

AGRICHEMICAL WAREHOUSING STANDARDS ASSOCIATION

AUDIT PROTOCOLS & USER GUIDE

Company Name: _____

Auditor Name: _____

**Auditor
Telephone Number:** _____

Audit Date: _____

Supersedes Protocols dated January, 2002
Effective January 1, 2006

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DISCLAIMER

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Preface

The objective of the audit protocol is to assist agrichemical warehouse owners and operators in the continuous improvement of managing the risks associated with the operation of agrichemical warehousing.

The auditing process provides a numerical value that will measure the facility's performance against the standards.

The audit is designed to establish factual information and observations. Subjective evaluation is limited.

A successful audit will allow for continued utilization of the facility as a warehouse for agrichemical products in Canada.

The purpose of this audit protocol is to provide the auditor with a step-by-step guide in collecting evidence about a facility's programs and practices that have been included within the scope of the audit. The audit is a systematic comparison of warehouse operations against established standards.

This Warehouse Audit Protocol and User Guide, when completed, should be retained by the warehouse facility for future reference.

Re-audit Process & Cycle

AWSA Warehousing Standards Certification Program

An ongoing auditing and re-audit process assures the entire distribution chain that agrichemicals are being stored on a continuous basis in facilities that meet the requirements agreed upon by the industry. Auditing and re-auditing is therefore vital to the process.

- The frequency for re-auditing is every two years. For example, If a facility was audited any time during 1999, it is required to be re-audited before December 31, 2001 and each successive second year thereafter.
- If a facility chooses to advance its re-audit date to an earlier year, the re-audit cycle will correspond to the new re-audit date. For example:
 - If a facility was first audited on May 1, 1996, it is due for a re-audit any time during the calendar year 1998, with a deadline of December 31, 1998. If the facility chooses to have a re-audit completed in an earlier year, for example on June 15, 1997, then the next re-audit will be due prior to December 31, 1999.
- The timing of the audit will be at the discretion of each warehouse operator or company owner, provided that the facility is re-audited within the specified two year time frame.
- It is up to the facility's management to co-ordinate the audit/re-audit.
- The selection of the auditor remains at the discretion of the warehouse operator. A current listing of all auditors can be found on the AWSA Website at www.awsacanada.com.
- For sites that fail to have their facilities successfully re-audited within the required time frame, all manufacturing and distributing members will be notified and all shipments of agrichemical will be suspended. Once a lapsed facility has been successfully re-audited, all manufacturers will be notified and the suspension of shipments will be removed.

Please note, that for facilities that lapse certification, the original re-audit cycle will remain. For example:

- If a facility was first audited on May 1, 1995, its re-audit is due by each successive second year i.e. 1997, 1999, 2001 etc. If the facility lapses certification in 1997 and then has a re-audit completed on February 1, 1998 - their next re-audit is required by December 31, 1999. By reverting the delinquent facility back to its original re-audit cycle, any advantage for allowing certification to lapse is removed.

References:

See policy on lapsed facilities – Warehousing Standards Bulletin #24.

For the re-audit cycle for multiple warehouses on the same site, please refer to Warehousing Standards Bulletin #23.

AWSA

Compliance and Enforcement Process

1. Complainant notifies AWSA

Written or faxed complaint are to be sent to AWSA c/o Project Manager at fax 416-968-6818), e- mail@awsacanada.com. The complainant is to outline details of the alleged infraction. AWSA Project Manager will respect the confidentiality of the complainant.

2. Qualification Process:

- AWSA to send auditor to site to check all details.
- Complaint is verified within three working days.
- Project Manager makes final recommendation to AWSA management.
- AWSA to notify complainant on or before the fourth working day as to status.

3. Resolution Process:

First Offence

- Warehouse has three working days to undertake and complete corrective action.
- Warehouse operator to confirm issue corrected in writing.
- Infraction record remains on file for two years from date of infraction.
- If situation is not corrected within three working days, certification is withdrawn and manufacturers/distributors are notified. A complete reaudit is required at the warehouse operators' expense. Recertification is issued following a successful audit. Infraction record remains on file for two years from date of infraction.
- AWSA has option for second auditor visit to confirm compliance.
- Unannounced audits will be performed at AWSA's expense the following year.

Second Offence

Second offence (same warehouse, same violation, within a two-year period (730 days) from first offence).

- Warehouse has three working days to undertake and complete corrective action.
- Warehouse operator to confirm issue corrected in writing.
- Infraction record remains on file for two years from date of second infraction.
- If situation is not corrected within three working days, certification is withdrawn and manufacturers/distributors are notified. A complete reaudit is required at the warehouse operators' expense. Recertification is issued following a successful audit. Infraction record remains on file for two years from date of second infraction.
- All manufacturers & distributors advised of second offence.

- AWSA has option for second auditor visit to confirm compliance. Follow up visits will be unannounced.
- Unannounced audits will be performed at AWSA's expense the following years.

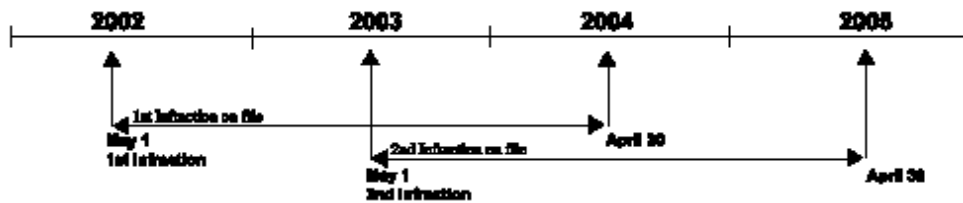
Third Offence

Third Offence (same warehouse, same violation, within a two-year period (730 days) from second offence).

- Certification immediately withdrawn for 365 days, no three-day grace period. Manufacturers immediately notified that warehouse is ineligible for receipt for agricultural products. Following 365 days, a complete reaudit is required at the warehouse operators' expense. Recertification issued following a successful audit.

Example:

1. Warehouse has verified complaint on May 1, 2002 (but rectified within three working days).
2. 1st infraction on file until April 30, 2004.
3. 2nd infraction committed (same issue) on May 1, 2003 (but rectified in three working days). Warehouse now in 2nd infraction status which is on file for two years from date of second infraction (until April 30, 2005).
4. If warehouse has 3rd infraction (same issue), between May 2003 and April 30, 2005, certification is withdrawn for a 365 day period and all manufacturers/distributors are notified.



AUDIT PROCESS

The audit of your warehouse will involve five distinct, interrelated basic steps as follows:

1. Understanding Internal Management Systems and Procedures

The various management systems, procedures, and standard practices that have been established to assist in achieving the desired performance of warehouse operations will be reviewed with the owner/manager/operator.

2. Gathering Audit Evidence

The auditor will gather information that supports the audit score given to each protocol.

3. Evaluating Audit Findings and Exceptions

The auditor will assimilate all audit data and observations into a coherent, complete finding, providing assurance that the audit objectives are being met.

4. Reporting Audit Findings and Exceptions to Site Management

Deficiencies will be reported by the auditor when identified, and will be formally reviewed with management during the exit meeting and summarized on the completed audit report.

5. Submission of successfully completed audits to AWSA Management

The auditor submits the audit tabulation forms and confirmation of insurance coverage to AWSA for review. Once successful completion of audit is verified AWSA will issue site certification.

Audit Tabulation

Compliance of all mandatory items is required for certification.

The site must also obtain 80% of the scoring points for certification for each of the nine categories (A to H). When specific audit protocols are not applicable to the site, full points will be given with an N/A (Not Applicable) designation. In such cases indicate N/A with point value (i.e. N/A 20). The audit protocols are designed to produce a "yes" or "no" answer and partial scores are not allowed.

TO: The Owner / Manager of a Agrichemical Warehouse

To assist the auditor in conducting an effective and efficient audit of your agrichemical warehouse, the following are suggestions that will save time prior to and during the day of the audit.

Prior to the Audit:

- 1 Ensure that you, the Owner / Manager, and the people involved in storing and handling agrichemical have read the audit protocol and understand the objective of the audit.
- 2 Have your warehouse supervisor/operator conduct a self audit using this audit protocol prior to the third party audit to ensure that all areas meet standards.
- 3 Consider a third party pre-audit by one of the trained certified auditors if this is a first time audit.
- 4 Advise the employees when the actual audit will be conducted in advance of the audit.

Day of Audit:

- 1 Ensure that you, the Owner / Manager, will have time to discuss the audit process and the results.
- 2 Allocate the time for you/warehouse personnel to accompany the auditor.
- 3 Allocate a location for the auditor to examine documents and prepare the report.
- 4 Encourage all employees handling agrichemicals to communicate with the auditor in a candid manner.
- 5 Ensure that relevant documentation is readily available for review by the auditor, i.e. operating procedures, check lists, ER plan, plot plan, training files, containment calculations and drawings, ventilation calculations, etc.
- 6 The auditor will want to see some activity at the warehouse, i.e. shipping, receiving, to verify the written operating procedures.

Billing

Each company/location will be invoiced for the audit directly by the auditor.

A. SITING AND EXTERIOR REQUIREMENTS

Auditors will examine a combination of documentation and physical attributes of the facility, considering its location, external design and construction, and exterior signage.

A storage warehouse will fall into only one of the following categories - A1 or A2

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
A1	All storage facilities built & certified after Dec. 31/98 are at least 50 metres from zoned residential property lot lines, hospitals, schools, shopping centres, restaurants, processing facilities for feed or food (not storage) and other buildings with high occupancy. <u>Observations:</u>	Mandatory	
<u>OR</u>			
A2	Sites certified prior to Jan. 1/99 are considered grandfathered with respect to the 50 metre buffer zone. For all facilities which have undergone renovations or new construction since the last audit and are closer than 50 metres to zoned residential property lot lines, hospitals, schools, shopping centres, restaurants or other buildings with high occupancy and processing facilities for feed or food, each facility will require a new site evaluation, in cooperation with authorities (Fire Chief or planning authority or M.O.E.) The authorities are in agreement to continue operations knowing the risks involved and documentation was provided. <u>Observations:</u>	Mandatory	

A1 Upon *examination* of a **site plan** and/or zoning documents and/or through physical examination (*professional judgment*), it is apparent that the warehouse is greater than 50 metres from zoned residential property lot lines, and from actual buildings such as hospitals, schools, prisons, shopping centres or other high-density occupancies, and food or feed processing operations.

If both the **site plan** and/or zoning documents and/or through physical examination meet the specified requirements the Auditor will score Mandatory acceptance under Protocol A1.

OR

A2 Sites that were previously certified will pass this protocol. For facilities that have undergone renovations, or expansion since the last audit, the auditor will review documentation indicating that local officials have agreed to continue operations. Reference Warehousing Standards Bulletin #9 & #11 in appendix F.

Note: If for any reason the site certification has lapsed for a period exceeding twelve consecutive months, the site will lose its grandfathered status, and Protocol A1 will apply.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
A3	This storage facility has free access of 10 metres to at least two sides for fire fighting access. <u>Observations:</u>	Mandatory	

A3 A site *examination* shall verify clear access of 10 metres or more to 2 sides of the building (or written approval/acceptance by the local Fire Chief for <10 metre clearance) will score Mandatory acceptance. Active rail sidings within 10 metres of the storage facility cannot be considered as free access.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
A4	Management has installed at the warehouse facility external lighting for all exterior sides of the warehouse. <u>Observations:</u>	10	

A4 The auditor will *observe* and score 10 points for external lighting. Lighting must be positioned to allow viewing of exterior sides. Lights may be remotely mounted. Yard lights and/or streetlights are acceptable provided that all sides of the warehouse are lit.

If the structure is a multi-purpose building, external lighting must be around the entire building housing the chemical storage area. If this is not easily accomplished, as the facility is part of a larger complex not owned by the warehouse management, the auditor will ask for a copy of a letter to the owner of the building requesting additional lighting to be installed.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
A5	The parking lots for company employees, customers and visitors do not obstruct passage for fire and emergency vehicles. <u>Observations:</u>	10	

A5 During the site examination the auditor will *determine* that the parking lot will not obstruct passage of fire and emergency vehicles. (See also Protocol A3).

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
A6	All man door entrances to the storage facility have legible pesticide warning signs, clearly identifying that agrichemicals are stored within the premises and that only authorized persons are entitled to enter. <u>Observations:</u>	10	

A6 The Auditor will *observe* warning signs indicating the presence of agrichemicals are affixed on or near all man door used to enter the warehouse storage area/room of the building. If rollup doors are the primary access points, warning signage is required.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
A7	The warehouse has an external sign posted which identifies: a) name of the company and the phone numbers of the person or persons in charge of the facility and/or the emergency phone numbers that will initiate the E/R plan. b) the location of a public off-site telephone <u>Observations:</u>	20 10	

A7 The Auditor will *examine* the site for posting of a sign, legible from the primary entrance to the property, that indicates the owner or operator of the site and/or emergency phone numbers that will initiate the site E/R plan. The signs shall be of a permanent, weatherproof construction.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
A8	Signs were clearly posted indicating: a) emergency exits and exit routes within the warehouse b) emergency supply cabinet c) fire extinguishers d) eyewash stations e) fire lanes around the warehouse <u>Observations:</u>	10 10 10 10 10	

A8 Within the storage facility/site, the Auditor will use *professional judgment and observation* to determine the need for and application of signs for:
Emergency Exits Emergency Supply Storage Fire Extinguishers
Eyewash Stations Fire Lanes

Either these items are clearly visible (and labeled if not immediately identifiable) or adequate signs indicating their location are posted.

A. SITING & EXTERIOR REQUIREMENTS	Full Compliance Score	Actual Score
SCORED ITEMS There are two mandatory protocols in this section.	110	

B. WAREHOUSE STRUCTURE AND EQUIPMENT

Auditors will *examine* physical attributes of the **structure and equipment used/installed** in its operations. Using *professional judgment* and the **National Building, Fire and Electrical Codes** (except where provincial codes exist) and the Protocol, Auditor's will *determine application and compliance*.

NO.	PROTOCOL	Full Compliance Score	Actual Score
B1	<p>Exterior walls are constructed to provide a minimum 1 hour fire resistance rating or are of non-combustible construction.</p> <p>All construction after December 31, 1996, with interior walls separating chemical storage area from other occupancies require a minimum 2 hour fire resistant rating after December 31, 1996</p> <p><u>Observations:</u></p>	Mandatory	

- B1** The warehouse operator must determine whether the entire building, or separate storage area within the building, is to be considered a fire compartment. If the fire compartment is a separate storage area (room) within a larger building, then the interior walls of the fire compartment must have a minimum 2 hour rating. Gable ends, which are part of a load-bearing wall, are considered to be part of the wall and must be fire rated unless the ceiling is fire rated.
- The Auditor will *observe* that all exterior walls **of the storage area** structure are built of non-combustible materials (steel, concrete, cinder block, fiberglass, etc.)

OR

The Auditor will *observe* that all exterior walls of the storage area are constructed with combustible construction materials and are protected by a 1 hour fire resistance rating constructed in accordance with National Building Code Standards. Exterior doors and windows do not require fire resistance ratings for the AWSA Standards unless they are mandated under the National Building Code spatial separation requirements. [Reference Warehousing Standards Bulletin #4 and #21 in Appendix F.]

NO.	PROTOCOL	Full Compliance Score	Actual Score
B2	<p>Interior fire compartment separation wall openings are provided with self-closing doors and if applicable, fire dampers having fire resistance rating of 1.5 hours, including the frames.</p> <p><u>Observations:</u></p>	Mandatory	

- B2** Openings in interior fire compartment separation walls are provided with self-closing doors and frames/fire dampers having a minimum 1.5 hour rating for construction after December 31, 1996. The Auditor will *observe* the ratings as listed on the doors frames and fire dampers. Rollup fire doors require fuseable links/activation devices on both sides of the opening.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
B3	For structures certified prior to December 31, 1996, the lunchroom, washrooms, cleanup facility and offices are in a separate building from the storage facility or separated by a minimum 1 hour fire rated separation wall (both sides) and be constructed in accordance with NBC Standards. <u>Observations:</u>	10	

B3 The Auditor will *observe* that either staff facilities including lunchrooms and washrooms, and offices or mercantile areas are in a building separated from the storage building or there is a minimum 1 hour fire resistance rated wall separating the two types of occupancies. Note: National Fire Code Standards may require higher ratings. Internal shipping and receiving area/room is exempt, provided it is not a permanent office.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
B4	For structures certified prior to December 31, 1996, the self-closing door and frames in the fire separation wall between the storage area and the mercantile area has a minimum fire resistance rating of 45 minutes. <u>Observations:</u>	10	

B4 The Auditor will observe that all self closing doors including their frames in required internal fire separation walls have a rating label indicating a minimum 45 minute fire resistance rating where 1 hour walls are required. Note: NFC standards may require higher ratings.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
B5	The lunchroom, washrooms, cleanup facility and office if connected to the storage area are designed to provide a ventilation system to reduce odours and ensure a healthy workplace. <u>Observations:</u>	10	

B5 Staff and office mercantile facilities as listed in B3, if connected to the storage facility, must have ventilation that does not draw air or create negative pressure allowing air from the storage area into the staff or office/mercantile occupancies. The Auditor will confirm this by examining the ventilation/heating systems. Internal shipping and receiving area/room is exempt.

Score this facility on B6 or B7, ONLY ONE IS APPLICABLE.

NO.	PROTOCOL	Full Compliance Score	Actual Score
B6	The maintenance shop is not located within the storage building. <u>Observations:</u>	30	
<u>OR</u>			
B7	If the maintenance shop is located adjacent to the storage area and has common walls constructed prior to December 31, 1996, the separation walls must have a minimum 1 hour fire resistance rating, ventilation system and a minimum 45 minutes fire resistance rated closure to the interior of the building and a means of egress other than to the interior of the certified storage area. If constructed/certified after December 31, 1996, the fire separation wall is to be rated at 2 hours, with 1.5 hour closures and frames. <u>Observations:</u>	30	

B6 The Auditor will *observe* that the maintenance shop is not located within the same building as the storage area. There is a physical separation between the two structures.

OR

B7 The maintenance shop is located within the same building adjacent to the storage area. The Auditor will *verify* the rating from applied door/frame labels. The maintenance shop ventilation system does not draw or allow air to migrate from the storage area. The Auditor will *observe* at least one alternate exit from the maintenance shop that does not enter the storage area.
Note: No ventilation in adjacent shop area is acceptable.

NO.	PROTOCOL	Full Compliance Score	Actual Score
B8	Inclines for forklift truck or pallet jack travel do not exceed 10 degrees. <u>Observations:</u>	10	

B8 The Auditor will *observe* that any ramps/inclines used for forklift or pallet jack travel do not exceed 10°. (10 cm rise = 61 cm run or greater.)

NO.	PROTOCOL	Full Compliance Score	Actual Score
B9	Wheel chocks or dock locks are provided for the trucks/trailers during loading/unloading when forklifts or other motorized equipment enters the truck/trailer. <u>Observations:</u>	20	

B9 The auditor will *observe* the availability of wheel chocks or mechanical dock lock devices to secure trucks/trailers during loading/unloading operations. The auditor will *examine* the **loading/unloading standard operating procedure** and/or *confirm* with appropriate staff that there is sufficient equipment available and that these devices are in fact used. Note: Not applicable if forklifts or other equipment do not enter the truck/trailer.

NO.	PROTOCOL	Full Compliance Score	Actual Score
B10	Lighting is provided for the interior of vans during loading/unloading if motorized material handling equipment is used. <u>Observations:</u>	10	

B10 The auditor will *observe* that a means of providing light for the interior of trailer or truck vans is available. Lighting can be provided by working headlights on forklifts, swing arm or extendible lights mounted at overhead doors, or portable lights that can be safely mounted inside the truck/trailer.

NO.	PROTOCOL	Full Compliance Score	Actual Score
B11	Dock levelers or plates are well maintained and in good working order. <u>Observations:</u>	10	

B11 The auditor will *observe* that dock levelers are in good working condition, with no breaks or cracks in the steel plate, all anchoring pins are intact. Dock plate retaining tabs must be intact, with no cracks in the steel plate or supporting structure.

NO.	PROTOCOL	Full Compliance Score	Actual Score
B12	Windows that have been installed in interior walls/doors required to have a fire resistance rating are wired glass and are not less than 6 mm thick, mounted in fixed steel frames. <u>Observations:</u>	10	

B12 The Auditor will *observe* that all windows which have been installed in interior walls and doors requiring a fire resistance rating are wire reinforced and not less than 6mm thick set in steel frames or are protected by a rated covering with fusible links.

NO.	PROTOCOL	Full Compliance Score	Actual Score
B13	All exit man doors from the storage area open in the direction of exit. <u>Observations:</u>	10	

B13 Auditor will *determine* that all man doors open in the direction of exit.

NO.	PROTOCOL	Full Compliance Score	Actual Score
B14	The floors in the certified warehouse area have had all cracks filled; they have a smooth finish. <u>Observations:</u>	Mandatory	

B14 The Auditor will *examine* the floors in the storage area, all cracks 2 mm, (thickness of a one dollar coin), saw cuts, etc. must be sealed/filled and the floor must have a surface that can be safely worked on and maintained/cleaned.

If Protocol B15 is not passed, the sealant used to fill cracks must be impervious to chemical products.

NO.	PROTOCOL	Full Compliance Score	Actual Score
B15	The floor has been designed or treated and maintained to render them impervious to absorption by to chemical spill. <u>Observations:</u>	30	

B15 The Auditor will *examine* documentation to determine if the floors have been treated and maintained in accordance with the manufacturer’s recommendations to render them impervious to chemical spills. Impervious to petroleum solvent absorption is an acceptable benchmark.

The auditor will use professional judgment to determine if the floor treatment is in good condition.

NO.	PROTOCOL	Full Compliance Score	Actual Score
B16	For all new construction after December 31, 1996, floor and floor support structure is constructed of non-combustible material. <u>Observations:</u>	Mandatory	

B16 The only acceptable materials for the floor after December 31, 1996 are concrete or steel. Asphalt floors certified prior to December 31, 1996 are grandfathered.

Floors and floor support structures certified prior to December 31, 1996 constructed of combustible materials must still maintain the one hour fire resistance requirement, and if elevated, have the underside secured to ground level around the perimeter with solid barrier sheathing. If not elevated (i.e. the floor supports are resting on the ground), the floor does not require a fire resistance rating, nor is sheathing required around the perimeter.

NO.	PROTOCOL	Full Compliance Score	Actual Score
B17	This storage area does not have any active floor drains. <u>Observations:</u>	Mandatory	

B17 The Auditor will *confirm* through *visual inspection* that the storage area/room does not have any active floor drains.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
B18	Warehouse storage area certified prior to December 31, 1996 has curbing 10 cm minimum in height around the perimeter or may be protected by a containment system incorporating floors sloped to a collection area which is 10 cm lower than the perimeter surface, and/or to drains leading only to a designed containment area specifically used for chemical spills or fire water retention. <u>Observations:</u>	30	
<u>OR</u>			
<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
B19	Warehouse storage area, initially certified after December 31, 1996, has retention curbing, 10 cm minimum around the perimeter. <u>Observations:</u>	Mandatory	

B18 The auditor will determine if the storage area is protected by retention curbing or a designed containment system. Curbing of at least 10 cm in height may be of concrete or steel, it must extend to the entire perimeter of the storage area. Alternatively, the storage area may be protected by a containment system incorporating floors sloped to a collection area which is 10 cm lower than the perimeter surface and/or to drains leading only to a designed collection area for chemical spills or fire-water retention. Drains cannot lead to any site or municipal sanitary (septic) or storm sewage system.

B19 If the curb is made of angle iron or concrete which is not a single pour, caulking which is impervious to agrichemicals, must be applied to ensure that spills cannot seep out through a crack. Multi-floor structures need curbing on all levels.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
B20	This warehouse facility has mechanical ventilation designed to provide a minimum of 2 air changes/hr. <u>Observations:</u>	Mandatory	

B20 Auditor will *examine* the mechanical ventilation system for the storage area(s). The Auditor will *determine* the system rating from the exhaust fan assembly or documents signed by the installer or engineer's stamped drawings indicating exhaust rates of at least 2 air changes per hour. [See Warehousing Standards Bulletins #3, 13A, 13B, and 15)

Sample calculation:
$$\frac{\text{Length} \times \text{width} \times \text{height}}{30} = \text{minimum CFM requirement}$$

Example: Warehouse is 20 feet in length, 10 feet wide and 8 feet high. Calculation is:

$$\frac{20 \times 10 \times 8}{30} = 53.33 \text{ cfm fan}$$

This means that you need a fan with a minimum of 53.33 cfm's to achieve a minimum of 2 air exchanges per hour.

Technical information for the fan must be on file to indicate cfm's.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
B21	The flammable and combustible liquid storage area ventilation system is designed to control explosive vapours. <u>Observations:</u>	Mandatory	

B21 Explosive vapours for products that produce vapours heavier than air, may be controlled by at least one air inlet and one exhaust outlet systems (ventilation) within 300 mm of the floor. Vapours of products that are lighter than air (ethylene in compressed gas cylinders) require exhaust at ceiling levels. Auditors can determine vapour density of products from MSDS's.)

Alternatively, the ventilation system may incorporate the general dilution principle. [See Warehouse Standards Bulletins # 3, 13A, 13B, 15, & 25].

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
B22	The heating system is designed and installed to: a) meet codes (Gas, electrical, fire) b) to prevent contact with explosive vapours <u>Observations:</u>	Mandatory	

- B22**
1. Ceiling mounted gas radiant unit heaters with open flames are not permitted where vapours from products are lighter than air or a ventilation system with mechanical agitation has been installed and is in use.
 2. All floor-mounted units must draw external combustion air into a sealed combustion chamber.
 3. Electric unit heaters must be CSA/ULC approved for industrial use and must be hardwired.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
B23	Electrical lighting within the warehouse has been designed and installed to provide sufficient intensity for safe working conditions. <u>Observations:</u>	Mandatory	

B23 Auditors must be able to read labels and safety instructions on products, signs and equipment within the storage area.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
B24	The emergency exits provided for in the storage facility have emergency lighting from a source of energy separate from the electrical supply for the building. <u>Observations:</u>	10	

B24 The Auditor will *verify* that all emergency exits leading from the storage area to the outdoors, be identified with emergency lights that illuminate the exit. These lights must be operated by an independent energy source such as automatic rechargeable batteries or stand-by generators. Phosphorescent signage is NOT acceptable.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
B25	Lighting fixtures and all other electrical installations are installed so that material handling within the warehouse will not interfere with or damage the electrical installation. <u>Observations:</u>	Mandatory	

B25 Auditors will *examine* all electrical installations and fixtures to ensure that warehouse operations do not cause damage to the fixtures or electrical wiring.

NO.	PROTOCOL	Full Compliance Score	Actual Score
B26	a) Portable fire extinguishers are installed in or adjacent to corridors, exits and aisles that provide access to exits and in proximity to other fire hazards to meet the N.F.C. standard for the warehouse. b) A properly secured fire extinguisher is installed on each forklift. <u>Observations:</u>	20 10	

B26 Storage areas are rated as ordinary hazards. This requires a minimum 2-A:10-B:C fire extinguisher within 9 metres or a minimum 2-A:20-B:C fire extinguisher within 15 metres travel distance to the extinguisher. Fire extinguishers on forklifts shall be a minimum of 5-B:C rating. An example of other fire hazard areas are as follows:

- a) in and around bulk loading / unloading electrical driven pumps
- b) at electrical battery charging stations
- c) individual storage area (ISA) for flammable/combustible products

NO.	PROTOCOL	Full Compliance Score	Actual Score
B27	The chemical storage warehouse and the building in which it is housed has a fire detection system throughout. The system is connected to a 24 hour monitoring station. <u>Observations:</u>	Mandatory	

B27 The chemical storage warehouse area and any adjacent rooms have a fire detection system throughout. [See Warehousing Standards Bulletin #22]

The Auditor will *examine* the fire detection and monitoring system current documentation (within the last 12 months) to verify that it provides 24 hour protection for the entire structure.

NO.	PROTOCOL	Full Compliance Score	Actual Score
B28	The chemical storage warehouse has a security system throughout. The system is connected to a 24 hour monitoring station. <u>Observations:</u>	Mandatory	

B28 The chemical storage warehouse has a security system throughout. The Auditor will *examine* the security detection and monitoring system current documentation (within the last 12 months) to verify that it provides 24 hour protection for the entire structure.

B. WAREHOUSE STRUCTURAL	Full Compliance Score	Actual Score
SCORED ITEMS There are 13 mandatory protocols in this section.	230	

C. WAREHOUSE OPERATIONS

NO.	PROTOCOL	Full Compliance Score	Actual Score
C1	Products are stored in such a way that material handling equipment has sufficient room to maneuver. <u>Observations:</u>	10	

- C1** The Auditor will *examine* the storage area and its contents ensuring that pallets and products are not damaged or nicked, and it appears they are sufficiently spaced for adequate material handling equipment movement.

NO.	PROTOCOL	Full Compliance Score	Actual Score
C2	Storage heights of flammable and combustible liquids meet N.F.C. standards. <u>Observations:</u>	20	

- C2** The Auditor will *observe* that flammable and combustible liquids are stored in accordance with the maximum storage heights as shown below:

Maximum Storage Heights

NFC Classification	Unprotected Storage	Protected Storage	Protected Rack Storage
1B or 1C	1.5m	2.0m	7.5m
II	3.0m	3.0m	7.5 m
IIIA	4.5m	6.0m	12.0m

N.F.C Class II products cannot be stored on top of (or over) N.F.C class IB or 1C products if the required storage heights are not maintained. If, on any particular pallet, a mixture of N.F.C Class IB or 1C and II are stored, the maximum storage height for this pallet will be restricted to that of N.F.C Class IB or 1C.

NO.	PROTOCOL	Full Compliance Score	Actual Score
C3	a) Flammable and combustible liquids are stored in (ISA) individual storage areas b) Flammable and combustible liquids are stored in accordance with the maximum quantity limitations in the National Fire Code. <u>Observations:</u>	10	

C3 The Auditor will observe that individual storage areas for flammable and combustible liquids do not exceed the maximum quantity limits in the National Fire Code. See appendix B&C.
 Note: All products with a flash point below 93.3 degrees C must be stored in a flammable and combustible liquid ISA within the quantity limitations for the ISA.

The Auditor will also ensure that each individual storage area is separated from any adjacent storage by clear aisles of not less than 2.4 metres or a 2 hour fire resistance rated wall.

Reference Warehousing Standards Bulletin #32.

NO.	PROTOCOL	Full Compliance Score	Actual Score
C4	TDG regulated products are stored in compliance with separation chart for storage of dangerous goods as per the National Fire Code. <u>Observations:</u>	20	

C4 TDG regulated products are properly segregated in accordance National Fire Code [See Appendix A.]

NO.	PROTOCOL	Full Compliance Score	Actual Score
C5	Storage heights of TDG regulated products excluding flammable and combustible liquids meet N.F.C. <u>Observations:</u>	20	

C5 The Auditor will *observe* that dangerous goods are stored in accordance with maximum storage heights shown below.

Maximum Storage Heights

Classification (TDG class 4, 5, 6, 8 only)	Unprotected Storage	Protected (Fire Suppression)	Protected Rack (Fire Suppression)
Packing Group I	1.8m	2.4m	Unlimited
Packing Group II	2.4m	4m	Unlimited
Packing Group III	4.5m	6m	Unlimited

Packing Group II products cannot be stored on top of (or over) Packing Group I products if the required storage heights are not maintained. If, on any particular pallet, a mixture of packing Group I and II are stored, the maximum storage height for this pallet will be restricted to that of Packing Group I. This applies to both pallet storage and racked storage unless it is protected rack storage.

TDG Class 2.1 products shall be stored according to Warehousing Standards Bulletin #26.

NO.	PROTOCOL	Full Compliance Score	Actual Score
C6	<p>a) TDG regulated products (excluding flammable and combustible liquids) are stored in a separate I.S.A.</p> <p>b) The sum of the I.S.A.'s in the building may not exceed 100 m² in unprotected storage.</p> <p>Note: Non-regulated products with a flash point at or above 93.3°C can be stored in the dangerous goods I.S.A.</p> <p><u>Observations:</u></p>	10 10	

C6 The Auditor will *observe* that TDG regulated products are stored in an I.S.A., separate from flammable and combustible liquids, which is 100 m² or less in unprotected storage.

Note: To determine the area of the I.S.A., disregard the area taken up by the flammable and combustible liquids.

NO.	PROTOCOL	Full Compliance Score	Actual Score
C7	<p>A plan view of the floor area was posted to show the aisles and individual storage areas for each T.D.G. and NFC class of product. In observing the storage facility, the Auditor found the operation adhering to the plan.</p> <p><u>Observations:</u></p>	10	

C7 The Auditor will *examine* the storage area to confirm that flammable and combustible liquids and TDG regulated products are stored in accordance to the posted floor plan.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
C8	Smoking, drinking and eating in the storage facility is strictly forbidden and permanent signs to this effect are posted. <u>Observations:</u>	Mandatory	

C8 The Auditor will *observe* that the storage area is clearly posted with permanent (weather proof, if outside) signs stating that smoking, drinking and eating are not allowed in the storage area. The Auditor can confirm compliance of the posting through employee interviews.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
C9	The auditor will inspect and certify that all the materials and/or equipment required for the site containment plan are in place and readily available. <u>Observations:</u>	Mandatory	

C9 **Examples of on-site materials:** may include storm sewer covers, sandbags, plastic sheeting, culvert closures etc.
Refer also to Protocol E3 & G1(e).

NO.	PROTOCOL	Full Compliance Score	Actual Score
C10	<p>a) This facility has a posted inventory list of emergency equipment and supplies which are stored in a specific location for use only in emergencies.</p> <p>Emergency equipment at the warehouse includes:</p> <ul style="list-style-type: none"> b) a first aid kit c) an eyewash station or eyewash/shower d) sealable salvage container (over pack) e) absorbent materials f) aluminum shovel g) gloves, goggles and rubber boots h) respirator and chemical cartridge <p><u>Observations:</u></p>	<p>10</p> <p>30</p> <p>30</p> <p>10</p> <p>10</p> <p>10</p> <p>10</p> <p>10</p>	

C10 The Auditor will *observe* that a list of emergency equipment available at the site is posted near, or on, the storage location for the equipment

The Auditor will *examine* basic emergency equipment to ensure that they are usable, clean and adequately equipped.

The auditor will determine from sample MSDS's what types of clean-up equipment (gloves, respirator cartridges, etc.) and absorbents (clay, vermiculite, polymer) are required. The auditor will *confirm* that these are available. Personal protective equipment must be stored off the floor to prevent contamination.

NO.	PROTOCOL	Full Compliance Score	Actual Score
C11	<p>All products stored in the facility had a supplier label, or a workplace label, or a label regulated by the P.C.P. Act which made the reader aware of the potential hazards and risks when handling or using crop protection products.</p> <p><u>Observations:</u></p>	20	

C11 The Auditor will *examine* products stored in the facility. Each regulated (WHMIS, TDG, PCP) chemical product will have an applicable label.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
C12	Hazardous waste materials and contaminated products are stored in compatible product storage areas and each waste container is appropriately labeled (as to its contents). <u>Observations:</u>	10	

C12 If there are hazardous waste materials or contaminated products on-site during the audit, the Auditor shall *examine* them for adequate packaging, labeling and storage (See Appendix A). The Auditor can also *examine* an **operating procedure** detailing site requirements (see Protocol E12). In cases where no hazardous waste materials or contaminated products exist at the time of the audit, the operating procedure will suffice.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
C13	Incompatible products such as feed, food products, food processing equipment, personal use items or containers and packaging material for such goods are not permitted in the same fire compartment as agrichemicals. <u>Observations:</u>	Mandatory	

C13 Upon *inspection* of the fire compartment for PCP regulated products, the Auditor will not find any food, feed, processing equipment for food/feed, or packaging material for food/feed. Twine is permitted. Seed that is clearly labeled is permitted in the storage area whether or not it has been treated.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
C14	a) Access aisles for fire fighting, emergency equipment and emergency exits are not less than 1 metre in width and are unobstructed.	10	
	b) All emergency exit doors must be operable with not more than one releasing operation, and egress areas unobstructed. <u>Observations:</u>	10	

C14 The Auditor upon *inspection* of the storage area will determine that there is clear, unobstructed access of at least 1 metre around emergency equipment including: fire extinguishers, eyewash stations, emergency supplies, and emergency exits. The Auditor will inspect the emergency exit doors to ensure they have only one releasing operation to exit (i.e. panic bars).

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
C15	Products were stored at a minimum of a) 1 metre from a heating unit b) 1 metre from the ceiling, c) at least 450 mm from a ceiling mounted sprinkler head. d) a clearance of not less than 400 mm shall be maintained between stored dangerous goods, flammable liquids, combustibles liquids and walls, except that where the width of storage adjacent to the wall is not more than 1.5 m., such wall clearance is not required. <u>Observations:</u>	10 10 10 10	

C15 The Auditor will *determine* that there is a physical separation of at least 1 metre between products stored and any heating units; 1 metre from the ceiling, 450 mm from a ceiling mounted sprinkler head, and 400 mm from the wall (as per description above). If the warehouse is less than 100 m² the ceiling restriction does not apply. See NFC Small Quantities Exception Table 3.2.7.1 (see Appendix D).

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
C16	The warehouse has at least one main aisle of at least 2.4 metres in width, marked, and free of storage. <u>Observations:</u>	20	

C16 The Auditor will *observe* in the warehouse at least one main aisle of 2.4 metres in width. This plus any other aisles must be marked and kept storage free. The Auditor's observations should be consistent with the posted warehouse storage plan (C7). If the warehouse is less than 100 m² an aisle of one metre must be maintained for access to fire protection equipment, exits and aisles. Racking can be used to denote aisles.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
C17	All products are stored on pallets, neatly piled with no leaning piles. <u>Observations:</u>	20	

C17 The Auditor upon *inspection* of the storage area will observe that all products are stored on pallets, (except TDG Class 2) all piles or stacks will be neatly maintained and piles will not be leaning precariously. Totes which have been designed with an integral pallet are exempt from being stored on a separate pallet.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
C18	There are no flammable or combustible fuel products stored inside the chemical warehouse. Bulk tanks outside the warehouse for the storage of flammable or combustible fuel products, which are closer than five metres (5 m) to the storage facility, are secured and grounded. <u>Observations:</u>	20	

C18 Both the storage tank and electrical pumping systems for fuels must be grounded.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
C19	There are no spare flammable compressed liquefied storage cylinders (TDG Class 2.1) inside the warehouse unless stored in accordance with the N.F.C. Those outside the storage facility are secured in an acceptable location to prevent build up of excess heat on cylinders. <u>Observations:</u>	20	

C19 If the facility uses propane powered forklifts, the Auditor upon *inspection* of the facility will find all spare tanks stored outside the building, protected from direct sunlight and excessive heat build-up. The tanks will be securely stored in the appropriate position as indicated on the tanks. (Reference Warehousing Standards Bulletin #26). TDG class 2.1 products are flammable gasses.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
C20	The battery charging station for material handling equipment was separated from the storage area by at least 1 metre, clean and tidy, well ventilated and a fire extinguisher was mounted and within easy reach. <u>Observations:</u>	20	

C20 If the facility uses electric material handling equipment, the Auditor will *observe* the battery charging station is isolated from stored products by at least 1 metre separation. The charging station will be kept tidy with an ABC fire extinguisher (min. 2.2 kg) within easy sight and reach of the station.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
C21	Power operated tools are not stored in the chemical storage area. <u>Observations:</u>	10	

C21 The Auditor will *observe* that there are no power tools located in the chemical storage area.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
C22	Floors, ramps, stairways, shipping areas were clean and tidy. <u>Observations:</u>	10	

C22 Upon *inspection* of the floors, ramps, stairways and shipping dock areas, the Auditor will find these areas kept clean and orderly.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
C23	The machinery and equipment were clean and in good operating condition. <u>Observations:</u>	10	

C23 The Auditor will *inspect* all machinery and equipment (i.e.: forklifts, pallet jacks, pallet jaws and chains) used to handle PCP products to determine that they are maintained in a good, clean operating condition.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
C24	There were no leaking packages or containers, and all returned empty pesticide containers are stored in polyethylene bags or under cover. <u>Observations:</u>	10	

C24 Upon *inspection* of the storage area, the Auditor will not find leaking packages or containers. Over-packed or rebagged or damaged containers which have been replaced or repaired are acceptable. All returned empty pesticide containers are contained in polyethylene bags or are stored under cover.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
C25	All full or partially full multi-trip and pre-packaged containers must be stored inside a certified warehouse. <u>Observations:</u>	Mandatory	

C25 The auditor will *observe* that there are no full or partially full multi-trip or pre-packaged containers stored outside. (reference Warehousing Standards Bulletin #14). All agrichemicals must be inside the certified portion of a facility before the closure of business for the day.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
C26	Pest control products classified as commercial or agricultural are not stored or displayed in the showroom/front office area or elsewhere on-site (other than the certified storage area). <u>Observations:</u>	Mandatory	

C26 PCP products classified as commercial and agricultural shall not be stored or displayed outside the certified warehouse storage area. This would include mixed spray solutions. The auditor should look around the rest of the property to determine if PCP products are stored elsewhere on the property.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
C27	Vehicles and implements, which are motorized, are not permitted to be stored in the chemical storage area of the warehouse. <u>Observations:</u>	20	

C27

1. Forklift trucks are permitted to be stored in the chemical storage area of the warehouse if local regulations permit. Forklifts with internal combustion engines must be parked in an aisle of the warehouse with a minimum 1 metre separation to warehouse inventory.
2. Procedures must be established to show that propane fuel tanks are shut off when the forklift is not in use.
3. New motorized vehicles (such as garden tractors and mowers) for retail sale are permitted provided that they do not contain fuel. This will primarily be items in original shipping packaging where the vehicle has not been prepped for delivery.
4. Large motorized vehicles such as floaters and sprayers are allowed to be stored overnight in bulk chemical storage areas (drive through for loading etc.) which are equipped with a containment pad provided that:
 - a) Those areas are separated from the finished goods section of the warehouse by a 2 hour fire rated wall, and
 - b) bulk storage tanks for pesticides are constructed of non-combustible materials such as steel or aluminum.

C. WAREHOUSE OPERATIONS	Full Compliance Score	Actual Score
SCORED ITEMS There are five mandatory protocols in this section.	490	

D. TRAINING

The auditor will prepare in the working papers the organizational chart for the agrichemical warehouse. Those employees who are directly involved in receiving products, shipping (including those who process shipping orders) and the storage (managing the warehouse) will all be involved in the training process. This will also include temporary employees or part time employees. Any employee, including the owner or manager, who handles agrichemical products will be included. This organizational chart is necessary during the audit so the auditor can track the movement of employees and therefore can track the training activities of new or transferred employees.

Staff Name	D1 Rules		D2 Operating Procedures		D3 T.D.G	D4 Forklift	D5 MSDS WHMIS		D6 OH & Safety		D7 CPR	D7 First Aid	D7 Fire Exting. Training	D8 ER	
	S	P	S	T	C	C	SOP	T	S	S	T	C	C	T	S
1.															
2.															
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13.															
14.															
15.															

P = Posted, S = Sign off, C = Certificate, T = Training Records, SOP = Safe Operating Procedures

Training Frequency:

D1	Rules	Upon sign up of new employee or when rules changed
D2	Safe Operating Procedures	At the start of a new job
D3	T.D.G.	Every 3 years
D4	Forklift Training	Every 3 years or provincially legislated requirements
D5	MSDS/WHMIS	Upon employment, with annual review
D6	OH & Safety	At commencement of employment
D7	CPR	Valid certificate
D7	First Aid	Valid certificate
D7	Fire Extinguisher Training	Only once
D8	ER Response Training	Annually
D9	Provincial vendors certification	Valid certificate (see Warehousing Standards Bulletin #30)

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
D1	The management of the storage facility has developed, issued and reviewed the general operating rules with all employees of the facility. During discussion and observation, it appears that these rules are enforced. <u>Observations:</u>	30	

D1 Inspect the written operating rules established for the facility. Determine if the operating rules have been issued, posted on the site and all employees have signed-off on them. Observe during evidence gathering that the rules are being followed and enforced. During the initial meeting of the audit process, bring this subject up because the auditor must also follow the established operating rules. Cross check with Audit Protocol C8.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
D2	Training has been provided to all employees on the safe operating procedures for each of their jobs. <u>Observations:</u>	30	

D2 Inspect the facility's written site specific operating procedures for each job at the warehouse. Inspect training records and employee sign off. (See Protocol E13.)

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
D3	All employees handling crop protection products have had training on the TDG Act and Regulations. This may include clerical staff involved in the transportation and administration process. <u>Observations:</u>	Mandatory	

D3 Auditor shall examine the TDG certificates which meet TDG regulation 6.3.
Note: AWSA TDG training program available at www.awsacanada.com

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
D4	All forklift drivers have undergone lift truck training provided by a qualified trainer. <u>Observations:</u>	Mandatory	

D4 Determine whom the forklift truck drivers are at the warehouse during the development of the organizational chart. The owner or manager of a facility may appoint a qualified employee as a trainer provided this is documented and signed by the owner or manager. Examine forklift training certificates. This shall also include a written procedure for forklift operation.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
D5	WHMIS/MSDS training has been provided for all employees handling pesticides. <u>Observations:</u>	Mandatory	

D5 Federal and Provincial regulations require that WHMIS training be provided to employees handling hazardous products. This training can be accomplished by training employees on the understanding of "A User's Guide to M.S.D.S.'s". The auditor shall examine training records and employee sign off.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
D6	This storage facility has developed and implemented an Occupational Health and Safety training program for all employees working within the chemical warehouse comprising of: a) safe work permits for confined workspace entry, hot work (cutting and welding) and lock out. b) Information on the rights of employees to refuse unsafe work c) Responsibilities of management and employees under the appropriate labour legislation. d) the use of an eye wash station e) fire extinguisher training (hands on/discharge) <u>Observations:</u>	30 20 20 20 20	

D6 Inspect the content of the Occupational Health & Safety training program developed. The content may be the Provincial Occupational Health & Safety Act & Regulations, Canada Occupational Safety & Health Regulations or equivalent. The auditor shall examine training records and employee sign off. Also reference E6. A written record of fire extinguisher training will suffice. Facilities operated solely by the owner are exempt from b & c.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
D7	Training has been provided for appropriate personnel on: a) first aid training b) Cardiopulmonary Resuscitation (C.P.R.) <u>Observations:</u>	Mandatory	

D7 Inspect the valid certificate of at least one employee on the site for first aid and CPR training. Facilities operated solely by the owner are exempt.

NO.	PROTOCOL	Full Compliance Score	Actual Score
D8	Annually, prior to the ER drills, training has been provided for appropriate personnel on the execution of the ER Plan for the site. <u>Observations:</u>	Mandatory	

D8 The auditor will inspect the employees sign off sheets for appropriate personnel (employees on the ER team) to verify that training took place.

NO.	PROTOCOL	Full Compliance Score	Actual Score
D9	This site, if a retail vendor, has a provincially certified person to sell pesticides on staff. <u>Observations:</u>	Mandatory	

D9 If the site is a retail vendor, inspect the certificate of at least one employee to ensure that someone on staff holds a valid certificate recognized by the province in accordance with Warehousing Standards Bulletin # 30.

D. TRAINING	Full Compliance Score	Actual Score
SCORED ITEMS There are six mandatory protocols in this section.	170	

E. DOCUMENTATION

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
E1	Warehouses constructed on flood plain land have written authorization from local authorities. <u>Observations:</u>	Mandatory	

- E1** The auditor must be knowledgeable on the historical background of the geographical area in which work is being done as it pertains to recognized flood plain land. Generally, warehouses close to rivers, lakes or large streams are subject to flooding. The lower mainland of British Columbia (Richmond & Delta) is an example of flood plain land. Information on flood plain land can be obtained from local Conservation Authorities or Natural Resources Departments. AWSA does not recommend locating a warehouse on land which floods more than once in a hundred years. Written authorization to operate on flood plain land could be obtained from the Conservation Authority, the local fire chief or planning authority, the Ministry of Environment or Natural Resources Canada.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
E2	Management has obtained and has documented information regarding: a) the normal groundwater level b) soil type/composition at the warehouse site. <u>Observations:</u>	10 10	

- E2** Inspect the documentation on normal ground water levels and soil composition. This does not have to be a formal letter from a government agency. It could well be historical information gained from local experience.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
E3	A written plan is in place to contain volumes of contaminated water on-site. A copy of this plan must be included with the Emergency Response Plan. <u>Observations:</u>	Mandatory	

- E3** Inspect the written plan to contain volumes of contaminated fire-fighting water. Ask the manager of the facility to explain how the plan will work. Cross reference the volumes of stored liquids with volumes of in-warehouse containment plus volumes of fire fighting water to balance the equation.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
E4	The storage building was renovated/constructed with the approval of provincial or municipal authorities. <u>Observations:</u>	30	

- E4** Inspect the documentation and/or drawings for the storage area to determine if the renovation/constructed of the storage area has been approved by the appropriate authority. The following permits are acceptable proof: building permit, approval to construct, development permit, operating permit, occupancy permit or equivalent.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
E5	There is documentation indicating the electrical installation has been inspected by a licensed electrician, engineer or appropriate electrical authority since the last audit for defects/hazards. <u>Observations:</u>	Mandatory	

- E5** Inspect the document or label provided by a licensed electrician, electrical engineer or the appropriate authority, that the electrical installation has been inspected since the **last audit**. The auditor will ensure that the document prepared by an electrician identifies the licence number.

New documentation is required for each renovation or addition to the electrical system since the last audit.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
E6	A written operating procedure for the safe work permit system is available for use at this facility. This includes: a) confined workspace entry b) hot work (cutting and welding) c) lock out <u>Observations:</u>	10 10 10	

- E6** Have the facility manager explain how the safe work permit system works, together with the forms. Full points are to be given for item a) “confined workspace entry”, if there is no on-site requirement for confined work space entry. Items (b) &(c) must be in place at every warehouse.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
E7	This warehouse facility has a written inspection program for its electrical installation which includes lights, globes, wiring, switches, motors, circuit breakers, fans, and main panel. The auditor was shown a completed past check list which supports the program. <u>Observations:</u>	20	

E7 Have the facility manager explain the written electrical inspection program together with a past usage inspection report. Requirements will vary depending on the usage of the warehouse. There should be a minimum of two completed inspection checklists (within the last 12 months) available for inspection by the auditor.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
E8	This warehouse facility has a written inspection program for its heating system, dock levelers, and forklift trucks. This program is documented and the auditor was shown completed past checklists which supports the program. a) heating system b) dock levelers c) fork lift trucks <u>Observations:</u>	10 10 10	

E8 Have the facility manager explain the written equipment inspection program together with past usage inspection reports (minimum of two in the last 12 months).

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
E9	The warehouse facility has a documented maintenance program and a trained maintenance technician for the fire suppression system. <u>Observations:</u>	30	

E9 Have the facility manager describe the written maintenance program in effect for the maintenance of the fire suppression system. What qualifications does the maintenance technician hold? An individual in design, installation and maintenance would usually qualify as a maintenance technician.

NO.	PROTOCOL	Full Compliance Score	Actual Score
E10	This facility has a written operating procedure and a checklist for the operation and testing of the fire suppression system in conformance with the manufacturers, insurers or NFC recommendations. <u>Observations:</u>	Mandatory	

E10 Inspect the written operating procedures for the operation and testing of the fire suppression system (if installed) to support the maintenance program.

NO.	PROTOCOL	Full Compliance Score	Actual Score
E11	This facility has established written procedures for the care and use of the following emergency equipment: a) first aid kit b) eyewash station or eyewash/shower c) fire extinguishers d) respirator and chemical cartridge <u>Observations:</u>	10 10 10 10	

E11 Inspect the written operating procedures for the care and use of emergency equipment. Written procedures can be obtained from manufacturers or provincial regulators.

NO.	PROTOCOL	Full Compliance Score	Actual Score
E12	The management of this facility has a written procedure for the proper handling, storage and disposal of contaminated products and hazardous waste materials that meets all legal requirements. <u>Observations:</u>	Mandatory	

E12 Have the manager of the facility explain the written procedures for the proper handling, storage and disposal of contaminated products and hazardous waste materials.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
E13	<p>This storage facility has developed and implemented written site specific operating procedures for:</p> <ul style="list-style-type: none"> a) Receiving products b) Shipping products c) Spill clean-up and reporting d) Receiving damaged goods e) Storage of damaged goods f) Containment inspection and maintenance g) Handling and storing TDG and National Fire Code regulated products <p><u>Observations:</u></p>	<p>10</p> <p>10</p> <p>10</p> <p>10</p> <p>10</p> <p>10</p> <p>10</p>	

E13 Establish with the manager of the facility at the opening meeting what specific jobs are carried out at this facility. Use the list found in this protocol to prompt responses. Use the information gathered to inspect the written site specific operating procedures for all the jobs identified. Refer to protocols C9, B18, B19, E3).

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
E14	<ul style="list-style-type: none"> a) A copy of all M.S.D.S.'s for products handled is available. b) At least one copy is available outside the warehouse and is readily accessible. <p><u>Observations:</u></p>	<p>30</p> <p>30</p>	

E14 Discuss with the manager of the facility the availability of M.S.D.S.'s for all products handled. Ensure that at least one copy of all M.S.D.S. is stored outside the warehouse. If electronic copy is kept off site, facilities must exist to access the data during an emergency.

NO.	PROTOCOL	Full Compliance Score	Actual Score
E15	A system for maintaining on-site inventory by products and quantities exists. <u>Observations:</u>	20	

E15 Have the manager of the facility describe how inventories are managed by product size and quantities. Maintaining inventories by dollar amounts is not acceptable. This information is critical for use in emergency response situations.

NO.	PROTOCOL	Full Compliance Score	Actual Score
E16	A sampling of shipping documents was inspected and these documents included the receiving warehouse Certification Number, or a grower name or number to whom the product was shipped. Shipments to individual end users will not exceed their requirements. <u>Observations:</u>	Mandatory	

E16 Inspect the shipping records for an active period. Ensure that the shipping records indicate shipments to an end user or to another certified warehouse. A file containing the grower name or number or certified warehouse is acceptable. All shipping destinations must be verifiable. **End use shipments are not permitted for resale purposes.** Reference Warehousing Standards Bulletins # 18 and 29 for shipping policies.

NO.	PROTOCOL	Full Compliance Score	Actual Score
E17	This storage facility ships products in conformance with TDG regulations and the shipping documents viewed verified this. <u>Observations:</u>	20	

E17 Ask the manager of the facility how products are shipped to meet the T.D.G. regulations, when reviewing the shipping documents.

NO.	PROTOCOL	Full Compliance Score	Actual Score
E18	All extinguishers were tagged to signify they had been inspected monthly while the building was occupied during the past year. <u>Observations:</u>	10	

E18 The Auditor will *determine* during which months in the past 12 that the facility was operated/occupied. This information will be used to examine fire extinguishers for monthly inspection sign-offs. The annual inspection tag must be attached to the fire extinguisher. Monthly inspections can be documented on the annual tag or be posted near each extinguisher.

NO.	PROTOCOL	Full Compliance Score	Actual Score
E19	There exists a standard operating procedure requiring all accidents/incidents be investigated and recorded. <u>Observations:</u>	30	

E19 The Auditor will examine documentation supporting investigation requirements and completed investigations.

E. DOCUMENTATION	Full Compliance Score	Actual Score
SCORED ITEMS There are six mandatory protocols in this section.	410	

F. EMPLOYEE KNOWLEDGE

Evidence as to warehouse employee knowledge can be obtained in an informal manner while inspecting the warehouse structure and storage layout plans. The auditor should concentrate on the warehouse employee in-charge but do not neglect the other employees. This section is the most subjective. It is quite satisfactory if an employee knows where to find an answer, and looks it up. Skill in asking questions and listening to the answer is utmost. Auditors may want to list a few questions to ask to ensure compliance to each protocol.

All employees working in the warehouse must be knowledgeable in these topics in order to be awarded the points.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
F1	<p>The warehouse employees are knowledgeable as to the classification and hazards of the products stored in the warehouse. This would include</p> <ul style="list-style-type: none"> a) TDG Regulations b) National Fire Code Standards for storage of agrichemicals <p><u>Observations:</u></p>	20 20	

- F1** Some examples of questions for this protocol could be as follows:
- a) Describe the TDG classifications of the products stored in this facility.
 - b) Describe under what conditions you would store non-regulated T.D.G. products in the same individual storage area (I.S.A.) as you store your flammable and combustible liquids.
 - c) Describe how you would determine what the TDG classification is for a certain product.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
F2	<p>When interviewing employees with ER responsibility at this facility, they were knowledgeable regarding their responsibilities in the event of an emergency.</p> <p><u>Observations:</u></p>	20	

- F2** The auditor must ensure that the ER Plan has been inspected prior to discussing this protocol. A good time to review the ER Plan is at the opening meeting. With a good knowledge of the organizational chart and ensuring that warehouse employees have been assigned ER responsibilities, ask each warehouse employee what their roles are. Questions such as:
- a) Who has overall responsibility for the ER Plan?
 - b) What would you do first if you spotted a fire in the warehouse?
 - c) What is your specific responsibility?
 - d) What role will the local fire department play in the warehouse fire?

NO.	PROTOCOL	Full Compliance Score	Actual Score
F3	<p>The employees at this facility can explain the established procedures for the care and use of emergency equipment such as:</p> <ul style="list-style-type: none"> a) first aid kits b) eyewash stations c) fire extinguishers d) respirators & cartridges <p><u>Observations:</u></p>	<p>10 10 10 10</p>	

F3 To be in compliance with this protocol, written procedures for the care and use of emergency equipment must be evident (see E11). Inspect these at the opening meeting. Some sample questions to ask the warehouse employees are:

- a) Describe how you maintain your first aid kit.
- b) How would you use the eye wash station? How do you maintain the eye wash station?
- c) Describe how you would use a portable fire extinguisher to fight a fire.
- d) How often is the emergency equipment inspected?

NO.	PROTOCOL	Full Compliance Score	Actual Score
F4	<p>In discussing the handling and disposal of contaminated product or hazardous waste materials with the warehouse employees, they were knowledgeable on the written procedures.</p> <p><u>Observations:</u></p>	10	

F4 To be in compliance with this protocol, written procedures for the handling and disposal of contaminated product and hazardous waste materials must be evident (see E12). Ask questions such as:

- a) Describe to me your understanding of a hazardous waste material.
- b) How do you handle and dispose of hazardous waste material? Does the answer to (b) correspond to the written procedure?

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
F5	The warehouse employees can describe cleanup procedures and know where the equipment is located. <u>Observations:</u>	20	

F5 To be in compliance with this protocol, written site-specific cleanup procedures must be evident [see E13(c)]. Inspect to see that cleanup equipment is on-site and in a designated location and identified. Ask the questions:

- a) Describe to me how you cleanup and decontaminate a spill.
- b) What do you include on the label of the container when you are storing spilled cleanup products?

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
F6	The employees interviewed were knowledgeable on M.S.D.S.'s a) how to access/where are the MSDS's kept? For a selected product, use the MSDS' to: b) describe hazards of the product c) describe the personal protective equipment required d) describe first aid procedures <u>Observations:</u>	10 10 10 10	

F6 The auditor will interview employees.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
F7	Forklift operators can explain the safe operation of the forklift. <u>Observations:</u>	20	

F7 Sample Questions:

- a) What is the daily inspection procedure (circle check)?
- b) What is the proper procedure to drive a loaded forklift down an incline?
- c) Describe the safe refueling procedure for the forklift.
- d) Describe the position of the forks when traveling forward empty.

F. EMPLOYEE KNOWLEDGE	Full Compliance Score	Actual Score
<p>SCORED ITEMS</p> <p>There are no mandatory protocols in this section.</p>	190	

G. EMERGENCY RESPONSE

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
G1	<p>This facility's written Emergency Response Plan was reviewed with the auditor and it included:</p> <ul style="list-style-type: none"> a) an organizational chart b) responsibilities of each position on the chart c) the telephone numbers of all emergency responders, employees, local medical facilities, governmental agencies and product suppliers d) a drawing of the site plan indicating emergency response equipment, containment, control centres, and emergency routes e) a written containment plan for volumes of contaminated fire fighting /spilled liquids (E3) f) a list of the distribution of the ER plan g) a list of events that initiate the ER plan <p><u>Observations:</u></p>	Mandatory	

G1 Inspect the written ER Plan to ensure it includes all elements. The ER Plan must be contained in a separate binder/booklet in an organized fashion. The auditor will confirm that all employees on the distribution list of the ER Plan will have their individual, separate ER plans in a binder/booklet.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
G2	<p>A representative of the local fire department has:</p> <ul style="list-style-type: none"> a) visited the site within the past 12 months and b) acknowledged in writing that the visit took place and c) acknowledged in writing that they have a copy of the E/R Plan 	20	
<u>OR</u>			
	<ul style="list-style-type: none"> a) a letter of invitation (copy on file) with a copy of the ER Plan was delivered to the fire department by the company. <p><u>Observations:</u></p>	20	

- G2** Inspect documentation where the local fire department has visited the site and has signed that they have received a copy of the ER Plan. Where an invitation to the department has been extended and refused, a copy of the invitation will suffice.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
G3	Management has conducted a risk assessment of the warehouse and site, identifying the major risks of their operation including, but not necessarily limited to fire, spills, and major injury. The risk assessment must have been reviewed since the last audit. <u>Observations:</u>	20	

- G3** Inspect documentation on the results of the risk assessment for the warehouse and site. The risk assessment should be site specific including internal and external factors such as vehicle impact, rail derailments, fires in nearby buildings and severe weather problems. The auditor will inspect documentation stating that the risk assessment plan has been reviewed.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
G4	Current copies of the Emergency Response Plan are kept: (a) in the office and at a designated location off-site. (b) with each designated person on the ER distribution list. <u>Observations:</u>	10 10	

- G4** The auditor will verify that copies of the Emergency Response Plan are available in the office and off-site, and that key employees know its location. The auditor will verify that all named persons on the ER distribution list have a current copy of the ER plan. The auditor will accept verbal confirmation that the Emergency Response Plan is also kept off-site.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
G5	This Emergency Response Plan has been reviewed and (updated, if required), within the past 12 months to ensure that it contains current updated information. <u>Observations:</u>	20	

- G5** Inspect the documentation to see that the ER Plan has been reviewed within the past twelve months to ensure that it contains current updated information.

NO.	PROTOCOL	Full Compliance Score	Actual Score
G6	<p>The employer has established, and prominently displayed in various locations, a list of relevant phone numbers and contact persons of product suppliers, local emergency services and agencies, management, employees, owner and the poison control centre.</p> <p><u>Observations:</u></p>	10	

G6 The Auditor will observe (usually posted near telephones) emergency telephone contacts clearly posted throughout the facility. These numbers may include those of product suppliers, local police, fire, ambulance, poison control centres, management, and staff contact numbers. Note that the AWSA web site (www.awsacanada.com) contains manufacturers' emergency response contact numbers.

NO.	PROTOCOL	Full Compliance Score	Actual Score
G7	<p>Using the site's ER Plan, the management of this facility has conducted:</p> <ul style="list-style-type: none"> a) at least one tabletop exercise on a simulated emergency over the past 12 months. b) At least one drill on a simulated emergency every calendar year. <p><u>Observations:</u></p>	10 20	

G7 Inspect documentation on the last test of the ER Plan. What, if any, enhancements to the plan were made as a result of the test? Who was involved in the test? [Reference F2]. AWSA Emergency Response video is available for training purposes. A response to a false alarm will not be considered an E/R drill.

NO.	PROTOCOL	Full Compliance Score	Actual Score
G8	<p>The local fire department has a copy of the total potential (maximum) inventories which includes flammable and combustible liquids and all other agrichemicals. This is a yearly requirement.</p> <p><u>Observations:</u></p>	10	

G8 Inspect the copies of documentation provided to the local fire department which indicates potential total inventories.

NO.	PROTOCOL	Full Compliance Score	Actual Score
G9	<p>The fire detection system, including the heat detector or smoke detector device, is maintained and tested in accordance with the manufacturers, suppliers or monitoring stations written recommendations:</p> <ul style="list-style-type: none"> a) heat/smoke detectors b) communications and monitoring systems <p><u>Observations:</u></p>	Mandatory	

G9 Inspect the written operating procedures for the operation and testing of the complete fire detection system. This must be a monitored 24 hour system.

-AND-

The auditor will require current documentation (within the last 12 months) that ensures the complete fire detection system has been maintained and tested in accordance with manufacturers written recommendations for:

- a) heat/smoke detectors
- b) communications and monitoring systems

Written verification from the monitoring company or supplier that annual maintenance is not required is acceptable.

NO.	PROTOCOL	Full Compliance Score	Actual Score
G10	<p>The security system, including the sensors and monitoring communications, is maintained and tested in accordance with the manufacturers, suppliers or monitoring stations written recommendations.</p> <p><u>Observations:</u></p>	Mandatory	

G10 Inspect the written operating procedures for the operation and testing of the complete security system. This must be a continuously monitored system.

-AND-

The auditor will require current documentation (within the last 12 months) that ensures the complete security system has been maintained and tested in accordance with manufacturers written recommendations.

Written verification from the monitoring company or supplier that annual maintenance is not required is acceptable.

G. EMERGENCY RESPONSE	Full Compliance Score	Actual Score
SCORED ITEMS There are three mandatory protocols in this section.	130	

H. BULK STORAGE AND HANDLING

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
H1	The materials used for the installation, storage, containment and transfer of bulk liquid and dry products are compatible with the products to be stored. <u>Observations:</u>	20	

H1 Each warehouse owner shall obtain documentation from the manufacturer/supplier which identifies storage and handling materials which are compatible with the products being stored.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
H2	This installation is positioned such that vehicles servicing the bulk installation have adequate space to maneuver safely. <u>Observations:</u>	10	

H2 Inspect the bulk site for sufficient room for vehicles to maneuver safely.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
H3	The bulk installation is designed such that during transfer of products a containment pad/drip pan is utilized to prevent spills from contaminating soil and groundwater. <u>Observations:</u>	20	

H3 Inspect the site where transfer of product takes place. Discuss with the warehouse operator how spill prevention is maintained during transfer. Some operators may use drip pans which are also acceptable.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
H4	The outside bulk installation is: a) fenced (either the site or localized around the tanks) b) well lit (either the site or localized around the tanks) <u>Observations:</u>	10 10	

H4 A bulk installation not housed in a building must be fenced. If the site is fenced to provide security during non-working hours, this is also acceptable. Lighting must be provided to enable safe operation at night.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
H5	The dike for liquid tanks is designed in such a way as to contain spouting. <u>Observations:</u>	20	

H5 Inspect the liquid bulk tank containment drawings against the actual installation to ensure that if spouting occurs, spilled product is contained within the bulk storage diked area.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
H6	The dike for liquid tank storage is designed in such a way as to hold 110% of the largest tank plus the volume taken up by the other tanks inside the dike in the event of a rupture. <u>Observations:</u>	Mandatory	

H6 Inspect the containment drawings and/or calculations used to determine the appropriate size of the containment. Measure the containment volume to verify. See sample calculations attached [Appendix E]. No other products, totes, tools etc of any kind can be stored within the diked area.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
H7	Each bulk liquid tank was fitted with a conservation vent. <u>Observations:</u>	10	

H7 Inspect each tank to ensure that it is vented (vacuum/pressure) and that foreign objects cannot enter through the vent. Some products require a conservation vent to ensure that moist air cannot enter the tank and thus avoid skimming of the product. Look for this feature in the supplier's operations manual.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
H8	Each bulk tank has, as a minimum, one visible label as to its contents which conforms with P.C.P. Regulations and the NFC where required. <u>Observations:</u>	10	

H8 Inspect to ensure that each tank has a P.C.P. label. If required, NFC label must be applied.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
H9	Each tank has a secured inspection port/manhole. <u>Observations:</u>	10	

H9 Inspect each tank for a secure and/or lockable inspection port or manhole.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
H10	The discharge line and sampling port from the tanks are locked when not in use. <u>Observations:</u>	Mandatory	

H10 The discharge line and sampling port from the tank must be locked when not in use. Computer controlled valves are acceptable.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
H11	A checklist covering all aspects of maintenance and operation for the bulk station is used. The preventative maintenance program and last check list were reviewed for: a) yearly and weekly inspection checklists b) bulk delivery checklist <u>Observations:</u>	10 10	

H11 The required checklist (or similar) for yearly inspections, weekly inspection during operations, and a bulk delivery checklist, will be inspected for completeness. If not used in a timely manner, non-compliance would be indicated.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
H12	Storage facility has developed and implemented written operating procedures for: a) decanting bulk liquid products b) receiving bulk liquid products c) removing and disposal of precipitation <u>Observations:</u>	10 10 10	

H12 The auditor shall verify the procedures by examining the written documents.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
H13	There are no underground storage tanks or under ground piping for agrichemicals on this site. <u>Observations:</u>	Mandatory	

H13 The auditor will request confirmation from the facility owner that there are no underground storage tanks or piping for agrichemical products. Piping running in concrete or steel trenches is acceptable.

<u>NO.</u>	<u>PROTOCOL</u>	Full Compliance Score	Actual Score
H14	Management has developed and implemented written personal hygiene standards and procedures for their bulk handling. <u>Observations:</u>	20	

H14 The auditor will examine documentation for personal hygiene standards and procedures for bulk pesticide handling operations. Requirements for personal protective equipment and other hygiene requirements may be written into standard operating procedures for decanting, packaging or loading/unloading procedures. Professional judgment shall be applied to the enforcement of standards detailed in documentation.

H.	BULK STORAGE AND HANDLING	Full Compliance Score	Actual Score
	SCORED ITEMS There are three mandatory protocols in this section.	190	

I. INSURANCE

NO.	PROTOCOL	Full Compliance Score	Actual Score
I-1	<p>The warehouse facility has documentation which indicates a current policy of insurance coverage for a minimum of \$1,000,000 and a maximum of \$25,000 deductible for both off-site and on-site pollution insurance coverage on the limited pollution form (sudden & accidental) with no sub-limits. This policy must meet the required Agrichemical Warehousing Standards Association standard.</p> <p><u>Observations:</u></p>	Mandatory	

I-1 The auditor will examine the “Confirmation Of Insurance Coverage” form to confirm that the required coverage is current & in force for on-site and off-site pollution insurance to the minimum level specified and as confirmed by the insurance representative (reference Warehousing Standards Bulletin #16 and Appendix II.)

NOTE: The “Confirmation of Insurance Coverage” form must accompany the audit summary and be forwarded to AWSA by the auditor. No changes to the wording on the form are permitted. Each audit for requires a confirmation of coverage form.

Regarding the insurance policy standard, the following summarizes the minimum coverage required:

- a) Coverage for on-site clean-up costs sustained by the insured due to new pollution conditions which have commenced during the policy period, and legal liability covering third party claims for bodily injury, property damage due to new on-site pollution conditions which have commenced during the policy period, to a total of \$1,000,000.
- b) Legal liability in the amount of at least \$1,000,000 covering third party claims for bodily injury, property damage or clean-up costs the results of new off-site pollution conditions which have commenced during the policy period.

NOTE: Coverage for A & B (above) must be subject to a discovery period of not less than 120 hours (preferably 240 hours). In the event of any pollution incident (spill, fire etc.) please advise AWSA at the earliest opportunity. The will enable AWSA to assist you and our industry and the media to mitigate similar future occurrences.

Standard for Policy Wording

In August 1994, a package outlining the minimum standards for insurance requirements necessary to comply with Protocol II was sent out to all warehouse operators. This package included details of the insurance program administered by the insurance brokerage of AON Reed Stenhouse. A copy can be found on the AWSA website (awsacanada.com).

OPTIONS:

The package outlined 2 options:

1. After having a successful audit completed (with the exception of insurance protocol II), apply for and purchase the package offered by AIC Environmental of Canada (formerly Commerce & Industry Insurance Company) through the brokerage firm of Aon Reed Stenhouse, and provide a completed signed copy the Confirmation of Insurance Coverage Form.

– or –

2. If you have or are intending to seek insurance from another source, have the Confirmation of Coverage Form (Appendix II) signed by your insurer or insurance broker and provide a copy to the auditor during your audit. This form must be signed with no wording amendments and made available to the auditor at the time of audit.

GLOSSARY OF TERMS

Term Description

Basement	A storey or storeys of a building located below the first storey.
Closure	A device or assembly for closing an opening through a fire separation or an exterior wall, such as a door, a shelter, wired glass or glass block and includes all components such as hardware, closing devices, frames and anchors.
Combustible Liquid	A liquid having a flash point at or above 37.8 °C and below 93.3° C.
Dangerous Goods	Those products or substances which are regulated by the “Transportation of Dangerous Goods Act” (T.D.G.) and its Regulations. T.D.G. classifies dangerous goods in 9 classes, class 1 through to class 9. Class 3 flammable and combustible liquids are further classified by the National Fire Code as Class 1A, 1B, 1C, II and IIIA, depending on the flash point of the product. Those products not classified under T.D.G. are non-regulated products.
Fire Compartment	An enclosed space in a building that is separated from all other parts of the buildings by enclosing construction providing a fire separation having a required fire-resistance rating.
Fire Separation	A construction assembly that acts as a barrier against the spread of fire.
Fire-Resistance Rating	The time in hours or fractions thereof that a material or assembly of materials will withstand the passage of flame and the transmission of heat when exposed to fire under specified conditions of test and performance criteria.
First Storey	The uppermost storey having its floor level not more than 2 metres above ground.
Flammable Liquid	A liquid having a flash point below 37.8 °C and having a vapour pressure not more than 275.8 KPa (absolute) at 37.8 °C.

Flash Point	The minimum temperature at which a liquid within a container gives off vapour in sufficient concentration to form an ignitable mixture with air near the surface of the liquid.
High Hazard Industrial Occupancy (Group F, Division 1)	An industrial occupancy containing sufficient quantities of highly combustible and flammable or explosive materials, which, because of their inherent characteristics constitute a special fire hazard.
Individual Storage Area (I.S.A.)	An area occupied by piles, bin boxes, racks or shelves, including subsidiary aisles, providing access to the stored products, which is separated from adjacent storage by aisles not less than 2.4 metres in width.
Industrial Occupancy (Group F)	The occupancy or use of a building or part thereof for the assembly, fabricating, manufacturing, processing, repairing or storing of goods and materials.
Low Hazard Industrial Occupancy (Group F, Division 3)	An industrial occupancy in which the combustible content is more than 50 Kg/m ² or 1200 MJ/m ² of floor area.
Medium Hazard Industrial Occupancy (Group F, Division 2)	An industrial occupancy in which the combustible content is more than 50 Kg/m ² or 1200 MJ/m ² of floor area and not Classified as high hazard industrial occupancy.
Mercantile Occupancy (Group E)	The occupancy or use of a building or part thereof for the displaying or selling of retail goods, wares or merchandise.
Non Combustible Construction	That type of construction in which a degree of fire safety is attained by the use of non-combustible materials for structural members and other building assemblies.
Partition	An interior wall, one storey or part storey in height that is not load bearing.

Appendix A

Table 3.2.7.6

Separation chart for Storage of Dangerous Goods

Forming Part of Sentences 3.2.7.6 (1), 3.2.7.9.(2), 3.3.4.3.(2) and 4.2.2.3.(2)

Class	2.1	2.2	2.3	3	4.1	4.2	4.3	5.1	5.2	6	8
2.1	-	P	X	P	P	A	DS	X	X	X	X
2.0	P	-	P	P	P	P	P	P	X	P	P
2.3	X	P	-	X	A	A	DS	A	X	DS	A
3.0	P	P	X	-	P	A	A	X	X	DS	A
4.1	P	P	A	P	-	A	DS	X	X	DS	A
4.2	A	P	A	A	A	-	DS	X	X	DS	A
4.3	DS	P	DS	A	DS	DS	-	X	X	DS	X
5.1	X	P	A	X	X	X	X	-	X	A	X
5.2	X	P	X	X	X	X	X	X	-	X	X
6.0	X	P	DS	DS	DS	DS	DS	A	X	-	A
8.0	X	P	A	A	A	A	X	X	X	A	-

X = Incompatible goods: do not store goods together in the same fire compartment

A = Incompatible goods: separate goods by horizontal distance of not less than 1m

P = Permitted: goods are permitted to be stored together

DS = Refer to MSDS

Notes to table 3.2.7.6.:

The numbers refer to the class and division of dangerous goods in Table 3.2.7.1

Appendix B

National Fire Code Table 4.2.7.5.A

Indoor Container Storage (Palletized or Solid Piled Storage and Unprotected Rack Storage) Forming Part of Sentences 4.2.7.5. (1) and (4), 4.2.8.4 (3) and 4.2.9.1. (3)							
Class of Liquid	Storage Level	Protected Storage ⁽¹⁾			Unprotected Storage		
		Maximum Quantity per I.S.A., ⁽²⁾ L	Maximum Storage Height, m	Maximum ⁽³⁾ Quantity per Fire Compartment L	Maximum Quantity per I.S.A., ⁽²⁾ L	Maximum Storage Height, m	Maximum ⁽³⁾ Quantity per Fire Compartment L
CLASS IA	<i>First storey</i> <i>Storeys above the first storey</i> <i>Basement</i>	10 000	1.5	50 000	2 500	1.5	2 500
		7 500	1.5	30 000	2 500	1.5	2 500
		Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
CLASS I or IC	<i>First storey</i> <i>Storeys above the first storey</i> <i>Basement</i>	20 000	2.0	60 000	10 000	1.5	10 000
		10 000	2.0	50 000	10 000	1.5	10 000
		Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted	Not Permitted
CLASS II	<i>First storey and Storeys above the first storey</i> <i>Basement</i>	40 000	3.0	100 000	15 000	3.0	30 000
		25 000	1.5	25 000	Not Permitted	Not Permitted	Not Permitted
CLASS IIIA	<i>First storey and Storeys above the first storey</i> <i>Basement</i>	60 000	6.0	200 000	50 000	4.5	100 000
		40 000	3.0	100 000	Not Permitted	Not Permitted	Not Permitted

Notes to Table 4.2.7.5.A.:
(see Article 4.2.7.6)

(1) Except as provided in Sentence (2), the storage of *flammable liquids and combustible liquids* in storage areas specified in Clause 4.2.7.2.

(1)(a) shall conform to Table 4.2.7.5.A.

where it consists of palletized or solid piled storage, or where stored in *racks* in *buildings* not protected in conformance with Article 4.2.7.7., or conform to Table 4.2.7.5.B. where stored in *racks* in *buildings* protected in conformance with Article 4.2.7.6.

Where a *building* is designed for the storage of *flammable liquids* or *combustible liquids*, there is no limit on the total quantity of storage per *fire compartment* provided the *building* or part of building is separated from adjacent *buildings* or parts by a *firewall* having a *fire-resistance rating* of at least 4 h, or *spatial* separation in conformance with the National Building Code [See Appendix A.]

3) Where containers for 2 or more liquids having different *flash points* are stored together in a single *individual storage area*, the maximum quantity permitted in the *individual storage area* shall equal that permitted for the liquid with the lowest *flash point*.

4) When 2 or more classes of liquid are stored in a single *fire compartment*, the maximum quantity permitted for each class of liquid shall be calculated as follows:

$$\frac{q_{IA}}{Q_{IA}} + \frac{q_{IB}}{Q_{IB}} + \frac{q_{IC}}{Q_{IC}} + \frac{q_{II}}{Q_{II}} + \frac{q_{IIIA}}{Q_{IIIA}} \leq 1$$

where

q_{IA}, IB or IC = the actual quantity of Class IA, IB or IC liquids present,

q_{II} = the actual quantity of Class II liquids present

q_{IIIA} = the actual quantity of Class IIIA liquids present,

Q_{IA}, IB, IC = the maximum quantity of Class IA, IB, or IC liquids permitted in Table 4.2.7.5.A. or Table 4.2.7.5.B. for the arrangement,

Q_{II} = the maximum quantity of Class II liquids permitted in Table 4.2.7.5.A. or Table 4.2.7.5.B. for the arrangement,

Q_{IIIA} = the maximum quantity of Class III liquids permitted in Table 4.2.7.5.A. or Table 4.2.7.5.B. for the arrangement.

Appendix C

National Fire Code Table 4.2.7.5.B.

Indoor Container Storage (Protected Rack Storage) ⁽¹⁾ Forming Part of Sentences 4.2.7.5.(1), (2) and (4)			
Class of Liquid	Storage Level	Maximum Height, m	Maximum Quantity per Fire Compartment, L
CLASS IA	<i>First Storey</i>	7.5	30 000
	<i>Storeys above first storey</i>	4.5	17 000
	<i>Basement</i>	Not Permitted	Not Permitted
CLASS IB or IC	<i>First Storey</i>	7.5	60 000
	<i>Storeys above first storey</i>	4.5	35 000
	<i>Basement</i>	Not Permitted	Not Permitted
CLASS II	<i>First Storey</i>	7.5	100 000
	<i>Storeys above first storey</i>	7.5	100 000
	<i>Basement</i>	4.5	35 000
CLASS IIIA	<i>First Storey</i>	12.0	200 000
	<i>Storeys above first storey</i>	6.0	200 000
	<i>Basement</i>	6.0	100 000

Notes to Table 4.2.7.B.:

⁽¹⁾ See Article 4.2.7.6.

Appendix D

**National Fire Code Table 3.2.7.1.
Small Quantity Exemptions for Dangerous Goods
Forming Part of Sentences 3.2.7.1.(1) and (2) and 3.3.4.1.(2) and (3)**

Class ⁽¹⁾	Dangerous Goods	Maximum Exempt Amount
1	Explosives	(See Subsection 3.1.1.)
2	Gases Division 1 ⁽¹⁾⁽²⁾ Flammable Division 2 Non-flammable and non-toxic Division 3 Toxic or Corrosive	25 kg ⁽²⁾ 150 kg 0
3	Flammable Liquids and Combustible Liquids	0 ⁽⁴⁾
4	Flammable Solids Division 1 Flammable Solids Division 2 Subject to spontaneous ignition Division 3 Reactive with Water	100 kg ⁽⁵⁾ 50 kg 50 kg
5	Oxidizing Substances Division 1 Oxidizers Packing Group I ⁽⁶⁾⁽⁷⁾ Packing Group II ⁽⁶⁾ Packing Group III Division 2 Organic Peroxides	250 kg or 250 L 100 kg or 100 L
6	Poisonous and Infectious Substances Division 1 Poisonous Substances Packing Group Packing Group II Packing Group III Division 2 Infectious Substances	0 100 kg or 100 L 1000 kg or 1000 L 0
7	Radioactive Materials	(See Subsection 3.1.1.)
8	Corrosive Substances Packing Group I Packing Group II Packing Group III	500 kg or 500 L 1 000 kg or 1 000 L 2 000 kg or 2 000 L
9	Miscellaneous	See Article 3.1.2.1. (8)

Notes to Table 3.2.7.1.:

- (1) The numbers refer to the class and division of *dangerous goods*, as defined in the “Transportation of Dangerous Goods Regulations.”
- (2) See Article 3.2.8.2
- (3) See A-3.2.8.2.(2) in Appendix A.
- (4) See Part 4.
- (5) 50 kg for nitrocellulose-based products, and 10kg for “strike anywhere” matches.
- (6) See Article 3.2.7.18.
- (7) The “Transportation of Dangerous Goods Act” and its Regulations defines “packing group” as “ a group in which *dangerous goods* are included based on the inherent danger of the *dangerous goods*.” Packing Group I products are more hazardous than Packing Group III products.
- (8) Small quantity exemptions may be determined by other authorities such as the “Transportation of Dangerous Goods Act,” the “Workplace Hazardous Materials Information System” (WHMIS), and environmental protection legislation.

Appendix E

CALCULATIONS FOR BULK STORAGE TANKS

Dike Construction - Single Tank

Tank Data

1. Single Tank, capacity $C_t = \underline{\hspace{2cm}}$ litres
2. Tank Diameter $D_t = \underline{\hspace{2cm}}$ metres

Calculations

3. Available surface area within the containment wall
 $(A_e = \text{effective containment area})$
 $A_e = \underline{\hspace{2cm}}$ metres x $\underline{\hspace{2cm}}$ metres = $\underline{\hspace{2cm}}$ metres² inside the walled area

4. Required containment volume (V_c) can be calculated as follows:
 $V_c = C_t \times 1.10 \times \underline{\hspace{2cm}}$ (cubic metres)
1000

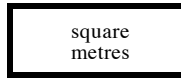
5. Containment wall height, minimum required: (H_w)
 $H_w = V_c / A_e$
 $H_w = \underline{\hspace{2cm}}$ metres / $\underline{\hspace{2cm}}$ metres² = $\underline{\hspace{2cm}}$ metres = minimum wall height

Note: This formula is not to be used for determining multi-tank containment wall heights.

Dike Construction-Multiple Tank

Tank data: Tank #1 Capacity $C_1 = \underline{\hspace{2cm}}$ litres (largest volume) Diameter $D_1 = \underline{\hspace{2cm}}$ metres
 Tank #2 Capacity $C_2 = \underline{\hspace{2cm}}$ litres Diameter $D_2 = \underline{\hspace{2cm}}$ metres
 Tank #3 Capacity $C_3 = \underline{\hspace{2cm}}$ litres Diameter $D_3 = \underline{\hspace{2cm}}$ metres

Sketch of containment area with tanks shown (sketch available area to place tanks)



Calculate available surface area within the containment wall area ($A_c = \text{containment area}$):

$$A_c = \underline{\hspace{2cm}} \text{ metres} \times \underline{\hspace{2cm}} \text{ metres} = \underline{\hspace{2cm}} \text{ metres}^2 \text{ inside wall area}$$

Calculate volume of largest tank plus 10% ($L_g = \text{litres}$, $V_t = \text{volume}$):

$$L_g = C_1 \underline{\hspace{2cm}} \text{ litres} \times 1.10 = \underline{\hspace{2cm}} \text{ litres} \quad V_t = L_g / 1000 = \underline{\hspace{2cm}} \text{ metres}^3$$

Calculate areas covered by tanks (A_t)

$$\begin{aligned} \text{Tank \#1} &= \text{area } A_1 = (D_1 / 2) \times 3.14 = \underline{\hspace{2cm}} \text{ metres}^2 \\ \text{Tank \#2} &= \text{area } A_2 = (D_2 / 2) \times 3.14 = \underline{\hspace{2cm}} \text{ metres}^2 \\ \text{Tank \#3} &= \text{area } A_3 = (D_3 / 2) \times 3.14 = \underline{\hspace{2cm}} \text{ metres}^2 \\ \text{Minus (-) Smallest diameter tank} &= \underline{\hspace{2cm}} \text{ metres}^2 \\ \text{Total area of tanks } A_t \text{ less smallest diameter tank} &= \underline{\hspace{2cm}} \text{ metres}^2 \end{aligned}$$

Effective containment area: ($A_e = \text{effective containment area}$)

$$A_e = A_c - A_t = \underline{\hspace{2cm}} \text{ metres}^2$$

Containment wall height required ($H_w = \text{wall height}$)

$$H_w = V_t / A_e \quad H_w = \underline{\hspace{2cm}} \text{ metres}^3 / \underline{\hspace{2cm}} \text{ metres}^2 = \underline{\hspace{2cm}} \text{ metres} = \text{minimum wall height}$$

Note: When calculating the areas covered by tanks A_t , instead of calculating the areas of all the tanks, calculate the areas of all the tanks minus (-) the smallest diameter tank to arrive at A_t . This allows for the fact that, under a rupture condition, the volume of the ruptured tank itself below the top of the dike is still usable volume for containment.

Warehousing Standards Bulletins – Appendix F

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1	Who Must Meet the AWSA Warehousing Standards	Re-issued January 2006	70
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4	Exterior Walls	January 2002	73
5	Withdrawn		
6	Fire Control Tactics	January 2002	74
7	Building, Electrical & Equipment Classification for the Storage of Agrichemicals	January 2002	76
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9	Siting of Warehouse	Re-issued January 2006	80
10	Movable Pyloaders 1000L Containers	July 1996	81
11	Audit Protocols A2	Re-issued January 2006	82
12	Bulk Installations, Liquid and Dry	July 1996	83
13A	Air Changes per hour	July 1996	88
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14	Storage Location (inside or outside) for Containers	January 2002	90
15	Ventilation Options for a Partitioned Storage Area	October 1994	91
16	Insurance Confirmation of Coverage Form	Re-issued January 2006	93
17	Withdrawn		
18	Policy Statement on Shipment and Transportation of Agrichemicals from a Certified Warehouse	Re-issued January 2006	95
19	Multiple Warehouses on a Single Site for Phase III Certification, Rented Space & Renovations	July 1995	96
20	Withdrawn		
21	Definition and Fire Rating of Interior Fire Compartment Separation Walls	October 1998	97
22	Fire Detention Systems	November 1997	98
23	Re-Audit Cycle for Multiple Warehouses on the Same Site	May 1998	100
24	Lapses in Certification Policy	Re-issued January 2006	101

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25	Flammable and Combustible Liquid Storage and Ventilation	January 2002	102
26	Storage of TDG Class 2.1 Flammable Gas	January 2002	103
27	Warehouse Change of Ownership Policy	September 1998	104
28	Withdrawn		
29	Shipments of Agrichemicals to Custom Applicators/Aerial Applicators having no Certified Warehousing Facilities	January 2002	105
30	Provincial Requirements for Retail Vendor Certification	January 2006	106
31	Clarification Protocol G9	January 2002	111
32	Correct Storage Patterns for Dangerous Goods	January 2006	112