

## **DRAFT FOR REVIEW AND COMMENT**

### **Guidance for Implementing the 2011 Revised**

### **MDNR Health Profile Regulation 10 CSR 25-7.264(2)(P)**

#### **I. Health Profile Law & Regulation Background**

For over two decades, Health Profiles have been required by Missouri Hazardous Waste Management Law section 260.395.7(5), RSMo as part of a hazardous waste treatment or land disposal facility permit application. The purpose of the Health Profile is to examine and document the potential for health effects on people in the surrounding communities that could be attributable to environmental contamination from hazardous waste management activities from these types of units.

The earlier regulation to this statute outlined the types of information about the illnesses occurring in the population surrounding the facility that were to be gathered and evaluated. The revised regulation takes into account additional and overlapping information used in the permitting process which documents potential for exposures.

#### **II. What is a Health Profile?**

A Health Profile is a document used by the Missouri Department of Natural Resources (MDNR) and the Missouri Department of Health and Senior Services (DHSS) to further evaluate information about the regulated units and corresponding activities at active hazardous waste treatment or land disposal facilities. A Health Profile is used to evaluate impacts associated with actual or potential releases of hazardous constituents to the surrounding environment that could affect human health. The impacts are dependent on first understanding the potential for exposure. A Health Profile can use information from other components of a hazardous waste permit application, or new/supplementary information. The following provides a list of the types of information that facilities and the agency reviewer(s) may need to complete the Health Profile. One or more of these may be pertinent to each unique facility and the hazardous waste treatment or land disposal unit(s) being addressed in the Health Profile:

- Description of hazardous waste treatment and/or land disposal unit(s) at the facility;
- Description of associated activities at those units;
- List of hazardous wastes/ hazardous constituents accepted by or managed in the units;
- Potential exposure pathways if hazardous constituents are released to the environment;
- Actions taken or controls in place to eliminate potential exposure pathways;
- Facility emission or monitoring data;
- Inspection activities for the units;
- Description of land use near the facility; and/or
- Population information for property in the immediate vicinity of the facility.

This type of information can exist in various sources, for example:

- Part A Permit Application;
- Part B Permit Application: Facility Description, Process Information, Waste Analysis Plan, Inspections, Procedures to Prevent Hazards sections, etc.;
- Air or Water permits, permit applications, sampling reports or other emission information;
- Previous information or reports from evaluation(s) of risk or health; and/or
- Corrective action investigation information (RCRA Facility Investigation Reports, annual groundwater monitoring reports, risk assessments and other environmental sampling or remediation reports).

The Health Profile and corresponding application information is reviewed and used by the agency to determine whether additional permit requirements are necessary to ensure protection of human health beyond the facility property boundaries, or if existing controls including permitted emission limits are adequate. The Health Profile assesses the potential for release and associated potential exposures/adverse health effects to the public from operation of the subject units.

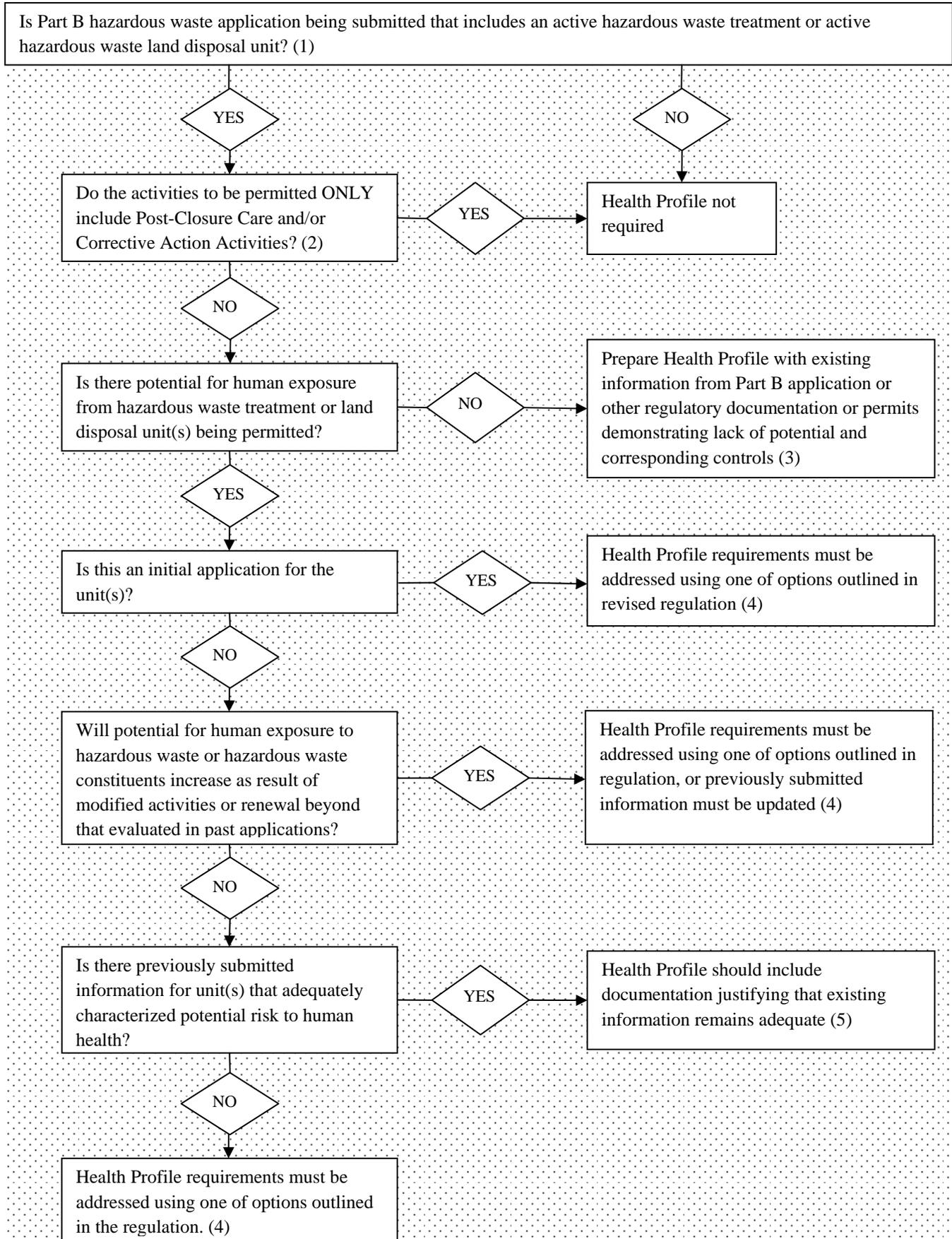
As described in Section IV, the revised rules allow options to address the Health Profile. The facility may prepare and submit the Health Profile information or a workplan as part of the hazardous waste permit application. Alternatively, a facility has the option to provide certain information (described in further sections) and request DHSS to prepare a Health Evaluation. DHSS will bill the facility directly for this evaluation.

### **III. Does my facility need to submit a Health Profile?**

Each facility that submits a permit application that includes active hazardous waste treatment and/or hazardous waste land disposal activities must address the requirement for a Health Profile in the permit application package using one of the options provided in the revised regulation. The type of information required may range from assembling basic application information on the unit to demonstrating the lack of potential human exposures. Current operations and controls can be used to document how previously submitted information remains adequate and is still representative for a permit modification/renewal or a newly-generated Health Profile. Each submittal must address the Health Profile requirements using one of the options as updated in the revised regulation. The section of the permit application that addresses the Health Profile requirement will be shared by MDNR with the DHSS or to U.S. EPA Region 7, as appropriate, for review during the permitting process.

The following flowchart can be used to help determine the options that can be used for each type of unit as the Health Profile portion of the facility hazardous waste permit application. Also refer to the numbered flowchart notes on the following page.

## Flow Chart for Health Profile Regulation



## Notes to the Flowchart

1. Examples of activities and units that are not considered hazardous waste treatment or land disposal and do not require a Health Profile. Process codes, if applicable, are also listed:
  - Remedial actions
  - Container storage (S01)
  - Containment building storage (S06)
  - Tank storage without blending (S02)
  - Drip pads (S05)
  - Exempt Wastewater Treatment Units exempted from hazardous waste permit requirements as 40 CFR 270.1(c)(2)
    - If a unit treated groundwater and then discharged the water, the unit would not be considered a treatment unit because it would be required to be permitted as a water discharge unit.
  - Other storage without treatment (S99)

If applying for a permit for one or more of these activities or units, facilities should contact the agency's permit writer to be sure that a Health Profile is not needed and note the facility's status with respect to the Health Profile on the application checklist.

2. Activities exempted from the requirement to submit a Health Profile when these are the only activities being permitted at the facility:
  - Post-closure care
  - Corrective action
3. Hazardous waste treatment units that are anticipated to have little to no potential risk to human health may include information (or references to information) from other sections of the Part B application, or include information from other permits/documentation. Examples of such units include treatment tanks and pug mills.
4. A Health Profile or a workplan must be prepared as part of the Part B permit application as described in Section IV. For a permit renewal or permit modification, an update to previously submitted information can be used to address information requirements for specific units.
5. Previously-submitted information that is intended to fulfill requirements for a Health Profile should meet all of the following conditions:
  - The Part B application submitted is a renewal or modification of an existing permit;
  - The previously-submitted information was approved by the appropriate agency;
  - Changes to the unit(s) in the permit renewal or modification will not result in an increase in the potential for human exposure to hazardous waste or hazardous constituents exceeding what was previously evaluated and approved; and,
  - The previously-submitted information adequately addresses potential human exposure to releases of hazardous waste or hazardous constituents at the facility following permit reissuance or implementation of the approved permit modification.

When using previously-submitted information, the Health Profile submittal should include 1) discussion and justification regarding why the information is adequate and does not require significant revisions, and 2) verification that the potential for human exposures to hazardous waste or hazardous constituents does not exceed what was previously evaluated and approved.

#### **IV. Health Profile Requirement Options**

The revised regulation includes several options to address the Health Profile requirements. This section introduces the options that can be utilized depending on the type of unit being permitted/re-permitted. Key is the facility's ability to rely on information already required to be submitted with the hazardous waste facility permit application or from other permits/documentation. Where pertinent information is already included in the permit application (such as technical/engineering controls and specifications, etc.) and is being reviewed by MDNR, the pertinent information is not necessary to duplicate in the Health Profile section<sup>1</sup>. For some types of units, this information can be used to demonstrate that controls are in place to eliminate the potential for exposure pathways, thereby eliminating the potential for human exposure. This option is discussed further in Section V. Note that the type of information provided can range from this type of documentation of facility information to a more complex multi-pathway risk assessment, depending on the type of unit and activities.

- Any facility has the option to perform an evaluation of potential risks to human health by examining appropriate exposures to releases of hazardous wastes or hazardous constituents. A workplan that describes how this evaluation will be conducted must first be submitted to MDNR as part of, or prior to, the application submittal. Once MDNR in coordination with the appropriate agency has approved the workplan, the facility can complete and submit the Health Profile. MDNR shall not issue the permit until the final Health Profile process (based on the approved workplan) is complete.
- Facilities subject to the health profile requirement also have the option to request a Health Evaluation performed by the DHSS (billed directly by DHSS). This request should be submitted with, or prior to, the hazardous waste facility permit application. The request shall include information such as: land use and demographics in the immediate vicinity of the facility, a description of the unit, hazardous constituents treated and/or disposed of in the unit, and available monitoring and emission data. Again, much of this information is already included in the Part B permit application. It is important that the facility

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<sup>1</sup> Note that for combustion units, EPA Region 7 provides the technical resources for review, thus the documentation for this type of unit should be included in the Health Profile section directly since it satisfies both 40 CFR 270.10(l)(1) and the Missouri Health Profile requirements. For other types of units, review by DHSS will be part of the approval process. Per the checklist in the Attachment, DNR will review and summarize technical/engineering controls in place. DHSS will review and concur with the DNR summary, in addition to reviewing information such as a description of the unit, hazardous constituents treated and/or disposed of in the unit, available monitoring and emission data and any additional human health evaluation components of the Health Profile, where necessary. Information needed by DHSS that is already elsewhere in the application should be copied and included in the Health Profile section to facilitate DHSS review. The best approach to accomplish this without excessive repetition should be worked out with the assigned permit writer.

coordinate with MDNR/DHSS before permit application submittal to identify appropriate information for submittal under this option. DHSS will then perform a Health Evaluation to identify potential health risks and will make recommendations to MDNR as to whether additional permit requirements are needed. Coordination and communication between the facility, MDNR, and DHSS is necessary throughout the evaluation process.

- For combustion units, there is an additional option to utilize the evaluation criteria presented in 40 CFR 270.10(l)(1), as already required under Federal and Missouri regulations. This regulation was intended to ensure that there are adequate controls in place in the permit to protect human health and the environment. An evaluation that addresses the relevant types of documentation described in §270.10(l)(1) may be utilized/submitted as the Health Profile documentation. This option can also be used for permit modifications and renewals where the applicant intends to demonstrate the adequacy of the previously-submitted information and evaluations.
- For active surface impoundments and landfills, there is the additional option to perform the evaluation described in 40 CFR 270.10(j), as already required under Federal and Missouri regulations. This includes addressing potential pathways of human exposure to hazardous wastes handled by the facility during both normal operations and also during accidental releases. An evaluation that addresses the requirements of §270.10(j) may be utilized/submitted as the Health Profile documentation.
- For all Health Profiles, examples of exposures to be evaluated are dependent on the specific facility/unit conditions and operations, and could include one or more of the following, as warranted: groundwater, surface water, soil, sediment, air emissions, and through the food chain. Only those potential exposures relevant to the particular unit or units at the facility need to be addressed.

**V. Examples of How to Demonstrate Lack of Exposure Pathway**

Since the purpose of the information collected for a Health Profile is to document actual or potential exposures, this section provides examples as to how applicants might document the lack of potential pathways for exposure from various operations, especially for less complex units. If it is demonstrated that a potential exposure pathway is incomplete, potential risk to human health resulting from that exposure pathway is eliminated, and will thus be considered to adequately address the Health Profile requirements for that unit.

a. Treatment

Unit / Process Code	Examples of Potential Pathway	Examples of Demonstration of Pathway Elimination
<b>Tank Blending / Treatment (T01)</b>	Inhalation of Air emissions	Tank systems operated with closed vent system, and compliance with RCRA Subparts BB & CC or corollary air standard

Unit / Process Code	Examples of Potential Pathway	Examples of Demonstration of Pathway Elimination
<b>Tank Blending / Treatment (T01)</b>	Ingestion, dermal or inhalation exposures related to spill/overflow to soil, groundwater and/or surface water	Tank systems operated with regular inspections / overflow automatic cutoff / secondary containment / located inside with curbs and no floor drains
<b>Various Ancillary Equipment</b>	Inhalation of Air emissions	Compliance with RCRA Subpart AA/BB/ or corollary air standard
<b>Surface Impoundment (T02)</b>	Ingestion, dermal or inhalation exposures related to leakage or overflow and migration to soil, groundwater, and/or surface water	Liner system / groundwater and surface water monitoring /oversight / inspections
<b>Surface Impoundment (T02)</b>	Inhalation exposures due to air emissions from aeration treatment	Tarp or other covering/ vapor collection system
<b>Containment Building Treatment (T94)</b>	Ingestion, dermal or inhalation exposures related to spills to soil, groundwater and/or surface water	Secondary containment / curbs around containment area / no floor drains in building/inspection
<b>Containment Building Treatment (T94)</b>	Inhalation exposures due to fugitive air emissions from building	Maintain negative air pressure in building / keep doors closed / inspections
<b>Pug Mill / Drum Shredder / Mechanical Processing (X02)</b>	Ingestion, dermal or inhalation exposures related to spills to soil groundwater and/or surface water from unit	Unit located inside containment building / secondary containment / curbs around containment area / no floor drains in building / inspections
<b>Other treatment process codes that may be addressed include X99 (Other Subpart X) and T04 (Other Treatment)</b>		

b. Active Land Disposal Units

Unit / Process Code	Potential Pathway	Examples of Demonstration of Pathway Elimination
<b>Transportation to landfill or surface impoundment via truck on-site (D80/D83)</b>	Ingestion, dermal or inhalation exposures related to spills to soil groundwater and/or surface water during transportation	Requirement for facility to have a spill response plan
<b>Transportation to landfill or surface impoundment via truck on-site (D80/D83)</b>	Inhalation exposures due to fugitive air emissions from transportation vehicles	Overfill protection, truck inspections, monitoring, stabilization of the waste prior to transport
<b>Landfill (D80)</b>	Ingestion, dermal or inhalation exposures related to leachate leakage or overflow and migration to soil, groundwater, and/or surface water	Double liner and groundwater monitoring / daily cover/ leachate detection / leak response plan/monitoring inspections
<b>Landfill (D80)</b>	Ingestion, dermal or inhalation exposures related to leachate leakage or overflow and migration to surface water	Stormwater controls / monitoring / inspections
<b>Landfill (D80)</b>	Inhalation exposures due to fugitive air emissions	Daily cover, if necessary
<b>Landfill (D80)</b>	Ingestion, dermal or inhalation exposures related to tracking of wastes outside of the unit on transportation equipment and subsequent migration to soil, groundwater, and/or surface water	Tire/vehicular decontamination before leaving unit or other similar controls
<b>Transportation to Land Treatment (D81)</b>	Ingestion, dermal or inhalation exposures related to spills to soil groundwater and/or surface water during transportation	Overfill protection, truck inspections, monitoring, stabilization of the waste prior to transport
<b>Land Treatment (D81)</b>	Inhalation exposures due to fugitive air emissions	Dust suppression or other control measures

Unit / Process Code	Potential Pathway	Examples of Demonstration of Pathway Elimination
<b>Surface Impoundment Disposal (D83)</b>	Ingestion, dermal or inhalation exposures related to fugitive air emissions, liquid leakage or overflow and migration to soil, groundwater, and/or surface water	Doubling liner and leachate detection / collection/ leak response plan / groundwater and surface water monitoring / oversight / inspections

## **VI. Unit Releases and Further Action**

Even if MDNR agrees as part of the permit application review process that the Health Profile requirement has been met for a particular unit or facility, this in no way affects MDNR's ability to require notification and/or further action by the facility in the event of a release from the unit pursuant to the provisions of the permit and applicable regulations. Meeting the Health Profile requirements should not in any way be misconstrued as satisfaction of corrective action requirements for historical and/or new releases to the environment at or from the facility. The Health Profile requirements are tools used to understand and evaluate the potential for unacceptable human exposures to facility-specific hazardous wastes and hazardous constituents associated with normal operation of the facility. If a release occurs from an active hazardous waste treatment or land disposal unit, MDNR may proceed with the normal course of investigation and action under the Missouri Hazardous Waste Management Permit and regulations.

The DHSS may require additional epidemiological investigations if the information provided by the Health Profile indicates the presence of potentially unacceptable human health risks. (10 CSR 25-7.264(2)(P)3)

## **VII. Health Profile Coordination**

MDNR and DHSS agree the most efficient way for a facility to fulfill the Health Profile requirements is to coordinate the effort with the agencies early in the application process. Coordination should first be initiated with the assigned permit writer in the MDNR's Hazardous Waste Program.

### Contact Information:

Missouri Department of Natural Resources  
Hazardous Waste Program  
P.O. Box 176  
Jefferson City, MO 65102  
Phone: 573-751-3176

Missouri Department of Health and Senior Services  
Bureau of Environmental Epidemiology  
P.O. Box 570  
Jefferson City, MO 65102  
Phone: 573-751-6102

## Appendix

### Example Checklist for MDNR and DHSS Approval for Each Applicable Unit

Facility ID	Unit Type	Unit ID	
Health Profile Option Selected		Combustion per 270.10(l)(1)	
		Land Disposal per 270.10(j)	
		Evaluation of Potential Risk by Applicant	
		Health Evaluation by DHSS	
Combustion per 270.10(l)(1) (Reviewed by EPA Region 7)		Date sent by DNR to EPA	
		Date of EPA concurrence	
Land Disposal per 270.10(j)		Date sent by DNR to DHSS	
		Date of DHSS concurrence	
Evaluation of Potential Risk to Human Health by Applicant (can be used for all unit types)  For documentation of prevention of pathways via RCRA Part B engineering controls as described in Section V of the guidance; DNR provides a summary for DHSS concurrence along with supporting information such as land use and demographics in the immediate vicinity of facility, description of the unit, hazardous constituents treated and/or disposed of in unit, and available monitoring and emission data; or for other evaluations additional health evaluation data also provided to DHSS to document health protection for release potential, if necessary.		Date Workplan sent by DNR to DHSS	
		Date of DHSS Workplan concurrence	
		Date DNR engineering controls summary and/or health evaluation data sent by DNR to DHSS	
		Date of DHSS concurrence	
Health Evaluation by DHSS (can be used for all unit types)  Facility information provided to DHSS as basis of Health Evaluation such as: land use and demographics, a description of the unit, hazardous constituents treated and/or disposed of in the unit, and available monitoring and emission data.		Date sent by DNR to DHSS	
		Date of DHSS concurrence	
		Date of DHSS concurrence	