State Summary of Soil and Groundwater Cleanup Standards for Hydrocarbons

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Summary of Alabama Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	Benzene	602, 624	*	any amount	5 ppb	5 ppb
	Ethylbenzene		*	any amount	700 ppb	700 ppb
	Toluene		*	any amount	1000 ppb	1000 ppb
	Xylenes		*	any amount	10,000 ppb	10,000 ppb
Diesel	PAH	EPA Method 610, 625	*	any amount	Site Specific**	Site Specific**
Waste Oil	BTEX	EPA Method 602, 625	*	any amount	Same as Gasoline	Same as Gasoline
	PAH	EPA Method 610, 625	*	any amount	Same as Diesel	Same as Diesel
	VOCS	EPA Method 601	*	any amount	DWS	DWS
	head	EPA Method 239.2	*	any amount	.015 ppb	.015 ppb

* Dictated by Method, ** Health Advisory Limits.
Note: Risk Assessment may be utilized to allow for a higher level.

Contact: Dorothy Malaier, Alabama Department of Environmental Management, 205-270-5613

Summary of Alabama Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	TPH	EPA Method 9071	*	any amount	100 ppm	100 ppm**
	TPH	Standard Method 5520	*	any amount	100 ppm	100 ppm**
	TPH	EPA 418.1	*	any amount	100 ppm	100 ppm**
Diesel	TPH	EPA Method 9071	*	any amount	100 ppm	100 ppm**
	TPH	Standard Method 5520	*	any amount	100 ppm	100 ppm**
	TPH	EPA 418.1	*	any amount	100 ppm	100 ppm**
Waste Oil	TPH	EPA Method 9071	*	any amount	100 ppm	100 ppm**
	TPH	Standard Method 5520	*	any amount	100 ppm	100 ppm**
	TPH	EPA 418.1	*	any amount	100 ppm	100 ppm**

* Dictated by Method
** Risk Assessment may be utilized to allow for a higher level.

Contact: Dorothy Malaier, Alabama Department of Environmental Management, 205-270-5613

Summary of Alaska Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	GRPH (C_6-C_{10})	EPA Method 8015M	1 mg/l	any amount	sheen	sheen
	Benzene	EPA Method 602	.005 mg/l	any amount	.005 mg/l	.005 mg/l
	Toluene	EPA Method 602	.005 mg/l	any amount	1 mg/l	1 mg/l
	Ethylbenzene	EPA Method 602	.005 mg/l	any amount	0.7 mg/l	0.7 mg/l
	Xylene	EPA Method 602	.005 mg/l	any amount	10 mg/l	10 mg/l
Diesel	DRPH (C_{10}-C_{28})	EPA Method 8100M	1 mg/l	any amount	sheen	sheen
Waste Oil	All of the Above and					
	TPH (C_{29})	EPA Method 418.1	1 mg/l	any amount	sheen	sheen

Contact: Dave Belyea, Alaska Department of Environmental Conservation 907-465-5200

Summary of Alaska Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	Gasoline Range Petro. Hydrocarbons C_6-C_{10}	EPA Method 8015M	1 mg/kg	any amount	Site Specific 50-1000 ppm	Site Specific/50-1000ppm
	BTEX	EPA Method 8020	0.05 mg/kg	any amount	Site Specific 10-100ppm	Site Specific/10-100ppm
	Benzene	EPA Method 8020	0.05 mg/kg	any amount	Site Specific .1-.5ppm	Site Specific/0.1-.5ppm
Diesel	Diesel Range Petro. Hydrocarbons C_{10}-C_{28}	EPA Method 8100M	10 mg/kg	any amount	Site Specific 100-2000ppm	Site Specific/100-2000ppm
Waste Oil	All of the Above and					
	TPH (C_{29})	EPA Method 418.1	25 mg/kg	any amount	2000 ppm	2000 ppm

Contact: Dave Belyea, Alaska Department of Environmental Conservation 907-465-5200

Summary of Arizona Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	TPH	EPA Method 418.1	Lab dependent	any amount	X>Non Detect	X< 1ppb
	Benzene	EPA Method 502.2***	Lab dependent	any amount	X>Non Detect	X< 5ppb
	Toluene	EPA Method 502.2***	Lab dependent	any amount	X>Non Detect	X< 1000ppb
	Ethylbenzene	EPA Method 502.2***	Lab dependent	any amount	X>Non Detect	X< 700ppb
	Xylenes	EPA Method 502.2***	Lab dependent	any amount	X>Non Detect	X< 10,000ppb
	VOCs	EPA Method 502.2***	Lab dependent	any amount	****	****
Diesel	TPH	Same As Above For Gasoline				
	PAH					
	Benzo (A) Anthracene	EPA Method 524	Lab dependent	any amount	X>Nondetect	X> .1 ug/l
	Benzo (A)	EPA Method 524	Lab dependent	any amount	X>Nondetect	X> .2 ug/l
	Benzo (A) Fluoroanthene	EPA Method 524	Lab dependent	any amount	X>Nondetect	X> .2 ug/l
	Benzo (A) Fluoranthene	EPA Method 524	Lab dependent	any amount	X>Nondetect	X> .2 ug/l
Waste Oil	Requirements specific to the unique waste oil					

*** All target compounds in addition to BTEX analyzed by these test methods must be reported. The 1st round of water samples from a newly completed well must be analyzed using EPA Test Method 502.2. Subsequent samples may be analyzed using 502.1 or 503.1 upon ADEQ approval.
**** Refer to most recent AWPS and HBAL for information on specific compounds

Contact: Sean Mckenzie, Arizona Department of Environmental Quality 602-207-4288

Summary of Arizona Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	TPH	ADHS Method BLS-181	lab dependent	any amount	Site Specific X>N.D. or X>100ppm	X<100ppm but risk Assessment option exists
	Benzene	EPA Method 8020	lab dependent	any amount	Site Specific X>N.D. or X>0.13ppm	X<0.13ppm but risk Assessment option exists
	Toluene	EPA Method 8020	lab dependent	any amount	Site Specific X>N.D. or X>200ppm	X<200ppm but risk Assessment option exists
	Ethylbenzene	EPA Method 8020	lab dependent	any amount	Site Specific X>N.D. or X>68ppm	X<68ppm but risk Assessment option exists
	Xylenes	EPA Method 8020	lab dependent	any amount	Site Specific X>N.D. or X>44ppm	X<44ppm but risk Assessment option exists
Kerosene	Identical with all the above gasoline categories					
Diesel	TPH only	ADHS Method BLS-181	lab dependent	any amount	Site Specific X>N.D. or X>100ppm	X<100ppm but risk Assessment option exists
Jet Fuel	Identical with all the above Gasoline categories.					
Heavy Oil	Identical with Diesel above.					
Solvents	TPH	ADHS Method BLS-181	lab dependent	any amount	Site Specific X>N.D. or X>100ppm	X<100ppm but risk Assessment option exists
	BTEX: Identical in all respects to BTEX for gasoline above.					
Waste Oil	TPH	ADHS Method BLS-181	lab dependent	any amount	Site Specific X>N.D. or X>100ppm	X<100ppm but risk Assessment option exists
	BTEX Not Required					
	VOCs	EPA Method 8010	lab dependent	any amount		Compound Specific

BTEX: Benzene, Toluene, Enthylbenzene, Xylene
N.D.: Non Detect, ADHS: Arizona Department of Health Services, VOCs: Volatile Organic Compounds

Contact: Sean Mckenzie, Arizona Department of Environmental Quality 602-207-4288

Summary of Arkansas Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	Benzene/ Total BTEX	EPA Method 8020	1ppb	Not Used	5 ppb Benzene 100ppb BTEX	Site Specific
	TPH	EPA Method 418.1	10ppm	Not Used	15 ppm	Site Specific
	TPH	Modified 8015	10ppm	Not Used	15 ppm	Site Specific
Diesel	TPH	EPA Method 418.1	10ppm	Not Used	15 ppm	Site Specific
	TPH	Modified 8015	10ppm	Not Used	15 ppm	Site Specific
Waste Oil	TPH	EPA Method 418.1	10ppm	Not Used	15 ppm	Site Specific
	TPH	Modified 8015	10ppm	Not Used	15 ppm	Site Specific
	May also require VOC scan (8240) under certain circumstances					

Contact: James Atchley, Arkansas Department of Pollution Control & Ecology 501-562-6533

Summary of Arkansas Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	TPH	EPA Method 418.1	10ppm	Not Used	100 ppm	Site Specific/100-1000ppm
	TPH	Modified 8015	10ppm	Not Used	100 ppm	Site Specific/100-1000ppm
	BTEX	EPA Method 8020	1ppm	Not Used	40 ppm	Site Specific/0-400ppm
Diesel	TPH	EPA Method 418.1	10ppm	Not Used	100 ppm	Site Specific/100-1000ppm
	TPH	Modified 8015	10ppm	Not Used	100 ppm	Site Specific/100-1000ppm
Waste Oil	TPH	EPA Method 418.1	10ppm	Not Used	100 ppm	Site Specific/100-1000ppm
	TPH	EPA Method 8015 Modified	10ppm	Not Used	100 ppm	Site Specific/100-1000ppm
	May also require VOC scan (8240) and TCLP for metals under some circumstances					

Contact: James Atchley, Arkansas Department of Pollution Control & Ecology 501-562-6533

Summary of California Clean-up Goals for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	Benzene					MCLs (1ppb)
	Toluene					*State Action Level 100ppb
	Xylene					MCLs (1750ppb)
	Ethlybenzene					MCLs (680ppb)
Diesel						
Waste Oil						

* Health based guidance number, nonenforcable.

Summary of California Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	TPH	DHS Recommended	*	NA	**	
	***Benzene	EPA Method 8020	*	NA	**	.3 to 1ppm
	***Toluene	EPA Method 8020	*	NA	**	.3 to 50ppm
	***Ethylbenzene	EPA Method 8020	*	NA	**	1 to 50ppm
	***Xylene	EPA Method 8020	*	NA	**	1 to 50ppm
	HVOs	EPA Method 8010	*	NA	**	Site Specific
Diesel	TPH	DHS Recommended	*	NA	**	100 to 10,000ppm
	TRPH	EPA Method 418.1	*	NA	**	100 to 10,000ppm
	BTEX same as Gasoline above. →					
Waste Oil						

* Test Specific. ** There are three action levels associated w/ TPN & BTX & E for sites which fall into catagories low, medium and high.
*** BTX & E levels are not applicable at a TPH concentration of 10ppm gas or 100ppm Diesel.
Note: California does not have state standard clean-up levels. Values shown are recommended action levels from the LUFT manual. Clean-up levels are site specific. California has 9 Regional Boards throughout the state and 107 local agencies. Each juristiction enforces site specific clean-up levels for the regional basins, plan drinking water standards, detection levels, etc.

Contact: Paul Johnson, California State Water Resources, Central Board 916-227-4337

Summary of Delaware Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	BTEX	APHA 5520C, 503B	5 µg/l	any amount	*	Site Specific**
		EPA Method 418.1	5 µg/l	any amount	*	Site Specific**
		California Method GC-FID	0.5 µg/l	any amount	*	Site Specific**
	TPH	EPA Method 5030, 8020, 8240	5 µg/l	any amount	*	Site Specific**
		EPA Method 602, 624	5 µg/l	any amount	*	Site Specific**
		Equivalent Method	5 µg/l	any amount	*	Site Specific**
Diesel	TPH	Same As Gasoline		any amount	*	Site Specific**
Waste Oil	TPH	Same As Gasoline		any amount	*	Site Specific**
	BTEX	Same As Gasoline		any amount	*	Site Specific**

* No established action levels, site specific. ** Drinking water standards to approximate 10ppm BTEX. Note: Water samples not required during tank removal activities. Water samples required as part of hydrogeologic investigation.

Contact: Patricia M. Ellis, Ph.D., Delaware Department of Natural Resources & Environmental Control 302-323-4588

Summary of Delaware Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level*	Clean-up Level*
Gasoline	TPH	Mod 8015, Mod 418.1 EPA Method 9071	40 mg/kg	any amount	100 ppm	Site Specific generally≤100
		APHA Metro ds 5520E/ 5520C, 503B, 503E	40 mg/kg	any amount		
	TPH	California Method GC-FD	10 mg/kg	any amount		Site Specific generally≤10 BTEX, 1 B
	BTEX	EPA Method 3010/8020, 5030/8020	1 mg/kg	any amount	BTEX>10ppm B>1ppm	Same As Above
		EPA Method 3810, 8240, 8240 purge & trap, Mod 602	1 mg/kg	any amount		
Diesel	TPH	as above	as above	any amount	1000 ppm	Site Specific generally≤1000
Waste Oil	BTEX	as above	as above	any amount	BTEX>10ppm B>1ppm	Site Specific generally≤10 BTEX, 1 B
	TPH	as above	as above	any amount	1000 ppm	Site Specific generally≤1000ppm

* Class B Site. Note: Class A sites—more sensitive, more stringent. Class B sites—average sensitivity. Class C sites—less sensitive, less stringent. Sites are rated by the DE DNREC as either A, B, or C. Factors influencing ratings include well locations, groundwater depth, residential, commercial or industrial settings, etc.

Contact: Patricia M. Ellis, Ph.D., Delaware Department of Natural Resources & Environmental Control 302-323-4588

Summary of Florida Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	Benzene	EPA Method 602	NA	any amount		1ppb
	Total Volatiles Organic Aromatics	EPA Method 602	NA	any amount		50ppb
	1, 2 dichloroethane	EPA Method 601	NA	any amount		3ppb
	(EDB) 1, 2 dichloroethane	EPA Method 601	NA	any amount		.02ppb
	Lead	EPA Method 239.2	NA	any amount		50ppb
	MTBE	EPA Method 602	NA	any amount		50ppb
Diesel	Same As Above Plus					
	PAHs (Excluding Naphthalenes)	EPA Method 610	10ppb	any amount		Detction Level
	Total Naphthalenes	EPA Method 610	NA	any amount		100ppb
	TRPH	EPA Method 418.1	NA	any amount		5ppm
Waste Oil	Same As Diesel Plus					
	Prioritory Pollutant Volatile Organics	EPA Method 624	NA	any amount	Site Specific	Site Specific
	Prioritory Pollutant Extracable Organics	EPA Method 625	NA	any amount	Site Specific	Site Specific
	Ar, Cd, Cr, Pb		NA	any amount	Site Specific	Site Specific

Contact: Thomas Conrardy, Florida Department of Environmental Protection 904-488-0190

Summary of Florida Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	Organic Vapor Analysis	OVA with Flame Ionization		10ppm	>500 ppm*	VOA<100ppb** TRPH<10ppm**
Diesel	Organic Vapor Analysis	OVA with Flame Ionization Detector		10ppm	>50 ppm*	VOA<100ppb** TRPH<10ppm**

* Soils with TPH readings greater than 500ppm (or 50ppm for Diesel) require remediation. Soils with vapor readings from 10-500ppm may require cleanup depending on site factors. ** Soil cleanup criteria for thermal treatment.

Contact: Thomas Conrardy, Florida Department of Environmental Protection 904-488-0190

Summary of Georgia Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	Benzene	EPA Method 8020	1 µg/l	any amount	5 µg/l	Site Specific 5–71 µg/l
	Toluene	EPA Method 8020	1 µg/l	any amount	1000 µg/l	Site Specific 1000–200,000 µg/l
	Ethybenzene	EPA Method 8020	1 µg/l	any amount	700 µg/l	Site Specific 700–28,718 µg/l
	Xylene	EPA Method 8020	1 µg/l	any amount	10,000 µg/l	Drinking water standards 10,000µg/l
Diesel/ Waste	Benzo (a) Pyrene	EPA Method 550, 8270	.06/10 µg/l	any amount	.0311 µg/l	Site Specific .0311–.2 µg/l
	Anthracene	EPA Method 8270	10 µg/l	any amount	110,000 µg/l	* 110,000 µg/l
	Chrysene	EPA Method 8270	10 µg/l	any amount	.0311 µg/l	* .0311 µg/l
	Fluoranthene	EPA Method 8270	10 µg/l	any amount	370 µg/l	* 370 µg/l
	Fluorene	EPA Method 8270	10 µg/l	any amount	14,000 µg/l	* 14,000 µg/l
	Pyrene	EPA Method 8270	10 µg/l	any amount	11,000 µg/l	* 11,000 µg/l

* Georgia in-stream water quality standards

Contact: Marlin Gottschalk, Ph.D., Georgia Department of Natural Resources, 404-362-2687

Summary of Georgia Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	TPH	Modified California Method	0.1 mg/kg	any amount	100 mg/kg	Site Specific/100-500 mg/kg
	BTEX	EPA Method 8020	0.001 mg/kg	any amount	20 mg/kg	Site Specific/20-100 mg/kg
Diesel	TPH	Modified California Method	0.1 mg/kg	any amount	100 mg/kg	Site Specific/100-500 mg/kg
Waste Oil	TPH	Modified California Method	0.1 mg/kg	any amount	100 mg/kg	Site Specific/100-500 mg/kg

Contact: Marlin Gottschalk, Ph.D., Georgia Department of Natural Resources, 404-362-2687

Summary of Hawaii Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Criteria Above The Oil Line (Manka) / Below The Oil Line (Makai)
Gasoline	TPH as Gasoline	EPA Method 5030, 8015 or LUFT Method		****		***** / *****
	Benzene	*		****		.005 / 1.7
	Ethylbenzene	*		****		.7 / .14
	Toluene	*		****		1 / 2.1
Diesel, Jet Fuel, Kerosene, Fuel Oil	TPH as Diesel	**		****		***** / *****
	Benzene	*		****		.005 / 1.7
	Ethylbenzene	*		****		.7 / .14
	Toluene	*		****		1 / 2.1
	Acenapthene	***		****		NS / .320
	Naphthalene	***		****		NS / .78
	Fluoranthene	***		****		NS / .013
	Benzo (a) Pyrene	***		****		.0002 / NS

* 5030/ 8015 or 5030/ 8020 or 5030/ 8240 or 602 or 624. ** 3550/ 8015 or 3510/ 8270 or 3520/ 8270 or LUFT. *** 3510/ 8310 or 3520/ 8310 or 3510/ 8100 or 3520/ 8100 or 610. **** All spills over 25 gallons that cannot be contained and cleaned up within 24 hours. ***** No clean-up criteria based on TPH–however that does not preclude use as screening method. Note: NS=No Standard

Contact: Kim Savage, Department of Health Underground Storege Tank Division 808-586-4225

Summary of Hawaii Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Criteria Above The Oil Line (Manka) / Below The Oil Line (Makai)
Gasoline	TPH as Gasoline	EPA Method 5030, 8015 or LUFT Method		****		***** / *****
	Benzene	*		****		.05 / 1.7
	Ethylbenzene	*		****		7 / 1.4
	Toluene	*		****		10 / 21
Diesel, Jet Fuel, Kerosene, Fuel Oil	TPH as Diesel	**		****		***** / *****
	Benzene	*		****		.05 / 1.7
	Ethylbenzene	*		****		7 / 1.4
	Toluene	*		****		10 / 21
	Acenapthene	***		****		100 / 100
	Naphthalene	***		****		100 / 100
	Fluoranthene	***		****		500 / 500
	Benzo (a) Pyrene	***		****		1 / 1

* 5030/ 8015 or 5030/ 8020 or 5030/ 8240. ** 3550/ 8015 or 3540/ 8270 or 3550/ 8270 or LUFT Method. *** 3540/ 8310 or 3550/ 8310 or 3540/ 8270 or 3550/ 8270. **** All spills over 25 gallons that cannot be contained and cleaned up within 24 hours. ***** No clean-up criteria based on TPH–however that does not preclude use as screening method. Note: NS=No Standard

Contact: Kim Savage, Department of Health Underground Storege Tank Division 808-586-4225

Summary of Idaho Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	Benzene	EPA Method 8020	1ppb	any level	5 µg/l	5 ppb (µg/l)
	Toluene		1ppb	any level	1000 µg/l	1000 ppb (µg/l)
	Ethylbenzene		1ppb	any level	700 µg/l	700 ppb (µg/l)
	Total Xylenes		1ppb	any level	10,000 µg/l	10,000 ppb (µg/l)
Diesel	Polynuclear Aromatic Hydrocarbons	EPA Method 8270			Drinking water standards	Drinking water standards
	BTEX	EPA Method 8020	1ppb	any level	Same As Gasoline	Same As Gasoline
Waste Oil	TPH	EPA Method 418.1			100ppm	100ppm
	VOCs	EPA Method 8240			Site Specific	Drinking water standards
	RCRA Metals	EPA Method 6010			Site Specific	Drinking water standards
	PAHs	EPA Method 8270			Site Specific	Drinking water standards

Contact: Thomas Neace, Idaho Division of Environmental Quality 208-334-5860

Summary of Idaho Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	TPH	EPA Method 8015 Modified as Gas	*	any amount	> 40ppm	Site Specific/40-200ppm
Diesel	TPH	EPA Method 8015 Modified as Diesel	*	any amount	> 100ppm	Site Specific/100-2000ppm
Waste Oil	Chlorinated Solvents	EPA Method 8010 or 8240		any amount	Site Specific	Site Specific
	TPH	EPA Method 418.1	*	any amount	> 100ppm	100ppm
	TCLP, RCRA Metals	EPA Method 6010	*	any amount	Site Specific	Site Specific/ RCRA Criteria
	PCBs	EPA Method 8080	*	any amount	Site Specific	Site Specific

* Dependent on sample matrix and concentration, 10 mg/kg target.

Contact: Thomas Neace, Idaho Division of Environmental Quality 208-334-5860

Summary of Illinois Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	******	Notification Level	Action Level	Clean-up Level
Gasoline	Benzene	*	.002mg/l	***	****	.005mg/l
	BETX	*	.002-.005**	***	****	11.705mg/l
Other Petroleum Substances	Benzene	*	.002mg/l	***	****	.005mg/l
	BETX	*	.002-.005**	***	****	11.705mg/l
	Naphthalene	*	.010mg/l	***	****	.025mg/l
	Acenaphthene	*	.018mg/l	***	****	.42mg/l
	Anthracene	*	.0066mg/l	***	****	2.1mg/l
	Fluoranthene	*	.0021mg/l	***	****	.28mg/l
	Fluorene	*	.0021mg/l	***	****	.28mg/l
	Pyrene	*	.0027mg/l	***	****	.21mg/l
	Total Carc. PNAs	*	.00013 – .0015**	***	****	.0002mg/l
	Total Non-Carc. PNAs	*	.00076 – .010**	***	****	.21mg/l
Waste Oil	LUST Pollutants List	*	Compound Specific	***	*****	Site Specific

* Any approved USEPA SW-846 Method. ** Each constituent has unique ADL. *** Notification criteria based on any release of product, not specific contaminant levels. **** Any amount above the cleanup objectives. ***** Any amount above the screening detection limits listed on LUST pollutants list. ****** Acceptable Detection Limits.

Contact: G. Tod Rowe, Illinois Environmental Protection Agency 217-782-6761

Summary of Illinois Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	*****	Notification Level	Action Level	Soil Objectives mg/kg Type A / Type B
Gasoline	Benzene	*	.002mg/l	**	***	.005 / .025
	BETX	*	.002-.005mg/l	**	***	11.705 / 13.525
Other Petroleum Substances	Benzene	*	.002mg/l	**	***	.005 / .025
	BETX	*	.002-.005mg/l	**	***	11.705 / 13.525
	Naphthalene	*	.660mg/l	**	***	.025 / .039
	Acenaphthene	*	1.2mg/l	**	***	8.4 / 42
	Anthracene	*	.660mg/l	**	***	42 / 210
	Fluoranthene	*	.660mg/l	**	***	5.6 / 28
	Fluorene	*	.140mg/l	**	***	5.6 / 28
	Pyrene	*	.180mg/l	**	***	4.2 / 21
	Total Carc. PNAs	*	.0087 – .10mg/l	**	***	4.2 / 21
	Total Non-Carc. PNAs	*	.0051 – .660mg/l	**	***	.0026–.03 / .013–.15
Waste Oil	LUST Pollutants List	*	Compound Specific	**	****	Site Specific

* Any approved USEPA SW-846 Method. ** Notification criteria based on any release of product, not specific contaminant levels. *** Any amount above the cleanup objectives. **** Any amount above the screening detection limits listed on LUST pollutants list. ***** Acceptable Detection Limits.

Contact: G. Tod Rowe, Illinois Environmental Protection Agency 217-782-6761

Summary of Indiana Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Acceptable Methods	Detection Level	Notification Level	Action Level	Clean-up Level
Kerosene, Gasoline	Benzene, Toluene, Ethylbenzene, Xylene*	GC/PID 8020 or GC/MS 8240/60 or GC/MS 524.2	5ppb(ug/l)	any amount	5ppb 1000ppb 700ppb 10,000ppb	5ppb 1000ppb 700ppb 10,000ppb
	TPH (optional)	GC/FID 8015 – Modified (California)	500ppb(ug/l)			
Naptha, Diesel	Benzene, Toluene, Ethylbenzene, Xylene* and	GC/PID 8020 or GC/MS 8240/60 or GC/MS 524.2	5ppb	any amount	Site Specific	Site Specific
	Semi-Volatile Organics (SVOC)	GC/MS 8270 or GC/MS 525	10ppb	any amount	Site Specific	Site Specific
	TPH (optional)	GC/FID 8015 – Modified (California)	500ppb	any amount	Site Specific	Site Specific
Waste Oil	VOC* and	GC/PID 8020 or GC/MS 8240/60 or GC/MS 524.2	10ppb	any amount	Site Specific	Site Specific
	SVOC and	GC/MS 8270 or GC/MS 525	10ppb	any amount	Site Specific	Site Specific
	TPH and	GC/FID 8015 – Modified (California)	500ppb	any amount	Site Specific	Site Specific
	PCB and	GC/ECD 8080/8081	.5ppb(ug/l)**	any amount	Site Specific	Site Specific
	Metals***	use the appropriate SW–846 method	set by the appropriate method	any amount	Site Specific	Site Specific

* This analysis also should include Methyl-tertiary-butyl-ether (MTBE). ** PCB Aroclor 1254 and 1260 detection limit must be 1.0 ppb. *** Metal scans must include: Arsenic, Barium, Beryllium, Cadmium, Chromium (total), Copper, Cobalt, Lead, Mercury, Nickel, Selenium, Silver and Zinc.

Contact: Lynnette Fogle, Indiana Department of Environmental Management 317-232-8603

Summary of Indiana Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Acceptable Methods	Detection Level	Notification Level	Action Level	Clean-up Level
Kerosene, Gasoline	Total Petroleum Hydrocarbons (TPH)	GC/FID 8015 – Modified (California) or GC/MS 8240/60	20ppm	any amount	On-site ≥ 100 Off-site any amount	On-site ≤ 100 Off-site N.D.
Naptha, Diesel	TPH	GC/FID 8015 – Modified (California) or GC/MS 8270	20ppm	any amount	On-site ≥ 100 Off-site any amount	On-site ≤ 100 Off-site N.D.
Waste Oil	VOC* and	GC/PID 8020 or GC/MS 8240/60	20ppm	any amount	Site Specific	Site Specific
	SVOC and	GC/MS 8270	20ppm	any amount	Site Specific	Site Specific
	TPH and	GC/FID 8015 – Modified (California) or IR 418.1	20ppm	any amount	Site Specific	Site Specific
	PCB and	GC/ECD 8080/8081	1ppm	any amount	Site Specific	Site Specific
	Metals**	use the appropriate SW–846 method	set by the appropriate method	any amount	Site Specific	Site Specific

* This analysis also should include Methyl-tertiary-butyl-ether (MTBE). ** Metal scans must include: Arsenic, Barium, Beryllium, Cadmium, Chromium (total), Copper, Cobalt, Lead, Mercury, Nickel, Selenium, Silver and Zinc.

Contact: Lynnette Fogle, Indiana Department of Environmental Management 317-232-8603

Summary of Iowa Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	Benzene	OA-1		any amount	5 ppb	Site Specific
	Toluene				2420 ppb	Site Specific
	Xylene				12000 ppb	Site Specific
	Ethylbenzene				700 ppb	Site Specific
Diesel	same	OA-1		any amount	same as Gasoline	Site Specific
Waste Oil	same	OA-1		any amount	same as Gasoline	Site Specific

Contact: Jim Humeston, Iowa Department of Natural Resources 515-281-8957

Summary of Iowa Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	TPH	Iowa OA-1		any amount	100 mg/kg	Site Specific
Diesel	TPH	Iowa OA-2		any amount	100 mg/kg	Site Specific
Waste Oil	TPH	Iowa OA-2		any amount	100 mg/kg	Site Specific

Contact: Jim Humeston, Iowa Department of Natural Resources 515-281-8957

Summary of Kansas Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	Benzene	EPA Method 502.2, 8020 etc	.5ppb	.5ppb	5ppb	5ppb
	Ethylbenzene	EPA Method 502.2,503.1, 524.1, 524.2	68ppb	68ppb	680ppb	680ppb
	Toluene	EPA Method 502.2,503.1, 524.1, 524.2	100ppb	100ppb	1000ppb	1000ppb
	Xylene	EPA Method 502.2,503.1, 524.1, 524.2	44ppb	44ppb	440ppb	440ppb
	1-2 Dichlcroethane	EPA Method 502.1,503.1 524.1,524.2,601,624,1624	.5ppb	.5ppb	5ppb	5ppb
Diesel	Napthalene		14.3ppb	14.3ppb	143ppb	143ppb
Waste Oil						

Contact: Thomas Winn, Department of Health and Environment 913-296-1684

Summary of Kansas Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	TPH	*	10		100 ppm	100ppm
	Benzene	EPA Method 8020,8021, 8240, 8260	.14ppm		1.4 ppm	1.4ppm
	1-2 Dichlcroethane	EPA Method 8010, 8021, 8240, 8260	.8ppm		8 ppm	8ppm
Diesel	TPH	*	10ppm		100 ppm	100ppm
Waste Oil	TPH	*	10ppm		100 ppm	100ppm

* Purge and Trap. Summation of peaks chromotograph.

Contact: Thomas Winn, Department of Health and Environment 913-296-1684

Summary of Kentucky Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	Benzene	EPA Method 8240, 8260 8020 or 8021	5ppb	>5ppb	5ppb	5ppb
	Toluene	EPA Method 8240, 8260 8020 or 8021	5ppb	>5ppb	5ppb	5ppb
	Ethylbenzene	EPA Method 8240, 8260 8020 or 8021	5ppb	>5ppb	5ppb	5ppb
	Xylene	EPA Method 8240, 8260 8020 or 8021	5ppb	>5ppb	5ppb	5ppb
Diesel	PAH	EPA Method 8100, 8270 or 8310	5ppb	>5ppb	5ppb	5ppb
Waste Oil	Oil & Grease	EPA Method 9070	5ppm	>5ppm or over background	>5ppm or over background	less than background
	total lead	EPA Method 7420, 7421 or 6010	50ppb	>50ppb	>50ppb	50ppb

These values are under review and may change as the study progresses

Contact: Doyle Mills, Division of Waste Management
502-564-6716

Summary of Kentucky Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	Benzene	EPA Method 8240, 8260, 8020 or 8021	1ppm	>1ppm	1ppm	<1ppm
	Toluene	EPA Method 8240, 8260, 8020 or 8021	1ppm	>1ppm	1ppm	<1ppm
	Xylene	EPA Method 8240, 8260, 8020 or 8021	1ppm	>1ppm	1ppm	<1ppm
	E-Benzene	EPA Method 8240, 8260, 8020 or 8021	1ppm	>1ppm	1ppm	<1ppm
Diesel	PAH	EPA Method 8100, 8270 or 8310	1ppm	>1ppm	1ppm	1ppm
Waste Oil	Oil & Grease	EPA Method 9071	1ppm	> 10ppm or over background	>10ppm or over background	<10ppm or less than background
	total lead	EPA Method 7420, 7421 or 6010	1ppm	over background	over background	less than background

These values are under review and may change as the study progresses

Contact: Doyle Mills, Division of Waste Management
502-564-6716

Summary of Louisiana* Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline*	Benzene	EPA Method 8240 EPA Method 8020	5ppb 2ppb	any amount	MDL	Non-Detect/Backround
	Toluene	EPA Method 8240 EPA Method 8020	5ppb 2ppb	any amount	MDL	Non-Detect/Backround
	Enthylbenzene	EPA Method 8240 EPA Method 8020	5ppb 2ppb	any amount	MDL	Non-Detect/Backround
	Xylene(Total)	EPA Method 8240 EPA Method 8020	5ppb 5ppb	any amount	MDL	Non-Detect/Backround
Gasoline**	TPHG	California Method		any amount	1 ppm	>2.5ppm
	BTEX	EPA Method 8020		any amount	.25 ppm	2.5ppm
Diesel*	TPH-D	Modified 8015 California DHS	250ppb	any amount	MDL	Non-Detect/Backround
Diesel**	TPH-D	California Method		any amount	***	
Waste Oil**	Oil & Grease	EPA Method 5520F Standard Method		any amount	100 ppm	300ppm
	Volatile Organics	EPA Method SW846-M8240		any amount		10ppm

Note: Louisiana is currently revising their cleanup levels to reflect risk based levels.
* Groundwater Protection Division ** Underground Storage Tanks Division. *** No Values at present Time.

Contact: Department of Environmental Quality 504-765-0741

Summary of Louisiana* Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	BTEX	EPA Method 8020		any amount		Site Specific/<100ppm
	TPHG	California Ap.A.				Site Specific/<300ppm
Diesel	TPHD, California Ap.A.	California Ap.A.		any amount		Site Specific/<300ppm
Waste Oil	TCLP (Heavy Metals)	SW846/1311		any amount		Substitute C HW Requirements

Note: Louisiana is currently revising their cleanup levels to reflect risk based levels. * Underground Storage Tanks Division. ** Solid Waste Division- no definitive standard site specific determination.

Contact: Department of Environmental Quality 504-765-0741

Summary of Maine Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	Benzene		5ppb			5ppb*
	MTBE		20ppb			50ppb*
	Total Gasoline		10ppb			50ppb*
Diesel	Total Fuel Oil					50ppb*
Waste Oil						

* Stringent sites only. Note: Maine DEP uses a decision tree approach to establish remediation standards. The three categories of LUST sites are baseline, intermediate and stringent.

Contact: Fred Lavallee, Maine Department of Environmental Protection 207-289-2651

Summary of Maine Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	Total Gasoline	DEP 4.2.3	1ppm	200ppm by Jar / Headspace		5mg/kg*
Diesel	Total Fuel Oil	DEP 4.1.2	5ppm	50ppm by Jar / Headspace		10mg/kg*
Waste Oil						

* Intermediate and stringent sites only, remove saturated soils and free product (baseline sites). Note: Maine DEP uses a decision tree approach to establish remediation standards. The three categories of LUST sites are baseline, intermediate and stringent.

Contact: Fred Lavallee, Maine Department of Environmental Protection 207-289-2651

Summary of Massachusetts Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level (1)	Action Level	Clean-up Level (2) A / B / C Site Specific
Gasoline	Benzene	NS	NS	5/2000ug/l	NS	5/ 2000/ 7000 ug/l
	Toluene	NS	NS	1000/6000ug/l	NS	1000/ 6000/50,000 ug/l
	Ethylbenzene	NS	NS	700/4000ug/l	NS	700/ 30,000/ 4000 ug/l
	Total Xylenes	NS	NS	6000/6000ug/l	NS	10,000/ 6000/ 50,000 ug/l
	MTBE	NS	NS	700/50,000ug/l	NS	700/ 50,000/ 50,000 ug/l
Diesel	TPH	NS	NS	1000/50,000ug/l	NS	1000/ NA/ 50,000 ug/l
	Naphtalene	NS	NS	20/6000ug/l	NS	20/ 6000/ 6000 ug/l
	Phenanthrene	NS	NS	50/50ug/l	NS	30/ NA/ 50 ug/l
	Benzene	NS	NS	5/2000ug/l	NS	5/ 2000/ 7000 ug/l
Waste Oil	TPH	NS	NS	1000/50,000ug/l	NS	1000/ NA/ 50,000 ug/l
	Various Metals	NS	NS	Metal/ area specific	NS	Metal/ area Specific
	Various PAHs	NS	NS	Compound/ area specific	NS	Compound/ area Specific

Note: ug/l approximates ppb. NS= Not Specified in regulation. NA= Not Applicable (Non-volatile contaminants). (1) Two notification thresholds have been established depending upon potential use of groundwater. (2) Three cleanup values have been established depending upon potential groundwater use/ exposure: A–groundwater actual/ potential drinking water supply; B–where groundwater could be source of vapor emmisions to building; C–everywhere alternative levels possible based upon site-specific Risk Characterization.

Contact: John J. Fitzgerald, Massachusetts Department of Environmental Protection 617-935-2160

Summary of Massachusetts Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level (1)	Action Level	Clean-up Level (2)
Gasoline	Benzene	NS	NS	10/60 ug/g	NS	Site Specific/10-200ug/g
	Toluene	NS	NS	90/500 ug/g	NS	Site Specific/90-2500ug/g
	Ethylbenzene	NS	NS	80/500 ug/g	NS	Site Specific/80-2500ug/g
	Total Xylenes	NS	NS	500/500 ug/g	NS	Site Specific/500-2500ug/g
	MTBE	NS	NS	3/200 ug/g	NS	Site Specific/3-200ug/g
Diesel	TPH	NS	NS	500/2500 ug/g	NS	Site Specific/500-5000ug/g
	Naphthalene	NS	NS	4/1000 ug/g	NS	Site Specific/4-1000ug/g
	Phenanthrene	NS	NS	100/100 ug/g	NS	Site Specific/100-2500ug/g
	Benzene	NS	NS	10/60 ug/g	NS	Site Specific/10-200ug/g
Waste Oil	TPH	NS	NS	500/2500 ug/g	NS	Site Specific/500-5000ug/g
	Various Metals	NS	NS	Metal/ Area specific	NS	Metal/ Area Specific
	Various PAHs	NS	NS	Compound/ Area specific	NS	Compound/ Area Specific

Note: ug/g=ppm mass/ mass dry weight basis. NS= Not Specified in regulation. (1) Two notification thresholds have been established for "high" and "low" exposure potential areas. (2) Nine cleanup values have been established depending upon exposure potential/ accessibility of soil, and use/ classification of underlying groundwater. Alternative cleanup levels are allowed based upon a site-specific risk characterization. Note: Please refer to Massachusetts regulations 310 CMR 40.0000 for complete details on clean-up numbers and requirements.

Contact: John J. Fitzgerald, Massachusetts Department of Environmental Protection 617-935-2160

Summary of Michigan Clean-up Standards for Hydrocarbon Contaminated Grounwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	Benzene	EPA Method 8020, 8021	1ppb	any amount	1ppb	1ppb
	Toluene	EPA Method 8020, 8021	1ppb	any amount	790ppb	790ppb
	Ethylbenzene	EPA Method 8020, 8021	1ppb	any amount	74ppb	74ppb
	Xylenes	EPA Method 8020, 8021	3ppb	any amount	280ppb	280ppb
Premium Gas	MTBE	EPA Method 8020, 8021	50ppb	any amount	230ppb	230ppb
Leaded Gas	Lead	EPA Method 6020, 7421	3ppb	any amount	21,000ppb	21,000ppb
Diesel	BTEX**					
	PNAs	EPA Method 8270, 8310	5ppb	any amount	*	*
Waste Oil	BTEX and Lead**					
	PNAs***					

* Varies by component. ** At same levels as in gasoline. *** Same as in Diesel. Note: Other metals and organic solvents of waste oils need to be tested for call MDNR for further information.

Contact: Fred Sellers, Michigan Department of Natural Resources, Environmental Response Division 517-373-8168

Summary of Michigan Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	Benzene	EPA Method 8020, 8021	10ppb	any amount	24ppb	24ppb
	Toluene	EPA Method 8020, 8021	10ppb	any amount	16,000ppb	16,000ppb
	Ethylbenzene	EPA Method 8020, 8021	10ppb	any amount	1500ppb	1500ppb
	Xylenes	EPA Method 8020, 8021	30ppb	any amount	5600ppb	5600ppb
Premium Gas	MTBE	EPA Method 8020, 8021	100ppb	any amount	4600ppb	4600ppb
Leaded Gas	Lead	EPA Method 6020, 7420	1000ppb	any amount	420,000ppb	420,000ppb
Diesel	BTEX**					
	PNAs	EPA Method 8270, 8310	330ppb	any amount	*	*
Waste Oil	BTEX and Lead**					
	PNAs***					

* Varies by component. ** At same levels as in gasoline. *** Same as in Diesel. Note: Other metals and organic solvents of waste oils need to be tested for call MDNR for further information.

Contact: Fred Sellers, Michigan Department of Natural Resources, Environmental Response Division 517-373-8168

Summary of Minnesota Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	TPH	Wisconsin DNR GRO Method		any amount	Site Specific***	Site Specific***
	VOCs	Purge & Trap GC Procedure		any amount	Site Specific**	Site Specific**
Diesel	TPH	Wisconsin DNR DRO Method		any amount	Site Specific***	Site Specific***
	VOCs	Purge & Trap GC Procedure		any amount	Site Specific**	Site Specific**
Waste Oil*	TPH	Wisconsin DNR DRO Method		any amount	Site Specific***	Site Specific***
	VOCs	Purge & Trap GC Procedure		any amount	Site Specific**	Site Specific**

* Defined as virgin oil that is discarded before use. ** Based on risk assessment and Minnesota Department of Health Recommended Allowable Limits for drinking water. (and multiples there of) *** In most cases, action and clean-up levels in groundwater are based on VOC levels.

Contact: Jessica Ebertz, Minnesota Pollution Control Energy 612-297-8594

Summary of Minnesota Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	TPH	Wisconsin DNR GRO Method		any amount	40 ppm**	Site Specific****
	BTEX	*		any amount	40 ppm**	Site Specific****
	MTBE	*		any amount	40 ppm**	Site Specific****
Diesel	TPH	Wisconsin DNR DRO Method		any amount	10 ppm***	Site Specific****
	BTEX	*		any amount	10 ppm***	Site Specific****
Waste Oil	Same as Diesel →					

* All samples, unless specifically noted, should use a US EPA approved method or equivalent. ** Soil Vapor headspace analysis ≥ 40ppm. *** Visual evidence of contamination or soil vapor headspace ≥ 10 ppm. **** Additional investigation needed if base, sidewall soil samples are >50ppm TPH for sands.

Contact: Jessica Ebertz, Minnesota Pollution Control Energy 612-297-8594

Summary of Mississippi Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	BTEX	EPA Method 602, 624, 8020, 8240, 8260	*	any amount	18 ppm or more	**
Diesel	TPH	EPA Method 418.1	.1ppm	any amount	18 ppm or more	**
Waste Oil	TPH	EPA Method 418.1	1ppm	any amount	18 ppm or more	**

* Benzene-.09ppb, Toulene-.1ppb, Ethylbenzene-.05ppb, Meta & Para Xylene-.1ppb.
** 18ppm or less if no sensitive environmental receptors present.

Contact: Jackie Key, Mississippi Department of Environmental Quality 601-939-8460

Summary of Mississippi Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	BTEX	EPA Method 602, 624, 8020, 8240, 8260	*	any amount	100 ppm or over	**
Diesel	TPH	EPA Method 418.1	4ppm	any amount	100 ppm or over	**
Waste Oil	TPH	EPA Method 418.1	1ppm	any amount	100 ppm or over	**

* Benzene-11.25ppb, Toluene-12.5ppb, Ethylbenzene-6.25ppb, Meta & Para Xylene-12.5ppb.
** 100ppm or less if no sensitive environmental receptors present.

Contact: Jackie Key, Mississippi Department of Environmental Quality 601-939-8460

Summary of Missouri Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	TPH	EPA Method 418.1	5.0ppm	5.0ppm	Site Specific	Site Specific/5-10ppm
	Benzene	EPA Method 8020 or 8240	.005ppm	.005ppm	Site Specific	Site Specific/5-50ppb*
	Toluene	EPA Method 8020 or 8240	.005ppm	.005ppm	Site Specific	Site Specific/max 150ppb
	Ethylbenzene	EPA Method 8020 or 8240	.005ppm	.005ppm	Site Specific	Site Specific/max 320ppb
	Xylene	EPA Method 8020 or 8240	.005ppm	.005ppm	Site Specific	Site Specific/max 320ppb
	Total BTEX	EPA Method 8020 or 8240	.005ppm	.005ppm	Site Specific	Site Specific/max 750ppb
Diesel	Same as Gasoline →					
Waste Oil	TPH	EPA Method 418.1	Same as Gasoline →			
	BTEX	EPA Method 8240	Same as Gasoline →			
	Heavy Metals	EPA Method 1311/6010 (TCLP)	TCLP	Contact the Environmental Services Program, Site specific.		

* 5ppb for Drinking Water.
Note: Regulatory levels in 40CFR 261.24

Contact: John Crawshaw, Missouri Department of Natural Resources 816-795-8655

Summary of Missouri Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	TPH	EPA Method 418.1 Modified	5.0ppm	25ppm	Site Specific	Site Specific/50-500ppm
	Benzene	EPA Method 8020 or 8240	.05ppm	.5ppm	Site Specific	Site Specific Min (Total BTEX<2ppm)
	Toluene	EPA Method 8020 or 8240	.05ppm	Total BTEX 1ppm	Site Specific	Max (Benzene 2ppm, Toluene 10ppm,
	Ethylbenzene	EPA Method 8020 or 8240	.05ppm	Total BTEX 1ppm	Site Specific	Ethylbenzene 50ppm, Xylene 50ppm)
	Xylene	EPA Method 8020 or 8240	.05ppm	Total BTEX 1ppm	Site Specific	
Diesel	Same as Gasoline →					
Waste Oil	TPH	Same as Gasoline				
	BTEX	EPA Method 8240	Same as Gasoline →			
	Heavy Metals	EPA Method 1311/6010 (TCLP)	40 mg/kg	Contact the Environmental Services Program, Site Specific		

Note: TCLP Regulatory levels in 40CFR 261.24

Contact: John Crawshaw, Missouri Department of Natural Resources 816-795-8655

Summary of Montana Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	TPH	GRO**	Not Specified	any amount	NA	Site Specific
	Benzene	602, 624, 524.2	Not Specified	any amount	NA	≥ MCL (Site Specific)
	Toluene	602, 624, 524.2	Not Specified	any amount	NA	≥ MCL (Site Specific)
	Ethylbenzene	602, 624, 524.2	Not Specified	any amount	NA	≥ MCL (Site Specific)
	Xylenes	602, 624, 524.2	Not Specified	any amount	NA	≥ MCL (Site Specific)
Diesel	TPH	DRO**	Not Specified	any amount	NA	Site Specific
	Benzene	602, 624, 524.2	Not Specified	any amount	NA	≥ MCL (Site Specific)
	Toluene	602, 624, 524.2	Not Specified	any amount	NA	≥ MCL (Site Specific)
	Ethylbenzene	602, 624, 524.2	Not Specified	any amount	NA	≥ MCL (Site Specific)
	Xylenes	602, 624, 524.2	Not Specified	any amount	NA	≥ MCL (Site Specific)
Waste Oil	TPH	DRO** with a used oil standard	Not Specified	any amount	NA	Site Specific
	VOCs	624, 524.2	Not Specified	any amount	NA	See above for BTEX*
	Cadmium, Chromium, Lead	Not Specified	Not Specified	any amount	NA	*

* Contamination from metals and halogenated VOCs is under the jurisdiction of another program.
** Must be performed according to DHES guidelines.

Contact: Pat Newby, Montana Department of Health and Environmental Sciences 406-444-5970

Summary of Montana Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	TPH	GRO**	Non-specific Level Required	100 ppm	NA	Site Specific ≥100ppm
	Benzene	EPA Method 8020, 8260	Non-specific Level Required	1 ppm	NA	Site Specific ≥1ppm
	Total BTEX	EPA Method 8020, 8260	Non-specific Level Required	10 ppm	NA	Site Specific ≥10ppm
Diesel	TPH	DRO**	Non-specific Level Required	100 ppm	NA	Site Specific ≥100ppm
Waste Oil	TPH	DRO** with a used oil standard	Non-specific Level Required	100 ppm	NA	Site Specific ≥100ppm
	VOCs	EPA Method 8260	Non-specific		NA	See above for BTEX*
	Cadmium, Chromium, Lead	Not Specified	Non-specific Level Required		NA	*

* Contamination from metals and halogenated VOCs is under the jurisdiction of another program.
** Must be performed according to DHES guidelines.

Contact: Pat Newby, Montana Department of Health and Environmental Sciences 406-444-5970

Summary of Nebraska Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	Benzene	EPA Method 8021, 8020, 8240, 8260, 602, 624	≤ Cleanup Level	any amount	≥ Cleanup level	5ppb
	Toluene	EPA Method 8021, 8020, 8240, 8260, 602, 624	≤ Cleanup Level	any amount	≥ Cleanup level	1000ppb
	Ethylbenzene	EPA Method 8021, 8020, 8240, 8260, 602, 624	≤ Cleanup Level	any amount	≥ Cleanup level	7000ppb
	Xylenes	EPA Method 8021, 8020, 8240, 8260, 602, 624	≤ Cleanup Level	any amount	≥ Cleanup level	10,000ppb
	TRPH	EPA Method 418.1	≤ Cleanup Level	any amount	≥ Cleanup level	2000ppb
Diesel	Benzene	EPA Method 8021, 8020, 8240, 8260, 602, 624	≤ Cleanup Level	any amount	≥ Cleanup level	5ppb
	Toluene	EPA Method 8021, 8020, 8240, 8260, 602, 624	≤ Cleanup Level	any amount	≥ Cleanup level	1000ppb
	Ethylbenzene	EPA Method 8021, 8020, 8240, 8260, 602, 624	≤ Cleanup Level	any amount	≥ Cleanup level	7000ppb
	Xylenes	EPA Method 8021, 8020, 8240, 8260, 602, 624	≤ Cleanup Level	any amount	≥ Cleanup level	10,000ppb
	TRPH	EPA Method 418.1	≤ Cleanup Level	any amount	≥ Cleanup level	2000ppb
Waste Oil	TRPH	EPA Method 418.1	≤ Cleanup Level	any amount	≥ Cleanup level	2000ppb

Contact: Marc Fisher, Nebraska Department of Environmental Quality 402-471-4230

Summary of Proposed Nebraska Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	Benzene	EPA Method 8021, 8020 8240, 8260	≤ Cleanup Level	any amount	≥ Cleanup Level	Site Specific/.005–50ppm
	Total BTEX	EPA Method 8021, 8020 8240, 8260	≤ Cleanup Level	any amount	≥ Cleanup Level	Site Specific/1–10,000ppm
	TRPH	EPA Method 418.1	≤ Cleanup Level	any amount	≥ Cleanup Level	Site Specific/10–500ppm
Diesel	Benzene	EPA Method 8021, 8020 8240, 8260	≤ Cleanup Level	any amount	≥ Cleanup Level	Site Specific/.005–50ppm
	Total BTEX	EPA Method 8021, 8020 8240, 8260	≤ Cleanup Level	any amount	≥ Cleanup Level	Site Specific/1–10,000ppm
	TRPH	EPA Method 418.1	≤ Cleanup Level	any amount	≥ Cleanup Level	Site Specific/100–500ppm
Waste Oil	TRPH	EPA Method 418.1	≤ Cleanup Level	any amount	≥ Cleanup Level	Site Specific/10–500ppm
	VOCs, SVOCs	EPA Method 8240/ 8260; 8270	≤ Cleanup Level	any amount	≥ Cleanup Level	Established Case-By-Case

Contact: Marc Fisher, Nebraska Department of Environmental Quality 402-471-4230

Summary of Nevada Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	Benzene	EPA Method 624	1 ug/l	> 25 Gallons or 3 Cubic Yards	MCLs 5ppb	MCLs
	Toluene	EPA Method 624	1 ug/l		MCLs 1ppm	MCLs
	Ethylbenzene	EPA Method 624	1 ug/l		MCLs .7ppm	MCLs
	Xylene	EPA Method 624	1 ug/l		MCLs 10ppm	MCLs
Diesel	Benzene	EPA Method 624	1 ug/l	> 25 Gallons or 3 Cubic Yards	MCLs As Above	MCLs
	Toluene	EPA Method 624	1 ug/l		MCLs As Above	MCLs
	Ethylbenzene	EPA Method 624	1 ug/l		MCLs As Above	MCLs
	Xylene	EPA Method 624	1 ug/l		MCLs As Above	MCLs
Waste Oil	BTEX	EPA Method 624,	1 ug/l	> 25 Gallons or 3 Cubic Yards	MCLs As Above	MCLs
		TCLP Inorganics			MCLs	MCLs

Contact: Larry Woods, Nevada Department of Conservation and Natural Resources 702-687-5872

Summary of Nevada Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	TPH	EPA Method 8015 Modified	10 mg/kg	> 25 Gallons or 3 Cubic Yards	100 ppm	100 ppm
Diesel	TPH	EPA Method 8015 Modified	10 mg/kg	> 25 Gallons or 3 Cubic Yards	100 ppm	100 ppm
Waste Oil	TPH	EPA Method 8015 Modified,	10 mg/kg	> 25 Gallons or 3 Cubic Yards	100 ppm MCLs	100 ppm MCLs
		TCLP Inorganics			MCLs	MCLs

Contact: Larry Woods, Nevada Department of Conservation and Natural Resources 702-687-5872

Summary of New Jersey Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Groundwater Quality Criteria
Gasoline	Benzene	EPA Method 524 (Drinking Water)	Test Specific	any amount	NS	.2
	Toluene	EPA Method 524 (Drinking Water)	Test Specific	any amount	NS	1000
	Ethylbenzene	EPA Method 524 (Drinking Water)	Test Specific	any amount	NS	700
	Xylene	EPA Method 524 (Drinking Water)	Test Specific	any amount	NS	40
	Anthracene	EPA Method 525	Test Specific	any amount	NS	2000
	Naphthalene	EPA Method 524.2	Test Specific	any amount	NS	——
	Lead	NS	Test Specific	any amount	NS	5
	Benzo (A) Pyrene	EPA Method 525	Test Specific	any amount	NS	NA
Diesel	Same As Above For Gasoline					

NS=Not Specified

Contact: New Jersey Department of Environmental Protection 609-984-3156

Summary of New Jersey Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Criteria Residential / Non-Residential
Gasoline	Benzene	EPA Method SW 846	Test Specific	any amount	NS	3mg/kg / 13mg/kg
	Toluene	EPA Method SW 846	Test Specific	any amount	NS	1000mg/kg / 1000mg/kg
	Ethylbenzene	EPA Method SW 846	Test Specific	any amount	NS	1000mg/kg / 1000mg/kg
	Xylene	EPA Method SW 846	Test Specific	any amount	NS	<110mg/kg / 1000mg/kg
	Anthracene	EPA MethodSW 846	Test Specific	any amount	NS	10,000mg/kg / 10,000mg/kg
	Naphthalene	EPA Method SW 846	Test Specific	any amount	NS	230mg/kg / 4200mg/kg
	Lead	EPA Method SW 846	Test Specific	any amount	NS	100mg/kg / 600mg/kg
	Benzo (A) Pyrene	EPA Method SW 846	Test Specific	any amount	NS	.66mg/kg / .66mg/kg
Diesel	Same As Above For Gasoline					

NS=Not Specified Note: Refer to clean-up standards for contaminated sites NJAC 7:26D

Contact: New Jersey Department of Environmental Protection 609-984-3156

Summary of New Mexico Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	Benzene	EPA Method 602			.01 ppm	.01 ppm
	Toluene	EPA Method 602			.75 ppm	.75 ppm
	Ethylbenzene	EPA Method 602			.75 ppm	.75 ppm
	Xylene (Total)	EPA Method 602			.62 ppm	.62 ppm
	MTBE	EPA Method 602			.1ppm	.1ppm
	EDB/ EDC	EPA Method 624			.0001 ppm/ .01 ppm	.0001 ppm/ .01 ppm
Diesel	Napthalene	EPA Method 610			.03 ppm	.03 ppm
	Benzo (A) Prrene	EPA Method 610			.0007 ppm	.0007 ppm
Waste Oil	TPH	Modified 8015			100 ppm	100 ppm
	TCLP-Semi-Volatiles, Volatiles, PCBs, Metals				Per RCRA	Per RCRA

Contact: Anna Richards, New Mexico Environmental Department 505-827-0079

Summary of New Mexico Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	TAH	EPA Method 8020			50 ppm	50ppm
	BTEX	EPA Method 8020			*	*
Diesel	TPH	EPA Method 8015 Modified			100 ppm	100ppm
		EPA Method 418.1			100ppm	100ppm
Waste Oil	Same as Diesel +				Per RCRA	Per RCRA
	TCLP-Semi-Volatiles, Volatiles, PCBs, Metals					

* Total 50ppm, Benzene .10ppm

Contact: Anna Richards, New Mexico Environmental Department 505-827-0079

Summary of New York Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	Benzene	EPA Method 8021 or 8020	1ppb	any amount	.7ppb	Action Level, or when not achievable site specific
	Ethylbenzene	EPA Method 8021 or 8020	1ppb	any amount	5ppb	Action Level, or when not achievable site specific
	Toluene	EPA Method 8021 or 8020	1ppb	any amount	5ppb	Action Level, or when not achievable site specific
	Xylene	EPA Method 8021 or 8020	2ppb	any amount	5ppb	Action Level, or when not achievable site specific
	MTBE	EPA Method 8021 or 8020	1ppb	any amount	50ppb	Action Level, or when not achievable site specific
	Other Compounds Listed in STARS #1	EPA Method 8021	Compound Specific	any amount	Compound Specific	Action Level, or when not achievable site specific
Diesel	Napthalene	EPA Method 8021 or 8270	1ppb or 6ppb	any amount	10ppb	Action Level, or when not achievable site specific
	Anthracene	EPA Method 8270	8ppb	any amount	50ppb	Action Level, or when not achievable site specific
	Fluorene	EPA Method 8270	8ppb	any amount	50ppb	Action Level, or when not achievable site specific
	Pyrene	EPA Method 8270	8ppb	any amount	50ppb	Action Level, or when not achievable site specific
	Other Compounds Listed in STARS #1	EPA Method 8021 or 8270	Compound Specific	any amount	Compound Specific	Action Level, or when not achievable site specific
Waste Oil	PCBs	EPA Method 8270	Compound Specific	Compound Specific	Compound Specific	Compound Specific
	Halogenated Organics	EPA Method 8020	Compound Specific	Compound Specific	Compound Specific	Compound Specific
	See Diesel Parameters Above	→				→

Contact: Chris O'Neill, New York Department of Environmental Conservation 518-457-9412

Summary of New York Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	Benzene	EPA Method 8021 or 8020	2ppb	any amount	14ppb	Site Specific
	Ethylbenzene	EPA Method 8021 or 8020	2ppb	any amount	100ppb	Site Specific
	Toluene	EPA Method 8021 or 8020	2ppb	any amount	100ppb	Site Specific
	Xylene	EPA Method 8021 or 8020	2ppb	any amount	100ppb	Site Specific
	MTBE	EPA Method 8021 or 8020	1ppb	any amount	1000ppb	Site Specific
	Other Compounds Listed in STARS #1	EPA Method 8021	Compound Specific	any amount	Compound Specific	Site Specific
Diesel	Napthalene	EPA Method 8021	1ppb	any amount	200ppb	Site Specific
	Anthracene	EPA Method 8270	330ppb	any amount	1000ppb	Site Specific
	Fluorene	EPA Method 8270	330ppb	any amount	1000ppb	Site Specific
	Pyrene	EPA Method 8270	330ppb	any amount	1000ppb	Site Specific
	Other Compounds Listed in STARS #1	EPA Method 8021 or 8270	Compound Specific	any amount	Compound Specific	Site Specific
Waste Oil	PCBs	EPA Method 8270	Compound Specific	Compound Specific	Compound Specific	Compound Specific
	Halogenated Organics	EPA Method 8021	Compound Specific	Compound Specific	Compound Specific	Compound Specific
	See Diesel Parameters Above	→				→

Contact: Chris O'Neill, New York Department of Environmental Conservation 518-457-9412

Summary of North Carolina Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	BTEX	EPA Method 601 & 602 or 502.2 & 524.2	MDL	None Specified	None Specified	Site Specific
	MTBE	Also Xylenes, MTBE, EDB, Isopropyl Ether and		None Specified	None Specified	
		Standard Methods 3030C (Lead)		None Specified	None Specified	
Diesel	BTEX	602 (Include Xylenes) or 502.2 and 625 plus	MDL	None Specified	None Specified	Site Specific
	MTBE	10 Largest Peaks and Standard Methods		None Specified	None Specified	
		3030C (Lead)				
Waste Oil	BTEX	502.2 and 625 with 10 Largest Peaks Identified		None Specified	None Specified	Site Specific
	MTBE	and Standard Method 3030C*		None Specified	None Specified	

Note: MDL = Method Detection Limit.
* For Waste Oil the analysis must include Arsenic, Cadmium, Chromium, Lead and Mercury.

Contact: Nardis Toma, North Carolina Department of Environmental Management, 919-733-1320

Summary of North Carolina Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	TPH	SW 846/ EPA Method 5030	10 PPM	None Specified	None Specified	Site Specific*
Diesel	TPH	SW 846/ EPA Method 5030/ 3550	10ppm/ 40ppm	None Specified	None Specified	Site Specific*
Waste Oil	TPH	SW 846/ EPA Method 9071/ 8021	MDL for 8021	None Specified	None Specified	Site Specific*
	Total Organics and Metals	1311 (TCLP)	MDL for 1311	None Specified	None Specified	Site Specific*

Note: MDL = Method Detection Limit. * North Carolina used a Site Sensitivity evaluation to rate sites, cleanup criteria are based on evaluation.

Contact: Nardis Toma, North Carolina Department of Environmental Management, 919-733-1320

Summary of North Dakota Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	Benzene	EPA Method 524.2	.5ppb	any amount	5ppb	Site Specific/5ppb
	Toluene	EPA Method 524.2	.5ppb	any amount	5ppb	Site Specific
	Ethlybenzene	EPA Method 524.2	.5ppb	any amount	5ppb	Site Specific
	Xylenes	EPA Method 524.2	.5ppb	any amount	5ppb	Site Specific
Diesel	TRPH	EPA Method 418.1	1 mg/l			Site Specific
Waste Oil	Lead	EPA Method 239.2	.2ug/l			Site Specific
	Chromium	EPA Method 218.2	.2ug/l			Site Specific
	Cadmium	EPA Method 213.2	.2ug/l			Site Specific

Contact: Gary Bracht, State Department of Health and Consolidated Laboratories 701-221-5166

Summary of North Dakota Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	TPH	EPA Method 418.1 or *DHS		any amount	100 ppm	Site Specific/100+ ppm
Diesel	TPH	EPA Method 418.1 or *DHS		any amount	100 ppm	Site Specific/100+ ppm
Waste Oil	BTEX	EPA Method 8020		any amount	.5mg/l Benzene	
	Lead	EPA Method 239.2		any amount	5mg/l	
	Chromium	EPA Method 218.2		any amount	5mg/l	
	TOX	EPA Method 9020, 9022		any amount	1000mg/l	

* California Department of Health Services Method.

Contact: Gary Bracht, State Department of Health and Consolidated Laboratories 701-221-5166

Summary of Ohio Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	Benzene	EPA Method 602	Method Specific	any amount	.005 ppm	Site Specific
	Toluene	EPA Method 602	Method Specific	any amount	12 ppm	Site Specific
	Ethylbenzene	EPA Method 602	Method Specific	any amount	.700 ppm	Site Specific
	Total Xylenes	EPA Method 602	Method Specific	any amount	10 ppm	Site Specific
	TPH	None Specified	None Specified	None Specified	None Specified	None Specified
Diesel	Benzene	EPA Method 602	Method Specific	any amount	.005 ppm	Site Specific
	Toluene	EPA Method 602	Method Specific	any amount	12 ppm	Site Specific
	Ethylbenzene	EPA Method 602	Method Specific	any amount	.700 ppm	Site Specific
	Total Xylenes	EPA Method 602	Method Specific	any amount	10 ppm	Site Specific
	PNAs	EPA Method 610	Method Specific	any amount	Site Specific	Site Specific
	TPH	None Specified	None Specified	None Specified	None Specified	None Specified
Waste Oil	Volatile Organic Aromatics	EPA Method 624	Method Specific	any amount	Site Specific	Site Specific
	TPH					

Contact: Raymond Roe, Ohio Department of Commerce
614-752-7941

Summary of Ohio Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	Benzene	EPA Method 8020	Method Specific	Action Level Based	.006 –.500 ppm	Site Specific
	Toluene	EPA Method 8020	Method Specific	Action Level Based	4–12 ppm	Site Specific
	Ethylbenzene	EPA Method 8020	Method Specific	Action Level Based	6–18 ppm	Site Specific
	Total Xylenes	EPA Method 8020	Method Specific	Action Level Based	28–85 ppm	Site Specific
	TPH	Modified Method 8015	Method Specific	Action Level Based	105–600ppm	Site Specific
Diesel	Benzene	EPA Method 8020	Method Specific	Action Level Based	.006 –.500 ppm	Site Specific
	Toluene	EPA Method 8020	Method Specific	Action Level Based	4–12 ppm	Site Specific
	Ethylbenzene	EPA Method 8020	Method Specific	Action Level Based	6–18 ppm	Site Specific
	Total Xylenes	EPA Method 8020	Method Specific	Action Level Based	28–85 ppm	Site Specific
	PNAs	EPA Method 8100	Method Specific	Any Level	Site Specific	Site Specific
	TPH	EPA Method 418.1	Method Specific	Any Level	380–1156 ppm	Site Specific
Waste Oil	Volatile Organic Aromatics	EPA Method 8240	Method Specific	Any Level	Site Specific	Site Specific
	TPH	EPA Method 418.1	Method Specific	Action Level Based	380–1156 ppm	Site Specific

Contact: Raymond Roe, Ohio Department of Commerce
614-752-7941

Summary of Oklahoma Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level 1 / 2 / 3 ppm
Gasoline, Diesel and Kerosene	TPH	*	1ppm	any amount above action level	TPH>2ppm B>.005ppm	TPH: 2 / 10 / 25 B: .005 / .05 / .5
	BTEX	*	1ppm	any amount above action level	T>1ppm E>.7ppm X>10ppm	T: 1 /10 / 100 E: .7 / 7 / 70 X: 10 / 100 / 1000

Note: Oklahoma uses a Remediation Index in determining cleanup standards on a site-bysite basis.
* No methods are specified– "Whatever methods is specified must be able to detect the most stringent cleanup levels

Contact: Oklahoma Corporation Commission, Underground Storage Tank Program 405-521-3107

Summary of Oklahoma Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level 1 / 2 / 3 ppm
Gasoline, Diesel and Kerosene	TPH	*	1ppm	any amount above action level	TPH>50ppm B>.5ppm	TPH: 50 / 500 / 1000 B: .5 / 5 / 10
	BTEX	*	1ppm	any amount above action level	T>40ppm E>15ppm X>200ppm	T: 40 /400 / 1000 E: 15 / 150 / 1000 X: 200 / 1000 / 1000

Note: Oklahoma uses a Remediation Index in determining cleanup standards on a site-bysite basis.
* No methods are specified– "Whatever methods is specified must be able to detect the most stringent cleanup levels

Contact: Oklahoma Corporation Commission, Underground Storage Tank Program 405-521-3107

Summary of Oregon Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	BTEX	EPA Method 8020 or 8240	.5 ppb	any amount		B: 5ppb, T: 700ppb E: 1000ppb, X: 10,000ppb
	Additives	EPA Method 8010 or 8240	.5 ppb	any amount		1.2-Dibromoethane-1ppb 1.2-Dichlorethane-5ppb Lead-5ppb
Diesel	BTEX	Same As Gasoline Above				
	PAHs	EPA Method 8310	.1 ppb	any amount		
	Carcinogenic					Benzo (A) Pyrene .2ppb Benzo(A)Anthracene .1ppb
	Non-Carcinogenic					Acenaphthene 420ppb Anthracene 2100ppb Fluoranthene 280ppb Fluorene 280ppb Naphthalene 28ppb Pyrene 210ppb
Waste Oil	Same as Diesel, but must screen for metals, Chlorinated and sometimes PCBs.					

Note: Oregon uses a site scoring matrix in determined petroleum cleanup standards in soil.

Contact: Michael Anderson, Department of Environmental Quality, 503-229-6764

Summary of Oregon Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	TPH	DE2 Method, TPH-G	10 mg/kg	any amount		Site Specific, Level 1=40ppm, Level 2=80ppm Level 3=130ppm
Diesel	TPH	DE2 Method, TPH-D or TPH-418.1	20 mg/kg	any amount		Site Specific Level 1=100ppm, Level 2=500ppm, Level 3=1000ppm,
Waste Oil	TPH	DE2 Method,TPH-418.1		any amount		(Same as Diesel)

Note: Oregon uses a site scoring matrix in determined petroleum cleanup standards in soil.

Contact: Michael Anderson, Department of Environmental Quality, 503-229-6764

Summary of Pennsylvania Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	Benzene	EPA Method 8020	.2 ug/l	any amount	None	Non-Detect
	Toluene	EPA Method 8020	.2 ug/l	any amount	None	Non-Detect
	Ethylbenzene	EPA Method 8020	.2 ug/l	any amount	None	Non-Detect
	Total Xylene	EPA Method 8020		any amount	None	Non-Detect
	PHC	API-GRO	.1 mg/l	any amount	None	Non-Detect
	Total Lead*	None Specified		any amount	None	Non-Detect
Diesel	PHC	API-DRO	.1 mg/l	any amount	None	Non-Detect
Waste Oil	TPH	EPA Method 418.1	1ppm	any amount	None	Non-Detect

* When tank contained a leaded Gasoline.

Contact: Doug Cordelli, Department of Environmental Resources 717-772-5835

Summary of Pennsylvania Clean-up Standards for Hydrocarbon Contaminated Soils

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	Benzene	EPA Method 8020	2 ug/l	.01ppm	.01ppm	.01ppm
	Toluene	EPA Method 8020	2 ug/l	.02ppm	.02ppm	.02ppm
	Ethylbenzene	EPA Method 8020	2 ug/l	.02ppm	.02ppm	.02ppm
	Total Xylene	EPA Method 8020		.07ppm	.07ppm	.07ppm
	PHC– Petroleum Hydrocarbons	API-GRO	5 mg/kg	10ppm	10ppm	10ppm
	Total Lead*	None Specified		any amount	N/A	Residential Areas 200 ppm Industrial Areas 600ppm
Diesel	PHC	API-DRO	4 mg/kg	10ppm	10ppm	10ppm
Waste Oil	TPH	EPA Method 418.1		any amount	Site Specific	Site Specific

* When tank contained a leaded Gasoline.

Contact: Doug Cordelli, Department of Environmental Resources 717-772-5835

Summary of South Carolina Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level (MCLs)
Gasoline	BTEX	EPA Method 8020	Test Specific	any amount	**	B:.5ug/l, T:1000ug/l, E:700ug/l, 10,000ug/l
	MTBE	EPA Method 8020	Test Specific	any amount	**	Not Established
	TPH	EPA Method5030*	Test Specific	any amount	**	Not Established
Diesel	BTEX	EPA Method 8020	Test Specific	any amount	**	B:.5ug/l, T:1000ug/l, E:700ug/l, 10,000ug/l
	Naphthalene	EPA Method 8020	Test Specific	any amount	**	Not Established
	TPH	EPA Method 3510*	Test Specific	any amount	**	Not Established
Waste Oil	BTEX	EPA Method 8240	Test Specific	any amount	**	B:.5ug/l, T:1000ug/l, E:700ug/l, 10,000ug/l
	Naphthalene	EPA Method 8240	Test Specific	any amount	**	Not Established
	TPH	EPA Method 9070	Test Specific	any amount	**	Not Established
	8 Drinking Water Metals AA-ICD					

* California method or equivalent.
** Site Specific.

Contact: Mark Berenbrok, South Carolina Department of Health & Environmental Control 803-734-5331

Summary of South Carolina Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	BTEX	EPA Method 8020	1 mg/kg	any amount	**	Site Specific
	TPH	EPA Method 5030*	10 mg/kg	any amount	**	Site Specific
Diesel	BTEX	EPA Method 8020	1 mg/kg	any amount	**	Site Specific
	Naphthalene	EPA Method 8020		any amount	**	Site Specific
	TPH	EPA Method 3550*	10 mg/kg	any amount	**	Site Specific
Waste Oil	BTEX	EPA Method 8240	1 mg/kg	any amount	**	Site Specific
	Naphthalene	EPA Method 8240		any amount	**	Site Specific
	TPH	EPA Method 9071	10 mg/kg	any amount	**	Site Specific
	8 Drinking Water Metals AA-ICD					

* California method or equivalent.
** Site Specific.

Contact: Mark Berenbrok, South Carolina Department of Health & Environmental Control 803-734-5331

Summary of South Dakota Clean-up* Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	Ethylbenzene	***	.7ppm	.7ppm	.7ppm	.7ppm
	Benzene	***	.005ppm	.005ppm	.005ppm	.005ppm
	Toluene	***	1ppm	1ppm	1ppm	1ppm
	Xylene	***	10ppm	10ppm	10ppm	10ppm
	TPH	***	.1ppm	.1ppm	.1ppm	**
Diesel	TPH	***	.1ppm	.1ppm		**
Waste Oil	TPH**	***	.1ppm	.1ppm	.1ppm	

* South Dakota does not specifically refer to the groundwater quality standards as Clean-up Standards but in a practical sense they are used as such. ** Compliance to the .1ppm level is required if the contamination is within the radius of influence of a well or within a delineated well head protection area, unless a variance is obtained. Otherwise the compliance level is 10ppm.
*** No particular method is specified however, methods used must conform with "Standard Methods for Examination of Water and Waste Water" and "EPA Methods, Methods for Chemical Analysis of Waters and Wastes."

Contact: Doug Miller, Department of Environmental and Natural Resources 605-773-3296

Summary of South Dakota Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	TPH	*	10ppm	any amount	10-100 ppm	10-100 ppm**
Diesel	TPH	*				
Waste Oil	TPH	*				
	EPTOX Methods	*				

* California/ USGS method or similar methods that can quantify TPH by integrating all detectable peaks within the time period in which 95% of the recoverable Hydrocarbons are eluded. ** Action Levels/ Clean-up Levels are Site Specific and are based on the type of contaminant released, depth to an aquifer and the soil type present.

Contact: Doug Miller, Department of Environmental and Natural Resources 605-773-3296

Summary of Tennessee Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	Benzene	SW-846 5030 P&T/ 8020 GC	.002ppm	any amount	> 5ppb	Applic. CL based on GW Class, > 5ppb or >70ppb
	TPH	Tennessee Method for Gasoline Range Organics	.1ppm	any amount	> 100ppb	> 100ppb or >1000ppb
Diesel	TPH	Tennessee Method for Diesel Range Organics	.1ppm	any amount	> 100ppb	> 100ppb or >1000ppb
Waste Oil	TPH	5520F, 503E or 418.1	1ppm	any amount	> 100ppb	> 100ppb or >1000ppb

Contact: Curtis Hopper, Tennessee Department of Environment and Conservation 615-741-4081

Summary of Tennessee Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	Total BTX	SW-846 5030 P&T/ 8020 GC	.002ppm	any amount	>10 ppm	Applic. CL based on GW Class. & Soil Perm. > 10ppm- >500ppm
	TPH	TN Method for Gasoline Range Organics	10ppm	any amount	>100 ppm	> 100ppm — >1000ppm
Diesel	TPH	TN Method for Diesel Range Organics	10ppm	any amount	>100 ppm	> 100ppm — >1000ppm
Waste Oil	TPH	5520F, 503E or 418.1	100ppm	any amount	>100 ppm	> 100ppm — >1000ppm

Contact: Curtis Hopper, Tennessee Department of Environment and Conservation 615-741-4081

Summary of Texas Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	Benzene	EPA Method 8020	1ppb	any amount	*	Site Specific/Risk-based**
	Toluene	EPA Method 8020	1ppb	any amount	*	Site Specific/Risk-based**
	Ethylbenzene	EPA Method 8020	1ppb	any amount	*	Site Specific/Risk-based**
	Xylene	EPA Method 8020	1ppb	any amount	*	Site Specific/Risk-based**
	TPH	EPA Method 418.1	.5ppm	any amount	Site Specific	Site Specific/Risk-based**
Diesel	Benzene	EPA Method 8020	1ppb	any amount	*	Site Specific/Risk-based**
	Toluene	EPA Method 8020	1ppb	any amount	*	Site Specific/Risk-based**
	Ethylbenzene	EPA Method 8020	1ppb	any amount	*	Site Specific/Risk-based**
	Xylene	EPA Method 8020	1ppb	any amount	*	Site Specific/Risk-based**
	TPH	EPA Method 418.1	.5ppm	any amount	Site Specific	Site Specific/Risk-based**
	PAHs	EPA Method 8100, 8270, 8310	Chemical Specific	any amount	Site Specific	Site Specific/Risk-based**
Waste Oil	BTEX	EPA Method 8020	1ppb	any amount	*	Site Specific/Risk-based**
	TPH	EPA Method 418.1	.5ppm	any amount	Site Specific	Site Specific/Risk-based**
	VOCs	EPA Method 8240	Chemical Specific	any amount	Site Specific	Site Specific/Risk-based**
	PAH	EPA Method 8100, 8270, 8310	Chemical Specific	any amount	Site Specific	Site Specific/Risk-based**

* EPA Maximum Contaminant Level.
** No Range Available.

Contact: Chris Chandler, Texas Natural Resource Commission 512-908-2247

Summary of Texas Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	Benzene	EPA Method 8020	.5mg/kg	any amount	*	Site Specific/Risk-based**
	Toluene	EPA Method 8020	.5mg/kg	any amount	*	Site Specific/Risk-based**
	Ethylbenzene	EPA Method 8020	.5mg/kg	any amount	*	Site Specific/Risk-based**
	Xylene	EPA Method 8020	.5mg/kg	any amount	*	Site Specific/Risk-based**
	TPH	EPA Method 418.1	10mg/kg	any amount	*	Site Specific/Risk-based**
Diesel	Benzene	EPA Method 8020	.5mg/kg	any amount	*	Site Specific/Risk-based**
	Toluene	EPA Method 8020	.5mg/kg	any amount	*	Site Specific/Risk-based**
	Ethylbenzene	EPA Method 8020	.5mg/kg	any amount	*	Site Specific/Risk-based**
	Xylene	EPA Method 8020	.5mg/kg	any amount	*	Site Specific/Risk-based**
	TPH	EPA Method 418.1	10mg/kg	any amount	*	Site Specific/Risk-based**
	PAHs	EPA Method 8100, 8270, 8310	Chemical Specific	any amount	*	Site Specific/Risk-based**
Waste Oil	BTEX	EPA Method 8020	.5mg/kg each	any amount	*	Site Specific/Risk-based**
	TPH	EPA Method 418.1	10mg/kg	any amount	*	Site Specific/Risk-based**
	VOCs	EPA Method 8240	Chemical Specific	any amount	*	Site Specific/Risk-based**
	PAH	EPA Method 8100, 8270, 8310	Chemical Specific	any amount	*	Site Specific/Risk-based**

* Product Specific/ Site Specific.
** No Range Available.

Contact: Chris Chandler, Texas Natural Resource Commission 512-908-2247

Summary of Utah Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	TPH	CDHS Method 8015 Modified	500ug/l	any amount	500ug/l	*
	Benzene	EPA Method 602 or 624	2ug/l		5ug/l	*
	Toluene	EPA Method 602 or 624	2ug/l		1000ug/l	*
	Ethylbenzene	EPA Method 602 or 624	2ug/l		700ug/l	*
	Xylene	EPA Method 602 or 624	2ug/l		10,000ug/l	*
	Naphthalene	EPA Method 602 or 624	2ug/l		20ug/l	*
Diesel	TPH	CDHS Method 8015 Modified	500ug/l	any amount	500ug/l	*
	Benzene		2ug/l		5ug/l	*
	Toluene		2ug/l		1000ug/l	*
	Ethylbenzene		2ug/l		700ug/l	*
	Xylene		2ug/l		10,000ug/l	*
	Naphthalene		2ug/l		20ug/l	*
Waste Oil	TRPH	EPA Method 418.1	500ug/l	any amount		*
	Oil & Grease	EPA Method 413.1	10,000ug/l	any amount	10,000ug/l	10,000ug/l
	BTEXN	Same as Diesel BTEXN Above				

* Same as Action Level, but Site Specific

Note: Depends on level of environmental sensitivity and is determined on a case-by-case basis.

Contact: Robin Davis Jenkins, Utah Department of Environmental Quality 801-536-4100

Summary of Utah Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline**	TPH	CDHS Method 8015 Modified	10mg/kg	any amount	30mg/kg	*
	Benzene	EPA Method 8020	.2mg/kl	any amount	.2mg/kg	*
	Toluene	EPA Method 8020	.2mg/kl	any amount	100mg/kg	*
	Ethylbenzene	EPA Method 8020	.2mg/kl	any amount	70mg/kg	*
	Xylene	EPA Method 8020	.2mg/kl	any amount	1000mg/kg	*
Diesel	TPH	CDHS Method 8015 Modified	10mg/kg	any amount	100mg/kg	*
	Benzene	EPA Method 8020	.2mg/kl	any amount	.2mg/kg	*
	Toluene	EPA Method 8020	.2mg/kl	any amount	100mg/kg	*
	Ethylbenzene	EPA Method 8020	.2mg/kl	any amount	70mg/kg	*
	Xylene	EPA Method 8020	.2mg/kl	any amount	1000mg/kg	*
	Naphthalene	EPA Method 8020	.2mg/kl	any amount		*
Waste Oil	TRPH	EPA Method 418.1	100mg/kg	any amount	100mg/kg	*
	Oil & Grease	EPA Method 413.1	100mg/kg	any amount	300mg/kg	*
	BTEXN	Same as Diesel BTEXN Above				

* Same as Action Level, but Site Specific. ** Level 1 environmental Sensitivity.

Note: Depends on level of environmental sensitivity and is determined on a case-by-case basis.

Contact: Robin Davis Jenkins, Utah Department of Environmental Quality 801-536-4100

Summary of Vermont Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	Benzene	EPA Method 8020	1ppb	any amount	5ppb	Site Specific
	Toluene	EPA Method 8020	1ppb	any amount	2420ppb	Site Specific
	Ethylbenzene	EPA Method 8020	1ppb	any amount	680ppb	Site Specific
	Xylenes	EPA Method 8020	1ppb	any amount	400ppb	Site Specific
	MTBE	EPA Method 8020	1ppb	any amount	40ppb	Site Specific
Diesel	Benzene	EPA Method 8020	1ppb	any amount	5ppb	Site Specific
	Toluene	EPA Method 8020	1ppb	any amount	2420ppb	Site Specific
	Ethylbenzene	EPA Method 8020	1ppb	any amount	680ppb	Site Specific
	Xylenes	EPA Method 8020	1ppb	any amount	400ppb	Site Specific
Waste Oil	VOCs	EPA Method 8240	1ppb	any amount	*	Site Specific

* Compound specific groundwater enforcement standard

Contact: Chuck Schwer, Vermont Agency of Environmental Conservation 802-241-3888

Summary of Vermont Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	BTEX	EPA Method 8020	100ppb	any amount	*	Site Specific
			(Required ug/kg)			
Diesel	BTEX	EPA Method 8020		any amount	*	
	TPH	EPA Method 418.1 or Extended GC	10ppm	any amount	1000 ppm	Site Specific
Waste Oil	VOCs	EPA Method 8240	100 ug/kg	any amount	*	Site Specific

* 20 times the groundwater enforcement standard for specific compounds.

Contact: Chuck Schwer, Vermont Agency of Environmental Conservation 802-241-3888

Summary of Virginia Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	BTEX	EPA Method 8020	*	any amount		Site Specific/Risk Based
	TPH	Cal Luft Method	.5 mg/l	any amount		Site Specific/Risk Based
Diesel	BTEX	EPA Method 8020	*	any amount		Site Specific/Risk Based
	TPH	Cal Luft Method	.5 mg/l	any amount		Site Specific/ Risk Based
Waste Oil	TPH	Cal Luft Method	.5 mg/l	any amount		Site Specific/Risk Based

* PQL for constituents as stated in SW846. Note: Methods above are required for remediation monitoring under permit. During Site Characterization, Closure, etc, All EPA Approved methods and Cal Luft Method for TPH are acceptable.

Contact: Dave Chance, Virginia Water Central Board 804-527-5188

Summary of Virginia Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	BTEX	EPA Method 8020	*	any amount		Site Specific/Risk Based
	TPH	Cal Luft Method	10 mg/kg	any amount		Site Specific/Risk Based
Diesel	BTEX	EPA Method 8020	*	any amount		Site Specific/Risk Based
	TPH	Cal Luft Method	10 mg/kg	any amount		Site Specific/ Risk Based
Waste Oil	TPH	Cal Luft Method	*	any amount		Site Specific/Risk Based

* PQL for constituents as stated in SW846. Note: Methods above are required for remediation monitoring under permit. During Site Characterization, Closure, etc, All EPA Approved methods and Cal Luft Method for TPH are acceptable.

Contact: Dave Chance, Virginia Water Central Board 804-527-5188

Summary of Washington Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	BTEX	EPA Method 602, 604	*	any amount	NS	B: 5ppb, T: 40ppb E: 30ppb, X: 20ppb
	TPH	WTPH-G	*	any amount	NS	1000ppb
	Total Lead	EPA Method 7421	*	any amount	NS	5ppb
Diesel	TPH	WTPH-D	*	any amount	NS	1000ppb
Waste Oil	TCLP		*	any amount	NS	Analyte Specific
	PCB	EPA Method 608	*	any amount	NS	.1 ug/l
	Total Metals	EPA Method 6010, 7000	*	any amount	NS	Metal Specific
	Volatile Organics	EPA Method 601, 602, and 624	*	any amount	NS	Analyte Specific
	Phenals	EPA Method 604/ 625	*	any amount	NS	Analyte Specific
	PANs	EPA Method 610/ 625	*	any amount	NS	.1 ug/l

* Test Specific. NS=Not Specified.

Contact: Richard Boose, Washington Department of Ecology, 206-459-6000

Summary of Washington Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level Method A / Method B
Gasoline	Benzene	EPA Method 8020 or 8240	*	any amount	NS	.5mg/kg / .5mg/kg
	Ethylbenzene	EPA Method 8020 or 8240	*	any amount	NS	20mg/kg / 20mg/kg
	Toluene	EPA Method 8020 or 8240	*	any amount	NS	40mg/kg / 40mg/kg
	Xylenes	EPA Method 8020 or 8240	*	any amount	NS	20mg/kg / 20mg/kg
	TPH	WTPH-G	*	any amount	NS	100mg/kg / 100mg/kg
	Total Lead	EPA Method 6010, 7420 or 7421	*	any amount	NS	250mg/kg / 1000mg/kg
Diesel	TPH	WTPH-D	*	any amount	NS	200mg/kg / 200mg/kg
Waste Oil	TCLP	EPA Method 1311	*	any amount	NS	Analyte Specific
	PCBs	EPA Method 8080	*	any amount	NS	1mg/kg
	Volatile Organics	EPA Method (8010, 8020) or 8240	*	any amount	NS	Analyte Specific
	Phenals	EPA Method 8040 or 8270	*	any amount	NS	Analyte Specific
	PAHs	EPA Method 8100 or 8270	*	any amount	NS	1mg/kg
	Total Metals	EPA Method 9071	*	any amount	NS	Metal Specific

* Test Specific. NS=Non Specified. Note: Washington State has rating matrix for establishing cleanup standards. Method B is industrial soil, Method A is residential. Method C is non-residential non-industrial clean-up on a case by case basis.

Contact: Richard Boose, Washington Department of Ecology, 206-459-6000

Summary of West Virginia Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	Benzene	EPA Method 8020	1ppb	any amount	5ppb	5ppb
	Toluene	EPA Method 8020	1ppb	any amount	1000 ppb	1000 ppb
	Ethylbenzene	EPA Method 8020	1ppb	any amount	700 ppb	700 ppb
	Xylenes	EPA Method 8020	1ppb	any amount	10,000 ppb	10,000 ppb
	TPH	EPA Method 8015 Modified, GRO & DRO	.5ppm	any amount		Site Specific
Diesel	Benzene	EPA Method 8020	1ppb	any amount	5ppb	5ppb
	Toluene	EPA Method 8020	1ppb	any amount	1000 ppb	1000 ppb
	Ethylbenzene	EPA Method 8020	1ppb	any amount	700 ppb	700 ppb
	Xylenes	EPA Method 8020	1ppb	any amount	10,000 ppb	10,000 ppb
	TPH	EPA Method 8015 Modified, GRO & DRO	.5ppm	any amount		Site Specific
Waste Oil						

Contact: Mike Sutphin, West Virginia Department of Natural Resources 304-558-6371

Summary of West Virginia Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	Benzene	EPA Method 8020		any amount	50ppb	Site Specific
	Toluene	EPA Method 8020		any amount	10ppm total BTEX	Site Specific
	Ethylbenzene	EPA Method 8020		any amount	10ppm total BTEX	Site Specific
	Xylenes	EPA Method 8020		any amount	10ppm total BTEX	Site Specific
	TPH	EPA Method 8015 Modified*			50ppm	Site Specific
Diesel	Benzene	EPA Method 8020		any amount	50ppb	Site Specific
	Toluene	EPA Method 8020		any amount	10ppm total BTEX	Site Specific
	Ethylbenzene	EPA Method 8020		any amount	10ppm total BTEX	Site Specific
	Xylenes	EPA Method 8020		any amount	10ppm total BTEX	Site Specific
	TPH	EPA Method 8015 Modified*			100ppm	Site Specific
Waste Oil						

* Report GRO and DRO separately

Contact: Mike Sutphin, West Virginia Department of Natural Resources 304-558-6371

Summary of Wisconsin Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	GRO, VOC[3]	DNR WI Modified GRO Method EPA Method 5030/ 8021	** **	any amount any amount	None None	Site Specific
	PVOC Benzene	* EPA Method 8021 or 5030/8020	** **	any amount any amount	None 5ppb	Site Specific
	Toluene Xylenes	* *	** **	any amount any amount	1000ppb[6] 10ppm[6]	Site Specific
	Ethylbenzene MTBE[3]	* EPA Method 8021	** **	any amount any amount	700ppb[6] 60ppb	Site Specific
	Lead[3]	EPA Method 3020/ 7421	**	any amount	15ppb[6]	Site Specific
Diesel	GRO, VOC[3], PVOC	Same as above for Gasoline			None	None
	PAH[4]	EPA Method 8310 (HDLC)	**	any amount	See Below	See Below
	BTEX & MTBE	Same as above for Gasoline →				
Waste Oil	PCBs[4]	EPA Method 3510/ 8080, or 3520/ 8080	**	any amount	.03[6]	.003[6]
	DRO[5],VOC[3], PVOC	Same as above for Gasoline			None	None
	Pb[3]	EPA Method 3020/ 7421	**	any amount	15ppb[6]	1.5ppb[6]
	CD[3]	EPA Method 3020/ 7131	**	any amount	5ppb[6]	.5ppb[6]
PAHs	Benzo (A) Pyrene	EPA Method 8310 (HDLC)	**	any amount	.003ppb	.0003ppb
	Napthalene	EPA Method 8310 (HDLC)	**	any amount	40ppb	8ppb

* EPA Method 5030/ 8021 or 5030/ 8020 ** Test Specific. Notes: (1) Wisconsin Admin. Code NR140 Enforcement Standard (active remedy required). (2) Wisconsin Admin. Code NR140 Preventative Action Level (clean-up goal). (3) Sample at least once. (4) Site Specific. (5) See analytical guidance. (6) Proposed new level, scheduled for early 1994

Contact: Laurie Egre, Wisconsin Department of Natural Resources 608-267-7560

Summary of Wisconsin Criteria* for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	GRO	WI DNR Modified GRO Method	**	any amount	10 ppm[4]	Site Specific
	PVOC[1]	EPA Method 8260 or 5030/8020 or 5030/8021	**	any amount	Any Amount[5]	Site Specific
	PB[2]	EPA Method 3050/ 7420 or 3050/7421 or 3050/6010	**	any amount	Any Amount[5]	Site Specific
Diesel	DRO	WI DNR Modified DRO Method	**	any amount	10 ppm[4]	Site Specific
	PVOC	EPA Method 8260 or 5030/8020 or 5030/8021	**	any amount	Any Amount[5]	Site Specific
	PAH[3]	EPA Method 8310HDLC 3540/8270 or 3550/8270	**	any amount	Any Amount[5]	Site Specific
Waste Oil	DRO[3]	WI DNR Modified DRO Method	**	any amount	10 ppm	Site Specific
	PAH[3]	EPA Method 8310HDLC 3540/8270 or 3550/8270	**	any amount	Any Amount[5]	Site Specific
	VOC	EPA Method 5030/8021 or 8260	**	any amount	Any Amount[5]	Site Specific
	PVOC[2, 3]	EPA Method 5030/8020 or 5030/8021 or 8260	**	any amount	Any Amount[5]	Site Specific
	PCB	EPA Method 3540/8080 or 3550/ 8080	**	any amount	Any Amount[5]	Site Specific
	PB	EPA Method 3050/7420 or 3050/7421 or 3050/6010	**	any amount	Any Amount[5]	Site Specific
	Cd[2, 3]	EPA Method 3050/7130 3050/7131 or 3050/6010	**	any amount	Any Amount[5]	Site Specific

* Soil clean-up criteria have been drafted, but not yet promulgated by rule. ** Test Specific. Notes: (1) Petroleum Volatile Organic Compounds-defined in Analytical Guidance. (2) Sample at least once. (3) See Analytical Guidance. (4) At tank removal. (5) Site specific-may require investigation, may require clean-up.

Contact: Laurie Egre, Wisconsin Department of Natural Resources 608-267-7560

Summary of Wyoming Clean-up Standards for Hydrocarbon Contaminated Groundwater

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	Benzene	EPA Method 524.2	.5 ug/l	any amount	>5ug/l	5ug/l
	Ethylbenzene	EPA Method 524.2	.5 ug/l	any amount	>700ug/l	700ug/l
	Toluene	EPA Method 524.2	.5 ug/l	any amount	>1000ug/l	1000ug/l
	Xylenes	EPA Method 524.2	.5 ug/l	any amount	>10,000ug/l	10,000ug/l
Leaded Gas	Total Lead	EPA Method 239.2	5 ug/l	any amount	>50ug/l	50ug/l
	TPH	Modified 8015 GRO	4 ug/l	any amount	>10ug/l	10ug/l
Fuel Oils	BTEX same as Gasoline					
	TPH	Modified 8015 DRO	4 ug/l	any amount	>10ug/l	10ug/l
Waste Oil	BTEX same as Gasoline					
	TPH	Modified 8015 DRO	4 ug/l	any amount	>10ug/l	10ug/l
	Total Lead	EPA Method 239.2	5 ug/l	any amount	>50ug/l	50ug/l
	Total Cadmium	EPA Method 213.2	1 ug/l	any amount	>1ug/l	1ug/l
	Total Chromium	EPA Method 218.1	50 ug/l	any amount	>100ug/l	100ug/l

Contact: LeRoy Feusner, Department of Environmental Quality 307-777-7096

Summary of Wyoming Clean-up Standards for Hydrocarbon Contaminated Soil

Product	Parameter/ Constituent	Lab Test Protocol & Number	Detection Level	Notification Level	Action Level	Clean-up Level
Gasoline	Benzene	EPA Method 8021	.1mg/kg	any amount	*	*
	Ethylbenzene	EPA Method 8021	.1mg/kg	any amount	*	*
	Toluene	EPA Method 8021	.1mg/kg	any amount	*	*
	Xylenes	EPA Method 8021	.1mg/kg	any amount	*	*
Leaded Gas	Total Lead	EPA Method 7421/6010	5mg/kg	any amount	*	*
	TPH	Modified 8015 GRO	4mg/kg	any amount	>30mg/l >100mg/l	30mg/l gw<50' 100mg/l gw>50'
Fuel Oils	BTEX same as Gasoline					
	TPH	Modified 8015 DRO	4 mg/kg	any amount	>100mg/kg	100mg/kg
Waste Oil	BTEX same as Gasoline					
	TPH	Modified 8015 DRO	4 mg/kg	any amount	>100mg/kg	100mg/kg
	Total Lead	EPA Method 7421/6010	5 mg/kg	any amount	*	*
	Total Cadmium	EPA Method 7131/6010	.5 mg/kg	any amount	*	*
	Total Chromium	EPA Method 7421/6010	.5 mg/kg	any amount	*	*

* Site Specific. Note: Site Specific soil action/ clean-up levels for organic compounds/ elements are determined from an environmental fate/ transport-risk model contained in the WDEQ/ WQD technical guidance document, Procedures for Eastablishing Environmental Restoration Standards for Leaking Underground Storage Tank Remediation Actions

Contact: LeRoy Feusner, Department of Environmental Quality 307-777-7096

CONNECTICUT

The State of Connecticut Department of Environmental Protection advises interested parties to call their General Information number, 203-566-5599, for more information. They are in the process of developing quantitative standards for hydrocarbon contaminated soil and groundwater.

RHODE ISLAND

The State of Rhode Island Department of Environmental Management advises interested parties to call their Division of Site Remediation, 401-277-2234, due to site specific requirements.

COLORADO

Because of program specific requirements the state of Colorado has set up a Public Assistance Desk to help individuals understand Colorado's Hydrocarbon Contaminated Soil and Groundwater Guidelines. Please Contact 303-692-3330 for more information.

MARYLAND

The State of Maryland Department of Environment advises interested parties to call their Oil Control Program at 410-631-3442.

NEW HAMPSHIRE

The State of New Hampshire Department of Environmental Services advises interested partites to call 603-271-3503 for more information on clean-up standards