

# REPORT DOCUMENTATION PAGE

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<b>14. ABSTRACT</b>  This TOP provides basic information to facilitate test planning, conducting, and reporting standardized testing of small items of military equipment, fielded and developmental decontaminants, and fielded and developmental decontamination systems (applicators with or without organic decontaminants).						
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US ARMY TEST AND EVALUATION COMMAND  
TEST OPERATIONS PROCEDURE

\*Test Operations Procedure 08-2-068  
DTIC AD No.

24 July 2018

SMALL ITEM DECONTAMINATION (SID) FIXTURE TESTING

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## 1. SCOPE.

### 1.1 Background.

a. The small item decontamination (SID) fixture was developed to test decontaminants for decontamination efficacy, decontamination systems for their ability to effectively perform their design functions under operationally relevant environmental conditions, and to perform chemical and biological (CB) contamination survivability testing of individual warfighters' equipment and other small items of equipment. Other types of testing can also be performed in the SID in order to meet testing requirements. Decontamination systems up to 61 centimeters (cm) × 91 cm × 122 cm can be tested within the SID. Test items up to 51 cm × 20 cm × 15 cm with a maximum weight of 9.1 kilograms (kg) can be placed in and moved around the SID for testing.

b. The SID is currently located in Laboratory 126, Building 4165, West Desert Test Center (WDTC), U.S. Army Dugway Proving Ground (DPG), Utah. The SID is a full glove box fixture.

c. The SID consists of three modules joined into one test fixture: the Challenge Module (CM), the Decontamination Module (DM), and the Sample Module (SM). Even though the names of the modules imply their function, testing has been conducted using the CM as a preparation/sample area and the contamination and decontamination of test items has been performed in the DM.

d. The SID was verified and validated for use as test and evaluation infrastructure<sup>1\*\*</sup> in 2014 and accredited in 2015 for the Joint Service Equipment Wipe Chemical Efficacy Environment<sup>2</sup> test.

### 1.2 Purpose.

a. This Test Operations Procedure (TOP) is to standardize testing of small items of equipment, decontaminants, and decontamination systems (applicators with decontaminants) using the SID fixture.

b. This TOP provides basic information to facilitate planning, conducting, and reporting of standardized testing. This TOP describes typical facilities, equipment, and procedures used for testing.

c. If the Capability Development Document or the Capability Production Document requirements or procedures contradict procedures in this document then the capability documents take precedence.

### 1.3 Limitations.

a. This TOP only provides standard procedures for testing small items of equipment, such as equipment carried by an individual warfighter or removable sensitive equipment.

\*\* Superscript numbers correspond to Appendix B, References.

b. The procedures in the TOP are also limited to the testing of decontamination systems that are 61 cm × 91 cm × 122 cm in size or smaller.

## 2. FACILITIES AND INSTRUMENTATION.

### 2.1 Facilities.

<u>Item</u>	<u>Requirement</u>
Chemical surety laboratory and chemical agent storage facility.	Constructed to ensure safe and secure storage, handling, analysis, and decontamination of chemical agents.
Chemical agent test fixture or chamber.	Constructed to allow testing of small items of equipment deliberately contaminated with chemical agent/simulant in a temperature- and humidity-controlled environment. The chamber must have sufficient volume to allow free air circulation around the test item. Ability to control temperature and relative humidity (RH) is required.
Fielded decontaminating apparatus, as specified in the concept of operations (CONOPS).	Constructed to decontaminate the test item as part of the test procedure. Must not increase the hazard or degrade safety protocols when used in a laboratory.
Biological analytical laboratories.	Required to store and prepare test quantities of biological agent/surrogate materials, to charge disseminating devices, to prepare samplers, and to analyze the biological agent/surrogate materials.

### 2.2 Instrumentation.

These values are minimum requirements. Actual instrumentation may have greater precision, and actual values must be reported.

<u>Parameter</u>	<u>Measuring Device</u>	<u>Permissible Measurement Uncertainty</u> <sup>(see NOTE 1)</sup>
Air temperature (-20 to 50 °Celsius (C)).	Thermometer with digital recording capability.	± 0.5 °C.
Relative Humidity (0 to 90 percent).	Humidity probe with digital recording capability.	± 2 percent.

<u>Parameter</u>	<u>Measuring Device</u>	<u>Permissible Measurement Uncertainty</u> <sup>(see NOTE 1)</sup>
Photographs.	Still color camera.	Adequate resolution to document typical test procedures, details of contamination techniques and contamination density.
Video.	Video color camera.	Adequate resolution and frames/second speed to document typical test procedures, details of contamination techniques and contamination density.
Contamination density or challenge level (grams per square meter (g/m <sup>2</sup> )).	Gas chromatograph (GC), high-performance liquid chromatography (HPLC), liquid chromatography (LC), spectrophotometer, or equivalent.	± 15 percent of challenge target.
Dose confirmation samples (g/m <sup>2</sup> ).	GC, HPLC, LC, spectrophotometer, or equivalent.	± 15 percent of challenge target.
Chemical agent mass from vapor samples (milligrams per square meter (mg/m <sup>2</sup> )).	MINICAMS <sup>®</sup> , GC, HPLC, LC, spectrophotometer, or equivalent.	Instrument must be ± 15 percent of calibration standard.
Chemical agent mass from liquid samples (microgram (µg)/sample area).	GC, HPLC, LC, spectrophotometer, or equivalent.	Instrument must be ± 15 percent of calibration standard.
Biological background contamination.	Microscopes, swabs or wipes placed in growth medium, automatic colony counters, or equivalent.	± 10 percent colony forming units (CFU)/sample.
Biological post-contamination verification.	Microscopes, swabs or wipes placed in growth medium, automatic colony counters, or equivalent.	± 10 percent CFU/sample.

<u>Parameter</u>	<u>Measuring Device</u>	<u>Permissible Measurement Uncertainty</u> <sup>(see NOTE 1)</sup>
Biological post-decontamination.	Microscopes, swabs or wipes placed in growth medium, automatic colony counters, or equivalent.	± 10 percent CFU/sample.

**NOTE 1:** The permissible measurement uncertainty is the two-standard deviation value for normally distributed instrumentation calibration data. Thus 95 percent of all instrumentation calibration data readings will fall within two standard deviations from the known calibration value.

### 3. REQUIRED TEST CONDITIONS.

#### 3.1 Documentation.

##### 3.1.1 Familiarization.

a. Potential problem areas must be identified by reviewing records and results of similar tests, if available.

b. Development of a detailed test plan (DTP) requires familiarization with the applicable test planning and requirements documents such as:

(1) Safety release and approval from the authorizing agency (e.g., U.S. Army Test and Evaluation Command) to begin testing, if required.

(2) Government and manufacturer's publications, including the current safety data sheets for all materials used in the test.

(3) Program-specific requirements documents: capability development document, system performance specification, system evaluation plan, safety assessment report (SAR), test directive, and event design plan.

c. Test personnel must familiarize themselves with the relevant standing operating procedures (SOPs) and other procedures for applicability, completeness, and adequacy. These documents will be updated as required.

d. All applicable/available safety documents such as the SAR and health hazard assessments should be reviewed to determine if any safety or health issues require special test protocols.

##### 3.1.2 Environmental Compliance.

a. Test personnel and participants must receive and understand environmental documentation before the test begins.

b. All local, state, and federal regulations will be followed, appropriate documentation prepared and submitted, and approval will be received before testing begins.

### 3.2 Safety.

Applicable safety SOPs and surety regulations will be reviewed to ensure all test procedures are in compliance.

### 3.3 Test Planning.

a. This TOP is to be used as a guide in preparing a DTP for use of the SID. TOPs 08-2-061A<sup>3</sup> and 08-2-060<sup>4</sup> will also be reviewed and the applicable sections used in test planning for procedures that will be used inside of the SID modules.

b. The test plan will be written before test execution and will incorporate input from test and evaluation subject matter experts. The test plan format can be test-site specific with customer agreement, but the content will address all elements required for test conduct. The following elements must be considered.

(1) The test plan must describe the collection of required data, data reduction, analytical procedures, and reporting procedures.

(2) The test plan must include safety procedures addressing hazard analysis, operations, and decontamination. Safety procedures should provide for a test readiness review before testing begins.

(3) The test plan must define the required challenge level of the agent(s) being disseminated, the trial conditions, analytical limitations, and safety considerations.

c. The procedures described in this TOP may require tailoring to address the particular purpose and requirements for a specific system under test (SUT). Any modifications of these procedures and the specific parameters used must be described in the DTP, along with the rationale.

d. The DTP shall describe the specific test processes to be used, based on factors including the system CONOPS, system requirements, and operational threats for the SUT. These factors should give consideration to the operational conditions which the SUT would be subjected to in the field.

e. When the testing is for chemical and biological contamination survivability (CBCS), then representative areas of the test item to be sampled for residual contamination will be selected and identified. If the entire test item/system cannot be contaminated and decontaminated, then representative areas for contamination, decontamination, and sampling will be selected. Selection of the sample locations will depend on consideration of overall test item size, geometry of the test item, materials of construction, surface texture, presence of joints and crevices, areas handled/touched by system operators, and the likelihood to contribute to producing a vapor or contact hazard. Because of the nature of contact sampling devices, sample locations need to be flat or nearly flat. An appropriate number of such areas will be selected to help assure the

statistical validity of the sampling. The test plan will identify and explain the rationale for the areas selected and the statistical and analytical methodology used. The test report will identify any changes from the test plan. Each sample location selected must be described and photographed. No additional marks must be placed within the marked boundaries of the locations to be sampled.

f. Existing system-specific decontamination procedures using fielded decontaminants or developmental decontaminants must be reviewed and incorporated into the planned test as much as possible. Standard decontamination procedures will be developed for the test item, if existing system-specific procedures do not exist. These procedures will take into account the nature of the test item: coupon, component, or whole item of equipment. Before testing begins, rehearsals must be held to familiarize the test team with the functioning of the test item (if applicable), test procedures, and data requirements. The team must practice until agent application, decontamination, and sampling become routine. The test items used during the actual test must not be used in rehearsals unless they are the only items available. One or more pilot trials must be performed to give operators an opportunity to become proficient with test procedures.

g. One of the most important considerations in the test planning process involves the appropriate use of the SID fixture. The three modules (CM, DM, and SM) are not equivalent in capabilities. The CM and DM have heating and cooling systems. The SM only operates at laboratory ambient conditions. The following concerns must be addressed and fully described in the DTP:

- (1) Which module to use for agent application, decontamination operations, and sampling procedures.
- (2) Planning for movement of test materials (especially chemical agent) between modules.
- (3) Placement of materials for multiple trials to minimize opening exterior doors.
- (4) Removing materials for waste disposal.
- (5) Number of individuals required to perform procedures.

### 3.4 Simulant Selection.

If simulants are required, selection should be conducted in accordance with (IAW) TOP 08-2-196<sup>5</sup>. An agent-simulant technology relationship must be established IAW TOP 08-2-140<sup>6</sup>. It is important to remember that simulant characteristics for decontamination testing are very different than characteristics for other types of chemical and biological agent testing (i.e., detector, individual protection, etc.).

### 3.5 Experimental Planning and Design.

When performed correctly, designs of experiment (DoE) are the most efficient way to test. Multiple factors are varied simultaneously in a specific, systematic manner that is

mathematically sound. This means that DoE techniques minimize the number of trials needed to obtain statistical validity. It is recommended that proper use of DoE be applied for all testing.

### 3.6 Chemical Toxicity.

a. All handling of toxic chemicals should be performed within well-ventilated areas. The operator must wear personal protective equipment IAW applicable SOPs. Surety regulations must be followed.

b. The evaluation of chemical toxicity issues must include consideration of the effects of leaks or spills on both the test operator and nearby laboratories. Storage and handling SOPs must be followed.

c. All established safety air monitoring and other hazardous operations SOPs must be followed.

### 3.7 Training.

Test personnel must be trained regarding the test items, test scenarios, and test conditions to include the identification of appropriate test personnel and processes to report any safety, surety, security, or health-related issues.

### 3.8 Quality Control (QC) and Quality Assurance.

a. Before testing, the data decision rules will be established for the test in question. These rules will determine the test requirements for data elements, limits of data collected, and allowable errors for data elements. The ability to meet the decision rules will be demonstrated during a pilot trial.

b. Chain of custody (CoC) procedures for the SUT, sampler, and analytical data control and accountability must be established and specified in the DTP. Each test item must have a CoC document that shall be implemented immediately upon receipt of test items. The CoC document will be updated at the time the SUTs are removed from storage or when custody of a sample passes from one individual to another. CoC documentation will contain the following columns as a minimum:

- (1) Date and time of each transaction.
- (2) Signature spaces for the persons relinquishing and receiving custody.
- (3) Operation description.
- (4) The current location of the SUT or sample.
- (5) SUT inspection.

c. All equipment, controls, and instruments shall be calibrated IAW SOPs and manufacturer's procedures. The data acquisition system shall be checked to ensure all data are retrieved and stored IAW the DTP.

d. Preliminary demonstrations of readiness, such as a readiness review and pilot trial(s) should be conducted to ensure proper test processes and procedures are in place and the test program is properly coordinated. The pilot trial (s) should also demonstrate that current methods and procedures, as contained in the DTP and SOPs, are followed by the test team, and that these methods and procedures are adequate to conduct the test in a safe manner.

e. Chemical analysis shall be conducted IAW procedures in local SOPs or manufacturer's recommended practices. Analytical methods shall be validated IAW the International Organization for Standardization (ISO) standard 17025<sup>7</sup>. The appropriate number of standards, blanks, and analytical controls must be used. Acceptable control limits of the results and how deviations from those control limits are treated must be addressed in the DTP or SOPs.

f. The sampler selected for use must be well characterized. For example, if MINICAMS<sup>®</sup> are used, ensure that precision and accuracy studies are performed after the multipoint calibration, and that airflow in the fixture is adequate and does not affect data, and that there is no carry-over contamination. If solid sorbent tubes are used, take steps to ensure the capacity of the sorbent is not exceeded and that carry-over does not occur. When solvents are used for extraction, document the extraction efficiency.

g. Several storage controls will be stored with the test samples if the samples must be stored for longer than 1 day before being analyzed. These storage control samples shall then be analyzed with the test samples to show any sample degradation or pick-up of interfering chemicals during storage. The storage control samples will consist of blanks and analytical standards with the chemical warfare agent (CWA) concentration levels near the CWA contamination level expected in the test samples. Acceptable control limits for the results and how deviations from these results will be treated must be addressed in the DTP.

h. The data quality objective process should be used to establish decision rules that will be applied to data for each trial. An example of a decision rule would be: If 95 percent of all temperature values are within  $\pm 3$  °C of the target value, then the temperature data for the trial are acceptable.

i. All aspects of testing shall be conducted with emphasis on acquiring valid, credible, and verifiable results.

### 3.9 Receipt Inspection.

a. Test item identification number (TIIN).

(1) A unique TIIN must be assigned to each SUT. All SUTs and all associated data shall be verified to ensure that each test item has the correct TIIN.

(2) A unique sample identification control number (SICN) will be assigned to each agent sampler, sampler data file, and CoC control established. The SUT TIIN will be correlated with the SICN such that the samples can be correlated with a SUT, the CWA used for the trial, and the time of sample (if applicable).

b. TOP 08-2-500A<sup>8</sup> provides details on conducting receipt inspection of SUTs.

### 3.10 Environmental Documentation.

a. All local, state, and federal regulations will be followed, appropriate documentation prepared and submitted, and approval will be received before testing begins.

b. Test personnel and participants must receive and understand environmental documentation before the test begins.

## 4. TEST PROCEDURES.

### a. General.

(1) The SID operating manual<sup>9</sup> (SID OM) describes the procedures to follow for the operation of the SID fixture, environmental parameter setting, and the acquisition of the required test data. All testing in the SID requiring environmental (temperature and humidity) conditions will require setting the applicable parameters in the SID operating system.

(2) All test items and materials required for each trial should be placed in the SID to allow for environmental conditioning of all materials as outlined in the DTP.

(3) The chemical agent challenge to test items will be used to determine the number of drops based on agent density, volume of drops required, and the contamination level required by test documentation.

(4) The biological agent or surrogate challenge to test items will be based on the contamination level required by test documentation and the sample area size as defined in the DTP.

(5) Other considerations for executing test procedures:

(a) Weathering or age time – the time between test item contamination and the initiation of decontamination procedures.

(b) Time required to conduct decontamination procedures.

(c) Sampling times (both liquid and vapor).

(d) Time required to conduct test item function checks (if applicable).

(e) Test item conditioning time – the time required for test items to reach environmental condition equilibrium.

(f) Requirement to move test items between modules.

(g) Pot life of decontaminant being tested – how long after mixing the decontaminant will it remain effective.

b. Chemical Agent. Before testing, a purity analysis will be performed to verify that neat agent [except for persistent nerve agent (VX)] is at least 95 percent pure. VX purity will need to be between 85 and 90 percent.

#### 4.1 Decontaminant Efficacy Testing.

a. This testing may be performed to determine the efficacy of a developmental decontaminant, to compare the efficacy of a developmental decontaminant to a fielded decontaminant, or to rank the relative performance of a series of decontaminants at operationally relevant conditions. Most decontaminant efficacy testing is conducted on coupons or panels of militarily relevant materials.

b. The testing for decontaminant efficacy for a developmental decontaminant, comparing multiple developmental decontaminants, or for comparing a developmental decontaminant with current fielded decontaminants, will use procedures found in Paragraphs 4.9 through 4.13 (as needed) in TOP 08-2-061A<sup>3</sup>. Procedures found in Paragraphs 4.7 through 4.13 (as needed) in TOP 08-2-060<sup>4</sup> will be used in preparing the data by calculating toxic load values that, when applied to specific scenarios, allow a determination of vapor hazards to unprotected personnel from decontaminated military materiel.

c. Safety air monitoring will be conducted during chemical agent testing.

#### 4.2 Testing of Decontamination Systems.

a. A decontamination system is defined as an application system with or without an organic decontaminant. An example would be the M26 Joint Service Transportable Decontaminating System Small Scale (JSTDS-SS). The JSTDS-SS can be used to decontaminate people or equipment by providing hot water or hot, soapy water with a range of pressures, but does not come with a reactive decontaminant.

b. The decontamination system will be placed in the DM of the SID, using the door that opens to the laboratory and then the door will be sealed. Placement of the system is extremely important to ensure proper operation of the system.

c. The SUT(s) will also be placed in the DM as outlined in the SID OM<sup>9</sup> using the airlock door and the DTP required environmental conditions will be established.

d. Safety air monitoring will be conducted during chemical agent testing.

#### 4.3 CBCS Testing.

a. All test items (SUTs, decontaminants, test equipment, etc.) will be placed into the SID and the SID will be brought to the DTP required test conditions.

b. All required test procedures for this testing are found in TOP 08-2-111B<sup>10</sup>, but may require adaptation based on the configuration of the SUT.

c. Safety air monitoring will be conducted during chemical agent testing.

5. DATA REQUIRED.

a. Temperature and RH for all trials during pre-conditioning and trial execution.

b. Duration of each sampling interval (min).

c. Mass of agent from contact sampling for each sample location.

d. Mass of agent from SUT extraction (residual agent).

e. Concentration of agent off gassing over time from each SUT.

f. Mass of agent collected from each dose confirmation sample.

g. Results of negative and positive control samples.

h. Results from CWA purity analysis.

i. Trial start and stop times.

j. Calibration and QC sample results from all chemical analyses.

k. Operator observations.

6. PRESENTATION OF DATA.

a. Test parameter data such as temperature, RH, differential pressures will be presented as graphs with trial time on the x-axis. Control limits will be presented on the graphs to visually demonstrate that trial parameters are within control.

b. Results of the statistical analysis will be presented as specified in the DTP.

c. All other data will be presented in tabular format grouped by agent, SUT type, and environmental conditions.

APPENDIX A. ABBREVIATIONS.

APG	Aberdeen Proving Ground
ATEC	US Army Test and Evaluation Command
ATTN	attention
°C	degrees Celsius
CAPAT	Capability Area Process Action Team
CB	chemical and biological
CBCS	chemical and biological contamination survivability
CFU	colony forming units
cm	centimeter
CM	Challenge Module
CoC	chain of custody
CONOPS	concept of operations
CWA	chemical warfare agent
DoE	design of experiment
DPG	U.S. Army Dugway Proving Ground
DM	Decontamination Module
DTIC	Defense Technical Information Center
DTP	detailed test plan
DUSA-TE	Deputy Under Secretary of the Army-Test and Evaluation
g/m <sup>2</sup>	grams per square meter
GC	gas chromatograph
HPLC	high-performance liquid chromatography
IAW	in accordance with
ISO	International Organization for Standardization
JSEW	Joint Sensitive Equipment Wipe
JSTDS-SS	Joint Service Transportable Decontaminating System Small Scale
kg	kilogram
LC	liquid chromatography
µg	microgram
mg/m <sup>2</sup>	milligrams per square meter
OM	operating manual

APPENDIX A. ABBREVIATIONS.

QC	quality control
RH	relative humidity
SAR	safety assessment report
SICN	sample identification control number
SID	small item decontamination fixture
SM	Sampling Module
SOP	standing operating procedure
SUT	system under test
TECMIPT	Test and Evaluation Capabilities and Methodologies Integrated Process Team
TIIN	test item identification number
TOP	Test Operations Procedure
V&V	validation and verification
VX	persistent nerve agent
WDTC	West Desert Test Center

APPENDIX B. REFERENCES.

1. U.S. Army Dugway Proving Ground (DPG), Dugway, Utah, Final Test Report of the Verification and Validation (V&V) of the Small Item Decontamination (SID) Test Capability SID V&V Report, June 2014.
2. U.S. Army Dugway Proving Ground (DPG), Dugway, Utah, Final Test Report for the Chemical Efficacy Environmental Testing of the Joint Sensitive Equipment Wipe (JSEW), November 2016.
3. TOP 08-2-061A Chemical Decontaminant Testing, 20 October 2014.
4. TOP 08-2-060 Post-Decontamination Vapor Sampling and Analytical Test Methods, 2 August 2015.
5. TOP 08-2-196 Simulant Selection for Laboratory, Chamber, and Field Testing, 25 April 2011.
6. TOP 08-2-140 Establish an Agent-Simulant Technology Relationship (ASTR), 14 April 2017.
7. International Organization for Standardization (ISO) 17025:2005, General Requirements for the Competence of Testing and Calibration Laboratories, 27 October 2005.
8. TOP 08-2-500A Receipt and Inspection of Chemical - Biological (CB) Materiel, 31 August 2017.
9. U.S. Army Dugway Proving Ground (DPG), Dugway, Utah, Small Item Decontamination (SID) Fixture Operations Manual (OM), November 2014.
10. TOP 08-2-111B Chemical, Biological, and Radiological (CBR) Contamination Survivability, Small Items of Equipment, 16 March 2016.

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APPENDIX C. APPROVAL AUTHORITY.

CSTE-TM

24 July 2018

MEMORANDUM FOR

Commanders, All Test Centers  
Technical Directors, All Test Centers  
Directors, U.S. Army Evaluation Center  
Commander, U.S. Army Operational Test Command

SUBJECT: Test Operations Procedure (TOP) 08-2-068 Small Item Decontamination (SID) Fixture Testing, Approved for Publication

1. TOP 08-2-068 Small Item Decontamination (SID) Fixture Testing, has been reviewed by the U.S. Army Test and Evaluation Command (ATEC) Test Centers, the U.S. Army Operational Test Command, and the U.S. Army Evaluation Center. All comments received during the formal coordination period have been adjudicated by the preparing agency. The scope of the document is as follows:

This TOP provides basic information to facilitate planning, conducting, and reporting standardized testing of small items of military equipment, fielded and developmental decontaminants, and fielded and developmental decontamination systems (applicators with or without organic decontaminants). The procedures in this TOP are limited to small items of equipment, such as equipment carried by an individual warfighter or removable sensitive equipment.

2. This document is approved for publication and will be posted to the Reference Library of the ATEC Vision Digital Library System (VDLS). The VDLS website can be accessed at <https://vdls.atc.army.mil/>.

3. Comments, suggestions, or questions on this document should be addressed to U.S. Army Test and Evaluation Command (CSTE-TM), 6617 Aberdeen Boulevard-Third Floor, Aberdeen Proving Ground, MD 21005-5001; or e-mailed to [usarmy.apg.atec.mbx.atec-standards@mail.mil](mailto:usarmy.apg.atec.mbx.atec-standards@mail.mil).

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Director, Test Management Directorate (G9)

APPENDIX C. APPROVAL AUTHORITY.

**TECMIPT Test Operations Procedure (TTOP) 08-2-068,  
Small Item Decontamination (SID) Testing Concurrence Sheet**

The Decontamination CAPAT recommends approval of TTOP 08-2-068. If a representative non-concurs, a dissenting position paper will be attached.

Organization	Signature	Date
Deputy Under Secretary of the Army Test and Evaluation (DUSA-TE)	O'BRIEN, SEAN P.1230553501 <i>Sean P. O'Brien</i>	
Joint Program Executive Office of Chemical Biological Defense (JPEO-CBD) Test & Evaluation	RYBAK, JOSEPH.MI CHAEL.1364953735 <i>Joseph M. Rybak</i>	03/01/2018
Joint Requirements Office for Chemical, Biological, Radiological and Nuclear Defense (JRO-CBRND)	MORISSETTE, GREG ORY.A.1012347924 <i>Lt Col Greg Morissette, USAF</i>	01/16/2018
Joint Science and Technology Office (JSTO)	<i>Eric J. Lowenstein</i> Eric J. Lowenstein	01/24/2018
US Army Evaluation Command (AEC)	YOST, EMILY. D.1245776124 <i>Emily D. Yost</i>	02/08/2018
Operational Test and Evaluation Force (OPTEVFOR)	BOBROW, JEFFREY L. EY.L.1229647110 <i>Jeffrey L. Bobrow</i>	
Air Force Operational Test and Evaluation Center (AFOTEC)	<i>Matthew Magness</i> Col Matthew Magness, USAF	23 Jan 18
Marine Corps Operational Test & Evaluation Activity (MCOTEA)	SMITH, JOHN.ETHAN HAN.1103197615 <i>LtCol J. E. Smith, USMC</i>	20180117
Edgewood Chemical Biological Center	SHUE, MATTHEW W.J.1282721895 <i>Matthew J. Shue</i>	01/22/2018
Decon CAPAT Co-Chair	HALL, MONICIA .R.1251909063 <i>Monicia R. Hall</i>	01/12/2018
Decon CAPAT Co-Chair	TIENES, BRYAN.MATTHEW THEW.1469193957 <i>Bryan M. Tienes</i>	22 JAN 2018

\* Signatures are copied from individual signature sheets. Originals available upon request.

Forward comments, recommended changes, or any pertinent data, which may be of use in improving this publication to the Policy and Standardization Division (CSTE-TM), U.S. Army Test and Evaluation Command, 6617 Aberdeen Boulevard, Aberdeen Proving Ground, Maryland 21005-5001. Technical information may be obtained from the preparing activity: Commander, West Desert Test Center, U.S. Army Dugway Proving Ground, ATTN: TEDT-DPW, Dugway, UT 84022-5000. Additional copies can be requested through the following website: <https://www.atec.army.mil/publications/documents.html>, or through the Defense Technical Information Center, 8725 John J. Kingman Rd., STE 0944, Fort Belvoir, VA 22060-6218. This document is identified by the accession number (DTIC AD No.) printed on the first page.