



NIRB Application for Screening #125990

McConnell (Kuugaarjuk) Migratory Bird Sanctuary - Site Cleanup and Waste Removal

Application Type: New

Project Type: Site Cleanup/Remediation

Application Date: 8/19/2024 11:19:44 AM

Period of operation: from 2024-08-23 to 2024-10-18

Project Proponent: Ryan Bernesky
Stantec Consulting Ltd.
100-75 24th Street E
Saskatoon SK S7K 0K3
Canada
Phone Number:: 3062209386, Fax Number::

DETAILS

Non-technical project proposal description

English: Project Title: McConnell River Migratory Bird Sanctuary – Site Cleanup and Waste Removal
Applicant Information: Ryan Bernesky, Project Manager, Nunami Stantec Ltd. 100-75 24th Street E., Saskatoon, SK S7K 0K3 ryan.bernesky@stantec.com; (306) 220-9386 On behalf of Mark Konecny, Contaminated Site Officer, Environment and Climate Change Canada 1801 Hollis St, Suite 200, Halifax, Nova Scotia, B3J 4N3 mark.konecny@ec.gc.ca; 782-640-2947
Number of Project Personnel: The personnel visiting the Site will include three (3) contractor construction personnel (SILA), one (1) departmental representative from Nunami Stantec, one (1) local wildlife monitor, one (1) local guide/labourer, and one (1) pilot. The Project objectives are to: •Decommission derelict buildings and structures associated with the former bird research facility. •Safely package waste materials and debris (including drum caches) for off-site transport and disposal. •Transport and dispose of waste materials and debris to appropriate off-site waste disposal facilities in Quebec. Project Location: The Project is located within Kuugaarjuk (McConnell River) Migratory Bird Sanctuary (MBS), approximately 35 kilometres (km) south of Arviat, Nunavut. The Project activities will take place at six (6) locations within the McConnell MBS (Extra Drum Cache #1, Extra Drum Cache #2, Base Camp, West Viewing Tower, South Viewing Tower and Third Viewing Tower). Proposed Date and Duration of Visit to McConnell MBS: The duration of site decommissioning is expected to take approximately two to three weeks. The site decommissioning is currently scheduled to commence the week of September 9, 2024. Method of Transportation(s) The primary mode of transportation that will be used for the Project is helicopter. Waste Disposal: Any wastes that may be produced by the Project will be removed daily. Wastes that may be produced by the Project include garbage. No camping will take place. The focus of the Project is to safely remove and dispose of existing wastes that may pose a risk. Potential Environmental Impacts and Mitigation Measures Wildlife species (including migratory birds and species at risk) that reside near the Project locations may be temporarily discouraged from using nearby habitats due to increased noise and human activity. Mitigation measures will include avoiding wildlife species whenever they are observed to reduce the risk of disturbance; helicopters will maintain a minimum flight altitude of 1.1 kilometres during travel over the Kuugaarjuk (McConnell River) Migratory Bird Sanctuary; helicopters will take all reasonable measures to fly a safe distance away from migratory birds, seabirds, and coastal waterfowl. Measures will be taken to avoid conflict with wildlife, as encounters with bears may pose a risk to people visiting the six (6) Project locations. Measures that will be taken will include the use of proper food storage and deterrents. Food will not be stored at the Project locations overnight and garbage will be removed daily. A local wildlife monitor will be hired from the Hamlet of Arviat equipped with a firearm as a deterrent for potential bear encounters. Community Consultation and Involvement: The Nivvialik Area Co-Management Committee (Nivvialik ACMC) was engaged for the Project. Ongoing communications have been held with Mr. Guy Alikut, the Chair of Nivvialik ACMC since 2017. In-person community engagement meetings were held with the Arviat Hunters and Trappers Organization and the Hamlet of Arviat on February 27, 2024 to review the environmental assessment activities and results and to discuss plan for site cleanup and waste removal. A public information session was also held at the community center in the Hamlet of Arviat on February 27, 2024. Local community members will be participating in the Project. A local community liaison, local wildlife monitor and local guide will be hired from the Hamlet of Arviat to support the Project. The hiring of local community members will build on existing local capacity through employment, and training and skills development opportunities. The engaged communities and organizations will be informed of Project completion through written correspondence, following completion. Future Plans Within the Protected Area: The objective of the Project is to cleanup the areas of the site associated with the former bird research facility. No further environmental work is anticipated following the proposed site cleanup and waste removal.

French: Titre du projet : Refuge d'oiseaux migrants de la Rivière-McConnell – Nettoyage du site et enlèvement des déchets Renseignements sur le demandeur : Ryan Bernesky, gestionnaire de projet, Nunami Stantec Ltd. 100-75, 24th Street E., Saskatoon (Saskatchewan) S7K 0K3 ryan.bernesky@stantec.com ; (306) 220-9386 Au nom de Mark Konecny, agent des sites contaminés, Environnement et Changement climatique Canada 1801, rue Hollis, bureau 200, Halifax (Nouvelle-Écosse) B3J 4N3 mark.konecny@ec.gc.ca ; 782-640-2947 Nombre d'employés du projet : Le personnel qui visitera le site comprendra trois (3) entrepreneurs en construction (SILA), un (1) représentant ministériel de Nunami Stantec, un (1) surveillant local de la faune,

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Inuinnaqtun: Havaakhap Atia: McConnell Kuugaq Tingmiat Tingmiat – Nayugaani Halumaghiyut uvalu

Iqakut Unguvaqtirnikkut Uuktuqtup Kangiqhidjutait: Ryan Bernesky, Havaaghamun Atanguya, Nunami Stantec Ltd. 100-75 24th Apqutit E., Saskatoon, SK S7K 0K3 ryan.bernesky@stantec.com; (306) 220-9386 pidjutigiplugit Mark Konecny, Halumaittut Nayugakhaa Havakti, Avatiliqiyitkut Hilaup Aalannguqtiirninga Kanadami 1801 Hollis St, Suite 200, Halifax, Nova Scotia, B3J 4N3 mark.konecny@ec.gc.ca; 782-640-2947 Nampaa Havaakhamut Havaktingit: Havaktingit pulaarlugit Nayuganga ilaliutiniaqtuq pingahunik (3) kaantraktiujug igluqpiliurniq havaktingit (SILA), atauhiq (1) havakviup havaktinga uumannga Nunami Stantec, atauhiq (1) nunamingni huradjanik munarijuq, atauhiq (1) nunamingni maliktakhaq/havakti, atauhiqlu (1) hivulliqaamik. Tamna Havaaqhangit hivunikhangit imaa itun: •Decommission derelict igluqpangit hanavikhangitlu aulahimayut talvani tingmianik ihivriudjutikharnik igluqpangni. •Qayangnairutikharnik puuqhimayunik iqakuukvikhangit hunavaluit iqakutlu (ilauyut qataqyungnik piruyarnik) agyagianganik iqaqtauyukharniklu. •Transport uvalu igilugit iqakut hunat uvalu iqakut ihuaqtumik iqakunik iqakuuqvingnun Quebecmi. Havaakhaq Nayugaa: Havaaqhaq nayugaqaqtuq talvani Kuugaarjuk (McConnell Kuugaq) Tingmiat Tingmiat Nayugaani (MBS), taima 35nik kilaamitanik (km) hivugaani Arviatmi, Nunavunmi. Tamna Havaaqhaq hulilukaarutikhangit aulaniaqtun siksuiyunik (6) nayugakharnik talvani McConnell MBSmi (Extra QilaudAmi Cache Auladjutikharnik1, Extra Qilaudjanik Cache 2, Aulaqtirvia tangmaarvikharnik, West Qunngiagianganik Towermi, Hivugaani Qunngiagianganik Townerik Pingahuaniklu Qunngiagianganik Tower). Tukhiqtauhimayuq Ublua aulavikhangalu Pulaarnikkut talvunga McConnell MBSmun: aulavikhanga nayugakhaanik piiqtauniaqtun taima malrungnik pingahunik havainirnik. Tamna qaritauyalidjutikhaq aulaniaqtuq havainirmi Apitilirvia 9, 2024mi. Hanaqidjutikhangit Ingilradjutikharnik (ngit)Hivulliqaamik ingilradjutikharnik atuqtauniaqtun talvani Havaaqharnun halikaptakkut. Iqakut Iqakut: Quyanginaq iqakut tapkua havaktauyaaqtut Havaaghamun unguvaqtauniaqtut ubluq tamaat. Iqakut havaktauyaaqtut Havaamin ilauyut iqakut. Hiniktavikhaittuq. Turaangania Havaktaujukhami qajangnaittumik piijarnikkut igitlugillu taja iqqakut pidjutittaaqtuq qajangnarhittaaqtumik. Piniaruknaqhiyut Avatimut Pilaqutingit unalu Mighiyuumiutingit Qanuriliurutingit Huradja huradja (ukuallu nuutirninnga qupanuat aadlatqiingitlu qayangnautiqaqtut) nunaqaqtut haniani Havauhikhaq nayugangit tadjakaffuk pingittut atuqluni hanianit nayugangit nipiquqtuyug inungnullu hulilukaarutingit. Mitigation qanuriliurutit ilaqarniaqtut pittaililugit hugadja huradja humi tautuktaukpata ikiliyuumiqlugu qayangnautit hulaqutit; halikaptakkut pihimaniaqtut ikiniqhanik tingmidjutikhamik 1.1 kilaamitanik tingmitilugit Kuugaarjuk (McConnell Kuugaq) Tingmiat Tingmiat; halikaaptakkut piniaqtait tamaita ihuaqtut maliqatqujahimajut tingmilutik qajangnaittumik un'ngahikhimajukhat tingmianit, tariukkut qupanuat, imaalu hinaani imaqrviit. Maliqajakhangit piniaqtait ajuqhautigilimaittut huradjanut, takugumik nanuit qajangnaqhittaaqtut inungnut pulaarlutik siksinit (6) Havaakhanut najugainnik. Maliqatqujahimajut ilauhungujut aturnikhanik ihuaqtumik niqikhanut tutquumaviannik imaalu ahikkuurutikhanik. Niqit tutquqtaulimaittut Havaaghamun nayugait unuami uvalu iqakut unguvaqtauniaqtut ubluq tamaat. Nunalaani uumayunik munagidjutikharnik havaktitauniaqtun talvunga Hamilaatkunin Arviatmi piqaqtunik hiquutinik taima auladjutikharnik nanurnik akuktauniaqtun. Nunallaani Katimadjutit uvalu Ilaunikkut: Nivvialik Nayugainun Munaqhiyut Katimayit (Nivvialik ACMC) ilauhimayuq haffumunga Havaaghamun. Aulahimaaqtumik tuhaqtidjutit katimaqatigiyaat Mr. Guy Alikut, Ikhivautalik nivvialik ACMC hamanga 2017min. Inungmik nunallaani miitirniq katimavaktun Arviani Anguhiqijitkut Katimajiinni ukuallu Haamlatkut Arviani february 27, 2024 ihivriurnikkut avatikkut qaujiharnirnik hulidjutinik qanurittaakhainniklu uqautigilugillu hivunikhat najugani halummarhinikkut iqqakuniknullu piijarnirnik. Inungnun kangiqhidjutikkut katimadjutit katimayut nunallaani katimayut Hamlanga Arviani uvani Iidjirurvia 27, 2024. Nunamingni nunallaani ilauyut ilauniaqtut uvani Havaaghami. Nunalaani nunalaani kivgaktiuyug, nunalaani uumayunik munagidjutikharnik nunalaani malikhautikharnik havaktitauniaqtun talvunga Hamilaatkunin Arviatmi ikayuutikharnik Havaaqhangit. Havaktighaquiutut nunamingni nunallaani ilauyut havaklugit atuqtauyut nunamingni aktilaangit havaatigut, uvalu ilihaidjutit uvalu ayuittatik pivallianikkut piyakhanik. Ilaumatigiingnikkut nunallaat uvalu katimayit kangiqhipkaqtauniaqtut Havaaghamun iniqtiqlutik titiraqhimayunik titiraqhimayunik, malikhugit iniqtigutait. Hivuniqmi Ihumaliurut Uumani Hapummiutihimayuq Nayuganga: ihuaqtuq uumannga Havauhikhaq halummaqtiriami humi ittut piyuq tingmianik naunaiyainiq igluqpangani. Piqagituqlu avatauyumik havakvikmik nahuriyauyuq kiguani atulirumayuq inikhamik halumaqtirijutinik iqaqurutiniklu ahivaqniginik.

Personnel on site: 7

Days on site: 14

Total Person days: 98

Operations Phase: from 2024-08-23 to 2024-10-18

Operations Phase: from 2024-08-23 to 2024-10-18

Closure Phase: from 2024-08-23 to 2024-10-18

Post-Closure Phase: from 2024-08-23 to 2024-10-18

Activities

Location	Activity Type	Land Status	Site history	Site archaeological or paleontological value	Proximity to the nearest communities and any protected areas
Former ECCC/CWS Base Camp - Site Cleanup/Waste Removal	Site Cleanup/Remediation	Crown	The McConnell MBS was established in the 1960s as a bird research facility, historically consisting of four areas including three viewing towers and the main base camp area. The infrastructure and surrounding area became an active Crown Land Reserve (File Number 055D16001) that was set aside for the Canadian Wildlife Services (CWS) in 1992, with an area of 3.17 hectares. ECCC is responsible for this Crown Land Reserve, which sits on Inuit Owned Land Parcel AR-04.	Parks Canada's Federal Heritage Building Review Office (FHBRO) reviewed the buildings at the McConnell MBS and confirmed none meet the criteria for being designated as a Federal Heritage Building.	The former CWS base camp is located approximately 35 kilometres (km) south of the Hamlet of Arviat in the Kivalliq region of Nunavut on the west coast of Hudson Bay. Located within McConnell Migratory Bird Sanctuary.
Remote Drum Cache 1 - Site Cleanup/Waste Removal	Site Cleanup/Remediation	Crown	The remote drum caches consists of approximately 12 empty and dilapidated drums that are of unknown origin but could potentially be associated with the with former bird research facility.	None	The former CWS base camp is located approximately 23 kilometres (km) southwest of the Hamlet of Arviat in the Kivalliq region of Nunavut on the west coast of Hudson Bay. Located within McConnell Migratory Bird

					Sanctuary.
Remote Drum Cache 2 - Site Cleanup/Waste Removal	Site Cleanup/Remediation	Crown	The remote drum caches consists of approximately 12 empty and dilapidated drums that are of unknown origin but could potentially be associated with the with former bird research facility.	None	The former CWS base camp is located approximately 26 kilometres (km) southwest of the Hamlet of Arviat in the Kivalliq region of Nunavut on the west coast of Hudson Bay. Located within McConnell Migratory Bird Sanctuary.
South Viewing Tower - Site Cleanup/Waste Removal	Site Cleanup/Remediation	Crown	The South Viewing Tower was established as a component of the bird research facility. The tower is not currently safe to use (disrepair).	None	The south viewing tower is located approximately 37 kilometres (km) south of the Hamlet of Arviat in the Kivalliq region of Nunavut on the west coast of Hudson Bay. Located within McConnell Migratory Bird Sanctuary.
Thid Viewing Tower - Site Cleanup/Waste Removal	Site Cleanup/Remediation	Crown	The Third Viewing Tower was established as a component of the bird research facility. The tower is not currently safe to use (disrepair).	None	The third viewing tower is located approximately 38 kilometres (km) south of the Hamlet of Arviat in the Kivalliq region of Nunavut on the west coast of Hudson Bay. Located within McConnell Migratory Bird Sanctuary.
West Viewing Tower - Site Cleanup/Waste Removal	Site Cleanup/Remediation	Crown	The West Viewing Tower was established as a component of the bird research facility. The tower is not currently safe to use	N/A	The West Viewing Tower is located approximately 30 kilometres (km) south of the Hamlet of Arviat in the Kivalliq region of Nunavut on the west coast

			(disrepair).		of Hudson Bay. Located within McConnell Migratory Bird Sanctuary.
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Community Involvement & Regional Benefits

Community	Name	Organization	Date Contacted
Arviat	Guy Alikut	Nivvialik Area Co-management Committee	2024-02-26
Arviat	Alex Ishalook	Arviat Hunters and Trappers Organization	2024-02-27
Arviat	Shane Ubluriak	Nivvialik Area Co-management Committee	2024-02-27
Arviat	Hamlet Council	Hamlet of Arviat - Hamlet Council	2024-02-27

Authorizations

Indicate the areas in which the project is located:

Authorizations

Regulatory Authority	Authorization Description	Current Status	Date Issued / Applied	Expiry Date
Canadian Wildlife Service	MM-NR-2023-NU-010 Amend Migratory Bird Sanctuary Permit issued under section 9 of the Migratory Bird Sanctuary Regulations, C.R.C., c. 1036 made pursuant to section 12 of the Migratory Birds Convention Act, 1994, S.C. 1994, c.22	Active	2024-05-14	2024-12-31
Kivalliq Inuit Association	Certificate of Exemption No. K VX23N04	Active	2023-06-28	2024-12-01
Government of Nunavut, Department of Culture, Language, Elders, and Youth	Class 2 Nunavut Territory Archaeologist Permit No. 2024-68A	Active	2024-06-21	2024-10-31

Project transportation types

Transportation Type	Proposed Use	Length of Use
Air	helicopter between Arviat and McConnell Migratory Bird Sanctuary	

Project accomodation types

Other,

Material Use

Equipment to be used (including drills, pumps, aircraft, vehicles, etc)

Equipment Type	Quantity	Size - Dimensions	Proposed Use
Helicopter	1	42 ft.	Travel to site on a daily basis from Arviat
Mega Bags	100	1 cubic meter capacity	Used for containerization to facilitate transport.
Portable Hand Tools	N/A	N/A	To crush/consolidate waste metals and other materials to reduce the waste material volume to an estimated 100 cubic meters.

Detail Fuel and Hazardous Material Use

Detail fuel material use:	Fuel Type	Number of containers	Container Capacity	Total Amount	Units	Proposed Use
Aviation fuel	fuel	0	0	0	Gallons	Helicopter will be fueled up in Arviat and will not be fueled at the McConnell Migratory Bird Sanctuary.

Water Consumption

Daily amount (m3)	Proposed water retrieval methods	Proposed water retrieval location
0		

Waste

Waste Management

Project Activity	Type of Waste	Projected Amount Generated	Method of Disposal	Additional treatment procedures
Site Cleanup/Remediation	Combustible wastes	34 m3 (containerized volume)	Non-treated wood will be broken down and containerized. Wood debris will be disposed of off-site at an appropriate facility.	N/A - material will be removed from Site.
Site Cleanup/Remediation	Hazardous	5.0 m3 of wood with lead containing paint	Containerize material on-site and transport to off-site facility authorized to receive/dispose of hazardous wastes (Quebec).	N/A - material will be removed from Site.
Site Cleanup/Remediation	Hazardous	2.0 m3	Containerize on-site and transport to off-site facility authorized to receive/dispose of hazardous wastes (Quebec).	N/A - material will be removed from Site.
Site Cleanup/Remediation	Non-Combustible wastes	8.75 metric tonnes (containerized)	Containerize and transport to off-site facility that accepts metal.	N/A - material will be removed from Site.
Site Cleanup/Remediation	Non-Combustible wastes	10 batteries	Containerize batteries and transport to off-site facility, authorized to receive/dispose of lead-acid batteries.	N/A - material will be removed from Site.

Environmental Impacts:

The overall environmental impact of this project is considered to be positive as the purpose of the project is to clean up the site and remove waste for off-site disposal. This phase of the project consists of site cleanup and waste removal and the environmental impact during the site cleanup is anticipated to be minimal and mitigable. The site cleanup is limited to surface structures and surface waste debris and ground disturbance is not anticipated to be required. No water withdrawals or deposits will be made for the site decommissioning and cleanup. There will be no overnight camping during the project.

Additional Information

SECTION A1: Project Info

SECTION A2: Allweather Road

SECTION A3: Winter Road

SECTION B1: Project Info

SECTION B2: Exploration Activity

SECTION B3: Geosciences

SECTION B4: Drilling

SECTION B5: Stripping

SECTION B6: Underground Activity

SECTION B7: Waste Rock

SECTION B8: Stockpiles

SECTION B9: Mine Development

SECTION B10: Geology

SECTION B11: Mine

SECTION B12: Mill

SECTION C1: Pits

SECTION D1: Facility

SECTION D2: Facility Construction

SECTION D3: Facility Operation

SECTION D4: Vessel Use

SECTION E1: Offshore Survey

SECTION E2: Nearshore Survey

SECTION E3: Vessel Use

SECTION F1: Site Cleanup

No landfills or dumps were historically constructed at the Site or will be constructed as part of the proposed site cleanup activities. All waste material will be transported off-site for appropriate disposal. Salvageable equipment, infrastructure and/or supplies is generally considered to be limited to scrap metal and wood materials; however, a portion of these materials is covered with lead containing paints that will require appropriate disposal. Site cleanup is limited to surface structures and waste debris (wood, metal, batteries, debris, barrels, etc). A waste inventory table is included as an attachment. Soil/water remediation is not required based on the results of historical assessments and risk assessments. Therefore, no excavation is anticipated. The site decommissioning is proposed to be completed using hand tools to break down structures and buildings. Waste materials will be containerized and slung by helicopter to Arviat to be loaded onto Sealift for appropriate disposal. All drums onsite were identified to be empty during previous assessment activities, with the exception of one drum that is approximately one quarter full of liquid. Empty drums will be compressed as possible onsite, containerized and shipped off-site for disposal. A Human Health Risk Assessment (HHRA) was conducted in 2023 to assess the potential health risks to individuals, such as Site visitors and construction workers, who may be exposed to identified contaminants (contaminants of potential concern [COPC]) at the Site and to guide site management by providing support for the development of a Remedial Options Evaluation (ROE). While at the Site, visitors and/or construction workers may incidentally ingest and have dermal contact with soil, inhale soil particulates, incidentally ingest and have dermal contact with sediment, and ingest and have dermal contact with surface water. Site visitors may also harvest and subsequently ingest country foods. Based on a comparison of maximum concentrations in soil, surface water, and sediment, to guidelines protective of human health, no COPC were identified in soil, surface water, sediment, or country foods. A screening of maximum concentrations in groundwater/active layer water was not required and no human health COPCs were identified in groundwater/active layer water. Therefore, since no COPCs were identified in these media, risk from exposure to chemicals on Site meet regulatory thresholds for acceptable risk, and no remediation or risk management measures are needed. An ecological risk assessment (ERA) was also conducted in 2023 to assess the potential risk to ecological receptors (e.g., terrestrial plants, soil invertebrates, mammals and birds, and freshwater aquatic life) that may be exposed to COPCs at the Site and to guide site management by providing support for the development of a ROE. Petroleum hydrocarbon (PHC) F3, chromium, lead, nickel, and zinc were identified as ecological COPCs in soil, iron was identified as a COPC in surface water and groundwater/active layer water, and chromium, lead, nickel, and zinc were identified as COPCs in vegetation. No COPCs were identified in sediment. For exposure to soil risks were estimated using 95% UCLM concentrations, and for exposure to surface water, sediment, and vegetation, risks were estimated using maximum concentrations. Based on the calculation of screening ratios (SRs) for community valued ecosystem components (VECs) (i.e., terrestrial plants and soil invertebrates, and freshwater aquatic life), and deterministic hazard quotients (HQs) for mammal and bird VECs (including SAR), no unacceptable risks to ecological VECs were identified.

SECTION G1: Well Authorization

SECTION G2: Onland Exploration

SECTION G3: Offshore Exploration

SECTION G4: Rig

SECTION H1: Vessel Use

SECTION H2: Disposal At Sea

SECTION I1: Municipal Development

Description of Existing Environment: Physical Environment

The Site is situated within the McConnell River (Kuugaarjuk) Migratory Bird Sanctuary (MBS) near Arviat,

Nunavut, which is considered a Protected Area. The Site is surrounded by remote and barren natural land of Arctic tundra with generally undulating topography and low-lying surficial vegetation. The site cleanup is being completed on land only and surface water will not be affected by the cleanup activities. Base Camp covers an area of approximately 250 meters (m) by 200 m and is located on an elevated point of land with topography sloping east and southeast towards the McConnell River. The West Viewing Tower covers an area of approximately 60 m by 50 m, with topography sloping to the south towards an unnamed water body. The Third Viewing Tower covers an area of approximately 50 m by 40 m with relatively level topography. Regional water drainage is anticipated to flow eastward towards Hudson Bay. The surficial geology of the Site consists of glaciomarine and marine deposits, which are defined as sediments deposited from meltwater and floating ice in marine waters during deglaciation and subsequent regression, as described in the Surficial Materials of Nunavut Map (Gilbert, Utting, and James, 2006). The active layer above permafrost was observed to be between 0.10 m bgs to 1.4 m bgs and consisted of silt, sand, gravel, and cobbles. The Site is located within a zone of continuous permafrost. Shallow melt water was observed at the Site within the active zone/layer above the impermeable permafrost layer. The active layer is essentially referring to the zone between ground surface and the impermeable permafrost layer in which ice forms and thaws seasonally. The shallow melt water present within the active layer is not commonly referred to as groundwater, as typically used in southern regions; however, is sometimes referred to as supra-permafrost water. The active layer water at the Site is expected to be mainly recharged through atmospheric precipitation, snow melt, and ground ice melt. The Site is situated within a complex of coastal marsh areas and plains. There are numerous freshwater surface water bodies consisting of shallow ponds and lakes located across the inland plains within the McConnell MBS site boundary. The main freshwater surface water feature within the McConnell MBS is the McConnell River, which runs through the McConnell MBS from further inland to the northwest. The McConnell River is fed by outlets from inland freshwater lakes as well as numerous ponds, streams and tributaries. The McConnell River generally flows to the southeast through the McConnell MBS before draining into the Hudson Bay. As such, the regional surface water is generally anticipated to drain to the east and southeast towards the Hudson Bay. The Base Camp is situated on a delta as the McConnell River transitions into the Hudson Bay. The Base Camp is situated on a roughly triangular formation of land that is encompassed by surface water on two sides with plains and coastal marsh lands extending to the south. The McConnell River is located approximately 40 m east and an unnamed stream flowing into the McConnell River is located approximately 50 m west of the Base Camp. The Base Camp Site is relatively flat; however, does slope slightly towards surface water features along both the east and west sides of the Base Camp Site. Local surface water drainage is anticipated to flow towards the McConnell River to the east and the unnamed stream to the west (i.e., tributary to the McConnell River). Potential heritage sites will be demarcated by Project Archaeologists to ensure they are not disturbed for sites identified within proximity of where the site cleanup activities will occur. Predicted future climate trends are not anticipated to have an impact on the site cleanup strategy.

Description of Existing Environment: Biological Environment

Terrestrial vegetation is present at the Site (moss, grass, shrubs, forb). Soil invertebrates and aerial insects are assumed to be present at the Site. Terrestrial vegetation is present at the Site (including moss, grass, shrub, forb). Soil invertebrates and aerial insects are assumed to be present at the Site. Herbivorous terrestrial mammals have been observed at the Site (e.g., snow hare and barren ground caribou). Small herbivores are a prey item for carnivorous mammals and birds. Terrestrial mammals whose diet is composed primarily of insects (e.g., arctic shrew) could be present at the Site. Carnivorous terrestrial mammals have been observed at the Site (e.g., arctic fox, polar bear, wolf and may be exposed to COPCs in mammals and soil. Small herbivores are a prey item for carnivorous mammals and birds. Omnivorous terrestrial mammals may be present at the Site (e.g., grizzly bear). Herbivorous and omnivorous terrestrial birds are assumed to be present at the Site (e.g., Rock Ptarmigan). Small herbivores and omnivores are a prey item for carnivorous mammals and birds. Insectivorous terrestrial birds whose diet is composed primarily of insects in the summer months and vegetation in the winter months are assumed to be present at the Site (e.g., Lapland longspur, barn swallow). Small insectivores and omnivores are a prey item for carnivorous mammals and birds. Terrestrial birds that are largely carnivorous are assumed to be present at the Site (e.g., Peregrine Falcon), based on range maps and habitat. Aquatic vegetation and other aquatic primary producers (e.g., phytoplankton, periphyton, submerged macrophytes) are assumed to be present in freshwater surface waterbodies within the Site. Freshwater pelagic invertebrates are assumed to be present in freshwater surface waterbodies within the Site. Benthic invertebrates are assumed to be present in freshwater surface waterbodies within the Site. Fish (e.g., Northern pike, Whitefish and Lake trout) are assumed to be present within suitable freshwater bodies at the Site. Herbivorous aquatic birds have been observed at the Site (e.g., snow geese). Small herbivores are a prey item for carnivorous mammals and birds. Insectivorous aquatic birds are assumed to be present at the Site and may be exposed to COPCs. The

Site is located within the range of the Red-necked Phalarope which consumes aquatic invertebrates. Therefore, it is possible that aquatic birds that primarily consume aquatic insects may reside or spend time at the Site. Omnivorous and piscivorous aquatic birds are assumed to be present at the Site. A total of 13 Species at Risk were identified as having the potential to be present within or near the Site based on overlapping ranges and/or historical observations (i.e., barren-ground caribou, grizzly bear, polar bear, wolverine, Harris's sparrow, Horned grebe, Ivory gull, Peregrine falcon, Red knot (rufa), Red-necked phalarope, Ross's gull, Rusty blackbird, Short-eared owl). Although Polar Bear have been identified within the Site, no surrogate VEC for the ecological risk assessment was identified because they largely consume marine prey items (e.g., seals) not associated with the Site.

Description of Existing Environment: Socio-economic Environment

The Site is not accessible by road. The Site could be accessed by ATV/snowmobile, depending on seasonal conditions but is approximately 35 km south of Arviat and there are several river crossings that would be required. Potentially edible and/or plants considered valuable by local people have been identified during previous site visits (e.g., Labrador Tea and Cloudberry plants). The former bird research facility has not been in use since the 1980s and is in a state of disrepair and is currently a physical hazard that needs to be cleaned up. The Site would primarily be accessed by Hunters and Trappers moving through the area to access hunting and trapping areas south of Arviat as the Site is not easy to access.

Miscellaneous Project Information

The McConnell MBS was established in the 1960s as a bird research facility. The infrastructure and surrounding area became an active Crown Land Reserve (file number 055D16001) that was set aside for Canadian Wildlife Service (CWS) in 1992 with an area of 3.17 hectares. ECCC is responsible for this Crown Land Reserve, which sits on Inuit Owned Land Parcel AR-04. Research activities at the McConnell MBS concluded by the late 1980s. ECCC completed some limited cleanup work at the Site in the late 1990s with the support of the local Arviat Hunters and Trappers Organization. There are three onsite buildings within the Base Camp that currently remain in a state of disrepair. The infrastructure and surrounding area are an active Crown Land Reserve managed by Canadian Wildlife Services.

Identification of Impacts and Proposed Mitigation Measures

The site cleanup is being scheduled for mid-September through October to avoid the caribou migration through this area (occurs in July) and also to be outside of the breeding bird nesting window. This work is also being planned to be completed within a timeframe when migratory birds are less active at the Site (late Fall) to mitigate bird interactions. Ground Disturbance is not required for the Site Cleanup. The structures will primarily be decommissioned using hand tools to mitigate bringing machinery into the area. The waste material will be slung out by helicopter. No camping will be conducted onsite during the Project and waste generated during the project will be hauled out daily. Food will not be kept onsite overnight and during the day provisions will be maintained in appropriate storage containers to mitigate potential wildlife interactions. A wildlife monitor will be hired from the local community to support onsite for the duration of the Project. Work will be performed in accordance with regulatory permits and mitigation measures included within permits/clearances. Potential disturbance to wildlife by aircraft will also be mitigated by the following measures: Wherever reasonably possible, aircraft shall maintain a minimum flight altitude of 1100 m (3500 ft) during point to point travel over the Migratory Bird Sanctuary. Aircraft shall maintain a minimum vertical distance of 1100 m and a minimum horizontal distance of 1.5 km from any observed concentrations of migratory birds. Aircraft shall maintain a minimum horizontal distance of 3 km from the seaward side of seabird colonies and from concentrations of coastal waterfowl and seaducks.

Cumulative Effects

The cumulative effects of this project should provide an overall positive impact as the Site is being cleaned up and physical hazards (Including waste debris) is being removed from the Site for proper disposal.

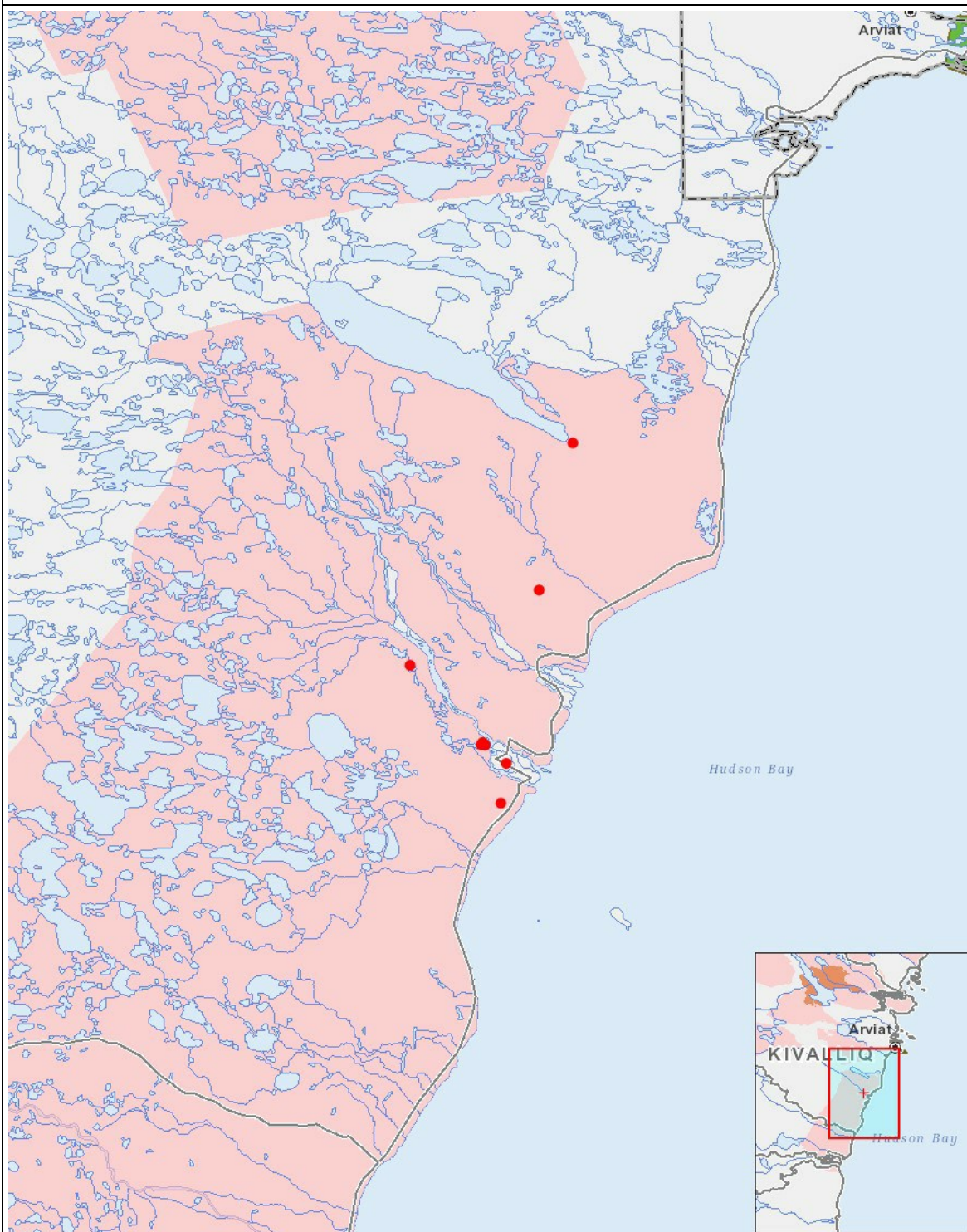
Impacts

Identification of Environmental Impacts

	PHYSICAL	Designated environmental areas	Ground stability	Permafrost	Hydrology / Limnology	Water quality	Climate conditions	Eskers and other unique or fragile landscapes	Surface and bedrock geology	Sediment and soil quality	Tidal processes and bathymetry	Air quality	Noise levels	BIOLOGICAL	Vegetation	Wildlife, including habitat and migration patterns	Birds, including habitat and migration patterns	Aquatic species, incl. habitat and migration/spawning	Wildlife protected areas	SOCIO-ECONOMIC	Archaeological and cultural historic sites	Employment	Community wellness	Community infrastructure	Human health
Construction																									
Site Cleanup/Remediation	P	-	-	-	-	-	-	-	-	M	-	-	-		P	M	M	-	M		-	P	P	P	P
Operation																									
Site Cleanup/Remediation	P	-	-	-	-	-	-	-	-	M	-	-	-		P	M	M	-	M		-	P	P	P	P
Decommissioning																									
Site Cleanup/Remediation	P	-	-	-	-	-	-	-	-	M	-	-	-		P	M	M	-	M		-	P	P	P	P

(P = Positive, N = Negative and non-mitigatable, M = Negative and mitigatable, U = Unknown)

Project Location



List of Project Geometries

- | | | |
|---|-------|--|
| 1 | point | Former ECCC/CWS Base Camp - Site Cleanup/Waste Removal |
| 2 | point | West Viewing Tower - Site Cleanup/Waste Removal |
| 3 | point | Remote Drum Cache 2 - Site Cleanup/Waste Removal |
| 4 | point | Remote Drum Cache 1 - Site Cleanup/Waste Removal |
| 5 | point | South Viewing Tower - Site Cleanup/Waste Removal |
| 6 | point | Thid Viewing Tower - Site Cleanup/Waste Removal |