NEW MEXICO
ENVIRONMENT DEPARTMENT

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CERTIFIED MAIL – RETURN RECEIPT REQUESTED

August 31, 2016

Mr. Robert S. Beers, LANS-EPC-CP
Los Alamos National Security, LLC
P.O. Box 1663 MS K490
Los Alamos, NM 87545

RE: Discharge Permit Issuance, Los Alamos National Laboratory Underground Injection Control Wells, Discharge Permit 1835

Dear Mr. Beers,

The New Mexico Environment Department (NMED) issues the enclosed Discharge Permit, DP-1835, to the U.S. Department of Energy and Los Alamos National Security, LLC (DOE/LANS) pursuant to the New Mexico Water Quality Act (WQA), NMSA 1978 §§74-6-1 through 74-6-17, and the New Mexico Water Quality Control Commission (WQCC) Regulations, 20.6.2 NMAC.

The Discharge Permit contains terms and conditions that shall be complied with by the permittee and are enforceable by NMED pursuant to Section 20.6.2.3104 NMAC, WQA, NMSA 1978 §74-6-5 and §74-6-10. Please be aware that this Discharge Permit may contain conditions that require the permittee to implement operational, monitoring, or closure actions by a specified deadline. Such conditions are listed at the beginning of the operational, monitoring, and closure sections of this Discharge Permit.

Issuance of this Discharge Permit does not relieve the permittee of the responsibility to comply with the WQA, WQCC Regulations, and any other applicable federal, state, and/or local laws, regulations, zoning requirements, and nuisance ordinances.

Pursuant to Paragraph (4) of Subsection H of 20.6.2.3109 NMAC, the term of the Discharge Permit shall be seven years from the effective date of August 31, 2016, or five years from the date the discharge commences, whichever comes first.

NMED requests that the permittee submit an application for renewal (or renewal and modification) at least 180 days prior to the date the Discharge Permit term ends.

An invoice reflecting the Discharge Permit Fee of $6,900.00 is being sent under separate cover. Payment will be pursuant to the terms of the Memorandum of Understanding between the DOE and NMED, dated December 28, 2015.

If you have any questions, please contact Greg Huey at (505) 827-6891. Thank you for your cooperation during this Discharge Permit review.

Sincerely,

Michelle Hunter, Chief
Ground Water Quality Bureau

MH:gmh

Encs: Discharge Permit, DP-1835
Ground Water Quality Bureau Monitoring Well Construction and Abandonment Conditions, Revision 1.1, March 2011
NMED *Risk Assessment Guidance for Site Investigation and Remediation*, Table A-1 for 20.6.2.7.WW NMAC Toxic Pollutants

cc: Mike Johnson, NMOSE (electronic copy)
Shelly Lemon, SWQB (electronic copy)
John Kieling, HWB (electronic copy)
Susan Lucas Kamat, DOE-OB (electronic copy)

GROUND WATER DISCHARGE PERMIT
Los Alamos National Laboratory
Underground Injection Control Wells
Discharge Permit-1835

Effective Date: August 31, 2016

I. INTRODUCTION

The New Mexico Environment Department (NMED) issues this Discharge Permit, DP-1835, to the United States Department of Energy (DOE) and to Los Alamos National Security, LLC (LANS) (collectively the permittees) pursuant to the New Mexico Water Quality Act (WQA), NMSA 1978 §§74-6-1 through 74-6-17, and the New Mexico Water Quality Control Commission (WQCC) Regulations, 20.6.2 NMAC.

NMED's purpose in issuing this Discharge Permit, and in imposing the requirements and conditions specified herein, is to control the discharge of water contaminants from the injection of treated groundwater (effluent) into the regional aquifer beneath Los Alamos National Laboratory (LANL), so as to protect and preserve ground and surface waters for present and future uses and to protect human health.

In issuing this Discharge Permit, NMED has determined that the requirements of Subsection C of 20.6.2.3109 NMAC have been or will be met. Pursuant to Section 20.6.2.3104 NMAC, it is the responsibility of the permittees to comply with the terms and conditions of this Discharge Permit; failure to do so may result in an enforcement action by NMED (20.6.2.1220 NMAC).

The activities which produce the discharge, the location of the discharge, and the quantity, quality, and flow characteristics of the discharge are described as follows.

Up to 648,000 gallons per day (gpd) of contaminated groundwater is to be pumped from up to three extraction wells installed in the regional aquifer, treated in ion exchange (IX) treatment systems to meet the groundwater concentration limits set by 20.6.2.3103 NMAC, and injected into the regional aquifer through up to six Class V Underground Injection Control (UIC) wells. Groundwater pumped from the three extraction wells (CrEX-1, CrEX-2, and CrEX-3) will be conveyed through double-walled piping with leak detection systems to the IX treatment systems. Multiple IX treatment trains, each consisting of a primary vessel and a polishing unit, will be operated to treat chromium levels to below the limits set by 20.6.2.3103 NMAC. Treated water will be pumped through single-walled piping and distributed to six Class V UIC wells (CrIN-1, CrIN-2, CrIN-3, CrIN-4, CrIN-5, and CrIN-6) that will be equipped with submersible pumps to allow for periodic back flushing as dictated by increased injection well pressures. The groundwater generated from back flushing of the injection wells or general well maintenance will be pumped into storage tanks, tested, transported to an IX treatment unit for treatment if necessary, stored in lined impoundments, and then land applied under DP-1793.

Specific monitoring of the extraction, treatment, and injection systems will be conducted to ensure proper system operation using a supervisory control and data acquisition (SCADA) control system. Incoming data, including flowrates, pressures, liquid levels, groundwater levels,

motor status, and alarms from the system sites, will be monitored, flowrate of injected water will be managed by motor controlled valves, and pressure at each injection well will be maintained at a specified value using down-hole pneumatic flow control valves (FCV).

The flow of treated water to be pumped into the injection wells will be controlled with the FCV to keep the down-hole discharge injection pipe filled and prevent cascading of the water into the well. Once discharged from the FCV, the water will enter the injection well casing and gravity flow through the well screen into the formation. Pressure in the piping at the surface will be monitored by the control system, which will automatically adjust the FCV operation to maintain the pipeline pressure set point.

The water level in the injection well casing will be monitored by the control system through a down-hole pressure transducer. It is expected that the water pressure in the injection well casing will rise above that of the static water level during injection. Reduced injection capacity within the well is anticipated during on-going operation; thus, the control system will be programmed to alarm the operator and shut down the affected well(s) in the event that water levels within the injection well casings reach the high-level set point.

Water level rise in each injection well will be dependent upon the hydraulic characteristics of each well. High level alarm set points will be used to prevent system overflow and will be identified and fine-tuned during system startup and operations.

The injection pipe will be equipped with a check valve and a submersible pump. This pump will be used to maintain well performance by back flushing the well as part of a regular maintenance program. Back flushing is anticipated once the water pressure within the injection well increases above the levels observed initially under static conditions. The specific levels above static conditions that will trigger the back flushing operations will be determined based upon the hydraulic and operational conditions of each well. The level of injection well capacity improvement observed during the initial back flushing will be used to develop ongoing well maintenance schedules. The groundwater generated from injection well back flushing or well maintenance will be pumped into storage tanks, tested, transported to an IX treatment unit for treatment if necessary, stored in lined impoundments, and then land applied under DP-1793.

Monitoring of the treated water will ensure that contaminant concentrations in the discharge do not exceed the 20.6.2.3103 NMAC standards or the limits in Table A-1 of the most recent version of the NMED *Risk Assessment Guidance for Site Investigation and Remediation* for 20.6.2.7.WW NMAC Toxic Pollutants (Table A-1).

The groundwater to be treated and discharged may contain water contaminants which may be elevated above the standards of Section 20.6.2.3103 NMAC and/or toxic pollutants as defined in Subsection WW of 20.6.2.7 NMAC. Prior to discharge, all groundwater will be treated to achieve standards less than (<) 90% of the numeric standards of 20.6.2.3103 NMAC and <90% of the numeric standards established for tap water in Table A-1 for constituents not listed in 20.6.2.3103 NMAC.

The discharge is located approximately 3 miles southeast of Los Alamos in sections 24 and 25, Township 19N, Range 06E, Los Alamos County, NM. Groundwater most likely to be affected lies in a regional aquifer from 900-1100 feet below ground surface (BGS) and has a total dissolved solids (TDS) concentration of approximately 150 milligrams per liter (mg/L).

The application (i.e. Discharge Plan) consists of the Discharge Permit Application and supporting materials submitted by the permittees on April 10, 2015 and October 08, 2015. The discharge shall be managed in accordance with all conditions and requirements of this Discharge Permit.

Pursuant to Section 20.6.2.3109 NMAC, NMED reserves the right to require a Discharge Permit Modification in the event NMED determines that the requirements of 20.6.2 NMAC are being or may be violated or the standards of Section 20.6.2.3103 NMAC are being or may be violated. This may include a determination that structural controls and/or management practices approved under this Discharge Permit are not protective of groundwater quality and that more stringent requirements to protect groundwater quality may be required by NMED. The permittees may be required to implement abatement of water pollution and remediate groundwater contamination.

Issuance of this Discharge Permit does not relieve the permittees of the responsibility to comply with the WQA, WQCC Regulations, and any other applicable federal, state and/or local laws, regulations, zoning requirements, and nuisance ordinances.

The following acronyms and abbreviations may be used in this Discharge Permit:

Abbreviation	Explanation		Abbreviation	Explanation
BGS	below ground surface		NMED	New Mexico Environment Department
CFR	Code of Federal Regulations		NMSA	New Mexico Statutes Annotated
Cl	chloride		NO_3-N	nitrate-nitrogen
EPA	United States Environmental Protection Agency		TDS	total dissolved solids
gpd	gallons per day		TKN	total Kjeldahl nitrogen
IX	Ion Exchange		total nitrogen	TKN + NO_3-N
mg/L	milligrams per liter		UIC	Underground Injection Control
mL	milliliters		WQA	New Mexico Water Quality Act
NMAC	New Mexico Administrative Code		WQCC	New Mexico Water Quality Control Commission

II. FINDINGS

In issuing this Discharge Permit, NMED finds the following:

1. The permittees propose to discharge effluent or leachate from the facility so that such effluent or leachate may move directly or indirectly into groundwater within the meaning of Section 20.6.2.3104 NMAC.

2. The permittees propose to discharge effluent from the facility so that such effluent may move into groundwater of the State of New Mexico which has an existing concentration of 10,000 mg/L or less of TDS within the meaning of Subsection A of 20.6.2.3101 NMAC.

3. Proposed discharges from the facility are not subject to any of the exemptions of Section 20.6.2.3105 NMAC.

4. The permittees propose to operate Class V underground injection control (UIC) wells within the meaning of 20.6.2.5002A(1) and 20.6.2.5002B(5)(d)(i) NMAC which is subject to the prohibitions listed under 20.6.2.5004A(4) NMAC.

III. AUTHORIZATION TO DISCHARGE

Pursuant to 20.6.2.3104 NMAC, it is the responsibility of the permittees to ensure that discharges authorized by this Discharge Permit are consistent with the terms and conditions herein.

The permittees are authorized to process up to 648,000 gpd of groundwater through an ion exchange treatment system and discharge the treated effluent via six UIC wells to the regional groundwater aquifer in Sections 24 and 25 of T19N, R06E, Los Alamos County, NM.

[20.6.2.3104 NMAC, Subsection C of 20.6.2.3106 NMAC, Subsection C of 20.6.2.3109 NMAC]

IV. CONDITIONS

The following conditions shall be complied with by the permittees and are enforceable by NMED. The permittees are authorized to discharge water contaminants subject to the following conditions.

A. OPERATIONAL PLAN

#	Terms and Conditions
1.	The permittees shall implement the following operational plan to ensure compliance with Title 20, Chapter 6, Parts 2 and 4 NMAC. [20.6.2.3109.C NMAC]

#	Terms and Conditions
2.	The permittees shall operate in a manner such that the standards and requirements of Sections 20.6.2.3101 and 20.6.2.3103 NMAC are not violated. [20.6.2.3101 NMAC, 20.6.2.3103 NMAC, 20.6.2.3109.C NMAC]
3.	Within one year of the effective date of this Discharge Permit (by August 31, 2017), the permittees shall demonstrate the mechanical integrity of the distribution piping and injection wells associated with this Discharge Permit. Prior to testing, the permittees shall propose for NMED approval the test method to be used. The results of the mechanical integrity testing shall be submitted to NMED within 60 days of test completion. The permittees shall demonstrate mechanical integrity of the distribution piping and injection wells associated with this Discharge Permit at least once every five years. If an injection well is reconfigured, the permittees must conduct a mechanical integrity test prior to re-injection of treated effluent into the subsurface at that well. [Subsection C of 20.6.2.3106 NMAC, Subsection A of 20.6.2.3107 NMAC, Subsection B of 20.6.2.5204 NMAC]
4.	Prior to the first discharge from the IX systems to any of the six injection wells, the permittees shall submit written notification to NMED stating the date that the discharge is to commence. [20.6.2.3107.A NMAC]
5.	Prior to the initial discharge of treated effluent from an IX treatment system to the injection wells, and before injecting treated effluent following any major modification or repair of an IX treatment system that could adversely impact effluent quality, the permittees shall submit documentation that the IX systems achieve standards less than (<) 90% of the numeric standards of 20.6.2.3103 NMAC and <90% of the numeric standards established for tap water in Table A-1 for constituents not listed in 20.6.2.3103 NMAC. [Subsections A and C of 20.6.2.1202 NMAC, Subsection C of 20.6.2.3109 NMAC, NMSA 1978, §§ 61-23-1 through 61-23-32]
6.	The permittees shall maintain fences around all synthetically lined storage lagoons to control access by the general public and animals. The fences shall consist of a minimum of six-foot chain link or field fencing and locking gates. Fences shall be maintained throughout the term of this Discharge Permit. IX treatment systems shall be contained within secure structures to control access by the general public.

#	Terms and Conditions
	[20.6.2.3109.B-C NMAC, NMSA 1978, §74-6-5.D]
7.	The permittees shall maintain signs printed in English and Spanish indicating that the treated effluent is not potable. Signs shall be posted at the UIC wellheads, the IX treatment systems, impoundments, storage vessels, and other areas where there is potential for public contact with hazardous materials or equipment. [20.6.2.3109 NMAC.B-C, NMSA 1978, § 74-6-5.D]

B. MONITORING, REPORTING, AND OTHER REQUIREMENTS

#	Terms and Conditions
8.	The permittees shall conduct the monitoring, reporting, and other requirements listed below. [20.6.2.3107 NMAC]
9.	METHODOLOGY - Unless otherwise approved in writing by NMED, the permittees shall conduct sampling and analysis in accordance with the most recent edition of the following documents: a) American Public Health Association, *Standard Methods for the Examination of Water and Wastewater* (18^{th}, 19^{th}, or current); b) U.S. Environmental Protection Agency, *Methods for Chemical Analysis of Water and Waste*; c) U.S. Geological Survey, *Techniques for Water Resources Investigations of the U.S. Geological Survey*; d) American Society for Testing and Materials, *Annual Book of ASTM Standards, Part 31.Water*; e) Federal Register, latest methods published for monitoring pursuant to Resource Conservation and Recovery Act regulations; f) U.S. Geological Survey, et al., *National Handbook of Recommended Methods for Water Data Acquisition*; g) American Society of Agronomy, *Chemical Methods: Methods of Soil Analysis; Part 1. Physical and Mineralogical Methods; Part 2. Microbiological and Biochemical Properties; Part 3.* [20.6.2.3107.B NMAC]
10.	The permittees shall submit quarterly monitoring reports to NMED by the first of June, September, December, and March of each year as described below. The quarterly reports shall document the influent and discharge volumes from the treatment systems, quarterly

#	**Terms and Conditions**
	groundwater and treated effluent sampling results, and any operations/maintenance activities performed for the prior quarter. Quarterly monitoring shall be performed during the following periods and submitted as follows: • January 1st through March 31st – due by June 1st • April 1st through June 30th – due by September 1st • July 1st through September 30th – due by December 1st • October 1st through December 31st – due by March 1st [20.6.2.3107.A NMAC]
11.	Quarterly reports shall include the following general information: a) any periodic test of mechanical integrity conducted; b) any replacement of primary or secondary IX vessels or associated treatment system infrastructure with an accompanying narrative explanation of the reasons for the decision to replace the vessels; c) any well work-overs conducted; d) any additional operational changes with the potential to markedly affect the discharge. [20.6.2.3107 NMAC]
12.	Quarterly reports shall include the following system performance information: a) monthly average, maximum, and minimum values for flow rate and volume of treated effluent transferred to each injection well; b) the totalized monthly volume of treated effluent transferred to each injection well; c) monthly average, maximum, and minimum values of injection water level (pressure head) above static level for each injection well; d) the daily volume injected at each injection well; e) the daily volume pumped from each extraction well. [20.6.2.3107 NMAC]

#	Terms and Conditions
13.	Quarterly reports shall include laboratory analysis of treated effluent from each IX treatment system. IX treatment system initial startup and major modifications shall be monitored according to the following schedule: a) treated effluent will be analyzed every week for the first 8 weeks after startup or modification of an IX treatment system; b) treated effluent will be analyzed every two weeks for weeks 10, 12, and 14 after startup or modification of an IX treatment system; c) treated effluent will be analyzed every month 14 weeks after startup or modification of an IX treatment system and continue on this schedule until a system is modified, placed on standby, or shut down. After an IX treatment system undergoes standby or shut down for a duration that could impact effluent quality, the permittees will repeat this sampling sequence upon initiation of treatment processes. This schedule will include analysis of treated effluent for the following analytes: • Total Chromium (µg/L) • Nitrate as N (mg/L) • Perchlorate (µg/L) • Sulfate (mg/L) • TDS (mg/L) • Fluoride (mg/L) • Chloride (mg/L) Treated effluent will be analyzed annually for all water contaminants listed in 20.6.2.3103 NMAC and all toxic pollutants defined in 20.6.2.WW NMAC. All confirmation analysis of treated effluent will be conducted by an independent environmental laboratory that is certified under the National Environmental Laboratory Accreditation Program (NELAP). [20.6.2.3107.A NMAC and 20.6.2.3107.B NMAC]
14.	The permittees shall perform quarterly depth to groundwater measurements and groundwater quality analysis for Nitrate as N, total Chromium, Perchlorate, Sulfate, Fluoride, Chloride, and TDS at the following monitoring wells: • CrCH-1 (water level only) • CrCH-2 (water level only) • CrCH-3 (water level only) • CrCH-4 (water level only) • CrCH-5 (water level only) • R-11 • R-13 • R-43 • R-44 • R-45 • R-50 • R-61 (water level only) • R-62 • SIMR-2

#	Terms and Conditions
	Depth to groundwater measurements, a summary table of analytical results, and a facility layout map showing the location and number of each well shall be submitted to NMED in the quarterly monitoring reports. [Subsection A of 20.6.2.3107 NMAC]
15.	The permittees shall develop a groundwater elevation contour map on a quarterly basis using the top of casing elevation data from the monitoring well survey and quarterly depth-to-regional groundwater measurements obtained from the regional aquifer groundwater monitoring wells listed in Condition 14 of this Discharge Permit. The groundwater elevation contour map shall depict the groundwater flow direction based on the groundwater elevation contours. Groundwater elevations between monitoring well locations shall be estimated using common interpolation methods. A contour interval appropriate to the data shall be used, but in no case shall the interval be greater than two feet. Groundwater elevation contour maps shall depict the groundwater flow direction using arrows based on the orientation of the groundwater elevation contours and the location and identification of each monitoring well and contaminant source. The groundwater elevation contour map shall be submitted to NMED in the quarterly monitoring reports. [Subsection A of 20.6.2.3107 NMAC]
16.	Groundwater quality monitoring shall be conducted in accordance with the most recent approved version of the *Interim Facility-Wide Groundwater Monitoring Plan* (IFGMP) which is conducted under the direction of the NMED Hazardous Waste Bureau. In some cases, the NMED Groundwater Quality Bureau may request that additional analytes or wells be added to the sampling regime in cases where specific locations, constituents, or monitoring may not be included in the IFGMP. [20.6.2.3107 NMAC]
17.	**ELECTRONIC POSTING** - Quarterly monitoring reports shall be posted on LANL's Electronic Public Reading Room located at http://eprr.lanl.gov/oppie/service (or as updated). [20.6.2.3107.A NMAC]

C. CONTINGENCY PLAN

#	Terms and Conditions
18.	If the SCADA system triggers a system alarm, injection operations in the affected system shall cease. The SCADA system shall be set to alarm and shut off injection should there be a malfunction such as increase in down-hole pressure in the injection well or rupture of a treated effluent conveyance line. Injection to the affected system shall not be resumed until the problem is corrected
19.	In the event that groundwater monitoring in the vicinity of the discharge conducted under this permit indicates that a significant increase in concentration of an analyte identified in Section 20.6.2.3103 NMAC or a toxic pollutant defined in Subsection WW of 20.6.2.7 NMAC is present in a groundwater sample that is attributable to a discharge conducted under this permit, and in any subsequent groundwater sample, the permittees shall enact the following contingency plan. Within 30 days of receipt of the data confirming the increase, the permittees shall propose measures to ensure that the exceedance of the standard or the presence of a toxic pollutant will be mitigated by submitting a corrective action plan to NMED for approval. The corrective action plan shall include a description of the proposed actions to control the source and an associated completion schedule. The plan shall be enacted as approved by NMED. Once invoked (whether during the term of this Discharge Permit or after the term of this Discharge Permit and prior to the completion of the Discharge Permit closure plan requirements), this condition shall apply until the permittees have fulfilled the requirements of this condition and groundwater monitoring confirms for a minimum of two years of consecutive groundwater sampling events that the standards of Section 20.6.2.3103 NMAC are not exceeded and toxic pollutants are not present in groundwater. The permittees may be required to abate water pollution pursuant to Sections 20.6.2.4000 through 20.6.2.4115 NMAC, should the corrective action plan not result in compliance with the standards and requirements set forth in Section 20.6.2.4103 NMAC within 180 days of confirmed increase in groundwater contamination. [Subsection A of 20.6.2.3107 NMAC, Subsection E of 20.6.2.3109 NMAC]
20.	In the event that information available to NMED indicates that a groundwater monitoring well listed in Condition 14 of this Discharge Permit is not constructed in a manner consistent with its intended use, contains insufficient water to effectively monitor groundwater quality, or is not completed in a manner that is protective of groundwater quality, the permittees shall, at the request of NMED, submit a drilling workplan and project schedule for NMED approval within 120 days following notification. The permittees shall survey the new monitoring well within 30 days following well

#	Terms and Conditions
	construction. Replacement monitoring well locations shall be approved by NMED prior to installation and completed in accordance with the attachment titled *Ground Water Quality Bureau Monitoring Well Construction and Abandonment Guidelines*, Revision 1.1, March 2011 (GWQB, 2011), or the permittees may propose specific construction details for approval by NMED. The permittees shall submit construction and lithologic logs, survey data, and a groundwater potentiometric surface map to NMED within 60 days following well completion. Actions associated with monitoring well SIMR-2 will require coordination with NMED and the Pueblo of San Ildefonso. Upon completion of the replacement monitoring wells, the monitoring well requiring replacement shall be properly plugged and abandoned. Well plugging, abandonment, and documentation of the abandonment procedures shall be completed in accordance with GWQB, 2011 and all applicable local, state, and federal regulations. The well abandonment documentation shall be submitted to NMED within 60 days of completion of well plugging activities. [Subsection A of 20.6.2.3107 NMAC]
21.	In the event that groundwater flow information obtained pursuant to this Discharge Permit indicates that a groundwater monitoring well listed in Condition 14 is not located hydrologically downgradient of the discharge location it is intended to monitor, the permittees shall submit a drilling workplan and project schedule for NMED approval within 120 days following notification from NMED. The permittees shall survey the new monitoring well within 30 days following well construction. New well locations shall be approved by NMED prior to installation and completed in accordance with GWQB, 2011, or the permittees may propose specific construction details for approval by NMED. The permittees shall submit construction and lithologic logs, survey data, and a groundwater elevation contour map within 90 days following well completion. [Subsection A of 20.6.2.3107 NMAC]
22.	In the event that a release ("spill") occurs that is not authorized under this Discharge Permit, the permittees shall take measures to mitigate damage from the unauthorized discharge and initiate the notifications and corrective actions required in Section 20.6.2.1203 NMAC and summarized below. Within 24 hours following discovery of the unauthorized discharge, the permittees shall

#	Terms and Conditions
	verbally notify NMED and provide the following information: a) the name, address, and telephone number of the person or persons in charge of the facility, as well as of the owner and/or operator of the facility; b) the name and address of the facility; c) the date, time, location, and duration of the unauthorized discharge; d) the source and cause of unauthorized discharge; e) a description of the unauthorized discharge, including its estimated chemical composition; f) the estimated volume of the unauthorized discharge; and g) any actions taken to mitigate immediate damage from the unauthorized discharge. Within seven days following discovery of the unauthorized discharge, the permittees shall submit written notification to NMED with the information listed above and any pertinent updates. Within 15 days following discovery of the unauthorized discharge, the permittees shall submit a corrective action report/plan to NMED describing any corrective actions taken and/or to be taken relative to the unauthorized discharge that includes the following: a) a description of proposed actions to mitigate damage from the unauthorized discharge; b) a description of proposed actions to prevent future unauthorized discharges of this nature; c) a schedule for completion of proposed actions. In the event that the unauthorized discharge causes or may with reasonable probability cause water pollution in excess of the standards and requirements of Section 20.6.2.4103 NMAC, and the water pollution will not be abated within 180 days after notice is required to be given pursuant to Paragraph (1) of Subsection A of 20.6.2.1203 NMAC, the permittees may be required to abate water pollution pursuant to Sections 20.6.2.4000 through 20.6.2.4115 NMAC. Nothing in this condition shall be construed as relieving the permittees of the obligation to comply with all requirements of Section 20.6.2.1203 NMAC. [20.6.2.1203 NMAC]
23.	In the event that NMED or the permittees identify any failures of the discharge plan or this Discharge Permit not specifically noted herein, NMED may require the permittees to submit a corrective action plan and a schedule for completion of corrective actions to address the failures. Additionally, NMED may require a Discharge Permit modification to achieve compliance with 20.6.2 NMAC. [Subsection A of 20.6.2.3107 NMAC, Subsection E of 20.6.2.3109 NMAC]

D. CLOSURE PLAN

#	Terms and Conditions
24.	Upon final cessation of the activity pursuant to the Discharge Permit, the permittees shall perform the following closure measures: a) cap or plug all lines to prevent the flow of wastewater to treatment or disposal systems; b) empty, clean, and remove tanks; c) empty lagoons, remove liners, backfill, and re-grade to surface topography; d) appropriately dispose of liquids and solids; e) regrade and cover stockpiles; f) continue groundwater monitoring for at least two years, or as appropriate; g) enact contingency plans if groundwater standards are exceeded including any abatement required by NMED pursuant to actions related to this Discharge Permit; h) remove any compounds and equipment pertaining to the remediation activities; i) appropriately remove and manage all treatment resins and media in accordance with all applicable local, state and federal regulations; j) UIC wells must be closed in accordance with State of New Mexico Oil Conservation Division guidelines as described in the *Oil Conservation Division Underground Injection Control Program Manual*, February 26, 2004; k) following notification from NMED that post-closure monitoring may cease, the permittees shall plug and abandon any groundwater monitoring wells not included in the current IFGMP in accordance with GWQB, 2011; l) when all post-closure requirements have been met, the permittees may request to terminate the Discharge Permit. Should individual components utilized under this Discharge Permit be required for completion of Consent Agreement activities under other regulatory oversight, the permittees may request a variance from specific closure activities required under this condition. [20.6.2.3107 (A)11 NMAC]

GENERAL TERMS AND CONDITIONS

#	Terms and Conditions
25.	RECORD KEEPING - The permittees shall maintain a written record of the following information: a) information and data used to complete the application for this Discharge Permit; b) records of any releases ("spills") not authorized under this Discharge Permit and reports submitted pursuant to 20.6.2.1203 NMAC; c) records of the operation, maintenance, and repair of all facilities/equipment used to treat, store, or dispose of wastewater; d) facility record drawings (plans and specifications) showing the actual construction of the facility that comply with all applicable statutes, regulations, and codes including applicable DOE and LANL Engineering Standards; e) copies of monitoring reports completed and/or submitted to NMED pursuant to this Discharge Permit; f) the volume of wastewater or other wastes discharged pursuant to this Discharge Permit; g) groundwater quality and wastewater quality data collected pursuant to this Discharge Permit; h) copies of construction records (well logs) for all groundwater monitoring wells required to be sampled pursuant to this Discharge Permit; i) records of the maintenance, repair, replacement, or calibration of any monitoring equipment or flow measurement devices required by this Discharge Permit; j) data and information related to field measurements, sampling, and analysis conducted pursuant to this Discharge Permit. The following information shall be recorded and made available to NMED upon request: i) the dates, locations, and times of sampling or field measurements; ii) the name and job title of the individuals who performed each sample collection or field measurement; iii) the sample analysis date of each sample; iv) the name and address of the laboratory, and the name of the signatory authority for the laboratory analysis; v) the analytical technique or method used to analyze each sample or collect each field measurement; vi) the results of each analysis or field measurement, including raw data; vii) the results of any split, spiked, duplicate or repeat sample; viii) a copy of the laboratory analysis chain-of-custody as well as a description of the quality assurance and quality control procedures used. The written record shall be maintained by the permittees at a location accessible during a facility inspection by NMED for a period of at least five years from the date of application, report, collection, or measurement and shall be made available to NMED upon request. [Subsections A and D of 20.6.2.3107 NMAC]

#	Terms and Conditions
26.	INSPECTION and ENTRY – The permittees shall allow inspection by NMED of the facility and its operations which are subject to this Discharge Permit and the WQCC regulations. NMED may, upon presentation of proper credentials, enter at reasonable times upon or through any premises in which a water contaminant source is located or in which any records are located regarding this discharge permit or related discharges required to be maintained by regulations of the federal government or the WQCC. The permittees shall allow NMED to have access to and reproduce for their use any copy of the records, and to perform assessments, sampling, or monitoring during an inspection for the purpose of evaluating compliance with this Discharge Permit and the WQCC regulations. Nothing in this Discharge Permit shall be construed as limiting in any way the inspection and entry authority of NMED under the WQA, the WQCC Regulations, or any other local, state, or federal regulations. [Subsection D of 20.6.2.3107 NMAC, NMSA 1978, §§ 74-6-9.B and 74-6-9.E]
27.	DUTY to PROVIDE INFORMATION - The permittees shall, upon NMED request, allow for NMED inspection/duplication of records required by this Discharge Permit and/or furnish to NMED copies of such records. [Subsection D of 20.6.2.3107 NMAC]
28.	MODIFICATIONS and/or AMENDMENTS – In the event the permittees propose a change to the facility or the facility's discharge that would result in a change in the volume discharged, the location of the discharge, or in the amount or character of water contaminants received, treated, or discharged by the facility, the permittees shall notify NMED prior to implementing such changes. The permittees shall obtain approval (which may require modification of this Discharge Permit) by NMED prior to implementing such changes. [Subsection C of 20.6.2.3107 NMAC, Subsections E and G of 20.6.2.3109 NMAC]
29.	PLANS and SPECIFICATIONS – In the event that the permittees are proposing to construct a wastewater system or change a process unit of an existing system such that the quantity or quality of the discharge will change substantially from that authorized by this Discharge Permit, the permittees shall submit construction plans and specifications to NMED for the proposed system or process unit prior to the commencement of construction. In the event the permittees implement changes to the wastewater system authorized by this Discharge Permit which result in only a minor effect on the character of the discharge, the permittees shall report such changes (including the submission of record drawings, where

#	Terms and Conditions
	applicable) in the subsequent quarterly report to NMED. [Subsections A and C of 20.6.2.1202 NMAC, NMSA 1978, §§ 61-23-1 through 61-23-32]
30.	CIVIL PENALTIES - Any violation of the requirements and conditions of this Discharge Permit, including any failure to allow properly credentialed NMED staff to enter and inspect records or facilities, or any refusal or failure to provide NMED with records or information required to be maintained by this Discharge Permit or related regulation may subject the permittees to a civil enforcement action. Pursuant to WQA 74-6-10(A) and (B), such action may include a compliance order requiring compliance immediately or in a specified time, assessing a civil penalty, modifying or terminating the Discharge Permit, or any combination of the foregoing; or an action in district court seeking injunctive relief, civil penalties, or both. Pursuant to WQA 74-6-10(C) and 74-6-10.1, civil penalties of up to $15,000 per day of noncompliance may be assessed for each violation of the WQA 74-6-5, the WQCC Regulations, or this Discharge Permit, and civil penalties of up to $10,000 per day of noncompliance may be assessed for each violation of any other provision of the WQA, or any regulation, standard, or order adopted pursuant to such other provision. In any action to enforce this Discharge Permit, the permittees waive any objection to the admissibility as evidence of any data generated pursuant to this Discharge Permit. [20.6.2.1220 NMAC, NMSA 1978, §§ 74-6-10 and 74-6-10.1]
31.	CRIMINAL PENALTIES – No person shall: a) make any false material statement, representation, certification, or omission of material fact in an application, record, report, plan, or other document filed, submitted, or required to be maintained under the WQA; b) falsify, tamper with, or render inaccurate any monitoring device, method, or record required to be maintained under the WQA; c) fail to monitor, sample, or report as required by a permit issued pursuant to a state or federal law or regulation. Any person who knowingly violates or knowingly causes or allows another person to violate the requirements of this condition is guilty of a fourth degree felony and shall be sentenced in accordance with the provisions of NMSA 1978, § 31-18-15. Any person who is convicted of a second or subsequent violation of the requirements of this condition is guilty of a third degree felony and shall be sentenced in accordance with the provisions of NMSA 1978, § 31-18-15. Any person who knowingly violates the requirements of this condition or knowingly causes another person to violate the requirements of this condition and thereby causes a substantial adverse environmental impact is guilty of a third degree felony and shall be sentenced in accordance with the provisions of NMSA 1978, § 31-18-15. Any person who knowingly violates the requirements of this condition and knows at the time of the violation that a substantial danger of death or serious bodily injury to any other person may be created is guilty of a second degree felony and shall be sentenced in

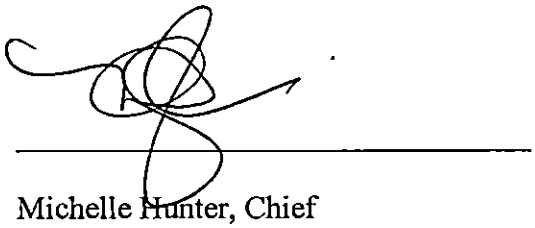
#	Terms and Conditions
	accordance with the provisions of NMSA 1978, § 31-18-15. [20.6.2.1220 NMAC, NMSA 1978, §§ 74-6-10.2.A through 74-6-10.2.F]
32.	COMPLIANCE with OTHER LAWS - Nothing in this Discharge Permit shall be construed in any way as relieving the permittees of the obligation to comply with all applicable federal, state, and local laws, regulations, permits, or orders. [NMSA 1978, § 74-6-5.L]
33.	RIGHT to APPEAL - The permittees may file a petition for review before the WQCC on this Discharge Permit. Such petition shall be in writing to the WQCC within thirty days of the receipt of postal notice of this Discharge Permit and shall include a statement of the issues to be raised and the relief sought. Unless a timely petition for review is made, the decision of NMED shall be final and not subject to judicial review. [20.6.2.3112 NMAC, NMSA 1978, § 74-6-5.O]
34.	TRANSFER of DISCHARGE PERMIT - Prior to the transfer of any ownership, control, or possession of this facility or any portion thereof, the permittees shall: 1) notify the proposed transferee in writing of the existence of this Discharge Permit; 2) include a copy of this Discharge Permit with the notice; 3) deliver or send by certified mail to NMED a copy of the notification and proof that such notification has been received by the proposed transferee. Until both ownership and possession of the facility have been transferred to the transferee, the permittees shall continue to be responsible for any discharge from the facility. [20.6.2.3111 NMAC]
35.	PERMIT FEES - Payment of permit fees is due at the time of Discharge Permit approval. Permit fees shall be paid in a single payment or shall be paid in equal installments on a yearly basis over the term of the Discharge Permit. Single payments shall be remitted to NMED no later than 30 days after the Discharge Permit effective date. Initial installment payments shall be remitted to NMED no later than 30 days after the Discharge Permit effective date; subsequent installment payments shall be remitted to NMED no later than the anniversary of the Discharge Permit effective date. Permit fees are associated with issuance of this Discharge Permit. Nothing in this Discharge Permit shall be construed as relieving the permittees of the obligation to pay all permit fees assessed by NMED. A permittee that ceases discharging or does not commence discharging from the facility during the term of the Discharge Permit shall pay all permit fees assessed by NMED. An approved Discharge Permit shall be suspended or terminated

#	Terms and Conditions
	if the facility fails to remit an installment payment by its due date. [Subsection F of 20.6.2.3114 NMAC, NMSA 1978, § 74-6-5.K]

PERMIT TERM & SIGNATURE

EFFECTIVE DATE: August 31, 2016
EXPIRATION DATE: Seven years from the effective date, or five years from the date the discharge commences, whichever comes first.

[Subsection H of 20.6.2.3109 NMAC, NMSA 1978, § 74-6-5.I]



Michelle Hunter, Chief
Ground Water Quality Bureau
New Mexico Environment Department

NEW MEXICO ENVIRONMENT DEPARTMENT
GROUND WATER QUALITY BUREAU
MONITORING WELL CONSTRUCTION AND ABANDONMENT GUIDELINES

Purpose: These guidelines identify minimum construction and abandonment details for installation of water table monitoring wells under ground water Discharge Permits issued by the NMED's Ground Water Quality Bureau (GWQB) and Abatement Plans approved by the GWQB. Proposed locations of monitoring wells required under Discharge Permits and Abatement Plans and requests to use alternate installation and/or construction methods for water table monitoring wells or other types of monitoring wells (e.g., deep monitoring wells for delineation of vertical extent of contaminants) must be submitted to the GWQB for approval prior to drilling and construction.

General Drilling Specifications:

1. All well drilling activities must be performed by an individual with a current and valid well driller license issued by the State of New Mexico in accordance with 19.27.4 NMAC. Use of drillers with environmental well drilling experience and expertise is highly recommended.
2. Drilling methods that allow for accurate determinations of water table locations must be employed. All drill bits, drill rods, and down-hole tools must be thoroughly cleaned immediately prior to the start of drilling. The borehole diameter must be drilled a minimum of 4 inches larger than the casing diameter to allow for the emplacement of sand and sealant.
3. After completion, the well should be allowed to stabilize for a minimum of 12 hours before development is initiated.
4. The well must be developed so that formation water flows freely through the screen and is not turbid, and all sediment and drilling disturbances are removed from the well.

Well Specifications (see attached monitoring well schematic):

5. Schedule 40 (or heavier) polyvinyl chloride (PVC) pipe, stainless steel pipe, carbon steel pipe, or pipe of an alternate appropriate material that has been approved for use by NMED must be used as casing. The casing must have an inside diameter not less than 2 inches. The casing material selected for use must be compatible with the anticipated chemistry of the ground water and appropriate for the contaminants of interest at the facility. The casing material and thickness selected for use must have sufficient collapse strength to withstand the pressure exerted by grouts used as annular seals and thermal properties sufficient to withstand the heat generated by the hydration of cement-based grouts. Casing sections may be joined using welded, threaded, or mechanically locking joints; the method selected must provide sufficient joint strength for the specific well installation. The casing must extend from the top of the screen to at least one foot above ground surface. The top of the casing must be fitted with a removable cap, and the exposed casing must be protected by a locking steel well shroud. The shroud must be large enough in diameter to allow easy access for removal of the cap. Alternatively, monitoring wells may be completed below grade. In this case, the casing must extend from the top of the screen to 6 to 12 inches below the ground surface; the monitoring wells must be sealed with locking, expandable well plugs; a flush-mount, watertight well vault that is rated to withstand traffic loads must be emplaced around the wellhead; and the cover must be secured with at least one bolt. The vault cover must indicate that the wellhead of a monitoring well is contained within the vault.
6. A 20-foot section (maximum) of continuous-slot, machine slotted, or other manufactured PVC or stainless steel well screen or well screen of an alternate appropriate material that has been approved for use by NMED must be installed across the water table. Screens created by cutting slots into solid casing with saws or other tools must not be used. The screen material selected for use must be compatible with the anticipated chemistry of the ground water and appropriate for the contaminants of interest at the facility. Screen sections may be joined using welded, threaded, or mechanically

locking joints; the method selected must provide sufficient joint strength for the specific well installation and must not introduce constituents that may reasonably be considered contaminants of interest at the facility. A cap must be attached to the bottom of the well screen; sumps (i.e., casing attached to the bottom of a well screen) should not be installed. The bottom of the screen must be installed no more than 15 feet below the water table; the top of the well screen must be positioned not less than 5 feet above the water table. The well screen slots must be appropriately sized for the formation materials and should be selected to retain 90 percent of the filter pack. A slot size of 0.010 inches is generally adequate for most installations.

7. Casing and well screen must be centered in the borehole by placing centralizers near the top and bottom of the well screen.
8. A filter pack must be installed around the screen by filling the annular space from the bottom of the screen to 2 feet above the top of the screen with clean silica sand. The filter pack must be properly sized to prevent fine particles in the formation from entering the well; clean medium to coarse silica sand is generally adequate as filter pack material for 0.010-inch slotted well screen. For wells deeper than 30 feet, the sand must be emplaced by a tremmie pipe. The well should be surged or bailed to settle the filter pack and additional sand added, if necessary, before the bentonite seal is emplaced.
9. A bentonite seal must be constructed immediately above the filter pack by emplacing bentonite chips or pellets (3/8-inch in size or smaller) in a manner that prevents bridging of the chips/pellets in the annular space. The bentonite seal must be 3 feet in thickness and hydrated with clean water. Adequate time should be allowed for expansion of the bentonite seal before installation of the annular space seal.
10. The annular space above the bentonite seal must be sealed with cement grout or a bentonite-based sealing material acceptable to the State Engineer pursuant to 19.27.4 NMAC. A tremmie pipe must be used when placing sealing materials at depths greater than 20 feet below the ground surface. Annular space seals must extend from the top of the bentonite seal to the ground surface (for wells completed above grade) or to a level 3 to 6 inches below the top of casing (for wells completed below grade).
11. For monitoring wells finished above grade, a concrete pad (2-foot minimum radius, 4-inch minimum thickness) must be poured around the shroud and wellhead. The concrete and surrounding soil must be sloped to direct rainfall and runoff away from the wellhead. The installation of steel posts around the well shroud and wellhead is recommended for monitoring wells finished above grade to protect the wellhead from damage by vehicles or equipment. For monitoring wells finished below grade, a concrete pad (2-foot minimum radius, 4-inch minimum thickness) must be poured around the well vault and wellhead. The concrete and surrounding soil must be sloped to direct rainfall and runoff away from the well vault.

Abandonment:

12. Approval for abandonment of monitoring wells used for ground water monitoring in accordance with Discharge Permit and Abatement Plan requirements must be obtained from NMED prior to abandonment.
13. Well abandonment must be accomplished by removing the well casing and placing neat cement grout, bentonite-based plugging material, or other sealing material approved by the State Engineer for wells that encounter water pursuant to 19.27.4 NMAC from the bottom of the borehole to the ground surface using a tremmie pipe. If the casing cannot be removed, neat cement grout, bentonite-based plugging material, or other sealing material approved by the State Engineer must be placed in the well using a tremmie pipe from the bottom of the well to the ground surface.
14. After abandonment, written notification describing the well abandonment must be submitted to the NMED. Written notification of well abandonment must consist of a copy of the well plugging record submitted to the State Engineer in accordance with 19.27.4 NMAC, or alternate documentation containing the information to be provided in a well plugging record required by the State Engineer as specified in 19.27.4 NMAC.

Deviation from Monitoring Well Construction and Abandonment Requirements: Requests to construct water table monitoring wells or other types of monitoring wells for ground water monitoring under ground water Discharge Permits or Abatement Plans in a manner that deviates from the specified requirements must be submitted in writing to the GWQB. Each request must state the rationale for the proposed deviation from these requirements and provide detailed evidence supporting the request. The GWQB will approve or deny requests to deviate from these requirements in writing.

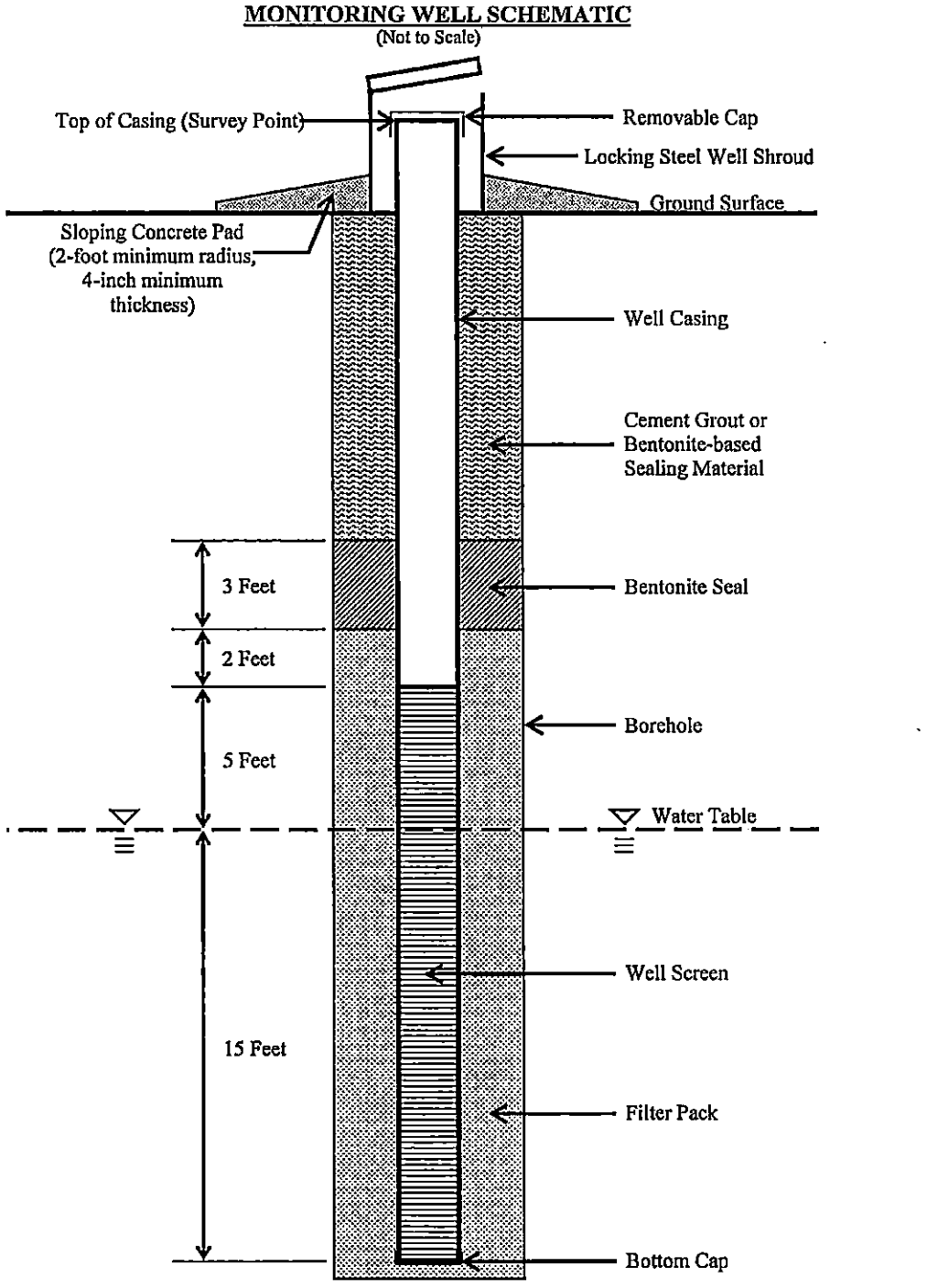


Table A-1: NMED Soil Screening Levels - July 2015

Chemical	Residential Soil (mg/kg)	End-point	Industrial/ Occupational Soil (mg/kg)	End-point	Construction Worker Soil (mg/kg)	End-point	Tap Water (ug/L)	End-point	Risk-based SSL for a DAF of 1 (mg/kg)	Risk-based SSL for a DAF of 20 (mg/kg)
Acenaphthene	3.48E+03	n	5.05E+04	n	1.51E+04	n	5.35E+02	n	4.12E+00	8.25E+01
Acetaldehyde	2.49E+02	n	1.17E+03	n	2.17E+02	n	1.88E+01	n	3.29E-03	6.58E-02
Acetone	6.63E+04	n	9.60E+05	nls	2.42E+05	nls	1.41E+04	n	2.49E+00	4.98E+01
Acrylonitrile	4.93E+00	c	2.46E+01	c	3.52E+01	n	5.23E-01	c	9.77E-05	1.95E-03
Acetophenone	7.82E+03	ns	1.30E+05	nls	3.54E+04	ns	1.92E+03	n	4.82E-01	9.64E+00
Acrolein	4.54E-01	n	2.16E+00	n	4.01E-01	n	4.15E-02	n	7.29E-06	1.46E-04
Aldrin	3.11E-01	c	1.50E+00	c	8.07E+00	n	4.54E-02	c	5.60E-03	1.12E-01
Aluminum	7.80E+04	n	1.29E+06	nl	4.14E+04	n	1.99E+04	n	2.99E+04	5.97E+05
Anthracene	1.74E+04	n	2.53E+05	nl	7.53E+04	n	1.72E+03	n	4.25E+01	8.51E+02
Antimony	3.13E+01	n	5.19E+02	n	1.42E+02	n	7.26E+00	n	3.28E-01	6.56E+00
Arsenic	4.25E+00	c	2.15E+01	c	5.74E+01	n	5.13E-01	c	1.50E-02	2.99E-01
Barium	1.56E+04	n	2.55E+05	nl	4.39E+03	n	3.28E+03	n	1.35E+02	2.70E+03
Benzene	1.78E+01	c	8.72E+01	c	1.42E+02	n	4.54E+00	c	1.90E-03	3.80E-02
Benzidine	5.18E-03	c	1.12E-01	c	8.12E-01	c	1.07E-03	c	2.09E-06	4.17E-05
Benzo(a)anthracene	1.53E+00	c	3.23E+01	c	2.40E+02	c	3.43E-01	c	9.11E-02	1.82E+00
Benzo(a)pyrene	1.53E-01	c	3.23E+00	c	2.40E+01	c	3.43E-02	c	3.02E-02	6.05E-01
Benzo(b)fluoranthene	1.53E+00	c	3.23E+01	c	2.40E+02	c	3.43E-01	c	3.09E-01	6.17E+00
Benzo(k)fluoranthene	1.53E+01	c	3.23E+02	c	2.31E+03	c	3.43E+00	c	3.02E+00	6.05E+01
Beryllium	1.56E+02	n	2.58E+03	n	1.48E+02	n	1.24E+01	n	9.79E+00	1.96E+02
a-BHC (a-Hexachlorocyclohexane, a-HCH)	8.45E-01	c	4.07E+00	c	2.97E+01	c	6.80E-02	c	2.98E-04	5.96E-03
b-BHC (b-Hexachlorocyclohexane, b-HCH)	2.96E+00	c	1.43E+01	c	1.04E+02	c	2.38E-01	c	1.04E-03	2.09E-02
g-BHC (Lindane)	5.63E+00	c	2.83E+01	c	9.43E+01	n	4.08E-01	c	1.79E-03	3.58E-02
1,1-Biphenyl	6.32E+01	n	2.98E+02	n	5.46E+01	n	8.34E-01	n	6.56E-03	1.31E-01
Bis(2-chloroethyl) ether	3.11E+00	c	1.57E+01	c	1.95E+00	c	1.36E-01	c	3.03E-05	6.05E-04
Bis(2-chloroisopropyl) ether	9.93E+01	c	5.19E+02	cs	3.54E+03	cs	9.76E+00	c	2.37E-03	4.73E-02
Bis(2-ethylhexyl) phthalate	3.80E+02	c	1.83E+03	c	5.38E+03	n	5.56E+01	c	9.99E+00	2.00E+02
Bis(chloromethyl) ether	2.08E-03	c	1.02E-02	c	4.81E-02	c	7.20E-04	c	1.50E-07	3.00E-06
Boron	1.56E+04	n	2.59E+05	nl	5.14E+04	n	3.95E+03	n	1.25E+01	2.51E+02
Bromodichloromethane	6.19E+00	c	3.02E+01	c	1.43E+02	c	1.34E+00	c	3.10E-04	6.21E-03
Bromomethane	1.77E+01	n	9.45E+01	n	1.79E+01	n	7.54E+00	n	1.71E-03	3.43E-02
1,3-Butadiene	6.86E-01	c	3.41E+00	c	2.02E+00	n	1.80E-01	c	1.04E-04	2.07E-03
2-Butanone (Methyl ethyl ketone, MEK)	3.74E+04	n	4.11E+05	nls	9.17E+04	ns	5.56E+03	n	1.00E+00	2.01E+01
tert-Butyl methyl ether (MTBE)	9.75E+02	c	4.82E+03	c	2.42E+04	cs	1.43E+02	c	2.77E-02	5.53E-01
Cadmium	7.05E+01	n	1.11E+03	n	7.21E+01	n	6.24E+00	n	4.69E-01	9.39E+00
Carbon disulfide	1.55E+03	ns	8.54E+03	ns	1.62E+03	ns	8.10E+02	n	2.21E-01	4.42E+00
Carbon tetrachloride	1.07E+01	c	5.25E+01	c	2.02E+02	n	4.53E+00	c	1.66E-03	3.33E-02
Chlordane	1.77E+01	c	8.90E+01	c	1.53E+02	n	2.23E+00	c	1.13E-01	2.26E+00
2-Chloroacetophenone	1.72E+05	nl	8.12E+05	nl	2.81E+02	n				
2-Chloro-1,3-butadiene	1.75E-01	c	8.48E-01	c	3.95E+00	c	1.87E-01	c	9.83E-05	1.97E-03
1-Chloro-1,1-difluoroethane	1.09E+05	nls	5.15E+05	nls	9.58E+04	ns	1.04E+05	n	5.34E+01	1.07E+03

Table A-1: NMED Soil Screening Levels - July 2015

Chemical	Residential Soil (mg/kg)	End-point	Industrial/ Occupational Soil (mg/kg)	End-point	Construction Worker Soil (mg/kg)	End-point	Tap Water (ug/L)	End-point	Risk-based SSL for a DAF of 1 (mg/kg)	Risk-based SSL for a DAF of 20 (mg/kg)
Chlorobenzene	3.78E+02	ns	2.16E+03	ns	4.12E+02	ns	7.76E+01	n	4.18E-02	8.36E-01
1-Chlorobutane	3.13E+03	ns	5.19E+04	ns	1.42E+04	ns	6.31E+02	n	2.27E-01	4.53E+00
Chlorodifluoromethane	1.02E+05	nls	4.83E+05	nls	8.98E+04	ns	1.04E+05	n	4.27E+01	8.55E+02
Chloroform	5.90E+00	c	2.87E+01	c	1.34E+02	c	2.29E+00	c	5.46E-04	1.09E-02
Chloromethane	4.11E+01	c	2.01E+02	c	2.35E+02	n	2.03E+01	c	4.76E-03	9.51E-02
b-Chloronaphthalene	6.26E+03	n	1.04E+05	nl	2.83E+04	ns	7.33E+02	n	2.85E+00	5.70E+01
o-Chloronitrobenzene	1.78E+01	c	8.55E+01	c	8.39E+01	n	2.35E+00	c	1.71E-03	3.42E-02
p-Chloronitrobenzene	6.16E+01	n	9.16E+02	n	2.57E+02	n	1.79E+01	n	1.28E-02	2.57E-01
2-Chlorophenol	3.91E+02	n	6.49E+03	n	1.77E+03	n	9.10E+01	n	5.76E-02	1.15E+00
2-Chloropropane	2.86E+02	n	1.35E+03	ns	2.51E+02	ns	2.09E+02	n	6.31E-02	1.26E+00
o-Chlorotoluene	1.56E+03	ns	2.60E+04	ns	7.08E+03	ns	2.33E+02	n	1.78E-01	3.56E+00
Chromium III	1.17E+05	nl	1.95E+06	nl	5.31E+05	nl	1.36E+04	n	2.46E+07	4.91E+08
Chromium VI	3.05E+00	c	7.21E+01	c	6.69E+01	c	2.52E-01	c	4.84E-03	9.68E-02
Chromium (Total)	9.66E+01	c	5.05E+02	c	1.34E+02	n	5.59E+00	c	1.01E+04	2.01E+05
Chrysene	1.53E+02	c	3.23E+03	c	2.31E+04	c	3.43E+01	c	9.30E+00	1.86E+02
Copper	3.13E+03	n	5.19E+04	n	1.42E+04	n	7.90E+02	n	2.78E+01	5.56E+02
Crotonaldehyde	3.66E+00	c	1.91E+01	c	1.30E+02	c	4.04E-01	c	7.11E-05	1.42E-03
Cumene (isopropylbenzene)	2.36E+03	ns	1.42E+04	ns	2.74E+03	ns	4.47E+02	n	5.69E-01	1.14E+01
Cyanide	1.12E+01	n	6.33E+01	n	1.21E+01	n	1.46E+00	n	2.61E-04	5.22E-03
Cyanogen	7.82E+01	n	1.30E+03	n	3.54E+02	n	1.99E+01	n	4.01E-03	8.01E-02
Cyanogen bromide	7.04E+03	n	1.17E+05	nl	3.19E+04	n	1.80E+03	n	5.29E-01	1.06E+01
Cyanogen chloride	3.91E+03	n	6.49E+04	n	1.77E+04	n	9.99E+02	n	2.94E-01	5.88E+00
DDD	2.22E+01	c	1.07E+02	c	7.78E+02	c	3.06E-01	c	5.39E-02	1.08E+00
DDE	1.57E+01	c	7.55E+01	c	5.49E+02	c	2.29E+00	c	4.04E-01	8.08E+00
DDT	1.87E+01	c	9.50E+01	c	1.62E+02	n	2.29E+00	c	5.80E-01	1.16E+01
Dibenz(a,h)anthracene	1.53E-01	c	3.23E+00	c	2.40E+01	c	1.06E-01	c	3.05E-01	6.11E+00
1,2-Dibromo-3-chloropropane	8.58E-02	c	1.18E+00	c	5.53E+00	c	3.36E-03	c	1.17E-06	2.34E-05
Dibromochloromethane	1.39E+01	c	6.74E+01	c	3.40E+02	c	1.68E+00	c	3.77E-04	7.54E-03
1,2-Dibromoethane	6.72E-01	c	3.31E+00	c	1.63E+01	c	7.46E-02	c	1.76E-05	3.52E-04
1,4-Dichloro-2-butene	1.15E-01	c	5.58E-01	c	2.59E+00	c	1.34E-02	c	5.00E-06	9.99E-05
1,2-Dichlorobenzene	2.15E+03	ns	1.30E+04	ns	2.50E+03	ns	3.02E+02	n	2.29E-01	4.58E+00
1,4-Dichlorobenzene	3.28E+01	c	1.59E+02	c	7.46E+02	c	4.81E+00	c	3.60E-03	7.20E-02
3,3-Dichlorobenzidine	1.18E+01	c	5.70E+01	c	4.10E+02	c	1.24E+00	c	6.14E-03	1.23E-01
Dichlorodifluoromethane	1.82E+02	n	8.65E+02	ns	1.61E+02	n	1.97E+02	n	3.61E-01	7.23E+00
1,1-Dichloroethane	7.86E+01	c	3.83E+02	c	1.82E+03	cs	2.75E+01	c	6.79E-03	1.36E-01
1,2-Dichloroethane	8.32E+00	c	4.07E+01	c	5.38E+01	n	1.71E+00	c	4.07E-04	8.14E-03
cis-1,2-Dichloroethene	1.56E+02	n	2.60E+03	ns	7.08E+02	n	3.65E+01	n	9.18E-03	1.84E-01
trans-1,2-Dichloroethene	2.95E+02	n	1.61E+03	ns	3.05E+02	n	9.32E+01	n	2.35E-02	4.69E-01
1,1-Dichloroethene	4.40E+02	n	2.26E+03	ns	4.24E+02	n	2.84E+02	n	9.74E-02	1.95E+00

Table A-1: NMED Soil Screening Levels - July 2015

Chemical	Residential Soil (mg/kg)	End-point	Industrial/ Occupational Soil (mg/kg)	End-point	Construction Worker Soil (mg/kg)	End-point	Tap Water (ug/L)	End-point	Risk-based SSL for a DAF of 1 (mg/kg)	Risk-based SSL for a DAF of 20 (mg/kg)
2,4-Dichlorophenol	1.85E+02	n	2.75E+03	n	8.07E+02	n	4.53E+01	n	4.13E-02	8.25E-01
1,2-Dichloropropane	1.78E+01	c	8.68E+01	c	2.54E+01	n	4.37E+00	c	1.21E-03	2.43E-02
1,3-Dichloropropene	2.93E+01	c	1.46E+02	c	1.30E+02	n	4.70E+00	c	1.40E-03	2.80E-02
Dicyclopentadiene	1.73E+00	n	8.14E+00	n	1.51E+00	n	6.25E-01	n	1.71E-03	3.42E-02
Dieldrin	3.33E-01	c	1.60E+00	c	1.17E+01	c	1.71E-02	c	5.18E-04	1.04E-02
Diethyl phthalate	4.93E+04	n	7.33E+05	nl	2.15E+05	nl	1.48E+04	n	4.89E+00	9.79E+01
Di-n-butyl phthalate (Dibutyl phthalate)	6.16E+03	n	9.16E+04	n	2.69E+04	n	8.85E+02	n	1.69E+00	3.38E+01
2,4-Dimethylphenol	1.23E+03	n	1.83E+04	n	5.38E+03	n	3.54E+02	n	3.22E-01	6.45E+00
4,6-Dinitro-o-cresol	4.93E+00	n	7.33E+01	n	2.15E+01	n	1.51E+00	n	1.97E-03	3.94E-02
2,4-Dinitrophenol	1.23E+02	n	1.83E+03	n	5.38E+02	n	3.88E+01	n	3.35E-02	6.71E-01
2,4-Dinitrotoluene	1.71E+01	c	8.23E+01	c	5.36E+02	n	2.37E+00	c	2.46E-03	4.91E-02
2,6-Dintitrotoluene	3.56E+00	c	1.72E+01	c	8.09E+01	n	4.84E-01	c	5.10E-04	1.02E-02
2,4/2,6-Dintrotoluene Mixture	7.83E+00	c	3.77E+01	c	2.77E+02	c	1.06E+00	c	1.12E-03	2.23E-02
1,4-Dioxane	5.33E+01	c	2.57E+02	c	1.88E+03	c	7.76E+00	c	1.38E-03	2.75E-02
1,2-Diphenylhydrazine	6.66E+00	c	3.21E+01	c	2.34E+02	c	7.73E-01	c	1.88E-03	3.76E-02
Endosulfan	3.70E+02	n	5.50E+03	n	1.61E+03	n	9.87E+01	n	1.02E+00	2.04E+01
Endrin	1.85E+01	n	2.75E+02	n	8.07E+01	n	2.23E+00	n	6.77E-02	1.35E+00
Epichlorohydrin	4.27E+01	n	2.15E+02	n	4.02E+01	n	2.05E+00	n	3.86E-04	7.72E-03
Ethyl acetate	1.82E+03	n	8.75E+03	n	1.63E+03	n	1.45E+02	n	2.64E-02	5.28E-01
Ethyl acrylate	1.45E+02	c	7.57E+02	c	5.16E+03	cs	1.56E+01	c	2.99E-03	5.97E-02
Ethyl chloride	1.90E+04	ns	8.95E+04	ns	1.66E+04	ns	2.09E+04	n	5.37E+00	1.07E+02
Ethyl ether	1.56E+04	ns	2.60E+05	nls	7.08E+04	ns	3.93E+03	n	7.60E-01	1.52E+01
Ethyl methacrylate	2.73E+03	ns	1.78E+04	ns	3.48E+03	ns	4.55E+02	n	9.15E-02	1.83E+00
Ethylbenzene	7.51E+01	c	3.68E+02	cs	1.77E+03	cs	1.49E+01	c	1.31E-02	2.62E-01
Ethylene oxide	5.02E+00	c	2.48E+01	c	1.23E+02	c	5.08E-01	c	9.09E-05	1.82E-03
Fluoranthene	2.32E+03	n	3.37E+04	n	1.00E+04	n	8.02E+02	n	6.69E+01	1.34E+03
Fluorene	2.32E+03	n	3.37E+04	n	1.00E+04	n	2.88E+02	n	4.00E+00	8.00E+01
Fluoride	4.69E+03	n	7.78E+04	n	1.81E+04	n	1.18E+03	n	1.78E+02	3.56E+03
Furan	7.24E+01	n	1.15E+03	n	3.54E+02	n	1.92E+01	n	6.12E-03	1.22E-01
Heptachlor	1.18E+00	c	5.70E+00	c	4.15E+01	c	4.39E-02	c	2.73E-03	5.45E-02
Hexachlorobenzene	3.33E+00	c	1.60E+01	c	1.17E+02	c	4.87E-01	c	4.61E-03	9.22E-02
Hexachloro-1,3-butadiene	6.16E+01	n	3.29E+02	c	2.69E+02	n	2.95E+00	c	4.39E-03	8.79E-02
Hexachlorocyclopentadiene	3.70E+02	n	5.49E+03	n	8.67E+02	n	2.78E+01	n	6.68E-02	1.34E+00
Hexachloroethane	4.31E+01	n	6.41E+02	c	1.88E+02	n	6.80E+00	n	3.31E-03	6.62E-02
n-Hexane	6.15E+02	ns	3.20E+03	ns	6.03E+02	ns	3.19E+02	n	2.78E+00	5.57E+01
HMX	3.85E+03	n	6.33E+04	n	1.74E+04	n	1.00E+03	n	9.72E-01	1.94E+01
Hydrazine anhydride	1.78E+00	c	8.55E+00	c	5.99E+01	c	2.60E-01	c	4.50E-05	9.00E-04
Hydrogen cyanide	1.02E+01	n	5.72E+01	n	1.09E+01	n	1.46E+00	n	2.61E-04	5.22E-03
Indeno(1,2,3-c,d)pyrene	1.53E+00	c	3.23E+01	c	2.40E+02	c	3.43E-01	c	1.00E+00	2.01E+01

Table A-1: NMED Soil Screening Levels - July 2015

Chemical	Residential Soil (mg/kg)	End-point	Industrial/ Occupational Soil (mg/kg)	End-point	Construction Worker Soil (mg/kg)	End-point	Tap Water (ug/L)	End-point	Risk-based SSL for a DAF of 1 (mg/kg)	Risk-based SSL for a DAF of 20 (mg/kg)
Iron	5.48E+04	n	9.08E+05	nl	2.48E+05	nl	1.38E+04	n	3.48E+02	6.96E+03
Isobutanol (Isobutyl alcohol)	1.85E+04	n	2.75E+05	nl	8.07E+04	n	5.91E+03	n	1.05E+00	2.10E+01
Isophorone	5.61E+03	c	2.70E+04	c	5.37E+04	n	7.79E+02	c	2.11E-01	4.22E+00
Lead	4.00E+02	IEUBK	8.00E+02	IEUBK	8.00E+02	IEUBK				
Lead (tetraethyl-)	6.16E-03	n	9.16E-02	n	3.54E-02	n	1.24E-03	n	4.70E-06	9.41E-05
Maleic hydrazide	3.08E+04	n	4.58E+05	nl	1.35E+05	nl	1.00E+04	n	1.79E+00	3.57E+01
Manganese	1.05E+04	n	1.60E+05	nl	4.64E+02	n	2.02E+03	n	1.31E+02	2.63E+03
Mercury (elemental)	2.38E+01	ns	1.12E+02	ns	2.07E+01	ns	6.26E+01	n	3.27E-02	6.54E-01
Mercury (methyl)	7.82E+00	n	1.30E+02	n	3.54E+01	n	1.96E+00	n	4.45E-04	8.89E-03
Mercury (salts)	2.35E+01	n	3.89E+02	ns	7.71E+01	n	4.92E+00	n	2.56E-01	5.13E+00
Methacrylonitrile	7.70E+00	n	1.23E+02	n	3.28E+01	n	1.91E+00	n	3.71E-04	7.43E-03
Methomyl	1.54E+03	n	2.29E+04	n	6.73E+03	n	4.98E+02	n	9.37E-02	1.87E+00
Methyl acetate	7.82E+04	ns	1.30E+06	nls	3.54E+05	nls	1.99E+04	n	3.55E+00	7.11E+01
Methyl acrylate	3.50E+02	n	1.85E+03	n	3.48E+02	n	3.90E+01	n	7.13E-03	1.43E-01
Methyl isobutyl ketone	5.81E+03	ns	8.16E+04	ns	2.02E+04	ns	1.24E+03	n	2.40E-01	4.80E+00
Methyl methacrylate	1.11E+04	ns	5.65E+04	ns	1.06E+04	ns	1.39E+03	n	2.61E-01	5.22E+00
Methyl styrene (alpha)	5.48E+03	ns	9.08E+04	ns	2.48E+04	ns	7.65E+02	n	9.43E-01	1.89E+01
Methyl styrene (mixture)	2.73E+02	ns	2.20E+03	ns	4.49E+02	ns	3.73E+01	n	4.70E-02	9.40E-01
Methylcyclohexane	5.50E+03	ns	2.59E+04	ns	4.82E+03	ns	6.26E+03	n	1.58E+01	3.16E+02
Methylene bromide (Dibromomethane)	5.79E+01	n	2.88E+02	n	5.39E+01	n	8.00E+00	n	1.68E-03	3.35E-02
Methylene chloride	4.09E+02	n	5.13E+03	ns	1.21E+03	n	1.06E+02	n	2.35E-02	4.71E-01
Molybdenum	3.91E+02	n	6.49E+03	n	1.77E+03	n	9.87E+01	n	1.99E+00	3.98E+01
Naphthalene	4.97E+01	c	2.41E+02	c	1.59E+02	n	1.65E+00	c	4.11E-03	8.23E-02
Nickel	1.56E+03	n	2.57E+04	n	7.53E+02	n	3.72E+02	n	2.42E+01	4.85E+02
Nitrate	1.25E+05	nl	2.08E+06	nl	5.66E+05	nl	3.16E+04	n	2.13E+01	4.25E+02
Nitrite	7.82E+03	n	1.30E+05	nl	3.54E+04	n	1.97E+03	n	1.33E+00	2.66E+01
Nitrobenzene	6.04E+01	c	2.93E+02	c	3.53E+02	n	1.40E+00	c	7.20E-04	1.44E-02
Nitroglycerin	6.16E+00	n	9.16E+01	n	2.69E+01	n	1.96E+00	n	6.80E-04	1.36E-02
N-Nitrosodiethylamine	7.94E-03	c	1.71E-01	c	1.25E+00	c	1.65E-03	c	4.92E-07	9.84E-06
N-Nitrosodimethylamine	2.34E-02	c	5.03E-01	c	2.14E+00	n	4.90E-03	c	1.02E-06	2.03E-05
N-Nitrosodi-n-butylamine	7.81E-01	c	3.77E+00	c	2.46E+01	c	2.72E-02	c	4.21E-05	8.41E-04
N-Nitrosodiphenylamine	1.09E+03	c	5.24E+03	c	3.79E+04	c	1.21E+02	c	4.98E-01	9.95E+00
N-Nitrosopyrrolidine	2.54E+00	c	1.22E+01	c	8.89E+01	c	3.70E-01	c	1.15E-04	2.30E-03
m-Nitrotoluene	6.16E+00	n	9.16E+01	n	2.69E+01	n	1.74E+00	n	1.25E-03	2.50E-02
o-Nitrotoluene	3.16E+01	c	1.65E+02	c	3.19E+02	n	3.13E+00	c	2.28E-03	4.56E-02
p-Nitrotoluene	2.47E+02	n	1.60E+03	c	1.08E+03	n	4.24E+01	c	3.05E-02	6.09E-01
Pentachlorobenzene	4.93E+01	n	7.33E+02	n	2.15E+02	n	3.07E+00	n	1.76E-02	3.52E-01
Pentachlorophenol	9.85E+00	c	4.45E+01	c	3.46E+02	c	4.00E-01	c	3.04E-03	6.08E-02
Perchlorate	5.48E+01	n	9.08E+02	ns	2.48E+02	n	1.38E+01	n	5.85E-03	1.17E-01

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Chemical	Residential Soil (mg/kg)	End-point	Industrial/ Occupational Soil (mg/kg)	End-point	Construction Worker Soil (mg/kg)	End-point	Tap Water (ug/L)	End-point	Risk-based SSL for a DAF of 1 (mg/kg)	Risk-based SSL for a DAF of 20 (mg/kg)
Phenanthrene	1.74E+03	n	2.53E+04	n	7.53E+03	n	1.70E+02	n	4.30E+00	8.59E+01
Phenol	1.85E+04	n	2.75E+05	nl	7.74E+04	n	5.76E+03	n	2.62E+00	5.23E+01
Polychlorinatedbiphenyls (PCBs)										
Aroclor 1016	3.98E+00	n	5.74E+01	n	1.72E+01	n	1.40E+00	n	1.01E-01	2.01E+00
Aroclor 1221	1.81E+00	c	8.57E+00	c	5.53E+01	cs	5.54E-02	c	7.08E-04	1.42E-02
Aroclor 1232	1.86E+00	c	8.82E+00	c	5.76E+01	cs	5.54E-02	c	7.08E-04	1.42E-02
Aroclor 1242	2.43E+00	c	1.15E+01	c	8.53E+01	c	3.89E-01	c	4.57E-02	9.14E-01
Aroclor 1248	2.43E+00	c	1.15E+01	c	8.53E+01	c	3.89E-01	c	4.48E-02	8.96E-01
Aroclor 1254	1.14E+00	n	1.15E+01	c	4.91E+00	n	3.89E-01	c	7.63E-02	1.53E+00
Aroclor 1260	2.43E+00	c	1.15E+01	c	8.53E+01	c	3.89E-01	c	2.04E-01	4.09E+00
2,2',3,3',4,4',5-Heptachlorobiphenyl (PCB 170)	3.75E-01	c	1.77E+00	c	1.72E+00	n	5.99E-02	c	3.21E-02	6.42E-01
2,2',3,4,4',5,5'-Heptachlorobiphenyl (PCB 180)	3.75E+00	c	1.77E+01	c	1.72E+01	n	5.99E-01	c	3.14E-01	6.29E+00
2,3,3',4,4',5,5'-Heptachlorobiphenyl (PCB 189)	1.25E+00	c	5.89E+00	c	5.73E+00	n	2.00E-01	c	1.05E-01	2.10E+00
2,3',4,4',5,5'-Hexachlorobiphenyl (PCB 167)	1.25E+00	c	5.89E+00	c	5.73E+00	n	2.00E-01	c	6.27E-02	1.25E+00
2,3,3',4,4',5'-Hexachlorobiphenyl (PCB 157)	1.25E+00	c	5.89E+00	c	5.73E+00	n	2.00E-01	c	6.40E-02	1.28E+00
2,3,3',4,4',5-Hexachlorobiphenyl (PCB 156)	1.25E+00	c	5.89E+00	c	5.73E+00	n	2.00E-01	c	6.40E-02	1.28E+00
3,3',4,4',5,5'-Hexachlorobiphenyl (PCB 169)	1.25E-03	c	5.89E-03	c	5.73E-03	n	2.00E-04	c	6.27E-05	1.25E-03
2',3,4,4',5-Pentachlorobiphenyl (PCB 123)	1.25E+00	c	5.89E+00	c	5.73E+00	n	2.00E-01	c	3.91E-02	7.83E-01
2',3',4,4',5-Pentachlorobiphenyl (PCB 118)	1.25E+00	c	5.89E+00	c	5.73E+00	n	2.00E-01	c	3.84E-02	7.67E-01
2',3,3',4,4'-Pentachlorobiphenyl (PCB 105)	1.25E+00	c	5.89E+00	c	5.73E+00	n	2.00E-01	c	3.91E-02	7.83E-01
2,3,4,4',5-Pentachlorobiphenyl (PCB 114)	1.25E+00	c	5.89E+00	c	5.73E+00	n	2.00E-01	c	3.91E-02	7.83E-01
3,3',4,4',5-Pentachlorobiphenyl (PCB 126)	3.75E-04	c	1.77E-03	c	1.72E-03	n	5.99E-05	c	1.15E-05	2.30E-04
3,3',4,4'-Tetrachlorobiphenyl (PCB 77)	3.75E-01	c	1.77E+00	c	1.72E+00	n	5.99E-02	c	7.03E-03	1.41E-01
3,4,4',5-Tetrachlorobiphenyl (PCB 81)	1.25E-01	c	5.89E-01	c	5.73E-01	n	2.00E-02	c	2.34E-03	4.69E-02
Propylene oxide	2.56E+01	c	1.33E+02	c	7.99E+02	n	2.66E+00	c	4.82E-04	9.65E-03
Pyrene	1.74E+03	n	2.53E+04	n	7.53E+03	n	1.17E+02	n	9.59E+00	1.92E+02
RDX (Hexahydro-1,3,5-trinitro-1,3,5-triazine	6.04E+01	c	3.11E+02	c	1.01E+03	n	7.02E+00	c	2.16E-03	4.31E-02
Selenium	3.91E+02	n	6.49E+03	n	1.75E+03	n	9.87E+01	n	5.11E-01	1.02E+01
Silver	3.91E+02	n	6.49E+03	n	1.77E+03	n	8.12E+01	n	6.88E-01	1.38E+01
Strontium	4.69E+04	n	7.79E+05	nl	2.12E+05	nl	1.18E+04	n	4.17E+02	8.33E+03
Styrene	7.26E+03	ns	5.13E+04	ns	1.02E+04	ns	1.21E+03	n	1.03E+00	2.06E+01
Sulfolane	6.16E+01	n	9.16E+02	n	2.65E+02	n	2.00E+01	n	3.75E-03	7.49E-02
2,3,7,8-TCDD	4.90E-05	c	2.48E-04	c	2.26E-04	n	5.99E-06	c	2.24E-06	4.48E-05
2,3,7,8-TCDF	4.90E-04	c	2.48E-03	c	1.72E-02	c	2.01E-06	c	4.22E-07	8.44E-06
1,2,4,5-Tetrachlorobenzene	1.85E+01	n	2.75E+02	n	8.07E+01	n	1.66E+00	n	5.83E-03	1.17E-01
1,1,1,2-Tetrachloroethane	2.81E+01	c	1.37E+02	c	6.59E+02	cs	5.72E+00	c	1.80E-03	3.59E-02
1,1,2,2-Tetrachloroethane	7.98E+00	c	3.94E+01	c	1.97E+02	c	7.57E-01	c	2.40E-04	4.80E-03
Tetrachloroethene	1.11E+02	ns	6.29E+02	ns	1.20E+02	ns	4.03E+01	n	1.60E-02	3.21E-01
Tetryl (Trinitrophenylmethylnitramine)	1.56E+02	n	2.59E+03	n	7.06E+02	n	3.94E+01	n	2.79E-01	5.59E+00

Table A-1: NMED Soil Screening Levels - July 2015

Chemical	Residential Soil (mg/kg)	End-point	Industrial/ Occupational Soil (mg/kg)	End-point	Construction Worker Soil (mg/kg)	End-point	Tap Water (ug/L)	End-point	Risk-based SSL for a DAF of 1 (mg/kg)	Risk-based SSL for a DAF of 20 (mg/kg)
Thallium	7.82E-01	n	1.30E+01	n	3.54E+00	n	1.97E-01	n	1.41E-02	2.81E-01
Toluene	5.23E+03	ns	6.13E+04	ns	1.40E+04	ns	1.09E+03	n	6.07E-01	1.21E+01
Toxaphene	4.84E+00	c	2.33E+01	c	1.70E+02	c	1.53E-01	c	1.77E-02	3.54E-01
Tribromomethane (Bromoform)	6.74E+02	c	3.25E+03	c	5.38E+03	n	9.19E+01	c	2.05E-02	4.11E-01
1,1,2-Trichloro-1,2,2-trifluoroethane	5.08E+04	ns	2.43E+05	nls	4.53E+04	ns	5.50E+04	n	1.60E+02	3.20E+03
1,2,4-Trichlorobenzene	8.29E+01	n	4.23E+02	ns	7.91E+01	n	3.98E+00	n	8.82E-03	1.76E-01
1,1,1-Trichloroethane	1.44E+04	ns	7.25E+04	ns	1.36E+04	ns	8.00E+03	n	2.55E+00	5.11E+01
1,1,2-Trichloroethane	2.61E+00	n	1.24E+01	n	2.30E+00	n	4.15E-01	n	1.11E-04	2.23E-03
Trichloroethylene	6.77E+00	n	3.65E+01	n	6.90E+00	n	2.82E+00	n	8.75E-04	1.75E-02
Trichlorofluoromethane	1.23E+03	ns	6.03E+03	ns	1.13E+03	ns	1.14E+03	n	7.84E-01	1.57E+01
2,4,5-Trichlorophenol	6.16E+03	n	9.16E+04	n	2.69E+04	n	1.17E+03	n	3.31E+00	6.62E+01
2,4,6-Trichlorophenol	6.16E+01	n	9.16E+02	n	2.69E+02	n	1.19E+01	n	3.37E-02	6.74E-01
1,1,2-Trichloropropane	3.91E+02	n	6.49E+03	ns	1.77E+03	ns	8.81E+01	n	2.79E-02	5.59E-01
1,2,3-Trichloropropane	5.10E-02	c	1.21E+00	c	6.31E+00	n	7.47E-03	c	2.60E-06	5.21E-05
Triethylamine	1.93E+02	n	9.09E+02	n	1.69E+02	n	1.46E+01	n	3.65E-03	7.31E-02
2,4,6-Trinitrotoluene	3.60E+01	n	5.73E+02	n	1.61E+02	n	9.80E+00	n	4.30E-02	8.61E-01
Uranium (soluable salts)	2.34E+02	n	3.88E+03	ns	2.77E+02	ns	5.92E+01	n	2.67E+01	5.33E+02
Vanadium	3.94E+02	n	6.53E+03	n	6.14E+02	n	6.31E+01	n	6.31E+01	1.26E+03
Vinyl acetate	2.56E+03	n	1.24E+04	ns	2.30E+03	ns	4.09E+02	n	7.52E-02	1.50E+00
Vinyl bromide	2.71E+00	c	1.31E+01	c	8.46E+00	n	1.75E+00	c	4.62E-04	9.23E-03
Vinyl chloride	7.42E-01	c	2.84E+01	c	1.61E+02	c	2.01E-01	c	6.75E-05	1.35E-03
m-Xylene	7.64E+02	ns	3.73E+03	ns	6.96E+02	ns	1.93E+02	n	1.48E-01	2.97E+00
o-Xylene	8.05E+02	ns	3.94E+03	ns	7.36E+02	ns	1.93E+02	n	1.49E-01	2.98E+00
Xylenes	8.71E+02	ns	4.28E+03	ns	7.98E+02	ns	1.93E+02	n	1.49E-01	2.98E+00
Zinc	2.35E+04	n	3.89E+05	nl	1.06E+05	nl	5.96E+03	n	3.71E+02	7.41E+03

c – carcinogen
cs - carcinogenic, SSL may exceed saturation
DAF – Dilution Attenuation Factor
mg/kg – milligrams per kilogram
n – noncarcinogenic
nl - noncarcinogen, SSL may exceed ceiling limit
ns - noncarcinogen, SSL may exceed saturation
nls - noncarcinogen, SSL may exceed both saturation and ceiling limit
SSL – Soil Screening Level
µg/L – micrograms per liter