

LPH SOIL REMEDIATION
FORMER LANDFILL
AND ASPHALT PLANT
OTTER CREEK
HAPPY VALLEY-GOOSE BAY
NEWFOUNDLAND AND LABRADOR
PROJECT NO. R.082578.001

1 GENERAL

1.01 SCOPE

- .1 The work covered under this project consists of the furnishing of all plant, labour, equipment and material for the complete removal and disposal of Liquid Petroleum Hydrocarbon (LPH) and LPH impacted soil via open excavation and offsite treatment at licensed Petroleum Hydrocarbon (PHC) soil and water treatment facilities.

The remediation work is situated on a site currently owned by Transport Canada (TC), located at the west side of Otter Creek in the Town of Happy Valley-Goose Bay, Newfoundland and Labrador. Previous environmental investigations carried out at the TC Site have identified a LPH plume along the western site boundary, east of the provincial Northwest River Highway (NRR) (Figure 1 and 2, Appendix B). The LPH plume is estimated to cover an area of approximately 860 square metres. Measureable LPH thickness within monitoring wells at the Site, where present, range from 10 mm to 91 mm. It is estimated that there is 1,290 cubic metres (2,838 tonnes) of LPH impacted soil that requires remediation (i.e. excavation from the ground surface to 0.30 m below the groundwater table).

1.02 DESCRIPTION OF WORK

- .1 In general, work under this contract consists of, but will not necessarily be limited to, the following:
 - .1 Mobilization and Demobilization of all equipment necessary for the complete remediation of the areas specified under this contract.
 - .2 Site Specific Safety Plan and Environmental Protection Plan, must be submitted prior to mobilization on site.
 - .3 Contractor to construct temporary access road and laydown areas during mobilization on site. All construction materials supplied for laydown area and temporary access road must be sound and clean.
 - .4 Contractor to develop, supply materials and install an impermeable barrier wall along the western boundary of the remediation excavation to prevent seepage of LPH from the upgradient DND and Provincial NRR properties (Figure 2, Appendix B). Contractor to install barrier wall during backfilling of the remediation excavation on the Site. For bidding purposes, Contractor to assume the barrier wall will be constructed using impermeable materials (i.e. geosynthetic clay liner, polyvinyl chloride, polypropylene); measure 30 m in length, 1.90 m in height and installed to a depth of 1.90 m below ground surface. Contractor will not be responsible for the removal of the barrier wall following the remediation work on Site.
 - .5 The Contractor to excavate 2,838 tonnes (1,290 cubic metres) of LPH and LPH impacted soils from the area shown (Figure 2). The excavation may be required to extend beyond the subject area based on actual conditions encountered during the Work. The Departmental Representative will indicate

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OTTER CREEK
HAPPY VALLEY-GOOSE BAY
NEWFOUNDLAND AND LABRADOR
PROJECT NO. R.082578.001

- the areas and extents of the remedial excavation requirements as it progresses, based on soil conditions encountered. Costs associated with excavating beyond the area shown, will be determined under a contemplated change notice.
- .6 The Contractor to recover, load, transport and dispose of all excavated material at an approved Registered Disposal Facility licensed to accept the type of contaminated material specified under this contract.
- .7 The Contractor to remove all LPH and Oily Water hydrocarbon product from the groundwater table within the open remediation excavation for off-site disposal at a licensed petroleum hydrocarbon water treatment facility by skimming the LPH from the top of the groundwater table. For bidding purposes, assume the volume of free phase LPH/Oily water product to be removed and treated is 20,000 litres.
- .1 When water accumulates in the excavation, and the excavation requires dewatering, the Contractor shall skim the impacted waters and properly dispose of the LPH from top of the groundwater table.
- .2 The Contractor shall transport and properly dispose of impacted water at an offsite facility licensed to accept the water.
- .8 Given that there will be LPH impacts remaining on the upgradient property, the Contractor will be required to control, contain and dispose of any LPH seepage from the western boundary of the remediation work, the 7 day inspection period, backfilling of the excavation and installation of the barrier wall. LPH seepage from the western boundary of the remediation excavation will not void the 7 day inspection period.
- .9 The Contractor, following completion of the excavation and upon authorization from the Departmental Representative, shall backfill the excavation to original grade with imported clean fill as specified.
- .10 The Contractor is not required to re-vegetate the remediated areas as part of this Work.
- .11 Remedial excavations must be kept open for a minimum of 7 days after the Contractor provides notification to the Departmental Representative that all measureable LPH has been removed to allow periodic inspection of excavations in order to determine the presence/absence of LPH seepage into excavations from sidewalls and bottom.
- .12 If within or after the 7-day inspection period, the Departmental Representative believes that further delineation of LPH impacts is required, there may be a need to excavate test pits around the specified LPH excavation perimeter. Costs to provide test pits is considered outside the original scope of work and is considered additional work to be addressed accordingly by change order. If no LPH is visible within the remediation after 7 days, the Contractor will backfill remediation excavation with imported clean fill material.
- .13 Costs associated with the separation of debris, sorting and transportation, environmental protection, cleaning, loading and unloading, haulage, and all else necessary to complete the Work are included in each payment item under this contract.
- .14 The Contractor is responsible for complete control of erosion and sediment.
- .15 All applicable permits, licenses, certificates as well as permission, approval or letters of authority must be submitted prior to commencement of Work.
- .16 Waste manifest must be submitted to the Departmental Representative before each Progress Payment.

**LPH SOIL REMEDIATION
FORMER LANDFILL
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OTTER CREEK
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NEWFOUNDLAND AND LABRADOR
PROJECT NO. R.082578.001**

- .2 Only items in the Unit Price Table will be measured for payment. All other work necessary to complete the Contract will be considered incidental to the project and included in the Lump Sum portion of the Work on the Bid and Acceptance Form for the Contract.
- .3 Tree removal at the Site was completed in October 2018, under a separate contract and therefore, no cost for tree removal is to be included as part of this contract.
- .4 The Contractor to include costs for grubbing and disposal of grubbing materials. No grubbing has been completed at the Site to date. Include all costs for grubbing and disposal of grubbing material in Lump Sum portion of the Work on the Bid and Acceptance Form.
- .5 The Contractor must reinstate remediated wetland area (approx. 100 square metres) during the backfilling of the remediation excavation. In addition, organic material (i.e. peat, moss, etc.) must be added to the top 0.3 m of the soil horizon at this area to promote re-establishment of native vegetation (Figure 2 - Appendix B).

1.03 INSPECTIONS OF SITE

- .1 All bidders, before submitting their bid, are recommended to inspect and examine the site and its surroundings and satisfy themselves as to the form and nature of the work and materials necessary for the completion of the works, the means of access to the site, severity, exposure and uncertainty of weather, soil conditions, groundwater elevation fluctuations, any accommodations they may require, and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their bid. No allowance shall be made subsequently in this connection on account of error or negligence to properly observe and determine the conditions that will apply.
- .2 Contractors, bidders or those they invite to site are to review specification Section 01 35 29.06 - Health and Safety Requirements before visiting site. Take all appropriate safety measures for any visit to site, either before or after Acceptance of Bid.
- .3 The Departmental Representative will give no consideration whatsoever to any claim by the Contractor resulting from failure to have made all necessary investigations prior to tendering.
- .4 Obtain prior permission from the Departmental Representative before carrying out such site inspections.

1.04 CODES AND STANDARDS

- .1 Perform work in accordance with the latest edition of the National Building Code of Canada and any other code of provincial or local application including all amendments up to project bid closing date provided. In any case of conflict or discrepancy, the more stringent requirements shall apply.

**LPH SOIL REMEDIATION
FORMER LANDFILL
AND ASPHALT PLANT
OTTER CREEK
HAPPY VALLEY-GOOSE BAY
NEWFOUNDLAND AND LABRADOR
PROJECT NO. R.082578.001**

- .2 Materials and workmanship must meet or exceed requirements of specified standards, codes and referenced documents.

1.05 LAYOUT OF WORK

- .1 Contractor is responsible to survey the Site prior to start of any remediation work and to re-survey the remediation excavation prior to and upon completion of backfilling. The survey data must be submitted to the Departmental Representative for evaluation to confirm that area has been remediated and backfill has been placed to proper grades.
- .2 The Contractor is responsible to mark-out the remediation excavation outlined on Figure 2 (Appendix B). The survey equipment must be a minimum of +/- 1 cm accuracy. Survey data will be provided to the Contractor upon Award of Contract. The remedial areas will be confirmed by the Departmental Representative prior to the start of remediation activities.
- .3 Assume full responsibility for and execute complete layout of work to locations, lines and elevations indicated or as directed by Departmental Representative.
- .4 Provide devices needed to layout and construct work.
- .5 Supply such devices required to facilitate Departmental Representative's inspection of work.
- .6 Supply stakes and other survey markers required for laying out work.
- .7 No separate payment will be made for field engineering work and layout of work. Contractor to include all costs of such work in the Lump Sum portion of the work on the Bid and Acceptance Form.

1.06 WORK SCHEDULE

- .1 Submit within 7 work days of notification of acceptance of bid, a construction schedule showing commencement and completion of all work within the time stated on the Bid and Acceptance Form and the date stated in the bid acceptance letter. The schedule should allow time for analytical results to be received (after being collected from the open excavation).
- .2 Provide sufficient details in schedule to clearly illustrate entire implementation plan, depicting efficient coordination of tasks and resources, to achieve completion of work on time and permit effective monitoring of work progress in relation to established milestones.
- .3 As a minimum, work schedule to be prepared and submitted in the form of Bar (GANTT) Charts, indicating work activities, tasks and other project elements, their anticipated durations and planned dates for achieving key activities and major project milestones provided in sufficient details and supported by narratives to demonstrate a reasonable plan for completion of project within designated time. Generally Bar Charts derived from commercially available computerized project management system are preferred but not mandatory.

**LPH SOIL REMEDIATION
FORMER LANDFILL
AND ASPHALT PLANT
OTTER CREEK
HAPPY VALLEY-GOOSE BAY
NEWFOUNDLAND AND LABRADOR
PROJECT NO. R.082578.001**

- .4 Submit schedule updates on a minimum monthly basis and more often, when requested by Departmental Representative, due to frequent changing project conditions. Provide a narrative explanation of necessary changes and schedule revisions at each update.
- .5 The schedule, including updates, shall be to Departmental Representative's approval. Take necessary measures to complete work within approved time. Do not change schedule without Departmental Representative's approval.
- .6 All work on the project will be completed within the time indicated on the Bid and Acceptance Form.

1.07 ABBREVIATIONS

- .1 Following abbreviations of standard specifications have been used in this specification and on the drawings:
 - CGSB - Canadian Government Specifications Board
 - CSA - Canadian Standards Association
 - NLGA - National Lumber Grades Authority
 - ASTM - American Society for Testing and Materials
- .2 Where these abbreviations and standards are used in this project, latest edition in effect on date of bid call will be considered applicable.

1.08 SITE OPERATIONS

- .1 Arrange for sufficient space adjacent to project site for conduct of construction operations, storage of materials and so on. Exercise care so as not to obstruct or damage public or private property in area. Do not interfere with normal day-to-day operations and adjacent traffic during the remediation process. All arrangements for space and access will be made by Contractor.
 - .1 A laydown area can be constructed during the temporary road access construction process on Transport Canada (TC) land. It must be constructed with geotextile, and sound, clean, compacted rock and must be graded to drain any water away from the Provincial roadway (NRR). Alternative methods can be submitted to the Departmental Representative for review.
 - .2 LPH and LPH impacted soils cannot remain on site once excavated. Once dewatered, it must be loaded continually, and transported directly to the Registered Disposal Facility, during the excavation.
- .2 The Department of National Defence (DND) has initiated remediation of LPH on its property and Provincial property (right-of-way for NRR), to the west and upgradient of the TC Site in September 2018, with an anticipated completion date of September 2019. Given the LPH plume on the DND and Provincial property is located upgradient and connected to the LPH plume on the TC Site, it was initially recommended that remediation of the LPH impacts at the TC Site not be carried out until remedial actions are completed at the upgradient property. However, it is now anticipated that TC will be remediating its property before DND completes full remediation of the upgradient property. For this reason, TC will require its Contractor to construct a temporary impermeable barrier wall along the western boundary of the

**LPH SOIL REMEDIATION
FORMER LANDFILL
AND ASPHALT PLANT
OTTER CREEK
HAPPY VALLEY-GOOSE BAY
NEWFOUNDLAND AND LABRADOR
PROJECT NO. R.082578.001**

remediation excavation to prevent migration of any LPH from the upgradient site onto TC Site, upon successful completion of the remediation Project.

- .3 Design, provision, and installation of an impermeable barrier wall along the western boundary of the remediation excavation to prevent seepage of LPH from the upgradient DND and Provincial properties (refer to Figure 2, Appendix B). The barrier wall will need to be installed during backfilling of the remediation excavation. Assume the barrier wall will be 30 m in length. The Contractor will not be required to remove the barrier wall.
- .4 Provide dust control when required, or as specified by the Departmental Representative.

1.09 PROJECT MEETINGS

- .1 Departmental Representative will arrange the start-up meeting. Contractor will schedule bi-weekly construction meetings and assume responsibility for setting times and recording minutes.
- .2 Project meetings will take place on site of work unless so directed by the Departmental Representative.
- .3 Contractor will assume responsibility for recording minutes of meetings and forwarding copies to all parties present at the meetings.
- .4 Have a responsible member of the firm present at all project meetings.

1.10 PROTECTION

- .1 Store all materials and equipment to be incorporated into work to prevent damage by any means.
- .2 Repair or replace all materials or equipment damaged in transit or storage to the satisfaction of Departmental Representative and at no cost to Canada.

1.11 PROTECTION OF SERVICES

- .1 Before commencing work, establish location and extent of service lines in area of work and notify Departmental Representative of findings. There are overhead wires running through the Work area.
- .2 The Contractor is required to request and obtain underground utility clearances from Transport Canada, Town of Happy Valley-Goose Bay (water and sewer), and all applicable utility companies prior to conducting intrusive work and provide a copy of the signed-off copies to the Departmental Representative.
- .3 Submit schedule to and obtain approval from Departmental Representative for any shut-down or closure of active service or facility. Adhere to approved schedule and provide notice to affected parties.

**LPH SOIL REMEDIATION
FORMER LANDFILL
AND ASPHALT PLANT
OTTER CREEK
HAPPY VALLEY-GOOSE BAY
NEWFOUNDLAND AND LABRADOR
PROJECT NO. R.082578.001**

- .4 Provide temporary services when directed by Departmental Representative to maintain critical facility systems.
- .5 Where unknown services are encountered, immediately advise Departmental Representative and confirm findings in writing.
- .6 The Contractor will immediately restore any existing services disrupted as a result of his operations at no cost to the Departmental Representative.
- .7 There are five (5) monitoring wells present within the proposed remediation excavation. Contractor to decommission these monitoring wells in accordance with Provincial environmental regulations. All additional monitoring wells must be protected from damage during remediation, if possible. If additional wells need to be removed, the Contractor must first obtain permission from the Departmental Representative.

1.12 LOCATION OF EQUIPMENT

- .1 Location of buildings, tanks, equipment, fixtures, shown or specified shall be considered as approximate. Actual locations shall be as required to suit conditions at time of installation and as is reasonable. Obtain approval of Departmental Representative.
- .2 Locate equipment, fixtures and distribution systems to provide minimum interference and maximum usable space and in accordance with manufacturer's recommendations for safety, access and maintenance.
- .3 Submit field drawings to indicate relative position of various services and equipment when required by Departmental Representative.

1.13 DOCUMENTS REQUIRED

- .1 Maintain at Work site, one copy each document as follows:
 - .1 Contract Drawings.
 - .2 Specifications.
 - .3 Addenda.
 - .4 Reviewed Shop Drawings.
 - .5 List of Outstanding Shop Drawings.
 - .6 Change Orders.
 - .7 Other Modifications to Contract.
 - .8 Field Test Reports.
 - .9 Copy of Approved Work Schedule.
 - .10 Health and Safety Plan and Traffic Control Plan.
 - .11 Environmental Protection Plan.
 - .12 Project Execution Plan.
 - .13 Other documents as specified.

1.14 PERMITS, CERTIFICATES AND FEES

**LPH SOIL REMEDIATION
FORMER LANDFILL
AND ASPHALT PLANT
OTTER CREEK
HAPPY VALLEY-GOOSE BAY
NEWFOUNDLAND AND LABRADOR
PROJECT NO. R.082578.001**

- .1 Contractor is responsible to obtain quarry permits, if required.
- .2 Contractor must obtain and pay for all permits and certificates, licenses as required by Municipal, Provincial, Federal and other Authorities.
- .3 Contractor must provide appropriate notifications of project to Municipal and Provincial inspection authorities.
- .4 Submit to Departmental Representative, copy of application submissions and approval documents received for above referenced authorities.
- .5 Submit to Departmental Representative, copy of quarry permit, if applicable, prior to start of quarry operations.
- .6 Contractor will comply with all requirements, recommendations and advice by all regulatory authorities unless otherwise agreed in writing by Departmental Representative. Make requests for such deviations to these requirements sufficiently in advance to related work.

1.15 ACCEPTANCE

- .1 Prior to the issuance of the Certificate of Substantial Performance, in association with Departmental Representative, make a check of all work. Correct all discrepancies before final inspection and acceptance.
- .2 Before Work can be accepted, the Contractor must clean up the site and leave it in a condition which is acceptable to the Departmental Representative.

1.16 WORKS COORDINATION

- .1 Contractor is responsible for coordinating the work of the various trades, where the work of such trades interfaces with each other. Designate one person from own employ having overall responsibility to review Contract Documents and shop drawings, plan and manage such coordination.
- .2 Contractor shall convene meetings between trades whose work interfaces and ensure that they are fully aware of the areas and the extent of where interfacing is required. Provide each trade with the plans and specifications of the interfacing trade, as required, to assist them in planning and carrying out their respective work.
- .3 Work Cooperation:
 - .1 Ensure cooperation between trades in order to facilitate the general progress of the work and avoid situations of spatial interference.
 - .2 Ensure each trade provides all other trades reasonable opportunity for the completion of the work and in such a way as to prevent unnecessary delays.
- .4 The DND has initiated remediation of LPH on its property and Provincial property (right-of-way for NRR), to the west and upgradient of the TC Site in September 2018, with an anticipated completion date of September 2019. Since the LPH plume

**LPH SOIL REMEDIATION
FORMER LANDFILL
AND ASPHALT PLANT
OTTER CREEK
HAPPY VALLEY-GOOSE BAY
NEWFOUNDLAND AND LABRADOR
PROJECT NO. R.082578.001**

on the DND and Provincial property is located upgradient and connected to the LPH plume on the TC Site, it is recommended that remediation of the LPH impacts at the TC Site not be carried out without coordination with adjacent remediation work. The development and construction of a barrier wall will be required during backfilling of the remediation excavation to prevent any LPH migrating to the Site from the impacted remediated area on the upgradient adjacent Provincial property.

- .5 Canada will not be responsible for or held accountable for any extra costs incurred as a result of the failure to carry out coordination work. Disputes between the various trades as a result of their not being informed of the areas and extent of interface work shall be the sole responsibility of the General Contractor and shall be resolved at no extra cost to Canada.

1.17 CONTRACTOR'S USE OF SITE

- .1 The Contractor's use of site is limited to the locations of the construction site.
- .2 Co-ordinate use of premises under direction of Departmental Representative.
- .3 Contractor is responsible for arranging storage of materials on or off site, and any materials stored at the site which interfere with any of the day to day activities at or near the site will be moved promptly at the Contractor's expense, upon request by Departmental Representative.
- .4 Exercise care so as not to obstruct or damage public or private property in the area.
 - .1 Contractor is responsible to limit obstruction to daily traffic.
- .5 Access to all exits must be maintained at all times.
- .6 Maintain the access road to the site and to the existing structures for the duration of the Contract. Access for emergency vehicles is to be kept open at all times.
- .7 Maintain roads through the construction areas free of snow and ice, and maintain the roads free of potholes and soft spots, suppressing dust on the roads.
- .8 Maintain gravel surfaced access roads or surfaces smooth, level, firm and free of potholes though the duration of the Work.
- .9 The Contractor will make every effort to limit the generation of dust and shall spray water on dust generating activities.
- .10 At completion of the Work, restore area to its original condition. Damage to ground and property will be repaired by Contractor. Remove all construction materials, residue, excess items, etc. and leave site in a condition acceptable to Departmental Representative.

1.18 PAYMENT

- .1 Payment for all work under this contract to be in accordance with the Bid and Acceptance Form.

**LPH SOIL REMEDIATION
FORMER LANDFILL
AND ASPHALT PLANT
OTTER CREEK
HAPPY VALLEY-GOOSE BAY
NEWFOUNDLAND AND LABRADOR
PROJECT NO. R.082578.001**

- .2 Dimensional changes as directed by the Departmental Representative to suit existing conditions, but not resulting in additional work or materials, will not be considered as extra to the Contract.
- .3 No separate payment will be made for:
 - .1 Unauthorized work beyond the limits shown.
 - .2 Field engineering survey and layout of work.
 - .3 Water management.
 - .4 Dust control.
 - .5 Temporary facilities.
 - .6 Temporary barriers and enclosures.
 - .7 Calibrated weigh scales.
 - .8 Site office.

1.19 DISPOSAL OF DEBRIS

- .1 Debris, including construction materials not incorporated in the Work, oil products and containers, and other materials of this nature will be disposed of in suitable locations off the site. Disposal is the responsibility of the Contractor.
- .2 Material from the work will not be permitted to go adrift to otherwise become a menace to navigation.
- .3 All hazardous materials must be transported and disposed of at Registered Hazardous Waste Facilities. Waste Manifest are to be submitted prior to each progress claim.

1.20 INTERPRETATION OF DOCUMENTS

- .1 Supplementary to GC1.1 of the General Conditions, the Division 01 sections of the specifications take precedence over technical specifications in other divisions of the specifications.

1.21 HIGHWAY SPRING WEIGHT RESTRICTIONS

- .1 Comply with Provincial regulations for spring weight restrictions on Provincial Highway.

1.22 WORK COMMENCEMENT

- .1 Mobilization to project site is to commence immediately after Acceptance of Bid and submission of Site Specific Safety Plan, Environmental Protection Plan, Project Execution Plan, insurance and bonding documentation, and Start Up Meeting unless otherwise agreed to by Departmental Representative.
- .2 Project work on site is to commence as soon as possible, with a continuous reasonable work force, unless otherwise agreed by Departmental Representative.
- .3 Weather conditions, short construction season, delivery challenges and the location of the work site may require the use of longer working days and additional

**LPH SOIL REMEDIATION
FORMER LANDFILL
AND ASPHALT PLANT
OTTER CREEK
HAPPY VALLEY-GOOSE BAY
NEWFOUNDLAND AND LABRADOR
PROJECT NO. R.082578.001**

work force to complete the project within the specified completion time.

- .4 Make every effort to ensure that sufficient material and equipment is delivered to site at the earliest possible date after Acceptance of Bid and replenished as required.

1.23 EXISTING SERVICES

- .1 Notify, Departmental Representative and utility companies of intended interruption of services and obtain required permission.
- .2 Where Work involves breaking into or connecting to existing services, give Departmental Representative 48 hours' notice for necessary interruption of mechanical or electrical service throughout course of work. Minimize duration of interruptions. Carry out work at times as directed by governing authorities with minimum disturbance to site operations and tenant operations.
- .3 Establish location and extent of service lines in area of work before starting Work. Notify Departmental Representative of findings.
- .4 Where unknown services are encountered, immediately advise Departmental Representative and confirm findings in writing.
- .5 Protect, relocate or maintain existing active services. When inactive services are encountered, cap off in manner approved by authorities having jurisdiction.
- .6 Record locations of maintained, re-routed and abandoned service lines.

1.24 PROGRESSIVE CLEANING

- .1 Maintain site in tidy condition, free from accumulation of waste products and debris.
- .2 Make arrangements with and obtain permits from authorities having jurisdiction for disposal of waste and debris.
- .3 Waste Management:
 - .1 Refer to Section 01 74 21 - Construction Waste Management and Disposal.

2 PRODUCTS

2.01 NOT USED

- .1 Not used.

3 EXECUTION

LPH SOIL REMEDIATION
FORMER LANDFILL
AND ASPHALT PLANT
OTTER CREEK
HAPPY VALLEY-GOOSE BAY
NEWFOUNDLAND AND LABRADOR
PROJECT NO. R.082578.001

3.01 NOT USED

.1 Not used.

END OF SECTION