

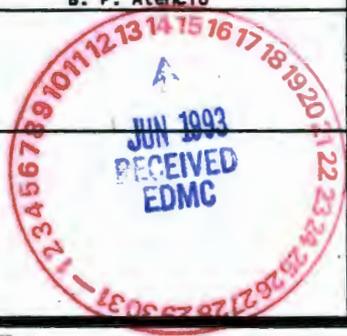
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1/2	1	Cog. Mgr. R. W. Oldham	R. Oldham	5/13/93					
1/2	1	S. J. Skurla	S. Skurla	5/14/93					
1/2	1	J. R. Rosser	J. Rosser	5/14/93					
1/2	1	J. E. Thresher	B.P. Atencio for J.E. Thresher	per telcom (5-17-93)					

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# SUPPORTING DOCUMENT

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2. Title EVALUATION OF SUPPORTING DOCUMENTATION FOR W-252 STREAMS STATE WASTE DISCHARGE PERMIT APPLICATIONS	3. Number WHC-SD-EN-EV-015	4. Rev No. 0
5. Key Words W-252 Liquid Effluent Streams, 216 Consent Order, "Other" Phase II streams, 200 Area Treated Effluent Disposal Facility (TEDF) <b>APPROVED FOR PUBLIC RELEASE</b>	6. Author Name: R. W. Oldham <i>swell</i> Signature Organization/Charge Code 88300 / A2EA1	
7. Abstract <i>5126193 N. Solin</i> This report evaluates the documentation supporting the development of WAC 173-216 State Waste Discharge (SWD) permit applications for the nine "Other" Phase II liquid effluent streams initially identified in the Annual Status Report of the Plan and Schedule to Discontinue Disposal of Contaminated Liquid into the Soil Column at the Hanford Site (Status Report, Stordeur 1988), and subsequently tabulated in Table 3 of Consent Order No. DE 91NM-177 (216 Consent Order, Ecology and DOE-RL, 1991) and in the Hanford Federal Facility Agreement and Consent Order Change Control Form M-17-91-05A (M-17 Change Package, Ecology et al., 1992). The ultimate treatment and disposal of these streams will be addressed under Project W-252, which calls for the implementation of the best available technology/all known, available, and reasonable treatment (BAT/AKART) by October 1997.		
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**EVALUATION OF SUPPORTING DOCUMENTATION  
OF W-252 STREAMS STATE WASTE DISCHARGE PERMIT APPLICATION**

**WHC-SD-EN-EV-015, Rev. 0**

**May 13, 1993**

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**LIST OF ACRONYMS/DEFINITIONS**

**ACRONYMS**

AKART	All Known, Available, and Reasonable Treatment; or "All Known, Available, and Reasonable methods to prevent and control the discharge of wastes into waters of the state" (WAC-173-216-020)
BAT	Best Available Technology (Economically Achievable)
CFR	Code of Federal Regulations
DOE	United States Department of Energy
DOE-RL	Department of Energy - Richland Field Office
EPA	United States Environmental Protection Agency
PUREX	Plutonium Uranium Extraction
QAPjP	Quality Assurance Project Plan
SAP	Sampling and Analysis Plan
SWD	State Waste Discharge
TPA	Tri-Party Agreement, or Hanford Federal Facility Agreement and Consent Order
WAC	Washington Administrative Code
WHC	Westinghouse Hanford Company

**DEFINITIONS**

**SWD Permits-**

WAC 173-216 State Waste Discharge Permit for liquid effluents being discharged to State water, including groundwater.

**240 Engineering Reports-**

WAC 173-240 Engineering Report which includes a detailed description of the treatment facilities to be constructed, including design criteria, water consumption and balance data, discharge impacts, etc.

## 1.0 INTRODUCTION

This report evaluates the documentation supporting the development of WAC 173-216 State Waste Discharge (SWD) permit applications for the nine "Other" Phase II liquid effluent streams initially identified in the *Annual Status Report of the Plan and Schedule to Discontinue Disposal of Contaminated Liquid into the Soil Column at the Hanford Site (Status Report, Stordeur 1988)*, and subsequently tabulated in Table 3 of *Consent Order No. DE 91NM-177 (216 Consent Order, Ecology and DOE-RL, 1991)* and in the Hanford Federal Facility Agreement and Consent Order Change Control Form M-17-91-05A (M-17 Change Package, Ecology et al., 1992). The ultimate treatment and disposal of these streams will be addressed under Project W-252, which calls for the implementation of the best available technology/all known, available, and reasonable treatment (BAT/AKART) by October, 1997. As such, these streams are hereafter referred to as the W-252 streams.

This report addresses Sampling and Analysis Plans (SAPs), Best Available Technology (BAT)/All Known Available, and Reasonable Treatment (AKART) evaluations, WAC 173-240 engineering reports, and groundwater impact assessments. The reasons these documents are pertinent to the permitting process are presented, and completion schedules and milestones for these documents are then evaluated with respect to their integration into the SWD permitting process for the W-252 streams, with particular emphasis on meeting the milestone dates for submittal of the SWD permit applications, as provided in Table 3 of the *216 Consent Order*. Potential problem areas are discussed, and possible resolution strategies are proposed.

The evaluation conducted in this report does not address the funding requirements for the activities necessary to support development of SWD permit applications. Instead, it is assumed that the necessary funding will be provided, particularly for those activities that directly support *216 Consent Order* milestones, such as the SWD permit applications.

## 2.0 ORGANIZATION

The organization of this report is as follows:

- Section 1.0 provides a brief introduction and summary of the report.
- Section 2.0 describes the various sections of the report.
- Section 3.0 provides a historical summary of the W-252 stream designation process, as well as the development of the supporting data requirements for the SWD permit applications.
- Section 4.0 includes an evaluation of the current status and integration of the SAPs, BAT/AKART evaluations, WAC 173-240 engineering reports, and the groundwater impact assessments into the SWD permit applications.
- Section 5.0 summarizes the conclusions and recommendations pertaining to the incorporation of the supporting documents discussed in section 4.0 into the permitting process for the W-252 streams.
- Section 6.0 lists the references cited in the report.

### 3.0 BACKGROUND

#### 3.1 HISTORICAL SUMMARY

In response to a congressional request, a document entitled *Plan and Schedule to Discontinue Disposal of Contaminated Liquids into the Soil Column at the Hanford Site* (Congressional Report, DOE-RL 1987) was issued by the U.S. Department of Energy-Richland Field Office (DOE-RL) in March, 1987. This document defined 16 Phase I and 17 Phase II liquid effluent streams that were being discharged to the soil column. The Phase I streams were considered to be the higher priority streams that were to have alternative treatment and disposal systems implemented by 1995. The W-252 Streams were to be addressed after the completion of the Phase I projects. This priority listing was later revised in the *Status Report* to 19 Phase I streams and 14 Phase II streams.

Due to the public comments received following submittal of the *Tri-Party Agreement* (TPA, Ecology et al. 1989a), the Washington Department of Ecology (Ecology) and the U.S. Environmental Protection Agency (EPA) requested that the United States Department of Energy (DOE) conduct a study to document the discharge history and characteristics of liquid effluent discharges at the Hanford Site, and to determine the associated levels of groundwater contamination. This study was to address the 33 liquid effluent streams and their 27 respective disposal sites that had been previously identified in the *Status Report* (Stordeur 1988). The DOE-RL, through its operating contractor Westinghouse Hanford Company (WHC), subsequently provided a study implementation plan, the *Liquid Effluent Study Project Plan* (WHC 1990a). The studies conducted under the guidance of this plan culminated in the *Liquid Effluent Study Final Project Report* (*Liquid Effluent Study*, WHC 1990b). Additional supporting documents developed during the project included the *Waste Stream Characterization Report* (WHC 1989), *Hanford Site Stream-Specific Reports* (WHC 1990c), *Waste Stream Designation of Liquid Effluent Analytical Data* (Jungfleisch 1990), and *Liquid Effluent Study: Groundwater Characterization Data* (WHC 1990d).

In the negotiations that followed submittal and review of the *Liquid Effluent Study* (WHC 1990b) and its associated documents, DOE and Ecology agreed that the unpermitted liquid effluent streams being discharged to the ground at the Hanford Site, as well as any future discharges to ground, must be evaluated for permitting under WAC 173-216, the State Waste Discharge Permit Program, or WAC 173-218, the Underground Injection Control Program (if applicable). This agreement is set forth in the *216 Consent Order*. The *216 Consent Order* prioritizes the permitting of specific liquid effluent waste streams, provides detailed schedules for permitting those streams, and sets forth the basis for continuing stream discharges until SWD permits are obtained or the use of current ground disposal sites is eliminated.

#### 3.2 W-252 STREAMS

The criteria used in the *Congressional Report* (DOE-RL 1987) to prioritize the liquid effluent streams into Phase I and Phase II streams were based on effluent disposal criteria contained in applicable DOE Orders and in relevant EPA and State environmental regulations. Four criteria were used to identify the original 16 Phase I streams and 17 Phase II streams. Any stream exceeding one or more of the four criteria received a Phase I priority ranking. The Phase I streams were considered to have the higher priority and were scheduled to have alternative treatment and disposal systems completed as quickly as possible. The remaining 17 streams of the original 33 streams identified were considered lower priority and were categorized as Phase II streams, to be addressed after the completion of the Phase I projects. These lists were later revised in the *Status Report* to 19 Phase I streams and 14 Phase II streams, due to changes in the key assumptions used in prioritizing the streams.

Of the 14 Phase II streams, one (209-E Laboratory reflector water) has been discontinued and will not require a SWD permit. Four Phase II streams (PUREX cooling water, 242-S Evaporator steam condensate, T-Plant laboratory wastewater, and 284-W Powerplant cooling water) were initially identified to be addressed under the permitting requirements for the 200 Area Treated Effluent Disposal Facility (Project W-049H). The remaining nine Phase II streams were subsequently categorized as "Other" Phase II streams, and were identified in Table 3 of the *216 Consent Order*. The ultimate treatment and disposal of these streams will be addressed under Project W-252; as such, these streams are hereafter referred to as the W-252 streams. Of these nine W-252 streams, the 241-AZ steam condensate stream is currently not in use. However, under flow conditions this stream discharges to the double-shell tanks and does not immediately require a SWD permit. The remaining eight streams require the completion of the supporting documentation addressed in this report, in addition to the submittal and approval of a SWD permit.

### 3.3 OVERVIEW OF SUPPORTING DOCUMENTATION FOR SWD PERMIT APPLICATIONS

As discussed in Section 3.1, DOE and Ecology have agreed that all unpermitted liquid effluent streams being discharged to the ground at the Hanford Site must be evaluated for permitting under WAC 173-216, the State Waste Discharge Permit Program. This agreement is set forth in the *M-17 Change Package*, and in the *216 Consent Order*. To meet SWD permit requirements for the W-252 streams, Sampling and Analysis Plans, BAT evaluations, and WAC 173-240 engineering reports (where necessary) have been developed for each W-252 stream. In addition, groundwater impact assessments are required for each of the W-252 stream disposal sites, but are not required for completion of the SWD permit applications. The following sections briefly discuss these supporting documents.

Table 1 lists the nine W-252 streams, and indicates WHC/DOE and Ecology submittal dates for their respective SAPs, BAT/AKART evaluations, 240 engineering reports, and groundwater impact assessments. Groundwater impact assessment categories are noted, and *216 Consent Order* milestone dates are also indicated, wherever applicable, as are the disposal sites for each of these streams. Internal WHC submittal dates are also noted.

#### 3.3.1 Sampling and Analysis Plans

Waste stream characterization data is required for each SWD permit application (Section E. Wastewater Information, State Waste Discharge Permit Application For Industrial Discharges to Land). Unless specified otherwise in writing by Ecology, the analytical methods used to meet the permit data requirements must conform to the Guidelines Establishing Test Procedures for the Analysis of Pollutants Contained in 40 CFR Part 136. Following review of the *Liquid Effluent Study* and the associated documentation discussed in Section 3.1, Ecology and EPA perceived significant shortcomings in the sample data provided for each of the streams with respect to meeting both these data requirements and the requirements of SW-846, and recommended that sampling, analytical, and quality assurance protocols be upgraded prior to collection of additional samples. As a result of these concerns and recommendations, Sampling and Analysis Plans (SAPs) were to be developed for each of the currently defined liquid effluent streams in order to provide defensible, superior quality characterization data for each stream. Schedules for SAP submittals are shown in Table 1.

**TABLE 1. Supporting Document Status  
State Waste Discharge (SWD) Permit Applications - W-252 Streams**

OTHER PHASE II EFFLUENT STREAMS	216 SWD PERMIT APPLICATION	SAPs	WAC 173-240 ENGINEERING REPORTS		GROUNDWATER IMPACT ASSESSMENTS			COMMENTS
			BAT/AKART EVAL.	240 ENGINEERING REPORT SUBMITTAL <sup>2</sup>	DISPOSAL SITE	CATEGORY	STATUS	
241 AY/AZ Tank Farm Steam Condensate	NCS	NCS	NCS	NCS	216-A-8 Crib (see comment)	ND	NCS	Stream currently not in use. Under flow conditions, streams is routed to dbi-shelled tanks. SAP to be developed and approved by Ecology prior to rerouting, and 216 application submitted prior to discharge to ground.
242-A Evaporator Cooling Water	F <sup>1</sup> : 12/93	IP DE <sup>1</sup> : 4/92	IP DW: 4/6/92	IP DW: 6/30/92 DE <sup>1</sup> : 9/92 F: 12/31/92	216-B-3 Pond System	3	DW: 11/94	Additional monitoring well installation required prior to development of GW Impact Assessment for 216-B-3-Pond.
242-A Evaporator Steam Condensate	F <sup>1</sup> : 12/93	IP DE <sup>1</sup> : 4/92	IP DW: 4/6/92	IP DW: 6/30/92 DE <sup>1</sup> :9/92 F: 12/31/92				
241-A Tank Farm Cooling Water	F <sup>1</sup> : 12/93	IP DE <sup>1</sup> : 4/92	IP DW: 4/6/92	IP DW: 6/30/92 DE <sup>1</sup> :9/92 F: 12/31/92				
244 AR Vault Cooling Water	F <sup>1</sup> : 12/93	IP DE <sup>1</sup> : 4/92	IP DW: 4/6/92	IP DW: 6/30/92 DE <sup>1</sup> :9/92 F: 12/31/92				
284-E Power Plant Waste Water	F <sup>1</sup> : 12/93	IP DE <sup>1</sup> : 4/92	IP DW: 4/6/92	IP DW: 6/30/92 DE <sup>1</sup> :9/92 F: 12/31/92				
B-Plant Cooling Water	F <sup>1</sup> : 12/93	IP DE <sup>1</sup> : 4/92	IP DW: 4/6/92	IP DW: 6/30/92 DE <sup>1</sup> :9/92 F: 12/31/92				
183-D Filter Backwash	F <sup>1</sup> : 12/93	IP DE <sup>1</sup> : 4/92	IP DW: 4/6/92	IP DW: 6/30/92 DE <sup>1</sup> :9/92 F: 12/31/92				
400 Area Secondary Cooling Water	F <sup>1</sup> : 12/92	IP DE <sup>1</sup> : 4/92	IP DW: 4/6/92	IP DW: 6/30/92 DE <sup>1</sup> :9/92 F: 12/31/92	400 Area Ponds	1	F 10/92	

**KEY**

1: 216 Consent Order Milestone  
F: Final Approved  
IP: In Progress

2: Implementation of BAT/AKART by 10/97  
DW: Submittal to Westinghouse Hanford/DOE  
DE: Submittal to Ecology Following Westinghouse Hanford/DOE Approval Submittal

NCS: Not Currently Scheduled

ND: Not Determined

DATES ARE SUBMITTAL DATES ONLY, UNLESS DESIGNATED AS F.

### 3.3.2 Best Available Technology/All Known, Available, and Reasonable Treatment Reports

Washington Administrative Code 173-216-110, Permit Terms and Conditions, states that "Any permit issued by the department [Ecology] shall specify conditions necessary to prevent and control waste discharges into the waters of the state, including the following, whenever applicable: All known, available, and reasonable methods of prevention, control, and treatment." Milestone M-17-00B of the M-17 Change Package designates an October, 1997 completion date for "Complete implementation of Best Available Technology/ All Known, Available, and Reasonable Methods of Prevention, Control and Treatment (BAT/AKART) for all Phase II Liquid Effluent Streams at the Hanford Site" under milestone M-17-00B. Both documents include in their scheduled W-252 stream requirements the submittal of BAT/AKART evaluations and 240 engineering reports to Ecology by September, 1992 (Table 1).

### 3.3.3 Groundwater Impact Assessments

In addition to concerns regarding sampling procedures and sample data quality described in the Liquid Effluent Study, both Ecology and EPA expressed further concerns regarding the level to which continued discharge of liquid effluents to the soil column would impact groundwater at the receiving sites. In particular, Ecology and EPA viewed the groundwater characterization data, the evaluation of contaminant migration pathways, as well as the effects of contaminant loading over time to require additional evaluation. As a result, the M-17 Change Package includes milestone M-17-13, which requires the submittal of a methodology for assessing impact of liquid discharge on groundwater at disposal sites to EPA and Ecology as a primary document by October, 1991. In October of 1991, *A Methodology for Assessing Impacts to Groundwater from Disposal of Liquid Effluent to the Soil at the Hanford Site (Impact Assessment Methodology, Tyler 1991)* was submitted to Ecology for review. The methodology provides guidance for the determination of hydrologic and contaminant impacts associated with the anticipated continued discharge of fourteen liquid effluent streams, including the W-252 streams, to the soil column. Categorization criteria for determining the level of groundwater impact assessment required are described, and each disposal site is categorized according to those criteria. In addition, as required in the *Impact Assessment Methodology*, an impact assessment plan must be developed and approved that assesses additional data needs, and how the impact assessment will be conducted.

The *Impact Assessment Methodology* identifies four disposal sites for the W-252 streams: the 216-A-8 Crib (currently not receiving effluent), the 216-B-3 Pond System, the 100-D Ponds, and the 400 Area Ponds. The impact assessment for the 400 Area Ponds has been designated category 1, which requires that only existing data be implemented, while the 100-D and 216-B-3 Ponds require category 3 impact assessments that encompass additional extensive field data collection, such as monitoring well installation and sampling.

## 4.0 DISCUSSION AND EVALUATION

The following discussion and evaluation addresses the schedule for completion and implementation of SAPs, BAT/AKART evaluations/240 engineering reports, and groundwater impact assessments, as well as their integration into the SWD permitting process, with emphasis on current *216 Consent Order* milestone requirements. Table 1 shows the status of these documents, and their relationship to the SWD permit application schedule requirements.

#### 4.1 SCHEDULING FOR COMPLETION AND IMPLEMENTATION OF SAMPLING AND ANALYSIS PLANS

Development of Sampling and Analysis Plans has been completed for all of the W-252 streams except the 241 AY/AZ Tank Farm Steam Condensate, which is being discharged to double-shell tanks (Table 1). These SAPs were approved within WHC, and transmitted by DOE to Ecology for approval in April, 1992. Subsequently, the SAPs have been rewritten to reflect DOE recommendations to the *Liquid Effluent Sampling Quality Assurance Project Plan* (QAPP, WHC 1992).

Section E, Wastewater Information, of the State Waste Discharge permit application states the following: "Provide measurements for the parameters listed below, unless waived by the permitting authority." The parameters listed are not, by necessity, specific to any particular effluent stream and are generic in nature. It is therefore assumed that approval of the SAP by Ecology is, effectively, a waiver of the parameters listed on the permit application form.

It will be necessary to implement the SAPs by collecting and analyzing samples, validating data, and then subsequently incorporating the analytical data into the first draft of the SWD permit application by midyear of 1993 at the latest, based on projected review cycles for the SWD permit applications, in order for permit applications to be submitted to Ecology by the December, 1993 *216 Consent Order* milestone date.

If SAPs cannot be implemented in sufficient time to allow for data acquisition and incorporation into the permit applications, the applications will require incorporation of either existing sample data from data sources previously considered by Ecology to be inadequate (i.e., Stream-Specific Reports), or data for all the parameters indicated in Section E of the application, which may require that interim sampling procedures be developed, approved, and implemented. Existing data have already been used to conduct BAT/AKART evaluations/240 engineering reports.

Data derived from the approved SAPs, as well as the SAPs themselves, may eventually prove to be interim data, since the implementation of BAT/AKART might result in modifications to the SAPs (i.e. sampling points, analytes of concern) at a later date. In a letter to DOE dated August 16, 1991, Ecology noted the following:

"It is imperative to realize that any reduction in detail to support the development of sampling and analysis plans by the dates agreed to during the Tri-Party Agreement Change Package, will dictate that additional detail must be provided in the 240 engineering reports. Therefore, as this additional information is reviewed, changes in the sampling and analysis plan may be required at a later date" (Ecology 1991).

Ecology does, therefore, acknowledge that sampling programs may change for a particular stream. This perspective may prove beneficial, should it become necessary to negotiate interim data requirements for those cases where new data may not be generated in sufficient time to be incorporated into the permit application.

##### 4.1.1 400 Area Secondary Cooling Water Sampling and Analysis Plan

The *216 Consent Order* milestone submittal date for the final approved SWD permit application for the 400 Area Secondary Cooling Water liquid effluent stream was December, 1992 (Table 1). A draft SWD permit application was completed in June 1992. An expedited sampling program, based on guidelines in the 400 Area Secondary Cooling Water SAP, was scheduled and implemented in September, 1992. These data were incorporated into the SWD permit application.

## 4.2 SCHEDULING FOR COMPLETION AND IMPLEMENTATION OF BAT/AKART EVALUATIONS/240 ENGINEERING REPORTS

The BAT/AKART evaluations and 240 engineering reports (where required) for all W-252 streams were submitted to WHC/DOE for review in April, 1992, except the 241-AY/AZ Tank Farm Steam Condensate. Draft 240 engineering reports were submitted to WHC/DOE in June, 1992, and submittal of final 240 engineering reports to Ecology was scheduled for September 1992. Final approval of the 240 engineering reports was scheduled for December, 1992 (Table 1).

Based on currently proposed review cycles for first draft submittals of the SWD permit applications, it will be necessary to incorporate BAT/AKART data into the SWD permit applications by midyear, 1993. However, the implementation of BAT/AKART (where necessary) prior to permit submittal will be dependant upon the complexity of the technology proposed. It is unlikely that all BAT/AKART will be implemented prior to submittal of the SWD permit applications. In addition, as noted in Section 4.1, implementation of the 240 engineering reports may also result in additional modifications to the SAPs. As a result of these discrepancies, SWD permit applications for the W-252 streams will, in at least some cases, have to be submitted to Ecology prior to implementation of BAT/AKART. For those effluent streams requiring BAT/AKART implementation, this will result in a conflict with the intent of the SWD permit application AKART requirements in WAC 173-216-110. In order to meet the *216 Consent Order* milestone dates for approval of SWD permit applications for the W-252 streams, it will likely be necessary for Ecology to approve SWD permit applications for streams without BAT/AKART in place. In addition, it may be necessary to make a determination as to the adequacy of the existing sample data used to develop the BAT/AKART evaluations and 240 engineering reports.

### 4.2.1 400 Area Secondary Cooling Water BAT/AKART Evaluation/240 Engineering Report

The *216 Consent Order* milestone date for the final approved SWD permit application for the 400 Area Secondary Cooling Water was December, 1992 (Table 1). The BAT/AKART evaluation for the 400 Area Secondary Cooling Water recommended no further action for this stream, and therefore had little impact on the submittal of the SWD permit application. Ecology has not, however, approved the evaluation as yet. Should Ecology determine that further BAT/AKART implementation is required, an agreement will have to be reached with Ecology as to what interim requirements and approval will be sufficient for the SWD permit application, as discussed in Section 4.2.

## 4.3 SCHEDULING FOR COMPLETION AND IMPLEMENTATION OF GROUNDWATER IMPACT ASSESSMENTS

There are three disposal sites identified for the W-252 streams, excluding the 241-AY/AZ Tank Farm Steam Condensate. The 100-D Ponds receive liquid effluent from the 183-D Filter Backwash, and the 400 Area Ponds receive the 400 Area Secondary Cooling Water. The remaining six W-252 streams discharge to the 216-B-3 Pond System (Table 1).

Groundwater impact assessments are scheduled for each of these three disposal sites. The 400 Area Secondary Cooling Water groundwater impact assessment (see Section 4.3.1) has been completed. Submittal of the 100-D Ponds groundwater impact assessment to WHC/DOE is scheduled for May 1993, which will allow sufficient time for the data to be incorporated into the associated SWD permit applications. However, prioritization concerns and projected budget constraints have resulted in a projected submittal date of the 216-B-3 Pond System groundwater impact assessment to WHC/DOE in November, 1994. As a result, groundwater impact assessment data will not be available for incorporation into the associated SWD permit applications, so the most current data available at that time will be used. While these groundwater impact

assessments are proposed as TPA requirements under milestone M-17-13 of the proposed *M-17 Change Package*, they are not required for the 216 permit application either in the application itself, nor in the *216 Consent Order*. Therefore, preparation and approval of permit applications are not contingent upon the completion of groundwater impact assessments. As a result, and as in the case of the 216-B-3 Pond System, existing regional hydrogeological data will be incorporated into the permit applications, except in cases where the groundwater impact assessments have been completed in sufficient time for the data to be incorporated into the permitting process.

#### 4.3.1 400 Area Secondary Cooling Water Groundwater Impact Assessments

The disposal sites for the 400 Area Secondary Cooling Water liquid effluent stream are the 400 Area Ponds (Table 1). These disposal sites are designated as category 1, indicating that sufficient data existed to conduct a groundwater impact assessment. The groundwater impact assessment for the 400 Area Ponds has been completed and the pertinent data was incorporated into the SWD permit application.

## 5.0 CONCLUSIONS

In an August 16, 1991 letter (Ecology 1991) to DOE regarding review of liquid effluent SAPs, Ecology stated the following:

"It is worthy to note that the 216 permitting process negotiated and the complexity of the Hanford facility does not lend itself to the standard permit application review process. However, this does not relieve the USDOE from any of the regulatory requirements; it merely recognizes that different elements of the process may be out of sequence."

The evaluation conducted in Section 4.0 demonstrates that many of the elements that contribute to the development of the 216 permit will, in fact, be out of sequence for the W-252 streams, if DOE is to adhere to the current *216 Consent Order* permit milestones. As a result, it may be necessary to incorporate existing waste stream and groundwater characterization data into the permit applications, pending the implementation of SAPs, BAT/AKART evaluations/240 engineering reports, and groundwater impact assessments currently in progress.

In order for SWD permit applications to be submitted within the current *216 Consent Order* milestone time frame, the following steps must be taken:

- The submittal of all pertinent data resulting from SAP implementation, BAT/AKART evaluations/240 engineering reports, and completed groundwater impact assessments should be scheduled for Midyear, 1993 (except for the 400 Area) for incorporation into first drafts of the SWD permit applications. To do so, achievable "work-around" solutions, such as expedited sampling and analysis schedules, may have to be developed and implemented. In cases where such solutions are not feasible, existing data will be incorporated into the SWD permit application.
- The assessment plan and the groundwater impact assessment for the 100-D ponds should be initiated as soon as possible. Well installation at the B pond disposal site should also begin immediately, and the wells at both B Pond and the D Ponds should be sampled as soon as possible, so that the samples can be analyzed and the validated results incorporated into the groundwater impact assessment, as well as into the SWD permit applications. In the case of the 216-B-3 Pond System where the groundwater impact assessment is scheduled for

completion in November 1994, existing regional hydrogeological data will be used since preparation and approval of SWD permit applications are not contingent upon the completion of the groundwater impact assessments.

- Agreement should be sought with Ecology that approval of a SAP for a specific waste stream waives the analytical parameter requirements listed in Section E of the SWD permit application.

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