SMETCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	BERYLLIUM	5	UG/L		U	5		SMETCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	BERYLLIUM	5	UG/L		U	5		DMETCLPTAL	26-JUN-90
SW095	TRG	SW00157WC	BERYLLIUM	5	UG/L		U	5		SMETCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	BERYLLIUM	1.00	UG/L		U	5		DMETCLPTAL	26-SEP-90
SW095	TRG	SW00355WC	BERYLLIUM	1.00	UG/L		U	5		SMETCLPTCL	26-SEP-90

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW00963WC	BERYLLIUM	1.00	UG/L		U	5		DMETCLPTAL	14-MAR-91
SW095	TRG	SW00963WC	BERYLLIUM	1.00	UG/L		U	5		SMETCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	BERYLLIUM	1.00	UG/L		U	5		DMETCLPTAL	11-APR-91
SW095	TRG	SW01065WC	BERYLLIUM	1.00	UG/L		U	5		SMETCLPTCL	11-APR-91
SW095	TRG	SW01172WC	BERYLLIUM	1.00	UG/L		U	5		SMETCLPTCL	22-MAY-91
SW095	TRG	SW01172WC	BERYLLIUM	1.00	UG/L		U	5		DMETCLPTAL	22-MAY-91
SW095	TRG	SW88A086	CADMIUM	0.005	MG/L		U		N	RFME	12-JUL-88
SW095	TRG	SW88A086	CADMIUM	0.006	MG/L				N	RFMS	12-JUL-88
SW095	S	SW88A086	CADMIUM	0.006	MG/L				N	RFMS	12-JUL-88
SW095	SD	SW88A086	CADMIUM	0.006	MG/L				N	RFMS	12-JUL-88
SW095	SD	SW88A086	CADMIUM	0.005	MG/L		U		N	RFME	12-JUL-88
SW095	S	SW88A086	CADMIUM	0.005	MG/L		U		N	RFME	12-JUL-88
SW095	TRG	SW095001	CADMIUM	.0050	MG/L		U	V 5.0	A	RFME	27-MAR-89
SW095	TRG	SW095002	CADMIUM	.0050	MG/L		U	V 5.0	A	RFME	22-MAY-89
SW095	TRG	SW095002	CADMIUM	.0050	MG/L		U	V 5.0	A	RFMS	22-MAY-89
SW095	TRG	SW095003	CADMIUM	.0050	MG/L		U	V 5.0	A	RFME	08-JUN-89
SW095	TRG	SW095003	CADMIUM	.0050	MG/L		U	V 5.0	A	RFMS	08-JUN-89
SW095	TRG	SW095004	CADMIUM	.0050	MG/L		U	V 5.0	A	RFME	05-JUL-89
SW095	TRG	SW095004	CADMIUM	.0050	MG/L		U	V 5.0	A	RFMS	05-JUL-89
SW095	TRG	SW095005	CADMIUM	.0050	MG/L		U	V 5.0	A	RFME	10-AUG-89
SW095	TRG	SW095005	CADMIUM	.0050	MG/L		U	V 5.0	A	RFMS	10-AUG-89
SW095	TRG	SW095006	CADMIUM	.0050	MG/L		U	V 5.0	A	RFMS	18-SEP-89
SW095	TRG	SW095007	CADMIUM	.0050	MG/L		U	V 5.0	A	RFME	10-OCT-89
SW095	TRG	SW095007	CADMIUM	.0050	MG/L		U	V 5.0	A	RFMS	10-OCT-89
SW095	TRG	SW095008	CADMIUM	.0050	MG/L		U	5.0		RFME	02-NOV-89
SW095	TRG	SW095008	CADMIUM	.0050	MG/L		U	5.0		RFMS	02-NOV-89
SW095	TRG	SW095009	CADMIUM	.0050	MG/L		U	5.0		RFME	07-DEC-89
SW095	TRG	SW095009	CADMIUM	.0050	MG/L		U	5.0		RFMS	07-DEC-89
SW095	TRG	SW095W053090A	CADMIUM	5	UG/L		U	5		DMETCLPTAL	30-MAY-90
SW095	TRG	SW095W053090A	CADMIUM	5	UG/L		U	5		SMETCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	CADMIUM	5	UG/L		U	5		SMETCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	CADMIUM	5	UG/L		U	5		DMETCLPTAL	30-MAY-90
SW095	TRG	SW00157WC	CADMIUM	5	UG/L		U	5		DMETCLPTAL	26-JUN-90
SW095	TRG	SW00157WC	CADMIUM	5	UG/L		U	5		SMETCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	CADMIUM	2.00	UG/L		U	5		DMETCLPTAL	26-SEP-90
SW095	TRG	SW00355WC	CADMIUM	2.00	UG/L		B	5		SMETCLPTCL	26-SEP-90
SW095	TRG	SW00963WC	CADMIUM	2.00	UG/L		U	5		DMETCLPTAL	14-MAR-91
SW095	TRG	SW00963WC	CADMIUM	2.10	UG/L		B	5		SMETCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	CADMIUM	2.00	UG/L		U	5		DMETCLPTAL	11-APR-91
SW095	TRG	SW01065WC	CADMIUM	2.00	UG/L		U	5		SMETCLPTCL	11-APR-91
SW095	TRG	SW01172WC	CADMIUM	2.00	UG/L		U	5		SMETCLPTCL	22-MAY-91
SW095	TRG	SW01172WC	CADMIUM	2.00	UG/L		U	5		DMETCLPTAL	22-MAY-91
SW095	TRG	SW88A086	CALCIUM	400	MG/L				N	RFME	12-JUL-88
SW095	S	SW88A086	CALCIUM	700	MG/L				N	RFMS	12-JUL-88
SW095	SD	SW88A086	CALCIUM	420	MG/L				N	RFMS	12-JUL-88
SW095	S	SW88A086	CALCIUM	400	MG/L				N	RFME	12-JUL-88
SW095	SD	SW88A086	CALCIUM	420	MG/L				N	RFME	12-JUL-88
SW095	TRG	SW88A086	CALCIUM	410	MG/L				N	RFMS	12-JUL-88
SW095	TRG	SW095001	CALCIUM	316.00	MG/L			V 5000	A	RFME	27-MAR-89
SW095	TRG	SW095002	CALCIUM	366.00	MG/L			V 5000	A	RFME	22-MAY-89
SW095	TRG	SW095002	CALCIUM	365.00	MG/L			V 5000	A	RFMS	22-MAY-89
SW095	TRG	SW095003	CALCIUM	314.00	MG/L			V 5000	A	RFME	08-JUN-89
SW095	TRG	SW095003	CALCIUM	313.00	MG/L			V 5000	A	RFMS	08-JUN-89
SW095	TRG	SW095004	CALCIUM	349.00	MG/L			V 5000	A	RFME	05-JUL-89
SW095	TRG	SW095004	CALCIUM	358.00	MG/L			V 5000	A	RFMS	05-JUL-89
SW095	TRG	SW095005	CALCIUM	348.00	MG/L			V 5000	A	RFME	10-AUG-89
SW095	TRG	SW095005	CALCIUM	373.00	MG/L			V 5000	A	RFMS	10-AUG-89
SW095	TRG	SW095006	CALCIUM	271.00	MG/L			V 5000	A	RFMS	18-SEP-89

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW095007	CALCIUM	396.00	MG/L			A 5000	A	RFME	10-OCT-89
SW095	TRG	SW095007	CALCIUM	392.00	MG/L			A 5000	A	RFMS	10-OCT-89
SW095	TRG	SW095008	CALCIUM	334.00	MG/L			5000		RFME	02-NOV-89
SW095	TRG	SW095008	CALCIUM	337.00	MG/L			5000		RFMS	02-NOV-89
SW095	TRG	SW095009	CALCIUM	342.00	MG/L			5000		RFME	07-DEC-89
SW095	TRG	SW095009	CALCIUM	342.00	MG/L			5000		RFMS	07-DEC-89
SW095	TRG	SW095W053090A	CALCIUM	248000	UG/L			5000		DMETCLPTAL	30-MAY-90
SW095	TRG	SW095W053090A	CALCIUM	272000	UG/L			5000		DMETCLPTAL	30-MAY-90
SW095	TRG	SW095W053090A	CALCIUM	272000	UG/L			5000		SMETCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	CALCIUM	241000	UG/L			5000		SMETCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	CALCIUM	462000	UG/L			5000		DMETCLPTAL	26-JUN-90
SW095	TRG	SW00157WC	CALCIUM	395000	UG/L			5000		SMETCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	CALCIUM	295000.00	UG/L			5000		DMETCLPTAL	26-SEP-90
SW095	TRG	SW00355WC	CALCIUM	297000.00	UG/L			5000		SMETCLPTCL	26-SEP-90
SW095	TRG	SW00963WC	CALCIUM	381000.00	UG/L			5000		DMETCLPTAL	14-MAR-91
SW095	TRG	SW00963WC	CALCIUM	392000.00	UG/L			5000		SMETCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	CALCIUM	122000.00	UG/L			5000		DMETCLPTAL	11-APR-91
SW095	TRG	SW01065WC	CALCIUM	140000.00	UG/L			5000		SMETCLPTCL	11-APR-91
SW095	TRG	SW01172WC	CALCIUM	298000.00	UG/L			5000		SMETCLPTCL	22-MAY-91
SW095	TRG	SW01172WC	CALCIUM	318000.00	UG/L			5000		DMETCLPTAL	22-MAY-91
SW095	TRG	SW88A086	CESIUM	NA	MG/L				N	RFME	12-JUL-88
SW095	SD	SW88A086	CESIUM	NA	MG/L				N	RFME	12-JUL-88
SW095	TRG	SW88A086	CESIUM	NA	MG/L				N	RFMS	12-JUL-88
SW095	SD	SW88A086	CESIUM	NA	MG/L				N	RFMS	12-JUL-88
SW095	S	SW88A086	CESIUM	NA	MG/L				N	RFMS	12-JUL-88
SW095	S	SW88A086	CESIUM	NA	MG/L				N	RFME	12-JUL-88
SW095	TRG	SW095001	CESIUM	1.00	MG/L		U	V 1000	A	RFME	27-MAR-89
SW095	TRG	SW095002	CESIUM	.100	MG/L		U	V 100	A	RFME	22-MAY-89
SW095	TRG	SW095002	CESIUM	.100	MG/L		U	V 100	A	RFMS	22-MAY-89
SW095	TRG	SW095003	CESIUM	.100	MG/L		U	V 100	A	RFME	08-JUN-89
SW095	TRG	SW095003	CESIUM	.100	MG/L		U	V 100	A	RFMS	08-JUN-89
SW095	TRG	SW095004	CESIUM	.100	MG/L		U	V 100	A	RFME	05-JUL-89
SW095	TRG	SW095004	CESIUM	.100	MG/L		U	V 100	A	RFMS	05-JUL-89
SW095	TRG	SW095005	CESIUM	.100	MG/L		U	V 100	A	RFME	10-AUG-89
SW095	TRG	SW095005	CESIUM	.100	MG/L		U	V 100	A	RFMS	10-AUG-89
SW095	TRG	SW095006	CESIUM	2.50	MG/L		U	V 2500	A	RFMS	18-SEP-89
SW095	TRG	SW095007	CESIUM	2.50	MG/L		U	V 2500	A	RFME	10-OCT-89
SW095	TRG	SW095007	CESIUM	2.50	MG/L		U	V 2500	A	RFMS	10-OCT-89
SW095	TRG	SW095008	CESIUM	2.50	MG/L		U	2500		RFME	02-NOV-89
SW095	TRG	SW095008	CESIUM	2.50	MG/L		U	2500		RFMS	02-NOV-89
SW095	TRG	SW095009	CESIUM	2.50	MG/L		U	2500		RFME	07-DEC-89
SW095	TRG	SW095009	CESIUM	2.50	MG/L		U	2500		RFMS	07-DEC-89
SW095	TRG	SW095W053090A	CESIUM	100	UG/L		U	100		DMETNOCLP	30-MAY-90
SW095	TRG	SW095W053090A	CESIUM	2500	UG/L		U	2500		DMETNOCLP	30-MAY-90
SW095	TRG	SW095W053090A	CESIUM	2500	UG/L		U	2500		SMETNOCLP	30-MAY-90
SW095	TRG	SW095W053090A	CESIUM	2500	UG/L		U	2500		SMETNOCLP	30-MAY-90
SW095	TRG	SW00157WC	CESIUM	100	UG/L		U	100		DMETNOCLP	26-JUN-90
SW095	TRG	SW00157WC	CESIUM	100	UG/L		U	100		SMETNOCLP	26-JUN-90
SW095	TRG	SW00355WC	CESIUM	92.00	UG/L		U	1000		DMETNOCLP	26-SEP-90
SW095	TRG	SW00355WC	CESIUM	92.00	UG/L		U	1000		SMETNOCLP	26-SEP-90
SW095	TRG	SW00963WC	CESIUM	76.00	UG/L		U	1000		DMETNOCLP	14-MAR-91
SW095	TRG	SW00963WC	CESIUM	76.00	UG/L		U	1000		SMETNOCLP	14-MAR-91
SW095	TRG	SW01065WC	CESIUM	112.00	UG/L		U	1000		DMETNOCLP	11-APR-91
SW095	TRG	SW01065WC	CESIUM	112.00	UG/L		U	1000		SMETNOCLP	11-APR-91
SW095	TRG	SW01172WC	CESIUM	112.00	UG/L		UN	1000		SMETNOCLP	22-MAY-91
SW095	TRG	SW01172WC	CESIUM	112.00	UG/L		UN	1000		DMETNOCLP	22-MAY-91
SW095	TRG	SW88A086	CHROMIUM	0.010	MG/L		U		N	RFME	12-JUL-88
SW095	SD	SW88A086	CHROMIUM	0.010	MG/L		U		N	RFMS	12-JUL-88

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	S	SW88A086	CHROMIUM	0.010	MG/L		U		N	RFMS	12-JUL-88
SW095	S	SW88A086	CHROMIUM	0.010	MG/L		U		N	RFME	12-JUL-88
SW095	TRG	SW88A086	CHROMIUM	0.010	MG/L		U		N	RFMS	12-JUL-88
SW095	SD	SW88A086	CHROMIUM	0.010	MG/L		U		N	RFME	12-JUL-88
SW095	TRG	SW095001	CHROMIUM	.0100	MG/L		U	V 10.0	A	RFME	27-MAR-89
SW095	TRG	SW095002	CHROMIUM	.0100	MG/L		U	V 10.0	A	RFME	22-MAY-89
SW095	TRG	SW095002	CHROMIUM	.0100	MG/L		U	V 10.0	A	RFMS	22-MAY-89
SW095	TRG	SW095003	CHROMIUM	.0100	MG/L		U	V 10.0	A	RFME	08-JUN-89
SW095	TRG	SW095003	CHROMIUM	.0100	MG/L		U	V 10.0	A	RFMS	08-JUN-89
SW095	TRG	SW095004	CHROMIUM	.0169	MG/L			A 10.0	A	RFME	05-JUL-89
SW095	TRG	SW095004	CHROMIUM	.0156	MG/L			A 10.0	A	RFMS	05-JUL-89
SW095	TRG	SW095005	CHROMIUM	.0100	MG/L		U	V 10.0	A	RFME	10-AUG-89
SW095	TRG	SW095005	CHROMIUM	.0100	MG/L		U	V 10.0	A	RFMS	10-AUG-89
SW095	TRG	SW095006	CHROMIUM	.0100	MG/L		U	V 10.0	A	RFMS	18-SEP-89
SW095	TRG	SW095007	CHROMIUM	.0100	MG/L		U	R 10.0	A	RFME	10-OCT-89
SW095	TRG	SW095007	CHROMIUM	.0100	MG/L		U	R 10.0	A	RFMS	10-OCT-89
SW095	TRG	SW095008	CHROMIUM	.0100	MG/L		U	10.0		RFME	02-NOV-89
SW095	TRG	SW095008	CHROMIUM	.0100	MG/L		U	10.0		RFMS	02-NOV-89
SW095	TRG	SW095009	CHROMIUM	.0100	MG/L		U	10.0		RFME	07-DEC-89
SW095	TRG	SW095009	CHROMIUM	.0100	MG/L		U	10.0		RFMS	07-DEC-89
SW095	TRG	SW095W053090A	CHROMIUM	10	UG/L		U	10		DMETCLPTAL	30-MAY-90
SW095	TRG	SW095W053090A	CHROMIUM	10	UG/L		U	10		SMETCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	CHROMIUM	10	UG/L		U	10		SMETCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	CHROMIUM	10	UG/L		U	10		DMETCLPTAL	30-MAY-90
SW095	TRG	SW00157WC	CHROMIUM	10	UG/L		U	10		DMETCLPTAL	26-JUN-90
SW095	TRG	SW00157WC	CHROMIUM	10	UG/L		U	10		SMETCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	CHROMIUM	27.20	UG/L			10		DMETCLPTAL	26-SEP-90
SW095	TRG	SW00355WC	CHROMIUM	30.30	UG/L			10		SMETCLPTCL	26-SEP-90
SW095	TRG	SW00963WC	CHROMIUM	14.00	UG/L			10		DMETCLPTAL	14-MAR-91
SW095	TRG	SW00963WC	CHROMIUM	19.30	UG/L			10		SMETCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	CHROMIUM	9.20	UG/L		B	10		DMETCLPTAL	11-APR-91
SW095	TRG	SW01065WC	CHROMIUM	10.50	UG/L			10		SMETCLPTCL	11-APR-91
SW095	TRG	SW01172WC	CHROMIUM	25.50	UG/L			10		SMETCLPTCL	22-MAY-91
SW095	TRG	SW01172WC	CHROMIUM	22.40	UG/L			10		DMETCLPTAL	22-MAY-91
SW095	TRG	SW88A086	COBALT	0.050	MG/L		U		N	RFME	12-JUL-88
SW095	TRG	SW88A086	COBALT	0.050	MG/L		U		N	RFMS	12-JUL-88
SW095	SD	SW88A086	COBALT	0.050	MG/L		U		N	RFMS	12-JUL-88
SW095	S	SW88A086	COBALT	0.050	MG/L		U		N	RFMS	12-JUL-88
SW095	S	SW88A086	COBALT	0.050	MG/L		U		N	RFME	12-JUL-88
SW095	SD	SW88A086	COBALT	0.050	MG/L		U		N	RFME	12-JUL-88
SW095	TRG	SW095001	COBALT	.0500	MG/L		U	V 50.0	A	RFME	27-MAR-89
SW095	TRG	SW095002	COBALT	.0500	MG/L		U	V 50.0	A	RFME	22-MAY-89
SW095	TRG	SW095002	COBALT	.0500	MG/L		U	V 50.0	A	RFMS	22-MAY-89
SW095	TRG	SW095003	COBALT	.0500	MG/L		U	V 50.0	A	RFME	08-JUN-89
SW095	TRG	SW095003	COBALT	.0500	MG/L		U	V 50.0	A	RFMS	08-JUN-89
SW095	TRG	SW095004	COBALT	.0500	MG/L		U	V 50.0	A	RFME	05-JUL-89
SW095	TRG	SW095004	COBALT	.0500	MG/L		U	V 50.0	A	RFMS	05-JUL-89
SW095	TRG	SW095005	COBALT	.0500	MG/L		U	V 50.0	A	RFME	10-AUG-89
SW095	TRG	SW095005	COBALT	.0500	MG/L		U	V 50.0	A	RFMS	10-AUG-89
SW095	TRG	SW095006	COBALT	.0500	MG/L		U	A 50.0	A	RFMS	18-SEP-89
SW095	TRG	SW095007	COBALT	.0500	MG/L		U	V 50.0	A	RFME	10-OCT-89
SW095	TRG	SW095007	COBALT	.0500	MG/L		U	V 50.0	A	RFMS	10-OCT-89
SW095	TRG	SW095008	COBALT	.0500	MG/L		U	50.0		RFME	02-NOV-89
SW095	TRG	SW095008	COBALT	.0500	MG/L		U	50.0		RFMS	02-NOV-89
SW095	TRG	SW095009	COBALT	.0500	MG/L		U	50.0		RFME	07-DEC-89
SW095	TRG	SW095009	COBALT	.0500	MG/L		U	50.0		RFMS	07-DEC-89
SW095	TRG	SW095W053090A	COBALT	50	UG/L		U	50		DMETCLPTAL	30-MAY-90
SW095	TRG	SW095W053090A	COBALT	50	UG/L		U	50		DMETCLPTAL	30-MAY-90

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW095W053090A	COBALT	50	UG/L		U	50		SMETCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	COBALT	50	UG/L		U	50		SMETCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	COBALT	50	UG/L		U	50		DMETCLPTAL	26-JUN-90
SW095	TRG	SW00157WC	COBALT	50	UG/L		U	50		SMETCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	COBALT	7.60	UG/L		B	50		DMETCLPTAL	26-SEP-90
SW095	TRG	SW00355WC	COBALT	8.60	UG/L		B	50		SMETCLPTCL	26-SEP-90
SW095	TRG	SW00963WC	COBALT	3.90	UG/L		B	50		DMETCLPTAL	14-MAR-91
SW095	TRG	SW00963WC	COBALT	6.10	UG/L		B	50		SMETCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	COBALT	3.00	UG/L		U	50		DMETCLPTAL	11-APR-91
SW095	TRG	SW01065WC	COBALT	3.00	UG/L		U	50		SMETCLPTCL	11-APR-91
SW095	TRG	SW01172WC	COBALT	5.40	UG/L		B	50		SMETCLPTCL	22-MAY-91
SW095	TRG	SW01172WC	COBALT	4.00	UG/L		B	50		DMETCLPTAL	22-MAY-91
SW095	TRG	SW88A086	COPPER	0.025	MG/L		U		N	RFME	12-JUL-88
SW095	TRG	SW88A086	COPPER	0.025	MG/L		U		N	RFMS	12-JUL-88
SW095	S	SW88A086	COPPER	0.025	MG/L		U		N	RFMS	12-JUL-88
SW095	SD	SW88A086	COPPER	0.025	MG/L		U		N	RFMS	12-JUL-88
SW095	SD	SW88A086	COPPER	0.025	MG/L		U		N	RFME	12-JUL-88
SW095	S	SW88A086	COPPER	0.025	MG/L		U		N	RFME	12-JUL-88
SW095	TRG	SW095001	COPPER	.0308	MG/L			A 25.0	A	RFME	27-MAR-89
SW095	TRG	SW095002	COPPER	.0250	MG/L		U	A 25.0	A	RFME	22-MAY-89
SW095	TRG	SW095002	COPPER	.0250	MG/L		U	A 25.0	A	RFMS	22-MAY-89
SW095	TRG	SW095003	COPPER	.0250	MG/L		U	V 25.0	A	RFME	08-JUN-89
SW095	TRG	SW095003	COPPER	.0250	MG/L		U	V 25.0	A	RFMS	08-JUN-89
SW095	TRG	SW095004	COPPER	.0250	MG/L		U	A 25.0	A	RFME	05-JUL-89
SW095	TRG	SW095004	COPPER	.0250	MG/L		U	A 25.0	A	RFMS	05-JUL-89
SW095	TRG	SW095005	COPPER	.0250	MG/L		U	A 25.0	A	RFME	10-AUG-89
SW095	TRG	SW095005	COPPER	.0250	MG/L		U	A 25.0	A	RFMS	10-AUG-89
SW095	TRG	SW095006	COPPER	.0250	MG/L		U	A 25.0	A	RFMS	18-SEP-89
SW095	TRG	SW095007	COPPER	.0250	MG/L		U	A 25.0	A	RFME	10-OCT-89
SW095	TRG	SW095007	COPPER	.0251	MG/L			A 25.0	A	RFMS	10-OCT-89
SW095	TRG	SW095008	COPPER	.0257	MG/L			25.0		RFME	02-NOV-89
SW095	TRG	SW095008	COPPER	.0259	MG/L			25.0		RFMS	02-NOV-89
SW095	TRG	SW095009	COPPER	.0250	MG/L		U	25.0		RFME	07-DEC-89
SW095	TRG	SW095009	COPPER	.0250	MG/L		U	25.0		RFMS	07-DEC-89
SW095	TRG	SW095W053090A	COPPER	25	UG/L		U	25		DMETCLPTAL	30-MAY-90
SW095	TRG	SW095W053090A	COPPER	25	UG/L		U	25		SMETCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	COPPER	25	UG/L		U	25		SMETCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	COPPER	25	UG/L		U	25		DMETCLPTAL	30-MAY-90
SW095	TRG	SW00157WC	COPPER	25	UG/L		U	25		DMETCLPTAL	26-JUN-90
SW095	TRG	SW00157WC	COPPER	25	UG/L		U	25		SMETCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	COPPER	5.90	UG/L		B	25		DMETCLPTAL	26-SEP-90
SW095	TRG	SW00355WC	COPPER	2.60	UG/L		B	25		SMETCLPTCL	26-SEP-90
SW095	TRG	SW00963WC	COPPER	6.50	UG/L		B	25		DMETCLPTAL	14-MAR-91
SW095	TRG	SW00963WC	COPPER	4.20	UG/L		B	25		SMETCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	COPPER	8.40	UG/L		B	25		DMETCLPTAL	11-APR-91
SW095	TRG	SW01065WC	COPPER	10.10	UG/L		B	25		SMETCLPTCL	11-APR-91
SW095	TRG	SW01172WC	COPPER	11.00	UG/L		U	25		SMETCLPTCL	22-MAY-91
SW095	TRG	SW01172WC	COPPER	11.00	UG/L		U	25		DMETCLPTAL	22-MAY-91
SW095	TRG	SW00355WC	CYANIDE	2.00	UG/L		U	10		SMETCLPTCL	26-SEP-90
SW095	TRG	SW00963WC	CYANIDE	3.50	UG/L		U	10		SMETCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	CYANIDE	62.50	UG/L		N	10		SMETCLPTCL	11-APR-91
SW095	TRG	SW01172WC	CYANIDE	2.50	UG/L		U	10		SMETCLPTCL	22-MAY-91
SW095	TRG	SW88A086	IRON	0.100	MG/L		U		N	RFME	12-JUL-88
SW095	S	SW88A086	IRON	0.100	MG/L		U		N	RFME	12-JUL-88
SW095	TRG	SW88A086	IRON	0.100	MG/L		U		N	RFMS	12-JUL-88
SW095	SD	SW88A086	IRON	0.100	MG/L		U		N	RFMS	12-JUL-88
SW095	S	SW88A086	IRON	0.100	MG/L		U		N	RFMS	12-JUL-88
SW095	SD	SW88A086	IRON	0.100	MG/L		U		N	RFME	12-JUL-88

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW095001	IRON	.452	MG/L			V 100	A	RFME	27-MAR-89
SW095	TRG	SW095002	IRON	.114	MG/L			V 100	A	RFME	22-MAY-89
SW095	TRG	SW095002	IRON	.100	MG/L		U	V 100	A	RFMS	22-MAY-89
SW095	TRG	SW095003	IRON	.234	MG/L			V 100	A	RFME	08-JUN-89
SW095	TRG	SW095003	IRON	.100	MG/L		U	V 100	A	RFMS	08-JUN-89
SW095	TRG	SW095004	IRON	.230	MG/L			A 100	A	RFME	05-JUL-89
SW095	TRG	SW095004	IRON	.100	MG/L		U	A 100	A	RFMS	05-JUL-89
SW095	TRG	SW095005	IRON	.100	MG/L		U	V 100	A	RFME	10-AUG-89
SW095	TRG	SW095005	IRON	.100	MG/L		U	A 100	A	RFMS	10-AUG-89
SW095	TRG	SW095006	IRON	.100	MG/L		U	V 100	A	RFMS	18-SEP-89
SW095	TRG	SW095007	IRON	.108	MG/L			V 100	A	RFME	10-OCT-89
SW095	TRG	SW095007	IRON	.115	MG/L			V 100	A	RFMS	10-OCT-89
SW095	TRG	SW095008	IRON	.215	MG/L			100		RFME	02-NOV-89
SW095	TRG	SW095008	IRON	.100	MG/L		U	100		RFMS	02-NOV-89
SW095	TRG	SW095009	IRON	.100	MG/L		U	100		RFME	07-DEC-89
SW095	TRG	SW095009	IRON	.100	MG/L		U	100		RFMS	07-DEC-89
SW095	TRG	SW095W053090A	IRON	100	UG/L		U	100		DMETCLPTAL	30-MAY-90
SW095	TRG	SW095W053090A	IRON	100	UG/L		U	100		DMETCLPTAL	30-MAY-90
SW095	TRG	SW095W053090A	IRON	210	UG/L			100		SMETCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	IRON	419	UG/L			100		SMETCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	IRON	100	UG/L		U	100		DMETCLPTAL	26-JUN-90
SW095	TRG	SW00157WC	IRON	100	UG/L		U	100		SMETCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	IRON	14.00	UG/L		U	100		DMETCLPTAL	26-SEP-90
SW095	TRG	SW00355WC	IRON	48.00	UG/L		B	100		SMETCLPTCL	26-SEP-90
SW095	TRG	SW00963WC	IRON	40.60	UG/L		BN*	100		DMETCLPTAL	14-MAR-91
SW095	TRG	SW00963WC	IRON	865.00	UG/L		N*	100		SMETCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	IRON	39.30	UG/L		B	100		DMETCLPTAL	11-APR-91
SW095	TRG	SW01065WC	IRON	1550.00	UG/L			100		SMETCLPTCL	11-APR-91
SW095	TRG	SW01172WC	IRON	79.10	UG/L		B	100		SMETCLPTCL	22-MAY-91
SW095	TRG	SW01172WC	IRON	23.90	UG/L		B	100		DMETCLPTAL	22-MAY-91
SW095	TRG	SW88A086	LEAD	0.005	MG/L		U		N	RFME	12-JUL-88
SW095	SD	SW88A086	LEAD	0.005	MG/L		U		N	RFME	12-JUL-88
SW095	S	SW88A086	LEAD	0.005	MG/L		U		N	RFMS	12-JUL-88
SW095	SD	SW88A086	LEAD	0.005	MG/L		U		N	RFMS	12-JUL-88
SW095	TRG	SW88A086	LEAD	0.005	MG/L		U		N	RFMS	12-JUL-88
SW095	S	SW88A086	LEAD	0.005	MG/L		U		N	RFME	12-JUL-88
SW095	TRG	SW095001	LEAD	.0050	MG/L		U	A 5.0	A	RFME	27-MAR-89
SW095	TRG	SW095002	LEAD	.0050	MG/L		U	A 5.0	A	RFME	22-MAY-89
SW095	TRG	SW095002	LEAD	.0050	MG/L		U	A 5.0	A	RFMS	22-MAY-89
SW095	TRG	SW095003	LEAD	.0050	MG/L		U	A 5.0	A	RFME	08-JUN-89
SW095	TRG	SW095003	LEAD	.0050	MG/L		U	A 5.0	A	RFMS	08-JUN-89
SW095	TRG	SW095004	LEAD	.0050	MG/L		U	A 5.0	A	RFME	05-JUL-89
SW095	TRG	SW095004	LEAD	.0050	MG/L		U	A 5.0	A	RFMS	05-JUL-89
SW095	TRG	SW095005	LEAD	.0050	MG/L		U	A 5.0	A	RFME	10-AUG-89
SW095	TRG	SW095005	LEAD	.0050	MG/L		U	A 5.0	A	RFMS	10-AUG-89
SW095	TRG	SW095006	LEAD	.0050	MG/L		U	A 5.0	A	RFMS	18-SEP-89
SW095	TRG	SW095007	LEAD	.0030	MG/L		U	A 3.0	A	RFME	10-OCT-89
SW095	TRG	SW095007	LEAD	.0030	MG/L		U	A 3.0	A	RFMS	10-OCT-89
SW095	TRG	SW095008	LEAD	.0030	MG/L		U	3.0		RFME	02-NOV-89
SW095	TRG	SW095008	LEAD	.0030	MG/L		U	3.0		RFMS	02-NOV-89
SW095	TRG	SW095009	LEAD	.0030	MG/L		U	3.0		RFME	07-DEC-89
SW095	TRG	SW095009	LEAD	.0030	MG/L		U	3.0		RFMS	07-DEC-89
SW095	TRG	SW095W053090A	LEAD	3	UG/L		U	3		DMETCLPTAL	30-MAY-90
SW095	TRG	SW095W053090A	LEAD	3	UG/L		U	3		DMETCLPTAL	30-MAY-90
SW095	TRG	SW095W053090A	LEAD	3	UG/L		U	3		SMETCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	LEAD	3.6	UG/L			3		SMETCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	LEAD	3	UG/L		U	3		DMETCLPTAL	26-JUN-90
SW095	TRG	SW00157WC	LEAD	3	UG/L		U	3		SMETCLPTCL	26-JUN-90

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW00355WC	LEAD	1.00	UG/L		U	3		DMETCLPTAL	26-SEP-90
SW095	TRG	SW00355WC	LEAD	1.00	UG/L		U	3		SMETCLPTCL	26-SEP-90
SW095	TRG	SW00963WC	LEAD	1.00	UG/L		U	3		DMETCLPTAL	14-MAR-91
SW095	TRG	SW00963WC	LEAD	1.00	UG/L		U	3		SMETCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	LEAD	1.00	UG/L		U	3		DMETCLPTAL	11-APR-91
SW095	TRG	SW01065WC	LEAD	2.70	UG/L		BW	3		SMETCLPTCL	11-APR-91
SW095	TRG	SW01172WC	LEAD	1.00	UG/L		UW	3		SMETCLPTCL	22-MAY-91
SW095	TRG	SW01172WC	LEAD	1.00	UG/L		U	3		DMETCLPTAL	22-MAY-91
SW095	TRG	SW88A086	LITHIUM	NA	MG/L				N	RFME	12-JUL-88
SW095	SD	SW88A086	LITHIUM	NA	MG/L				N	RFME	12-JUL-88
SW095	S	SW88A086	LITHIUM	NA	MG/L				N	RFMS	12-JUL-88
SW095	SD	SW88A086	LITHIUM	NA	MG/L				N	RFMS	12-JUL-88
SW095	TRG	SW88A086	LITHIUM	NA	MG/L				N	RFMS	12-JUL-88
SW095	S	SW88A086	LITHIUM	NA	MG/L				N	RFME	12-JUL-88
SW095	TRG	SW095001	LITHIUM	.412	MG/L		V	100	A	RFME	27-MAR-89
SW095	TRG	SW095002	LITHIUM	.445	MG/L		V	100	A	RFME	22-MAY-89
SW095	TRG	SW095002	LITHIUM	.449	MG/L		V	100	A	RFMS	22-MAY-89
SW095	TRG	SW095003	LITHIUM	.380	MG/L		V	100	A	RFME	08-JUN-89
SW095	TRG	SW095003	LITHIUM	.396	MG/L		V	100	A	RFMS	08-JUN-89
SW095	TRG	SW095004	LITHIUM	80.50	MG/L		V	100	A	RFME	05-JUL-89
SW095	TRG	SW095004	LITHIUM	84.10	MG/L		V	100	A	RFMS	05-JUL-89
SW095	TRG	SW095005	LITHIUM	.410	MG/L		V	100	A	RFME	10-AUG-89
SW095	TRG	SW095005	LITHIUM	.436	MG/L		V	100	A	RFMS	10-AUG-89
SW095	TRG	SW095006	LITHIUM	.342	MG/L		A	100	A	RFMS	18-SEP-89
SW095	TRG	SW095007	LITHIUM	.464	MG/L		V	100	A	RFME	10-OCT-89
SW095	TRG	SW095007	LITHIUM	.461	MG/L		V	100	A	RFMS	10-OCT-89
SW095	TRG	SW095008	LITHIUM	.570	MG/L			100		RFME	02-NOV-89
SW095	TRG	SW095008	LITHIUM	.589	MG/L			100		RFMS	02-NOV-89
SW095	TRG	SW095009	LITHIUM	.360	MG/L			100		RFME	07-DEC-89
SW095	TRG	SW095009	LITHIUM	.365	MG/L			100		RFMS	07-DEC-89
SW095	TRG	SW095W053090A	LITHIUM	240	UG/L			100		DMETNOCLP	30-MAY-90
SW095	TRG	SW095W053090A	LITHIUM	240	UG/L			100		SMETNOCLP	30-MAY-90
SW095	TRG	SW095W053090A	LITHIUM	276	UG/L			100		SMETNOCLP	30-MAY-90
SW095	TRG	SW095W053090A	LITHIUM	283	UG/L			100		DMETNOCLP	30-MAY-90
SW095	TRG	SW00157WC	LITHIUM	402	UG/L			100		DMETNOCLP	26-JUN-90
SW095	TRG	SW00157WC	LITHIUM	410	UG/L			100		SMETNOCLP	26-JUN-90
SW095	TRG	SW00355WC	LITHIUM	308.00	UG/L			100		DMETNOCLP	26-SEP-90
SW095	TRG	SW00355WC	LITHIUM	305.00	UG/L			100		SMETNOCLP	26-SEP-90
SW095	TRG	SW00963WC	LITHIUM	394.00	UG/L			100		DMETNOCLP	14-MAR-91
SW095	TRG	SW00963WC	LITHIUM	392.00	UG/L			100		SMETNOCLP	14-MAR-91
SW095	TRG	SW01065WC	LITHIUM	170.00	UG/L		E	100		DMETNOCLP	11-APR-91
SW095	TRG	SW01065WC	LITHIUM	178.00	UG/L		E	100		SMETNOCLP	11-APR-91
SW095	TRG	SW01172WC	LITHIUM	351.00	UG/L			100		SMETNOCLP	22-MAY-91
SW095	TRG	SW01172WC	LITHIUM	376.00	UG/L			100		DMETNOCLP	22-MAY-91
SW095	SD	SW88A086	MAGNESIUM	100	MG/L				N	RFME	12-JUL-88
SW095	TRG	SW88A086	MAGNESIUM	97	MG/L				N	RFME	12-JUL-88
SW095	S	SW88A086	MAGNESIUM	98	MG/L				N	RFME	12-JUL-88
SW095	S	SW88A086	MAGNESIUM	100	MG/L				N	RFMS	12-JUL-88
SW095	SD	SW88A086	MAGNESIUM	100	MG/L				N	RFMS	12-JUL-88
SW095	TRG	SW88A086	MAGNESIUM	100	MG/L				N	RFMS	12-JUL-88
SW095	TRG	SW095001	MAGNESIUM	83.80	MG/L		V	5000	A	RFME	27-MAR-89
SW095	TRG	SW095002	MAGNESIUM	96.00	MG/L		A	5000	A	RFME	22-MAY-89
SW095	TRG	SW095002	MAGNESIUM	96.00	MG/L		A	5000	A	RFMS	22-MAY-89
SW095	TRG	SW095003	MAGNESIUM	77.00	MG/L		V	5000	A	RFME	08-JUN-89
SW095	TRG	SW095003	MAGNESIUM	76.80	MG/L		V	5000	A	RFMS	08-JUN-89
SW095	TRG	SW095004	MAGNESIUM	91.50	MG/L		V	5000	A	RFME	05-JUL-89
SW095	TRG	SW095004	MAGNESIUM	95.80	MG/L		V	5000	A	RFMS	05-JUL-89
SW095	TRG	SW095005	MAGNESIUM	90.80	MG/L		V	5000	A	RFME	10-AUG-89

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW095005	MAGNESIUM	96.30	MG/L			V 5000	A	RFMS	10-AUG-89
SW095	TRG	SW095006	MAGNESIUM	69.90	MG/L			V 5000	A	RFMS	18-SEP-89
SW095	TRG	SW095007	MAGNESIUM	107.00	MG/L			A 5000	A	RFME	10-OCT-89
SW095	TRG	SW095007	MAGNESIUM	106.00	MG/L			A 5000	A	RFMS	10-OCT-89
SW095	TRG	SW095008	MAGNESIUM	95.20	MG/L			5000		RFME	02-NOV-89
SW095	TRG	SW095008	MAGNESIUM	96.00	MG/L			5000		RFMS	02-NOV-89
SW095	TRG	SW095009	MAGNESIUM	97.80	MG/L			5000		RFME	07-DEC-89
SW095	TRG	SW095009	MAGNESIUM	98.20	MG/L			5000		RFMS	07-DEC-89
SW095	TRG	SW095W053090A	MAGNESIUM	65000	UG/L			5000		DMETCLPTAL	30-MAY-90
SW095	TRG	SW095W053090A	MAGNESIUM	75800	UG/L			5000		DMETCLPTAL	30-MAY-90
SW095	TRG	SW095W053090A	MAGNESIUM	76000	UG/L			5000		SMETCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	MAGNESIUM	63100	UG/L			5000		SMETCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	MAGNESIUM	124000	UG/L			5000		DMETCLPTAL	26-JUN-90
SW095	TRG	SW00157WC	MAGNESIUM	107000	UG/L			5000		SMETCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	MAGNESIUM	80400.00	UG/L			5000		DMETCLPTAL	26-SEP-90
SW095	TRG	SW00355WC	MAGNESIUM	79900.00	UG/L			5000		SMETCLPTCL	26-SEP-90
SW095	TRG	SW00963WC	MAGNESIUM	105000.00	UG/L			5000		DMETCLPTAL	14-MAR-91
SW095	TRG	SW00963WC	MAGNESIUM	107000.00	UG/L			5000		SMETCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	MAGNESIUM	30200.00	UG/L			5000		DMETCLPTAL	11-APR-91
SW095	TRG	SW01065WC	MAGNESIUM	35200.00	UG/L			5000		SMETCLPTCL	11-APR-91
SW095	TRG	SW01172WC	MAGNESIUM	79300.00	UG/L			5000		SMETCLPTCL	22-MAY-91
SW095	TRG	SW01172WC	MAGNESIUM	85900.00	UG/L			5000		DMETCLPTAL	22-MAY-91
SW095	TRG	SW88A086	MANGANESE	0.015	MG/L		U		N	RFME	12-JUL-88
SW095	SD	SW88A086	MANGANESE	0.015	MG/L		U		N	RFMS	12-JUL-88
SW095	S	SW88A086	MANGANESE	0.015	MG/L		U		N	RFME	12-JUL-88
SW095	SD	SW88A086	MANGANESE	0.015	MG/L		U		N	RFME	12-JUL-88
SW095	TRG	SW88A086	MANGANESE	0.015	MG/L		U		N	RFMS	12-JUL-88
SW095	S	SW88A086	MANGANESE	0.015	MG/L		U		N	RFMS	12-JUL-88
SW095	TRG	SW095001	MANGANESE	.0334	MG/L			A 15.0	A	RFME	27-MAR-89
SW095	TRG	SW095002	MANGANESE	.0202	MG/L			V 15.0	A	RFME	22-MAY-89
SW095	TRG	SW095002	MANGANESE	.0189	MG/L			V 15.0	A	RFMS	22-MAY-89
SW095	TRG	SW095003	MANGANESE	.0203	MG/L			A 15.0	A	RFME	08-JUN-89
SW095	TRG	SW095003	MANGANESE	.0168	MG/L			A 15.0	A	RFMS	08-JUN-89
SW095	TRG	SW095004	MANGANESE	.0318	MG/L			A 15.0	A	RFME	05-JUL-89
SW095	TRG	SW095004	MANGANESE	.0179	MG/L			A 15.0	A	RFMS	05-JUL-89
SW095	TRG	SW095005	MANGANESE	.0150	MG/L		U	A 15.0	A	RFME	10-AUG-89
SW095	TRG	SW095005	MANGANESE	.0150	MG/L		U	A 15.0	A	RFMS	10-AUG-89
SW095	TRG	SW095006	MANGANESE	.0150	MG/L		U	A 15.0	A	RFMS	18-SEP-89
SW095	TRG	SW095007	MANGANESE	.0161	MG/L			A 15.0	A	RFME	10-OCT-89
SW095	TRG	SW095007	MANGANESE	.0165	MG/L			A 15.0	A	RFMS	10-OCT-89
SW095	TRG	SW095008	MANGANESE	.0307	MG/L			15.0		RFME	02-NOV-89
SW095	TRG	SW095008	MANGANESE	.0256	MG/L			15.0		RFMS	02-NOV-89
SW095	TRG	SW095009	MANGANESE	.0150	MG/L		U	15.0		RFME	07-DEC-89
SW095	TRG	SW095009	MANGANESE	.0150	MG/L		U	15.0		RFMS	07-DEC-89
SW095	TRG	SW095W053090A	MANGANESE	15.9	UG/L			15		DMETCLPTAL	30-MAY-90
SW095	TRG	SW095W053090A	MANGANESE	35.3	UG/L			15		SMETCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	MANGANESE	16.9	UG/L			15		SMETCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	MANGANESE	17.9	UG/L			15		DMETCLPTAL	30-MAY-90
SW095	TRG	SW00157WC	MANGANESE	15	UG/L		U	15		DMETCLPTAL	26-JUN-90
SW095	TRG	SW00157WC	MANGANESE	15	UG/L		U	15		SMETCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	MANGANESE	3.10	UG/L		B	15		DMETCLPTAL	26-SEP-90
SW095	TRG	SW00355WC	MANGANESE	5.30	UG/L		B	15		SMETCLPTCL	26-SEP-90
SW095	TRG	SW00963WC	MANGANESE	2.90	UG/L		B	15		DMETCLPTAL	14-MAR-91
SW095	TRG	SW00963WC	MANGANESE	8.80	UG/L		B	15		SMETCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	MANGANESE	5.50	UG/L		B	15		DMETCLPTAL	11-APR-91
SW095	TRG	SW01065WC	MANGANESE	25.80	UG/L			15		SMETCLPTCL	11-APR-91
SW095	TRG	SW01172WC	MANGANESE	6.50	UG/L		B	15		SMETCLPTCL	22-MAY-91
SW095	TRG	SW01172WC	MANGANESE	5.30	UG/L		B	15		DMETCLPTAL	22-MAY-91

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW88A086	MERCURY	0.0002	MG/L		U		N	RFME	12-JUL-88
SW095	S	SW88A086	MERCURY	0.0002	MG/L		U		N	RFMS	12-JUL-88
SW095	SD	SW88A086	MERCURY	0.0002	MG/L		U		N	RFMS	12-JUL-88
SW095	TRG	SW88A086	MERCURY	0.0002	MG/L		U		N	RFMS	12-JUL-88
SW095	S	SW88A086	MERCURY	0.0002	MG/L		U		N	RFME	12-JUL-88
SW095	SD	SW88A086	MERCURY	0.0002	MG/L		U		N	RFME	12-JUL-88
SW095	TRG	SW095001	MERCURY	.0002	MG/L		U	A 0.20	A	RFME	27-MAR-89
SW095	TRG	SW095002	MERCURY	.0002	MG/L		U	V 0.20	A	RFME	22-MAY-89
SW095	TRG	SW095002	MERCURY	.0002	MG/L		U	V 0.20	A	RFMS	22-MAY-89
SW095	TRG	SW095003	MERCURY	.0002	MG/L		U	V 0.20	A	RFME	08-JUN-89
SW095	TRG	SW095003	MERCURY	.0002	MG/L		U	V 0.20	A	RFMS	08-JUN-89
SW095	TRG	SW095004	MERCURY	.0002	MG/L		U	V 0.20	A	RFME	05-JUL-89
SW095	TRG	SW095004	MERCURY	.0002	MG/L		U	V 0.20	A	RFMS	05-JUL-89
SW095	TRG	SW095005	MERCURY	.0004	MG/L			V 0.20	A	RFME	10-AUG-89
SW095	TRG	SW095005	MERCURY	.0002	MG/L		U	V 0.20	A	RFMS	10-AUG-89
SW095	TRG	SW095006	MERCURY	.0002	MG/L		U	A 0.20	A	RFMS	18-SEP-89
SW095	TRG	SW095007	MERCURY	.0002	MG/L		U	V 0.20	A	RFME	10-OCT-89
SW095	TRG	SW095007	MERCURY	.0002	MG/L		U	V 0.20	A	RFMS	10-OCT-89
SW095	TRG	SW095008	MERCURY	.0002	MG/L		U	0.20		RFME	02-NOV-89
SW095	TRG	SW095008	MERCURY	.0002	MG/L		U	0.20		RFMS	02-NOV-89
SW095	TRG	SW095009	MERCURY	.0002	MG/L		U	0.20		RFME	07-DEC-89
SW095	TRG	SW095009	MERCURY	.0002	MG/L		U	0.20		RFMS	07-DEC-89
SW095	TRG	SW095W053090A	MERCURY	0.2	UG/L		U	0.2		DMETCLPTAL	30-MAY-90
SW095	TRG	SW095W053090A	MERCURY	0.2	UG/L		U	0.2		SMETCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	MERCURY	0.21	UG/L			0.2		SMETCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	MERCURY	0.21	UG/L			0.2		DMETCLPTAL	30-MAY-90
SW095	TRG	SW00157WC	MERCURY	0.2	UG/L		U	0.2		DMETCLPTAL	26-JUN-90
SW095	TRG	SW00157WC	MERCURY	0.2	UG/L		U	0.2		SMETCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	MERCURY	0.20	UG/L		U	0		DMETCLPTAL	26-SEP-90
SW095	TRG	SW00355WC	MERCURY	0.20	UG/L		U	0		SMETCLPTCL	26-SEP-90
SW095	TRG	SW00963WC	MERCURY	0.44	UG/L		N	0		DMETCLPTAL	14-MAR-91
SW095	TRG	SW00963WC	MERCURY	0.63	UG/L		N	0		SMETCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	MERCURY	0.20	UG/L		U	0		DMETCLPTAL	11-APR-91
SW095	TRG	SW01065WC	MERCURY	0.20	UG/L		U	0		SMETCLPTCL	11-APR-91
SW095	TRG	SW01172WC	MERCURY	0.80	UG/L		UN*	0		SMETCLPTCL	22-MAY-91
SW095	TRG	SW01172WC	MERCURY	0.20	UG/L		N*	0		DMETCLPTAL	22-MAY-91
SW095	TRG	SW88A086	MOLYBDENUM	NA	MG/L				N	RFME	12-JUL-88
SW095	SD	SW88A086	MOLYBDENUM	NA	MG/L				N	RFME	12-JUL-88
SW095	S	SW88A086	MOLYBDENUM	NA	MG/L				N	RFMS	12-JUL-88
SW095	SD	SW88A086	MOLYBDENUM	NA	MG/L				N	RFMS	12-JUL-88
SW095	TRG	SW88A086	MOLYBDENUM	NA	MG/L				N	RFMS	12-JUL-88
SW095	S	SW88A086	MOLYBDENUM	NA	MG/L				N	RFME	12-JUL-88
SW095	TRG	SW095001	MOLYBDENUM	.100	MG/L		U	V 100	A	RFME	27-MAR-89
SW095	TRG	SW095002	MOLYBDENUM	.100	MG/L		U	V 100	A	RFME	22-MAY-89
SW095	TRG	SW095002	MOLYBDENUM	.100	MG/L		U	V 100	A	RFMS	22-MAY-89
SW095	TRG	SW095003	MOLYBDENUM	.100	MG/L		U	V 100	A	RFME	08-JUN-89
SW095	TRG	SW095003	MOLYBDENUM	.100	MG/L		U	V 100	A	RFMS	08-JUN-89
SW095	TRG	SW095004	MOLYBDENUM	.100	MG/L		U	V 100	A	RFME	05-JUL-89
SW095	TRG	SW095004	MOLYBDENUM	.100	MG/L		U	V 100	A	RFMS	05-JUL-89
SW095	TRG	SW095005	MOLYBDENUM	.100	MG/L		U	V 100	A	RFME	10-AUG-89
SW095	TRG	SW095005	MOLYBDENUM	.100	MG/L		U	V 100	A	RFMS	10-AUG-89
SW095	TRG	SW095006	MOLYBDENUM	.100	MG/L		U	A 100	A	RFMS	18-SEP-89
SW095	TRG	SW095007	MOLYBDENUM	.100	MG/L		U	A 100	A	RFME	10-OCT-89
SW095	TRG	SW095007	MOLYBDENUM	.100	MG/L		U	A 100	A	RFMS	10-OCT-89
SW095	TRG	SW095008	MOLYBDENUM	.100	MG/L		U	100		RFME	02-NOV-89
SW095	TRG	SW095008	MOLYBDENUM	.100	MG/L		U	100		RFMS	02-NOV-89
SW095	TRG	SW095009	MOLYBDENUM	.100	MG/L		U	100		RFME	07-DEC-89
SW095	TRG	SW095009	MOLYBDENUM	.100	MG/L		U	100		RFMS	07-DEC-89

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW095W053090A	MOLYBDENUM	100	UG/L		U	100		DMETNOCLP	30-MAY-90
SW095	TRG	SW095W053090A	MOLYBDENUM	100	UG/L		U	100		SMETNOCLP	30-MAY-90
SW095	TRG	SW095W053090A	MOLYBDENUM	100	UG/L		U	100		SMETNOCLP	30-MAY-90
SW095	TRG	SW095W053090A	MOLYBDENUM	100	UG/L		U	100		DMETNOCLP	30-MAY-90
SW095	TRG	SW00157WC	MOLYBDENUM	100	UG/L		U	100		DMETNOCLP	26-JUN-90
SW095	TRG	SW00157WC	MOLYBDENUM	100	UG/L		U	100		SMETNOCLP	26-JUN-90
SW095	TRG	SW00355WC	MOLYBDENUM	20.70	UG/L		B	200		DMETNOCLP	26-SEP-90
SW095	TRG	SW00355WC	MOLYBDENUM	21.60	UG/L		B	200		SMETNOCLP	26-SEP-90
SW095	TRG	SW00963WC	MOLYBDENUM	4.10	UG/L		B	200		DMETNOCLP	14-MAR-91
SW095	TRG	SW00963WC	MOLYBDENUM	8.40	UG/L		B	200		SMETNOCLP	14-MAR-91
SW095	TRG	SW01065WC	MOLYBDENUM	5.10	UG/L		B	200		DMETNOCLP	11-APR-91
SW095	TRG	SW01065WC	MOLYBDENUM	4.30	UG/L		B	200		SMETNOCLP	11-APR-91
SW095	TRG	SW01172WC	MOLYBDENUM	6.40	UG/L		BN	200		SMETNOCLP	22-MAY-91
SW095	TRG	SW01172WC	MOLYBDENUM	6.00	UG/L		BN	200		DMETNOCLP	22-MAY-91
SW095	TRG	SW88A086	NICKEL	0.040	MG/L		U		N	RFME	12-JUL-88
SW095	S	SW88A086	NICKEL	0.040	MG/L		U		N	RFME	12-JUL-88
SW095	SD	SW88A086	NICKEL	0.040	MG/L		U		N	RFME	12-JUL-88
SW095	S	SW88A086	NICKEL	0.040	MG/L		U		N	RFMS	12-JUL-88
SW095	SD	SW88A086	NICKEL	0.040	MG/L		U		N	RFMS	12-JUL-88
SW095	TRG	SW88A086	NICKEL	0.040	MG/L		U		N	RFMS	12-JUL-88
SW095	TRG	SW095001	NICKEL	.0400	MG/L		U	V 40.0	A	RFME	27-MAR-89
SW095	TRG	SW095002	NICKEL	.0400	MG/L		U	V 40.0	A	RFME	22-MAY-89
SW095	TRG	SW095002	NICKEL	.0400	MG/L		U	V 40.0	A	RFMS	22-MAY-89
SW095	TRG	SW095003	NICKEL	.0400	MG/L		U	V 40.0	A	RFME	08-JUN-89
SW095	TRG	SW095003	NICKEL	.0400	MG/L		U	V 40.0	A	RFMS	08-JUN-89
SW095	TRG	SW095004	NICKEL	.0400	MG/L		U	V 40.0	A	RFME	05-JUL-89
SW095	TRG	SW095004	NICKEL	.0400	MG/L		U	V 40.0	A	RFMS	05-JUL-89
SW095	TRG	SW095005	NICKEL	.0400	MG/L		U	V 40.0	A	RFME	10-AUG-89
SW095	TRG	SW095005	NICKEL	.0400	MG/L		U	V 40.0	A	RFMS	10-AUG-89
SW095	TRG	SW095006	NICKEL	.0400	MG/L		U	A 40.0	A	RFMS	18-SEP-89
SW095	TRG	SW095007	NICKEL	.0400	MG/L		U	V 40.0	A	RFME	10-OCT-89
SW095	TRG	SW095007	NICKEL	.0400	MG/L		U	V 40.0	A	RFMS	10-OCT-89
SW095	TRG	SW095008	NICKEL	.0400	MG/L		U	40.0		RFME	02-NOV-89
SW095	TRG	SW095008	NICKEL	.0400	MG/L		U	40.0		RFMS	02-NOV-89
SW095	TRG	SW095009	NICKEL	.0400	MG/L		U	40.0		RFME	07-DEC-89
SW095	TRG	SW095009	NICKEL	.0400	MG/L		U	40.0		RFMS	07-DEC-89
SW095	TRG	SW095W053090A	NICKEL	40	UG/L		U	40		DMETCLPTAL	30-MAY-90
SW095	TRG	SW095W053090A	NICKEL	40	UG/L		U	40		DMETCLPTAL	30-MAY-90
SW095	TRG	SW095W053090A	NICKEL	40	UG/L		U	40		SMETCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	NICKEL	40	UG/L		U	40		SMETCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	NICKEL	40	UG/L		U	40		DMETCLPTAL	26-JUN-90
SW095	TRG	SW00157WC	NICKEL	40	UG/L		U	40		SMETCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	NICKEL	18.00	UG/L		B	40		DMETCLPTAL	26-SEP-90
SW095	TRG	SW00355WC	NICKEL	19.40	UG/L		B	40		SMETCLPTCL	26-SEP-90
SW095	TRG	SW00963WC	NICKEL	4.00	UG/L		U	40		DMETCLPTAL	14-MAR-91
SW095	TRG	SW00963WC	NICKEL	4.00	UG/L		U	40		SMETCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	NICKEL	4.60	UG/L		B	40		DMETCLPTAL	11-APR-91
SW095	TRG	SW01065WC	NICKEL	4.70	UG/L		B	40		SMETCLPTCL	11-APR-91
SW095	TRG	SW01172WC	NICKEL	8.10	UG/L		B	40		SMETCLPTCL	22-MAY-91
SW095	TRG	SW01172WC	NICKEL	5.20	UG/L		B	40		DMETCLPTAL	22-MAY-91
SW095	TRG	SW88A086	POTASSIUM	101	MG/L				N	RFME	12-JUL-88
SW095	S	SW88A086	POTASSIUM	111	MG/L				N	RFMS	12-JUL-88
SW095	S	SW88A086	POTASSIUM	102	MG/L				N	RFME	12-JUL-88
SW095	SD	SW88A086	POTASSIUM	102	MG/L				N	RFME	12-JUL-88
SW095	SD	SW88A086	POTASSIUM	106	MG/L				N	RFMS	12-JUL-88
SW095	TRG	SW88A086	POTASSIUM	108	MG/L				N	RFMS	12-JUL-88
SW095	TRG	SW095001	POTASSIUM	63.80	MG/L			V 5000	A	RFME	27-MAR-89
SW095	TRG	SW095002	POTASSIUM	76.90	MG/L			A 5000	A	RFME	22-MAY-89

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW095002	POTASSIUM	76.50	MG/L			A 5000	A	RFMS	22-MAY-89
SW095	TRG	SW095003	POTASSIUM	73.10	MG/L			V 5000	A	RFME	08-JUN-89
SW095	TRG	SW095003	POTASSIUM	74.40	MG/L			V 5000	A	RFMS	08-JUN-89
SW095	TRG	SW095004	POTASSIUM	80.50	MG/L			V 5000	A	RFME	05-JUL-89
SW095	TRG	SW095004	POTASSIUM	84.10	MG/L			V 5000	A	RFMS	05-JUL-89
SW095	TRG	SW095005	POTASSIUM	75.70	MG/L			V 5000	A	RFME	10-AUG-89
SW095	TRG	SW095005	POTASSIUM	78.60	MG/L			V 5000	A	RFMS	10-AUG-89
SW095	TRG	SW095006	POTASSIUM	73.80	MG/L			A 5000	A	RFMS	18-SEP-89
SW095	TRG	SW095007	POTASSIUM	91.20	MG/L			V 5000	A	RFME	10-OCT-89
SW095	TRG	SW095007	POTASSIUM	91.30	MG/L			V 5000	A	RFMS	10-OCT-89
SW095	TRG	SW095008	POTASSIUM	124.00	MG/L			5000		RFME	02-NOV-89
SW095	TRG	SW095008	POTASSIUM	128.00	MG/L			5000		RFMS	02-NOV-89
SW095	TRG	SW095009	POTASSIUM	64.40	MG/L			5000		RFME	07-DEC-89
SW095	TRG	SW095009	POTASSIUM	65.20	MG/L			5000		RFMS	07-DEC-89
SW095	TRG	SW095W053090A	POTASSIUM	55200	UG/L			5000		DMETCLPTAL	30-MAY-90
SW095	TRG	SW095W053090A	POTASSIUM	53200	UG/L			5000		SMETCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	POTASSIUM	72600	UG/L			5000		DMETCLPTAL	30-MAY-90
SW095	TRG	SW095W053090A	POTASSIUM	73900	UG/L			5000		SMETCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	POTASSIUM	85100	UG/L			5000		DMETCLPTAL	26-JUN-90
SW095	TRG	SW00157WC	POTASSIUM	75000	UG/L			5000		SMETCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	POTASSIUM	57800.00	UG/L			5000		DMETCLPTAL	26-SEP-90
SW095	TRG	SW00355WC	POTASSIUM	57800.00	UG/L			5000		SMETCLPTCL	26-SEP-90
SW095	TRG	SW00963WC	POTASSIUM	63200.00	UG/L			5000		DMETCLPTAL	14-MAR-91
SW095	TRG	SW00963WC	POTASSIUM	64300.00	UG/L			5000		SMETCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	POTASSIUM	23700.00	UG/L			5000		DMETCLPTAL	11-APR-91
SW095	TRG	SW01065WC	POTASSIUM	23600.00	UG/L			5000		SMETCLPTCL	11-APR-91
SW095	TRG	SW01172WC	POTASSIUM	63400.00	UG/L			5000		SMETCLPTCL	22-MAY-91
SW095	TRG	SW01172WC	POTASSIUM	68800.00	UG/L			5000		DMETCLPTAL	22-MAY-91
SW095	S	SW88A086	SELENIUM	0.008	MG/L				N	RFME	12-JUL-88
SW095	TRG	SW88A086	SELENIUM	0.009	MG/L				N	RFME	12-JUL-88
SW095	S	SW88A086	SELENIUM	0.009	MG/L				N	RFMS	12-JUL-88
SW095	TRG	SW88A086	SELENIUM	0.010	MG/L				N	RFMS	12-JUL-88
SW095	SD	SW88A086	SELENIUM	0.009	MG/L				N	RFMS	12-JUL-88
SW095	SD	SW88A086	SELENIUM	0.008	MG/L				N	RFME	12-JUL-88
SW095	TRG	SW095001	SELENIUM	.0118	MG/L			A 10.0	A	RFME	27-MAR-89
SW095	TRG	SW095002	SELENIUM	.0105	MG/L			A 5.0	A	RFME	22-MAY-89
SW095	TRG	SW095002	SELENIUM	.0106	MG/L			A 10.0	A	RFMS	22-MAY-89
SW095	TRG	SW095003	SELENIUM	.0126	MG/L			V 10.0	A	RFME	08-JUN-89
SW095	TRG	SW095003	SELENIUM	.0164	MG/L			V 10.0	A	RFMS	08-JUN-89
SW095	TRG	SW095004	SELENIUM	.0100	MG/L		U	V 10.0	A	RFME	05-JUL-89
SW095	TRG	SW095004	SELENIUM	.0100	MG/L		U	V 10.0	A	RFMS	05-JUL-89
SW095	TRG	SW095005	SELENIUM	.0144	MG/L			V 10.0	A	RFME	10-AUG-89
SW095	TRG	SW095005	SELENIUM	.0170	MG/L			V 10.0	A	RFMS	10-AUG-89
SW095	TRG	SW095006	SELENIUM	.0050	MG/L		U	A 5.0	A	RFMS	18-SEP-89
SW095	TRG	SW095007	SELENIUM	.0100	MG/L		U	A 10.0	A	RFME	10-OCT-89
SW095	TRG	SW095007	SELENIUM	.0150	MG/L			A 10.0	A	RFMS	10-OCT-89
SW095	TRG	SW095008	SELENIUM	.0100	MG/L		U	10.0		RFME	02-NOV-89
SW095	TRG	SW095008	SELENIUM	.0060	MG/L			5.0		RFMS	02-NOV-89
SW095	TRG	SW095009	SELENIUM	.0128	MG/L			10.0		RFME	07-DEC-89
SW095	TRG	SW095009	SELENIUM	.0142	MG/L			10.0		RFMS	07-DEC-89
SW095	TRG	SW095W053090A	SELENIUM	5	UG/L		U	5		DMETCLPTAL	30-MAY-90
SW095	TRG	SW095W053090A	SELENIUM	5	UG/L		U	5		DMETCLPTAL	30-MAY-90
SW095	TRG	SW095W053090A	SELENIUM	13.8	UG/L			10		SMETCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	SELENIUM	10.8	UG/L			10		SMETCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	SELENIUM	14.2	UG/L			10		DMETCLPTAL	26-JUN-90
SW095	TRG	SW00157WC	SELENIUM	8.4	UG/L			5		SMETCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	SELENIUM	4.50	UG/L		B+*	5		DMETCLPTAL	26-SEP-90
SW095	TRG	SW00355WC	SELENIUM	2.00	UG/L		BWN	5		SMETCLPTCL	26-SEP-90

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW00963WC	SELENIUM	8.10	UG/L		SN	5		DMETCLPTAL	14-MAR-91
SW095	TRG	SW00963WC	SELENIUM	6.70	UG/L		SN	5		SMETCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	SELENIUM	2.00	UG/L		BWN	5		DMETCLPTAL	11-APR-91
SW095	TRG	SW01065WC	SELENIUM	2.00	UG/L		BWN	5		SMETCLPTCL	11-APR-91
SW095	TRG	SW01172WC	SELENIUM	7.90	UG/L		+N	5		SMETCLPTCL	22-MAY-91
SW095	TRG	SW01172WC	SELENIUM	9.00	UG/L		SN	5		DMETCLPTAL	22-MAY-91
SW095	TRG	SW095W053090A	SILICON	4620	UG/L			100		DMETNOCLP	30-MAY-90
SW095	TRG	SW095W053090A	SILICON	5350	UG/L			100		SMETNOCLP	30-MAY-90
SW095	TRG	SW00450WC	SILICON	6880	UG/L					SMETCLPTCL	24-OCT-90
SW095	TRG	SW88A086	SILVER	0.010	MG/L		U		N	RFME	12-JUL-88
SW095	S	SW88A086	SILVER	0.010	MG/L		U		N	RFME	12-JUL-88
SW095	SD	SW88A086	SILVER	0.010	MG/L		U		N	RFME	12-JUL-88
SW095	TRG	SW88A086	SILVER	0.010	MG/L		U		N	RFMS	12-JUL-88
SW095	S	SW88A086	SILVER	0.010	MG/L		U		N	RFMS	12-JUL-88
SW095	SD	SW88A086	SILVER	0.010	MG/L		U		N	RFMS	12-JUL-88
SW095	TRG	SW095001	SILVER	.0100	MG/L		U	A 10.0	A	RFME	27-MAR-89
SW095	TRG	SW095002	SILVER	.0100	MG/L		U	V 10.0	A	RFME	22-MAY-89
SW095	TRG	SW095002	SILVER	.0100	MG/L		U	V 10.0	A	RFMS	22-MAY-89
SW095	TRG	SW095003	SILVER	.0100	MG/L		U	V 10.0	A	RFME	08-JUN-89
SW095	TRG	SW095003	SILVER	.0100	MG/L		U	V 10.0	A	RFMS	08-JUN-89
SW095	TRG	SW095004	SILVER	.0100	MG/L		U	R 10.0	A	RFME	05-JUL-89
SW095	TRG	SW095004	SILVER	.0100	MG/L		U	R 10.0	A	RFMS	05-JUL-89
SW095	TRG	SW095005	SILVER	.0100	MG/L		U	V 10.0	A	RFME	10-AUG-89
SW095	TRG	SW095005	SILVER	.0100	MG/L		U	V 10.0	A	RFMS	10-AUG-89
SW095	TRG	SW095006	SILVER	.0100	MG/L		U	R 10.0	A	RFMS	18-SEP-89
SW095	TRG	SW095007	SILVER	.0100	MG/L		U	R 10.0	A	RFME	10-OCT-89
SW095	TRG	SW095007	SILVER	.0100	MG/L		U	R 10.0	A	RFMS	10-OCT-89
SW095	TRG	SW095008	SILVER	.0100	MG/L		U	10.0		RFME	02-NOV-89
SW095	TRG	SW095008	SILVER	.0100	MG/L		U	10.0		RFMS	02-NOV-89
SW095	TRG	SW095009	SILVER	.0100	MG/L		U	10.0		RFME	07-DEC-89
SW095	TRG	SW095009	SILVER	.0100	MG/L		U	10.0		RFMS	07-DEC-89
SW095	TRG	SW095W053090A	SILVER	10	UG/L		U	10		DMETCLPTAL	30-MAY-90
SW095	TRG	SW095W053090A	SILVER	10	UG/L		U	10		DMETCLPTAL	30-MAY-90
SW095	TRG	SW095W053090A	SILVER	10	UG/L		U	10		SMETCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	SILVER	10	UG/L		U	10		SMETCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	SILVER	10	UG/L		U	10		DMETCLPTAL	26-JUN-90
SW095	TRG	SW00157WC	SILVER	10	UG/L		U	10		SMETCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	SILVER	3.60	UG/L		B	10		DMETCLPTAL	26-SEP-90
SW095	TRG	SW00355WC	SILVER	5.20	UG/L		B	10		SMETCLPTCL	26-SEP-90
SW095	TRG	SW00963WC	SILVER	5.20	UG/L		B	10		DMETCLPTAL	14-MAR-91
SW095	TRG	SW00963WC	SILVER	7.60	UG/L		B	10		SMETCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	SILVER	5.60	UG/L		B	10		DMETCLPTAL	11-APR-91
SW095	TRG	SW01065WC	SILVER	5.00	UG/L		B	10		SMETCLPTCL	11-APR-91
SW095	TRG	SW01172WC	SILVER	2.00	UG/L		UN	10		DMETCLPTAL	22-MAY-91
SW095	TRG	SW01172WC	SILVER	2.00	UG/L		UN	10		SMETCLPTCL	22-MAY-91
SW095	TRG	SW88A086	SODIUM	520	MG/L				N	RFME	12-JUL-88
SW095	S	SW88A086	SODIUM	530	MG/L				N	RFME	12-JUL-88
SW095	SD	SW88A086	SODIUM	530	MG/L				N	RFME	12-JUL-88
SW095	TRG	SW88A086	SODIUM	520	MG/L				N	RFMS	12-JUL-88
SW095	SD	SW88A086	SODIUM	520	MG/L				N	RFMS	12-JUL-88
SW095	S	SW88A086	SODIUM	530	MG/L				N	RFMS	12-JUL-88
SW095	TRG	SW095001	SODIUM	460.00	MG/L			V 5000	A	RFME	27-MAR-89
SW095	TRG	SW095002	SODIUM	408.00	MG/L			A 5000	A	RFME	22-MAY-89
SW095	TRG	SW095002	SODIUM	424.00	MG/L			A 5000	A	RFMS	22-MAY-89
SW095	TRG	SW095003	SODIUM	373.00	MG/L			V 5000	A	RFME	08-JUN-89
SW095	TRG	SW095003	SODIUM	403.00	MG/L			V 5000	A	RFMS	08-JUN-89
SW095	TRG	SW095004	SODIUM	480.00	MG/L			V 5000	A	RFME	05-JUL-89
SW095	TRG	SW095004	SODIUM	509.00	MG/L			V 5000	A	RFMS	05-JUL-89

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW095005	SODIUM	466.00	MG/L		A	5000	A	RFME	10-AUG-89
SW095	TRG	SW095005	SODIUM	478.00	MG/L		A	5000	A	RFMS	10-AUG-89
SW095	TRG	SW095006	SODIUM	399.00	MG/L		A	5000	A	RFMS	18-SEP-89
SW095	TRG	SW095007	SODIUM	578.00	MG/L		V	50000	A	RFME	10-OCT-89
SW095	TRG	SW095007	SODIUM	590.00	MG/L		V	50000	A	RFMS	10-OCT-89
SW095	TRG	SW095008	SODIUM	821.00	MG/L			50000		RFME	02-NOV-89
SW095	TRG	SW095008	SODIUM	789.00	MG/L			50000		RFMS	02-NOV-89
SW095	TRG	SW095009	SODIUM	464.00	MG/L			5000		RFME	07-DEC-89
SW095	TRG	SW095009	SODIUM	469.00	MG/L			5000		RFMS	07-DEC-89
SW095	TRG	SW095W053090A	SODIUM	349000	UG/L			5000		DMETCLPTAL	30-MAY-90
SW095	TRG	SW095W053090A	SODIUM	339000	UG/L			5000		SMETCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	SODIUM	443000	UG/L			5000		SMETCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	SODIUM	447000	UG/L			5000		DMETCLPTAL	30-MAY-90
SW095	TRG	SW00157WC	SODIUM	585000	UG/L			5000		DMETCLPTAL	26-JUN-90
SW095	TRG	SW00157WC	SODIUM	535000	UG/L			5000		SMETCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	SODIUM	348000.00	UG/L			5000		DMETCLPTAL	26-SEP-90
SW095	TRG	SW00355WC	SODIUM	348000.00	UG/L			5000		SMETCLPTCL	26-SEP-90
SW095	TRG	SW00963WC	SODIUM	471000.00	UG/L			5000		DMETCLPTAL	14-MAR-91
SW095	TRG	SW00963WC	SODIUM	477000.00	UG/L			5000		SMETCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	SODIUM	202000.00	UG/L			5000		DMETCLPTAL	11-APR-91
SW095	TRG	SW01065WC	SODIUM	206000.00	UG/L			5000		SMETCLPTCL	11-APR-91
SW095	TRG	SW01172WC	SODIUM	463000.00	UG/L			5000		DMETCLPTAL	22-MAY-91
SW095	TRG	SW01172WC	SODIUM	422000.00	UG/L			5000		SMETCLPTCL	22-MAY-91
SW095	TRG	SW88A086	STRONTIUM	3.6	MG/L				N	RFME	12-JUL-88
SW095	S	SW88A086	STRONTIUM	3.6	MG/L				N	RFME	12-JUL-88
SW095	SD	SW88A086	STRONTIUM	3.7	MG/L				N	RFME	12-JUL-88
SW095	TRG	SW88A086	STRONTIUM	3.5	MG/L				N	RFMS	12-JUL-88
SW095	SD	SW88A086	STRONTIUM	3.6	MG/L				N	RFMS	12-JUL-88
SW095	S	SW88A086	STRONTIUM	3.7	MG/L				N	RFMS	12-JUL-88
SW095	TRG	SW095001	STRONTIUM	2.83	MG/L		V	100	A	RFME	27-MAR-89
SW095	TRG	SW095002	STRONTIUM	2.71	MG/L		V	100	A	RFME	22-MAY-89
SW095	TRG	SW095002	STRONTIUM	2.69	MG/L		V	100	A	RFMS	22-MAY-89
SW095	TRG	SW095003	STRONTIUM	2.21	MG/L		V	100	A	RFME	08-JUN-89
SW095	TRG	SW095003	STRONTIUM	2.21	MG/L		V	100	A	RFMS	08-JUN-89
SW095	TRG	SW095004	STRONTIUM	2.77	MG/L		A	100	A	RFME	05-JUL-89
SW095	TRG	SW095004	STRONTIUM	2.93	MG/L		A	100	A	RFMS	05-JUL-89
SW095	TRG	SW095005	STRONTIUM	2.67	MG/L		V	100	A	RFME	10-AUG-89
SW095	TRG	SW095005	STRONTIUM	2.83	MG/L		V	100	A	RFMS	10-AUG-89
SW095	TRG	SW095006	STRONTIUM	2.11	MG/L		A	100	A	RFMS	18-SEP-89
SW095	TRG	SW095007	STRONTIUM	3.14	MG/L		V	100	A	RFME	10-OCT-89
SW095	TRG	SW095007	STRONTIUM	3.12	MG/L		V	100	A	RFMS	10-OCT-89
SW095	TRG	SW095008	STRONTIUM	2.84	MG/L			100		RFME	02-NOV-89
SW095	TRG	SW095008	STRONTIUM	2.86	MG/L			100		RFMS	02-NOV-89
SW095	TRG	SW095009	STRONTIUM	3.30	MG/L			100		RFME	07-DEC-89
SW095	TRG	SW095009	STRONTIUM	3.36	MG/L			100		RFMS	07-DEC-89
SW095	TRG	SW095W053090A	STRONTIUM	2000	UG/L			100		DMETNOCLP	30-MAY-90
SW095	TRG	SW095W053090A	STRONTIUM	2210	UG/L			100		SMETNOCLP	30-MAY-90
SW095	TRG	SW095W053090A	STRONTIUM	1940	UG/L			100		SMETNOCLP	30-MAY-90
SW095	TRG	SW095W053090A	STRONTIUM	2200	UG/L			100		DMETNOCLP	30-MAY-90
SW095	TRG	SW00157WC	STRONTIUM	3870	UG/L			100		DMETNOCLP	26-JUN-90
SW095	TRG	SW00157WC	STRONTIUM	3400	UG/L			100		SMETNOCLP	26-JUN-90
SW095	TRG	SW00355WC	STRONTIUM	2380.00	UG/L			200		DMETNOCLP	26-SEP-90
SW095	TRG	SW00355WC	STRONTIUM	2360.00	UG/L			200		SMETNOCLP	26-SEP-90
SW095	TRG	SW00963WC	STRONTIUM	3350.00	UG/L			200		DMETNOCLP	14-MAR-91
SW095	TRG	SW00963WC	STRONTIUM	3440.00	UG/L			200		SMETNOCLP	14-MAR-91
SW095	TRG	SW01065WC	STRONTIUM	965.00	UG/L			200		DMETNOCLP	11-APR-91
SW095	TRG	SW01065WC	STRONTIUM	1140.00	UG/L			200		SMETNOCLP	11-APR-91
SW095	TRG	SW01172WC	STRONTIUM	2530.00	UG/L			200		DMETNOCLP	22-MAY-91

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
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SW095	TRG	SW01172WC	STRONTIUM	2380.00	UG/L			200		SMETNOCLP	22-MAY-91
SW095	TRG	SW88A086	THALLIUM	0.005	MG/L		U		N	RFME	12-JUL-88
SW095	S	SW88A086	THALLIUM	0.005	MG/L		U		N	RFME	12-JUL-88
SW095	SD	SW88A086	THALLIUM	0.005	MG/L		U		N	RFME	12-JUL-88
SW095	TRG	SW88A086	THALLIUM	0.005	MG/L		U		N	RFMS	12-JUL-88
SW095	S	SW88A086	THALLIUM	0.005	MG/L		U		N	RFMS	12-JUL-88
SW095	SD	SW88A086	THALLIUM	0.005	MG/L		U		N	RFMS	12-JUL-88
SW095	TRG	SW095001	THALLIUM	.100	MG/L		U	V 100	A	RFME	27-MAR-89
SW095	TRG	SW095002	THALLIUM	.0100	MG/L		U	A 10.0	A	RFME	22-MAY-89
SW095	TRG	SW095002	THALLIUM	.0100	MG/L		U	A 10.0	A	RFMS	22-MAY-89
SW095	TRG	SW095003	THALLIUM	.0100	MG/L		U	A 10.0	A	RFME	08-JUN-89
SW095	TRG	SW095003	THALLIUM	.0100	MG/L		U	A 10.0	A	RFMS	08-JUN-89
SW095	TRG	SW095004	THALLIUM	.0100	MG/L		U	A 10.0	A	RFME	05-JUL-89
SW095	TRG	SW095004	THALLIUM	.0100	MG/L		U	A 10.0	A	RFMS	05-JUL-89
SW095	TRG	SW095005	THALLIUM	.0100	MG/L		U	A 10.0	A	RFME	10-AUG-89
SW095	TRG	SW095005	THALLIUM	.0100	MG/L		U	A 10.0	A	RFMS	10-AUG-89
SW095	TRG	SW095006	THALLIUM	.100	MG/L		U	R 100	A	RFMS	18-SEP-89
SW095	TRG	SW095007	THALLIUM	.0100	MG/L		U	A 10.0	A	RFME	10-OCT-89
SW095	TRG	SW095007	THALLIUM	.0100	MG/L		U	R 10.0	A	RFMS	10-OCT-89
SW095	TRG	SW095008	THALLIUM	.0100	MG/L		U	10.0		RFME	02-NOV-89
SW095	TRG	SW095008	THALLIUM	.100	MG/L		U	100		RFMS	02-NOV-89
SW095	TRG	SW095009	THALLIUM	.0100	MG/L		U	10.0		RFME	07-DEC-89
SW095	TRG	SW095009	THALLIUM	.0100	MG/L		U	10.0		RFMS	07-DEC-89
SW095	TRG	SW095W053090A	THALLIUM	10	UG/L		U	10		DMETCLPTAL	30-MAY-90
SW095	TRG	SW095W053090A	THALLIUM	10	UG/L		U	10		DMETCLPTAL	30-MAY-90
SW095	TRG	SW095W053090A	THALLIUM	10	UG/L		U	10		SMETCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	THALLIUM	10	UG/L		U	10		SMETCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	THALLIUM	10	UG/L		U	10		DMETCLPTAL	26-JUN-90
SW095	TRG	SW00157WC	THALLIUM	10	UG/L		U	10		SMETCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	THALLIUM	2.00	UG/L		UWN	10		DMETCLPTAL	26-SEP-90
SW095	TRG	SW00355WC	THALLIUM	2.00	UG/L		UWN	10		SMETCLPTCL	26-SEP-90
SW095	TRG	SW00963WC	THALLIUM	1.00	UG/L		U	10		DMETCLPTAL	14-MAR-91
SW095	TRG	SW00963WC	THALLIUM	1.00	UG/L		U	10		SMETCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	THALLIUM	1.00	UG/L		BW	10		DMETCLPTAL	11-APR-91
SW095	TRG	SW01065WC	THALLIUM	1.00	UG/L		U	10		SMETCLPTCL	11-APR-91
SW095	TRG	SW01172WC	THALLIUM	1.00	UG/L		U	10		SMETCLPTCL	22-MAY-91
SW095	TRG	SW01172WC	THALLIUM	1.00	UG/L		U	10		DMETCLPTAL	22-MAY-91
SW095	TRG	SW095001	TIN	.100	MG/L		U	V 100	A	RFME	27-MAR-89
SW095	TRG	SW095002	TIN	.132	MG/L			V 100	A	RFME	22-MAY-89
SW095	TRG	SW095002	TIN	.148	MG/L			V 100	A	RFMS	22-MAY-89
SW095	TRG	SW095003	TIN	.144	MG/L			V 100	A	RFME	08-JUN-89
SW095	TRG	SW095003	TIN	.155	MG/L			V 100	A	RFMS	08-JUN-89
SW095	TRG	SW095004	TIN	.147	MG/L			V 100	A	RFME	05-JUL-89
SW095	TRG	SW095004	TIN	.127	MG/L			V 100	A	RFMS	05-JUL-89
SW095	TRG	SW095005	TIN	.100	MG/L		U	V 100	A	RFME	10-AUG-89
SW095	TRG	SW095005	TIN	.100	MG/L		U	V 100	A	RFMS	10-AUG-89
SW095	TRG	SW095006	TIN	.100	MG/L		U	A 100	A	RFMS	18-SEP-89
SW095	TRG	SW095007	TIN	.131	MG/L			A 100	A	RFME	10-OCT-89
SW095	TRG	SW095007	TIN	.128	MG/L			A 100	A	RFMS	10-OCT-89
SW095	TRG	SW095008	TIN	.130	MG/L			100		RFME	02-NOV-89
SW095	TRG	SW095008	TIN	.135	MG/L			100		RFMS	02-NOV-89
SW095	TRG	SW095009	TIN	.100	MG/L		U	100		RFME	07-DEC-89
SW095	TRG	SW095009	TIN	.100	MG/L		U	100		RFMS	07-DEC-89
SW095	TRG	SW095W053090A	TIN	100	UG/L		U	100		DMETNOCLP	30-MAY-90
SW095	TRG	SW095W053090A	TIN	100	UG/L		U	100		DMETNOCLP	30-MAY-90
SW095	TRG	SW095W053090A	TIN	100	UG/L		U	100		SMETNOCLP	30-MAY-90
SW095	TRG	SW095W053090A	TIN	100	UG/L		U	100		SMETNOCLP	30-MAY-90
SW095	TRG	SW00157WC	TIN	100	UG/L		U	100		DMETNOCLP	26-JUN-90

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW00157WC	TIN	100	UG/L		U	100		SMETNOCLP	26-JUN-90
SW095	TRG	SW00355WC	TIN	67.20	UG/L		B	200		DMETNOCLP	26-SEP-90
SW095	TRG	SW00355WC	TIN	76.40	UG/L		B	200		SMETNOCLP	26-SEP-90
SW095	TRG	SW00963WC	TIN	68.30	UG/L		B	200		DMETNOCLP	14-MAR-91
SW095	TRG	SW00963WC	TIN	76.40	UG/L		B	200		SMETNOCLP	14-MAR-91
SW095	TRG	SW01065WC	TIN	41.30	UG/L		B	200		DMETNOCLP	11-APR-91
SW095	TRG	SW01065WC	TIN	54.40	UG/L		B	200		SMETNOCLP	11-APR-91
SW095	TRG	SW01172WC	TIN	34.30	UG/L		BN	200		DMETNOCLP	22-MAY-91
SW095	TRG	SW01172WC	TIN	33.80	UG/L		BN	200		SMETNOCLP	22-MAY-91
SW095	TRG	SW88A086	VANADIUM	0.050	MG/L		U		N	RFME	12-JUL-88
SW095	S	SW88A086	VANADIUM	0.050	MG/L		U		N	RFME	12-JUL-88
SW095	SD	SW88A086	VANADIUM	0.050	MG/L		U		N	RFME	12-JUL-88
SW095	TRG	SW88A086	VANADIUM	0.050	MG/L		U		N	RFMS	12-JUL-88
SW095	S	SW88A086	VANADIUM	0.050	MG/L		U		N	RFMS	12-JUL-88
SW095	SD	SW88A086	VANADIUM	0.050	MG/L		U		N	RFMS	12-JUL-88
SW095	TRG	SW095001	VANADIUM	.0500	MG/L		U	A 50.0	A	RFME	27-MAR-89
SW095	TRG	SW095002	VANADIUM	.0500	MG/L		U	V 50.0	A	RFME	22-MAY-89
SW095	TRG	SW095002	VANADIUM	.0500	MG/L		U	A 50.0	A	RFMS	22-MAY-89
SW095	TRG	SW095003	VANADIUM	.0500	MG/L		U	V 50.0	A	RFME	08-JUN-89
SW095	TRG	SW095003	VANADIUM	.0500	MG/L		U	V 50.0	A	RFMS	08-JUN-89
SW095	TRG	SW095004	VANADIUM	.0500	MG/L		U	V 50.0	A	RFME	05-JUL-89
SW095	TRG	SW095004	VANADIUM	.0500	MG/L		U	V 50.0	A	RFMS	05-JUL-89
SW095	TRG	SW095005	VANADIUM	.0500	MG/L		U	V 50.0	A	RFME	10-AUG-89
SW095	TRG	SW095005	VANADIUM	.0500	MG/L		U	V 50.0	A	RFMS	10-AUG-89
SW095	TRG	SW095006	VANADIUM	.0500	MG/L		U	V 50.0	A	RFMS	18-SEP-89
SW095	TRG	SW095007	VANADIUM	.0500	MG/L		U	V 50.0	A	RFME	10-OCT-89
SW095	TRG	SW095007	VANADIUM	.0500	MG/L		U	V 50.0	A	RFMS	10-OCT-89
SW095	TRG	SW095008	VANADIUM	.0500	MG/L		U	50.0		RFME	02-NOV-89
SW095	TRG	SW095008	VANADIUM	.0500	MG/L		U	50.0		RFMS	02-NOV-89
SW095	TRG	SW095009	VANADIUM	.0500	MG/L		U	50.0		RFME	07-DEC-89
SW095	TRG	SW095009	VANADIUM	.0500	MG/L		U	50.0		RFMS	07-DEC-89
SW095	TRG	SW095W053090A	VANADIUM	50	UG/L		U	50		DMETCLPTAL	30-MAY-90
SW095	TRG	SW095W053090A	VANADIUM	50	UG/L		U	50		DMETCLPTAL	30-MAY-90
SW095	TRG	SW095W053090A	VANADIUM	50	UG/L		U	50		SMETCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	VANADIUM	50	UG/L		U	50		SMETCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	VANADIUM	50	UG/L		U	50		DMETCLPTAL	26-JUN-90
SW095	TRG	SW00157WC	VANADIUM	50	UG/L		U	50		SMETCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	VANADIUM	15.90	UG/L		B	50		DMETCLPTAL	26-SEP-90
SW095	TRG	SW00355WC	VANADIUM	17.60	UG/L		B	50		SMETCLPTCL	26-SEP-90
SW095	TRG	SW00963WC	VANADIUM	9.90	UG/L		B	50		DMETCLPTAL	14-MAR-91
SW095	TRG	SW00963WC	VANADIUM	12.80	UG/L		B	50		SMETCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	VANADIUM	10.70	UG/L		B	50		DMETCLPTAL	11-APR-91
SW095	TRG	SW01065WC	VANADIUM	14.30	UG/L		B	50		SMETCLPTCL	11-APR-91
SW095	TRG	SW01172WC	VANADIUM	6.30	UG/L		B	50		SMETCLPTCL	22-MAY-91
SW095	TRG	SW01172WC	VANADIUM	5.20	UG/L		B	50		DMETCLPTAL	22-MAY-91
SW095	TRG	SW88A086	ZINC	0.040	MG/L				N	RFME	12-JUL-88
SW095	SD	SW88A086	ZINC	0.040	MG/L				N	RFME	12-JUL-88
SW095	S	SW88A086	ZINC	0.040	MG/L		U		N	RFME	12-JUL-88
SW095	S	SW88A086	ZINC	0.040	MG/L				N	RFMS	12-JUL-88
SW095	SD	SW88A086	ZINC	0.040	MG/L				N	RFMS	12-JUL-88
SW095	TRG	SW88A086	ZINC	0.050	MG/L				N	RFMS	12-JUL-88
SW095	TRG	SW095001	ZINC	.0391	MG/L			A 20.0	A	RFME	27-MAR-89
SW095	TRG	SW095002	ZINC	.0359	MG/L			A 20.0	A	RFME	22-MAY-89
SW095	TRG	SW095002	ZINC	.0475	MG/L			A 20.0	A	RFMS	22-MAY-89
SW095	TRG	SW095003	ZINC	.0557	MG/L			A 20.0	A	RFME	08-JUN-89
SW095	TRG	SW095003	ZINC	.0446	MG/L			A 20.0	A	RFMS	08-JUN-89
SW095	TRG	SW095004	ZINC	.0685	MG/L			A 20.0	A	RFME	05-JUL-89
SW095	TRG	SW095004	ZINC	.0400	MG/L			A 20.0	A	RFMS	05-JUL-89

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW095005	ZINC	.0430	MG/L		A	20.0	A	RFME	10-AUG-89
SW095	TRG	SW095005	ZINC	.0461	MG/L		A	20.0	A	RFMS	10-AUG-89
SW095	TRG	SW095006	ZINC	.0357	MG/L		A	20.0	A	RFMS	18-SEP-89
SW095	TRG	SW095007	ZINC	.0246	MG/L		A	20.0	A	RFME	10-OCT-89
SW095	TRG	SW095007	ZINC	.0234	MG/L		A	20.0	A	RFMS	10-OCT-89
SW095	TRG	SW095008	ZINC	.0836	MG/L			20.0		RFME	02-NOV-89
SW095	TRG	SW095008	ZINC	.0565	MG/L			20.0		RFMS	02-NOV-89
SW095	TRG	SW095009	ZINC	.0200	MG/L		U	20.0		RFME	07-DEC-89
SW095	TRG	SW095009	ZINC	.0245	MG/L			20.0		RFMS	07-DEC-89
SW095	TRG	SW095W053090A	ZINC	20	UG/L			20		DMETCLPTAL	30-MAY-90
SW095	TRG	SW095W053090A	ZINC	57.4	UG/L			20		DMETCLPTAL	30-MAY-90
SW095	TRG	SW095W053090A	ZINC	67.5	UG/L			20		SMETCLPTCL	30-MAY-90
SW095	TRG	SW095W053090A	ZINC	116	UG/L			20		SMETCLPTCL	30-MAY-90
SW095	TRG	SW00157WC	ZINC	25.6	UG/L			20		DMETCLPTAL	26-JUN-90
SW095	TRG	SW00157WC	ZINC	86.4	UG/L			20		SMETCLPTCL	26-JUN-90
SW095	TRG	SW00355WC	ZINC	10.10	UG/L		B	20		DMETCLPTAL	26-SEP-90
SW095	TRG	SW00355WC	ZINC	73.30	UG/L		E	20		SMETCLPTCL	26-SEP-90
SW095	TRG	SW00963WC	ZINC	29.20	UG/L			20		DMETCLPTAL	14-MAR-91
SW095	TRG	SW00963WC	ZINC	28.20	UG/L			20		SMETCLPTCL	14-MAR-91
SW095	TRG	SW01065WC	ZINC	42.50	UG/L			20		DMETCLPTAL	11-APR-91
SW095	TRG	SW01065WC	ZINC	71.30	UG/L			20		SMETCLPTCL	11-APR-91
SW095	TRG	SW01172WC	ZINC	36.10	UG/L			20		SMETCLPTCL	22-MAY-91
SW095	TRG	SW01172WC	ZINC	28.40	UG/L			20		DMETCLPTAL	22-MAY-91

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW095001	4,4'-DDD	1.0	UG/L		U	1.0		RFPP	27-MAR-89
SW095	TRG	SW095002	4,4'-DDD	0.50	UG/L		U	0.50		RFPP	22-MAY-89
SW095	TRG	SW095007	4,4'-DDD	0.10	UG/L		U	0.10		RFPP	10-OCT-89
SW095	TRG	SW095W053090A	4,4'-DDD	0.1	UG/L		U	0.1		PSTCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	4,4'-DDD	0.10	UG/L		U	0.10		PSTCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	4,4'-DDD	0.10	UG/L		U	0		PSTCLPTCL	11-APR-91
SW095	TRG	SW095001	4,4'-DDE	1.0	UG/L		U	1.0		RFPP	27-MAR-89
SW095	TRG	SW095002	4,4'-DDE	0.50	UG/L		U	0.50		RFPP	22-MAY-89
SW095	TRG	SW095007	4,4'-DDE	0.10	UG/L		U	0.10		RFPP	10-OCT-89
SW095	TRG	SW095W053090A	4,4'-DDE	0.1	UG/L		U	0.1		PSTCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	4,4'-DDE	0.10	UG/L		U	0.10		PSTCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	4,4'-DDE	0.10	UG/L		U	0		PSTCLPTCL	11-APR-91
SW095	TRG	SW095001	4,4'-DDT	1.0	UG/L		U	1.0		RFPP	27-MAR-89
SW095	TRG	SW095002	4,4'-DDT	0.50	UG/L		U	0.50		RFPP	22-MAY-89
SW095	TRG	SW095007	4,4'-DDT	0.10	UG/L		U	0.10		RFPP	10-OCT-89
SW095	TRG	SW095W053090A	4,4'-DDT	0.1	UG/L		U	0.1		PSTCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	4,4'-DDT	0.10	UG/L		U	0.10		PSTCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	4,4'-DDT	0.10	UG/L		U	0		PSTCLPTCL	11-APR-91
SW095	TRG	SW095001	ALDRIN	0.50	UG/L		U	0.50		RFPP	27-MAR-89
SW095	TRG	SW095002	ALDRIN	0.25	UG/L		U	0.25		RFPP	22-MAY-89
SW095	TRG	SW095007	ALDRIN	0.05	UG/L		U	0.05		RFPP	10-OCT-89
SW095	TRG	SW095W053090A	ALDRIN	0.05	UG/L		U	0.05		PSTCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	ALDRIN	0.05	UG/L		U	0.05		PSTCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	ALDRIN	0.050	UG/L		U	0		PSTCLPTCL	11-APR-91
SW095	TRG	SW00157WC	ALKALINITY AS CACO3	310	MG/L			2		WQPL	26-JUN-90
SW095	TRG	SW095001	AROCLOR-1016	5.0	UG/L		U	5.0		RFPP	27-MAR-89
SW095	TRG	SW095002	AROCLOR-1016	2.5	UG/L		U	2.5		RFPP	22-MAY-89
SW095	TRG	SW095007	AROCLOR-1016	0.50	UG/L		U	0.50		RFPP	10-OCT-89
SW095	TRG	SW095W053090A	AROCLOR-1016	0.5	UG/L		U	0.5		PSTCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	AROCLOR-1016	0.50	UG/L		U	0.50		PSTCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	AROCLOR-1016	0.50	UG/L		U	0		PSTCLPTCL	11-APR-91
SW095	TRG	SW095001	AROCLOR-1221	5.0	UG/L		U	5.0		RFPP	27-MAR-89
SW095	TRG	SW095002	AROCLOR-1221	2.5	UG/L		U	2.5		RFPP	22-MAY-89
SW095	TRG	SW095007	AROCLOR-1221	0.50	UG/L		U	0.50		RFPP	10-OCT-89
SW095	TRG	SW095W053090A	AROCLOR-1221	0.5	UG/L		U	0.5		PSTCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	AROCLOR-1221	0.50	UG/L		U	0.50		PSTCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	AROCLOR-1221	0.50	UG/L		U	0		PSTCLPTCL	11-APR-91
SW095	TRG	SW095001	AROCLOR-1232	5.0	UG/L		U	5.0		RFPP	27-MAR-89
SW095	TRG	SW095002	AROCLOR-1232	2.5	UG/L		U	2.5		RFPP	22-MAY-89
SW095	TRG	SW095007	AROCLOR-1232	0.50	UG/L		U	0.50		RFPP	10-OCT-89
SW095	TRG	SW095W053090A	AROCLOR-1232	0.5	UG/L		U	0.5		PSTCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	AROCLOR-1232	0.50	UG/L		U	0.50		PSTCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	AROCLOR-1232	0.50	UG/L		U	0		PSTCLPTCL	11-APR-91
SW095	TRG	SW095001	AROCLOR-1242	5.0	UG/L		U	5.0		RFPP	27-MAR-89
SW095	TRG	SW095002	AROCLOR-1242	2.5	UG/L		U	2.5		RFPP	22-MAY-89
SW095	TRG	SW095007	AROCLOR-1242	0.50	UG/L		U	0.50		RFPP	10-OCT-89
SW095	TRG	SW095W053090A	AROCLOR-1242	0.5	UG/L		U	0.5		PSTCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	AROCLOR-1242	0.50	UG/L		U	0.50		PSTCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	AROCLOR-1242	0.50	UG/L		U	0		PSTCLPTCL	11-APR-91
SW095	TRG	SW095001	AROCLOR-1248	5.0	UG/L		U	5.0		RFPP	27-MAR-89
SW095	TRG	SW095002	AROCLOR-1248	2.5	UG/L		U	2.5		RFPP	22-MAY-89
SW095	TRG	SW095007	AROCLOR-1248	0.50	UG/L		U	0.50		RFPP	10-OCT-89
SW095	TRG	SW095W053090A	AROCLOR-1248	0.5	UG/L		U	0.5		PSTCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	AROCLOR-1248	0.50	UG/L		U	0.50		PSTCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	AROCLOR-1248	0.50	UG/L		U	0		PSTCLPTCL	11-APR-91
SW095	TRG	SW095001	AROCLOR-1254	10	UG/L		U	10		RFPP	27-MAR-89
SW095	TRG	SW095002	AROCLOR-1254	5.0	UG/L		U	5.0		RFPP	22-MAY-89
SW095	TRG	SW095007	AROCLOR-1254	1.0	UG/L		U	1.0		RFPP	10-OCT-89

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW095W053090A	AROCLOR-1254	1	UG/L		U	1		PSTCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	AROCLOR-1254	1.00	UG/L		U	1.00		PSTCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	AROCLOR-1254	1.0	UG/L		U	1		PSTCLPTCL	11-APR-91
SW095	TRG	SW095001	AROCLOR-1260	10	UG/L		U	10		RFPP	27-MAR-89
SW095	TRG	SW095002	AROCLOR-1260	5.0	UG/L		U	5.0		RFPP	22-MAY-89
SW095	TRG	SW095007	AROCLOR-1260	1.0	UG/L		U	1.0		RFPP	10-OCT-89
SW095	TRG	SW095W053090A	AROCLOR-1260	1	UG/L		U	1		PSTCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	AROCLOR-1260	1.00	UG/L		U	1.00		PSTCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	AROCLOR-1260	1.0	UG/L		U	1		PSTCLPTCL	11-APR-91
SW095	TRG	SW88A086	BICARBONATE	344	MG/L					RFIN	12-JUL-88
SW095	TRG	SW095006	BICARBONATE	350	MG/L			V		RFIN	18-SEP-89
SW095	TRG	SW09590002	BICARBONATE	300	MG/L					RFIN	23-FEB-90
SW095	TRG	SW09590003	BICARBONATE	280	MG/L					RFIN	16-MAR-90
SW095	TRG	SW00157WC	BICARBONATE AS CACO3	310	MG/L			2		WQPL	26-JUN-90
SW095	TRG	SW00355WC	BICARBONATE AS CACO3	280	MG/L			1.0		WQPL	26-SEP-90
SW095	TRG	SW00450WC	BICARBONATE AS CACO3	260	MG/L					WQPL	24-OCT-90
SW095	TRG	SW00551WC	BICARBONATE AS CACO3	300	MG/L			1.0		WQPL	19-NOV-90
SW095	TRG	SW00963WC	BICARBONATE AS CACO3	250	MG/L			1.0		WQPL	14-MAR-91
SW095	TRG	SW01065WC	BICARBONATE AS CACO3	150	MG/L			1.0		WQPL	11-APR-91
SW095	TRG	SW01172WC	BICARBONATE AS CACO3	270	MG/L			1.0		WQPL	22-MAY-91
SW095	TRG	SW88A086	CARBONATE	1.0	MG/L		U			RFIN	12-JUL-88
SW095	TRG	SW095006	CARBONATE	5	MG/L		U	V		RFIN	18-SEP-89
SW095	TRG	SW09590002	CARBONATE	5	MG/L		U			RFIN	23-FEB-90
SW095	TRG	SW09590003	CARBONATE	5	MG/L		U			RFIN	16-MAR-90
SW095	TRG	SW00157WC	CARBONATE AS CACO3	2	MG/L		U	2		WQPL	26-JUN-90
SW095	TRG	SW00355WC	CARBONATE AS CACO3	0	MG/L			1.0		WQPL	26-SEP-90
SW095	TRG	SW00450WC	CARBONATE AS CACO3	1	MG/L		U			WQPL	24-OCT-90
SW095	TRG	SW00551WC	CARBONATE AS CACO3	0	MG/L			1.0		WQPL	19-NOV-90
SW095	TRG	SW00963WC	CARBONATE AS CACO3	0	MG/L			1.0		WQPL	14-MAR-91
SW095	TRG	SW01065WC	CARBONATE AS CACO3	0	MG/L			1.0		WQPL	11-APR-91
SW095	TRG	SW01172WC	CARBONATE AS CACO3	1	MG/L		U	1.0		WQPL	22-MAY-91
SW095	TRG	SW88A086	CHLORIDE	133	MG/L					RFIN	12-JUL-88
SW095	TRG	SW095006	CHLORIDE	84	MG/L			V		RFIN	18-SEP-89
SW095	TRG	SW09590002	CHLORIDE	170	MG/L					RFIN	23-FEB-90
SW095	TRG	SW09590003	CHLORIDE	110	MG/L					RFIN	16-MAR-90
SW095	TRG	SW00157WC	CHLORIDE	125	MG/L			50		WQPL	26-JUN-90
SW095	TRG	SW00355WC	CHLORIDE	120	MG/L			0.2		WQPL	26-SEP-90
SW095	TRG	SW00450WC	CHLORIDE	120	MG/L					WQPL	24-OCT-90
SW095	TRG	SW00551WC	CHLORIDE	130	MG/L			0.2		WQPL	19-NOV-90
SW095	TRG	SW00963WC	CHLORIDE	130	MG/L			0.2		WQPL	14-MAR-91
SW095	TRG	SW01065WC	CHLORIDE	72	MG/L			0.2		WQPL	11-APR-91
SW095	TRG	SW01172WC	CHLORIDE	120	MG/L			0.2		WQPL	22-MAY-91
SW095	TRG	SW095W053090A	CYANIDE	10	UG/L		U	10		WQPL	30-MAY-90
SW095	TRG	SW095W053090A	CYANIDE	10	UG/L		U	10		WQPL	30-MAY-90
SW095	TRG	SW00157WC	CYANIDE	10	UG/L		U	10		WQPL	26-JUN-90
SW095	TRG	SW095001	DIELDRIN	1.0	UG/L		U	1.0		RFPP	27-MAR-89
SW095	TRG	SW095002	DIELDRIN	0.50	UG/L		U	0.50		RFPP	22-MAY-89
SW095	TRG	SW095007	DIELDRIN	0.10	UG/L		U	0.10		RFPP	10-OCT-89
SW095	TRG	SW095W053090A	DIELDRIN	0.1	UG/L		U	0.1		PSTCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	DIELDRIN	0.10	UG/L		U	0.10		PSTCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	DIELDRIN	0.10	UG/L		U	0		PSTCLPTCL	11-APR-91
SW095	TRG	SW00963WC	DISSOLVED ORGANIC CARBON	5	MG/L			1.0		WQPL	14-MAR-91
SW095	TRG	SW01065WC	DISSOLVED ORGANIC CARBON	9	MG/L			1.0		WQPL	11-APR-91
SW095	TRG	SW095001	ENDOSULFAN I	0.50	UG/L		U	0.50		RFPP	27-MAR-89
SW095	TRG	SW095002	ENDOSULFAN I	0.25	UG/L		U	0.25		RFPP	22-MAY-89
SW095	TRG	SW095007	ENDOSULFAN I	0.05	UG/L		U	0.05		RFPP	10-OCT-89
SW095	TRG	SW095W053090A	ENDOSULFAN I	0.05	UG/L		U	0.05		PSTCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	ENDOSULFAN I	0.05	UG/L		U	0.05		PSTCLPTCL	24-OCT-90

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW01065WC	ENDOSULFAN I	0.050	UG/L		U	0		PSTCLPTCL	11-APR-91
SW095	TRG	SW095001	ENDOSULFAN II	1.0	UG/L		U	1.0		RFPP	27-MAR-89
SW095	TRG	SW095002	ENDOSULFAN II	0.50	UG/L		U	0.50		RFPP	22-MAY-89
SW095	TRG	SW095007	ENDOSULFAN II	0.10	UG/L		U	0.10		RFPP	10-OCT-89
SW095	TRG	SW095W053090A	ENDOSULFAN II	0.1	UG/L		U	0.1		PSTCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	ENDOSULFAN II	0.10	UG/L		U	0.10		PSTCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	ENDOSULFAN II	0.10	UG/L		U	0		PSTCLPTCL	11-APR-91
SW095	TRG	SW095001	ENDOSULFAN SULFATE	1.0	UG/L		U	1.0		RFPP	27-MAR-89
SW095	TRG	SW095002	ENDOSULFAN SULFATE	0.50	UG/L		U	0.50		RFPP	22-MAY-89
SW095	TRG	SW095007	ENDOSULFAN SULFATE	0.10	UG/L		U	0.10		RFPP	10-OCT-89
SW095	TRG	SW095W053090A	ENDOSULFAN SULFATE	0.1	UG/L		U	0.1		PSTCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	ENDOSULFAN SULFATE	0.10	UG/L		U	0.10		PSTCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	ENDOSULFAN SULFATE	0.10	UG/L		U	0		PSTCLPTCL	11-APR-91
SW095	TRG	SW095001	ENDRIN	1.0	UG/L		U	1.0		RFPP	27-MAR-89
SW095	TRG	SW095002	ENDRIN	0.50	UG/L		U	0.50		RFPP	22-MAY-89
SW095	TRG	SW095007	ENDRIN	0.10	UG/L		U	0.10		RFPP	10-OCT-89
SW095	TRG	SW095W053090A	ENDRIN	0.1	UG/L		U	0.1		PSTCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	ENDRIN	0.10	UG/L		U	0.10		PSTCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	ENDRIN	0.10	UG/L		U	0		PSTCLPTCL	11-APR-91
SW095	TRG	SW095001	ENDRIN KETONE	1.0	UG/L		U	1.0		RFPP	27-MAR-89
SW095	TRG	SW095002	ENDRIN KETONE	0.50	UG/L		U	0.50		RFPP	22-MAY-89
SW095	TRG	SW095007	ENDRIN KETONE	0.10	UG/L		U	0.10		RFPP	10-OCT-89
SW095	TRG	SW095W053090A	ENDRIN KETONE	0.1	UG/L		U	0.1		PSTCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	ENDRIN KETONE	0.10	UG/L		U	0.10		PSTCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	ENDRIN KETONE	0.10	UG/L		U	0		PSTCLPTCL	11-APR-91
SW095	TRG	SW00157WC	FLUORIDE	0.93	MG/L			0.1		WQPL	26-JUN-90
SW095	TRG	SW00355WC	FLUORIDE	1.0	MG/L			0.1		WQPL	26-SEP-90
SW095	TRG	SW00551WC	FLUORIDE	1.0	MG/L			0.1		WQPL	19-NOV-90
SW095	TRG	SW00963WC	FLUORIDE	1.0	MG/L			0.1		WQPL	14-MAR-91
SW095	TRG	SW01065WC	FLUORIDE	0.8	MG/L			0.1		WQPL	11-APR-91
SW095	TRG	SW01172WC	FLUORIDE	1.2	MG/L			0.1		WQPL	22-MAY-91
SW095	TRG	SW00450WC	FLUORIDE, SOLUBLE	.57	MG/L					WQPL	24-OCT-90
SW095	TRG	SW095001	HEPTACHLOR	0.50	UG/L		U	0.50		RFPP	27-MAR-89
SW095	TRG	SW095002	HEPTACHLOR	0.25	UG/L		U	0.25		RFPP	22-MAY-89
SW095	TRG	SW095007	HEPTACHLOR	0.05	UG/L		U	0.05		RFPP	10-OCT-89
SW095	TRG	SW095W053090A	HEPTACHLOR	0.05	UG/L		U	0.05		PSTCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	HEPTACHLOR	0.05	UG/L		U	0.05		PSTCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	HEPTACHLOR	0.050	UG/L		U	0		PSTCLPTCL	11-APR-91
SW095	TRG	SW095001	HEPTACHLOR EPOXIDE	0.50	UG/L		U	0.50		RFPP	27-MAR-89
SW095	TRG	SW095002	HEPTACHLOR EPOXIDE	0.25	UG/L		U	0.25		RFPP	22-MAY-89
SW095	TRG	SW095007	HEPTACHLOR EPOXIDE	0.05	UG/L		U	0.05		RFPP	10-OCT-89
SW095	TRG	SW095W053090A	HEPTACHLOR EPOXIDE	0.05	UG/L		U	0.05		PSTCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	HEPTACHLOR EPOXIDE	0.05	UG/L		U	0.05		PSTCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	HEPTACHLOR EPOXIDE	0.050	UG/L		U	0		PSTCLPTCL	11-APR-91
SW095	TRG	SW095001	METHOXYCHLOR	5.0	UG/L		U	5.0		RFPP	27-MAR-89
SW095	TRG	SW095002	METHOXYCHLOR	2.5	UG/L		U	2.5		RFPP	22-MAY-89
SW095	TRG	SW095007	METHOXYCHLOR	0.50	UG/L		U	0.50		RFPP	10-OCT-89
SW095	TRG	SW095W053090A	METHOXYCHLOR	0.5	UG/L		U	0.5		PSTCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	METHOXYCHLOR	0.50	UG/L		U	0.50		PSTCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	METHOXYCHLOR	0.50	UG/L		U	0		PSTCLPTCL	11-APR-91
SW095	TRG	SW88A086	NITRATE	3205.148						RFIN	12-JUL-88
SW095	TRG	SW095006	NITRATE	1859.340						RFIN	18-SEP-89
SW095	TRG	SW88A086	NITRATE/NITRITE	724	MG/L					RFIN	12-JUL-88
SW095	TRG	SW095006	NITRATE/NITRITE	420	MG/L		V			RFIN	18-SEP-89
SW095	TRG	SW09590002	NITRATE/NITRITE	690	MG/L					RFIN	23-FEB-90
SW095	TRG	SW09590003	NITRATE/NITRITE	330	MG/L					RFIN	16-MAR-90
SW095	TRG	SW00157WC	NITRATE/NITRITE	587	MG/L			50		WQPL	26-JUN-90
SW095	TRG	SW00355WC	NITRATE/NITRITE	360	MG/L			0.02		WQPL	26-SEP-90

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW00450WC	NITRATE/NITRITE	470	MG/L					WQPL	24-OCT-90
SW095	TRG	SW00551WC	NITRATE/NITRITE	410	MG/L			0.02		WQPL	19-NOV-90
SW095	TRG	SW00963WC	NITRATE/NITRITE	620	MG/L			0.02		WQPL	14-MAR-91
SW095	TRG	SW01065WC	NITRATE/NITRITE	190	MG/L			0.02		WQPL	11-APR-91
SW095	TRG	SW01172WC	NITRATE/NITRITE	440	MG/L			0.02		WQPL	22-MAY-91
SW095	TRG	SW00355WC	NITRITE	0.02	MG/L		U	0.02		WQPL	26-SEP-90
SW095	TRG	SW00450WC	NITRITE	.01	MG/L		U			WQPL	24-OCT-90
SW095	TRG	SW00551WC	NITRITE	0.02	MG/L		U	0.02		WQPL	19-NOV-90
SW095	TRG	SW00963WC	NITRITE	0.04	MG/L			0.02		WQPL	14-MAR-91
SW095	TRG	SW01065WC	NITRITE	0.06	MG/L			0.02		WQPL	11-APR-91
SW095	TRG	SW01172WC	NITRITE	0.12	MG/L			0.02		WQPL	22-MAY-91
SW095	TRG	SW88A086	OIL AND GREASE	11	MG/L					RFIN	12-JUL-88
SW095	TRG	SW095006	OIL AND GREASE	1	MG/L		U		V	RFIN	18-SEP-89
SW095	TRG	SW09590002	OIL AND GREASE	1	MG/L		U			RFIN	23-FEB-90
SW095	TRG	SW09590003	OIL AND GREASE	1	MG/L		U			RFIN	16-MAR-90
SW095	TRG	SW00157WC	OIL AND GREASE	5	MG/L		U	5		WQPL	26-JUN-90
SW095	TRG	SW00355WC	OIL AND GREASE	0.5	MG/L			0.2		WQPL	26-SEP-90
SW095	TRG	SW00963WC	OIL AND GREASE	0.7	MG/L			0.2		WQPL	14-MAR-91
SW095	TRG	SW01065WC	OIL AND GREASE	1.1	MG/L			0.2		WQPL	11-APR-91
SW095	TRG	SW01172WC	OIL AND GREASE	0.4	MG/L			0.2		WQPL	22-MAY-91
SW095	TRG	SW00963WC	PARATHION, ETHYL	0.01	MG/L		U	0.01		WQPL	14-MAR-91
SW095	TRG	SW01065WC	PARATHION, ETHYL	0.11	MG/L			0.01		WQPL	11-APR-91
SW095	TRG	SW01172WC	PARATHION, ETHYL	0.01	MG/L			0.01		WQPL	22-MAY-91
SW095	TRG	SW00355WC	PHOSPHATE	0.05	MG/L			0.01		WQPL	26-SEP-90
SW095	TRG	SW00450WC	PHOSPHATE	.03	MG/L					WQPL	24-OCT-90
SW095	TRG	SW00551WC	PHOSPHATE	0.04	MG/L			0.01		WQPL	19-NOV-90
SW095	TRG	SW00963WC	PHOSPHATE	0.02	MG/L			0.01		WQPL	14-MAR-91
SW095	TRG	SW01065WC	PHOSPHATE	0.16	MG/L			0.01		WQPL	11-APR-91
SW095	TRG	SW01172WC	PHOSPHATE	0.05	MG/L			0.01		WQPL	22-MAY-91
SW095	TRG	SW00450WC	PHOSPHORUS	.09	MG/L					WQPL	24-OCT-90
SW095	TRG	SW00355WC	SILICA, DISSOLVED	7.8	MG/L			0.4		WQPL	26-SEP-90
SW095	TRG	SW00551WC	SILICA, DISSOLVED	6.8	MG/L			0.4		WQPL	19-NOV-90
SW095	TRG	SW00963WC	SILICA, DISSOLVED	6.6	MG/L			0.4		WQPL	14-MAR-91
SW095	TRG	SW01065WC	SILICA, DISSOLVED	4.5	MG/L			0.4		WQPL	11-APR-91
SW095	TRG	SW01172WC	SILICA, DISSOLVED	6.4	MG/L			0.4		WQPL	22-MAY-91
SW095	TRG	SW88A086	SPECIFIC CONDUCTIVITY	1000	UMHOS					RFIN	12-JUL-88
SW095	TRG	SW88A086	SULFATE	218	MG/L					RFIN	12-JUL-88
SW095	TRG	SW095006	SULFATE	170	MG/L				V	RFIN	18-SEP-89
SW095	TRG	SW09590002	SULFATE	170	MG/L					RFIN	23-FEB-90
SW095	TRG	SW09590003	SULFATE	110	MG/L					RFIN	16-MAR-90
SW095	TRG	SW00157WC	SULFATE	187	MG/L			25		WQPL	26-JUN-90
SW095	TRG	SW00355WC	SULFATE	180	MG/L			2.0		WQPL	26-SEP-90
SW095	TRG	SW00450WC	SULFATE	200	MG/L					WQPL	24-OCT-90
SW095	TRG	SW00551WC	SULFATE	170	MG/L			2.0		WQPL	19-NOV-90
SW095	TRG	SW00963WC	SULFATE	160	MG/L			2.0		WQPL	14-MAR-91
SW095	TRG	SW01065WC	SULFATE	120	MG/L			2.0		WQPL	11-APR-91
SW095	TRG	SW01172WC	SULFATE	170	MG/L			2.0		WQPL	22-MAY-91
SW095	TRG	SW00963WC	SULFIDE	2	MG/L			2.0		WQPL	14-MAR-91
SW095	TRG	SW01065WC	SULFIDE	1	MG/L		U	2.0		WQPL	11-APR-91
SW095	TRG	SW01172WC	SULFIDE	1	MG/L		U	2.0		WQPL	22-MAY-91
SW095	TRG	SW88A086	TOTAL DISSOLVED SOLIDS	4555	MG/L					RFIN	12-JUL-88
SW095	TRG	SW095006	TOTAL DISSOLVED SOLIDS	3400	MG/L				A	RFIN	18-SEP-89
SW095	TRG	SW09590002	TOTAL DISSOLVED SOLIDS	4400	MG/L					RFIN	23-FEB-90
SW095	TRG	SW09590003	TOTAL DISSOLVED SOLIDS	2700	MG/L					RFIN	16-MAR-90
SW095	TRG	SW00157WC	TOTAL DISSOLVED SOLIDS	4560	MG/L			5		WQPL	26-JUN-90
SW095	TRG	SW00355WC	TOTAL DISSOLVED SOLIDS	3200	MG/L			10.0		WQPL	26-SEP-90
SW095	TRG	SW00450WC	TOTAL DISSOLVED SOLIDS	3790	MG/L					WQPL	24-OCT-90
SW095	TRG	SW00551WC	TOTAL DISSOLVED SOLIDS	3800	MG/L			10.0		WQPL	19-NOV-90

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW00963WC	TOTAL DISSOLVED SOLIDS	4300	MG/L			10.0		WQPL	14-MAR-91
SW095	TRG	SW01065WC	TOTAL DISSOLVED SOLIDS	1500	MG/L			10.0		WQPL	11-APR-91
SW095	TRG	SW01172WC	TOTAL DISSOLVED SOLIDS	3700	MG/L			10.0		WQPL	22-MAY-91
SW095	TRG	SW00963WC	TOTAL ORGANIC CARBON	6	MG/L			1.0		WQPL	14-MAR-91
SW095	TRG	SW01065WC	TOTAL ORGANIC CARBON	9	MG/L			1.0		WQPL	11-APR-91
SW095	TRG	SW88A086	TOTAL SUSPENDED SOLIDS	21	MG/L					RFIN	12-JUL-88
SW095	TRG	SW095006	TOTAL SUSPENDED SOLIDS	5	MG/L		U	A		RFIN	18-SEP-89
SW095	TRG	SW09590002	TOTAL SUSPENDED SOLIDS	94	MG/L					RFIN	23-FEB-90
SW095	TRG	SW09590003	TOTAL SUSPENDED SOLIDS	6	MG/L					RFIN	16-MAR-90
SW095	TRG	SW00157WC	TOTAL SUSPENDED SOLIDS	5	MG/L		U	5		WQPL	26-JUN-90
SW095	TRG	SW00355WC	TOTAL SUSPENDED SOLIDS	7	MG/L			4.0		WQPL	26-SEP-90
SW095	TRG	SW00450WC	TOTAL SUSPENDED SOLIDS	7	MG/L					WQPL	24-OCT-90
SW095	TRG	SW00551WC	TOTAL SUSPENDED SOLIDS	11	MG/L			4.0		WQPL	19-NOV-90
SW095	TRG	SW00963WC	TOTAL SUSPENDED SOLIDS	4	MG/L		U	4.0		WQPL	14-MAR-91
SW095	TRG	SW01065WC	TOTAL SUSPENDED SOLIDS	48	MG/L			4.0		WQPL	11-APR-91
SW095	TRG	SW01172WC	TOTAL SUSPENDED SOLIDS	24	MG/L			4.0		WQPL	22-MAY-91
SW095	TRG	SW095001	TOXAPHENE	10	UG/L		U	10		RFPP	27-MAR-89
SW095	TRG	SW095002	TOXAPHENE	5.0	UG/L		U	5.0		RFPP	22-MAY-89
SW095	TRG	SW095007	TOXAPHENE	1.0	UG/L		U	1.0		RFPP	10-OCT-89
SW095	TRG	SW095W053090A	TOXAPHENE	1	UG/L		U	1		PSTCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	TOXAPHENE	1.00	UG/L		U	1.00		PSTCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	TOXAPHENE	1.0	UG/L		U	1		PSTCLPTCL	11-APR-91
SW095	TRG	SW095001	alpha-BHC	0.50	UG/L		U	0.50		RFPP	27-MAR-89
SW095	TRG	SW095002	alpha-BHC	0.25	UG/L		U	0.25		RFPP	22-MAY-89
SW095	TRG	SW095007	alpha-BHC	0.05	UG/L		U	0.05		RFPP	10-OCT-89
SW095	TRG	SW095W053090A	alpha-BHC	0.05	UG/L		U	0.05		PSTCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	alpha-BHC	0.05	UG/L		U	0.05		PSTCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	alpha-BHC	0.050	UG/L		U	0		PSTCLPTCL	11-APR-91
SW095	TRG	SW095001	alpha-CHLORDANE	5.0	UG/L		U	5.0		RFPP	27-MAR-89
SW095	TRG	SW095002	alpha-CHLORDANE	2.5	UG/L		U	2.5		RFPP	22-MAY-89
SW095	TRG	SW095007	alpha-CHLORDANE	0.50	UG/L		U	0.50		RFPP	10-OCT-89
SW095	TRG	SW095W053090A	alpha-CHLORDANE	0.5	UG/L		U	0.5		PSTCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	alpha-CHLORDANE	0.50	UG/L		U	0.50		PSTCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	alpha-CHLORDANE	0.50	UG/L		U	0		PSTCLPTCL	11-APR-91
SW095	TRG	SW095001	beta-BHC	0.50	UG/L		U	0.50		RFPP	27-MAR-89
SW095	TRG	SW095002	beta-BHC	0.25	UG/L		U	0.25		RFPP	22-MAY-89
SW095	TRG	SW095007	beta-BHC	0.05	UG/L		U	0.05		RFPP	10-OCT-89
SW095	TRG	SW095W053090A	beta-BHC	0.05	UG/L		U	0.05		PSTCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	beta-BHC	0.05	UG/L		U	0.05		PSTCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	beta-BHC	0.050	UG/L		U	0		PSTCLPTCL	11-APR-91
SW095	TRG	SW095001	delta-BHC	0.50	UG/L		U	0.50		RFPP	27-MAR-89
SW095	TRG	SW095002	delta-BHC	0.25	UG/L		U	0.25		RFPP	22-MAY-89
SW095	TRG	SW095007	delta-BHC	0.05	UG/L		U	0.05		RFPP	10-OCT-89
SW095	TRG	SW095W053090A	delta-BHC	0.05	UG/L		U	0.05		PSTCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	delta-BHC	0.05	UG/L		U	0.05		PSTCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	delta-BHC	0.050	UG/L		U	0		PSTCLPTCL	11-APR-91
SW095	TRG	SW095001	gamma-BHC (LINDANE)	0.50	UG/L		U	0.50		RFPP	27-MAR-89
SW095	TRG	SW095002	gamma-BHC (LINDANE)	0.25	UG/L		U	0.25		RFPP	22-MAY-89
SW095	TRG	SW095007	gamma-BHC (LINDANE)	0.05	UG/L		U	0.05		RFPP	10-OCT-89
SW095	TRG	SW095W053090A	gamma-BHC (LINDANE)	0.05	UG/L		U	0.05		PSTCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	gamma-BHC (LINDANE)	0.05	UG/L		U	0.05		PSTCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	gamma-BHC (LINDANE)	0.050	UG/L		U	0		PSTCLPTCL	11-APR-91
SW095	TRG	SW095001	gamma-CHLORDANE	5.0	UG/L		U	5.0		RFPP	27-MAR-89
SW095	TRG	SW095002	gamma-CHLORDANE	2.5	UG/L		U	2.5		RFPP	22-MAY-89
SW095	TRG	SW095007	gamma-CHLORDANE	0.50	UG/L		U	0.50		RFPP	10-OCT-89
SW095	TRG	SW095W053090A	gamma-CHLORDANE	0.5	UG/L		U	0.5		PSTCLPTCL	30-MAY-90
SW095	TRG	SW00450WC	gamma-CHLORDANE	0.50	UG/L		U	0.50		PSTCLPTCL	24-OCT-90
SW095	TRG	SW01065WC	gamma-CHLORDANE	0.50	UG/L		U	0		PSTCLPTCL	11-APR-91

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW88A086	pH	6.99	PHUNIT					RFIN	12-JUL-88
SW095	TRG	SW095006	pH	7.5	PHUNIT					RFIN	18-SEP-89
SW095	TRG	SW09590002	pH	7.8	PHUNIT					RFIN	23-FEB-90
SW095	TRG	SW09590003	pH	7.7	PHUNIT					RFIN	16-MAR-90

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW095001 FILTERED	AMERICIUM-241	-0.01	PCI/L	0.03				RFRS	27-MAR-89
SW095	TRG	SW095001 UNFILTERED	AMERICIUM-241	2.2	PCI/L	0.1				RFRA	27-MAR-89
SW095	TRG	SW095002	AMERICIUM-241	0.00	PCI/L	0.02		0.		RFRA	22-MAY-89
SW095	TRG	SW095004	AMERICIUM-241	0.02	PCI/L	0.01		0.		RFRA	05-JUL-89
SW095	TRG	SW095006	AMERICIUM-241	0.02	PCI/L	0.01		0.009		RFRA	18-SEP-89
SW095		SW00355WC	AMERICIUM-241	.02142	PC/L	.0081987		.005		TRADS	26-SEP-90
SW095		SW00355WC	AMERICIUM-241	.02142	PC/L	.0081987		.005		TRADS	26-SEP-90
SW095	TRG	SW00450WC	AMERICIUM-241	.3000	PCI/L		U	.01		DRADS	24-OCT-90
SW095	TRG	SW00551WC	AMERICIUM-241	N.A.	PCI/L			.01		DRADS	19-NOV-90
SW095	TRG	SW00655WC	AMERICIUM-241	2.000	PCI/L		U	.01		DRADS	06-DEC-90
SW095	TRG	SW095001 FILTERED	CESIUM-137	0.9	PCI/L	0.6				RFRS	27-MAR-89
SW095	TRG	SW095001 UNFILTERED	CESIUM-137	0.2	PCI/L	0.7				RFRA	27-MAR-89
SW095	TRG	SW095002	CESIUM-137	0.2	PCI/L	0.5		0.		RFRA	22-MAY-89
SW095	TRG	SW095004	CESIUM-137	-0.1	PCI/L	0.7		1.		RFRA	05-JUL-89
SW095	TRG	SW095006	CESIUM-137	-0.06	PCI/L	0.12		0.3		RFRA	18-SEP-89
SW095	TRG	SW095007	CESIUM-137	0.07	PCI/L	0.42		0.68		RFRA	10-OCT-89
SW095		SW00355WC	CESIUM-137	.02104	PC/L	.200508		.64		TRADS	26-SEP-90
SW095		SW00355WC	CESIUM-137	.02104	PC/L	.200508		.64		TRADS	26-SEP-90
SW095		SW00355WC	GROSS ALPHA - SUSPENDED	73.59	PC/L	21.6776		14.8		TRADS	26-SEP-90
SW095		SW00355WC	GROSS ALPHA - SUSPENDED	73.59	PC/L	21.6776		14.8		TRADS	26-SEP-90
SW095	TRG	SW88A086	GROSS ALPHA PARTICLE RADIOAC	50.1	PCI/L	22.0		30	N	RFRS	12-JUL-88
SW095	TRG	SW095001 FILTERED	GROSS ALPHA PARTICLE RADIOAC	110	PCI/L	60				RFRS	27-MAR-89
SW095	TRG	SW095001 UNFILTERED	GROSS ALPHA PARTICLE RADIOAC	340	PCI/L	130				RFRA	27-MAR-89
SW095	TRG	SW095002	GROSS ALPHA PARTICLE RADIOAC	140	PCI/L	60		72		RFRA	22-MAY-89
SW095	TRG	SW095004	GROSS ALPHA PARTICLE RADIOAC	62	PCI/L	27		31		RFRA	05-JUL-89
SW095	TRG	SW095006	GROSS ALPHA PARTICLE RADIOAC	48	PCI/L	14		16		RFRA	18-SEP-89
SW095	TRG	SW095007	GROSS ALPHA PARTICLE RADIOAC	81.9	PCI/L	14.4		12.1		RFRA	10-OCT-89
SW095	TRG	SW00450WC	GROSS ALPHA PARTICLE RADIOAC	40.00	PCI/L	13.00		2		DRADS	24-OCT-90
SW095	TRG	SW00551WC	GROSS ALPHA PARTICLE RADIOAC	42.00	PCI/L	14.00		2		DRADS	19-NOV-90
SW095	TRG	SW00655WC	GROSS ALPHA PARTICLE RADIOAC	47.00	PCI/L	15.00		2		DRADS	06-DEC-90
SW095		SW00355WC	GROSS BETA - SUSPENDED	88.56	PC/L	9.694161		8.77		TRADS	26-SEP-90
SW095		SW00355WC	GROSS BETA - SUSPENDED	88.56	PC/L	9.694161		8.77		TRADS	26-SEP-90
SW095	TRG	SW88A086	GROSS BETA PARTICLE RADIOACT	135	PCI/L	22.7		30	N	RFRS	12-JUL-88
SW095	TRG	SW095001 FILTERED	GROSS BETA PARTICLE RADIOACT	130	PCI/L	30				RFRS	27-MAR-89
SW095	TRG	SW095001 UNFILTERED	GROSS BETA PARTICLE RADIOACT	250	PCI/L	50				RFRA	27-MAR-89
SW095	TRG	SW095002	GROSS BETA PARTICLE RADIOACT	160	PCI/L	30		40		RFRA	22-MAY-89
SW095	TRG	SW095004	GROSS BETA PARTICLE RADIOACT	160	PCI/L	20		19		RFRA	05-JUL-89
SW095	TRG	SW095006	GROSS BETA PARTICLE RADIOACT	130	PCI/L	20		13		RFRA	18-SEP-89
SW095	TRG	SW095007	GROSS BETA PARTICLE RADIOACT	145	PCI/L	19		21		RFRA	10-OCT-89
SW095	TRG	SW00450WC	GROSS BETA PARTICLE RADIOACT	100.0	PCI/L	10.00		4		DRADS	24-OCT-90
SW095	TRG	SW00551WC	GROSS BETA PARTICLE RADIOACT	110.0	PCI/L	10.00		4		DRADS	19-NOV-90
SW095	TRG	SW00655WC	GROSS BETA PARTICLE RADIOACT	110.0	PCI/L	10.00		4		DRADS	06-DEC-90
SW095	TRG	SW00450WC	GROSS GAMMA	1.000	PCI/L		U	1		DRADS	24-OCT-90
SW095	TRG	SW00450WC	GROSS GAMMA	.6000	PCI/L		U	1		DRADS	24-OCT-90
SW095	TRG	SW00551WC	GROSS GAMMA	.7000	PCI/L		U	1		DRADS	19-NOV-90
SW095	TRG	SW00551WC	GROSS GAMMA	.5000	PCI/L		U	1		DRADS	19-NOV-90
SW095	TRG	SW00655WC	GROSS GAMMA	1.000	PCI/L		U	1		DRADS	06-DEC-90
SW095	TRG	SW00655WC	GROSS GAMMA	.6000	PCI/L		U	1		DRADS	06-DEC-90
SW095	TRG	SW88A086	PLUTONIUM-239	0.838	PCI/L	0.439		0.3	N	RFRA	12-JUL-88
SW095	TRG	SW88A086	PLUTONIUM-239	0.0900	PCI/L	0.642		1	N	RFRS	12-JUL-88
SW095	TRG	SW095001 FILTERED	PLUTONIUM-239	0.01	PCI/L	0.01				RFRS	27-MAR-89
SW095	TRG	SW095001 UNFILTERED	PLUTONIUM-239	10	PCI/L	1				RFRA	27-MAR-89
SW095	TRG	SW095002	PLUTONIUM-239	0.01	PCI/L	0.01		0.		RFRA	22-MAY-89
SW095	TRG	SW095004	PLUTONIUM-239	0.04	PCI/L	0.01		0.		RFRA	05-JUL-89
SW095	TRG	SW095006	PLUTONIUM-239	0.009	PCI/L	0.004		0.003		RFRA	18-SEP-89
SW095	TRG	SW095007	PLUTONIUM-239	0.010	PCI/L	0.008		0.009		RFRA	10-OCT-89
SW095	TRG	SW00450WC	PLUTONIUM-239	.5000	PCI/L		U	.01		DRADS	24-OCT-90
SW095	TRG	SW00551WC	PLUTONIUM-239	1.000	PCI/L		U	.01		DRADS	19-NOV-90

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW00655WC	PLUTONIUM-239	.6000	PCI/L		U	.01		DRADS	06-DEC-90
SW095		SW00355WC	PLUTONIUM-239/240	.0114	PC/L	.0081516		.005		TRADS	26-SEP-90
SW095		SW00355WC	PLUTONIUM-239/240	.0114	PC/L	.0081516		.005		TRADS	26-SEP-90
SW095	TRG	SW00450WC	RADIUM 226 AND 228	.6000	PCI/L		U	.5		DRADS	24-OCT-90
SW095	TRG	SW00450WC	RADIUM 226 AND 228	2.900	PCI/L	.9000		1		DRADS	24-OCT-90
SW095	TRG	SW095001 FILTERED	RADIUM-226	0.8	PCI/L	0.3				RFRS	27-MAR-89
SW095	TRG	SW095001 UNFILTERED	RADIUM-226	4.4	PCI/L	0.8				RFRA	27-MAR-89
SW095	TRG	SW095002	RADIUM-226	0.6	PCI/L	0.2		0.		RFRA	22-MAY-89
SW095	TRG	SW095004	RADIUM-226	0.5	PCI/L	0.3		0.		RFRA	05-JUL-89
SW095	TRG	SW095006	RADIUM-226	1.0	PCI/L	0.6		0.7		RFRA	18-SEP-89
SW095	TRG	SW00551WC	RADIUM-226	.4	PCI/L		U	.5		DRADS	19-NOV-90
SW095	TRG	SW00655WC	RADIUM-226	.2000	PCI/L		U	.5		DRADS	06-DEC-90
SW095	TRG	SW095001 UNFILTERED	RADIUM-228	5.3	PCI/L	4.0				RFRA	27-MAR-89
SW095	TRG	SW095006	RADIUM-228	NR						RFRA	18-SEP-89
SW095	TRG	SW00551WC	RADIUM-228	1.600	PCI/L	.7000		1		DRADS	19-NOV-90
SW095	TRG	SW00450WC	STRONTIUM-89	1.000	PCI/L		U	1		DRADS	24-OCT-90
SW095	TRG	SW00551WC	STRONTIUM-89	1.000	PCI/L		U	1		DRADS	19-NOV-90
SW095	TRG	SW00655WC	STRONTIUM-89	1.000	PCI/L		U	1		DRADS	06-DEC-90
SW095	TRG	SW095001 FILTERED	STRONTIUM-90	-0.2	PCI/L	0.4				RFRS	27-MAR-89
SW095	TRG	SW095001 UNFILTERED	STRONTIUM-90	0.2	PCI/L	0.5				RFRA	27-MAR-89
SW095	TRG	SW095002	STRONTIUM-90	0.2	PCI/L	0.4		0.		RFRA	22-MAY-89
SW095	TRG	SW095004	STRONTIUM-90	-0.2	PCI/L	0.5		0.		RFRA	05-JUL-89
SW095	TRG	SW095006	STRONTIUM-90	0.1	PCI/L	0.2		0.8		RFRA	18-SEP-89
SW095	TRG	SW095007	STRONTIUM-90	0.26	PCI/L	0.42		0.65		RFRA	10-OCT-89
SW095		SW00355WC	STRONTIUM-90	.4421	PC/L	.616224		1.31		TRADS	26-SEP-90
SW095		SW00355WC	STRONTIUM-90	.4421	PC/L	.616224		1.31		TRADS	26-SEP-90
SW095	TRG	SW00450WC	STRONTIUM-90	.5000	PCI/L		U	1		DRADS	24-OCT-90
SW095	TRG	SW00551WC	STRONTIUM-90	.3000	PCI/L		U	1		DRADS	19-NOV-90
SW095	TRG	SW00655WC	STRONTIUM-90	.9000	PCI/L		U	1		DRADS	06-DEC-90
SW095	TRG	SW88A086	TRITIUM	2960	PCI/L	308		500	N	RFRA	12-JUL-88
SW095	TRG	SW095001 UNFILTERED	TRITIUM	2700	PCI/L	200				RFRA	27-MAR-89
SW095	TRG	SW095002	TRITIUM	2500	PCI/L	200		26		RFRA	22-MAY-89
SW095	TRG	SW095004	TRITIUM	2300	PCI/L	300		30		RFRA	05-JUL-89
SW095	TRG	SW095006	TRITIUM	1700	PCI/L	300		400		RFRA	18-SEP-89
SW095	TRG	SW095007	TRITIUM	2730	PCI/L	400		500		RFRA	10-OCT-89
SW095		SW09590002	TRITIUM	2224.141	PC/L	238.0635		255		TRADS	23-FEB-90
SW095		SW00355WC	TRITIUM	1772.1	PC/L	224.2724		243		TRADS	26-SEP-90
SW095	TRG	SW00450WC	TRITIUM	3200.	PCI/L	1400.		400		DRADS	24-OCT-90
SW095	TRG	SW00551WC	TRITIUM	1600.	PCI/L	200.0		400		DRADS	19-NOV-90
SW095	TRG	SW00655WC	TRITIUM	1800.	PCI/L	200.0		400		DRADS	06-DEC-90
SW095	TRG	SW88A086	URANIUM, TOTAL	206.8000					N	RFRA	12-JUL-88
SW095	TRG	SW88A086	URANIUM, TOTAL	164.100					N	RFRS	12-JUL-88
SW095	TRG	SW095001 FILTERED	URANIUM, TOTAL	124.900						RFRS	27-MAR-89
SW095	TRG	SW095001 UNFILTERED	URANIUM, TOTAL	70.5000						RFRA	27-MAR-89
SW095	TRG	SW095006	URANIUM, TOTAL	100.0000						RFRA	18-SEP-89
SW095	TRG	SW88A086	URANIUM-233,-234	122	PCI/L	4.16		0.4	N	RFRA	12-JUL-88
SW095	TRG	SW88A086	URANIUM-233,-234	99.1	PCI/L	1.74		0.4	N	RFRS	12-JUL-88
SW095	TRG	SW095001 FILTERED	URANIUM-233,-234	74	PCI/L	5				RFRS	27-MAR-89
SW095	TRG	SW095001 UNFILTERED	URANIUM-233,-234	43	PCI/L	4				RFRA	27-MAR-89
SW095	TRG	SW095002	URANIUM-233,-234	89	PCI/L	2		0.		RFRA	22-MAY-89
SW095	TRG	SW095004	URANIUM-233,-234	59	PCI/L	2		0.		RFRA	05-JUL-89
SW095	TRG	SW095006	URANIUM-233,-234	60	PCI/L	7		0.5		RFRA	18-SEP-89
SW095	TRG	SW095007	URANIUM-233,-234	70.2	PCI/L	4.9		0.40		RFRA	10-OCT-89
SW095		SW00355WC	URANIUM-233,-234	43.04	PC/L	6.31316		.424		TRADS	26-SEP-90
SW095		SW00355WC	URANIUM-233,-234	43.04	PC/L	6.31316		.424		TRADS	26-SEP-90
SW095	TRG	SW00450WC	URANIUM-233,-234	59.00	PCI/L	4.000		.6		DRADS	24-OCT-90
SW095	TRG	SW00551WC	URANIUM-234	78.00	PCI/L	4.000		.6		DRADS	19-NOV-90
SW095	TRG	SW00655WC	URANIUM-234	69.00	PCI/L	4.000		.6		DRADS	06-DEC-90

Location	ID	Proj_Sample_No	Chemical	Result	Unit	Err	Qual.	D.Lmt	VA	Group	Smpl Date
SW095	TRG	SW095001 FILTERED	URANIUM-235	2.9	PCI/L	1.0				RFRS	27-MAR-89
SW095	TRG	SW095001 UNFILTERED	URANIUM-235	2.5	PCI/L	1.0				RFRA	27-MAR-89
SW095	TRG	SW095002	URANIUM-235	3.0	PCI/L	0.4		0.		RFRA	22-MAY-89
SW095	TRG	SW095004	URANIUM-235	1.7	PCI/L	0.3		0.		RFRA	05-JUL-89
SW095	TRG	SW095006	URANIUM-235	3	PCI/L	0.8		0.2		RFRA	18-SEP-89
SW095	TRG	SW095007	URANIUM-235	2.83	PCI/L	1.02		0.40		RFRA	10-OCT-89
SW095	TRG	SW00450WC	URANIUM-235	1.700	PCI/L	.6000		.6		DRADS	24-OCT-90
SW095	TRG	SW00551WC	URANIUM-235	2.000	PCI/L	.6000		.6		DRADS	19-NOV-90
SW095	TRG	SW00655WC	URANIUM-235	1.900	PCI/L	.6000		.6		DRADS	06-DEC-90
SW095		SW00355WC	URANIUM-235/236	2.093	PC/L	.704228		.257		TRADS	26-SEP-90
SW095		SW00355WC	URANIUM-235/236	2.093	PC/L	.704228		.257		TRADS	26-SEP-90
SW095	TRG	SW88A086	URANIUM-238	84.8	PCI/L	3.47		0.4	N	RFRA	12-JUL-88
SW095	TRG	SW88A086	URANIUM-238	65.0	PCI/L	1.42		0.4	N	RFRS	12-JUL-88
SW095	TRG	SW095001 FILTERED	URANIUM-238	48	PCI/L	4				RFRS	27-MAR-89
SW095	TRG	SW095001 UNFILTERED	URANIUM-238	25	PCI/L	3				RFRA	27-MAR-89
SW095	TRG	SW095002	URANIUM-238	59	PCI/L	2		0.		RFRA	22-MAY-89
SW095	TRG	SW095004	URANIUM-238	37	PCI/L	2		0.		RFRA	05-JUL-89
SW095	TRG	SW095006	URANIUM-238	37	PCI/L	5		0.5		RFRA	18-SEP-89
SW095	TRG	SW095007	URANIUM-238	45.3	PCI/L	4.0		0.40		RFRA	10-OCT-89
SW095		SW00355WC	URANIUM-238	28.26	PC/L	4.3414		.424		TRADS	26-SEP-90
SW095		SW00355WC	URANIUM-238	28.26	PC/L	4.3414		.424		TRADS	26-SEP-90
SW095	TRG	SW00450WC	URANIUM-238	39.00	PCI/L	3.000		.6		DRADS	24-OCT-90
SW095	TRG	SW00551WC	URANIUM-238	55.00	PCI/L	3.000		.6		DRADS	19-NOV-90
SW095	TRG	SW00655WC	URANIUM-238	43.00	PCI/L	3.000		.6		DRADS	06-DEC-90

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.

APPENDIX C

ANALYTICAL DATA FOR WATER IN ALL SOLAR PONDS

APPENDIX C

ANALYTICAL DATA FOR WATER IN ALL SOLAR PONDS

GLOSSARY

A	Anion
B	Found in blank
E	Laboratory error
J	Detected below QC limit
M	Metal
N	Nitrosodiphenylamine
P	Pesticide, PCB, or dioxin
R	Radionuclide
S	Semivolatile organic compound
T	Miscellaneous tests
U	Undetected
V	Volatile organic compound

Where the concentration is reported as less than a given value, it appears in this report as 0.00 < _.__, as for sulfide, phosphate, and some radionuclides.

ALL WATER ANALYSIS FOR PONDS 207 B NORTH, CENTER, AND SOUTH

TYPE	COMPOUND	UNITS	B NORTH	B CENTER	B SOUTH	CCW
V	ACETONE	uG/KG	1.00 JB	10.00 U	2.00 JB	590
S	ACENAPHTHENE	uG/KG	10.00 U	11.00 U	10.00 U	
S	ACENAPHTHYLENE	uG/KG	10.00 U	11.00 U	10.00 U	
V	ACRYLONITRILE	uG/KG	10.00 U	10.00 U	10.00 U	
P	ALDRIN	uG/KG	0.05 U	0.11 U	0.25 U	
S	ANTHRACENE	uG/KG	10.00 U	11.00 U	10.00 U	
P	AROCLOR 1016	uG/KG	0.52 U	1.10 U	2.50 U	
P	AROCLOR 1221	uG/KG	0.52 U	1.10 U	2.50 U	
P	AROCLOR 1232	uG/KG	0.52 U	1.10 U	2.50 U	
P	AROCLOR 1242	uG/KG	0.52 U	1.10 U	2.50 U	
P	AROCLOR 1248	uG/KG	0.52 U	1.10 U	2.50 U	
P	AROCLOR 1254	uG/KG	1.00 U	2.10 U	5.00 U	
P	AROCLOR 1260	uG/KG	1.00 U	2.10 U	5.00 U	
P	ATRAZINE	uG/KG	1.10	9.00	13.00	
V	BENZENE	uG/KG	5.00 U	5.00 U	5.00 U	3700
S	BENZIDINE	uG/KG	52.00 U	53.00 U	51.00 U	
S	BENZO(A)ANTHRACENE	uG/KG	10.00 U	11.00 U	10.00 U	
S	BENZO(A)PYRENE	uG/KG	10.00 U	11.00 U	10.00 U	
S	BENZO(B)FLUORANTHENE	uG/KG	10.00 U	11.00 U	10.00 U	
S	BENZO(G,H,I)PERYLENE	uG/KG	10.00 U	11.00 U	10.00 U	
S	BENZO(J)FLUORANTHENE	uG/KG	10.00 U	11.00 U	10.00 U	
S	BENZO(K)FLUORANTHENE	uG/KG	10.00 U	11.00 U	10.00 U	
S	BENZOIC ACID	uG/KG	52.00 U	4.00 J	51.00 U	
S	BENZYL ALCOHOL	uG/KG	10.00 U	11.00 U	10.00 U	
V	BROMODICHLOROMETHANE	uG/KG	5.00 U	5.00 U	5.00 U	
V	BROMOFORM	uG/KG	5.00 U	5.00 U	5.00 U	
V	BROMOMETHANE	uG/KG	10.00 U	10.00 U	10.00 U	
S 4	BROMOPHENYL-PHENYL ETHER	uG/KG	10.00 U	11.00 U	10.00 U	
V 2	BUTANONE	uG/KG	10.00 U	10.00 U	10.00 U	
S	BUTYLBENZYLPHTHALATE	uG/KG	10.00 U	11.00 U	10.00 U	
V	CARBON DISULFIDE	uG/KG	5.00 U	5.00 U	5.00 U	4810
V	CARBON TETRACHLORIDE	uG/KG	5.00 U	5.00 U	5.00 U	960
P	CHLORDANE, ALPHA	uG/KG	0.52 U	1.10 U	2.50 U	
P	CHLORDANE, GAMMA	uG/KG	0.52 U	1.10 U	2.50 U	
S 4	CHLORO-3-METHYLPHENOL	uG/KG	10.00 U	11.00 U	10.00 U	
S 4	CHLOROANILINE	uG/KG	10.00 U	11.00 U	10.00 U	
V	CHLOROBENZENE	uG/KG	5.00 U	5.00 U	5.00 U	50

ALL WATER ANALYSIS FOR PONDS 207 B NORTH, CENTER, AND SOUTH

TYPE	COMPOUND	UNITS	B NORTH	B CENTER	B SOUTH	CCW
V	CHLOROETHANE	uG/KG	10.00 U	10.00 U	10.00 U	
S BIS 2	CHLOROETHOXYMETHANE	uG/KG	10.00 U	11.00 U	10.00 U	
S BIS 2	CHLOROETHYLETHER	uG/KG	10.00 U	11.00 U	10.00 U	
V	CHLOROFORM	uG/KG	5.00 U	5.00 U	5.00 U	
S BIS 2	CHLOROISOPROPYL ETHER	uG/KG	10.00 U	11.00 U	10.00 U	
V	CHLOROMETHANE	uG/KG	10.00 U	10.00 U	10.00 U	
S 2	CHLORONAPHTHALENE	uG/KG	10.00 U	11.00 U	10.00 U	
S 2	CHLOROPHENOL	uG/KG	10.00 U	11.00 U	10.00 U	
S 4	CHLOROPHENYL-PHENYLETHER	uG/KG	10.00 U	11.00 U	10.00 U	
S	CHRYSENE	uG/KG	10.00 U	11.00 U	10.00 U	
V	CYCLOHEXANONE	uG/KG	9.50 U	9.50 U	9.50 U	750
P 4,4	DDD	uG/KG	0.10 U	0.21 U	0.50 U	
P 4,4	DDE	uG/KG	0.10 U	0.21 U	0.50 U	
P 4,4	DDT	uG/KG	0.10 U	0.21 U	0.50 U	
S	DI-N-BUTYLPHTHALATE	uG/KG	10.00 U	11.00 U	1.00 J	
S	DI-N-OCTYL PHTHALATE	uG/KG	10.00 U	11.00 U	10.00 U	
P	DIAZINON	uG/KG	0.50 U	0.52 U	0.50 U	
S	DIBENZO(A,H)ANTHRACENE	uG/KG	10.00 U	11.00 U	10.00 U	
S	DIBENZOFURAN	uG/KG	10.00 U	11.00 U	10.00 U	
V	DIBROMOCHLOROMETHANE	uG/KG	5.00 U	5.00 U	5.00 U	
S 1,3	DICHLOROBENZENE	uG/KG	10.00 U	11.00 U	10.00 U	
S 1,4	DICHLOROBENZENE	uG/KG	10.00 U	11.00 U	10.00 U	
S 1,2	DICHLOROBENZENE	uG/KG	10.00 U	11.00 U	10.00 U	125
S 3,3	DICHLOROBENZIDINE	uG/KG	21.00 U	21.00 U	20.00 U	
V 1,2	DICHLOROETHANE	uG/KG	5.00 U	5.00 U	5.00 U	
V 1,1	DICHLOROETHANE	uG/KG	5.00 U	5.00 U	5.00 U	
V 1,1	DICHLOROETHENE	uG/KG	5.00 U	5.00 U	5.00 U	
V 1,2	DICHLOROETHENE(TOTAL)	uG/KG	5.00 U	5.00 U	5.00 U	
S 2,4	DICHLOROPHENOL	uG/KG	10.00 U	11.00 U	10.00 U	
V 1,2	DICHLOROPROPANE	uG/KG	5.00 U	5.00 U	5.00 U	
V TRANS 1,3	DICHLOROPROPENE	uG/KG	5.00 U	5.00 U	5.00 U	
V CIS 1,3	DICHLOROPROPENE	uG/KG	5.00 U	5.00 U	5.00 U	
P	DIELDRIN	uG/KG	0.10 U	0.21 U	0.50 U	
V	DIETHYL ETHER	uG/KG	7.10 U	7.10 U	7.10 U	750
S	DIETHYL PHTHALATE	uG/KG	10.00 U	11.00 U	10.00 U	
S	DIMETHYL PHTHALATE	uG/KG	10.00 U	11.00 U	10.00 U	
S 2,4	DIMETHYLPHENOL	uG/KG	10.00 U	11.00 U	10.00 U	

ALL WATER ANALYSIS FOR PONDS 207 B NORTH, CENTER, AND SOUTH

TYPE	COMPOUND	UNITS	B NORTH	B CENTER	B SOUTH	CCW
S 4,6	DINITRO-2-METHYLPHENOL	uG/KG	52.00 U	53.00 U	51.00 U	
S 2,4	DINITROPHENOL	uG/KG	52.00 U	53.00 U	51.00 U	
S 2,6	DINITROTOLUENE	uG/KG	10.00 U	11.00 U	10.00 U	
S 2,4	DINITROTOLUENE	uG/KG	10.00 U	11.00 U	10.00 U	
P	DIOXIN (2,3,7,8 TCDD)	nG/KG	0.60 U	0.70 U	0.50 U	
P	ENDOSULFAN I	uG/KG	0.05 U	0.11 U	0.25 U	
P 4,4	ENDOSULFAN II	uG/KG	0.10 U	0.21 U	0.50 U	
P 4,4	ENDOSULFAN SULFATE	uG/KG	0.10 U	0.21 U	0.50 U	
P 4,4	ENDRIN	uG/KG	0.10 U	0.21 U	0.50 U	
P 4,4	ENDRIN KETONE	uG/KG	0.10 U	0.21 U	0.50 U	
V	ETHYL ACETATE	uG/KG	9.00 U	9.00 U	9.00 U	750
V	ETHYL BENZENE	uG/KG	5.00 U	5.00 U	5.00 U	53
S BIS 2	ETHYLHEXYL PHTHALATE	uG/KG	10.00 U	11.00 U	10.00 U	
S	FLUORANTHENE	uG/KG	10.00 U	11.00 U	10.00 U	
S	FLUORENE	uG/KG	10.00 U	11.00 U	10.00 U	
P	HEPTACHLOR	uG/KG	0.05 U	0.11 U	0.25 U	
P	HEPTACHLOR EPOXIDE	uG/KG	0.05 U	0.11 U	0.25 U	
S	HEXACHLOROBENZENE	uG/KG	10.00 U	11.00 U	10.00 U	
S	HEXACHLOROBUTADIENE	uG/KG	10.00 U	11.00 U	10.00 U	
P	HEXACHLOROCYCLOHEXANE, ALPHA	uG/KG	0.05 U	0.11 U	0.25 U	
P	HEXACHLOROCYCLOHEXANE, BETA	uG/KG	0.05 U	0.11 U	0.25 U	
P	HEXACHLOROCYCLOHEXANE, DELTA	uG/KG	0.05 U	0.11 U	0.25 U	
P	HEXACHLOROCYCLOHEXANE, GAMMA	uG/KG	0.05 U	0.11 U	0.25 U	
S	HEXACHLOROCYCLOPENTADIENE	uG/KG	10.00 U	11.00 U	10.00 U	
S	HEXACHLOROETHANE	uG/KG	10.00 U	11.00 U	10.00 U	
V 2	HEXANONE	uG/KG	10.00 U	10.00 U	10.00 U	
S	INDENO(1,2,3-CD)PYRENE	uG/KG	10.00 U	11.00 U	10.00 U	
V	ISO BUTYL ALCOHOL	uG/KG	8.10 U	8.10 U	8.10 U	5000
S	ISOPHORONE	uG/KG	10.00 U	11.00 U	10.00 U	
V	METHANOL	uG/KG	7.80 U	7.80 U	7.80 U	750
P	METHOXYCHLOR	uG/KG	0.52 U	1.10 U	0.25 U	
S 2	METHYL NAPHTHALENE	uG/KG	10.00 U	11.00 U	10.00 U	
P	METHYL PARATHION	uG/KG	0.50 U	0.52 U	0.50 U	
V 4	METHYL-2-PENTANONE	uG/KG	10.00 U	10.00 U	10.00 U	
V	METHYLENE CHLORIDE	uG/KG	5.00 U	7.00 JB	5.00 U	960
S 3	METHYLPHENOL(M-CRESOL)	uG/KG	10.00 U	11.00 U	10.00 U	
S 2	METHYLPHENOL(O-CRESOL)	uG/KG	10.00 U	11.00 U	10.00 U	

ALL WATER ANALYSIS FOR PONDS 207 B NORTH, CENTER, AND SOUTH

TYPE	COMPOUND	UNITS	B NORTH	B CENTER	B SOUTH	CCW
S 4	METHYLPHENOL(P-CRESOL)	uG/KG	10.00 U	11.00 U	10.00 U	
V	N BUTYL ALCOHOL	uG/KG	8.10 U	8.10 U	8.10 U	5000
S	N-NITROSO-DI-N-BUTYLAMINE	uG/KG	10.00 U	11.00 U	10.00 U	
S	N-NITROSO-DI-PROPYLAMINE	uG/KG	10.00 U	11.00 U	10.00 U	
S	N-NITROSO-DIETHYLAMINE	uG/KG	10.00 U	11.00 U	10.00 U	
S	N-NITROSO-DIMETHYLAMINE	uG/KG	10.00 U	11.00 U	10.00 U	
S	N-NITROSODIPHENYLAMINE	uG/KG	10.00 U	11.00 U	10.00 U	
S	N-NITROSOPYRROLIDINE	uG/KG	10.00 U	11.00 U	10.00 U	
S	NAPHTHALENE	uG/KG	10.00 U	11.00 U	10.00 U	
S 4	NITROANILINE	uG/KG	52.00 U	53.00 U	51.00 U	
S 2	NITROANILINE	uG/KG	52.00 U	53.00 U	51.00 U	
S 3	NITROBENZENE	uG/KG	10.00 U	11.00 U	10.00 U	
S 2	NITROPHENOL	uG/KG	10.00 U	2.00 J	10.00 U	
S 4	NITROPHENOL	uG/KG	52.00 U	53.00 U	51.00 U	
S	PENTACHLOROPHENOL	uG/KG	52.00 U	53.00 U	51.00 U	
S	PHENANTHRENE	uG/KG	10.00 U	11.00 U	10.00 U	
S	PHENOL	uG/KG	10.00 U	11.00 U	10.00 U	
S	PYRENE	uG/KG	10.00 U	11.00 U	10.00 U	
S	PYRIDINE	uG/KG	10.00 U	11.00 U	10.00 U	
P	SIMAZINE	uG/KG	1.00 U	1.00 U	1.10 U	
V	STYRENE	uG/KG	5.00 U	5.00 U	5.00 U	
V 1,1,2,2	TETRACHLOROETHANE	uG/KG	5.00 U	5.00 U	5.00 U	
V	TETRACHLOROETHENE	uG/KG	5.00 U	5.00 U	5.00 U	50
V	TOLUENE	uG/KG	5.00 U	5.00 U	5.00 U	330
P	TOXAPHENE	uG/KG	1.00 U	2.10 U	0.50 U	
S 1,2,4	TRICHLOROBENZENE	uG/KG	10.00 U	11.00 U	10.00 U	
V 1,1,1	TRICHLOROETHANE	uG/KG	5.00 U	5.00 U	5.00 U	410
V 1,1,2	TRICHLOROETHANE	uG/KG	5.00 U	5.00 U	5.00 U	7600
V	TRICHLOROETHENE	uG/KG	5.00 U	5.00 U	5.00 U	91
V	TRICHLOROFLUOROMETHANE	uG/KG	5.00 U	5.00 U	5.00 U	960
S 2,4,5	TRICHLOROPHENOL	uG/KG	52.00 U	53.00 U	51.00 U	
S 2,4,6	TRICHLOROPHENOL	uG/KG	10.00 U	11.00 U	10.00 U	
V 1,1,2	TRICHLOROTRIFLUOROETHANE	uG/KG	10.00 U	10.00 U	10.00 U	960
V	VINYL ACETATE	uG/KG	10.00 U	10.00 U	10.00 U	
V	VINYL CHLORIDE	uG/KG	10.00 U	10.00 U	10.00 U	
V	XYLENES (TOTAL)	uG/KG	5.00 U	5.00 U	5.00 U	150
M	ALUMINUM	uG/KG	200.00 U	200.00 U	200.00 U	

ALL WATER ANALYSIS FOR PONDS 207 B NORTH, CENTER, AND SOUTH

TYPE	COMPOUND	UNITS	B NORTH	B CENTER	B SOUTH	CCW
M	ANTIMONY	uG/KG	60.00 U	60.00 U	60.00 U	
M	ARSENIC	uG/KG	10.00 U	13.80	16.40	
M	BARIUM	uG/KG	200.00 U	200.00 U	200.00 U	
M	BERYLLIUM	uG/KG	5.00 U	5.00 U	5.00 U	
M	BORON	uG/KG	173.00	2770.00	2770.00	
M	CADMIUM	uG/KG	5.00 U	5.00 U	5.00 U	66
M	CALCIUM	uG/KG	189000.00	22600.00	18900.00	
M	CHROMIUM, TOTAL	uG/KG	10.00 U	93.80	22.80	5200
M	COBALT	uG/KG	50.00 U	50.00 U	50.00 U	
M	COPPER	uG/KG	25.00 U	34.80	37.40	
M	IRON	uG/KG	100.00 U	100.00 U	100.00 U	
M	LEAD	uG/KG	3.00 U	3.00 U	3.00 U	510
M	LITHIUM	uG/KG	332.00	2600.00	2670.00	
M	MAGNESIUM	uG/KG	79300.00	181000.00	180000.00	
M	MANGANESE	uG/KG	15.00 U	15.00 U	18.20	
M	MERCURY	uG/KG	0.20 U	0.20 U	1.00	
M	MOLYBDENUM	uG/KG	100.00 U	100.00 U	122.00	
M	NICKEL	uG/KG	40.00 U	40.00 U	40.00	320
M	POTASSIUM	uG/KG	58800.00	729000.00	791000.00	
M	SELENIUM	uG/KG	8.20	50.00 U	0.00	
M	SILICON	uG/KG	1020.00	1410.00	952.00	
M	SILVER	uG/KG	10.00 U	10.00 U	10.00 U	72
M	SODIUM	uG/KG	403000.00	2440000.00	2940000.00	
M	STRONTIUM	uG/KG	2220.00	2130.00	2370.00	
M	THALLIUM	uG/KG	10.00 U	10.00 U	10.00 U	
M	TIN	uG/KG	100.00 U	109.00	100.00 U	
M	VANADIUM	uG/KG	50.00 U	50.00 U	50.00 U	
M	ZINC	uG/KG	47.90	20.00 U	37.10	
A	AMMONIA	MG/KG	0.10 U	0.50	0.97	
A	BICARBONATE	MG/L	0.00 U	0.00 U	0.00 U	
A	CARBONATE	MG/KG	0.00 < 5	280.00	190.00	
A	CHLORIDE	MG/KG	147.00	763.00	745.00	
A	CYANIDE, TOTAL	uG/KG	37.80	555.00	509.00	590000
A	FLUORIDE	MG/KG	50.00 U	73.00	72.50	
A	NITRATE-N	MG/KG	39.00	1600.00	1800.00	
A	NITRITE	MG/KG	1.30 U	75.00	100.00	
A	PHOSPHATE, ORTHO	MG/KG	0.00 <.02	0.00 o3	0.00	

ALL WATER ANALYSIS FOR PONDS 207 B NORTH, CENTER, AND SOUTH

TYPE	COMPOUND	UNITS	B NORTH	B CENTER	B SOUTH	CCW
A	PHOSPHATE, TOTAL	MG/KG	0.04	3.10	2.60	
A	SULFATE	MG/KG	155.00	736.00	784.00	
A	SULFIDE	MG/L	0.00 < 1.	0.00 < 1.	1.00	
A	TKN-N	MG/KG	0.50 U	0.10 U	0.10 U	
T	ALKALINITY, TOTAL	MG/KG	75.00	1000.00	860.00	
T	ASTM D 422, PARTICLE SIZE	GRAPH	0.00	0.00	0.00	
T	CONDUCTIVITY @ 25C	uMHOS	3380.00	1350.00	23000.00	
T	TOTAL DISSOLVED SOLIDS	MG/L	3200.00	13000.00	16000.00	
T	TOTAL ORGANIC CARBON	MG/L	7.60	126.00	297.00	
T	TOTAL SUSPENDED SOLIDS	%	18.00	15.00	6.00	
T	pH	pH	8.50	9.10	9.20	
R	AMERICIUM 241	pCI/L	0.14 +-.11	5.50 +-4.5	0.13 +-.11	
R	GROSS ALPHA	pCI/L	59.00 +-21	2400.00 +-300	1600.00 +-200	
R	GROSS BETA	pCI/L	110.00 +-20	3900.00 +-200	2300.00 +-200	
R	PLUTONIUM 239	pCI/L	0.00 <0.1	0.36 +-.18	0.14 +-.12	
R	URANIUM 234	pCI/L	40.00 +-2.	780.00 +-30	760.00 +-50.	
R	URANIUM 235	pCI/L	1.70 +-.5	36.00 +-7	31.00 +-11.	
R	URANIUM 238	pCI/L	26.00 +-2.	900.00 +-40	870.00 +-60.	

ALL WATER ANALYSIS FOR 207 A AND 207 C PONDS

TYPE	COMPOUND	UNITS	207 A WATER	207 C WATER	CCW
V	ACETONE	uG/KG	3.00 JB	43.00	590
S	ACENAPHTHENE	uG/KG	10.00 U	10.00 U	
S	ACENAPHTHYLENE	uG/KG	10.00 U	10.00 U	
V	ACRYLONITRILE	uG/KG	10.00 U	10.00 U	
P	ALDRIN	uG/KG	0.10 U	2.60 U	
S	ANTHRACENE	uG/KG	10.00 U	10.00 U	
P	AROCLOR 1016	uG/KG	1.00 U	26.00 U	
P	AROCLOR 1221	uG/KG	1.00 U	26.00 U	
P	AROCLOR 1232	uG/KG	1.00 U	26.00 U	
P	AROCLOR 1242	uG/KG	1.00 U	26.00 U	
P	AROCLOR 1248	uG/KG	1.00 U	26.00 U	
P	AROCLOR 1254	uG/KG	2.00 U	41.00 U	
P	AROCLOR 1260	uG/KG	2.00 U	41.00 U	
P	ATRAZINE	uG/KG	3.50	0.51 U	
V	BENZENE	uG/KG	5.00 U	5.00 U	3700
S	BENZIDINE	uG/KG	52.00 U	51.00 U	
S	BENZO(A)ANTHRACENE	uG/KG	10.00 U	10.00 U	
S	BENZO(A)PYRENE	uG/KG	10.00 U	10.00 U	
S	BENZO(B)FLUORANTHENE	uG/KG	10.00 U	10.00 U	
S	BENZO(G,H,I)PERYLENE	uG/KG	10.00 U	10.00 U	
S	BENZO(J)FLUORANTHENE	uG/KG	10.00 U	10.00 U	
S	BENZO(K)FLUORANTHENE	uG/KG	10.00 U	10.00 U	
S	BENZOIC ACID	uG/KG	52.00 U	51.00 U	
S	BENZYL ALCOHOL	uG/KG	10.00 U	10.00 U	
V	BROMODICHLOROMETHANE	uG/KG	5.00 U	5.00 U	
V	BROMOFORM	uG/KG	5.00 U	5.00 U	
V	BROMOMETHANE	uG/KG	10.00 U	10.00 U	
S 4	BROMOPHENYL-PHENYL ETHER	uG/KG	10.00 U	10.00 U	
V 2	BUTANONE	uG/KG	10.00 U	10.00 U	
S	BUTYLBENZYLPHTHALATE	uG/KG	10.00 U	10.00 U	
V	CARBON DISULFIDE	uG/KG	5.00 U	5.00 U	4810
V	CARBON TETRACHLORIDE	uG/KG	5.00 U	5.00 U	960
P	CHLORDANE, ALPHA	uG/KG	1.00 U	26.00 U	
P	CHLORDANE, GAMMA	uG/KG	1.00 U	26.00 U	
S 4	CHLORO-3-METHYLPHENOL	uG/KG	10.00 U	10.00 U	
S 4	CHLOROANILINE	uG/KG	10.00 U	10.00 U	

ALL WATER ANALYSIS FOR 207 A AND 207 C PONDS

TYPE	COMPOUND	UNITS	207 A WATER	207 C WATER	CCW
V	CHLOROBENZENE	uG/KG	5.00 U	5.00 U	50
V	CHLOROETHANE	uG/KG	10.00 U	10.00 U	
S BIS 2	CHLOROETHOXYMETHANE	uG/KG	10.00 U	10.00 U	
S BIS 2	CHLOROETHYLETHER	uG/KG	10.00 U	10.00 U	
V	CHLOROFORM	uG/KG	5.00 U	5.00 U	
S BIS 2	CHLOROISOPROPYL ETHER	uG/KG	10.00 U	10.00 U	
V	CHLOROMETHANE	uG/KG	10.00 U	10.00 U	
S 2	CHLORONAPHTHALENE	uG/KG	10.00 U	10.00 U	
S 2	CHLOROPHENOL	uG/KG	10.00 U	10.00 U	
S 4	CHLOROPHENYL-PHENYLETHER	uG/KG	10.00 U	10.00 U	
S	CHRYSENE	uG/KG	10.00 U	10.00 U	
V	CYCLOHEXANONE	uG/KG	9.50 U	950.00 U	750
P 4,4	DDD	uG/KG	0.20 U	5.20 U	
P 4,4	DDE	uG/KG	0.20 U	5.20 U	
P 4,4	DDT	uG/KG	0.20 U	5.20 U	
S	DI-N-BUTYLPHTHALATE	uG/KG	1.00 J	10.00 U	
S	DI-N-OCTYL PHTHALATE	uG/KG	10.00 U	10.00 U	
P	DIAZINON	uG/KG	0.51 U	2.80	
S	DIBENZO(A,H)ANTHRACENE	uG/KG	10.00 U	10.00 U	
S	DIBENZOFURAN	uG/KG	10.00 U	10.00 U	
V	DIBROMOCHLOROMETHANE	uG/KG	5.00 U	5.00 U	
S 1,3	DICHLOROBENZENE	uG/KG	10.00 U	10.00 U	
S 1,4	DICHLOROBENZENE	uG/KG	10.00 U	10.00 U	
S 1,2	DICHLOROBENZENE	uG/KG	10.00 U	10.00 U	125
S 3,3	DICHLOROBENZIDINE	uG/KG	21.00 U	20.00 U	
V 1,2	DICHLOROETHANE	uG/KG	5.00 U	5.00 U	
V 1,1	DICHLOROETHANE	uG/KG	5.00 U	5.00 U	
V 1,1	DICHLOROETHENE	uG/KG	5.00 U	5.00 U	
V 1,2	DICHLOROETHENE(TOTAL)	uG/KG	5.00 U	5.00 U	
S 2,4	DICHLOROPHENOL	uG/KG	10.00 U	10.00 U	
V 1,2	DICHLOROPROPANE	uG/KG	5.00 U	5.00 U	
V TRANS 1,3	DICHLOROPROPENE	uG/KG	5.00 U	5.00 U	
V CIS 1,3	DICHLOROPROPENE	uG/KG	5.00 U	5.00 U	
P	DIELDRIN	uG/KG	0.20 U	5.20 U	
V	DIETHYL ETHER	uG/KG	7.10 U	710.00 U	750
S	DIETHYL PHTHALATE	uG/KG	10.00 U	10.00 U	

ALL WATER ANALYSIS FOR 207 A AND 207 C PONDS

TYPE	COMPOUND	UNITS	207 A WATER	207 C WATER	CCW
S	DIMETHYL PHTHALATE	uG/KG	10.00 U	10.00 U	
S 2,4	DIMETHYLPHENOL	uG/KG	10.00 U	10.00 U	
S 4,6	DINITRO-2-METHYLPHENOL	uG/KG	52.00 U	51.00 U	
S 2,4	DINITROPHENOL	uG/KG	52.00 U	0.00 E	
S 2,6	DINITROTOLUENE	uG/KG	10.00 U	10.00 U	
S 2,4	DINITROTOLUENE	uG/KG	10.00 U	10.00 U	
P	DIOXIN (2,3,7,8 TCDD)	nG/KG	0.50 U	3.00 U	
P	ENDOSULFAN I	uG/KG	0.10 U	2.60 U	
P 4,4	ENDOSULFAN II	uG/KG	0.20 U	5.20 U	
P 4,4	ENDOSULFAN SULFATE	uG/KG	0.20 U	5.20 U	
P 4,4	ENDRIN	uG/KG	0.20 U	5.20 U	
P 4,4	ENDRIN KETONE	uG/KG	0.20 U	5.20 U	
V	ETHYL ACETATE	uG/KG	9.00 U	900.00 U	750
V	ETHYL BENZENE	uG/KG	5.00 U	5.00 U	53
S BIS 2	ETHYLHEXYL PHTHALATE	uG/KG	10.00 U	4.00 J	
S	FLUORANTHENE	uG/KG	10.00 U	10.00 U	
S	FLUORENE	uG/KG	10.00 U	10.00 U	
P	HEPTACHLOR	uG/KG	0.10 U	2.60 U	
P	HEPTACHLOR EPOXIDE	uG/KG	0.10 U	2.60 U	
S	HEXACHLOROBENZENE	uG/KG	10.00 U	10.00 U	
S	HEXACHLOROBUTADIENE	uG/KG	10.00 U	10.00 U	
P	HEXACHLOROCYCLOHEXANE, ALPHA	uG/KG	0.10 U	2.60 U	
P	HEXACHLOROCYCLOHEXANE, BETA	uG/KG	0.10 U	2.60 U	
P	HEXACHLOROCYCLOHEXANE, DELTA	uG/KG	0.10 U	2.60 U	
P	HEXACHLOROCYCLOHEXANE, GAMMA	uG/KG	0.10 U	2.60 U	
S	HEXACHLOROCYCLOPENTADIENE	uG/KG	10.00 U	10.00 U	
S	HEXACHLOROETHANE	uG/KG	10.00 U	10.00 U	
V 2	HEXANONE	uG/KG	10.00 U	10.00 U	
S	INDENO(1,2,3-CD)PYRENE	uG/KG	10.00 U	10.00 U	
V	ISO BUTYL ALCOHOL	uG/KG	8.10 U	810.00 U	5000
S	ISOPHORONE	uG/KG	10.00 U	10.00 U	
V	METHANOL	uG/KG	7.80 U	780.00 U	750
P	METHOXYCHLOR	uG/KG	1.00 U	26.00 U	
S 2	METHYL NAPHTHALENE	uG/KG	10.00 U	10.00 U	
P	METHYL PARATHION	uG/KG	0.51 U	0.51 U	
V 4	METHYL-2-PENTANONE	uG/KG	10.00 U	10.00 U	

ALL WATER ANALYSIS FOR 207 A AND 207 C PONDS

TYPE		COMPOUND	UNITS	207 A WATER	207 C WATER	CCW
V		METHYLENE CHLORIDE	uG/KG	5.00 B	5.00 U	960
S	3	METHYLPHENOL(M-CRESOL)	uG/KG	10.00 U	10.00 U	
S	2	METHYLPHENOL(O-CRESOL)	uG/KG	10.00 U	10.00 U	
S	4	METHYLPHENOL(P-CRESOL)	uG/KG	10.00 U	10.00 U	
V		N BUTYL ALCOHOL	uG/KG	8.10 U	810.00 U	5000
S		N-NITROSO-DI-N-BUTYLAMINE	uG/KG	10.00 U	10.00 U	
S		N-NITROSO-DI-PROPYLAMINE	uG/KG	10.00 U	10.00 U	
S		N-NITROSO-DIETHYLAMINE	uG/KG	10.00 U	10.00 U	
S		N-NITROSO-DIMETHYLAMINE	uG/KG	10.00 U	10.00 U	
S		N-NITROSODIPHENYLAMINE	uG/KG	10.00 U	10.00 U	
S		N-NITROSOPYRROLIDINE	uG/KG	10.00 U	10.00 U	
S		NAPHTHALENE	uG/KG	10.00 U	10.00 U	
S	4	NITROANILINE	uG/KG	52.00 U	51.00 U	
S	2	NITROANILINE	uG/KG	52.00 U	51.00 U	
S	3	NITROBENZENE	uG/KG	10.00 U	10.00 U	
S	2	NITROPHENOL	uG/KG	2.00 J	10.00 U	
S	4	NITROPHENOL	uG/KG	52.00 U	51.00 U	
S		PENTACHLOROPHENOL	uG/KG	52.00 U	51.00 U	
S		PHENANTHRENE	uG/KG	10.00 U	10.00 U	
S		PHENOL	uG/KG	10.00 U	10.00 U	
S		PYRENE	uG/KG	10.00 U	10.00 U	
S		PYRIDINE	uG/KG	10.00 U	10.00 U	
P		SIMAZINE	uG/KG	1.00 U	7.50	
V		STYRENE	uG/KG	5.00 U	5.00 U	
V	1,1,2,2	TETRACHLOROETHANE	uG/KG	5.00 U	5.00 U	
V		TETRACHLOROETHENE	uG/KG	5.00 U	5.00 U	50
V		TOLUENE	uG/KG	5.00 U	5.00 U	330
P		TOXAPHENE	uG/KG	2.00 U	41.00 U	
S	1,2,4	TRICHLOROBENZENE	uG/KG	10.00 U	10.00 U	
V	1,1,1	TRICHLOROETHANE	uG/KG	5.00 U	5.00 U	410
V	1,1,2	TRICHLOROETHANE	uG/KG	5.00 U	5.00 U	7600
V		TRICHLOROETHENE	uG/KG	5.00 U	5.00 U	91
V		TRICHLOROFLUOROMETHANE	uG/KG	5.00 U	5.00 U	960
S	2,4,5	TRICHLOROPHENOL	uG/KG	52.00 U	51.00 U	
S	2,4,6	TRICHLOROPHENOL	uG/KG	10.00 U	10.00 U	
V	1,1,2	TRICHLOROTRIFLUOROETHANE	uG/KG	10.00 U	10.00 U	960

ALL WATER ANALYSIS FOR 207 A AND 207 C PONDS

TYPE	COMPOUND	UNITS	207 A WATER	207 C WATER	CCW
V	VINYL ACETATE	UG/KG	10.00 U	10.00 U	
V	VINYL CHLORIDE	UG/KG	10.00 U	10.00 U	
V	XYLENES (TOTAL)	UG/KG	5.00 U	5.00 U	150
M	ALUMINUM	UG/KG	200.00 U	4000.00 U	
M	ANTIMONY	UG/KG	60.00 U	2400.00 U	
M	ARSENIC	UG/KG	10.00 U	1000.00 U	
M	BARIUM	UG/KG	200.00 U	8000.00 U	
M	BERYLLIUM	UG/KG	5.00 U	200.00 U	
M	BORON	UG/KG	1260.00	360000.00	
M	CADMIUM	UG/KG	5.00 U	312.00	66
M	CALCIUM	UG/KG	60400.00	200000.00 U	
M	CHROMIUM, TOTAL	UG/KG	10.00 U	2360.00	5200
M	COBALT	UG/KG	50.00 U	1000.00 U	
M	COPPER	UG/KG	25.00 U	6790.00	
M	IRON	UG/KG	100.00 U	2000.00 U	
M	LEAD	UG/KG	3.90	300.00 U	510
M	LITHIUM	UG/KG	1420.00	4000.00 U	
M	MAGNESIUM	UG/KG	121000.00	200000.00 U	
M	MANGANESE	UG/KG	15.00 U	600.00 U	
M	MERCURY	UG/KG	0.20 U	0.20 U	
M	MOLYBDENUM	UG/KG	100.00 U	4000.00 U	
M	NICKEL	UG/KG	40.00 U	5090.00	320
M	POTASSIUM	UG/KG	376000.00	78700000.00	
M	SELENIUM	UG/KG	14.90	500.00 U	
M	SILICON	UG/KG	846.00	30100.00	
M	SILVER	UG/KG	10.00 U	400.00 U	72
M	SODIUM	UG/KG	1610000.00	102000000.00	
M	STRONTIUM	UG/KG	2350.00	4000.00 U	
M	THALLIUM	UG/KG	10.00 U	1000.00 U	
M	TIN	UG/KG	100.00 U	4000.00 U	
M	VANADIUM	UG/KG	50.00 U	2000.00 U	
M	ZINC	UG/KG	27.50	400.00 U	
A	AMMONIA	MG/KG	0.43	0.10 U	
A	BICARBONATE	MG/L	35.00	4000.00	
A	CARBONATE	MG/KG	47.00	25000.00	
A	CHLORIDE	MG/KG	416.00	18300.00	

ALL WATER ANALYSIS FOR 207 A AND 207 C PONDS

TYPE	COMPOUND	UNITS	207 A WATER	207 C WATER	CCW
A	CYANIDE, TOTAL	uG/KG	478.00	9650.00	590000
A	FLUORIDE	MG/KG	50.00 U	1470.00 U	
A	NITRATE-N	MG/KG	1000.00	2600.00	
A	NITRITE	MG/KG	39.00	2500.00	
A	PHOSPHATE, ORTHO	MG/KG	0.00 <.02	390.00	
A	PHOSPHATE, TOTAL	MG/KG	0.00 <.1	431.00	
A	SULFATE	MG/KG	409.00	12200.00	
A	SULFIDE	MG/L	0.00 < 1	10.00	
A	TKN-N	MG/KG	0.10 U	0.50 U	
T	ALKALINITY, TOTAL	MG/KG	110.00	45000.00	
T	ASTM D 422, PARTICLE SIZE	GRAPH	0.00	0.00	
T	CONDUCTIVITY @ 25C	uMHOS	8800.00	610000.00	
T	TOTAL DISSOLVED SOLIDS	MG/L	7600.00	400000.00	
T	TOTAL ORGANIC CARBON	MG/L	67.80	54.90	
T	TOTAL SUSPENDED SOLIDS	%	23.00	76.00	
T	pH	pH	9.90	10.20	
R	AMERICIUM 241	pCI/L	0.42 +-.19	8.60 +-.6	
R	GROSS ALPHA	pCI/L	300.00 +-60	72000.00 -8000	
R	GROSS BETA	pCI/L	930.00 +-60	170000.00 10000	
R	PLUTONIUM 239	pCI/L	0.71 +-.29	670.00 +-20.	
R	URANIUM 234	pCI/L	310.00 +-10	2600.00 +-100	
R	URANIUM 235	pCI/L	11.00 +-1.	120.00 +-30.	
R	URANIUM 238	pCI/L	340.00 +-10	3900.00 +-200	

APPENDIX D

ARARs AGREEMENT LETTERS

Department of Energy

ALBUQUERQUE OPERATIONS
ROCKY FLATS AREA OFFICE
P.O. BOX 928
GOLDEN, COLORADO 80402-0928

August 22, 1989

Mr. Frederick R. Dowsett
Hazardous Materials & Waste Management
Division
Colorado Department of Health
4210 East 11th Avenue
Denver, Colorado 80220

Dear Mr. Dowsett:

Our understanding is that you and members of our staffs, namely Messrs. William Rask and Mark Van Der Puy of the United States Department of Energy ("DOE") and Allen Schubert and Chris Casias of Rockwell International Corporation ("Rockwell") met yesterday afternoon to discuss water recycling practices and issues at the Rocky Flats Plant. As a result of the meeting, you agreed to confirm in writing the applicability of the "commercial product" exclusion contained in 6 C.C.R. 1007-3, Section 261.2(e)(ii) to the reused effluent water that flows from Building 374 at the Rocky Flats Plant. This is not a new issue since you and other representatives of the Colorado Department of Health ("CDH") have previously acknowledged informally the applicability of this exclusion to the reused effluent water that flowed from and presently flows from Building 374. Nevertheless, as you know, the Plant will not restart the Building 374 evaporator (except as necessary to support safe shut-down of operations) until after we have your confirmation.

More specifically, as you know from past submittals and prior discussions, Building 374 at the Plant is presently the subject of a two-part permit application submitted to CDH for treatment of hazardous waste. The Building 374 treatment involves both evaporation and precipitation. Water that is separated from solids is used in the steam plant (Building 443) and in the cooling tower (Building 373). Once used, portions of this water flow to the sewage treatment plant (Buildings 995/988). Also, as discussed yesterday afternoon at the meeting, further recirculation and use of the 374 water will take place in a number of other cooling towers (Buildings 444, 447, 460, 707, 776, 779, 881 and 883). Obviously, one of the purposes for yesterday's meeting was to advise you of this additional recirculation and use of the Building 374 water.

In the past, as well as the present time, the 374 water has been excluded from regulation as a solid and hazardous waste, even assuming it retains its identity as a hazardous waste after treatment in Building 374, for purposes of downstream recirculation and use of the water provided it has essentially the same general characteristics of the substituted commercially available water. These general characteristics include the ability to meet maximum contaminant levels (MCLs) as identified in 40 C.F.R. 141 Subpart B with exception of turbidity and microbiological contamination. For effluent constituents for which no MCL has been established, the lack of unusually high contaminant levels in comparison with historical data will suffice. You and others at the Colorado Department of Health previously acknowledged informally in meetings that this Building 374 water was excluded from regulation under federal and state requirements as a solid and hazardous waste because it was "used or reused as effective substitutes for Commercial products." 40 C.F.R. 261.2(e)(ii) and 6 C.C.R. 1007-3, Section 261.2(e)(ii). That is, since the water is being used or reused as an effective substitute for commercially available water that could or otherwise would be purchased from the Denver Water Board, this water is not identified as solid and hazardous waste pursuant to federal and state regulation.

On the basis of federal and state regulations, as well as informal discussions with CDH, DOE and Rockwell believed this to be the case. Nevertheless, under the present circumstances concerning operation of the Rocky Flats Plant we are requesting your confirmation of the applicability of the commercial product exclusion. Please confirm by signing below the applicability of the exclusion to the past and present Building 374 water.

Consistent with the discussion at yesterday's meeting, the Rocky Flats Plant will commit to provide you with any and all data and lab analyses concerning sampling conducted since 1987. Additionally, the Plant will establish a monthly monitoring program in order to monitor the existing flow of the Building 374 product water. Results of analyses of such monitoring, to include VOCs and metals for which MCLs have been established, will be retained at the Plant and made available to you upon request.

Please return the signed original of this letter as well as one signed copy to our attention. We appreciate your willingness to meet with us and resolve this very important matter on such short notice.

Sincerely,

By: ______________________
Edward S. Goldberg
Acting Area Manager
Rocky Flats Area Office
U.S. Department of Energy

By: ______________________
Dominick J. Sanchini
President
Rockwell International
Corporation
Rocky Flats Plant

I concur: ______________________
Frederick R. Dowsett
Unit Leader
Monitoring & Enforcement
Hazardous Materials & Waste
Management Division
Colorado Department of Health

STATE OF COLORADO

COLORADO DEPARTMENT OF HEALTH
AIR POLLUTION CONTROL DIVISION
TELEPHONE: (303) 331-8576

EMISSION PERMIT

PERMIT NO: 91JE316(1)

INITIAL APPROVAL

DATE ISSUED:

ISSUED TO: EG&G ROCKY FLATS, INC. AND U.S. DEPARTMENT OF ENERGY-ROCKY FLATS PLANT

THE SOURCE TO WHICH THIS PERMIT APPLIES IS DESCRIBED AND LOCATED AS FOLLOWS:

Nuclear weapons component production located at the Rocky Flats Plant, Jefferson County, Colorado.

THE SPECIFIC EQUIPMENT OR ACTIVITY SUBJECT TO THIS PERMIT INCLUDES THE FOLLOWING:

Three (3) identical natural gas fired generator units and associated liquid evaporator units, each design rated at 2.0 MMBtu per hour. Vent numbers 910-A, 910-B, and 910-C.

THIS PERMIT IS GRANTED SUBJECT TO ALL RULES AND REGULATIONS OF THE COLORADO AIR QUALITY CONTROL COMMISSION AND THE COLORADO AIR QUALITY CONTROL ACT C.R.S. (25-7-101 et seq), TO THOSE GENERAL TERMS AND CONDITIONS SET FORTH ON THE REVERSE SIDE OF THIS DOCUMENT AND THE FOLLOWING SPECIFIC TERMS AND CONDITIONS:

1. Visible emissions shall not exceed twenty percent (20%) opacity.

2. The permit number shall be marked on the subject equipment for ease of identification.

3. The manufacturer, model number and serial number of the subject equipment shall be provided to the Division prior to Final Approval.

4. Construction of this source must commence within 18 months of initial approval permit issuance or within 18 months of the start-up date stated in the application. If commencement does not occur within the stated time the permit will expire on ______________________ (See General Condition No. 6., Item 1 on the reverse side of the first page of this permit.)

1140/3/139

GENERAL TERMS AND CONDITIONS: (IMPORTANT! READ ITEMS 6,7 and 8)

1. This permit is issued in reliance upon the accuracy and completeness of information supplied by the applicant and is conditioned upon conduction of the activity, or construction, installation and operation of the source, in accordance with this information and with representations made by the applicant or applicant's agents. It is valid only for the equipment and operations or activity specifically identified on the permit.

2. Unless specifically stated otherwise, the general and specific conditions contained in this permit have been determined by the APCD to be necessary to assure compliance with the provisions of Section 25-7-114(4)(g), C.R.S. and, as such, shall be enforceable under the provisions of Section 25-7-115, C.R.S. after final approval of the permit has been granted. Emission limits are imposed to ensure that emissions will not (1) interfere with reasonable further progress toward attainment of the NAAOS for pollutants as required by Sections 25-7-114(4)(g)(I)(B) and 301(1), C.R.S. the Clean Air Act, 42 USC Section 7502 (b)(3); and Air Quality Control Commission Regulation No. 3 Section IV.D.2. or (2) result in an exceedance of the NAAQS for pollutants as required by Sections 25-7-105(1)(a)(I), and 201(1)(b), C.R.S.; of the Clean Air Act, 42 USC Section 7475(a)(3); and Air Quality Control Commission Regulation No. 3, Section IV.D.1.c.

3. Each and every condition of this permit is a material part hereof and is not severable. Any challenge to or appeal of, a condition hereof shall constitute a rejection of the entire permit and upon such occurence this permit shall be deemed denied ab initio. This permit may be revoked at any time prior to final approval by the Air Pollution Control Division (APCD) on grounds set forth in the Colorado Air Quality Control Act and regulations of the Air Quality Control Commission (AQCC), including failure to meet any express term or condition of the permit.

4. This permit and any required attachments must be retained and made available for inspection upon request at the location set forth herein. With respect to a portable source which is moved to a new location, a copy of the revised Air Pollutant Emissions Notice (APEN) (required by law to be submitted to the APCD whenever a portable source is relocated) should be attached to this permit. The permit may be reissued to a new owner by the APCD as provided in AQCC Regulation No. 3 Section III.B upon a request for transfer of ownership, and the submittal of a revised APEN and the required fee.

5. Issuance (initial approval) of an emission permit does not provide "final" authority for this activity or operation of this source. Final approval of the permit must be secured from the APCD in writing in accordance with the provisions of 25-7-114(4)(j) C.R.S. and AQCC Regulation No. 3, Section IV.H. Final approval cannot be granted until the operation or activity commences and has been verified by the APCD as conforming in all respects with the conditions of the permit. If the APCD so determines, it will provide written documentation of such final approval, which does constitute "final" authority to operate.

6. THIS PERMIT AUTOMATICALLY EXPIRES IF you (1) do not commence construction or operation within 18 months after either the date of issuance of this permit or the date on which such construction or activity was scheduled to commence as set forth in the permit, whichever is later; (2) discontinue construction for a period of 18 months or more; or (3) do not complete construction within a reasonable time of the estimated completion date. Extensions of the expiration date may be granted by the APCD upon a showing of good cause by the permittee.

7. YOU MUST notify the APCD at least thirty days (fifteen days for portable sources) prior to commencement of the permitted operation or activity. Failure to do so is a violation of Section 25-7-114(4)(j), C.R.S. and AQCC Regulation No. 3., Section IV.H.1., and can result in the revocation of the permit.

8. Section 25-7-114(5)(a), C.R.S. requires that all sources required to file an Air Pollution Emission Notice (APEN) must pay an annual fee to cover the costs of inspections and administration. If a source or activity is to be discontinued the owner must notify the Division in writing requesting a cancellation of the permit. Upon notification, annual fee billing will terminate.

9. Violation of the terms of a permit which has received final approval or of the provisions of the Colorado Air Quality Control Act or the regulations of the AQCC may result in administrative, civil or criminal enforcement actions under Sections 25-7-115 (enforcement), -121 (injunctions), -122 (civil penalties), C.R.S.

5. Emissions of air pollutants shall not exceed the following limitations (as calculated in the Division's preliminary analysis):

PM10:	0.06 pounds/hour or	0.11 tons/year.
Particulate Matter:	0.06 pounds/hour or	0.11 tons/year.
Sulfur Dioxide:	0.003 pounds/hour or	0.006 tons/year.
Nitrogen Oxides:	20.20 pounds/hour or	36.36 tons/year.
Volatile Organic Compounds:	0.49 pounds/hour or	0.90 tons/year.
Carbon Monoxide:	2.55 pounds/hour or	4.59 tons/year.

6. This source shall be limited to a maximum consumption rate as listed below and all other activities, operational rates and numbers of equipment as stated in the application. Annual records of the actual consumption rate shall be maintained by the applicant and made available to the Division for inspection upon request.

   Total consumption of natural gas shall not exceed 21.3 million standard cubic feet/year.

7. At all times, including periods of start-up, shutdown, and malfunction, the facility and control equipment shall, to the extent practicable, be maintained and operated in a manner consistent with good air pollution control practices for minimizing emissions. Determination of whether or not acceptable operating and maintenance procedures are being used will be based on information available to the Division, which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

8. Prevention of Significant Deterioration (PSD) requirements shall apply to this modification at such time that this source becomes major solely by virtue of a relaxation in any permit condition. Any relaxation that increases the potential to emit above the applicable PSD threshold will require a full PSD review of the source as though construction had not yet commenced on the source. The source shall not exceed the PSD threshold until a PSD permit is granted.

9. Compliance with annual limits shall be determined on a 52 week rolling total. On the first day of each week a new 52 week total is calculated using the previous 52 weeks. Written records of the 52 week rolling total for fuel use shall be maintained and made available to the Division for inspection if so requested.

10. A source compliance test shall be conducted to measure the emission rate(s) for the pollutants listed below in order to demonstrate compliance with the emission limits in condition 5. The test protocol must be in accordance with the requirements of the Air Pollution Control Division Compliance test Manual and shall be submitted to the Division for review and approval at least thirty (30) days prior to testing. No test shall be conducted without prior approval from the Division.

    Oxides of Nitrogen

11. A Revised Air Pollutant Emission Notice shall be filed when a significant change in emissions occurs, as required by Regulation No.3.II.B.

12. A natural gas meter shall be installed in order to measure total natural gas usage.

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

By: Dennis M. Myers
Dennis M. Myers
Permit Engineer

By: James S. Geier
James S. Geier, P.E., Chief
New Source Review Section
Stationary Sources Program
Air Pollution Control Division

ROCKY FLATS PLANT WASTE MANAGEMENT SERVICES
EBASCO TEAM INTERNAL CORRESPONDENCE

EBASCO | DAMES & MOORE | SAIC | S.M. STOLLER CORPORATION

DATE:	March 4, 1992	REF:	RFEV21-SMSC-EGRF-T002
TO:	Richard C. Flory EG&G	LOCATION:	Golden
FROM:	Allen B. Crockett S.M. Stoller	LOCATION:	Boulder

SUBJECT: Habitat Survey for Spiranthes diluvialis

Attached please find the letter report prepared by Dr. David Buckner of ESCO Associates Inc., presenting the results of his recent walk-through of the OU1 French Drain and South Interceptor Ditch and OU4 Solar Ponds IRA sites. As you know, the walk-through was performed to evaluate the potential for occurrence of Diluvial Ladies' Tresses (Spiranthes diluvialis), which has recently been federally listed as a threatened plant species and has been documented to occur in the region. Dr. Buckner performed the work in support of Stoller's role on the OU1 Environmental Evaluation, as requested by EG&G/DOE.

I would like to add to Dr. Buckner's report that the OU1 areas were intensively studied during ecological investigations performed by EBASCO and Stoller during the summer of 1991, including the period when Spiranthes diluvialis is most conspicuous. It is very unlikely that the plant would have been overlooked, because the field crews were aware that Spiranthes diluvialis was proposed for federal listing as threatened and were alert to its potential presence.

Please let me know if you have any questions.

cc:	C. Nylander	EBASCO
	D. Cushing	EBASCO
	RFEV21/DCC	EBASCO
	RFEV21/Chron	EBASCO
	Larry Woods	EG&G
	Bruce Bevirt	EG&G
	Bruce Hope	EG&G
	M. Raudenbush	Stoller
	B. Lundeen	Stoller
	M. Lewis	Stoller
	RFEV21 Project	Stoller
	ABC Chron	Stoller

ESCO

ESCO ASSOCIATES INC.

P.O. Box 18775
Boulder, CO 80308
(303) 447-2999

1077 So. Cherryvale Rd.
Boulder, CO 80303
FAX (303) ~~494-3231~~ 499 4276

March 3, 1992

Dr. Allen B. Crockett
Technical Director, Environmental Services
The S. M. Stoller Corporation
5700 Flatiron Parkway
Boulder, CO 80301-5718

Dear Dr. Crockett:

This letter is written in documentation of the results of a field survey on the DOE Rocky Flats site conducted on March 2, 1992. Purpose of the survey was to ascertain the general suitability of three sites on the property to support the possible presence of the Diluvial Ladies' Tresses (Spiranthes diluvialis), a plant listed in January of this year as threatened by the U.S. Fish and Wildlife Service. Results were as follows:

Site OU-4. On this site of proposed tank construction, the bulk of the area is located on an arid south to south-east facing slope vegetated by Blue Grama (Bouteloua gracilis), Western Wheatgrass (Agropyron smithii), and Purple Three-awn (Aristida purpurea) along with locally heavy infestations of tumble knapweed (Acosta diffusa). This site is too dry to support Spiranthes diluvialis, which is usually found in wet soils in the company of a variety of mesic native and introduced grasses and forbs. At the OU-4 site, the slope and south-facing exposure, along with the dryland nature of the existing vegetation all clearly indicate the dry conditions. At the bottom of the slope, the drainage that will be crossed by supply pipe(s) is a dry and only intermittent channel, lacking species at all indicative of the level of moisture required for the presence of Spiranthes diluvialis. **In summary, site OU-4 has no possibility for the occurrence of Spiranthes diluvialis.**

South Interceptor Ditch (SID). Within the bottom of this manmade channel, the presence of perennial wetness is readily apparent from the widespread abundance of broadleaf cattail (Typha latifolia). In some parts, especially those further west, the cattails of the ditch bottom are replaced by heavy cover of introduced forage grasses such as Smooth Brome (Bromopsis inermis) and Timothy (Phleum pratense). These grasses are also common on the slopes of the ditch throughout its length. For the most part, these grasses may grow with sufficient vigor so as to shade the ground surface beyond the preferences of Spiranthes diluvialis, since there is no grazing or other processes active that would limit the height of grass growth. There exist periodically along the length of the ditch small areas of nearly level "terrace" topography at an elevation about a foot above the SID bottom. These sites may experience subirrigation in a manner consistent with the requirements of Spiranthes diluvialis. Likewise, above the SID, on the upper slopes where the thick cover of Rocky Flats alluvial gravels contact the underlying shales, various seeps occur, as they do under similar conditions at many locations in the Rocky Flats area. While some of these seeps support true wetland vegetation, including cattails, some are more moderately wet, and these may have the potential for the occurrence of Spiranthes diluvialis. In the portions of the bottom of the SID that are occupied by cattail there is no chance of the occurrence of Spiranthes diluvialis. Other areas showed evidence of infestation by tall weeds such as Canada thistle (Cirsium arvense); in these areas, there is little chance for the occurrence of the plant due to the excessive shading associated with these tall weeds. **In summary, the environs of the SID include certain small areas in which the necessary perennial moisture along with moderate competition from competing vegetation, leaves open the possibility, small though it may be, that Spiranthes diluvialis could occur.**

French Drain site. This area is located above the eastern portion of the SID. At this site, extensive surface disturbance associated with on-going construction of a French drain has removed most of the vegetational cover. It is unlikely that any of the habitats present here were suitable for the occurrence of Spiranthes diluvialis because of the fairly steep slope, south-facing exposure, and lack of perennial high soil moisture at the surface. The exception to this lack of possible habitat might have been found where any of the afore-mentioned seeps provided suitable moisture conditions. It should be noted that the plant has not been found in hillside seep habtitats and it is speculative that the plant might find conditions in such sites suitable. **In summary, the French Drain site has already been disturbed, so there can be no direct knowledge of the occurrence of Spiranthes diluvialis; however, the disturbed area included none of the habitat in which the plant is known to occur.**

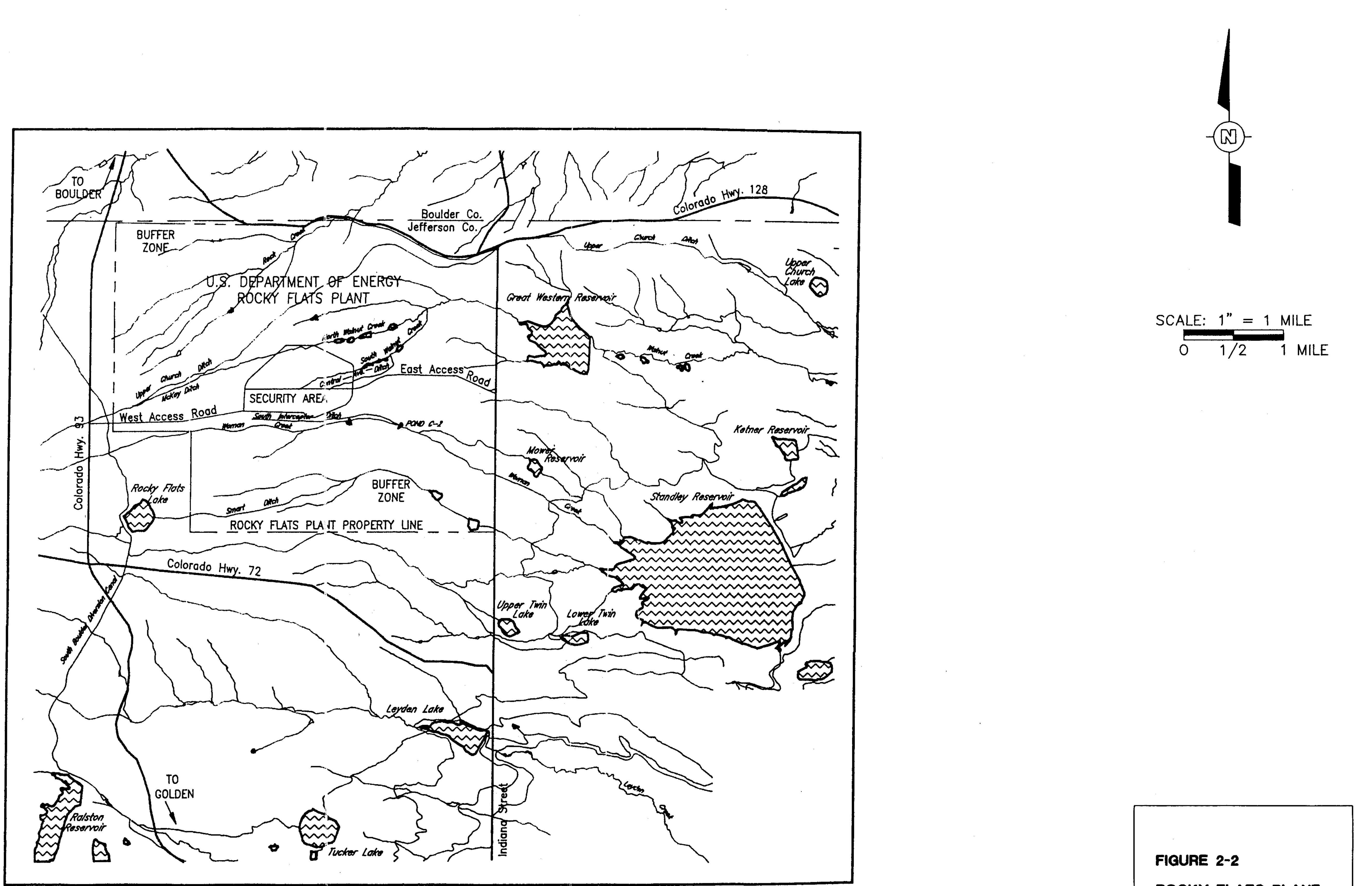
It is suggested that the localities on the Rocky Flats site that have habitat most like that in which Spiranthes diluvialis is known to occur be surveyed at an appropriate time of year (late July through August) to ascertain whether the plant occurs under the "best" conditions that the area has to offer. Such sites would include the alluvial materials along the active and inactive channels of the major creeks of the site. If the plant is not found in these sites, a strong suggestion would be apparent that its occurrence on moist yet man-made sites such as the SID would be unlikely given no local supply of propagules. If the plant were found, the chance of occurrence on man-made sites might be considered to be substantially increased. It is also suggested that the SID be examined during a more suitable time of year to more directly address the presence or absence of the plant.

There was discussion of the possible impact on Spiranthes diluvialis, were it to be present, of burning the vegetation of the ditch to expose the sediments obstructing the flow of the ditch. To my knowledge there is no direct information on the effect of burning on Spiranthes diluvialis. However, inasmuch as it is a plant associated with grassy vegetation in a semiarid environment, it seems probable that it has regularly experienced fire; given the moist nature of Spiranthes diluvialis habitat, any burns probably occurred during the dormant season.

If you have any questions regarding the results of the survey, please call me.

Sincerely,

David L. Buckner, Ph.D.
Plant Ecologist



DRAWN BY	RITA HYNA	CHECKED BY		8-2-91	DRAWING NUMBER	304903-B20
	7/31/91	APPROVED BY		8-13-91		

REFERENCE: EG&G DRAFT PHASE I
RFI/RI WORK PLAN FOR OU-7, JULY 1991.

FIGURE 2-2

ROCKY FLATS PLANT AND VICINITY MAP

DRAWN BY	KRONER 7-31-91	CHECKED BY	GNB 8-2-91	DRAWING NUMBER 304903-B18
		APPROVED BY	GNB 8-13-91	

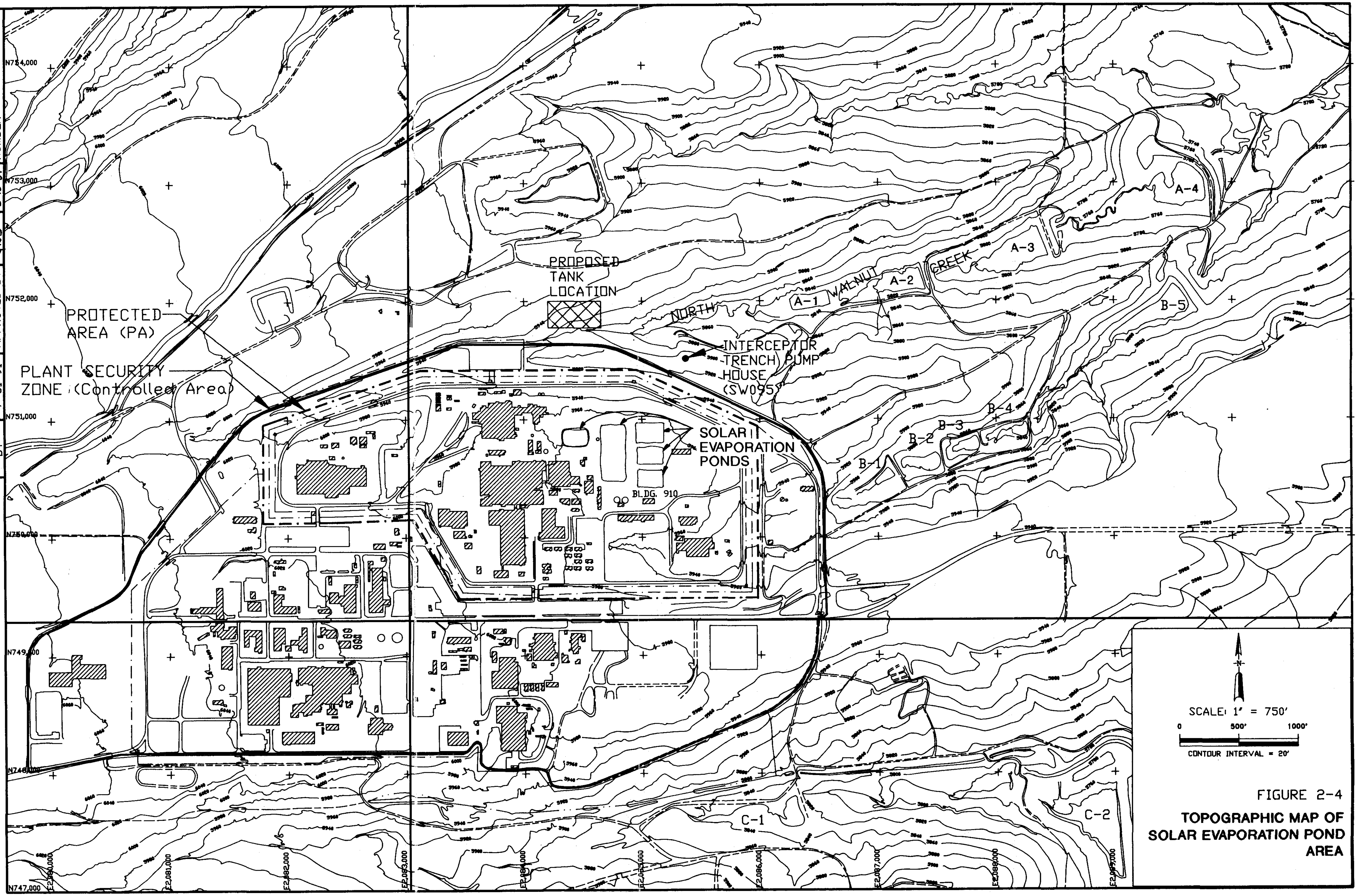


FIGURE 2-4

TOPOGRAPHIC MAP OF SOLAR EVAPORATION POND AREA

DRAWN BY	RITA HYNA 7/31/91	CHECKED BY	GNB	8-13-91	DRAWING NUMBER	304903-B23
		APPROVED BY	GNB	8-13-91		

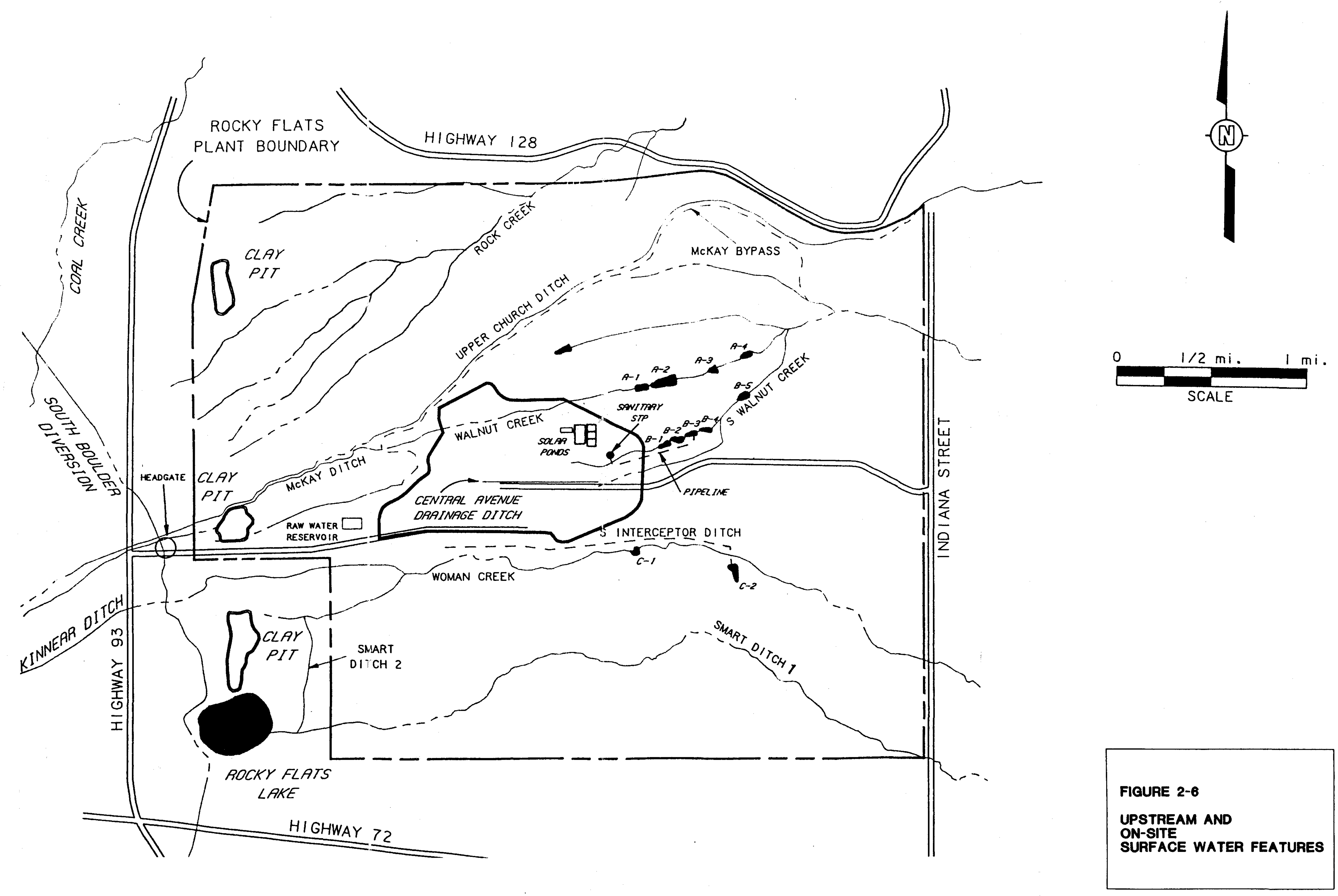
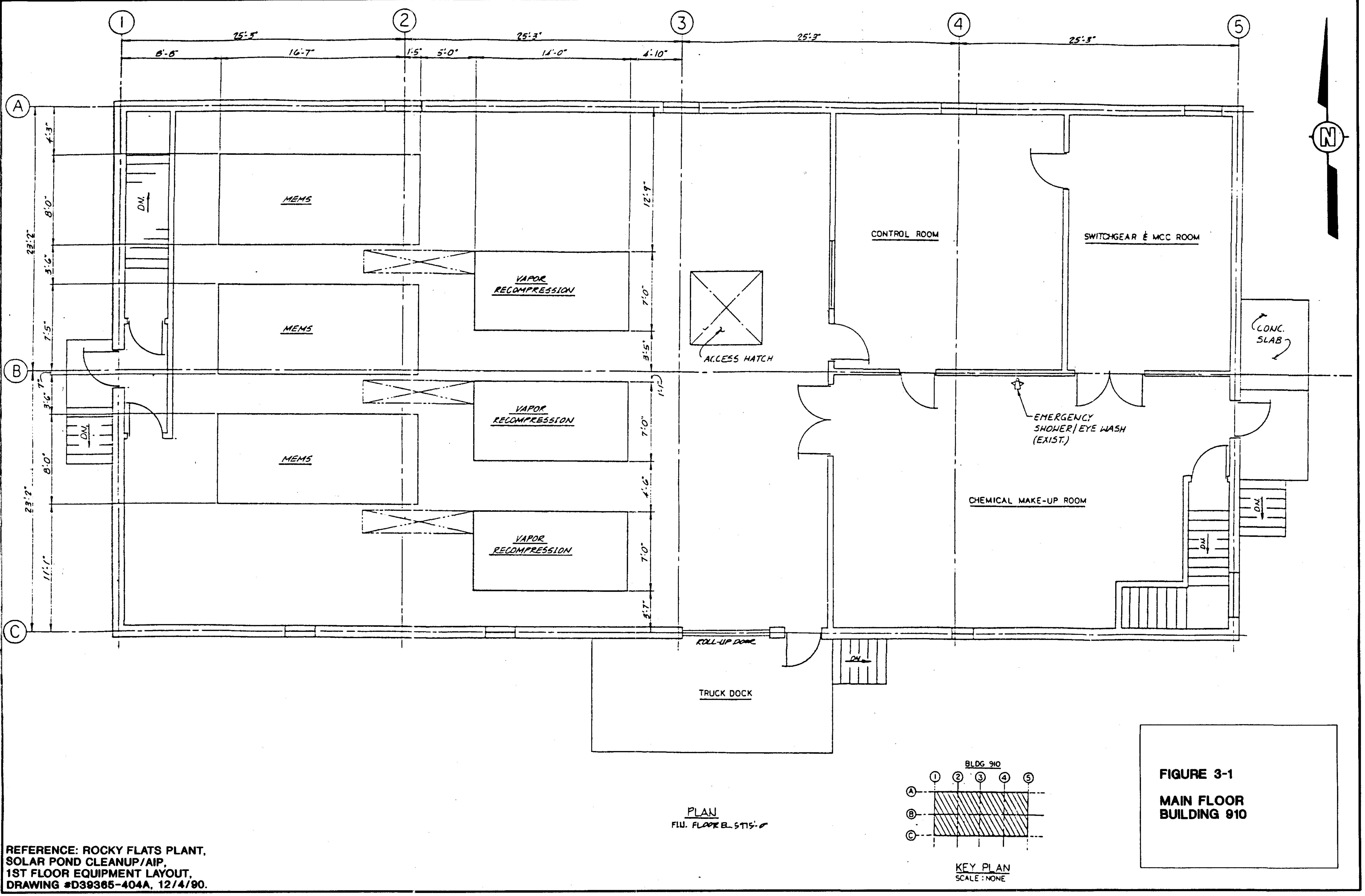


FIGURE 2-6

UPSTREAM AND ON-SITE SURFACE WATER FEATURES

SOURCE: DRAFT ROCKY FLATS SURFACE WATER MANAGEMENT PLAN, MARCH 1991.



DRAWN BY	RITA HYNA 7/31/91	CHECKED BY	GNB 8-2-91	DRAWING NUMBER 304903-B21
		APPROVED BY	GNB 8-13-91	

REFERENCE: ROCKY FLATS PLANT,
SOLAR POND CLEANUP/AIP,
1ST FLOOR EQUIPMENT LAYOUT,
DRAWING #D39365-404A, 12/4/90.

FIGURE 3-1

MAIN FLOOR BUILDING 910

DRAWN BY	RITA HYNA 7/31/91	CHECKED BY APPROVED BY	GNB GNB	8-2-91 8-13-91	DRAWING NUMBER	304903-B22

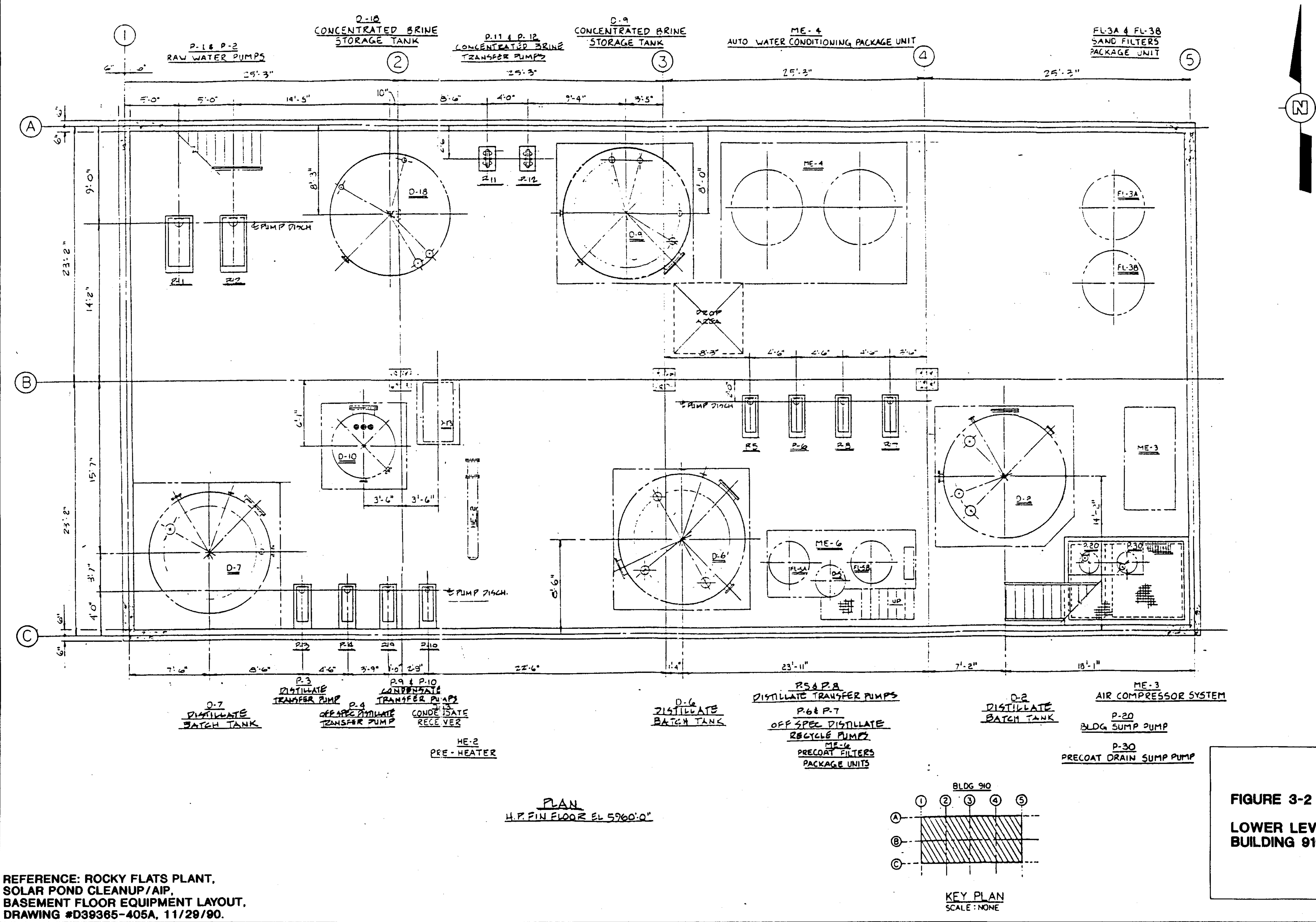
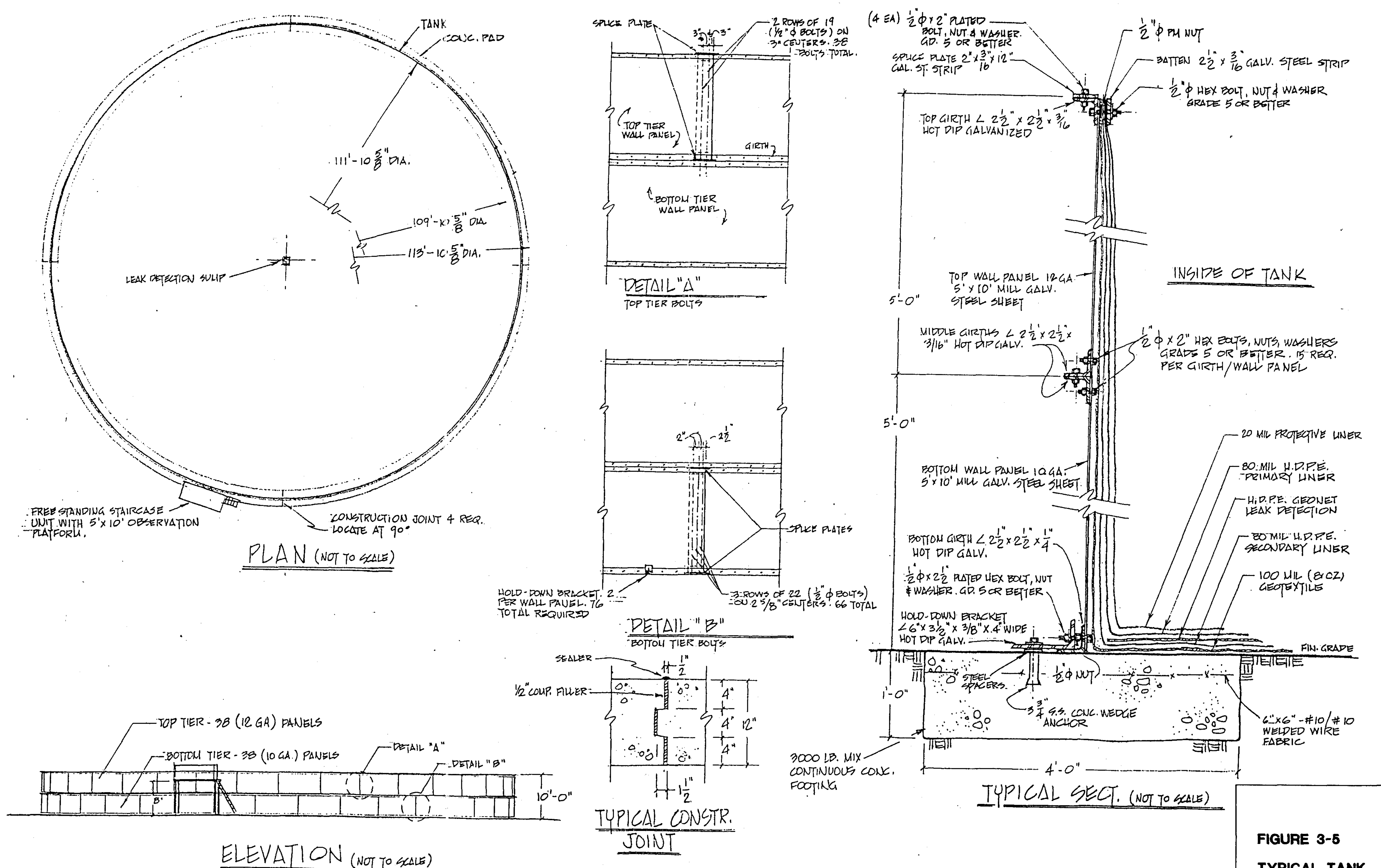


FIGURE 3-2

LOWER LEVEL
BUILDING 910

REFERENCE: ROCKY FLATS PLANT,
SOLAR POND CLEANUP/AIP,
BASEMENT FLOOR EQUIPMENT LAYOUT,
DRAWING #D39365-405A, 11/29/90.



DRAWN BY	RITA HYNA 7/31/91	CHECKED BY	GNB	8-2-91	DRAWING NUMBER	304903-B19
		APPROVED BY	GNB	8-13-91		

FIGURE 3-5

TYPICAL TANK CONSTRUCTION

REFERENCE: MODUTANK INC.,
500,000 GAL. MODULAR WATER STORAGE TANK IN ACCORDANCE WITH ROCKY FLANTS PLANT SPEC. NO. 986819-01 DRAWING, JULY 1991.