This checklist is a summary of the requirements and recommendations in the Environment Canada (now Environment and Climate Change Canada) test method. As a summary, it will not contain all supplementary information. If there is a discrepancy between the checklist and the Environment Canada test method, the test method is taken as the definitive source.

Y= Yes, meets requirements; N= No, does not meet requirements; NA= not applicable.
temp = temperature; conc = concentration(s); d = day; SD = standard deviation; # = number (of); DO = dissolved oxygen; CV = coefficient of variation

TEST SPECIFIC CHECKLIST

Survival and Growth in Sediment Using Polychaete Worms (*Polydora cornuta*)

Parameter	Specification	Document Review			Implementation		
		Y	N	NA	Y	N	NA
Sample Collection and Handling: Field-Collected sediment							
Sample Collection	RM/29 consulted for guidance with respect to sampling design, sampling procedures, and subsample compositing	☐	☐	☐	☐	☐	☐
	Sediment collected via benthic grab or core from depths that represent the layer(s) of concern	☐	☐	☐	☐	☐	☐
	Care taken to minimize the loss of fines	☐	☐	☐	☐	☐	☐
Containers	Made of nontoxic material **(Must)**; new containers or thoroughly cleaned used containers **(Must)**, rinsed before use with test water	☐	☐	☐	☐	☐	☐
	Filled to exclude air	☐	☐	☐	☐	☐	☐
	Sealed and labeled/coded **(Must)**	☐	☐	☐	☐	☐	☐
Labeling/coding	Include at least sample type, source, precise location, replicate number, date and time of collection **(Must)**; name and signature of sample collectors	☐	☐	☐	☐	☐	☐
Holding Time	Test to be initiated no later than 6 weeks after sampling **(Must)**	☐	☐	☐	☐	☐	☐
	Recommend test initiation within 2 weeks after sampling, preferably within 1 week	☐	☐	☐	☐	☐	☐
Holding Conditions	Upon collection, if sample > 7 °C, cool to 1 - 7°C with regular ice or frozen gel packs	☐	☐	☐	☐	☐	☐
	Samples are kept cool (1 - 7°C) in transit using regular ice or frozen gel packs	☐	☐	☐	☐	☐	☐
	Samples to be kept from freezing or drying during transport and storage **(Must)**	☐	☐	☐	☐	☐	☐
	Date of receipt at laboratory recorded **(Must)**; temperature upon receipt recorded	☐	☐	☐	☐	☐	☐
	Sample held in darkness in airtight containers at 4 ± 2°C **(Must)**; headspace purged with nitrogen before capping	☐	☐	☐	☐	☐	☐

Characterization	For whole sediment – particle size distribution, % water content, total organic carbon content **(Must)**	☐	☐	☐	☐	☐	☐
	For pore water – salinity, pH, and ammonia (total and un-ionized) **(Must)**	☐	☐	☐	☐	☐	☐
Sample Preparation : Field-Collected Test Sediment							
Sieving	Sample is not sieved with water **(Must)**; indigenous organisms or large debris are moved with forceps, gloved hand or coarse (e.g., 5 mm) sieve	☐	☐	☐	☐	☐	☐
Homogenization	Each sample of test sediment mixed thoroughly	☐	☐	☐	☐	☐	☐
	Moisture separated during transport and storage remixed into sample **(Must)**	☐	☐	☐	☐	☐	☐
	Mixing conditions (i.e. duration and temp) are as similar as possible **(Must)**	☐	☐	☐	☐	☐	☐
	Subsamples for testing and physicochemical analysis taken immediately after mixing **(Must)**	☐	☐	☐	☐	☐	☐
Salinity Adjustment	None to interstitial water of test sediments; adjustments are to be made to the overlaying water if necessary	☐	☐	☐	☐	☐	☐
Sample Preparation: Spiked Sediment							
Chemical	Containers sealed and coded or labeled upon receipt **(Must)**	☐	☐	☐	☐	☐	☐
	Chemical to be tested at least reagent grade (if applicable)	☐	☐	☐	☐	☐	☐
Mixing	Mixing conditions standardized for each treatment included in a test **(Must)**	☐	☐	☐	☐	☐	☐
	Mixtures of spiked sediment aged for 4 weeks before testing in sealed containers (no headspace) at 4 ± 2°C in the dark	☐	☐	☐	☐	☐	☐
Test Conditions							
Test Facility and Apparatus	Facility is properly ventilated and free from physical disturbances, isolated from culture area and sample preparation/storage area	☐	☐	☐	☐	☐	☐
	All construction materials that might contact the organisms, water, or test chambers made of nontoxic materials **(Must)** and materials that minimize sorption	☐	☐	☐	☐	☐	☐
	Instruments available to measure basic water quality variables (temp DO, pH, salinity, conductivity) for test water and pore water **(Must)** and lab prepared for other analyses (e.g. ammonia, hydrogen sulphide, residual chlorine)	☐	☐	☐	☐	☐	☐
	All test chambers, equipment, and supplies that might contact sediment or test water cleaned and rinsed with test water, deionized water, or distilled water. **(Must)**; Control/dilution water rinse immediately before use in test	☐	☐	☐	☐	☐	☐
Test Type	Static with overlying water renewed on Day 7 **(Must)**	☐	☐	☐	☐	☐	☐
Test Duration	14 days **(Must)**	☐	☐	☐	☐	☐	☐
Test Temp	Daily mean = 23 ± 1°C **(Must)**; instantaneous = 23 ± 3°C **(Must)**	☐	☐	☐	☐	☐	☐

Lighting	Full spectrum (fluorescent or equivalent) **(Must)**; 500-1000 lux adjacent to the surface of overlaying water	☐	☐	☐	☐	☐	☐
	Photoperiod 16 h light, 8 h dark **(Must)**	☐	☐	☐	☐	☐	☐
Salinity	Porewater salinity of each test sediment measured **(Must)**; salinity between 10-35‰ **(Must)**	☐	☐	☐	☐	☐	☐
	Salinity of overlying water within 10-35‰ **(Must)**	☐	☐	☐	☐	☐	☐
	Salinity of overlying water within 5‰ of porewater at test start **(Must)**	☐	☐	☐	☐	☐	☐
DO	90-100% air saturation	☐	☐	☐	☐	☐	☐
Aeration	Aeration does not disturb the surface of the sediment **(Must)**; overnight before test start and continuously during the test; compressed air free of oil and fumes, oil-free air pumps; 2-3 bubbles/sec; aeration halted temporarily after organism addition to allow the worms to settle	☐	☐	☐	☐	☐	☐
Test Chambers	300 mL high-form glass beaker with an inner diameter of ~7 cm with watchglass or clear plastic covers	☐	☐	☐	☐	☐	☐
	Treatments positioned randomly	☐	☐	☐	☐	☐	☐
	Each vessel clearly labelled or positions coded so that conc. and replicates can be identified **(Must)**	☐	☐	☐	☐	☐	☐
	Date and time of test initiation is on labels or data sheets **(Must)**	☐	☐	☐	☐	☐	☐
Volume Wet Sediment	50 mL (~2 cm in thickness) **(Must)**	☐	☐	☐	☐	☐	☐
Volume Test Water	200 mL **(Must)**	☐	☐	☐	☐	☐	☐
Animal Handling	Known-age cultures sieved quickly and gently, worms remaining on sieve transferred rapidly to sorting tray containing test water; worms remaining in mucoid tubes probed to observe vitality; all worms examined under dissecting microscope with atypical (size, colour, injury, etc) being discarded	☐	☐	☐	☐	☐	☐
	45 worms selected randomly during test setup and divided into 3 groups before being dried to determine initial mean dry weight of the group ± SD	☐	☐	☐	☐	☐	☐
Renewal of Test Solution	~80% of overlaying water on Day 7 only **(Must)**; water from the same source as test setup **(Must)**; water added to each vessel on Day 7 from the same batch **(Must)**; care taken during siphoning and addition of renewal water not to disturb sediment surface (e.g., through use of disc)	☐	☐	☐	☐	☐	☐

Dilution/ Control Water	Uncontaminated natural seawater or reconstituted (artificial) seawater; routinely analyzed including salinity, pH, suspended solids, total organic carbon, pesticides, ammonia, nitrite and metals	☐	☐	☐	☐	☐	☐
	Artificial seawater prepared by the direct addition of dry salts aerated vigorously for a minimum of 24 h before use **(Must)**	☐	☐	☐	☐	☐	☐
	HSB prepared by freezing (-10°C to -20°C for ≥6 h) or evaporation (≤40°C while aerating); salinity 90 ± 1 g/kg	☐	☐	☐	☐	☐	☐
	HSB must be filtered (≤1 µm) and aerated vigorously for at least 24 h before use **(Must)**	☐	☐	☐	☐	☐	☐
	Water previously demonstrated to allow acceptable survival and growth of *P. cornuta* in 14-d tests w/ negative control sediment, if possible **(Must)**	☐	☐	☐	☐	☐	☐
	Water filtered (≤5 µm) no more than 24 h before use; additional filtration (≤0.45 µm) and/or UV sterilization if contamination with pathogens is suspected	☐	☐	☐	☐	☐	☐
	Adjusted to test temperature before use **(Must)**	☐	☐	☐	☐	☐	☐
	Same water used for preparing control and all test conc. **(Must)**	☐	☐	☐	☐	☐	☐
	Water added on any day to any test chamber from the same batch **(Must)**	☐	☐	☐	☐	☐	☐
	Salinity of batches does not differ by more than 2 ‰	☐	☐	☐	☐	☐	☐
	pH and salinity measured and stable	☐	☐	☐	☐	☐	☐
	Artificial and natural seawater should be held in clean and covered containers a 4 ± 2°C and used within 14 days	☐	☐	☐	☐	☐	☐
Initial tests	≥5 control performance tests and ≥5 reference toxicity tests with negative control sediment intended for routine use performed before undertaking toxicity tests	☐	☐	☐	☐	☐	☐
	Conditions and procedures for initial control performance are identical to those described for the definitive test	☐	☐	☐	☐	☐	☐
	Conditions and procedures for initial reference toxicity tests are identical to those described for routine reference toxicant tests	☐	☐	☐	☐	☐	☐
	Data from initial reference toxicity tests are compared by calculating and appraising the magnitude of the coefficient of variation (CV) of the derived LC50s	☐	☐	☐	☐	☐	☐
Negative Control Sediment	Clean sediment used to assess the performance of the test organisms, the acceptability of the test, and serve as a basis for interpreting data derived from the test sediments; either natural or artificial sediment can be used	☐	☐	☐	☐	☐	☐
	Negative control sediment is included as a treatment in every toxicity test **(Must)**	☐	☐	☐	☐	☐	☐
	During collection, temperature and pore water salinity measured	☐	☐	☐	☐	☐	☐

Negative Control Sediment (cont)	Sediment composited and analyzed for % water content, particle size distribution, organic content, and concentration of any contaminants	☐	☐	☐	☐	☐	☐
	Sediment frozen and washed through a fine-mesh (e.g. 0.5 mm) sieve to remove indigenous macro-organisms; sediment allowed to settle overnight, overlying water decanted, and sediment re-mixed; adjustment of porewater salinity permitted	☐	☐	☐	☐	☐	☐
	Sediment placed in containers sealed to exclude air and stored at -20°C and thawed as required; washed three times after thawing to remove soluble toxic constituents	☐	☐	☐	☐	☐	☐
Positive Control Sediment	Included in each series of 14-d tests; may be a negative control sediment spiked with a reference toxicant or with one or more toxic chemicals of concern; or a highly contaminated sample of field-collected sediment; or a standard contaminated sediment	☐	☐	☐	☐	☐	☐
Reference Sediment	One or more samples are included for tests with field-collected sediment, ideally taken from site(s) presumed to be clean but near sites of test soil collection	☐	☐	☐	☐	☐	☐
	Characteristics such as: percent organic matter, pH, and particle size distribution represent the test sediment as much as possible	☐	☐	☐	☐	☐	☐
# Replicates/Conc.	≥5 for each treatment or field-sample and control(s) **(Must)**	☐	☐	☐	☐	☐	☐
# Animals/Vessel	5 worms per test chamber; randomly transferred	☐	☐	☐	☐	☐	☐
Feeding Regime	Animals fed three times per week (non-consecutive days) **(Must)**; equal ration added to each test chamber on each feeding occasion **(Must)**; ration sufficient to enable growth and survival but not excessive (~10 mg dry equivalent per test chamber) **(Must)**	☐	☐	☐	☐	☐	☐
	Food type is 1:1 mixtures of ground tropical fishfood flakes and ground *Enteromorpha sp.*; prepared and stored on a dry weight basis; a slurry is created to deliver to test vessels	☐	☐	☐	☐	☐	☐
Chemicals testing: Solvent	Preferred solvent for preparing test solutions is test water; solvent other than water avoided unless absolutely necessary; surfactants not used	☐	☐	☐	☐	☐	☐
	If organic solvent used – a solvent control (using solvent from the same batch used to prepare the stock solution) included **(Must)**	☐	☐	☐	☐	☐	☐
	For tests that included solvent controls – solvent control results statistically compared to negative control data **(Must)**; if different than only solvent controls used for comparison to test data; if same both controls should be combined before use in calculating test results or assessing test validity	☐	☐	☐	☐	☐	☐
Chemicals Testing: # Conc	For a multi-concentration test, ≥5 plus a control **(Must)**; 6-10 plus one or more control(s) recommended	☐	☐	☐	☐	☐	☐

Test Takedown	Worms pipetted from surface of each test chamber to dish for observation; chambers then sieved (shaken in test water – not sprayed) to collect remaining worms; individuals showing no signs of life or potentially remaining in tubes prodded before being counted as dead and discarded; surviving worms dried and weighed; missing individuals counted as dead	☐	☐	☐	☐	☐	☐
Endpoints	Mean (± SD) % of organisms that survived the 14-d exposure **(Must)**	☐	☐	☐	☐	☐	☐
	Mean (± SD) dry weight per surviving worm, calculated from the total weight of the group of survivors **(Must)**	☐	☐	☐	☐	☐	☐
Additional Endpoints (Chemicals Testing)	14 d LC50 with 95% confidence limits **(Must)**; 14 d ICp with 95% confidence limits **(Must);** hypothesis testing (e.g., no-observed-effect-concentration) optional	☐	☐	☐	☐	☐	☐
Observations and Measurements							
Temperature	Measured in one representative test vessel per treatment at beginning of test and thereafter ≥3 times per week on non-consecutive days **(Must);** daily recommended	☐	☐	☐	☐	☐	☐
DO, Salinity, pH, Ammonia	Measured in one representative test vessel per treatment at beginning of test, just before water renewal (Day 7), and at the end of the test **(Must)**; any probe used rinsed with distilled or deionized water between samples **(Must)**	☐	☐	☐	☐	☐	☐
	More frequent (e.g., 3 x week or daily) DO measurements for sediments with high oxygen demand; DO measured anytime airflow is observed to have stopped **(Must)**; any observations of DO dropping below 60% saturation included in test-specific report **(Must)**	☐	☐	☐	☐	☐	☐
≥3 times per week	Detailed records of food type and ration from each feeding occasion	☐	☐	☐	☐	☐	☐
	Appearance of the sediment and overlaying water in each test chamber	☐	☐	☐	☐	☐	☐
	Any abnormal events (emerged worms, airflow interrupted, etc.)	☐	☐	☐	☐	☐	☐
Chemical Concentration (Chemical Testing)	Concentration of chemical in stock solution(s), overlying water, sediment, pore water and test solution (if applicable) is analytically measured	☐	☐	☐	☐	☐	☐
Test Organisms							
Species	Lab-cultured *Polydora cornuta* **(Must)**	☐	☐	☐	☐	☐	☐
	Species identification confirmed and documented	☐	☐	☐	☐	☐	☐
Source	Existing government, private, or commercial culture	☐	☐	☐	☐	☐	☐
	All worms used in a test derived from the same population **(Must)**	☐	☐	☐	☐	☐	☐
Age	Juveniles that are 3-4 weeks post-release	☐	☐	☐	☐	☐	☐
	Mean dry weight of the juveniles used to start the test range within 0.06-0.50 mg per individual **(Must)**	☐	☐	☐	☐	☐	☐

Health Criteria	Cultures checked at least 2-3 times per week - emerged adult worms prodded and discarded if they appear to be dead or unhealthy	☐	☐	☐	☐	☐	☐
	Culture container discarded if ≥20% of adults dead or inactive during any period of observation **(Must)**	☐	☐	☐	☐	☐	☐
Culture/ Holding Conditions							
Facility & Apparatus	Controlled temperature laboratory facility with ability to maintain temperature within the required limits **(Must)**	☐	☐	☐	☐	☐	☐
	Culturing area isolated from any testing, sample storage, or sample preparation areas	☐	☐	☐	☐	☐	☐
	All equipment, containers, and accessories that might contact the organisms or water within the culturing facility made of nontoxic materials **(Must)**; copper, zinc, brass galvanized metal, lead and natural rubber are not used **(Must)**	☐	☐	☐	☐	☐	☐
Temp	23 ± 1°C as daily average **(Must)**, 23 ± 3°C as instantaneous **(Must)**	☐	☐	☐	☐	☐	☐
DO and aeration	Water aerated vigorously just before use; DO 80-100%	☐	☐	☐	☐	☐	☐
	Culture chambers aerated 2-3 bubbles per second for each L of water; oil-free compressed air delivered through disposable glass pipette, disposable plastic pipette, or aquarium-supply airstone; DO 80-100% saturation	☐	☐	☐	☐	☐	☐
Salinity	15- 35 ‰ **(Must)**; recommended 26-34 ‰	☐	☐	☐	☐	☐	☐
Lighting	Overhead broad-spectrum; photoperiod 16-h light: 8-h dark; 500 – 1000 lux near the water surface	☐	☐	☐	☐	☐	☐
Feeding	Diet varies by lifestage: *Dunaliella tertiolecta* for planktonic larvae stage, *D. tertiolecta* with increasing quantities of *Enteromorpha sp.*and tropical fish food flakes for settled juveniles, 1:1 mixture of *Enteromorpha sp.* and TetraMarin fish food flakes for adults	☐	☐	☐	☐	☐	☐
	Feeding frequency is 2-3 x per week	☐	☐	☐	☐	☐	☐
Culture Water	Reconstituted or clean natural seawater	☐	☐	☐	☐	☐	☐
	Temperature, salinity, DO, and pH measured at least weekly as well as during the 24h period preceding a test.	☐	☐	☐	☐	☐	☐
	Water quality characteristics (e.g. nitrite, ammonia, hydrogen sulphide, suspended solids, total organic carbon, total dissolved gases, metals, pesticides) analyzed routinely	☐	☐	☐	☐	☐	☐
Culture Substrate	Field-collected sediment sieved (0.5 mm) then washed with culture water before being frozen; thawed sediment washed three times and used quickly	☐	☐	☐	☐	☐	☐
	Laboratory formulated negative control sediment can be used as a culture substrate instead of field-collected sediment	☐	☐	☐	☐	☐	☐

Monitoring	Cultures observed frequently (> 2-3 times per week); documentation of: # of larvae used to begin culture, survival and weight of larvae as they develop, # of surviving adults, young production, dates of culture renewals, feeding regime, etc.	☐	☐	☐	☐	☐	☐
Water Renewal	Renewed routinely (80-100% weekly water exchange) or continuous recirculation through commercial filter	☐	☐	☐	☐	☐	☐
Acclimation	Gradual acclimation for temperature (≤ 2°C /d) and salinity (≤ 5‰ /d) differences upon arrival	☐	☐	☐	☐	☐	☐
QA/QC							
Test Validity Criteria	Test is invalid if the mean percent survival rate in negative control sediment is <90% **(Must)**	☐	☐	☐	☐	☐	☐
Reference Toxicant Test	96-h water-only reference toxicant test using cadmium chloride	☐	☐	☐	☐	☐	☐
	Stock solution made day of use	☐	☐	☐	☐	☐	☐
	Concentrations of stock solutions and low, medium and high test concentrations are measured chemically	☐	☐	☐	☐	☐	☐
	If stored, aliquots are acidified and held in the dark at 4 ± 2 °C **(Must)**	☐	☐	☐	☐	☐	☐
	Performed monthly or concurrently with definitive test **(Must)**; performed on new cultures before their use in testing	☐	☐	☐	☐	☐	☐
	Same test chambers as sediment test; 200 mL of test water per chamber	☐	☐	☐	☐	☐	☐
	10 individuals per test chamber; aged 3-4 weeks at test start	☐	☐	☐	☐	☐	☐
	≥5 test concentrations plus a control; ≥1 replicate per treatment	☐	☐	☐	☐	☐	☐
	Control/dilution water is culture water; salinity 28 ± 2 ‰	☐	☐	☐	☐	☐	☐
	No aeration or feeding	☐	☐	☐	☐	☐	☐
	Temp and lighting conditions same as sediment test	☐	☐	☐	☐	☐	☐
	Observations: daily for dead individuals; test start and end for temp, DO pH, and salinity	☐	☐	☐	☐	☐	☐
	Endpoint is mean % survival; 96-h LC50	☐	☐	☐	☐	☐	☐
	Test is invalid if the mean survival rate in control water is <90% **(Must)**	☐	☐	☐	☐	☐	☐
Warning Chart	Prepared using 96-h LC50 results for each reference toxicant and continually updated **(Must)**	☐	☐	☐	☐	☐	☐
	LC50 is acceptable if within warning limits (± 2 SD on log scale)	☐	☐	☐	☐	☐	☐
	If LC50 outside warning limits (mean ±2 SD), a thorough check of all procedures and culturing/test conditions is carried out	☐	☐	☐	☐	☐	☐
	Co-efficient of variation should be <30% and ideally is <20%	☐	☐	☐	☐	☐	☐

Test Report							
Sample Data	Brief description of sample type as provided to the lab **(Must)**						
	Information on labelling or coding, for each sample **(Must)**						
	Date of sample collection; date and time sample received at lab **(Must)**						
Test Organism	Species and source of brood stock and test organisms **(Must)**						
	Range of age at start of test **(Must)**						
	Dry weight (mean ± SD) at start of test **(Must)**						
	Any unusual appearance, behaviour, or treatment of the organisms before their use in the test **(Must)**						
Test Facilities	Name and address of test laboratory **(Must)**						
	Name of person(s) performing the test **(Must)**						
Test Water	Type and source and salinity of test water **(Must)**						
	Measured characteristics of test water before and/or at test start **(Must)**						
Test Method	Citation of biological test method used **(Must)**						
	Design and description if specialized procedure used or modification of the standard Biological Test Method **(Must)**						
	Brief description of frequency and type of all observations and all measurements made during test **(Must)**						
	Program(s) and methods used for calculating statistical endpoints **(Must)**						
Test Conditions	Design and description if any deviation from or exclusion of any of the procedures and conditions specified in test method document **(Must)**						
	# of discrete samples per treatment, # of replicates for each treatment, # and description of treatments in each test including controls **(Must)**						
	Depth and volume of sediment and overlaying water in each test chamber **(Must)**						
	# of organisms per test chamber and treatment **(Must)**						
	Feeding regime and ration **(Must)**						
	Dates when test was started and ended **(Must)**						
	For each sample, all measurements of sediment - particle size, % water content, and total organic carbon as well as porewater - salinity, pH, and ammonia **(Must)**						
	For at least one test chamber representing each treatment, all measurements of: temperature, DO, salinity, ammonia, and pH in overlaying water **(Must)**						

Test Results	For each treatment – mean ± SD for % of worms that survived **(Must)**; mean ± SD for dry weight of individual surviving worms **(Must)**; results of any statistical comparisons **(Must)**	☐	☐	☐	☐	☐	☐
	Co-efficient of variation for mean % survival and mean individual dry weight of replicate control groups **(Must)**	☐	☐	☐	☐	☐	☐
	Any LC50 (including 95% confidence limits and slope if determined) **(Must)**	☐	☐	☐	☐	☐	☐
	Any ICp (including 95% confidence limits) determined for the data on dry weight **(Must);** details regarding any transformation of data that was required and indication of quantitative statistic used **(Must)**	☐	☐	☐	☐	☐	☐
	For a multi-concentration test with chemical spiked sediment, indication if results are based on nominal or measured concentrations as well as all values of measured concentrations **(Must)**	☐	☐	☐	☐	☐	☐
	Results of any 96-h LC50 (including 95% confidence limits) performed with a reference toxicant in conjunction with a definitive sediment test with the geometric mean ± 2 SD from previous reference toxicant tests **(Must)**	☐	☐	☐	☐	☐	☐
	Anything unusual about the test, any problems encountered, any remedial measures taken **(Must)**	☐	☐	☐	☐	☐	☐
Information Kept On-File	Do lab SOPs indicate that the information on Section 7.2 of the EPS 1/RM/41 method must be kept on file for a minimum of 5 years? **(Must)** For details of this information, see EPS 1/RM/41, Section 7.2	☐	☐	☐	☐	☐	☐

Notes: