

BIODIVERSITY AND ECOSYSTEM ASSESSMENT REPORT 生物多样性和 生态系统评估报告

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EXECUTIVE SUMMARY 摘要

Arcadis Shanghai Limited (Arcadis) was retained by Constellium Engley (Changchun) Automotive Structures Co., Ltd. (Constellium Engley) to conduct a Biodiversity and Ecosystem Assessment (BEA) at its manufacture facility located at No. 667, Sanyou Road, Chaoyang District, Changchun City, Jilin Province, China (the Site). The Biodiversity and Ecosystem Assessment was performed in general accordance with the ASI Performance Standard V3.1 April 2023, ASI Performance Standard Guidance V3.1 April 2023, Constellium EHS First Directive 4.6.7- Biodiversity and Ecosystem Services effected on March 1st, 2023, and the applicable biodiversity and ecosystem inventory/ literature/regulation / standard for factories located in Changchun, Jilin, China. 凯谛思建设工程咨询（上海）有限公司（凯谛思）受肯联英利（长春）汽车结构有限公司(肯联英利)委托，在其位于中国吉林省长春市朝阳区三友路667号的制造工厂（以下简称“场地”）进行生物多样性和生态系统评估。本次生物多样性和生态系统评估按照2023年4月的ASI绩效标准V3.1, 2023年4月的ASI绩效标准指南V3.1, 肯联生效于2023年3月1日的EHS第一版指令4.6.7-生物多样性和生态系统服务,以及位于中国, 吉林省, 长春市的工厂适用的生物多样性和生态系统相关清单/文献/法规/标准进行。

Site Layout and Operations Description 场地布局和运营描述

The Site covers an area of approximately 30,079 square meters (sqm). The southern corner of the Site is 43°45'46.25"N, 125°10'16.08"E. The main buildings on-site cover an area of approximately 12,493 square meters (sqm). The main buildings include office building, workshop 1, workshop 2, and workshop 3. The green area of the Site covers an area of approximately 5,596 square meters (sqm). The green areas of the Site are mainly distributed at southwestern portion, the western portion, and along the northern and the eastern boundary of the Site. The remainder of the Site consists of asphalt-paved parking lots, asphalt-paved roads, and production auxiliary facilities. 场地占地面积约30,079平方米。场地南面墙角坐标为北纬43°45'46.25", 东经125°10'16.08"。场地主要建筑占地约12,493平方米。主要建筑包括办公楼、1号车间、2号车间和3号车间。场地绿化面积约5,596平方米。场地绿地主要分布在西南部分、西部以及沿着场地的北边界和东边界。场地其余部分为硬化的停车场和道路以及生产辅助设施。

The Site was built in 2010 and the construction work was completed in 2011. The expansion construction work of workshop 3 was built in 2017 and completed in 2018. The owner of the Site is Changchun Dongjin Auto Parts Co., Ltd. The Site was leased from the owner since 2015. At the time of the site visit, the Site was producing the automotive structural parts and the industrial process including machining, punching, assembly and welding. The production pollutants including air emission from welding, domestic wastewater, noise, domestic waste, industrial waste, and hazardous waste. The operation of the Site is two shift per day, 8 hours per shift, and five days per week. 场地建设于2010年, 于2011年建成。3号车间扩建工程于2017年开始, 2018年竣工。场地为长春市东进汽车零部件

有限公司所有。场地于 2015 年从业主处租赁。现场踏勘期间，场地生产汽车结构件，工艺流程包括机械加工、冲压、装配和焊接等。场地产生的污染物包括焊接废气排放、生活污水、噪声、生活垃圾、一般固废和危险废物。现场作业每天两班倒，每班 8 小时，一周工作五天。

Area of Influence 影响区域

According to site representative, only domestic wastewater was generated onsite, domestic wastewater and stormwater were separated, domestic wastewater was drain to the municipal wastewater pipeline and finally discharged to the Xinkai River, stormwater was flowing into onsite rainwater wells and drainage to municipal stormwater pipeline and finally discharge to the nearby surface water body. Non-hazardous waste was recycled by qualified vendor or transported by environmental sanitation department. The hazardous waste was stored in the hazardous waste storage room and regularly transported by qualified vendor. The air emission onsite was mainly particulate matters from welding processes, after treatment and be exhausted through two air emission outlets. The noise was generated during industrial process and from internal traffic. The pest management of poison bait spots were observed, mousetraps were also installed in the site area. Lawn maintenance is conducted every autumn through cutting off the dry vegetation to avoid fire risk. The heating of the Site was supplied by municipal heating pipeline during winter. The domestic water and electricity of the Site are supplied by municipal water supply pipeline and electricity grid. 据现场代表介绍，现场仅产生生活废水，生活废水与雨水分离，生活废水排入市政污水管道，最后排入新凯河；雨水流入场地雨水井，排入市政雨水管道，就近排入地表水体。非危险废物由有资质的供应商回收或由环卫部门清运。危险废物储存在车间内铺有环氧树脂涂层的危废房中，并定期由有资质的供应商清运。场地产生的废气主要为焊接过程中产生的颗粒物。废气处理后通过两个排气筒排出。场地的工艺过程和内部交通会产生噪声。虫害管理包括办公楼外墙脚下观察到的毒饵点，也安装了捕鼠器。根据现场代表介绍，每年秋天场地会剪除绿地上干枯的植被以避免火灾风险。场地冬季为市政供暖，生活用水为市政供水，电力为市政电网。

The emissions onsite are well controlled. Therefore, the AOI of the Site is identified as the internal site area (area of control) and surrounding areas that 50 m outside the site boundaries. The internal site area is managed by Constellium Engley. The outside areas are urban public green areas and adjacent factories managed by municipal department and other companies. 场地排放的控制情况良好。因此，场地影响范围被定为场地内部区域（场地控制范围）和场地边界外 50 米的周边区域。工厂内部区域由肯联英利管理。外部区域是城市公共绿地由市政部门管理，相邻工厂由其他公司自行管理。

Biodiversity Features 生物多样性特征

During the site reconnaissance, the main habitat types within the AOC of the Site are urban, shrub, and grassland. The plant community in the Site is grassland consisting of artificial greening spaces and vacant grassland. No forests or wetlands were found within the AOC. The west and south sides of the Site are adjacent to the urban public green space artificial forest and street trees. 现场踏勘期间，场地

控制范围内主要栖息地类型为城市、灌木丛及草丛。场地植物群落为草地群落，由人工绿地和野生草地组成。场地控制范围内未发现森林及湿地。场地西侧及南侧紧邻城市公共绿地人工林和行道树。

The flora identified within the AOC (in the Site) was listed in **Table 3** with relevant taxonomy. A total of 33 species of plants and Poaceae were identified during the site reconnaissance. None of them were listed in *the List of National Key Protected Wild Plants in China* or *List of Provincial Key Protected Wild Plants in Jilin Province*. A total of eight (8) sampling quadrats were set for flora survey. Five (5) of them were located in the vacant grassland at the southwestern portion of the Site, three (3) of them were located at the greening spaces along the boundaries of the Site. The sampling map is shown in **Figure 2**. The calculated Simpson's Index for flora in the sampling quadrat is 0.88 excluding the artificially planted species. 场地控制区域内确认的植物及其分类见表 3。现场踏勘期间，总共记录了 33 种植物，以及禾本科植物。未识别到国家重点保护野生植物或吉林省级保护植物。植物调查共选取了 8 个样方，其中 5 个位于场地西南部分的空地草地，3 个位于场地边界的绿地。抽样位置图见图 2。计算的采样样方植物群落辛普森指数为 0.88，不含人工种植物种。

The fauna recorded during this assessment within the AOC of the Site is listed in **Table 5** together with their taxonomy. A total of 1 species of mammal, 9 species of birds, 17 species of insects and 6 species of other invertebrates were recorded. The bird abundance recorded during this assessment was calculated. The abundance of insects and other invertebrates were not recorded. The calculated Simpson's Index for bird is 0.78. 本次评估期间在场地控制范围内记录到的动物及其分类列于表 5 中。共记录到 1 种哺乳动物、9 种鸟类、17 种昆虫及 6 种其他无脊椎动物。本次评估中记录的鸟类丰度进行了计算，昆虫及其他无脊椎动物的丰度未记录。计算得出的鸟类群落辛普森指数为 0.78。

There are nine protected species of birds and one protected species of mammal are identified within the AOC. These birds and the mammal are in *the National Protected List of Terrestrial Wild Animals with Important Ecological, Scientific and Social Value*. According to the IUCN Red List of Threatened Species, the conservation level of these identified protected species are Least Concern. 在场地控制范围内确认了 10 种被列入《国家保护的有重要生态、科学、社会价值的陆生野生动物名录》的保护物种，包括 9 种鸟类及 1 种哺乳动物。根据世界自然保护联盟濒危物种红色名录，识别出的这些保护物种保护等级为无危。

During this assessment, common ragweed (*Ambrosia artemisiifolia*) and giant ragweed (*Ambrosia trifida*) were recognized as alien invasive species according to the List of Alien Invasive species in China issued by the Ministry of Ecology and Environment. Both species originated from North America and are now widely distributed in China since their first entry in the 1930s. Their pollen is one of main causes of human pollen allergies. In addition, they have inhibitory effects on Poaceae, Leguminosae and Compositae plants, which will impact local biodiversity and cause agricultural production reduction. 本次评估期间，根据生态环境部发布的《中国外来入侵物种名录》，豚草 (*Ambrosia artemisiifolia*) 和三裂叶豚草 (*Ambrosia trifida*) 被识别为外来入侵物种。两种植物均原产北美，20 世纪 30 年代进入中国，

现已广泛分布。豚草花粉为人类花粉过敏的主要过敏原之一。此外，其对禾本科、豆科、菊科植物有抑制作用，会破坏本土生物多样性，造成农业减产。

Potential Impacts on Biodiversity Features 生物多样性特征潜在影响

The habitat type of the AOI if the Site is urban artificial forest, shrub, and grassland. No forests, wetlands, and other critical habitat type were found within the AOI. The conservation level of the identified protected species in the AOC are LC and Sanyou. The potential impacts of the land use and site activities on these Biodiversity Features is limited and under control. The Site could continue strengthen their pollutant management in the aspects of stormwater management, air emission management, noise management, soil and groundwater management, and Pest Management to further mitigate the impact to environment and species. In addition, should minimize anthropogenic interference with the identified protected species of birds and mammals. 场地影响区域的栖息地类型是城市人工林、灌木和草地。场地影响区域内未发现森林，湿地，及其他关键栖息地类型。场地控制范围内已识别的保护物种的保护等级为无危和三有。场地生产运营和活动对这些生物多样性特征的潜在影响有限且可控。该场地可以继续雨水管理、废气排放管理、噪音管理、土壤和地下水管理以及虫害管理等方面加强污染物排放管理，以进一步减轻对环境和物种的潜在影响。此外，应尽量减少对于识别出的保护物种鸟类和哺乳动物的人为干扰。

1 INTRODUCTION 介绍

Arcadis Shanghai Limited (Arcadis) was retained by Constellium Engley (Changchun) Automotive Structures Co., Ltd. (Constellium Engley) to conduct a Biodiversity and Ecosystem Assessment (BEA) for its manufacturing facility located at No. 667, Sanyou Road, Chaoyang District, Changchun City, Jilin Province, China (the Site). 凯谛思建设工程咨询（上海）有限公司（凯谛思）受肯联英利（长春）汽车结构有限公司(肯联英利)委托，在其位于中国吉林省长春市朝阳区三友路 667 号的制造工厂（以下简称“场地”）进行生物多样性和生态系统评估。

1.1 Purpose 目的

Arcadis understands that the purpose for conducting this Biodiversity and Ecosystem Consultancy Services is part of the Constellium's management requirements to protect ecosystems, habitats and species related to the footprint or area of influence. Constellium Changchun wishes to engage Arcadis to assess the risk and potential impacts on Biodiversity and Ecosystem from the land use and activities within the sites' Area of Influence. The Site visit was performed from July 10th to July 13rd, 2023, by Arcadis assessors Mr. Yang Li, Ms. Jane Dai and Ms. Alexis Xiang. The site representative consulted during the site visit was Mr. Dexu Dong, the EHS Manager of Constellium Engley Changchun. 凯谛思了解到，生物多样性和生态系统评估是肯联集团管理要求的一部分，旨在保护与生态足迹或影响区域相关的生态系统、栖息地和物种。肯联英利长春希望聘请凯谛思对场地土地利用和生产活动影响区域范围内的生物多样性和生态系统的潜在风险和影响进行评估。场地勘察时间为 2023 年 7 月 10 日到 13 日，由凯谛思的李阳先生，代剑兰女士，和项祎心女士执行。现场采访的代表人员为肯联英利长春的 EHS 经理董德旭先生。

1.2 Scope of Work 工作内容

The Biodiversity and Ecosystem Assessment was performed in general accordance with the ASI Performance Standard V3.1 April 2023, ASI Performance Standard Guidance V3.1 April 2023, Constellium EHS First Directive 4.6.7- Biodiversity and Ecosystem Services effected on March 1st, 2023, and the applicable biodiversity and ecosystem inventory/ literature/regulation / standard for factories located in Changchun, Jilin, China. 本次生物多样性和生态系统评估按照 2023 年 4 月的 ASI 绩效标准 V3.1, 2023 年 4 月的 ASI 绩效标准指南 V3.1, 肯联生效于 2023 年 3 月 1 日的 EHS 第一版指令 4.6.7-生物多样性和生态系统服务,以及位于中国, 吉林省, 长春市的工厂适用的生物多样性和生态系统相关清单/文献/法规/标准进行。

The following tasks were completed as part of the Biodiversity and Ecosystem Assessment 完成了以下生物多样性和生态系统评估的任务:

- Knowing the international, national, regional regulations/standards 了解国际，国家，区域的法规和标准；
- Identify the Site's Area of Influence (AOI) 确定场地的影响区域；
- Knowing the regional information of climate, geography, fauna and flora zoning, and habitat type 了解区域基本信息包括气候条件，地理条件，动植物区划，栖息地类型
- Identify Protected Areas and Species 识别保护区域和保护物种
- Identify Biodiversity Features present within the Site's Area of Influence 确定场地影响区域内存在的生物多样性特征；
- Evaluate if Alien Species are present in the area under the control of the Site 评估场地控制区域是否存在外来物种；
- Identify potential impacts of the land use and site activities on these Biodiversity Features 确定场地的用地和生产活动对这些生物多样性特征的潜在影响；

1.3 Methodology 方法

Arcadis conducted desktop research, reviewed available site documents, interviewed site personnel, and conducted site investigation to complete the Biodiversity and Ecosystem Assessment. 凯谛思通过资料信息研究和文献审查，审阅可用的场地文档，现场人员访谈，以及场地实地调查等来完成本次生物多样性和生态系统评估。

The sampling strategy and data analysis of field investigation for flora and fauna were as following 场地植物和动物采样策略和数据分析实地调查工作如下:

- A total of eight (8) sampling quadrats were set for flora survey to calculate Simpson's Index for flora in the area of control 植物调查共选取了 8 个样方,以计算采样样方植物群落的辛普森指数。
- The bird abundance was recorded during this assessment to calculate Simpson's Index for birds. The abundance of insects and other invertebrates were not recorded. 本次评估中记录了鸟类丰度,以计算鸟类群落辛普森指数,昆虫及其他无脊椎动物的丰度未记录。

The calculation formula for the Simpson index is as follows:辛普森指数的计算公式如下:

$$D = 1 - \sum P_i^2$$

Where P_i represents the proportion of the number of individuals in species i to the total number of individuals in the community. 其中 P_i 表示物种 i 的个体数占群落内总个体数的比例。

1.4 Standards & Regulations 标准与法规

The applicable biodiversity and ecosystem inventory/ literature/regulation / standard for factories located in Changchun, Jilin, China are listed as below. 对于中国，吉林省，长春市的工厂适用的生物多样性和生态系统相关清单/文献/法规/标准罗列如下。

- IUCN (International Union for Conservation of Nature) “Red List of Threatened Species 《国际自然保护联盟濒危物种红色名录》
- Convention of International Trade in Endangered Species of Wild Fauna and Flora (CITES) 《濒危野生动植物国际贸易公约》
- China Red List of Biodiversity 《中国生物多样性红色名录》
- China Red List of Biodiversity — Plant 《中国生物多样性红色名录-高等植物卷》
- China Red List of Biodiversity — Vertebrate 《中国生物多样性红色名录-脊椎动物卷》
- National Protected List of Terrestrial Wild Animals with Important Ecological, Scientific and Social Value 《国家保护的有重要生态、科学、社会价值的陆生野生动物名录》
- List of Invasive Alien Species in China’s Natural Ecosystems 《中国自然生态系统外来入侵物种名单》
- List of Key Invasive Alien Species Under National Management 《国家重点管理外来入侵物种名录》
- Wildlife Protection Law of the People's Republic of China 《中华人民共和国野生动物保护法》
- Regulations of the People's Republic of China on the Protection of Wild Plants 《中华人民共和国野生植物保护条例》
- Technical Guidelines for Environmental Impact Assessment —Ecological Impact 《环境影响评价技术导则 生态影响（HJ 19—2022）》
- Technical Guidelines for Biodiversity Monitoring - Birds 《生物多样性观测技术导则 鸟类（HJ 710.4-2014）》

- **Technical Guidelines for Biodiversity Monitoring Establishment of Permanent Observation Plots for Plant Diversity (Draft for Opinions)** 《生态多样性观测技术导则 植物多样性观测固定样地的设置》（征求意见稿）
- **Technical Guidelines for Biodiversity Monitoring - Terrestrial Vascular Plants** 《生物多样性观测技术导则 陆生维管植物（HJ 710.1-2014）》
- **Technical Guidelines for Biodiversity Monitoring - Terrestrial Mammals** 《生物多样性观测技术导则 陆生哺乳动物（HJ 710.3-2014）》
- **White Paper on Biodiversity Conservation in China** 《中国的生物多样性保护》白皮书
- **“The 14th Five-year Plan “Rescue Protection of 50 Species Small Populations Wild Plants : Asplenium komarovii Akasawa（Jilin Baishan Siberian Musk Deer National Nature Reserve, Jilin Tong Fossil Lake National Nature Reserve）** 《“十四五”抢救性保护的 50 种极小种群野生植物:对开蕨（吉林白山原麝国家级自然保护区、吉林通化石湖国家级自然保护区）》
- **Jilin Province Issued the Implementation Opinions on Further Strengthening Biodiversity Conservation** 吉林省印发《关于进一步加强生物多样性保护的实施意见》
- **Jilin Province Biodiversity Conservation Strategy and Action Plan (2011-2030)** 《吉林省生物多样性保护战略与行动计划(2011-2030 年)》

2 AREA OF INFLUENCE 影响区域

2.1 Site Location 场地位置

The Site is located at No. 667, Sanyou Road, Chaoyang District, Changchun City, Jilin Province, P. R. China (**Figure 1**). The southern corner of the Site is 43°45'46.25"N, 125°10'16.08"E. The Site is owned by Changchun Dongjin Auto Parts Co., Ltd. The Site was built in 2010 and leased to Constellium Engley in 2015. The Site is located in a combined industrial, commercial, and residential area. Bayi Reservoir wetland is located 7.5 kilometres east of the Site. Other than that, no other protected areas were identified within 10-km radius of the Site. 场地位于中国吉林省长春市朝阳区三友路 667 号（**图 1**）。工厂南面墙角坐标为北纬 43°45'46.25"，东经 125°10'16.08"。场地为长春市东进汽车零部件有限公司所有。场地建设于 2010 年，并于 2015 年租赁给肯联英利。场地所在区域主要为工业，商业和住宅区域。八一水库湿地位于场地东侧 7.5 千米处。除此之外，距场地 10 千米半径范围内未识别到其他保护区。

2.2 Site Layout Description 场地布局描述

The Site covers an area of approximately 30,079 square meters (sqm). The main buildings on-site cover an area of approximately 12,493 square meters (sqm). The green area of the Site covers an area of approximately 5,596 square meters (sqm). The main buildings include office building, workshop 1, workshop 2, and workshop 3. The auxiliary facilities include maintenance room, guardroom, temporary general industrial waste storage room, and temporary material storage room. The green areas of the Site are mainly distributed at southwestern portion, the western portion, and along the northern and the eastern portion of the fence. The remainder of the Site consists of asphalt-paved parking lots and asphalt-paved roads. At the time of Site visit, the southwestern outside the Site is urban public green area and Fuyu Street, the southeastern is public green area and Sanyou Road, northeastern is Nazida Automotive Equipment Manufacturing Company, northwestern is vacant land and Sanyou Auto Parts Manufacturing Company. 工厂占地面积约 30,079 平方米。工厂主要建筑占地约 12,493 平方米。工厂绿化面积约 5,596 平方米。主要建筑包括办公楼、1 号车间、2 号车间和 3 号车间。辅助设施包括维修室，门卫室，一般工业废物暂存间，和物料暂存间。场地绿地主要分布在西南部分、西部以及沿着围栏的北部和东部。工厂其余部分为硬化的停车场和道路。场地走访期间，场地周边西南方向为城市绿地和阜育大街，东南方向为公共绿地和三友路，东北方向紧邻纳资达汽车装备制造公司，西北方向为空地和三友汽车零部件制造公司。

2.2.1 Utilities 公用设施

The following utilities are supplied to the Site 场地配有以下公辅设施：

- **Power:** The electricity is supplied by the State Grid Jilinsheng Electric Power Co., Ltd. Changchun Power Supply Branch. 供电：场地供电由国网吉林省电力有限公司长春供电公司提供。
- **Water Supply:** No groundwater extraction wells were reported or observed at the Site for water supply purpose. The Site is connected to the municipal water supply and the connection point was located to the southwest of the Site along the Fuyu Street. 供水：场地内未报告或观察到地下水取水井。场地供水为市政供水，由场地西侧阜育大街接入，供水接入点位于场地西南角。
- **Storm Water:** Separated municipal wastewater and storm water drainage systems were installed at the Site. The stormwater of the Site was flowing into the rainwater wells of the Site and drainage to the municipal stormwater pipeline along the Fuyu Street and finally discharge to the nearby surface water system. 雨水：场地实行雨污分流。场地内的雨水流入场地雨水井并排入阜育大街上的市政雨水管线，最终排入附近的地表水体。
- **Wastewater:** There was no industrial wastewater discharge from the Site. The domestic wastewater generated onsite was connected to the municipal sewage networks via the wastewater discharge point along the Fuyu Street to the west of the Site and discharged into the Fufeng Wastewater Treatment Plant, after treatment and finally discharged to Xinkai River. 废水排放：场地不产生工业污水。场地产生的生活污水通过场地西侧的污水排口排入阜育大街市政污水管网，最后排入富锋污水处理厂，处理达标后排入新凯河。
- **Heating and Cooling:** The building is heated and cooled by air conditioners for the office areas. Central heating of the Site is supplied by municipal heating pipeline during winter. 供暖和制冷：办公区域制热与制冷由空调控制。场地冬季由市政热力管道集中供暖。

2.3 Operations 生产运营

The Site was built in 2010 and the construction work was completed in 2011. The expansion construction work of workshop 3 was built in 2017 and completed in 2018. The owner of the Site is Changchun Dongjin Auto Parts Co., Ltd. The Site was leased from the owner since 2015. At the time of the site visit, the Site was producing the automotive structural parts and the industrial process including machining, punching, assembly and welding. Ancillary operations include administrative operations. 场地建设于 2010 年，于 2011 年建成。3 号车间扩建工程于 2017 年开始，2018 年竣工。场地为长春市东进汽车零部件有限公司所有。场地于 2015 年从业主处租赁。现场踏勘期间，场地生产汽车结构件，工艺流程包括机械加工、冲压、装配和焊接，以及行政业务等。

The production pollutants including air emission from welding, domestic wastewater, noise, domestic waste, industrial waste, and hazardous waste. The operation of the Site is two shift per day, 8 hours per shift, and five days per week. According to site representative, lawn maintenance is conducted every autumn through cutting off the dry vegetation to avoid the fire risk. 场地产生的污染包括焊接废气排放、生活污水、噪声、生活垃圾、一般固废和危险废物。现场作业每天两班倒，每班 8 小时，一周工作五天。每年秋天场地会剪除绿地上干枯的植被以避免火灾风险。

2.4 AOI Identification 影响区域识别

The Area of Influence covers at least the Area of Control (= premises), but can be larger than the Area of Control. Smaller sites may not have an area of influence beyond the areas of their direct operations and facilities. The Area of Influence outside the Area of Control is defined by each site. The pollutant discharge, operation and administration activities influence of the Site is described as following. 影响区域至少包括控制范围（=场地），但可以大于控制范围。较小场地的影响区域可能未超出其生产运营和设备设施的范围。场地控制范围以外的影响区域根据每个场地实际情况定义。场地的污染物排放、运营和管理活动的影响描述如下。

- **Wastewater and Stormwater:** the wastewater and stormwater were discharged to the municipal wastewater and stormwater pipelines, and two septic tanks (5 m³) were used onsite. According to the provided Testing Report for Noise, Air Emission and Wastewater dated February 2023 (Testing Report), the wastewater generated onsite is in compliance with the standard of Class III in the *Integrated Wastewater Discharge Standard (GB 8978—1996)*. At the time of site reconnaissance, oil stains were observed in the stormwater and flowing into the on-site stormwater wells, the oil could be from the trucks/forklift or the waste scraps temporary stack area. The oil polluted stormwater will be drained to the municipal stormwater pipeline and finally discharged to the nearby surface water body, which might have negative impact to the water quality and the aquatic creature. 污水和雨水：污水和雨水排放到市政废水和雨水管道。场地有两个五立方米的化粪池。根据提供的噪声、大气排放和废水检测报告（2023 年 2 月）（以下简称“检测报告”），场地产生的废水符合《污水综合排放标准》（GB 8978--1996）中的三类标准。现场踏勘期间，场地雨水积水中观察到油渍，并流入场地雨水井，该油渍可能来自于场内卡车叉车或周边废料临时堆放区域。被油渍污染的雨水排入市政雨水管道并排入附近地表水体，可能会对水质及水生生物产生负面影响。
- **Waste Management:** general solid waste and domestic waste were stored in the waste storage area located near the west boundary of the Site. Non-hazardous waste will be recycled by qualified vendor or transported by environmental sanitation department. The hazardous waste was stored in the

hazardous waste storage room with epoxy-coated floor in the workshop and will be regularly transported by qualified vendor. 废物管理：一般固体废物和生活垃圾存放于场地西边界附近的废物存放区域。非危险废物将由有资质的供应商回收或由环境卫生部门清运。危险废物储存在车间内铺有环氧树脂涂层的危废房中，并定期由有资质的供应商清运。

- **Air Emissions:** according to the EIA Report of the Site, the gas generated onsite is mainly particulate matters from the welding processes, and will be exhausted through two air emission outlets. According to the provided Testing Report, the exhausted gas generated onsite is in compliance with the standard of Class II in the *Integrated emission standard of air pollutants (GB 16297-1996)*. 废气：根据场地环评报告，场地产生的气体主要为焊接过程中产生的颗粒物。废气将通过两个废气排气筒排出。根据提供的检测报告，场地排放的废气符合《大气污染物综合排放标准》（GB 16297-1996）中的二类标准。
- **Noise:** according to the EIA Report of the Site and the provided Testing Report, the boundary noise generated onsite is in compliance with the standard of Class III in the *Emission Standard for Industrial Enterprises Noise at Boundary (GB 12348—2008)*. At the time of site visit, the traffic noise from trucks was identified. 噪声：根据场地环评报告及提供的检测报告，场界噪声符合《工业企业厂界环境噪声排放标准》（GB 12348-2008）中的三类标准。现场勘察期间，识别到了来自场地卡车的噪声。
- **Soil and Groundwater:** according to the site representative, no soil and groundwater investigation has been conducted for the site area. The soil and groundwater condition underneath the site area is unknown. 土壤地下水：根据场地代表介绍，场地范围内未曾开展过土壤地下水调查。场地下方土壤地下水情况未知。
- **Pest Management:** the pest management of poison bait spots were observed along the external wall foot of the office building. According to the site representative, mousetraps were also installed in the site area, no other pesticide was used in the site area. 虫害管理：包括办公楼外墙脚下观察到的毒饵点。据场地代表所述，场地内还安装了捕鼠器，场地内再无使用其他杀虫剂。

The emissions onsite are well controlled. Therefore, the AOI of the Site is identified as the internal site area (area of control) and surrounding areas that 50 m outside the site boundaries. The internal site area is managed by Constellium Engley. The outside areas are urban public green areas and adjacent factories managed by municipal department and other companies. 场地排放的控制情况良好。因此，场地影响范围被定为场地内部区域（场地控制范围）和场地边界外 50 米的周边区域。工厂内部区域由肯联英利管理。外部区域是城市公共绿地由市政部门管理，相邻工厂由其他公司自行管理。

3 REGIONAL INFORMATION 区域信息

3.1 Physical Setting 自然条件

3.1.1 Climate 气候条件

Changchun City is located in the mid latitude northern temperate zone of the Northern Hemisphere, with a climate between the transition zone between the eastern mountainous humid area and the western plain semi-arid area. It belongs to the temperate continental semi humid monsoon climate type, with significant seasonal changes. The average annual temperature is 4.3-4.9°C, and the average temperature in the hottest month (July) is 22.4-22.7 °C. 长春市居北半球中纬度北温带，气候介于东部山地湿润区与西部平原半干旱区之间的过渡带，属温带大陆性半湿润季风气候类型，季节变化明显。年均气温 4.3—4.9°C，最热月（7月）平均气温 22.4—22.7°C。

3.1.2 Geography 地理条件

Changchun is located on the Yitong River platform where the eastern mountainous area of Songliao Plain transits to the western plain. The terrain is high in the east and low in the west. The landform consists of platform (70%) and plain (30%). The Site was leveled before construction and the overall elevation was consistent with the surrounding municipal roads. 长春位于松辽平原东部山地向西部平原过渡的伊通河台地上，地势东高西低，地貌由台地（70%）和平原（30%）组成。现场建设前进行了土地平整，整体标高与周围市政道路齐平。

3.1.3 Fauna and Flora Zoning 动植物区划

The zoogeographical division of Changchun City belongs to the Palearctic Realm-Northeast Region, and the fauna zoning belongs to the Songliao Plain in the temperate forest, shrub and grassland fauna habitat area. 长春市动物地理区划属于古北界-东北区，动物区系属于温带森林、灌丛、草地动物群栖息区中的松辽平原区。

The flora of Changchun City belongs to the Pan-Arctic Flora Zone-Eurasian Grassland Flora Area, and the vegetation type belongs to the temperate (subtropical) deciduous broad-leaved forest. 长春市植物区系属于泛北极植物区系-欧亚草原植物亚区，植被类型属于温带（亚热带）落叶阔叶林。

3.1.4 Habitat Type 栖息地类型

The main habitat types in Changchun City include cities, forests, and inland water bodies. According to the *Vegetation Zoning in China*, the area where the Site is located belongs to the temperate coniferous and deciduous broad-leaved mixed forest zone (Ilii). The closest wetland to Site is the Bayi Reservoir wetland

located 7.5 kilometers east of the site. 长春市主要栖息地类型包括城市、森林及内陆水体。根据中国植被区划数据，场地所在区域为温带针叶、落叶阔叶混交林（Ilii）。距离场地最近的湿地为东侧 7.5 千米处的八一水库湿地。

Reference: <http://www.gjsrs.cn/infofordata?id=802d8d8f-a7b8-498b-b425-f804951100ed>

3.2 Protected Areas and Species 保护区和保护物种

3.2.1 Protected Areas 保护区

During this assessment, Arcadis has reviewed the following list of protected areas within 10-km radius of the Site. 本次评估期间，凯谛思审阅了如下保护区名录中距场地 10 千米半径范围内的地点信息：

- Wetland or habitat of birds, fishes, and animals 湿地或者鸟类，鱼类和动物的栖息地
- National Nature Reserve Area 国家级自然保护区
- National Park 国家公园
- Important Ecological Redline Protected Areas 重要生态红线保护区
- Biodiversity Key Areas 生物多样性关键区域
- High Conservation Value Areas (HCVA) 高保护价值区
- World Natural Heritage Site 世界自然遗产地
- World Natural Protected Areas 世界自然保护区
- Core areas of UNESCO biosphere reserves 联合国教科文组织生物圈保护区核心区

Bayi Reservoir wetland is located 7.5 kilometres east of the Site. Other than that, no other protected areas were identified within 10-km radius of the Site. 八一水库湿地位于场地东侧 7.5 千米处。除此之外，距场地 10 千米半径范围内未识别到其他保护区。

3.2.2 Protected Species 保护物种

During this assessment, Arcadis has reviewed the following list of protected species. 本次评估期间，凯谛思参阅了以下保护物种名录：

- IUCN Red List of Threatened Species 世界自然保护联盟濒危物种红色名录
 - ✓ Extinct Species (EX) 绝灭物种
 - ✓ Extinct Species in the Wild (EW) 野外绝灭物种
 - ✓ Critically Endangered Species (CR) 极危物种
 - ✓ Endangered Species (EN) 濒危物种

- ✓ Vulnerable Species (VU) 易危物种
 - ✓ Near Threatened Species (NT) 近危物种
 - ✓ Least Concern (LC) 无危
 - ✓ Data Deficient (DD) 数据缺乏
 - ✓ Not Evaluated (NE) 未予评估
- *List of Wild Animals/Plants of National Priority Protection and List of Terrestrial Wildlife with Significant Ecological, Scientific and Social Value ('Sanyou' Protected Animals)* formulated according to the *Wildlife Protection Law of the People's Republic of China* 根据《中华人民共和国野生动物保护法》制定的《国家重点保护野生动/植物名录》和《有重要生态、科学、社会价值的陆生野生动物名录》（“三有”保护动物）

The following protected species are identified with a potential to occur within the AOI 以下识别的保护物种可能会出现在场地的影响区域范围内：

Table 表 1. Protected Species Potential to Occur in the AOI 场地影响区域可能出现的保护物种清单

Scientific Name 物种学名	Chinese Name 物种中文名	IUCN Conservation Status 濒危等级	RCB Conservation Status 濒危等级	WPLPRC 野生动物保护法动物	Average Distance 平均距离 km
<i>Anas crecca</i>	绿翅鸭	LC	LC	Sanyou 三有	8
<i>Anas acuta</i>	针尾鸭	LC	LC	Sanyou 三有	7
<i>Tachybaptus ruficollis</i>	小鸕鹚	LC	LC	Sanyou 三有	8
<i>Sibirionetta formosa</i>	花脸鸭	LC	NT	Sanyou 三有	7
<i>Chloris sinica</i>	金翅雀	LC	LC	Sanyou 三有	8
<i>Aythya ferina</i>	红头潜鸭	VU	LC	Sanyou 三有	8
<i>Mareca strepera</i>	赤膀鸭	LC	LC	Sanyou 三有	8
<i>Motacilla alba</i>	白鹡鸰	LC	LC	Sanyou 三有	9
<i>Aythya fuligula</i>	凤头潜鸭	LC	LC	Sanyou 三有	8
<i>Numenius madagascariensis</i>	大杓鹬	EN	VU	II	8
<i>Fulica atra</i>	白骨顶	LC	LC	Sanyou 三有	9
<i>Anas zonorhyncha</i>	斑嘴鸭	LC	LC	Sanyou 三有	9

Scientific Name 物种学名	Chinese Name 物种中文名	IUCN Conservation Status 濒危等级	RCB Conservation Status 濒危等级	WPLPRC 野生动物保护法动物	Average Distance 平均距离 km
<i>Phasianus colchicus</i>	环颈雉	LC	LC	Sanyou 三有	8
<i>Podiceps cristatus</i>	凤头鸕鹚	LC	LC	Sanyou 三有	9
<i>Podiceps cristatus</i>	赤颈鸕鹚	LC	NT	II	8
<i>Dendrocopos major</i>	大斑啄木鸟	LC	LC	Sanyou 三有	9
<i>Egretta garzetta</i>	白鹭	LC	LC	Sanyou 三有	9
<i>Emberiza pallasii</i>	苇鹀	LC	LC	Sanyou 三有	9
<i>Emberiza pusilla</i>	小鹀	LC	LC	Sanyou 三有	9
<i>Falco peregrinus</i>	游隼	LC	NT	II	9
<i>Falco tinnunculus</i>	红隼	LC	LC	II	9
<i>Gallinula chloropus</i>	黑水鸡	LC	LC	Sanyou 三有	9
<i>Himantopus himantopus</i>	黑翅长脚鹬	LC	LC	Sanyou 三有	9
<i>Lanius cristatus</i>	红尾伯劳	LC	LC	Sanyou 三有	9
<i>Lanius excubitor</i>	灰伯劳	LC	LC	Sanyou 三有	9
<i>Lanius sphenocercus</i>	楔尾伯劳	LC	LC	Sanyou 三有	9
<i>Motacilla cinerea</i>	灰鹊鸂	LC	LC	Sanyou 三有	9
<i>Nycticorax nycticorax</i>	夜鹭	LC	LC	Sanyou 三有	9
<i>Passer montanus</i>	麻雀	LC	LC	Sanyou 三有	9
<i>Periparus ater</i>	煤山雀	LC	LC	Sanyou 三有	9
<i>Phylloscopus proregulus</i>	黄腰柳莺	LC	LC	Sanyou 三有	9
<i>Pica pica</i>	喜鹊	LC	LC	Sanyou 三有	9
<i>Podiceps nigricollis</i>	黑颈鸕鹚	LC	LC	II	9
<i>Saxicola maurus</i>	黑喉石鹀		LC	Sanyou 三有	9

Scientific Name 物种学名	Chinese Name 物种中文名	IUCN Conservation Status 濒危等级	RCB Conservation Status 濒危等级	WPLPRC 野生动物保护法动物	Average Distance 平均距离 km
<i>Spatula querquedula</i>	白眉鸭	LC	LC	Sanyou 三有	9
<i>Streptopelia chinensis</i>	珠颈斑鸠		LC	Sanyou 三有	9
<i>Tringa ochropus</i>	白腰草鹞	LC	LC	Sanyou 三有	9
<i>Acrocephalus bistrigiceps</i>	黑眉苇莺	LC	LC	Sanyou 三有	9
<i>Tringa stagnatilis</i>	泽鹞	LC	LC	Sanyou 三有	9
<i>Actitis hypoleucos</i>	矶鹞	LC	LC	Sanyou 三有	9
<i>Anas platyrhynchos</i>	绿头鸭	LC	LC	Sanyou 三有	9
<i>Ardea alba</i>	大白鹭	LC	LC	Sanyou 三有	9
<i>Ardeola bacchus</i>	池鹭	LC	LC	Sanyou 三有	9
<i>Bucephala clangula</i>	鹊鸭	LC	LC	Sanyou 三有	9
<i>Butorides striata</i>	绿鹭	LC	LC	Sanyou 三有	9
<i>Calliope calliope</i>	红喉歌鸲	LC	LC	Sanyou 三有	9
<i>Cecropis daurica</i>	金腰燕	LC	LC	Sanyou 三有	9
<i>Charadrius dubius</i>	金眶鸻	LC	LC	Sanyou 三有	9
<i>Chroicocephalus ridibundus</i>	红嘴鸥	LC	LC	Sanyou 三有	9
<i>Cuculus canorus</i>	大杜鹃	LC	LC	Sanyou 三有	9
<i>Cuculus micropterus</i>	四声杜鹃	LC	LC	Sanyou 三有	9
<i>Cyanopica cyanus</i>	灰喜鹊	LC	LC	Sanyou 三有	9
<i>Cygnus olor</i>	疣鼻天鹅	LC	NT	II	9

4 BIDIVERSITY FEATURES SURVEY 生物多样性特征调查

4.1 Site Habitat 场地栖息地

During the site reconnaissance, the Site is generally flat, the main habitat types within the AOC of the Site are urban, shrub, and grassland. The plant community in the Site is grassland consisting of artificial greening spaces and vacant grassland. No forests or wetlands were found within the AOC. The west and south sides of the Site are adjacent to the urban public green space artificial forest of street trees. 现场踏勘期间，场地基本平坦，场地控制范围内主要栖息地类型为城市、灌木丛及草丛。场地植物群落为草地群落，由人工绿地和空地野生草地组成。场地控制范围内未发现森林及湿地。场地西侧及南侧紧邻城市公共绿地，人工林和行道树。

Table 表 2. AOI Habitat Type 影响区域栖息地类型

AOI Habitat Type 影响区域栖息地类型	Photo 图片			
Buildings and Structures (area of control) 场地建筑				
Shrub and Grassland (area of control) 灌木丛及草丛				
Public Green Space (out of control) 城市公共绿地				

4.2 Flora Community 植物群落




4.2.1 Species of Flora 植物种类








A total of eight (8) sampling quadrats were set for flora survey. Five (5) of them were located in the vacant grassland at the southwestern portion of the Site, three (3) of them were located at the greening spaces along the boundaries of the Site. The sampling map is shown in **Figure 2**. Considering that some plants were artificially planted at the boundary of the plot or observed outside the quadrats, these plants will be additionally recorded in the list as well. 植物调查共选取了八个样方，其中五个位于场地西南部分的空地草地，三个位于场地边界的绿地。抽样位置图见**图 2**。考虑到样地边界处仍有部分人工种植的植物和不在样方内的植物，这些植物会被额外统计并列入植物清单。









The flora identified within the AOC (in the Site) was listed in **Table 3** as follows with relevant taxonomy. A total of 33 species of plants and Poaceae were identified during the site reconnaissance. None of them were listed in the *List of National Key Protected Wild Plants in China* or *List of Provincial Key Protected Wild Plants in Jilin Province*. 场地控制区域内确认的植物及其分类见表**3**。现场踏勘期间，总共记录了 33 种植物，以及禾本科植物。未识别到国家重点保护野生植物或吉林省级保护植物。









Reference: <https://www.plantplus.cn/bhzw/>

Table 表 3. The Flora and Taxonomy Inventory within the AOC 场地控制范围内的植物及其分类清单

Class 纲	Order 目	Family 科	Genus 属	Species 种	Photo 照片
木兰纲 Magnoliopsida	菊目 Asterales	菊科 Asteraceae	豚草属	豚草 <i>Ambrosia artemisiifolia</i>	
			Ambrosia	三裂叶豚草 <i>Ambrosia trifida</i>	
			蒿属 Artemisia	野艾蒿 <i>Artemisia lavandulifolia</i>	

Class 纲	Order 目	Family 科	Genus 属	Species 种	Photo 照片
木兰纲 Magnoliopsida	菊目 Asterales	菊科 Asteraceae		猪毛蒿 <i>Artemisia scoparia</i>	
				黄花蒿 <i>Artemisia annua</i>	
				大籽蒿 <i>Artemisia sieversiana</i>	/
			毛连菜属 Picris	毛连菜 <i>Picris hieracioides</i>	
			蓟属 Cirsium	刺儿菜 <i>Cirsium arvense</i>	
			莴苣属 Lactuca	翅果菊 <i>Lactuca indica</i>	
			飞蓬属 Erigeron	小蓬草 <i>Erigeron canadensis</i>	
			黄鹌菜属 Youngia	黄鹌菜 <i>Youngia japonica</i>	

Class 纲	Order 目	Family 科	Genus 属	Species 种	Photo 照片
木兰纲 Magnoliopsida	菊目 Asterales	菊科 Asteraceae	蒲公英属 Taraxacum	蒲公英 <i>Taraxacum mongolicum</i>	
			百日菊 Zinnia	百日菊* <i>Zinnia elegans</i>	
			翠菊属 Callistephus	翠菊* <i>Callistephus chinensis</i>	
			秋英属 Cosmos	秋英* <i>Cosmos bipinnatus</i>	
	豆目 Fabales	豆科 Fabaceae	鸡眼草属 Kummerowia	鸡眼草 <i>Kummerowia striata</i>	
			草木樨属 Melilotus	草木樨* <i>Melilotus suaveolens</i>	
	石竹目 Caryophyllales	蓼科 Polygonaceae	酸模属 Rumex	皱叶酸模 <i>Rumex crispus</i>	
			蒺藜属 Polygonum	蒺藜 <i>Polygonum aviculare</i>	

Class 纲	Order 目	Family 科	Genus 属	Species 种	Photo 照片
木兰纲 Magnoliopsida	石竹目 Caryophyllales	苋科 Amaranthaceae	藜属 Chenopodium	藜 <i>Chenopodium album</i>	
			千日红属 Gomphrena	千日红* <i>Gomphrena globosa</i>	
		马齿苋科 Portulacaceae	马齿苋属 Portulaca	大花马齿苋* <i>Portulaca grandiflora</i>	
	龙胆目 Gentianales	夹竹桃科 Apocynaceae	鹅绒藤属 Cynanchum	华萝藦 <i>Cynanchum hemsleyanum</i>	
			长春花属 Catharanthus	长春花* <i>Catharanthus roseus</i>	
	桃金娘目 Myrtales	Onagraceae 柳叶菜科	月见草属 Oenothera	月见草 <i>Oenothera biennis</i>	
	蔷薇目 Rosales	榆科 Ulmaceae	榆属 Ulmus	榆树 <i>Ulmus pumila</i>	
		大麻科 Cannabaceae	葎草属 Humulus	葎草 <i>Humulus scandens</i>	

Class 纲	Order 目	Family 科	Genus 属	Species 种	Photo 照片
木兰纲 Magnoliopsida	蔷薇目 Rosales	蔷薇科 Rosaceae	草莓属 Fragaria	野草莓* <i>Fragaria vesca</i>	
	伞形目 Apiales	伞形科 Apiaceae	蛇床属 Cnidium	蛇床 <i>Cnidium monnieri</i>	
	牻牛儿苗目 Geraniales	牻牛儿苗科 Geraniaceae	老鹳草属 Geranium	老鹳草 <i>Geranium wilfordii</i>	
	唇形目 Lamiales	车前科 Plantaginaceae	车前属 Plantago	车前* <i>Plantago asiatica</i>	
	十字花目 Brassicales	十字花科 Brassicaceae	垂果南芥属 Catolobus	垂果南芥* <i>Catolobus pendulus</i>	
木贼纲 Equisetopsida	木贼目 Equisetales	木贼科 Equisetaceae	木贼属 Equisetum	问荆 <i>Equisetum arvense</i>	
单子叶植物纲 Monocotyledoneae	禾本目 Poales	禾本科 Poaceae	-	-	

*Note: artificially planted species that are excluded in the sampling quadrat. *注：样方外统计的人工种植植物物种。

4.2.2 Relative Abundance of Flora 植物相对丰度

During this assessment, the coverage was used to represent the relative abundance of flora in grassland of the Site. The relative coverage of each plant species in the quadrats is shown in **Table 4**. 调查期间，场地内草地群落的植物相对丰度用相对盖度表示。每个样方中的物种盖度见表 4。

Table 表 4. The Relative Coverage of Plant Species in the Quadrats 样方中的植物物种相对盖度

物种 Species	百分比 Percentage							
	样方 1 Quadrat 1	样方 2 Quadrat 2	样方 3 Quadrat 3	样方 4 Quadrat 4	样方 5 Quadrat 5	样方 6 Quadrat 6	样方 7 Quadrat 7	样方 8 Quadrat 8
裸土 Bareground	5	0	2	0	0	0	8	0
豚草 <i>Ambrosia artemisiifolia</i>	35	30	5	30	34	25	3	15
三裂叶豚草 <i>Ambrosia trifida</i>	0	0	0	0	0	7	4	57
野艾蒿 <i>Artemisia lavandulifolia</i>	25	5	53	8	10	0	0	3
猪毛蒿 <i>Artemisia scoparia</i>	1	1	0	0	0	2	0	0
黄花蒿 <i>Artemisia annua</i>	0	0	2	0	0	0	0	8
大籽蒿 <i>Artemisia sieversiana</i>	0	0	0	0	0	0	2	0
毛连菜 <i>Picris hieracioides</i>	0	3	0	0	0	0	0	0
刺儿菜 <i>Cirsium arvense</i>	0	0	0	4	10	0	0	0
翅果菊 <i>Lactuca indica</i>	0	0	0	0	3	1	0	1
小蓬草 <i>Erigeron canadensis</i>	0	0	0	0	0	1	0	0
黄鹌菜 <i>Youngia japonica</i>	0	0	0	0	0	0	0	1
蒲公英 <i>Taraxacum mongolicum</i>	2	1	0	0	0	0	0	0
鸡眼草 <i>Kummerowia striata</i>	3	30	0	40	5	1	0	0
藜 <i>Chenopodium album</i>	2	1	0	1	1	0	60	1
华萝藦 <i>Cynanchum hemsleyanum</i>	3	1	8	0	5	0	0	0
月见草 <i>Oenothera biennis</i>	2	0	0	0	0	0	0	0
榆树 <i>Ulmus pumila</i>	0	8	0	0	0	0	0	0
葎草 <i>Humulus scandens</i>	0	0	0	0	0	0	10	3

物种 Species	百分比 Percentage							
	样方 1 Quadrat 1	样方 2 Quadrat 2	样方 3 Quadrat 3	样方 4 Quadrat 4	样方 5 Quadrat 5	样方 6 Quadrat 6	样方 7 Quadrat 7	样方 8 Quadrat 8
蛇床 <i>Cnidium monnieri</i>	0	0	15	0	0	0	0	0
老鹳草 <i>Geranium wilfordii</i>	0	0	10	2	25	58	0	0
问荆 <i>Equisetum arvense</i>	0	0	0	5	0	0	5	1
皱叶酸模 <i>Rumex crispus</i>	0	0	0	0	2	0	0	0
篇蓄 <i>Polygonum aviculare</i>	0	0	0	0	0	2	0	0
禾本科 Poaceae	22	20	5	10	5	3	8	10

4.2.3 Diversity Index of Flora 植物多样性指数


The Simpson's Index calculates species alpha diversity by considering species richness (the number of distinct species in a sample) and relative abundance of species (the number of each species). The range is between 0 and 1, closer to 1 indicating higher diversity and closer to 0 indicating lower diversity. In this assessment, the calculated Simpson's Index for flora in the sampling quadrat is 0.88. 辛普森指数考虑物种丰富度（样本中不同物种的数量）和物种相对丰度（每个物种的数量）计算物种 alpha 多样性。值域在 0 到 1 之间，越接近 1 表示多样性越高，越接近 0 表示多样性越低。本次评估取样计算得出，抽样样方内的植物群落的辛普森指数为 0.88。

4.3 Fauna Community 动物群落

4.3.1 Species of Flora 动物种类




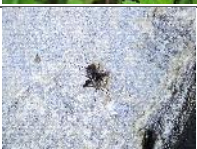






The fauna recorded during this assessment within the AOC of the Site is listed in **Table 5** together with their taxonomy. A total of 1 species of mammal, 9 species of birds, 17 species of insects and 6 species of other invertebrates were recorded. 本次评估期间在场地控制范围内记录到的动物及其分类列于表 5 中。共记录到 1 种哺乳动物、9 种鸟类、17 种昆虫及 6 种其他无脊椎动物。

Table 表 5. The Fauna and Taxonomy Inventory within the AOC 场地控制范围内的动物及其分类清单

Class 纲	Order 目	Family 科	Genus 属	Species 种	Photo 照片
哺乳纲 Mammalia	食虫目 Insectivora	猬科 Erinaceidae	猬属 Erinaceus	东北刺猬 Amur hedgehog <i>Erinaceus amurensis</i>	

Class 纲	Order 目	Family 科	Genus 属	Species 种	Photo 照片
鸟纲 Aves	鹮形目 Pelecaniformes	鹭科 Ardeidae	夜鹭属 Nycticorax	夜鹭 Black-crowned night heron <i>Nycticorax nycticorax</i>	/
	鸠形目 Columbiformes	鸠鸽科 Columbidae	斑鸠属 Streptopelia	山斑鸠 Oriental turtle dove <i>Streptopelia orientalis</i>	
	雀形目 Passeriformes	伯劳科 Laniidae	伯劳属 Lanius	红尾伯劳 Brown shrike <i>Lanius cristatus</i>	
				北椋鸟 Daurian starling <i>Agropsar sturninus</i>	
		燕科 Hirundinidae	燕属 Hirundo	家燕 Barn swallow <i>Hirundo rustica</i>	/
				斑燕属 Cecropis	金腰燕 Red-rumped swallow <i>Cecropis daurica</i>
		雀科 Passeridae	雀属 Passer	麻雀 Eurasian tree sparrow <i>Passer montanus</i>	
		鸦科 Corvidae	灰喜鹊属 Cyanopica	灰喜鹊 Azure-winged magpie <i>Cyanopica cyanus</i>	
				鹊属 Pica	喜鹊 Oriental magpie <i>Pica pica</i>
		蛛形纲 Arachnida	蜘蛛目 Araneae	圆蛛科 Araneidae	圆蛛属 Araneus
艾蛛属 Cyclosa	突尾艾蛛 Common trashline orbweaver <i>Cyclosa conica</i>				
优列蛛科 Eutichuridae	红螯蛛属 Cheiracanthium			绿色红螯蛛 Yellow sac spider <i>Cheiracanthium virescens</i>	

Class 纲	Order 目	Family 科	Genus 属	Species 种	Photo 照片	
		球蛛科 Theridiidae	拟肥腹蛛属 Parasteatoda	温室拟肥腹蛛 Common house spider <i>Parasteatoda tepidariorum</i>		
昆虫纲 Insecta	鞘翅目 Coleoptera	拟步甲科 Tenebrionidae	伪叶甲属 Lagria	林氏伪叶甲 Rough-haired lagria beetle <i>Lagria hirta</i>		
		步甲科 Carabidae	婪步甲属 Harpalus	毛婪步甲 Ground beetle <i>Harpalus griseus</i>		
		叶甲科 Chrysomelidae	毛萤叶甲属 Pyrrhalta	榆绿毛萤叶甲 Leaf beetle <i>Pyrrhalta aenescens</i>		
			金叶甲属 Chrysolina	蒿金叶甲 Leaf beetle <i>Chrysolina aeruginosa</i>		
		肖叶甲科 Eumolpidae	萝藦肖叶甲属 Chrysochus	中华萝藦肖叶甲 Blue shiny leaf beetle <i>Chrysochus chinensis</i>		
		瓢虫科 Coccinellidae	和瓢虫属 Harmonia	异色瓢虫 Asian ladybeetle <i>Harmonia axyridis</i>		
	半翅目 Hemiptera	叶蝉科 Cicadellidae	叶蝉属 Cicadella	大青叶蝉 Green leafhopper <i>Cicadella viridis</i>		
		红蝽科 Pyrrhocoridae	红蝽属 Pyrrhocoris	地红蝽 Firebug <i>Pyrrhocoris tibialis</i>		
		鳞翅目 Lepidoptera	粉蝶科 Pieridae	粉蝶属 Pieris	东方菜粉蝶 Cabbage white <i>Pieris canidia</i>	/

Class 纲	Order 目	Family 科	Genus 属	Species 种	Photo 照片
昆虫纲 Insecta		灰蝶科 Lycaenidae	蓝灰蝶属 Everes	蓝灰蝶 Short-tailed blue <i>Everes argiades</i>	
		螟蛾科 Pyralidae	锥额野螟属 Loxostege	尖锥额野螟 Lesser pearl <i>Loxostege verticalis</i>	
	直翅目 Orthoptera	斑腿蝗科 Catantopidae	稻蝗属 Oxya	稻蝗 Short-horned grasshopper <i>Oxya sp.</i>	
		蟋蟀科 Gryllidae	斗蟋属 Velarifictorus	迷卡斗蟋 Japanese burrowing cricket <i>Velarifictorus micado</i>	
	蜻蜓目 Odonata	螳科 Coenagrionidae	异痣螳属 Ischnura	东亚异痣螳 Forktails <i>Ischnura asiatica</i>	
	双翅目 Diptera	食蚜蝇科 Syrphidae	蜂蚜蝇属 Volucella	黑蜂蚜蝇 Hoverfly <i>Volucella nigricans</i>	
	革翅目 Dermaptera	蠼螋科 Labiduridae	蠼螋属 Labidura	蠼螋 Earwig <i>Labidura riparia</i>	
	膜翅目 Hymenoptera	蚁科 Formicidae	弓背蚁属 Camponotus	日本弓背蚁 Japanese carpenter ant <i>Camponotus japonicus</i>	
腹足纲 Gastropoda	柄眼目 Stylommatophora	巴蜗牛科 Bradybaenidae	巴蜗牛属 Bradybaena	灰尖巴蜗牛 Asian trampsnail <i>Bradybaena ravida</i>	
倍足纲 Diplopoda	/	/	/	马陆 Milipede	

4.3.2 Protected Species and Relative Abundance 保护物种及其相对丰度

During the assessment, nine protected species of birds and one protected species of mammal are identified within the AOI. The relative abundance of birds was also recorded in the assessment. The conservation level and the relative abundance of these protected species are listed in **Table 6**. However, the relative abundance of insects and other invertebrates were not recorded. 本次评估，在场地影响区域内共确认了九种鸟类保护物种。评估中记录了鸟类的相对丰度。这些鸟类的保护级别和相对丰度见表 6。昆虫及其他无脊椎动物的相对丰度未记录。

Table 表 6. Conservation Level and Relative Abundance of Protected Species in the AOI 场地影响区域内的物种保护级别及其相对丰度

Scientific Name 学名	English Name 英文名	Chinese Name 中文名	Conservation Level 保护级别	Relative Abundance 相对丰度
<i>Erinaceus amurensis</i>	Amur hedgehog	东北刺猬	LC & Sanyou 无危&三有	/
<i>Nycticorax nycticorax</i>	Black-crowned night heron	夜鹭	LC & Sanyou 无危&三有	1
<i>Streptopelia orientalis</i>	Oriental turtle dove	山斑鸠	LC & Sanyou 无危&三有	2
<i>Lanius cristatus</i>	Brown shrike	红尾伯劳	LC & Sanyou 无危&三有	2
<i>Cyanopica cyanus</i>	Azure-winged magpie	灰喜鹊	LC & Sanyou 无危&三有	7
<i>Pica pica</i>	Oriental magpie	喜鹊	LC & Sanyou 无危&三有	1
<i>Hirundo rustica</i>	Barn swallow	家燕	LC & Sanyou 无危&三有	9
<i>Cecropis daurica</i>	Red-rumped swallow	金腰燕	LC & Sanyou 无危&三有	1
<i>Agropsar sturninus</i>	Daurian starling	北椋鸟	LC & Sanyou 无危&三有	1
<i>Passer montanus</i>	Eurasian tree sparrow	麻雀	LC & Sanyou 无危&三有	15

4.3.3 Diversity Index of Bird 鸟类多样性指数

The Simpson's Index calculates species alpha diversity by considering species richness (the number of distinct species in a sample) and relative abundance of species (the number of each species). The range is between 0 and 1, closer to 1 indicating higher diversity and closer to 0 indicating lower diversity. In this assessment, the calculated Simpson's Index of birds in this season is 0.78. 辛普森指数考虑物种丰富度（样本中不同物种的数量）和物种相对丰度（每个物种的数量）计算物种 alpha 多样性。值域在 0 到 1 之间，越接近 1 表示多样性越高，越接近 0 表示多样性越低。本次评估中，计算得出的鸟类在该季节的辛普森指数为 0.78。

4.4 Alien Species in Site 场地外来物种

During this assessment, common ragweed (*Ambrosia artemisiifolia*) and giant ragweed (*Ambrosia trifida*) were recognized as alien invasive species according to the *List of Alien Invasive species in China* issued by the Ministry of Ecology and Environment. 本次评估期间，根据生态环境部发布的《中国外来入侵物种名录》，豚草（*Ambrosia artemisiifolia*）和三裂叶豚草（*Ambrosia trifida*）被识别为外来入侵物种。

Both species originated from North America and are now widely distributed in China since their first entry in the 1930s. Their pollen the one of the main causes of human pollen allergies. In addition, they have inhibitory effects on Poaceae, Leguminosae and Compositae plants, which will impact local biodiversity and cause agricultural production reduction. According to *Management Measures for Invasive Alien Species of China*, the supervision and management of the impact of invasive alien species on biodiversity are the responsibility of the local government's ecological and environmental departments. If the site plans to reduce the impact of invasive species on the biodiversity, opinions from the ecological and environmental department of Changchun City can be consulted. 两种植物均原产北美，20世纪30年代进入中国，现已广泛分布。豚草花粉为人类花粉过敏的主要过敏原之一。此外，其对禾本科、豆科、菊科植物有抑制作用，会破坏本土生物多样性，造成农业减产。根据中国《外来入侵物种管理办法》，外来入侵物种对生物多样性影响的监督管理由地方政府生态环境部门负责。场地如计划降低入侵物种对场地生物多样性的影响，可征询长春市生态环境部门的意见。

According to the site representative, there are some auto parts are imported from other countries, these products are packaged by plastic film on the wooden pallets. The insect eggs of other countries could parasite in the wooden pallets and transported to the Site. At the time of site visit, no sign of insect eggs was observed in the wooden pallets. And the wooden pallets bear the International Plant Protection Convention (IPPC) sign, proving that they have been overheated or fumigated to kill potential insect eggs. Therefore, the risk of species invasion caused by imported wooden pallets on the site is limited. 据场地代表介绍，一些汽车零部件是从其他国家进口的，这些产品在木托盘上用塑料薄膜包装。来自其他国家的虫卵可能会寄生在木托盘中并运输到场地。在实地勘察期间，木托盘外表没有观察到虫卵的迹象，且现场的木托盘带有国际植物保护公约（IPPC）标志，证明其已经热处理或熏蒸处理以杀死可能携带的虫卵。因此场地由于进口木托盘导致物种入侵的风险是可控的。

4.5 AOI outside the Site Area 场地区域外的影响区域

Based on the assessment of on-site operations and activities, the Area of Influence (AOI) out of control was identified as 50 meters outside the boundaries of the Site. The outside areas are urban public green areas

and adjacent factories managed by municipal department and other companies. The flora in the urban public green areas are mainly artificial plants and street trees. 基于对场地生产活动的评估，非场地控制的影响区域（AOI）被认定为距离场地边界 50 米内的范围。外部区域是城市公共绿地由市政部门管理，相邻工厂由其他公司自行管理。城市公共绿地上的主要植物为人工种植植物和行道树。

Table 表 7. The Flora and Taxonomy Inventory outside the Site 场地外影响区域的植物及其分类清单

Class 纲	Order 目	Family 科	Genus 属	Species 种	Photo 照片
木兰纲 Magnoliopsida	蔷薇目 Rosales	蔷薇科 Rosaceae	李属 Prunus	杏树 <i>Prunus armeniaca</i>	
				樱桃李 <i>Prunus cerasifera</i>	
		胡颓子科 Elaeagnaceae	胡颓子属 Elaeagnus	沙枣树 <i>Elaeagnus angustifolia</i>	
		榆科 Ulmaceae	榆属 Ulmus	榆树 <i>Ulmus pumila</i>	/
	豆科 Fabaceae	槐属 Styphnolobium	槐树 <i>Styphnolobium japonicum</i>	/	
无患子目 Sapindales	无患子科 Sapindaceae	槭属 Acer	槭树 <i>Acer miyabei</i>	/	

Class 纲	Order 目	Family 科	Genus 属	Species 种	Photo 照片
木兰纲 Magnoliopsida				元宝槭 <i>Acer truncatum</i>	
	杨柳目 Salicales	杨柳科 Salicaceae	杨属 Populus	白杨树 <i>Populus alba</i>	
	杨柳目 Salicales	杨柳科 Salicaceae	柳属 Salix	柳树 <i>Salix babylonica</i>	
	壳斗目 Fagales	桦木科 Betulaceae	槲木属 Alnus	槲木 <i>Alnus cremastogyne</i>	
	玄参目 Scrophulariales	紫葳科 Bignoniaceae	梓属 Catalpa	梓树 <i>Catalpa ovata</i>	/
	捩花目 Contortae	木樨科 Oleaceae	丁香属 Syringa	丁香 <i>Syringa oblata</i>	/
松纲 Pinopsida	松目 Pinales	松科 Pinaceae	云杉属 Picea	云杉 <i>Picea asperata</i>	

5 IMPACT ON BIODIVERSITY FEATURES 生物多样性特征影响

5.1 Impact on Species 物种影响

This section identifies potential impacts of the land use and site activities on these Biodiversity Features and in which ways impacting these species. The overall assessment of the potential impacts and inherent risk are described in **Table 8**. 本章节描述了场地生产运营和活动对这些生物多样性特征的潜在影响以及影响路径和方式。**表 8** 总体评估了场地对影响区域内的生物多样性特征的潜在影响。

Table 8. Potential Impacts on Biodiversity Features of AOI 影响区域生物多样性特征的潜在影响

AOI Subject 影响类别	Source of Impact 影响来源	Possible Consequence 可能的后果	Gross Risk 风险等级	Recommendations 建议
Stormwater 雨水	Spilled chemicals 泄露的化学品	Oil stains were observed on the outdoor ground on site, which may have been discharged into the municipal rainwater pipe network and drainage channels along with the rainwater. Chemicals may contaminate water bodies and have an impact on fish and benthic aquatic organisms. 现场观察到室外地面有油污，可能随雨水排入市政雨水管网及排水河道。化学品可能污染水体，对鱼类、底栖类水生生物造成影响。	Medium 中等	Strengthen site chemical management to prevent oil/chemical leakage of internal traffic or scraps stacked area from flushing into the onsite stormwater wells, and promptly clean up oil/chemical stains on the ground. 加强场地化学品管理，避免场内车辆油渍滴漏，预防边角料堆积区域沾染的油渍/化学品随雨水流入雨水管网，及时清理泄露到地面的油渍或化学品污渍。
Air Emissions 废气	Particles 颗粒物	The particulate matter in the site exhaust may affect air quality and bird activity. 场地废气中颗粒物有可能影响空气质量及鸟类的活动。	Low 低	Strengthen air emission supervision to ensure it meets national and local limit requirements, while ensuring the normal operation of air emission treatment equipment 建议加强废气监管，确保其满足国家及地方的限值要求，同时确保废气处理设备正常运转。
Noise 噪声	Traffic and operation 交通及运营	Traffic and manufacturing noise within the site may affect the activities of organisms such as birds and bats. 场地内交通及生产的噪声可能影响生物（如鸟类、蝙蝠等）的活动。	Low 低	Suggest strengthening noise supervision to ensure it meets national and local limit requirements 建议加强噪声监管，确保其满足国家及地方的限值要求。

AOI Subject 影响类别	Source of Impact 影响来源	Possible Consequence 可能的后果	Gross Risk 风险等级	Recommendations 建议
Soil and Groundwater 土壤地下水	Pollutants for soil and groundwater 土壤地下水污染物	The site has not conducted soil and groundwater monitoring, and potential pollutants may affect the growth of plants and subsurface animals (such as earthworms) within the site. 场地未进行过土壤及地下水调查，潜在污染物可能影响场地内植物及地表下动物（如蚯蚓）的生长。	Low 低	Conduct soil and groundwater investigation and monitoring within the site if necessary. 如有需要，可在场地内开展土壤及地下水调查和监测。
Pest Management 虫害管理	Toxic stations for rats 毒鼠站	Several toxic stations for rats were observed within the site. If the poison packaging is damaged, it may be ingested by hedgehogs, birds, etc., leading to poisoning. 场地内观察到若干毒鼠站。毒药包装若破损，有可能被刺猬、鸟类等误食导致中毒。	Medium 中等	Strengthen the management of the poison stations. If packaging damage is found, the supplier should be notified in a timely manner for handling and replacement. 应加强对毒鼠站的管理，若发现包装破损，应及时通知供应商处理、更换。
Others 其他	Weeding 除草	According to the site representative, in order to meet the needs of fire prevention, weeding is carried out on the site annually. If weeding is conducted in summer might influence reproduction of insects and birds. 据场地代表所述，场地每年会进行除草。如在夏季除草可能会影响场地内昆虫、鸟类的繁殖。	Low 低	It is recommended to arrange weeding and pruning of branches (if any) during the autumn and winter seasons. 建议将除草、修剪树枝（如有）安排在秋冬季节。

According to overall assessment of the potential impacts on biodiversity features of AOI, the risk of stormwater and pest management is considered as medium. The following action plan and timeline are proposed in **Table 9**. 根据对影响区域生物多样性特征潜在影响的总体评估，雨水和虫害管理的风险被评为中等风险。**表 9** 列出以下行动计划和时间表。

Table 表 9. The Proposed Action Plan and Timeline 提议的行动计划和时间表

AOI Subject 影响类别	Source of Impact 影响来源	Action Plan 行动计划	Timeline 时间表
Stormwater 雨水	Spilled chemicals 泄露的化学品	<p>Maintain and check the oil container of forklift and trucks of the Site regularly to avoid the leakage. 定期维护和检查场内叉车和卡车的油箱，避免泄漏。</p> <p>Provide proper coverage or canopy to waste metal scraps temporary stack area outside the workshop to avoid stormwater drenched waste metal scraps and flushing chemical or oil from contaminated waste metal scraps to the stormwater wells. 车间外的金属废料临时堆放区提供适当的覆盖或顶篷，避免雨水浸透废金属废料并将废料上沾染的化学品或油冲刷到雨水井。</p> <p>Any oil or chemical stains observed onsite should be cleaned on time. 及时清理场地上观察到的油渍或者化学品污渍。</p>	Current 当前
Pest Management 虫害管理	Toxic stations for rats 毒鼠站	<p>Strengthen the management of the poison stations. If packaging damage is found, the supplier should be notified in a timely manner for handling and replacement. If the poisoned rats are observed, the Site should dispose it properly. 应加强对毒鼠站的管理，若发现包装破损，应及时通知供应商处理、更换。如果观察到中毒的老鼠或死老鼠，场地应妥善处理。</p>	Current 当前

5.2 Conclusions 结论

The biodiversity and ecosystem assessment has revealed the following findings as defined in this Report. 本次生物多样性和生态系统评估揭示了本报告所描述的以下结论。

The main habitat types within the AOC of the Site are urban shrub and grassland. No forests, wetlands, and other critical habitat type were found within the AOC. 场地控制范围内主要栖息地类型为城市灌木丛及草丛。场地控制范围内未发现森林，湿地，及其他关键栖息地类型。

A total of 33 species of plants and Poaceae were identified in the assessment. None of them were listed in *the List of National Key Protected Wild Plants in China* or *List of Provincial Key Protected Wild Plants in Jilin Province*. 本次评估总共识别记录了 33 种植物，以及禾本科植物。未识别到国家重点保护野生植物或吉林省级保护植物。

A total of 1 species of mammal, 9 species of birds, 17 species of insects and 6 species of other invertebrates were recorded. There are nine protected species of birds, and one protected species of mammal are

identified within the AOC. These birds and the mammal are in *the National Protected List of Terrestrial Wild Animals with Important Ecological, Scientific and Social Value*. According to the IUCN Red List of Threatened Species, the conservation level of these identified protected species are Least Concern. 本次评估共识别记录到 1 种哺乳动物、9 种鸟类、17 种昆虫及 6 种其他无脊椎动物。在场地控制范围内确认了 10 种被列入《国家保护的有重要生态、科学、社会价值的陆生野生动物名录》的保护物种，包括 9 种鸟类及 1 种哺乳动物。根据世界自然保护联盟濒危物种红色名录，识别出的这些保护物种保护等级为无危。

In this assessment, common ragweed (*Ambrosia artemisiifolia*) and giant ragweed (*Ambrosia trifida*) were recognized as alien invasive species according to the List of Alien Invasive species in China issued by the Ministry of Ecology and Environment. 本次评估期间，根据生态环境部发布的《中国外来入侵物种名录》，豚草（*Ambrosia artemisiifolia*）和三裂叶豚草（*Ambrosia trifida*）被识别为外来入侵物种。

In a conclusion, the habitat type of the AOI if the Site is urban artificial forest, shrub, and grassland. The conservation level of the identified protected species in the AOC are LC and Sanyou. The potential impacts of the land use and site activities on these Biodiversity Features and Site Communities is limited and under control, and the identified risks are medium and low. The impact of the Site on the local Ecosystem Services is mainly towards the underground water. Considering that no industrial wastewater was generated onsite, the impact on the Ecosystem Services is relatively low. The Site could continue strengthen their pollutant management in the aspects of stormwater management, air emission management, noise management, soil and groundwater management, and Pest Management to further mitigate the impact to environment and species. In addition, should minimize anthropogenic interference with the identified protected species of birds and mammals. 总结，场地影响区域的栖息地类型是城市人工林、灌木和草地。场地控制范围内已识别的保护物种的保护等级为无危和三有。场地生产运营和活动对这些生物多样性特征和场地群落的潜在影响有限且可控，均为中低风险。场地对与生态系统服务的影响主要为对地下水的影响，考虑到场地无工业废水产生，场地对生态系统服务的影响较小。该场地可以继续雨水管理、废气排放管理、噪音管理、土壤和地下水管理以及虫害管理等方面加强污染物排放管理，以进一步减轻对环境和物种的潜在影响。此外，应尽量减少对于识别出的保护物种鸟类和哺乳动物的人为干扰。

6 SOURCES, REFERENCES, ASSUMPTIONS, AND LIMITATIONS 信息来源、参考、假设和限制

6.1 Records Review 查阅记录

Arcadis reviewed the following sources of information 凯谛思查阅和收集了下列信息:

- Environmentally relevant documents provided by the Site (including EIA documents, pollutant discharge registration form, site layout, chemical inventory, waste manifests, vendors and contracts for general waste); 场地提供的和环境相关的文件（环评文件，污染物排放登记表，场地平面布局图，化学品清单，废物清单，一般废物的处理商）；
- Interview with Mr. Dong Dexu, the EHS manager of Constellium Engley (Changchun) Automotive Structures Co., Ltd; 采访了董德旭先生，肯联英利长春场地 EHS 经理；
- Historical aerial photographs from Google Earth; 谷歌地球历史航拍图；

6.2 Limitations and Exceptions 限制与免责

The services performed and any opinions expressed by Arcadis in this report are based upon the limits of the assessment described herein. Arcadis has relied upon the accuracy of documents, information, data, and other materials provided or made available by the User and others. Arcadis has not independently verified such information and assumes no liability for the accuracy or completeness of such information. Arcadis makes no guarantee that Site conditions do not exist, or will not exist in the future, that were undetected or that could lead to liability in connection with the Site. Likewise, Site conditions or Site activities that were outside the scope of the services described above, or changes to Site conditions or regulatory requirements may lead to liabilities in connection with the Site that are not identified in this report. Arcadis has reviewed the information obtained in connection with the performance of the services described above, in keeping with existing applicable consulting standards and enforcement practices, but cannot predict what actions any given agency may take or what standards and practices may apply in the future. 凯谛思在本报告中提供的服务和表达的任何建议均基于此处描述的评估限制。凯谛思依赖于用和其他机构提供的文档、信息、数据和其他材料的准确性。凯谛思未对此类信息进行独立验证，也不对此类信息的准确性或完整性承担任何责任。凯谛思不保证不存在或将来不存在未被发现或可能导致与本场地相关的责任。同样，超出上述服务范围的场地活动，或场地情况或监管要求的更改可能会导致与本场地有关的责任在本报告中未确定。凯谛思已根据现有的适用咨询标准和执法要求审查了与上述服务相关的信息，但无法预测任何特定机构可能采取的行动或未来可能适用的标准和实践。

The conclusions and observations are based upon limited data and professional opinions, and the Site visit was performed on a particular date. Site conditions and activities may change after that date. Arcadis does not make any representations or warranties regarding the condition or value of the Site, regardless of the results of the assessment presented in this report. 报告结论和意见基于有限的数据和专业意见，并且现场走访是在特定日期进行的。在现场走访之后，场地条件和活动可能会发生变化。无论本报告中提供的评估结果如何，凯谛思都不对场地的状况或价值做出任何陈述或保证。

6.3 Data Gaps 数据差距

The following data gaps were identified during this biodiversity and ecosystem assessment 本次生物多样性和生态系统评估存在以下数据差距:

Seasonal Influence: Biodiversity on-site is dependent on the seasons. This evaluation recorded the flora and fauna observed on-site during summer, and the animals that may be observed during other seasons, especially during the spring and autumn bird migration seasons, are listed in Table 1. 季节影响：场地的生物多样性受季节影响。本次评估记录了场地夏季观察到的动植物，在其他季节，尤其是春、秋鸟类迁徙季节可能在场地观察到的动物已列于表 1 中。

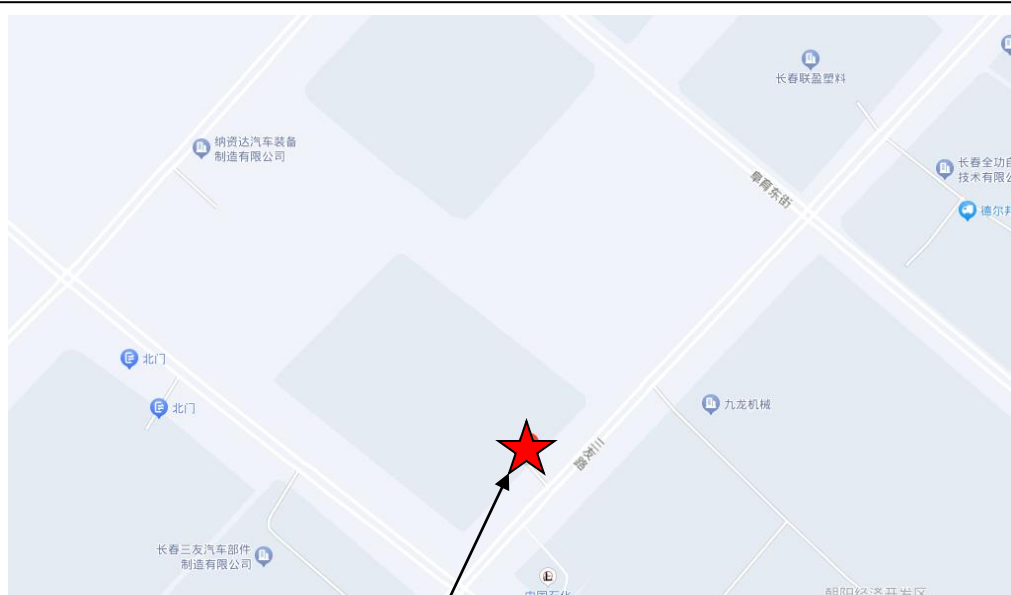
Adjoining Property File Review: Arcadis searched information available online and conducted a walkover outside the adjoining property to address this data gap. Based on information obtained, this data gap is unlikely to affect Arcadis' ability to identify evidence of actual situation at the Site; therefore, this data gap is considered to be non-significant. 相邻资产文件审查：凯谛思搜索了可用信息，并在相邻资产外进行了一次巡视，以解决这一数据差距。根据获得的信息，这一数据差距不太可能影响凯谛思识别现场实际的能力；因此，这种数据差距被认为是不显著的。

6.4 Reliance 使用权限

This Report has been prepared for the sole use of Constellium Engley, and the contents thereof may not be used or relied upon by any other person without the express written consent and authorization of Arcadis. Use of this Report by any other party shall be at such party's sole risk and liability. 本报告中的内容仅供肯联英利所使用，未经凯谛思明确书面同意和授权，任何其他人不得使用或依赖其内容。任何其他方使用本报告的风险和责任均由该方自行承担。

FIGURES 图





Site Address: No. 677, Chaoyang District, Changchun City, Jilin province, China
 目标工厂地址：中国吉林省长春市朝阳区三友路 667 号



Jilin, China 中国吉林省



Changchun, Jilin Province 吉林省长春市

Legend 图例

- ▲ Province Location 所在省份
- ★ Site location 目标场地位置
- City Location 所在城市
- Site Boundary 场地大致边界



不按比例












Constellium Engley (Changchun) Automotive Structures Co., Ltd. 肯联英利(长春)汽车结构有限公司
 No. 667, Sanyou Road, Chaoyang District, Changchun City, Jilin Province 吉林省长春市朝阳区三友路667号

Figure 图1
 Site Location Map 场地位置图

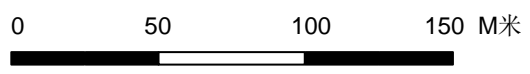




Legend 图例

-  Site Boundary 工厂红线
-  Green Area 厂内绿地
-  Plant Quadrats 植物样方
-  Fauna Observation
Transects 动物观测样线
-  Infrared Camera
红外相机朝向
-  Guardroom 门卫室
-  Maintenance Room
维修室
-  Air Emission Outlets
有组织废气排口
-  Noise Monitor Spot
噪声监测点
-  Hazardous Waste Room
危废暂存间
-  Green Area Outside Site
厂外绿地

Proportion 大致比例



Constellium Engley (Changchun) Automotive Structures Co., Ltd. 肯联英利(长春)汽车结构有限公司
 No. 667, Sanyou Road, Chaoyang District, Changchun City, Jilin Province 吉林省长春市朝阳区三友路667号

Figure 图 2
Site Layouts and Sampling Map 场地布局和抽样图



7/2023



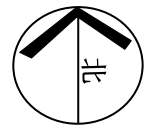
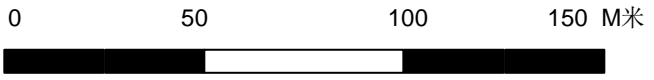
KAYSER

Image © 2023 Maxar Technologies

Google Earth

43°45'51.79" N 125°10'00.16" E elev 0 ft eye alt 1177 ft

Proportion 大致比例



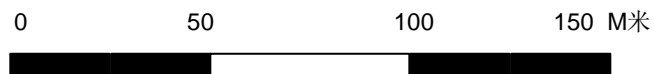
Constellium Engley (Changchun) Automotive Structures Co.,
Ltd. 肯联英利（长春）汽车结构有限公司
No. 667, Sanyou Road, Chaoyang District, Changchun City, Jilin
Province 吉林省长春市朝阳区三友路667号

Figure 图 3.1
(2023.07)





Proportion 大致比例



Constellium Engley (Changchun) Automotive Structures Co.,
Ltd. 肯联英利（长春）汽车结构有限公司
No. 667, Sanyou Road, Chaoyang District, Changchun City, Jilin
Province 吉林省长春市朝阳区三友路667号

Figure 图 3.2
(2017.11)





Proportion 大致比例



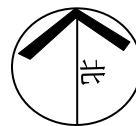
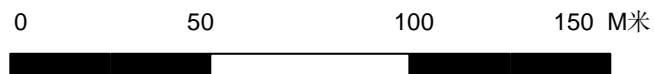
Constellium Engley (Changchun) Automotive Structures Co.,
 Ltd. 肯联英利（长春）汽车结构有限公司
 No. 667, Sanyou Road, Chaoyang District, Changchun City, Jilin
 Province 吉林省长春市朝阳区三友路667号

Figure 图 3.3
 (2009.05)





Proportion 大致比例



Constellium Engley (Changchun) Automotive Structures Co.,
 Ltd. 肯联英利（长春）汽车结构有限公司
 No. 667, Sanyou Road, Chaoyang District, Changchun City, Jilin
 Province 吉林省长春市朝阳区三友路667号

Figure 图 3.4
 (2006.05)



APPENDIX 附录 A

Photographic Log 场地工作照片记录



Client 客户	Constellium Engley (Changchun) Automotive Structures Co., Ltd. 肯联英利（长春）汽车结构有限公司	Site 场地	Target Site 目标场地
Address 地址	No. 667, Sanyou Road, Chaoyang District, Changchun City, Jilin Province, China 中国吉林省长春市朝阳区三友路 667 号	Date 日期	2023. 7. 10-12


Photo 照片:	1.	
Date 日期:	2023.7.10	
Location/ Direction 位置 / 方向:	The southern boundary of the Site 场地南边界	
Description 描述:	Main entrance of the Site 场地出入口	

Photo 照片:	2.	
Date 日期:	2023.7.10	
Location/ Direction 位置 / 方向:	The south portion of the Site 场地南侧	
Description 描述:	The overview of the south portion of the Site 场地南部区域概览	

Client 客户	Constellium Engley (Changchun) Automotive Structures Co., Ltd. 肯联英利（长春）汽车结构有限公司	Site 场地	Target Site 目标场地
Address 地址	No. 667, Sanyou Road, Chaoyang District, Changchun City, Jilin Province, China 中国吉林省长春市朝阳区三友路 667 号	Date 日期	2023. 7. 10-12

Photo 照片:	3.	
Date 日期:	2023.7.10	
Location/ Direction 位置 / 方向:	The southwest portion of the Site 场地西南侧	
Description 描述:	The grassland located at southwest portion of the Site 场地西南角为一片荒地	

Photo 照片:	4.	
Date 日期:	2023.7.10	
Location/ Direction 位置 / 方向:	Inside the Workshop 厂房内	
Description 描述:	The chemical storage room in the workshop 场地内的化学品储存区	

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Address 地址	No. 667, Sanyou Road, Chaoyang District, Changchun City, Jilin Province, China 中国吉林省长春市朝阳区三友路 667 号	Date 日期	2023. 7. 10-12

Photo 照片:	5.	
Date 日期:	2023.7.10	
Location/ Direction 位置 / 方向:	Western portion of the Site 场地西侧	
Description 描述:	The general industrial waste and domestic waste storage area 场地内的一般工业固废和生活垃圾储存区	

Photo 照片:	6.	
Date 日期:	2023.7.10	
Location/ Direction 位置 / 方向:	Eastern portion of the Site 场地东侧	
Description 描述:	The eastern boundary of the Site 场地东面围墙边界	

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Address 地址	No. 667, Sanyou Road, Chaoyang District, Changchun City, Jilin Province, China 中国吉林省长春市朝阳区三友路 667 号	Date 日期	2023. 7. 10-12


Photo 照片:	7.	
Date 日期:	2023.7.10	
Location/ Direction 位置 / 方向:	Southern portion of the Site 场地南侧	
Description 描述:	The toxic stations for rats observed in the Site 场地内观察到若干毒鼠站	

Photo 照片:	8.	
Date 日期:	2023.7.10	
Location/ Direction 位置 / 方向:	Southern portion of the Site 场地南侧	
Description 描述:	The infrared camera installed at the grassland located at southwestern portion of the Site 在场地西南角荒地内安装的一台红外相机	

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Address 地址	No. 667, Sanyou Road, Chaoyang District, Changchun City, Jilin Province, China 中国吉林省长春市朝阳区三友路 667 号	Date 日期	2023. 7. 10-12

Photo 照片:	9.	
Date 日期:	2023.7.11	
Location/ Direction 位置 / 方向:	Southwestern portion of the Site 场地西南	
Description 描述:	The plants, insects, birds observation in the grassland 在荒地内进行植物、昆虫及鸟类观测	

Photo 照片:	10.	
Date 日期:	2023.7.11	
Location/ Direction 位置 / 方向:	Southwestern portion of the Site 场地西南	
Description 描述:	Sampling Quadrats 植物样方	

Client 客户	Constellium Engley (Changchun) Automotive Structures Co., Ltd. 肯联英利（长春）汽车结构有限公司	Site 场地	Target Site 目标场地
Address 地址	No. 667, Sanyou Road, Chaoyang District, Changchun City, Jilin Province, China 中国吉林省长春市朝阳区三友路 667 号	Date 日期	2023. 7. 10-12


Photo 照片:	11.	
Date 日期:	2023.7.10	
Location/ Direction 位置 / 方向:	Southwestern portion of the Site 场地西南	
Description 描述:	Night observation 进行夜间观测	

Photo 照片:	12.	
Date 日期:	2023.7.10	
Location/ Direction 位置 / 方向:	In the Workshop 厂房内	
Description 描述:	Wooden pallets bear the IPPC sign, proving that they have been overheated or fumigated to kill potential insect eggs. 现场的木托盘带有国际植物保护公约 (IPPC) 标志, 证明其已经过热处理或熏蒸处理以杀死可能携带的虫卵。	

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