WORK PLAN GUIDANCE DOCUMENT

VERSION 1.0

January 2008

DND UXO AND LEGACY SITES PROGRAM
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1. INTRODUCTION

1.1 This Technical Bulletin is provided as a structured document for Consultants and Contractors engaged in the preparation and review of Work Plans (WP) submitted for acceptance on DND contracts where Munitions and Explosives of Concern (MEC) are involved or maybe encountered. Development of WP's is required to ensure that project goals will be achieved in a safe, timely, and cost effective manner. Review and acceptance of the WP submission is required for all MEC projects.

1.2 A WP is required for all MEC projects and will normally be prepared following a site visit. The WP is the basis for all contracted activities during the execution of the scope of work.

2. OBJECTIVES

2.1 The WP demonstrates knowledge of the project site, risk, goals and will describe methods and procedures that include (but are not limited to) the following aspects of work:

a. MEC Avoidance
b. Wide Area Assessments,
c. Residual Risk Audits
d. MEC surveys,
e. MEC clearance,
f. MEC related call-ups,
g. Any other MEC project specific requirement.

3. WORK PLAN REVIEW AND ACCEPTANCE

3.1 Review and acceptance of the WP submission is required for all MEC projects.

3.2 The Contractor will submit a Draft WP for review and comment by the Project Management Team (PMT). Each project must be assessed individually to determine which specific areas of the WP are required prior to submittal to the PMT for the reviewing approval process. Indication and special considerations not covered in this document regarding the site-specific content of the WP should be made at the Kick Off meeting or through queries to the PMT after award.

3.3 WP acceptance processes applicable to all WP's prepared for MEC contracts is dependent on the type of work and the contract mechanism being used. Performance-based criteria for deliverables such as Draft and Final WP's are dependent on quality of product submittals evaluated through review by the PMT. Following review of the Draft WP the PMT will provide comments to the Contractor for incorporation into the Final WP. Following acceptance of a Final

WP an Authority to Mobilize will be issued through the CA. Any proposed changes to an accepted WP must be requested through a written Change Order (CO) prior to implementation on the project. Once the PMT accepts modifications, a CO will be issued through the CA as documentation for acceptance. The CO process is detailed in the Tender documents.

4. STANDARD OPERATING PROCEDURES

4.1 Contractors Standard Operating Procedures (SOP) should be in place for the following aspects of the WP as identified in this Section 9 - Work Plan Structure below;

a. Project Management Plan,

b. Field Investigation Plan (and its task components),

c. EO Management and Contingency Plan,

d. Explosive Siting Plan,

e. Quality Control Plan,

f. Environmental Management Plan,

g. Communications Plan,

h. Health and Safety Emergency Response Plan,

4.2 It is recommended that the contractor develop individual standard operating procedures to clearly outline the process to be followed in each task. There are several benefits to well defined SOP's, including ease of understanding for all team members, for audit purposes (both internal and external), and overall production efficiency. SOP's do not have to be submitted with the WP but should available on site and signed by employees engaged in each particular task identified in the WP. In the future SOP's will become mandatory.

4.3 It is the Contractor's responsibility to fully inform the work force of the details contained in the WP and to make available the WP to the staff at the site. The work force shall have a thorough understanding of the background of the project, the goals and deliverables. For example, workers should have an understanding of the roles of geophysics and quality control in the work process and be aware of the follow on steps subsequent to the work in which he/she is engaged. Each technician should have a complete understanding of their role and responsibility and how their position fits in the work process and project goals. This understanding should be demonstrated through a signatory acknowledgment for each SOP task.

5. MEC SAFETY PRECAUTIONS

5.1 A minimum of two UXO-qualified personnel will be present during all MEC operations so that one may function as a safety operator and second opinion for the effort. During MEC operations, exposure to explosive risk shall to essential personnel as authorized in the WP. All non-essential personnel shall be evacuated to a pre-designated assembly point.

5.2 If at anytime through the project an unidentifiable EO item is found, the on-site Site Representative will be informed and who will request assistance through the PMT. At no time is project personnel authorized to attempt to remove any fuse(s) from MEC, or to dismantle or strip components. UXO qualified personnel are not authorized to inert any MEC items found on site. It is a Federal offence to remove MEC items as souvenirs from any DND site.

5.3 A statement to affect the clauses in this section of the WP Guidance Document should exist in the appropriate sections of the WP and Contractors SOP's.

6. MEC IDENTIFICATION

6.1 A detailed accounting of all live and suspect UXO encountered during the MEC project will be conducted, including Chain of Custody documentation on each live/suspect item encountered. The accounting will include;

a. Identification Number (a unique ID),
b. Grid Location,
c. Nomenclature,
d. Fuse Description,
e. Fuse Condition,
f. Additional Comments if required.

6.2 While one Identification Number or control number is required per item, safe-to-move (STM) items consisting of SAA and 20mm rounds may be recorded in quantity under one control number.

6.3 When any unexpected MEC item is found a digital image will be taken for documentation of the item and the image will be given the identifier of the actual item. A ruler or some similar measure of scale should be in the image adjacent to the item. The photographer needs to remember that these photos will be utilized in final reports and follow on documentation and therefore a focused, well thought out image with attention to lighting and shadows is necessary.

6.4 During demolition operations for EO items it maybe beneficial to record the event on video. The same consideration for video recordings as described above for digital photographs is required.

6.5 Documentation approach and instructions are required within the EO Management and Contingency Plan of the WP as detailed in Section 9.

7. ON-SITE MEC TRANSPORTATION

7.1 All applicable requirements for the on-site transportation of explosives and MEC must meet NRCan requirements and be documented in the WP and SOP's. Generally it is desirable for any onsite explosives to be used in demolition operations to be ordered and delivered for use the same day of delivery.

7.2 Instructions regarding placards, day boxes and fire extinguishers are to be clearly understood to meet NRCan requirements as stated in the NRCan publications and requirements available through NRCan at http://www.nrcan.gc.ca

7.3 Documentation, approach and instructions on the requirements for MEC Transportation are to be described within the EO Management and Contingency Plan of the WP as detailed in Section 9.

8. MUNITIONS DEBRIS

8.1 Ordnance related munitions debris (MD) must under go a three level screening process during the execution of an MEC project. Inert items, including all ordnance related metallic debris, shrapnel or fragments, and other scrap cleared from the project site will be collected, deconfined or perforated if needed, and prepared for transportation to a DND demilitarization site. The screening process is to ensure that there are no explosives remaining in the items are not only inert fill their empty items are transported on public roads.

8.2 MD recovered during surface and intrusive clearance operations will be inspected by a UXOT, as a minimum, to verify the item is inert or safe to handle prior to moving to meet Level One screening in the grid. Any item which is not readily determined by the UXOT requires the additional check by the UXOTS.

8.3 Before collected materials leave the grid, the UXOTS will perform an additional Second Level of screening of all MD collected with the assistance of a UXOT to meet two person requirements for the verification of MD. A Chain of Custody document for MD is initiated by the UXOTS prior to removal to a securable consolidation point for final Level 3 inspection. MD collected as fragmentation and reported as Level 2 screened must be recorded as Munition Debris-Fragment for debris which is not an intact expended item and recorded as mass (kg). Munitions Debris – Expended (MD-E) items are recorded as individual items with unique identifiers recorded within the same Chain of Custody accounting process as for MD-F.

8.4 Level 3 Screening must be completed by a retired Canadian Forces military, or foreign equivalent, who have held MOSID 00169 (formerly MOC 921) Supervisor

(Sgt QL6A qualification or above after Sep 96 or MOC 921 WO QL6B qualification and above previous to Sep 96). The two person rule is also in effect with the minimum qualification of the second person required as UXOT or above. The reference for this requirement can be found in "CANFORGEN 106–07 – ADM(IE) 181246Z Jun07-Civilian Equivalent" and is available on the UXO Canada Web Site at www.UXOCanada.forces.gc.ca.

8.5 Munitions debris must be placed and lockable sealable containers for security. Instructions for preparation and palletization of munitions debris following Level 3 screening is included in the document "Specifications for the Palletization of Range Debris- J4 Ammo 1/2006"

8.6 Documentation, approach and instructions on the requirements for MEC Transportation are required within the EO Management and Contingency Plan of the WP as detailed in Section 9.

9. WORK PLAN STRUCTURE

9.1 The content requirements for WP's are contingent upon the specifications in the Statement of Work (SOW). Not all requirements will be applicable to all projects, however the Contractor will ensure that the following components are considered dependent on the contract specifications. It is the Contractor's responsibility to include in the WP all information to inform and direct the work force. Additional requirements not listed in this outline maybe added to meet the scope for MEC work being performed. The Sectional requirements for MEC Site WP's include, but are not limited to, the following;

a. **Introduction.** The Introduction will include a description of intent of the WP, define the project purpose and scope, provide a preliminary summary of MEC risk. It should also provide an overall description of site characterization or a synopsis of the intent of the contract scope as well as offer a brief description of inspection and/or clearance goals. The Introduction should set the tone for the work to be completed, describe an anticipation of MEC hazard, clearance requirements, sample and analysis planning, MD response activities and follow on activities as stipulated in any Environmental Assessment (EA) document provided.

b. **Background.** This section of the WP is to be provided so the Contractors team has a full understanding of the site with information including location, property description, site history, current land use, future land use, topography, climate, previous MEC work on the site, and brief identification of MEC sources.

c. **Objectives.** The Contractor is to provide a full description of the requirements as stated in the SOW demonstrating a complete understanding of the project objectives.

d. **Project Management Plan.(PMP)** This section will provide guidance on site procedures to support the project tasks and shall include (but are not limited to): organization, personnel, communications, reporting, document flow, subcontractor management, field operations management, site preparation, control site access, describe data management processes, and costing and billing. The PMP section will be supported through a Project Management Plan Flowchart. If the PMP requires detailed and regular updates of project Gantt charts reflecting priority and scheduling of all project activities, resources and deliverables to meet those established in the SOW, it should state when and how those updates will be distributed.

e. **Technical Management Plan (TMP).** The TMP provides guidance on methods and procedures for detection, clearance and removal of MEC. For Wide Area Assessments or Residual Risk Audits the areas of interest (AOI) may not be fully defined within the SOW, but exists as a deliverable for the contractor to identify, however an overview for the AOI delineation process should be described. In cases where AOI's are identified for survey and/or clearance the contractor should present well-defined descriptions in the narrative of this section and in accompanying maps in Appendix B - Maps. The WP should describe Contractor field personnel responsibilities, transport personnel, survey and mark boundaries, site specific training, work hour, footprint reduction, vegetation removal, clearance operations, data collection and information transfer processes such that the Contractor's team clearly understands the TMP process. In regards with MEC clearance and removal the TMP must describe the team structure, analog detectors to be used, the depth of exploration (DoE), search lane/grid methodology, recording methods and chain of custody documentation to be utilized in the field.

f. **Geophysical Survey Plan (GSP).** The GSP must discuss in general terms the geophysical system to be employed, i.e., the sensor system, positioning and navigation tools, deployment platforms, data management and interpretation techniques. It will describe project requirements for all activities related to geophysical operations that rely on geophysical data and interpretations. If required, an SPO and an SPO Letter Report will establish the capabilities and parameters of the GSP prior to entering into production as a deliverable defined in the SOW. The interpretation of the production geophysical data will include reference to the SPO, justify the proposed system and explain how the approach and methods will be tailored to anticipated site conditions, technical requirements, and strategies. The Contractor will provide information about the instruments to be used, daily documents, daily service and calibration checks in line with the QCP. The operational worthiness of the instrument, and verifying the accuracy and precision of the data collected on a daily basis must be discussed along with the daily calibration procedure. Instrument operators are considered components of the geophysical system. The GSP will address the experience of personnel, site preparation, geophysical systems instrumentation,

detection capabilities, limitations, geophysical platforms, analysis procedures anomaly resolution procedures and must describe all tasks and actions to be taken in verifying and confirming the dig results. An example of the dig sheet must be included in the GSP. Unless the Geo-Tech is UXO qualified, a UXOT will accompany the Geo-Tech during all data collection and reacquisition flagging. Reacquisition will always be done using the same sensor as initial detection and at a described horizontal accuracy. A discussion of capturing and recording no contact, false positives/negatives responses is expected.

g. **Location and Mapping Plan**. This section will describe project requirements, proposed technical methodologies and procedures, and equipment recommendations for all GIS activities that will take place on the project. This would also describes geospatial procedures including hardware and software, personnel, work instructions/data formats, survey data standards, data processing, analysis support, communications/data transfer, data sharing, and data storage. Unless otherwise indicated, all spatial data will be stored using the UTM Coordinate System, either NAD83 or WGS84, for horizontal control. Project specific requirements may dictate the use of an alternate coordinate system, datum, and measurement units, but deviations from this standard should only be made after investigating potential project site impacts. All spatial data must be located with a stated minimum accuracy.

h. **Intrusive Investigation Plan.(IIP)** The IIP section of the WP will include a discussion of the overall intrusive investigation methodology; establish the procedures for accountability, records management; chain of custody documentation; discuss UXO personal qualifications as identified in the organizational chart. Procedures discussed will include excavation; establishing and maintaining exclusion zones; integration with the Geospatial data; MEC identification, removal, transportation procedures for MEC; and munitions debris (MD) processes which apply prior to removal, consolidation, destruction or disposal.

i. **EO Management and Contingency Plan.** The Contractor shall include a WP section that includes an EO Management and Contingency Plan. It must include a description for personnel and materials related to the transport and consolidation of safe-to-move (STM) and MD items. A detailed description of the procedure that Contractor's personnel will follow if suspect or live EO are encountered. Accounting processes shall be designed to ensure tracking and custody of all EO and Materials Potentially Presenting an Explosive Hazard (MPPEH) from field identification to final disposition. The Contractor shall propose a method for maintaining a detailed accounting of all EO items/components encountered during the survey and investigation. This accounting shall include nomenclature, condition, location and orientation of EO, and a digital image of the item. Plans for Blow in Place (BIP), deconfining, perforating and demolitions operations must be written

submissions presented to the DND UXO and Legacy Sites Program for review and approval. The Contracting Authority shall be informed as soon as possible during the planning of demolition operations so that action may be taken if additional security measures are needed to prevent access to the area. The Maximum Greatest Fragmentation Distance (MGFD) must be calculated for items that are reasonably expected to be found during the investigations specified in this SOW. Six factors to be included in the calculation of Minimum Safe Distance (MSD) for the intentional and unintentional destruction of EO expected to be encountered are 1) fragmentation, 2) overpressure, 3) ground shock, 4) noise, 5) ejected soils/sediments and 6) effects of an underwater detonation when targets are in an aquatic environment. A re-calculation of MSD's is expected to include engineered controls to limit the explosion effects. MSD calculations must be based on industry standards or an accepted scientific paper and referenced in the EO Management and Contingency Plan.

j. **Explosive Siting Plan (ESP)** When required and specified in the SOW, an ESP must be developed and included as built in facilities for explosives storage magazines and for planned demolitions areas for STM items. The guidelines for the ESP must conform to NRCan requirements and be licensed by NRCan. Information is available through the NRCan site at http://www.nrcan-rncan.gc.ca/com/. Additionally, personnel from the DND UXO and Legacy Sites Program will conduct an inspection of the ESP area periodically during the storage of any explosive materials. The following items must be discussed in the ESP: type of explosives to be stored, the Net Explosive Quantity (NEQ) and hazard division of each magazine, and Quantity-Distance (Q-D) criteria used to site the magazine. The Q-D rating of explosive storage facilities must be adequate for the intended quantity of explosives and STM items anticipated to be used/stored by the Contractor through the scope of this SOW.

k. **Quality Control Plan.(QCP)** The QCP section of the WP will discuss QC procedures for all elements of the project including sample plans, duties and responsibilities of QC personnel, inspection processes, acceptance criteria, and for: data management, digital geophysical operations, anomaly acquisition and reacquisition, field operations, equipment maintenance/calibration, environmental monitoring, safety, personal protective equipment and contracts materials. Included in the QC plan shall be descriptors of the critical elements of work – that is, the tasks of the work where quality control is requires absolute adherence and is key to the success of deliverable. The QC plan shall discuss corrective/preventative action procedures, deficiencies and non-conformances, root cause analysis, document pass/fail criteria for quality audits and records generated (i.e., logs, minutes, forms etc.), field inspection pass/fail criteria and describe the process for capturing and submitting lessons learned to the DND PM and CA.

l. **Environmental Management Plan (EMP).** EMP will describe procedures and methods to be implemented during projects activities to minimize pollution, detect and conserve natural resources (wetlands, threatened and endangered species, coastal zones), cultural resources, archaeological resources, water resources, restore damage, and noise control and asked within reasonable limits. The EMP will normally be based on the (EA) and may require the addition of biologists or environmentalists as detailed in either the SOW or EA.

m. **Communication Plan (CP)** The Contractor, when specified in the SOW, must develop a CP specific to the area of operations. This will include the production of a Notice to Airmen NOTAM or if required, a Notice to Mariners (NOTM). In areas affected by a Vessel Traffic Management System (VTMS) the Contractor must inform the proper authorities when conducting diving operations or underwater detonations and monitor the appropriate VHF channel. The CP must also include the notification of departments or institutions that have sensitive monitoring equipment placed on the seabed. When a planned UW detonation will occur. The CP must also include contact numbers for the local emergency response authorities in case of fire or in a situation that may require an area evacuation.

n. **Health, Safety and Emergency Response Plan (HSERP).** A detailed HSERP shall be prepared as an Annex to the SWP. Any changes to the HSERP require acceptance by the DND Project Manager via change requests submitted to the Site Representative. The adherence to required health and safety measures for all personnel at the site shall be addressed. The Contractor is to provide comprehensive safety training to all personnel employed on the project prior to commencement of operations. Training in safe procedures and accident prevention is to be continuously stressed and revised throughout the period of the proposed contract. Safety briefings to any personnel visiting the site will be the Contractor's responsibility and held prior to a site visit. Provision of safety equipment for visitors will be the responsibility of the Contractor. The HSERP shall also address site specific and routine training requirements for Contractor personnel and site visitors.

o. **Appendices.** The WP will include the following information as Appendices. All Appendices will be reference and integrated throughout the WP:

i. SOW;

ii. Site Maps;

iii. Points of Contact;

iv. Contractor Forms.

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MEC ID SHEET

1) For UXO Team Use (Fill out only the section for your activity. Fill in every block.)
Initial discovery by search team.

Name:	**Contract Number:**	**Grid Map Unit:**	**Date:**

Control No.:

(check one)
☐ **Surface**
☐ **Subsurface**

UXO Type (circle one):
☐ Bomb, ☐ Grenade ☐ Guided Missile ☐ Mortar ☐ OE Component
☐ Projectile ☐ Pyrotechnic ☐ Rocket ☐ Small Arms ☐ Sub-munitions
☐ Propellant ☐ Unknown ☐ Raw Explosives
Comments: _____

Location (fill all):
X (East): _____ (m) Y (North): _____ (m) Depth or Z: _____ (cm)

2) For Access and Identification Team Use (Fill out only the section for your activity. Fill in every block.)
Project Leader / Field Supervisor.

Name: _____

Demolition Tracking Code: _____

Comments:

UXO Category (check one): ☐ Functioned as Designed ☐ Dud Fired ☐ Inert ☐ Unfired

Ordnance Filler (check one): ☐ Explosive, ☐ Inert, ☐ Propellant ☐ Pyrotechnic, ☐ WP ☐ Unknown

Fusing Type(s): No Fuze Present or check all that apply:
☐ All-ways ☐ Mechanical Time ☐ Point Detonating (PD) ☐ Burning Time ☐ Base Detonating ☐ Piezo ☐ Unknown

Orientation (check one):
☐ Horizontal ☐ Vertical, nose up ☐ Vertical, nose down ☐ Angle from horizontal: _____(Deg)appprox.

UXO Nomenclature (if known):

Total N.E.W.:

Recommended Disposition (check one):
☐ Safe to Move ☐ Blow-in-Place

Photo ID: (use story board with location and ID clearly visible)

Moved From (GPS)
Location: X (East):_____ **Y(North)**_____

Moved To (GPS)
Location: X (East):_____ **Y (North):**_____

Name:_____ **Date:** _____

Remarks (optional):

Signature: _____
UXO Supervisor/Field Supervisor

3) For UXO Demolition Manager Use

Disposition (check one): ☐ Concur with Blow-in-Place
☐ Approve Safe-to-Move

Date:_____

Remarks (optional)

Signature: _____
UXO Demolition Manager/Project Leader

Destruction date:

_____
(DD/MM/YYYY)

Remarks (optional)

Signature: _____
UXO Demolition Manager/Project Leader

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Progress Report (UXO)

1) Progress Meeting Information Contract Number: ☐ Weekly ☐ Bi-Weekly ☐ Monthly		Report Number: Date: Page of
Prepared by:	Report for week of:	Time Started: Time Completed:

NAME	Contact Phone Num.	Email	Company

2) Weeks Activity:

Activities Conducted

☐ Surface ☐ Subsurface (re-acquire/invest)
☐ Geo Survey ☐ Site Prep
☐ Veg. Removal ☐ Target Removal
☐ Demolition prep ☐ Demolition
☐ Other ☐ Sediment Sampling

Sub-Contractors on site Company Name	Activity

Call Up Number	Task Number	Description of task	% Complete

Problems Encountered: ☐ No ☐ Yes ☐ Production ☐ Equipment ☐ Other
Comments:

UXO Discovery: ☐ No ☐ Yes Qty. ___ Identification Sheet Completed for each Item: ☐ No ☐ Yes. Photos: ☐ No ☐ Yes.
GPS location: ☐ No ☐ Yes Items Moved : ☐ No ☐ Yes.
Comments:

Safety Issues: yes ☐ no ☐ list issues.
Comments:

Planning following week:

Next Meeting// Date:_____ **Time:**_____

Progress Report (UXO)

Use additional work sheets as required:		Weekly report number:_____ Date:_____ Page___of___	
Call Up	Task Number	Description	% Completed

Comments:

Safety Issues Comments:

Problems Encountered Comments:

UXO Issues Comments:

Contract Issues:

Personnel Changes / Other Subjects:

Planning for following weeks:

Next Meeting// Date:_____ Time:_____

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1) Project Information / Weather — **DAILY DIARY FORM** — **Fill out applicable**

Field Supervisor:	**Contract Number:**	**Report for work done on:** **Date:**	**Date submitted:**

Weather Conditions: Morning Fog. ☐ Foggy. ☐
Sunny. ☐ Partly Cloudy. ☐ Cloudy. ☐
Overcast Showers. ☐ Light Rain. ☐ Heavy Rain. ☐
Thunder Storms. ☐
Snow Light. ☐ Snow Heavy. ☐
Average Days Temp: °c Relative Humidity (if avail)
Comment:

Personnel Changes:

Morning Briefs:
Safety yes ☐ no ☐ Topic:
Days Tasking yes ☐ no ☐
Teams assigned yes ☐ no ☐ # teams Pers/team
Equipment Checks: yes ☐ no ☐ list any equipment failure.
Comment:

Contractors on site:
Contract Number Company Name Personnel on site

2) Days activity:

Activity

☐ Surface ☐ Subsurface (re-acquire/invest)
☐ Geo Survey ☐ Site Prep
☐ Veg. Removal ☐ Target Removal
☐ Demolition prep ☐ Demolition
☐ Other ☐ Sediment Sampling

Comments:

UXO Discovery: ☐ No ☐ Yes Qty. ☐ Identification Sheet Completed for each Item ☐ Photos ☐ GPS location.

Large Target Items: ☐ No ☐ Yes
Comment:

Problems Encountered: ☐ No ☐ Yes ☐ Production ☐ Equipment ☐ Other

Description of problems:

Solutions or Corrective actions Imposed:

Overall Comments:

Author of report: **Signature:** _____ **Date:**

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Call-UP
TASK FORM

Contract Number:	Task Number:	Personnel Assigned:

Task description:

Expected Duration:	Start Date: Time:	Completion Date: Time:	Actual Duration:

Work Issues; None ☐ As Listed ☐

Quality Control Action Required No ☐ Yes ☐

Date Passed to QC:_____

Name:_____Signature:_____

Quality Control:

QC Complete: Yes ☐
Date:_____

1st QC Pass ☐ QC Fail ☐ Date:_____

2nd. QC Pass ☐ QC Fail ☐ Date:_____

3rd. QC Pass ☐ QC Fail ☐ Date:_____

Quality Control Inspector:_____ Signature:_____

QC FAILURE CAUSAL FACTOR:

Project Leader informed of QC Failures: Yes ☐ No ☐ Date:_____

Field Supervisor Informed of QC Failures: Yes ☐ No ☐ Date:_____

Comment:

Task Closure:

All related work to this task has been completed to the satisfaction of Quality Control and the Project Leader.

Project Leader :_____ Signature:_____ Date:_____

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Daily Geophysical (UXO)

Contract Number:	Date:	Date last SPO run:	Prepared By:

Static test:

Baseline:_____

Accepted Error:10%

Acceptable Range__-__

Test Results:_____

Deviation:_____%

Static test results: ☐ PASS ☐ FAIL

Lag Test:

Expected: 2 sec.

Test results:

Req. Corr:

Cable Shake:

Base noise level (SPO results)+/-_____mV Shake Results+/-_____mV Acceptable Max +/-_____mV

Shake Test results: ☐ Acceptable ☐ FAIL

GPS Test: (Based on SPO results)		
Established Monument:	**Accepted Scatter +/-**	**System Accuracy +/-**
X:	**Test Results +/-**	☐ PASS ☐ FAIL
Y:		

NAD83 is the acceptable projection standard

Equipment issues: ☐ yes ☐ No

COMMENTS:

Signature:	

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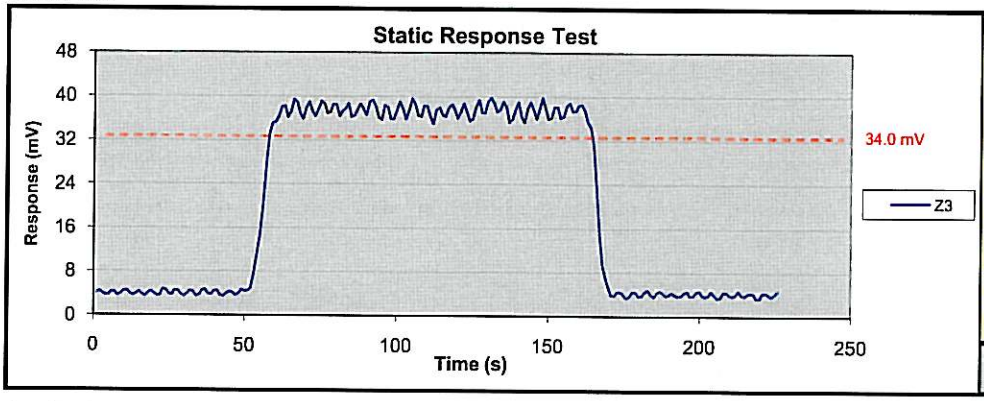
Daily Geophysical (UXO)

Appendix: C1

Date: _____ Project Name: _____
Prepared By: _____ Contract Number: _____
Date of Last SPO: _____ Location: _____

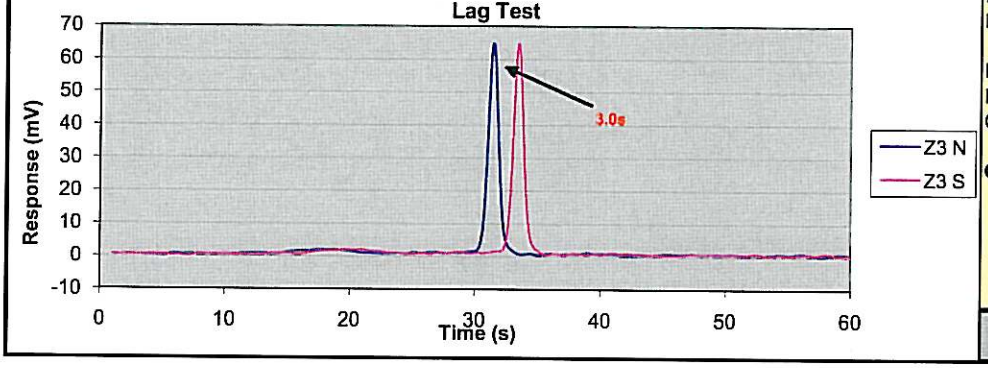
Static Test



Requirements	
Baseline:	34 mV
Accepted Error:	10%
Accepted Range:	30.6 - 37.4
Results	
Background:	5.1 mV
Peak:	38.0 mV
Difference:	32.9 mV
Comparison	
Deviation:	3.2%

☑ Pass ☐ Fail

Lag Test



Requirements	
Expected Results:	1.5 s
Results	
Peak Offset:	3.0 s
Correction Req.:	1.5 s
Comparison	

☑ Consistent Lag
☐ Variable Lag

☑ Pass ☐ Fail

GPS Test

Established Monument
X: 452112.35
Y: 5945651.22
NAD83 Projection

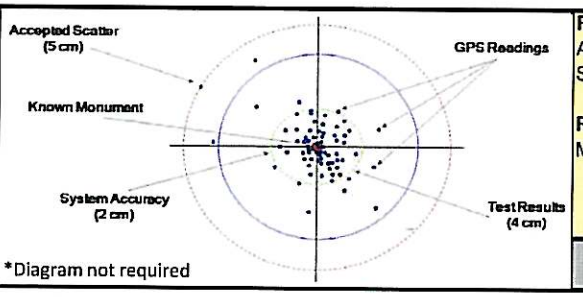


*Diagram not required

Requirements	
Accepted Scatter:	± 5.0 cm
System Accuracy:	± 2.0 cm
Results	
Maximum Scatter:	± 4.0 cm

☑ Pass ☐ Fail

Equiptment Issues

Problem Encountered: Frequent GPS dropouts

Cause of Problem: Short is communication table

Corrective Course of Action: Replace cable, securely tie cable down to prevent re-occurance.

Cable Shake Test

Requirements	
Acceptable Noise:	± 10 mV
System Noise:	± 5 mV
Results	
Max Noise Levels:	± 9.0 mV

☑ Pass ☐ Fail

Comments

Enter Comments Here

Signature: _____

Appendix D to
CFB Petawawa
MEC Survey/Clearance

SPECIFICATIONS FOR THE PALLETIZATION OF RANGE DERIS

To allow for the safe and efficient storage of Range/Munitions debris at CFB Petawawa the following specification is the only authorized method to transport range/munitions debris for storage.

1. Markings

   a. Markings are to be stenciled in black letters no less than 1 inch high. Each wooden triwall shall have the following markings clearly indicated:
      i. Description of contents including stock code if appropriate,
      ii. Weight of triwall in kg,
      iii. Certifier's name, rank and date of certification,
      iv. Control number of the triwall with unit monogram and date eg: **GA/C, Pal 2 of 14, May 2007.** This control number will be used to control and identify each triwall during shipment and storage.

   b. A signed and dated DND 2286 (Level 3 screened Range Debris) certificate shall be attached to the same side as the markings. Certificate is to be placed within a protective covering to ensure longevity.

   c. A signed and dated DND 2286 (Level 3 screened Range Debris) certificate shall be inserted within the triwall in a protective covering prior to its being strapped shut and sealed.

2. Construction

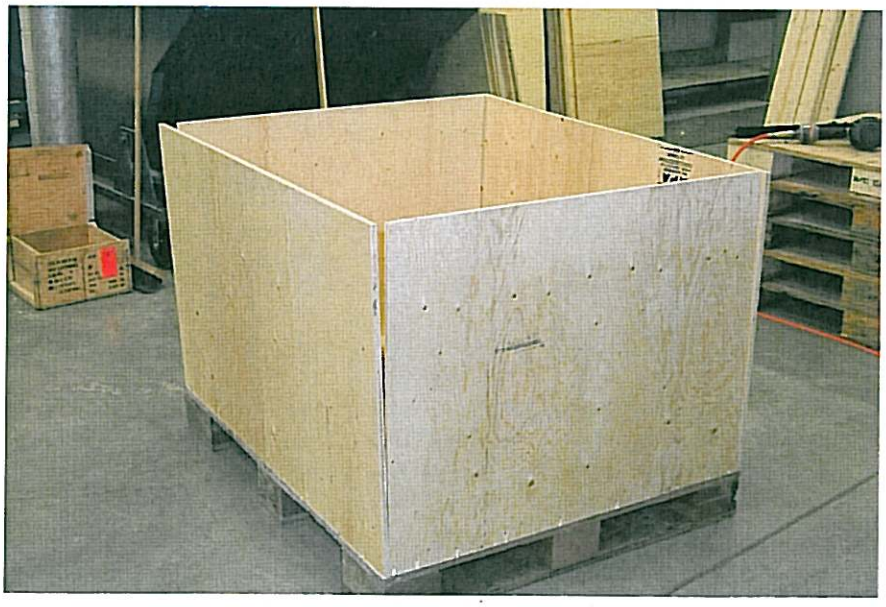
   a. Each triwall will be constructed in the following manner:

i. Beginning with a standard pallet, place qty 2 2" X 4" on the outer ends of the pallet, leaving enough space to place a piece of plywood flush with the side of the pallet. Secure.

ii. Place qty 2 2" X 4" on the inner ends of the pallet, again leaving enough space to place a piece of plywood flush with the side of the pallet. Secure.

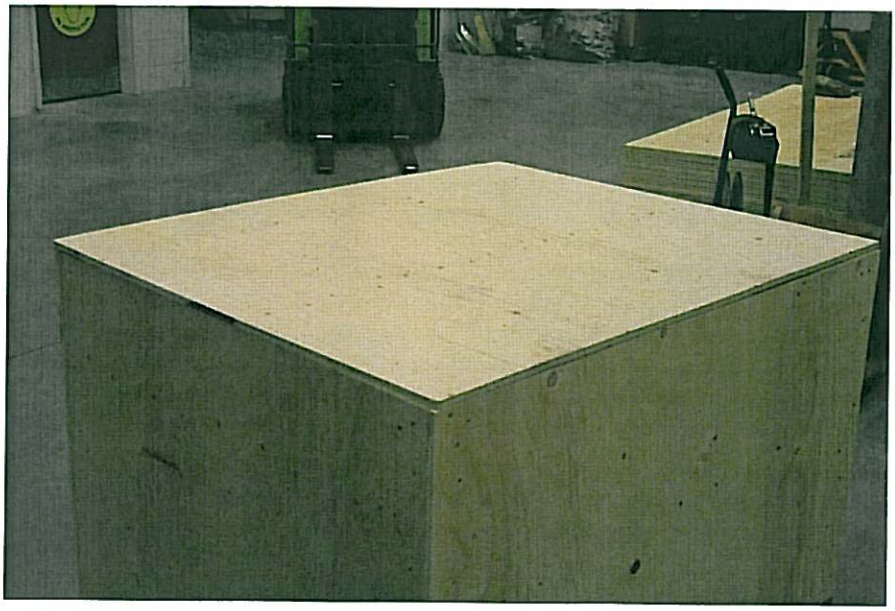
iii. Using ¾ inch 4" X 8" plywood, cut to fit and place along the sides of pallet. Secure.

iv. Using ¾ inch 4" X 8" plywood, cut to fit and place along the front and back of pallet. Secure.



v. Using 4" X 4" posts, cut to fit from bottom of pallet to flush with top of plywood. This will allow for the 4" X 4" to support the triwalls during stacking. Secure.

vi. Using ¾ inch 4" X 8" plywood, cut to proper size a lid. Once triwall is filled and a signed certificate is within, secure the lid.



vii. After lid is secured, seal the lid with monogram cloth ammunition seals for security. Using 1 ¼ inch caristrap, place two straps over each side and one bellyband around the circumference of the triwall.