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EPA

Site Inspection Prioritization Guidance

Office of Emergency and Remedial Response
Hazardous Site Evaluation Division (5204G)

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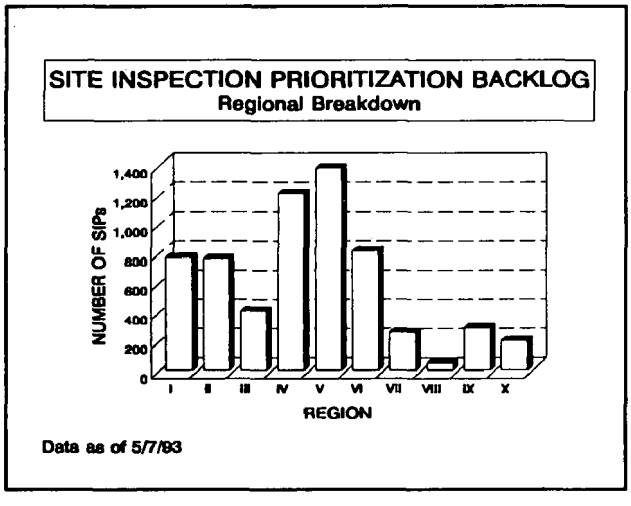
Quick Reference Fact Sheet

The purpose of this fact sheet is to provide guidance to Environmental Protection Agency (EPA), State, and contractor staff responsible for conducting Site Inspection Prioritizations (SIPs). Of the 36,000 sites currently in the Comprehensive Environmental Response, Compensation, and Liability Act Information System (CERCLIS) inventory, approximately 16,700 have undergone Site Inspections (SIs). Of those, however, over 6,000 sites still require final site disposition decisions (*Figure 1*). This backlog has made it difficult for EPA to evaluate sites efficiently on a worst sites first basis. Consequently, EPA established the SIP to address this backlog and to make decisions on these sites.

Figure 1



BACKGROUND

The Superfund Amendments and Reauthorization Act (SARA) of 1986 required that EPA revise the Hazard Ranking System (HRS), the primary mechanism used to list sites on the National Priorities List (NPL). In December 1990, EPA promulgated and published the revised HRS in the Federal Register (55 FR 51532), superseding the original HRS. During a period of transition to the revised HRS, sites were evaluated through the SI stage under the original HRS; however, EPA felt it would be preferable to make final site disposition decisions on these sites after revising the HRS. Information for these sites needs to be updated to evaluate the site using the revised HRS. A final decision may be to list the site on the NPL, make a Site Evaluation Accomplished (SEA) determination, or defer the site to another Federal authority (e.g. Resource Conservation and Recovery Act (RCRA) or Nuclear Regulatory Commission (NRC)). An SEA decision means that, based on currently available information, the site does not meet the criteria for inclusion on the NPL and Federally funded remediation. Sites designated SEA are subsequently referred to the appropriate State agency for any further action.

The goal of the SIP is to gather any additional information necessary, following the completion of the SI, to help set priorities among these sites for NPL listing or to screen them from further Superfund attention. At a minimum, this would generally require gathering data to update the site evaluation and determining whether the HRS score is greater than 28.5. Typical SIP data gathering efforts may

include collecting additional site information (e.g. historical use) and "target" information (e.g., wells within 4 miles, surface water intakes, fisheries and sensitive environments within 15 miles downstream). SIPs may also entail collecting limited samples if this is required to make a screening decision. The number of samples for an SIP should range from a few up to the normal number typically collected for an SI. An SIP should rarely result in the need for further investigation through the Expanded Site Inspection (ESI) stage. ESIs should be reserved for those sites clearly headed for the NPL and where significant fieldwork (e.g., well installation or extensive air monitoring) or other non-routine data collection activities are necessary.

The SIP is a temporary, intermediate step in the Site Assessment program to update old SIs and make screening decisions on a discrete universe of sites using minimal resources. Therefore funding for SIP activities is expected to be available for the next two to four years. The SIP backlog should not continue to grow. Current Preliminary Assessments (PAs) and SIs are being completed according to guidance developed for the revised HRS (see *Guidance for Performing Preliminary Assessments Under CERCLA,* OSWER Directive 9345.1-01A, September 1991 and *Guidance for Performing Site Inspections Under CERCLA*, OSWER Directive 9345.1-05, September 1992). The updated guidance documents recommend the use of intermediate scoring tools (PA Scoresheets, PA-Score, and SI Worksheets) to make screening decisions using site information normally available at the PA and SI stages. These scoring tools typically require less site information and effort to make a screening decision than using PREscore. At the SIP stage the majority of sites should be scored using SI Worksheets at a minimum; however, the decision of which scoring tool (PA Scoresheets, PA-Score, SI Worksheets, or PREscore) to use for SIPs will be made on a site by site basis.

REVISED HRS REQUIREMENTS

EPA revised the HRS to comply with the requirements set forth by SARA. To better assess the relative degree of risk to human health and the environment, EPA modified the approach for evaluating the ground water, surface water, and air migration pathways that were addressed in the original HRS and incorporated a direct exposure pathway (soil exposure) into the composite score used to evaluate sites. In general, the HRS score reflects the risk associated with each pathway by estimating: (1) the likelihood of a release of hazardous substances; (2) the quantity and toxicity or other harmful characteristics of on-site wastes; and (3) the risk to both human and environmental targets.

The revised HRS requires more data than the original HRS to evaluate a site. The revised HRS evaluates ground water discharge to surface water, human food chain exposure, soil exposure, and the potential for air release. In addition, the evaluation of risk to ecosystems or environmental targets is broader in the revised HRS than the original HRS, and the calculation of waste quantity is more comprehensive. However, the most crucial information that will need updating for an SIP is the target data. *Table 1* presents a comparison of target needs between the original and the revised HRS models and identifies what information might be missing in old SIs.

SIP UNIVERSE

In general, an SIP should be assigned for non-Federal facility sites which had SIs completed prior to the implementation of the revised HRS and have not received a final NPL decision. SIPs are appropriate where more information is necessary to determine whether a site should be screened out (designated SEA or deferred to another Federal authority), or investigated further for probable inclusion on the NPL. The extent of additional information required to make this final decision and the probability of NPL listing are both important in determining whether an SIP or an ESI is appropriate. SIP candidates are sites with an SI completion date entered into CERCLIS prior to the implementation of the revised HRS (i.e., August 1, 1992) and may include: (1) sites without an event qualifier (i.e., high priority, low priority, SEA, or deferred), or (2) sites with an event qualifier of high or low priority.

Sites may not have event qualifiers due to CERCLIS coding errors. The Region should review file information for these sites to determine whether a decision is possible. Sufficient information may be available to screen out the site from further CERCLA investigation (SEA or defer to another Federal authority). The appropriate event qualifier should then be entered into CERCLIS. If additional

Table 1: Original vs. Revised HRS Target Data Requirements

PATHWAY	ORIGINAL HRS TARGETS	REVISED HRS TARGETS
Ground Water Migration Pathway	• Ground water use • Distance to the nearest well/population served within 3 miles	• Distance from a source to the nearest drinking water well • Population served by drinking water wells within four miles • Apportioned population for blended systems • Resources • Wellhead protection areas
Surface Water Migration Pathway Overland/Flood Migration Component	• Surface water use • Distance to the nearest intake/ population served • Distance to sensitive environment	Drinking Water Threat: • Distance to nearest drinking water intake • Average flow (cubic feet per second) • Population served by drinking water drawn by intakes along the surface water migration pathway within 15 downstream miles • Apportioned population for blended systems • Resources Human Food Chain Threat: • Location of fisheries • Annual harvest (in pounds) of human food chain organisms Environmental Threat: • Location of sensitive environments • Wetlands frontage length (in miles)
Ground Water to Surface Water Migration Component	NA	Same as above New component to the surface water pathway. If both the overland/flood and the ground water to surface water components are scored, the greater of the two component scores is selected.
Soil Exposure Pathway	NA The original HRS included a direct contact pathway, but that pathway was not calculated in the overall HRS migration score.	Resident Population Threat: • Number of individuals who live, work, attend school or day care within property boundaries and within 200 feet of observed contamination • Location of terrestrial sensitive environments within the area of observed contamination • Resources Nearby Population Threat: • Number of individuals who live or attend school within a one-mile travel distance from any source with observed contamination • Attractiveness/accessibility of sources
Air Migration Pathway	• Land use • Population within four miles • Distance to sensitive environments	• Distance from an emission source to the nearest individual • Population within a four-mile radius of sources • Resources within one-half mile of sources • Distance from sources to sensitive environments within four miles of sources • Total wetland acreage within four miles of sources

information is required to make a final decision, either a high priority or low priority recommendation should be entered as the event qualifier (Regional guidance should be consulted to distinguish between high and low priority recommendations). These sites would then fall into the second category of sites.

Sites with high or low priority event qualifiers may still require additional data, either desktop or analytical, to support a revised HRS score. Since the average level of effort per SIP is 190 hours, sites which require significantly more effort to support a final decision (> 550 hours) may not be appropriate for an SIP assignment. If a greater level of effort is required to fill SI data gaps and to support a final decision, particularly if the site is likely to be listed on the NPL, then an ESI may be more appropriate. In general, an ESI should be assigned if extensive fieldwork or unusual data collection activities are required prior to preparing an NPL package. Factors that should be examined to help determine whether an SIP or an ESI should be assigned are provided in *Table 2*. In addition to sites with and without SI event qualifiers, there may be other sites evaluated under the original HRS which need further evaluation via the SIP. This includes sites where an incorrect site decision was made or new file information is made available which might significantly alter the HRS evaluation of the site. The decision as to whether an SIP is appropriate for these sites will be made on a case by case basis. Note, however, that these sites are not included as part of the SIP backlog (*Figure 1*) because site decisions have already been entered into CERCLIS.

SETTING PRIORITIES

Figure 1 shows that some Regions have a very large SIP backlog and may need to incorporate additional measures to set priorities among their SIP candidates. One method may be to identify sites located in vulnerable geographic areas. Features that may characterize an area as vulnerable include: population density, geologic and hydrogeologic features, surface water intakes, fisheries, municipal drinking water wells, wetlands, and other considerations. Much of this information is available in existing databases that can be incorporated into a Regional geographic information system (GIS). By plotting these features, sites located in vulnerable areas could then be identified.

The issue of setting priorities is not limited to SIPs. If further investigation is warranted at the conclusion of an SIP, these sites, which are now ESI candidates, must also be prioritized. It is critical to set priorities for ESI candidates, not only to comply with EPA's policy of assessing the worst sites first, but also to allow for the efficient use of limited resources. ESIs consume an average of 1,000 hours; therefore Regions must set priorities for ESI candidates while keeping in mind their budgetary constraints. Regions may use more detailed prioritization schemes to further identify ESI candidates.

Regions are encouraged to investigate their Regional GIS capabilities as well as other prioritization methods, not only to address the SIP backlog, but also to help direct other environmental protection efforts on a worst sites first basis.

Table 2: Factors to Determine SIP or ESI Assignment

SIP	ESI
Limited data are necessary to determine whether or not the site will attain a score greater than the cutoff score for NPL eligibility	Substantial data collection is necessary to prepare NPL quality HRS package (>550 hours)
NPL eligibility is uncertain	Probable NPL site
SI completed but no HRS score calculated	SI score (completed with SI Worksheets) is greater than the cutoff score for NPL eligibility
SI completed but preliminary HRS scoring assumes primary targets without sample results	SI sampling has verified contamination at primary targets; site score is greater than the cutoff score for NPL eligibility

SIPs and SACM

The Superfund Accelerated Cleanup Model (SACM) requires better integration of all Superfund program components to make cleanups more timely and efficient. During an SIP, activities should be coordinated to ensure that data collected support assessment, enforcement, and response activities. The Regional Decision Team (RDT), which is responsible for making site decisions to ensure early risk reduction, will establish the strategy for addressing sites. SIP data collection efforts should be consistent with these strategy decisions.

The basic principles of SACM assessment are built upon the need to eliminate redundancy and expedite the Superfund process. SIPs will help identify priority sites so that EPA resources are expended on sites that require prompt risk reduction. For further information, refer to *Assessing Sites Under SACM - Interim Guidance* OSWER Directive 9203.1-05I, December 1992.

SIP ACTIVITIES

Activities to be conducted for an SIP will depend on the additional information necessary to update the old SI in accordance with current guidance and the revised HRS. In all cases, however, site information must be reexamined to update current site conditions, satisfy revised HRS requirements, and identify the potential need for removal actions (see the next section for further information on identifying potential removal actions during SIPs).

Because activities necessary for SIPs will vary due to the quality and comprehensiveness of site information that is available, three levels have been identified to meet the goal of an SIP as illustrated in *Table 3*.

It is estimated that each SIP will require at least updated HRS scoring; two-thirds will require desktop data collection and updated scoring; and one-third will require desktop data collection, updated scoring, and limited sampling. It is estimated that an SIP will average 190 hours per site. EPA Regional staff will help determine the level of effort necessary for each SIP assigned. The choice of which HRS scoring tool to use (PA Scoresheets, PA-Score, SI Worksheets, or PREscore) will depend on the amount of information available for the site. At a minimum, revised HRS scores must support each SIP decision. Sites with revised HRS scores below the cutoff (28.5) are screened out, and will receive an SEA decision in CERCLIS. Sites with revised HRS scores above the cutoff will be recommended for either an ESI (if extensive information/data collection is still required) or for a full HRS package.

Level A: The first step in conducting an SIP is to generate a revised HRS score. This typically requires collecting new target information for the revised HRS target distance limits (see *Table 1*). This first activity is necessary for <u>all</u> SIPs to generate a site score according to the revised HRS, identify data gaps, and determine whether additional SIP activities (desktop data collection and/or sampling) are necessary to make a final site disposition decision. If desktop data collection and sampling are not necessary, the site's revised HRS score should be documented with these new target data incorporated, and a final site disposition decision should be entered into CERCLIS.

Level B: Most SIPs will likely require the collection of additional site specific desktop data beyond

Table 3: SIP Levels versus SIP Activities

SIP LEVEL	SIP ACTIVITIES	APPROXIMATE TOTAL HOURS
LEVEL A	• Updated (revised HRS) scoring	40 - 60
LEVEL B	• Updated (revised HRS) scoring • Desktop data collection	80 - 100
LEVEL C	• Updated (revised HRS) scoring • Desktop data collection • Limited Sampling	350 - 550

updating a site's target information. Level B SIPs typically include researching and updating site information because site conditions may have changed significantly since the completion of the old SI. All appropriate data sources (EPA, State, municipal, etc.) should be researched to ensure that information is updated for the SIP. The SI Data Summary (Appendix B of the *Guidance for Performing Site Inspections Under CERCLA*) and the Site Assessment Information Directory (SAID) may be useful data collection tools for this task. After this new information is collected, the site's revised HRS score should be documented incorporating this new data, and a final site disposition decision should be entered into CERCLIS.

Level C: It is estimated that approximately one-third of SIPs will require sampling activities in addition to the activities described for Level A or B SIPs. EPA Regional staff will determine the appropriate sampling strategies necessary for Level C SIPs. After sampling activities are conducted, the site's revised HRS score should be documented incorporating the new analytical data, and a final site disposition decision should be entered into CERCLIS.

Site visits may be necessary for Level A, B, or C SIPs to verify and update site conditions, evaluate the need for a potential removal action, identify target information for HRS scoring, and/or conduct sampling activities. As a cost savings measure, Regions should consider scheduling SIPs in geographic clusters so that site visits can be combined. SIP field activities may also be combined with other Site Assessment and integrated assessment field activities.

SIP products will depend on what activities are conducted and will be determined by EPA Regional staff. For example, the final product for an SIP requiring only Level A activities may consist of a brief memo updating site and target information along with completed revised HRS scoresheets. Products for an SIP requiring Level B or C activities may consist of a full report, similar to the SI reporting format, along with completed HRS scoresheets.

SIPs will be tracked in CERCLIS as a subevent of the SI. Refer to the sidebar for the appropriate CERCLIS entry protocols.

CERCLIS Data Entry for SIPs

- Enter the SIP as a subevent (SP) to the last SI.
- The completion date is the date the report is accepted by the Region and a disposition (event qualifier) is made on the report.
- Replace the last SI event qualifier with the new SIP event qualifier (Higher, Lower, Deferred, or SEA).

Only sites where the last SI completion date is prior to August 1, 1992 are eligible for SIPs. Sites with SI qualifier "N" or "D" are not eligible for SIPs unless new information relevant to the decision becomes available.

IDENTIFYING POTENTIAL REMOVAL ACTIONS DURING SIPs

SIP field activities can be very useful in identifying sites where a potential removal action may be necessary. Removals are relatively short-term actions, compared to the long-term remedial solutions that the NPL addresses. Removal actions are designed to respond to situations that require immediate action to eliminate a present threat or to avoid a more serious future problem (for example, containing leaking drums of hazardous substances to prevent ground water contamination). Removal actions can be of an emergency, time-critical, or non-time-critical nature and can include, but are not limited to, any of the following (see *Superfund Removal Procedures*, OSWER Directive 9360.3-01, February 1988):

- Fencing the site
- Providing 24 hour security to restrict public access
- Stabilizing waste sources such as leaking drums or overflowing surface impoundments
- Physical removal of hazardous substances
- Capping areas of obvious contamination
- Assessing the need to temporarily relocate populations
- Providing alternative drinking water supplies

Table 4 outlines the factors that EPA considers in determining the appropriateness of a removal action pursuant to section 300.415(b) of the National Oil and Hazardous Substances Pollution Contingency Plan, commonly known as the NCP (40 CFR Part 300).

Under the revised HRS, waste removals may be considered for HRS scoring purposes under certain circumstances. For more information concerning the requirements for considering removal actions, refer to *The Revised Hazard Ranking System: Evaluating Sites After Waste Removals*, OSWER Directive 9345.1-03FS, October 1991.

SIP SAMPLING

Because SIPs that include sampling will require significantly more hours, some analysis should be conducted to determine if sampling is critical for making a final decision. For example, if a preliminary site score is 28.5 or greater, all targets for which actual contamination (level I and II) is suspected should be identified. By examining various scoring scenarios, the site score should be tested to determine whether the site score will fall below the 28.5 cutoff for NPL eligibility if the targets with suspected actual contamination are scored as potentially contaminated. If the site score falls below 28.5 with this modification, sampling is necessary to verify the suspected contamination of the target receptors. If the site score remains 28.5 or greater, sampling may not be necessary. On the rare occasion where an SIP results in the need for further investigation via an ESI, new data obtained from samples collected for the SIP may help set priorities for sites needing further work.

For additional information concerning sampling guidance for the revised HRS requirements, refer to *Guidance for Performing Site Inspections Under CERCLA*, OSWER Directive 9345.1-05 and the *Hazard Ranking System Guidance Manual*, OSWER Directive 9345.1-07.

In summary, the goal of the SIP is to gather any additional information necessary, following the completion of the SI, to make decisions on this discrete universe of sites. Activities conducted for an SIP should be consistent with current guidance, including SACM, and should result in sites being either removed from further Superfund attention or recommended for NPL package preparation.

EPA developed the SIP as a cost effective, intermediate step in the Site Assessment process to screen out less serious problems and expedite action at sites that require additional Superfund response. Site priorities must continue to be set on a worst first basis to ensure that Superfund cleanups are timely and efficient.

Table 4: Removal Action Criteria

1.	Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances or pollutants or contaminants;
2.	Actual or potential contamination of drinking water supplies or sensitive ecosystems;
3.	Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release;
4.	High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate;
5.	Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released;
6.	Threat of fire or explosion;
7.	The availability of other appropriate Federal or State response mechanisms to respond to the release; and
8.	Other situations or factors that may pose threats to public health or welfare or the environment.

REFERENCES

U.S. Environmental Protection Agency, 1988. Superfund Removal Procedures, OSWER Directive 9360.3-01.

U.S. Environmental Protection Agency, 1990. Hazard Ranking System, Final Rule, 55 FR 51532, December 14, 1990.

U.S. Environmental Protection Agency, 1990. National Oil and Hazardous Substances Pollution Contingency Plan. 40 CFR Part 300. 55 FR 8666, March 8, 1990.

U.S. Environmental Protection Agency, 1991. Guidance for Performing Preliminary Assessments Under CERCLA, OSWER Directive 9345.0-01A.

U.S. Environmental Protection Agency, 1991. Revised Hazard Ranking System: Evaluating Sites After Waste Removals, OSWER Directive 9345.1-03FS.

U.S. Environmental Protection Agency, 1991. Site Assessment Information Directory (SAID), October 31, 1991.

U.S. Environmental Protection Agency, 1992. Assessing Sites Under SACM—Interim Guidance, OSWER Directive 9203.1-05I.

U.S. Environmental Protection Agency, 1992. Guidance for Performing Site Inspections Under CERCLA, OSWER Directive 9345.1-05.

U.S. Environmental Protection Agency, 1992. Hazard Ranking System Guidance Manual, OSWER Directive 9345.1-07.

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