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Glossary

EDMC

Basin - excavated lined area to hold fluids until they evaporate or until radioactive decay reduces their activities to levels permissible for release.

Burial Ground - land area specifically designated to receive contaminated waste packages and equipment, usually in unlined trenches covered with overburden.

Byproduct Material - 1) any radioactive material (except special nuclear material) yielded in or made radioactive by exposure to the radiation incident to the process of producing or utilizing special nuclear material, and 2) the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content. (See also Low-level Waste.)

Canister - the primary metal envelope for remote-handled solid transuranic waste, high-level waste, or spent fuel. The canister affords physical containment for the waste, but is not primarily designed to provide shielding.

Capsule - stainless-steel cylinder used for containment of strontium or cesium recovered from radioactive wastes.

Carbon Tetrachloride - chlorinated organic solvent used in the plutonium extraction process at the Plutonium Finishing Plant. Known human liver carcinogen via inhalation and ingestion. Can damage the central nervous system.

Cask - a specially designed container used for shipping, storage, and/or disposal of radioactive material that affords protection from accidents and provides shielding for the radioactive material.

CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act. also known as "Superfund;" this is a federal law that establishes the regulatory approach for cleanup of hazardous substances that could endanger human health or the environment.

Cesium 137 (Cs-137) - A gamma emitting radioisotope with a half-life of 30 years. Cesium 137 is generated during fission of uranium-235.

Characterization - a process for determining the chemical, physical, and radiological constituents of wastes.

Class A & B Waste - low-level radioactive wastes requiring institutional control for 100 years, after which they are assumed to have decayed to the point where they present an acceptable hazard to any intruder.

Class C Waste - low-level radioactive wastes requiring isolation for 500 years, after which they are assumed to present an acceptable hazard to an intruder. Class C wastes must be stabilized prior to disposal.

Cleanup - environmental remediation and waste management activities required to remove, isolate, treat, stabilize, or contain contamination resulting from past practices in order to reduce associated risks.

Contamination - measured concentration of an undesirable chemical or radionuclides that is above the normal or background level.

Decontamination and Decommissioning - process of removing contamination from facilities or equipment by washing, chemical action, mechanical cleaning, or other techniques; then removing facility or equipment from operation; and entombing, dismantling and removing, or converting the facility for another use.

Disposal - the isolation radioactive wastes from the biosphere inhabited by humans and containing their food chain by emplacement in a land disposal facility without maintenance and with no intent of retrieval, and requiring deliberate action to gain access after emplacement.

DOE-RL - Richland Operations Office of USDOE.

Double-shell Tank - reinforced concrete underground vessel with two inner steel liners to provide containment and backup containment of liquid wastes.

Ecology - Washington State Department of Ecology.

EIS - Environmental Impact Statement.

Environmental Restoration - cleanup and restoration of sites contaminated with hazardous substances during past production or disposal activities.

EPA - U.S. Environmental Protection Agency.

Expedited Response Action - given a more immediate threat to human health or the environment, old waste sites under CERCLA may be cleaned up more quickly by bypassing some interim reviews and paperwork. Final disposition of these sites is done via a CERCLA Record of Decision for the entire operable unit.

Fission - the splitting or breaking apart of a heavy atom such as uranium. When a uranium atom is split, large amounts of energy and one or more neutrons are released.

Fuel - fissionable material used as the source of power when placed in a criticality arrangement in a nuclear reactor.

Groundwater - a water-saturated region below the land surface.

Grout - a cementitious waste form which consists of mixing dry-blended materials with double-shell tank waste to a specific grout formulation, for near-surface disposal; it is used for waste fixation and immobilization.

Hazardous Waste - non-radioactive chemical toxins or otherwise potentially dangerous materials defined by RCRA.

High-level Waste/High level Radioactive Waste (HLW) - the highly radioactive waste material resulting from the reprocessing of spent nuclear fuel, including liquid waste produced directly in reprocessing and any solid waste derived from such liquid waste that contains fission products in sufficient concentrations as to require permanent isolation. Includes also other highly radioactive material that the Nuclear Regulatory Commission determines by rule requires permanent isolation.

Immobilization - a process that prepares waste for disposal.

Interim stabilization - a process that removes liquid from a single-shell tank until less than 190,000 liters (50,000 gallons) of drainable interstitial liquid and less than 19,000 liters (5,000 gallons) of supernatant remain.

Iodine 129 (I-129) - gamma emitting radioisotope with a half-life of 15,700,000 years. It is generated during the fission of uranium-235.

K Basins - basins in the K reactor area used for storage of spent fuel rods immersed in water. See "Basin."

Low-level Waste (LLW) - any radioactive waste not classified as high-level waste, transuranic waste, spent nuclear fuel, or byproduct material. (See also High-level Waste, Transuranic Waste, and Byproduct Material.)

Mixed Waste - waste that is both radioactive and hazardous.

Monitored Retrievable Storage - a concept for interim storage of waste or spent fuel. The waste would be continuously monitored and would be stored in such a way that it could be retrieved at a later date.

National Environmental Policy Act - established requirement for conducting environmental reviews of Federal actions that may have a significant impact the environment.

Nuclear Reactor - device which sustains a chain of fission events that can be maintained and controlled to meet a particular purpose.

Performance Assessment - a systematic radiological analysis of the potential risks posed by waste management systems to the public and environment and a comparison of those risks to established performance objectives.

Plume - a distribution of contaminants a distance away from a point source in a medium like groundwater or soil; a defined area of contamination.

Pretreatment - Processing of waste stored in tanks to separate it into high-level and low-level waste fractions.

Radioactive Half-life - The time it takes for one half of the radioactive atoms present to decay. After seven half-lives, the activity will be less than 1% of the original activity.

Radioactive Waste - solid, liquid, or gaseous material of negligible economic value that contains radionuclides in excess of threshold quantities. It does not include material contaminated by radionuclides from nuclear weapons testing.

Radioactivity - property of certain nuclides of emitting particles or electromagnetic radiation while undergoing nuclear transformations.

RCRA - Resource Conservation and Recovery Act; federal law regulating generation, transportation, treatment, storage, and disposal of hazardous wastes and remediation of waste sites currently in use.

Record of Decision - (ROD) - (1) under CERCLA, the official document used to select the method of remedial action and cleanup goals to be implemented at a particular contaminated site; (2) under the National Environmental Policy Act (NEPA), the official document describing an agency's final choice among alternatives that have been the subject of study in an Environmental Impact Statement.

Remediation - removing or correcting a condition, such as by removing or isolating contaminated material.

Repository - a place for the permanent disposal of radioactive wastes in an engineered facility in an underground geologic formation.

Retrieval - removal of liquid and solid wastes from storage tanks.

Single-shell Tank - older Hanford high-level waste underground tank composed of a single carbon steel liner surrounded by concrete.

Spent Nuclear Fuel - fuel elements withdrawn from a nuclear reactor following irradiation.

Stabilization - treatment of tank waste to protect the environment from contamination.

Strontium 90 - heavy radioactive isotope of strontium that is hazardous because it can be assimilated by and deposited in the bones of organisms much like calcium. It is a beta emitter with a half life of 28.6 years. The primary source of strontium 90 to Hanford entering the Columbia River has been the 100N Area liquid waste disposal facilities, which are known to discharge to the river via ground water seepage.

Superfund - see CERCLA.

TPA - Tri-Party Agreement.

TWRS - Tank Waste Remediation System.

Technetium 99 (Tc-99) - A pure beta emitting radioisotope with a half-life of 212,000 years. Technetium 99 is generated during the fission of uranium-235.

Transuranic (TRU) Waste - waste containing radionuclides with an atomic number greater than that of uranium, with a half-life of "more than 20 years, and in concentrations greater than 100 nanoCuries (nCi) per gram of waste. Typically, these wastes do not have much penetrating radiation, but they require isolation because they remain radioactive for a long time and are very damaging to internal tissue.

Treatment - an activity that alters the chemical or physical nature of hazardous or radioactive waste to reduce its toxicity, volume, and/or mobility.

Tri-Party Agreement [Hanford Federal Facility Agreement and Consent Order] - agreement signed in 1989 by USDOE, EPA, and Washington State Department of Ecology that identifies milestones for bringing Hanford into compliance with CERCLA/RCRA.

Tritium - radioactive isotope of hydrogen.

Uranium - heavy radioactive element naturally occurring in isotopes of U^{234} , U^{235} , and U^{238} . Fuel for nuclear weapons.

USDOE - U.S. Department of Energy.

Vadose Zone - unsaturated region of soil between the ground surface and the water table.

Vault - type of structure constructed out of concrete to store a variety of nuclear materials.

Vitrification - method of immobilizing radioactive waste for eventual disposal in a geologic repository; involves adding frit and waste to a joule-heated vessel and melting it into a glass that is then poured into a canister.

Waste Management - activities involving the short-term or long-term storage or isolation of existing or newly-generated wastes, treatment, and final disposal of wastes.

ALE - Arid Lands Ecology Reserve.

Basin - excavated lined area to hold fluids until they evaporate or until radioactive decay reduces their activities to levels permissible for release.

Buffer - a term used by the Working Group to refer to a part of the site that surrounds an "exclusive" area that would be treated like an "exclusive" area because of risk emanating from the "exclusive" area it abuts. Environmental restoration activities would occur in buffers, but waste management activities would not. A buffer area would not be expected to remain a buffer area forever.

Burial Ground - land area specifically designated to receive contaminated waste packages and equipment, usually in unlined trenches covered with overburden.

Capsule - stainless-steel cylinder used for containment of strontium or cesium recovered from radioactive wastes.

Carbon Tetrachloride - chlorinated organic solvent used in the plutonium extraction process at the Plutonium Finishing Plant. Known human liver carcinogen via inhalation and ingestion. Can damage central nervous system.

CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act, also known as "Superfund;" this is a federal law that provides authority for cleanup of hazardous substances that could endanger human health or the environment.

Cleanup - environmental restoration and waste management activities required to remove, isolate, treat, stabilize or contain contamination resulting from past practices in order to reduce associated risks.

Cleanup Scenario - description that identifies distinct levels of "access," based on the presence of contamination, to the air, the surface, the subsurface and the groundwater needed to allow future use options to occur. The levels of access used by the Working Group are "unrestricted," "restricted," "exclusive," and "buffer."

Contamination - measured concentration of an undesirable chemical that is above the normal or background level.

Decontamination and Decommissioning - process of removing contamination from facilities or equipment by washing, chemical action, mechanical cleaning, or other techniques; then removing facility or equipment from operation- and entombing, dismantling and removing, or converting the facility for another use.

Disposal - emplacement of waste so as to ensure isolation from the biosphere without maintenance and with no intent of retrieval, and requiring deliberate action to gain access after emplacement.

DOE - U.S. Department of Energy.

DOE-RL - Richland Operation Office of DOE.

Double-shell Tank - reinforced concrete underground vessel with two inner steel liners to provide containment and backup containment of liquid wastes; space between the shells contains instruments to detect leaks from inner liner.

EIS - Environmental Impact Statement

Environmental Restoration - cleanup and restoration of sites contaminated with hazardous substances during past production or disposal activities.

EPA - U.S. Environmental Protection Agency.

Exclusive - term used by the Working Group to mean an area where access would be restricted because of risk to personnel who were trained and monitored for working with radioactive or hazardous materials.

Expedited Response Action - given a more immediate threat to human health or the environment, under CERCLA, old waste sites may be cleaned up more quickly by bypassing some interim reviews and paperwork. Final disposition of these sites is done via a CERCLA Record of Decisions for the entire operable unit.

Fast Flux Test Facility - liquid metal reactor used to test advanced reactor technology.

FFTF - Fast Flux Test Facility.

Fuel - fissionable material used as the source of power when placed in a critical arrangement in a nuclear reactor.

Future Use Option - as used by the Working Group, a generic proposal for how an area of the site might be used in the future. The viability of future use options depends upon specific levels of access (see Cleanup Scenario) which would have implications for the degree of cleanup.

Groundwater - a water-saturated region below the land surface.

Grout - a fluid mixture of cement-like materials and liquid waste that sets up as a solid mass and is used.

Hanford Defense Waste EIS - Environmental Impact Statement completed in 1987 by DOE-RL (DOE/EIS-0113) that examined the potential impacts for management of defense-related wastes at Hanford. On the basis of this EIS, DOE decided to pretreat double-shell tank wastes, vitrify the high-level portion for disposal in an off-site repository and, solidify the low-level portion for on-site burial; continue to store the cesium and strontium capsules for disposal in a geologic repository; and build a facility to prepare certain types of transuranic waste to be sent for off-site disposal.

Hanford Reach EIS - Environmental Impact Statement and River conservation study being prepared by the National Park Service in accordance with Public Law 100-605. The draft EIS was issued in June 1992, and evaluates a range of alternatives for protection of the Hanford Reach of the Columbia River (a 51 mile segment of the river extending from one mile below Priest Rapids Dam, to the McNary pool north of Richland).

Hazardous Waste - non-radioactive chemical toxins or other wise potentially dangerous materials defined by RCRA.

Hanford Remedial Action EIS (HRA-EIS) - Environmental Impact Statement being prepared by the U.S. Department of Energy Richland Office. The HRA-EIS will evaluate a range of cleanup approaches and technologies and their application to various site conditions to estimate the potential cumulative impacts associated with the different alternatives for environmental remediation. A scoping notice for this EIS was published in the Federal Register August 21, 1992.

High-level Waste - the highly radioactive waste material that results from the reprocessing of spent nuclear fuel, including liquid waste produced directly in reprocessing and any solid waste derived from the liquid, that contains a combination of TRU waste and fission products in concentrations as to require permanent isolation.

K Basins - basins in the K reactor area used for storage of spent fuel rods immersed in water. See "Basin."

Low-level Waste - radioactive waste not classified as high-level waste, TRU waste, spent nuclear fuel, or byproduct material (see DOE Order 5820.2).

Memorandum of Agreement between the Bureau of Reclamation and the Atomic Energy Commission, February, 1957.

Mixed Waste - waste that is both radioactive and hazardous.

N Reactor - last plutonium production reactor built at Hanford. Operated from 1964 to 1987. Shutdown in 1992.

National Environmental Policy Act - established requirement for conducting environmental reviews of Federal actions that potentially may significantly impact the environment.

NPDES - National Pollutant Discharge Elimination System. Permit system created by the federal Clean Water Act to regulate discharges of pollutants to surface waters of the United States.

Nuclear Reactor - device constructed of fissionable material such that a chain of fission events can be maintained and controlled to meet a particular purpose.

Operable Unit - discrete portion of site consisting of one or more release sites considered together for assessment and cleanup activities. Release sites generally are grouped together in an operable unit based on geographic proximity, similarity of waste characteristics and site type, and the possibilities for economies of scale.

Plume - a distribution of contaminants a distance away from a point source in a medium like groundwater or soil; a defined area of contamination.

Radioactive Waste - solid, liquid, or gaseous material of negligible economic value that contains radionuclides in excess of threshold quantities except for radioactive material from post-weapons-test activities.

Radioactivity - property of certain nuclides of emitting particles or electromagnetic radiation while undergoing nuclear transformations.

RCRA - Resource Conservation and Recovery Act; federal law regulating generation, transportation, treatment, storage, and disposal of hazardous wastes and remediation of waste sites currently in use.

Reactor Decommissioning EIS - Environmental Impact Statement assessing the potential impacts of five alternatives under consideration for the decommissioning of eight plutonium production reactors at Hanford (reactors B, C, D, DR, F, H, KE, and KW)[The N reactor is not addressed because it was not declared surplus at the time the EIS was being prepared.] The draft EIS was issued by DOE-RL in March 1989 (DOE/EIS-01 19D); final F-IS, pending.

Record of Decision (ROD) - (1) under CERCLA, the official document used to select the method of remedial action and cleanup goals to be implemented at a particular contaminated site; (2) under NEPA, the official document describing an agency's final choice among alternatives that have been the subject of study in an Environmental Impact Statement.

Remediation - removing or correcting a condition, such as by removing or isolating contaminated material.

Red Zone - a 1973 designation for a portion of the North of the River geographic area where irrigation is currently prohibited because of the presence of Ringold clay formations that are of low permeability and, when saturated, cause the soils above to, slip. It is believed that any contributions to the upper ground water aquifer in this area would directly affect sloughing of the White Bluffs.

Repository - a place for the permanent disposal of radioactive wastes in an engineered facility in an underground geologic formation.

Restricted - a term used by the Working Group to mean that there would be limits on the use of an area because of contamination. It can apply to the air, surface, subsurface or groundwater. Restricted as a category applied to groundwater does not mean that the groundwater would not ultimately be cleaned up to "unrestricted" status.

Single-shell Tank - older style Hanford high-level waste underground tank composed of a single carbon steel liner surrounded by concrete.

Spent Nuclear Fuel - fuel that has been withdrawn from a nuclear reactor following irradiation, whose constituent elements have not been separated by reprocessing.

Strontium 90 - heavy radioactive isotope of strontium which is hazardous because it can be assimilated by and deposited in the bones of organisms much like calcium. The primary source of strontium 90 attributable to Hanford entering the Columbia River has been the 100-N Area liquid waste disposal facilities, which are known to discharge to the river via groundwater seepage.

Superfund - see CERCLA.

Transuranic Waste - waste containing radionuclides with an atomic number greater than that of uranium, with a half-life of more than 20 years, and in concentrations greater than 100 nanocuries (Nci) per gram of waste. In other words, those wastes contaminated usually with plutonium which do not have much penetrating radiation (a piece of paper or two inches of air will block the radiation) but which require isolation because they remain radioactive for a long time and are very damaging to internal tissue.

Treatment - an activity that alters the chemical or physical nature of hazardous or radioactive waste to reduce its toxicity, volume and/or mobility.

Tri-Party Agreement [Hanford Federal Facility Agreement and Consent Order] - agreement signed in 1989 by DOE, the Environmental Protection Agency, Washington Department of Ecology that identifies milestones for key environmental, restoration and waste management actions.

Tritium - radioactive isotope of hydrogen.

Unrestricted - a term used by the Working Group to mean that contamination would not preclude any human uses of an area.

Uranium - heavy radioactive element naturally occurring in isotopes of U^{234} , U^{235} , and U^{238} . Fuel for nuclear weapons.

Vadose Zone - unsaturated region of soil between the ground surface and the water table.

Vault - type of solid waste structure constructed out of concrete.

Vitrification - method of immobilizing radioactive waste for eventual disposal in a geologic repository; involves adding frit and waste to a joule-heated vessel and melting it into a glass that is then poured into a canister.

Waste Management - activities involving the short-term or long-term storage or isolation of existing or newly-generated wastes, treatment and final disposal of wastes.

WPPSS - Washington Public Power Supply System.

Text item 3: Telecon for working group . . .

Linda, please fax this information to the definitions working group and advise a conference call is being set up for Friday, the 17th at 10:30. We want to finalize the information that will be presented to the trustees on the 28/29th meeting. Meeting shouldn't go much more than an hour. The working group consists of Liz Block, Steve/Geoff, Dirk Dunning, John Hall and myself. I'm not sure that John is partaking in all this since he is no longer working for wildlife. He is working for Battelle, and may want to continue. You might get in touch with him and ask if he wants to sit in on the call to finalize. I'll do the conference call from here, unless Robinson will be out of the office. Can you ck on that for me? Thanks kiddo....

File item 2: NRDA-DEF.WPD 6/15/94 12:46PM

[73] From: Kathleen M Leonard 6/16/94 8:05AM (5712 bytes: 17 ln, 1 fl)

To: Linda C Tunnell

Subject: NRDA Definitions

----- Forwarded with Changes -----

From: Geoff Tallent at Ecology Lacey 6/15/94 12:52PM (4530 bytes: 4 ln, 1 fl)

To: Kathleen M Leonard at ~WHC155

Subject: NRDA Definitions

----- Message Contents -----

Text item 1:

Attached is the file I promised. Feel free to clean it up
or call me if you think anything should be changed.

-Geoff

Hanford Site NRDA Trustee Council
Glossary of Terms

These definitions are intended as working definitions. They reflect the statutory definitions, but they are modified for the purposes of the Hanford Trustees. References to the regulatory definitions are cited for each definition and attached as an appendix.

Acquisition of the Equivalent

The substitution of an injured resource by another resource that provides services of equal value as elaborated in 43 CFR 11.14 (a).

Assessment

The determination of damages for injuries to the natural resources and the services they provide resulting from a release of hazardous substances or the remediation of that release as defined in 43 CFR 11.14 (aa).

Baseline

The condition of the natural resources had no release (or remediation of that release) occurred as defined in 43 CFR 11.14 (e).

Damages

The compensation sought by the trustees for the injury, destruction, or loss of the natural resources, as defined in 43 CFR 11.14 (1).

Injury

Any adverse change in the natural resource resulting from a release. 43 CFR 11.14 (v) defines injury as including "injury," "destruction," and "loss."

Mitigation

The minimization of, or compensation for, impacts to the environment resulting from an action. For natural resource agencies, mitigation is based on specific policies following a defined hierarchy.

Natural Resources

The elements of the environment of interest to the trustees as found in 43 CFR 11.14 (z). Elements of the environment include both the biotic and abiotic components such as plants and animals and soils and groundwater.

Remediation

The reduction or elimination of threatened or continuing releases of hazardous substances through such mechanisms as removal or isolation. See definition of "remedy or remedial action" in 40 CFR 300.5.

Replacement

The substitution of an injured resource by another resource that provides substantially similar services, as elaborated in 43 CFR 11.14 (a).

Restoration

The return of natural resources to their baseline conditions. Restoration and rehabilitation are synonymous under 43 CFR 11.14 (11).

Services

The functions of a natural resource, including the human use of those functions as defined in 43 CFR 11.14 (nn). Functions can be both physical and biological.

Substitution

This term can be used as shorthand for the replacement or acquisition of the equivalent as those terms are defined under 43 CFR 11.14 (ii).

The following terms have been put in a "parking lot" to be defined at a later time.

Risk Assessment

Compensation

Hazardous Substance - Defined in CERCLA 101 (14)

Release - Defined in CERCLA 101 (22)

Mitigation Bank

Buffer

Tiered approach to revegetation

Reclamation - reestablishing vegetation or other natural features to reduce the impacts of a particular disturbance such as erosion or infestation of noxious weeds.

Development of habitat components or native community are not goals under this approach.

Rehabilitation - Reestablishing vegetation or other natural features for particular goals

such as providing habitat for a particular species or improving degraded riparian vegetation at a stream. The project may focus on providing particular services or habitat components, but the goal is not to develop a native community.

Restoration - Reestablishing a native community to provide a fully functioning ecology.

FAX COVER SHEET

Date: June 16, 1994

Page 1 of 3 Pages (Coversheet included)

Fax Number To: 509-765-9043	Fax Number From: 509-376-2816
Name: Liz Block	Name: Linda Tunnell
Phone Number/Location: 509-765-6125	Phone Number/Location: 509-372-3166
Organization: U.S. Fish & Wildlife	Organization: Westinghouse Hanford Company

Message

Liz,

There will be a conference call tomorrow, Friday, June 17, 1994, to discuss the attached definitions. If you get cut off, call 509-376-7411 and ask the operator to be reconnected.

Thanks,
Linda

P.S. Is Dave going to attend the Trustee meeting?

Hanford Site NRDA Trustee Council
Glossary of Terms

These definitions are intended as working definitions. They reflect the statutory definitions, but they are modified for the purposes of the Hanford Trustees. References to the regulatory definitions are cited for each definition and attached as an appendix.

Acquisition of the Equivalent

The substitution of an injured resource by another resource that provides services of equal value as elaborated in 43 CFR 11.14 (a).

Assessment

The determination of damages for injuries to the natural resources and the services they provide resulting from a release of hazardous substances or the remediation of that release as defined in 43 CFR 11.14 (aa).

Baseline

The condition of the natural resources had no release (or remediation of that release) occurred as defined in 43 CFR 11.14 (e).

Damages

The compensation sought by the trustees for the injury, destruction, or loss of the natural resources, as defined in 43 CFR 11.14 (1).

Injury

Any adverse change in the natural resource resulting from a release. 43 CFR 11.14 (v) defines injury as including "injury," "destruction," and "loss."

Mitigation

The minimization of, or compensation for, impacts to the environment resulting from an action. For natural resource agencies, mitigation is based on specific policies following a defined hierarchy.

Natural Resources

The elements of the environment of interest to the trustees as found in 43 CFR 11.14 (z). Elements of the environment include both the biotic and abiotic components such as plants and animals and soils and groundwater.

Remediation

The reduction or elimination of threatened or continuing releases of hazardous substances through such mechanisms as removal or isolation. See definition of "remedy or remedial action" in 40 CFR 300.5.

Replacement

The substitution of an injured resource by another resource that provides substantially similar services, as elaborated in 43 CFR 11.14 (a).

Restoration

The return of natural resources to their baseline conditions. Restoration and rehabilitation are synonymous under 43 CFR 11.14 (11).

Services

The functions of a natural resource, including the human use of those functions as defined in 43 CFR 11.14 (nn). Functions can be both physical and biological.

Substitution

This term can be used as shorthand for the replacement or acquisition of the equivalent as those terms are defined under 43 CFR 11.14 (ii).

The following terms have been put in a "parking lot" to be defined at a later time.

Risk Assessment

Compensation

Hazardous Substance - Defined in CERCLA 101 (14)

Release - Defined in CERCLA 101 (22)

Mitigation Bank

Buffer

Tiered approach to revegetation

Reclamation - reestablishing vegetation or other natural features to reduce the impacts of a particular disturbance such as erosion or infestation of noxious weeds. Development of habitat components or native community are not goals under this approach.

Rehabilitation - Reestablishing vegetation or other natural features for particular goals such as providing habitat for a particular species or improving degraded riparian vegetation at a stream. The project may focus on providing particular services or habitat components, but the goal is not to develop a native community.

Restoration - Reestablishing a native community to provide a fully functioning ecology.

FAX COVER SHEET

Date: April 29, 1994

Page 1 of 2 Pages (Coversheet included)

Fax Number To: 503-373-7806	Fax Number From: 509-376-2816
Name: Dirk Dunning	Name: Linda Tunnell
Phone Number/Location: 503-378-3187	Phone Number/Location: 509-372-3166
Organization: ODOE	Organization: Westinghouse Hanford Company

Message

Dirk,
Here is your notice for the teleconference next week. If you have any questions, I am here from 7:30 to 11:30 a.m. If you get disconnected, call the Hanford Operator on 376-7411 and ask to be hooked into Kathy Leonard's conferenc call.

Thanks,
Linda

FAX COVER SHEET

Date: June 16, 1994

Page 1 of 3 Pages (Coversheet included)

Fax Number To: 503-373-7806	Fax Number From: 509-376-2816
Name: Dirk Dunning	Name: Linda Tunnell
Phone Number/Location: 503-378-3187	Phone Number/Location: 509-372-3166
Organization: ODOE	Organization: Westinghouse Hanford Company

Message

Dirk,

There will be a conference call tomorrow, Friday, June 17, 1994, to discuss the attached definitions. If you get cut off, call 509-376-7411 and ask the operator to reattach you....

Thanks,
Linda

DON'T SAY IT --- Write It!

DATE: April 29, 1994

TO: Distribution

FROM: K. M. Leonard *Tunnell for*

H6-22

Telephone: 509-376-7065

cc: File/LB

SUBJECT: TELECONFERENCE

There will be a teleconference on Wednesday, May 4, 1994, at 10:30 a.m. to discuss definitions for a glossary to be used by the Natural Resource Trustees. The teleconference will last approximately an hour.

If you have any questions, please call me.

Thanks.

Distribution:

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These definitions are intended as working definitions. They reflect the regulatory definitions, but they are modified for purposes of the Hanford Trustees. References to the regulatory definitions are cited for each definition and attached as an appendix.

ASSESSMENT

The determination of damages for injuries to the natural resources and the services they provide resulting from a release of hazardous substances or the cleanup of that release as defined in 43 CFR 11.14(aa).

ACQUISITION OF THE EQUIVALENT

Means the substitution of an injured resource by another resource that provides substantially similar services, as elaborated in 43 CFR 11.14(a).

BASELINE

The condition of the natural resources had no release occurred, as defined in 43 CFR 11.14(e).

DAMAGES

The compensation sought by the trustees for the injury, destruction or loss of the natural resources, as defined in 43 CFR 11.14(l).

INJURY

Means an adverse change in a natural resource resulting from a release. 43 CFR 11.14(v) defines injury as including "injury," "destruction," and "loss".

MITIGATION

The partial resolution, or lessening, of injury resulting from a release.

NATURAL RESOURCE

The elements of the environment of interest to the trustees. 43 CFR 11.14(z).

REMEDICATION

The reduction or elimination of threatened or continuing releases of hazardous substances through such mechanisms as removal or isolation. See definition of "remedy or remedial action" in 40 CFR 300.5.

REPLACEMENT

Means the substitution of an injured resource by another resource that provides substantially similar services, as elaborated in 43 CFR 11.14(a).

RESTORATION

The return of natural resources to their baseline conditions. Restoration and rehabilitation are synonymous under 43 CFR 11.14(11).

SERVICES

The functions of a natural resource, including the human use of those functions. See 43 CFR 11.14(nn).

SUBSTITUTION

This term can be used as a shorthand for the replacement or acquisition the equivalent as those terms are defined under 43 CFR 11.14(ii).

The following terms have been put in a "PARKING LOT" to be defined at a later time:

RISK ASSESSMENT

HAZARDOUS SUBSTANCE - Defined in CERCLA 101(14)

RELEASE - Defined in CERCLA 101(22)

APPENDIX A DEFINITIONS PER DOI
REGULATIONS

Sec. 11.14 Definitions.

Terms not defined in this section have the meaning given by CERCLA or the CWA. As used in this part, the phrase:

(a) "Acquisition of the equivalent" or "replacement" means the substitution for an injured resource with a resource that provides the same or substantially similar services, when such substitutions are in addition to any substitutions made or anticipated as part of response actions and when such substitutions exceed the level of response actions determined appropriate to the site pursuant to the NCP, 40 CFR 300.65 and 300.68.

(c) "Assessment area" means the area or areas within which natural resources have been affected directly or indirectly by the discharge of oil or release of a hazardous substance and that serves as the geographic basis for the injury assessment.

(e) "Baseline" means the condition or conditions that would have existed at the assessment area had the discharge of oil or release of the hazardous substance under investigation not occurred.

(l) "Damages" means the amount of money sought by the Federal or State agency acting as trustee as compensation for injury, destruction, or loss of natural resources as set forth in section 107(a) or 111(b) of CERCLA.

(v) "Injury" means a measurable adverse change, either long- or short-term, in the chemical or physical quality or the viability of a natural resource resulting either directly or indirectly from exposure to a discharge of oil or release of a hazardous substance, or exposure to a product of reactions resulting from the discharge of oil or release of a hazardous substance. As used in this part, injury encompasses the phrases "injury," "destruction," and "loss." Injury definitions applicable to specific resources are provided in Sec. 11.62 of this part.

(z) "Natural resources" or "resources" means land, fish, wildlife, biota, air, water, ground water, drinking water supplies, and other such resources belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the United States (including the resources of the fishery conservation zone established by the Magnuson

Fishery Conservation and Management Act of 1976), any State or local government, or any foreign government. These natural resources have been categorized into the following five groups: surface water resources, ground water resources, air resources, geologic resources, and biological resources.

(ii) "Replacement" or "acquisition of the equivalent" means the substitution for an injured resource with a resource that provides the same or substantially similar services, when such substitutions are in addition to any substitutions made or anticipated as part of response actions and when such substitutions exceed the level of response actions determined appropriate to the site pursuant to the NCP, 40 CFR 300.65 and 300.68.

(ll) "Restoration" or "rehabilitation" means actions undertaken to return an injured resource to its baseline condition, as measured in terms of the injured resource's physical, chemical, or biological properties or the services it previously provided, when such actions are in addition to response actions completed or anticipated, and when such actions exceed the level of response actions determined appropriate to the site pursuant to the NCP, 40 CFR 300.65 and 300.68.

(nn) "Services" means the physical and biological functions performed by the resource including the human uses of those functions. These services are the result of the physical, chemical, or biological quality of the resource.

APPENDIX B DEFINITIONS PER NCP

§ 300.5 Definitions.

Terms not defined in this section have the meaning given by CERCLA or the CWA.

"Hazardous substance" as defined by section 101(14) of CERCLA, means: Any substance designated pursuant to section 311(b)(2)(A) of the CWA; any element, compound, mixture, solution, or substance designated pursuant to section 102 of CERCLA; any hazardous waste having the characteristics identified under or listed pursuant to section 3001 of the Solid Waste Disposal Act (but not including any waste the regulation of which under the Solid Waste Disposal Act has been suspended by Act of Congress); any toxic pollutant listed under section 307(a) of the CWA; any hazardous air pollutant listed under section 112 of the Clean Air Act; and any imminently hazardous chemical substance or mixture with respect to which the EPA Administrator has taken action pursuant to section 7 of the Toxic Substances Control Act. The term does not include petroleum, including crude oil or any fraction thereof which is not otherwise specifically listed or designated as a hazardous substance in the first sentence of this paragraph, and the term does not include natural gas, natural gas liquids, liquified natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas).

"Release" as defined by section 101(22) of CERCLA, means any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles containing any hazardous substance or pollutant or contaminant), but excludes: Any release which results in exposure to persons solely within a workplace, with respect to a claim which such persons may assert against the employer of such persons; emissions from the engine exhaust of a motor vehicle, rolling stock, aircraft, vessel, or pipeline pumping station engine; release of source, byproduct, or special nuclear material from a nuclear incident, as those terms are defined in the Atomic Energy Act of 1954, if such release is subject to requirements with respect to financial protection established by the Nuclear Regulatory Commission under section 170 of such Act, or, for the purposes of

section 104 of CERCLA or any other response action, any release of source, byproduct, or special nuclear material from any processing site designated under section 102(a)(1) or 302(a) of the Uranium Mill Tailings Radiation Control Act of 1978; and the normal application of fertilizer. For purposes of the NCP, release also means threat of release.

"Remedy or remedial action" (RA) means those actions consistent with permanent remedy taken instead of, or in addition to, removal action in the event of a release or threatened release of a hazardous substance into the environment, to prevent or minimize the release of hazardous substances so that they do not migrate to cause substantial danger to present or future public health or welfare or the environment. The term includes, but is not limited to, such actions at the location of the release as storage, confinement, perimeter protection using dikes, trenches, or ditches, clay cover, neutralization, cleanup of released hazardous substances and associated contaminated materials, recycling or reuse, diversion, destruction, segregation of reactive wastes, dredging or excavations, repair or replacement of leaking containers, collection of leachate and runoff, on-site treatment or incineration, provision of alternative water supplies, any monitoring reasonably required to assure that such actions protect the public health and welfare and the environment and, where appropriate, post-removal site control activities. The term includes the costs of permanent relocation of residents and businesses and community facilities (including the cost of providing "alternative land of equivalent value" to an Indian tribe pursuant to CERCLA section 126(b)) where EPA determines that, alone or in combination with other measures, such relocation is more cost-effective than, and environmentally preferable to, the transportation, storage, treatment, destruction, or secure disposition off-site of such hazardous substances, or may otherwise be necessary to protect the public health or welfare; the term includes off-site transport and off-site storage, treatment, destruction, or secure disposition of hazardous substances and associated contaminated materials. For the purpose of the NCP, the term also includes enforcement activities related thereto.

APPENDIX C DEFINITIONS PER DOI
PREAMBLE

Section 11.14 Definitions.

Sec. 11.14(a) "Acquisition of the equivalent" or "replacement".

One comment suggested that "acquisition of the equivalent" or "replacement" be defined as the substitution of "the same or substantially similar" services because, in the comment's view, the term "related services" is not sufficient to comply with CERCLA. The Department agrees and has revised the definition accordingly. In addition, this change has also been made in Sec. 11.14(ii).

Sec. 11.14(c) "Assessment area"

Several comments suggested that the term "assessment area" be defined in terms of affected resources rather than affected geographical areas. The Department concurs and has incorporated the term "natural resources" into the definition of assessment area in Sec. 11.14(c) of the rule.

Several comments suggested that "damage assessment area" and "injury assessment area" be distinguished. The comments held that damage assessment area should include areas directly or indirectly affected by the injury. The Department notes that the proposed rule did not define either of these terms, nor does this final rule. The Department believes that sufficient flexibility has been established in this final rule to allow the Federal or State authorized official acting as trustee to include all areas of direct or indirect injury or damages in the damage assessment.

Sec. 11.14(e) "Baseline"

Some comments stated that the concept of baseline should reflect all pre-release conditions, rather than just the condition of the assessment area immediately preceding the release that caused the injury for which damages are being assessed. In addition, one comment recommended that the concept of cumulative effects of incremental releases be incorporated into the definition of "baseline" so that restoration to conditions prior to the first of several releases that cumulatively caused the injury would be required.

The Department disagrees with the comments and has not made these changes. Where there is a series of releases, baseline is determined by looking to the condition of the injured resource in the absence of the release or any number of releases that can be included in the current assessment. Whether

cumulative releases can be assessed will depend upon the application of the liability provisions of section 107 of CERCLA to the incident in question in accordance with governing case law.

Some changes were made to the definition of the term "baseline." These changes are discussed in the response to comments on Sec. 11.72 Quantification phase--baseline determination.

Sec. 11.14(l) "Damages"

One comment recommended that the definition of "damages" be revised to provide that only lost public services and public uses are compensable, and that damages are to be measured by the lesser of cost-effective restoration or replacement and diminution of use values.

The Department points out that this rule limits the damages compensable to authorized officials to the loss to the general public, in Secs. 11.81 and 11.83. As such, defining damages as the comment suggests would be redundant. Consequently, this change was not incorporated into this rule.

One comment noted that while the definition of damages in this section was reasonable, this definition was effectively expanded in Secs. 11.15(a) and 11.80(f)(1) of the proposed rule. This comment suggested that the definition of damages, in Sec. 11.14(l), be expanded to incorporate the concepts in Secs. 11.15(a) and 11.80(f)(1). The Department notes that Sec. 11.14(l) provides the basic definition of damages as compensation for an injury. Sections 11.15(a) and 11.80(f)(1), and other sections, elaborate on how this compensation is to be measured. To incorporate all of this elaboration into the definition section would be unwieldy and unworkable.

Sec. 11.14(v) "Injury"

One comment stated that the definition of "injury" be explicitly limited to the change in services from baseline less mitigation of those lost services resulting from response actions. The Department points out that the definition, as well as the concept of injury, has been discussed in detail elsewhere in this preamble. The comment is addressed further in the response to comments on Sec. 11.71 of the rule.

Sec. 11.14(z) "Natural resources"

One comment suggested that the Department provide a more detailed definition of the term

"natural resources" to emphasize that only public and not private resources are within the scope of this definition.

Section 101(16) of CERCLA defines natural resources as those resources "belonging to, managed by, held in trust by, appertaining to, or otherwise controlled by the United States . . . , any State or local government, or any foreign government." The Department believes that Congress has defined "natural resources" with sufficient specificity to leave no doubt that resources owned by parties other than Federal, State, local, or foreign governments (i.e., privately-owned resources) are not included. The Department has therefore retained the CERCLA definition of natural resources in Sec. 11.14(z) of this rule.

Another comment held that the rule allowed the assessment of resources not covered by CERCLA, because throughout the rule, the term "resources" is used instead of "natural resources."

The Department has amended the definition of "natural resources" to clarify that the term "resources" is equivalent to the term "natural resources."

One comment urged the Department to state explicitly in the rule that only two types of private losses are not subject to trustee recovery, namely, change in value of injured private property and lost private business opportunity. The comment further stated that only when the potentially responsible party demonstrates that a private cause of action is available to recover private losses should a trustee be barred from recovering those losses.

The Department notes, as stated above, that section 101(16) of CERCLA clearly indicates that damage to privately-owned natural resources are not to be included in natural resource damage assessments. Private resource owners are free to pursue private damage actions to recover for injuries to their resources.

Several comments held that the statement in the proposed rule that "direct losses suffered by private users of public resources" are not compensable suggests that trustees will be precluded from recovering natural resource damages under CERCLA.

The Department believes that these comments have misinterpreted the concept of public use embodied in the proposed rule. "Private uses" are essentially synonymous with for-profit uses. For example, an enterprise that rents boats for recreation at a public lake is a private use. Those who pay a fee for entry to the lake, by contrast, enjoy a public use. If the lake is injured by a hazardous substance release, a Federal or State authorized official may recover the

loss in fees from visitations forgone due to the discharge or release. However, the Federal or State authorized official may not recover the lost wages or income to those who conduct a business there.

One comment recommended a limited exception to the provisions of the rule that private uses of public resources are not compensable in order to protect the public interest in resources that are the subject of scientific studies being conducted by research teams from private educational institutions.

The Department feels that there is no need for such an exception. Non-profit scientific research performed for a public purpose by public or private institutions is a public use and, therefore, compensable under this rule.

Sec. 11.14(ll) "Restoration" or "rehabilitation"

One comment suggested that the definition of "restoration" be revised so that "baseline condition" may be measured in terms of a resource's biological or chemical, as well as physical, properties. The comment maintained that limiting the measurement of baseline to the physical properties of a resource would unduly limit the injuries considered. The Department agrees with this comment and has modified the definition accordingly.

Sec. 11.14(nn) "Services"

One comment suggested that the definition of "services" provide explicitly that services are not limited to human uses. The comment stated that the legislative history is clear that ecological services should be considered. Several comments recommended that the definition of "services" include explicit references to examples of intangible services.

The Department notes that the current definition does not preclude the consideration of non-human services where the authorized official deems consideration appropriate. Human uses are a subset of services. As such, no change in this definition has been made. Further discussion of this issue can be found in the discussion of the comments to Sec. 11.71.

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[16] From: Kathleen M Leonard at ~WHC155 5/5/94 6:42AM (68655 bytes: 16 ln, 3 fl)
To: John A. Hall at ~PNL6, Geoff Tallent at _Ecology_Lacey, Steve Cross at _Ecology_Lacey
Receipt Requested
cc: Linda C Tunnell, Robert G Holt at ~DOE13
Subject: Definitions

----- Message Contents -----

Text item 1:

attached please find Trustee Working group definitions, appendices and the tank waste task force glossary. Please review and comment on the attached. Are the definitions acceptable, do we want to add more, delete, etc.? In reviewing the tank waste task force glossary, I'm not sure the definitions apply to us, however, it was suggested at our last Trustee Meeting that we review those. We had tentatively set up a conference call for Friday, at 3:00. Unfortunately, I will not be available at all on Friday. Sorry, I forgot I would not be in. Please let me know if you want to go ahead and have the call without me. Geoff, you'll have to make arrangements then for the conference call. Otherwise, we can postpone until Monday. Please call me today or cc mail me with what you would like to do. Thanks for you help.....These files will be faxed to Liz Block and Dirk Dunning.....



DEPARTMENT of
NATURAL RESOURCES

Environmental
Planning/
Rights Protection
Program

CONFEDERATED TRIBES
of the

Umatilla Indian Reservation

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TELEFAX TRANSMISSION COVERSHEET

DATE: May 3rd, 1994

TRANSMISSION TO: Linda Tunnel 509-376-2816

TRANSMISSION FROM: JR Wilkinson 503-276-0540

NO. OF PAGES (INCLUDING THIS SHEET): 13

NOTES: Sorry for the delay. Hope the
info. is useful.
Bye! ☺

IF TRANSMISSION IS UNREADABLE, PLEASE TELEPHONE (503)276-3449

[30] From: Kathleen M Leonard 5/2/94 6:41PM (1025 bytes: 31 ln)
To: Linda C Tunnell
Subject: DEFINITIONS

----- Message Contents -----

take and delete all the definitions on 1114def but the following for appendix a:

- (a) acquisition of the equivalent or ...
- (c) "assessment area"...
- (e) "baseline"...
- (l) "damages"....
- (v) "injury"...
- (z) "natural resourc"...
- (ll) "restoration"...
- (nn) "services"....
- (ii) "substitution..."

take and delete all the definitions on NCPdef but the following for appendix b:

- "remedy or remedial action"...
- "hazardous substance"....
- "Release"...

take and delete all the definitions on 1114com but the following for appendix c:

- (a)....
- (c)....
- (e)....
- (l)...
- (v)....
- (z)...
- (ll)...
- (nn)...

[20] From: kathleen m leonard at ~WHC155 4/27/94 11:53AM (103702 bytes: 19 ln, 4 fl)

To: Linda C Tunnell at ~WHC155

cc: Robert G Holt at ~DOE13

Subject: Trustee Working Group Definitions

----- Message Contents -----

Text item 1:

Please prepare attached for distribution to the working group in preparation of our teleconference next week. Take the definition files and make appendices. Use only the definitions for terms used.

Appendix A Title - Definitions per DOI Regulations (file is 1114DEF)

Appendix B Title - Definitions per NCP (file is NCPDEF)

Appendix C Title - Preamble to DOI Reg (file is 1114com)

When complete, prepare dsi for distribution. Include things like reiview and be prepared to comment, offer suggestions, additional terms, etc. etc. We may want to restate date and time of conference call. If you have any questions, I'll be in the office tomorrow or call me at Cross's number. Thanks kiddo....

File item 2: WRKGRP.DEF 4/27/94 11:40AM * .

File item 3: 1114DEF 4/27/94 8:42AM

File item 4: NCPDEF 4/27/94 8:48AM

File item 5: 1114COM 4/27/94 8:43AM

Definitions