

not occur under proposed IWS conditions (see Appendix Z). This analysis confirmed that zero overflows occur when the 50-year KCRTS period of record is simulated for the conditions described in Table 4-2. If any future additional diversion to the IWS is proposed, then the performance of the IWS system will be evaluated prior to the diversion to verify that SMP performance standards are met.

**Table 4-2. IWS configuration (land use, storage, treatment rate, discharge rate, number of overflows)**

Parameter	Value
<b>Land Use</b>	
Till Grass	16.53 acres
Outwash Grass	8.16 acres
Airport Fill	0.01 acres
Wetland	0.01 acres
Impervious Area	<u>410.00 acres</u>
<b>TOTAL</b>	<b>434.71 acres<sup>a</sup></b>
<b>Storage Volume</b>	
Lagoon 1	1.6 mg
Lagoon 2	3.3 mg
Lagoon 3	<u>72.0 mg</u>
<b>TOTAL</b>	<b>76.9 mg</b>
<b>Outfall Discharge Capacity</b>	<b>7.1 mgd</b>
<b>Treatment Rate</b>	<b>4.0 mgd</b>
<b>Number of Overflows in 50-year Simulation</b>	<b>0</b>
<b>Treatment Rate at Which One Overflow Occurs</b>	<b>3.1 mgd</b>
<b>Treatment Rate at Which Two Overflows Occur</b>	<b>2.4 mgd</b>

<sup>a</sup> Although all major planned additions to the IWS are included, this area conservatively includes approximately 16 acres of impervious area to account for future unplanned additions to the IWS.

To demonstrate IWS performance at reduced treatment rates, an analysis was also performed to determine the treatment rates at which one and two overflows would occur over the 50-year KCRTS period of record, with all other future conditions (Table 4-2) held constant (see Appendix Z). This analysis determined that one overflow would occur at a treatment rate of approximately 3.1 mgd, and two overflows would occur at a treatment rate of approximately 2.4 mgd.

If the safe storage capacity of IWS storage is exceeded during extreme precipitation events untreated water would have to be released to Des Moines Creek. This has occurred only once under



the current configuration of the IWS, during an extreme rain-on-snow event in December 1996-January 1997. The release lasted only a few hours. No petroleum hydrocarbons were detected downstream of the release. As stated above, increased storage capacity and treatment rate will prevent overflows.