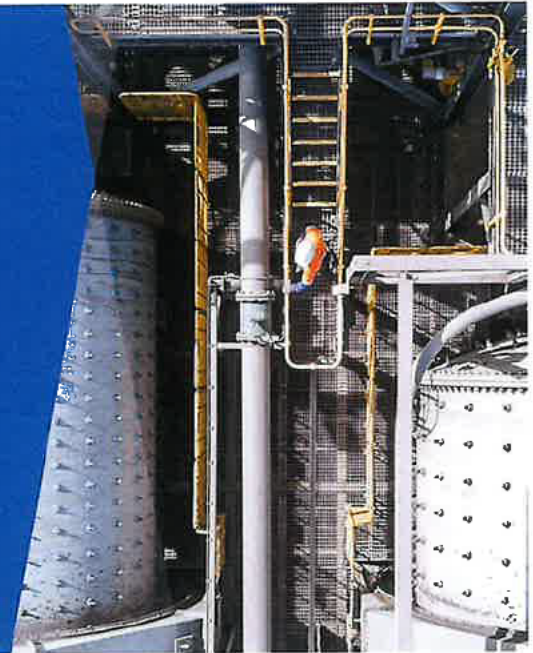




# NOVA OPERATION L8880/2015/1 ANNUAL ENVIRONMENTAL REPORT 2024-2025

DATE: 17 APRIL 2025





## TABLE OF CONTENTS

1.	INTRODUCTION .....	1
1.1	Purpose and Scope of Report.....	1
1.2	Summary of Operations .....	2
1.3	Licence Amendments.....	2
2.	INCIDENTS .....	3
3.	COMPLIANCE .....	3
4.	COMPLAINTS .....	3
5.	EMISSIONS TO LAND.....	3
6.	INPUTS AND OUTPUTS .....	4
6.1	Sewage and Effluent.....	4
6.2	Landfill Waste .....	6
6.3	Tailings and Decant.....	7
7.	GROUNDWATER MONITORING .....	8
8.	PRODUCTION DATA .....	9

## LIST OF TABLES

Table 1: Reporting Requirements of Licence L8880/2015/1 .....	1
Table 2: WWTP sample results for the reporting period .....	3
Table 3: Total contaminant loading in the reporting period .....	4
Table 4: Contaminant loading in emissions irrigated to land in the reporting period.....	4
Table 5: WWTP inflows and outflows for the reporting period .....	4
Table 6: Waste inputs to the Nova Landfill for the reporting period .....	6
Table 7: Water quality of TSF inputs and outputs in the reporting period .....	7
Table 8: Volumes of TSF inputs and outputs for the reporting period.....	7
Table 9: TSF Bore Monitoring Results for the reporting period.....	8
Table 10: Processing Plant and Power Station data for the reporting period.....	9

## APPENDICES

Appendix A: Annual Audit Compliance Report

## ACRONYMS AND ABBREVIATIONS

Acronym	Definition
AACR	Annual Audit Compliance Report
AER	Annual Environmental Report
BOD	Biochemical Oxygen Demand
DWER	Department of Water and Environmental Regulation
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
TSF	Tailings Storage Facility
WWTP	Wastewater Treatment Plant

## 1. INTRODUCTION

### 1.1 Purpose and Scope of Report

This Annual Environmental Report (AER) has been prepared by IGO Limited for the Nova Operation, to satisfy the Department of Water and Environmental Regulation (DWER) reporting requirements under Part V of the *Environment Protection Act 1986*. This AER covers the reporting period from 1st April 2023 to 31st March 2024. A list of the annual environmental reporting requirements required to satisfy Licence L8880/2015/1, and the sections of this report where these are addressed, is provided in Table 1.

**Table 1: Reporting Requirements of Licence L8880/2015/1**

Condition Number	Requirement	Section of this Report
Table 4.2.1	Summary of any failure or malfunction of any pollution control equipment and any environmental incidents that have occurred during the annual period and any environmental impacts, investigations conducted including outcomes, and remedial actions	Section 2
Table 3.2.1	Monitoring of emissions to land Contaminant loading (kg/day and kg/ha/day – monthly average and total annual loading kg/year and kg/ha/year) to land of parameters monitored in Table 3.2.1 (except pH and <i>E. coli</i> )	Section 5
Table 3.3.1	Monitoring of inputs and outputs	Section 6
Table 3.4.1	Monitoring of groundwater and a comparison of results against background water quality Details of investigations conducted, including outcomes, environmental impacts and remedial actions.	Section 7
4.1.3	Compliance Annual Audit Compliance Report (AACR)	Section 3, Appendix A
4.1.4	Complaints summary	Section 4
4.2.2	Any relevant process, production or operational data recorded under condition 3.1.3	Section 8
4.2.2	An assessment of the information contained within the report against previous monitoring results and Licence limits and/or targets	Sections 5, 6, and 8



## 1.2 Summary of Operations

The Nova Operation is a nickel and copper mine located in the Fraser Range of Western Australia. The manager and proponent of the Nova Operation is IGO Limited (ABN 46 092 786 304). IGO Nova Pty Ltd is a 100% owned subsidiary of IGO Limited.

Project construction commenced in January 2015 while commercial production commenced in July 2017.

Activities undertaken during the reporting period comprised the following:

- Underground mining of nickel and copper ore
- Processing of ore using conventional flotation techniques
- Transport of concentrate by road to Kambalda and Esperance
- Operation of paste plant for paste infill of the underground mine
- Deposition of tailings in the Tailings Storage Facility (TSF)
- Extraction of groundwater for mine dewatering and water supply
- Operation of support infrastructure including a Power Station, Solar Farm, Wastewater Treatment Plant (WWTP), Landfill, Accommodation Village, and Airstrip
- Exploration drilling and surveys

No changes to the Nova Operation were made at Nova since the last reporting period.

## 1.3 Licence Amendments

No licence amendments were made during the last reporting period.

## 2. INCIDENTS

There were no reportable incidents during the reporting period.

## 3. COMPLIANCE

The Annual Audit Compliance Report is attached as Appendix A.

No site inspections by DWER occurred during the reporting period.

## 4. COMPLAINTS

There were no complaints received during the reporting period.

## 5. EMISSIONS TO LAND

Samples from the WWTP recycled water were taken monthly (except October 2024), and the results are shown in Table 2.

**Table 2: WWTP sample results for the reporting period**

Parameter	Units	No of samples	Mean	Median	Max	Min
pH	-	12	7.3	7.4	7.9	6.0
BOD <sup>1</sup>	mg/L	11	8.0	6.6	18.0	<5
TDS <sup>2</sup>	mg/L	11	620.9	620.5	720.0	490.0
TSS	mg/L	11	5.0	5.0	5.0	5.0
Nitrate + Nitrite as N	mg/L	11	2.0	1.0	5.0	1.0
Ammonium as N	mg/L	11	0.0	0.0	0.2	0.0
Total N	mg/L	11	32.3	34.6	50.0	0.0
Total P	mg/L	11	4.8	4.7	7.7	1.1
E. coli	cfu/ 100mL	11	<10	<10	<10	<10

Using the average from the sample results in Table 2 and the total discharge flow of over the year (see Table 5 in Section 6), the contaminant loadings were calculated and shown in Table 3. Recycled water was sent to the irrigation area at various intervals from October 2024 to March 2025 during the reporting period, these contaminant loadings are displayed in Table 4. Recycled water was otherwise recycled for use in the Nova processing circuit.

**Table 3: Total contaminant loading in the reporting period.**

Parameter	kg/day	kg/ha/day	kg/year	kg/ha/year
BOD	0.51	0.11	186.45	40.53
TDS	39.76	8.64	14553.51	3163.81
TSS	0.32	0.07	117.20	25.48
Nitrate + Nitrite as N	0.13	0.03	46.88	10.19
Ammonium as N	0.00	0.00	0.83	0.18
Total N	2.07	0.45	756.44	164.44
Total P	0.31	0.07	112.74	24.51

**Table 4: Contaminant loading in emissions irrigated to land in the reporting period.**

Parameter	kg/day	kg/ha/day	kg/year	kg/ha/year
BOD	0.59	0.13	7.10	1.54
TDS	40.35	8.77	484.15	105.25
TSS	0.32	0.07	3.84	0.84
Nitrate + Nitrite as N	0.19	0.04	2.31	0.50
Ammonium as N	0.00	0.00	0.01	0.00
Total N	2.60	0.57	31.25	6.79
Total P	0.31	0.07	3.66	0.80

As per condition 2.2.2 of Licence L8880/2015/1 the limits for emissions to land are;

- 480 kg/ha/annum for Total Nitrogen and
- 180 kg/ha/annum for Total Phosphorus.

Total Nitrogen and Total Phosphorus levels in the recycled water were below prescribed limits in this reporting period.

## 6. INPUTS AND OUTPUTS

### 6.1 Sewage and Effluent

Monthly inflows of raw sewage and discharge of treated effluent to land for the reporting period are shown in Table 4.

**Table 5: WWTP inflows and outflows for the reporting period**

Month	Sewage inflow (m <sup>3</sup> )	Treated effluent Total (m <sup>3</sup> )	Treated effluent to land (m <sup>3</sup> )
April 2024	2,142	1,871	0
May 2024	2,110	1,926	0



June 2024	2,057	1,911	0
July 2024	1,893	1,980	0
August 2024	1,829	1,783	0
September 2024	1,885	1,702	0
October 2024	2,128	1,906	1,334
November 2024	2,073	1,733	1,213
December 2024	1,968	1,754	1,228
January 2025	1,885	1,702	1,191
February 2025	1,552	1,714	1,689
March 2025	1,853	1,862	836
<b>TOTAL</b>	<b>23,375</b>	<b>21,844</b>	<b>7,492</b>

During the current reporting period there was discharge to the onsite irrigation area from October to March 2025 due to issues with membranes requiring replacement and capacity issues of holding recycled water at the processing plant.

The difference between sewage inflow and outflow is due to regular sludge tank truck collections, through the reporting period and tank holding balance differences at the end of reporting period.

## 6.2 Landfill Waste

The Nova site does not utilise a weighbridge system for landfill inputs because of the landfill's small size. Tonnages to landfill are estimated on volumes and a conversion factor to tonnes. The conversion factor in use at Nova is based on the uncompacted putrescible rate from the Waste Authority of WA guidelines for conversion of volume to tonnes. A significant component of heavier waste streams such as metal is not landfilled.

Nova has a comprehensive waste reduction scheme in place and is committed to waste diversion. A three-bin recycling system is in place, industrial skips are utilised for metals, hydrocarbons and cardboard. The mining contractor, Barmingo, also has a recycling programme for industrial wastes. In December 2019, Nova Operations implemented a program to send organic waste offsite for composting which has led to a decrease in the quantity of waste sent to landfill in subsequent months. During this reporting period a "Container for Change program" was set up. These containers are sent offsite to Norseman Men's shed with all proceeds going to charity.

The estimated waste data for the reporting period is shown in Table 5. An estimated 1,019 tonnes of waste were landfilled in this reporting period, utilising the estimated volume to tonnage methodology. This amount is well within the licensed 2000 tonnes per annum allowance.

**Table 6: Waste inputs to the Nova Landfill for the reporting period**

Month	Waste to landfill (m <sup>3</sup> )	Waste to landfill (tonnes)
April 2024	217	65
May 2024	182	55
June 2024	287	86
July 2024	378	113
August 2024	363	109
September 2024	229	69
October 2024	461	138
November 2024	372	112
December 2024	196	59
January 2025	196	59
February 2025	259	78
March 2025	252	76
<b>TOTAL</b>	<b>3392</b>	<b>1019</b>

### 6.3 Tailings and Decant

The water quality monitoring results for TSF inputs and outputs are shown in Table 6. Samples were collected monthly, and analysis of samples was undertaken by the onsite Bureau Veritas laboratory.

**Table 7: Water quality of TSF inputs and outputs in the reporting period**

Site	Parameter	Units	No of samples	Min	Max	Mean	Median
TSF input (Processing Plant discharge point)	pH	-	12	3.5	6.6	5.7	5.9
	TDS	mg/L	12	55.5	127.9	99.8	101.4
TSF output (Decant to Process Water Tank)	pH	-	12	5.2	7.6	6.1	6.2
	TDS	mg/L	12	100.9	127.7	114.4	114.4

For the reporting period, samples were taken monthly.

The volume of Tailings being discharged to the TSF, and the volume of Decant water being taken from the TSF is shown in Table 7.

**Table 8: Volumes of TSF inputs and outputs for the reporting period**

Month	Tailings inflow (m <sup>3</sup> )	Decant outflow (m <sup>3</sup> )	Tailings to TSF (t)	Tailings to Underground (paste) (t)
April 2024	46,011	160,074	79,249	124,656
May 2024	54,196	171,982	40,410	130,128
June 2024	54,652	173,318	36,498	108,367
July 2024	54,187	154,593	27,497	78,267
August 2024	53,140	163,117	15,940	79,878
September 2024	47,781	166,683	23,007	102,310
October 2024	48,164	141,766	16,029	62,231
November 2024	54,360	137,477	91,877	111,663
December 2024	51,184	159,534	30,984	95,353
January 2025	52,790	150,082	54,381	117,039
February 2025	42,175	124,237	30,297	67,324
March 2025	53,391	160,762	33,370	118,804
<b>TOTAL</b>	<b>612,031</b>	<b>1,863,625</b>	<b>479,539</b>	<b>1,196,020</b>

## 7. GROUNDWATER MONITORING

Quarterly monitoring was undertaken at shallow bores TSF-MBH01A, TSF-MBH02C<sup>1</sup>, TSF-MBH03A, and TSF-MBH04A, and at deep bores TSF-MBH01B, TSF-MBH02B, TSF-MBH03B, and TSF-MBH04B. Monitoring results for the TSF bores are shown in Table 8. Sampling for analysis of water quality parameters was not required to be undertaken, because the bores were all dry throughout the reporting period. All the monitoring bores were also dry in the previous reporting period.

**Table 9: TSF Bore Monitoring Results for the reporting period**

Quarter	Date of Monitoring	Result
Q2 2024		All bores were dry
Q3 2024		All bores were dry
Q4 2024		All bores were dry
Q1 2025		All bores were dry

<sup>1</sup> TSF-MBH02C has replaced TSF-MBH02A since Q3 2017, as TSF-MBH02A had collapsed.

## 8. PRODUCTION DATA

As per condition 1.2.12 of Licence L8880/2015/1 the production limit for the Processing Plant is 1,750,000 tonnes per year of ore. In Table 9 the Processing Plant throughput for the reporting period was 1,535,416 wet tonnes. The throughput in the reporting period was 88% of the licenced limit.

As per condition 1.2.12 of Licence L8880/2015/1, the production limit for the Power Station is 19.5 MW (This is also the design capacity and can't be exceeded). In Table 9 the Power Station produced 61,755 MWh of electric power. The Nova Solar Farm was constructed in 2019 and commenced power production in mid-November 2019. An extension of the solar farm with a battery storage facility was commissioned in the previous reporting period (FY22-23) and was in operation over this reporting period.

**Table 10: Processing Plant and Power Station data for the reporting period**

Month	Processing Plant throughput (tonnes)	Power Station production (MWh)
April 2024	155,156	6,756
May 2024	172,595	6,941
June 2024	149,866	6,603
July 2024	100,053	5,351
August 2024	100,081	4,963
September 2024	124,189	4,752
October 2024	81,366	3,905
November 2024	143,206	4,728
December 2024	119,340	4,370
January 2025	149,320	4,356
February 2025	86,158	3,534
March 2025	154,086	5,496
<b>TOTAL</b>	<b>1,535,416</b>	<b>61,755</b>



## APPENDIX A: ANNUAL AUDIT COMPLIANCE REPORT



## Annual Audit Compliance Report Form

Environmental Protection Act 1986, Part V Division 3

Once completed, please submit this form either via email to [info@dwer.wa.gov.au](mailto:info@dwer.wa.gov.au), or to the below postal address:

Department of Water and Environmental Regulation  
Locked Bag 10  
Joondalup DC WA 6919

Section A – Licence details			
Licence number:	L8880/2015/1	Licence file number:	DER2015/000284
Licence holder name:	IGO Nova Pty Ltd		
Trading as:			
ACN:	146 091 527		
Registered business address:	Suite 4, Level 5, South Shore Centre 85 South Perth Esplanade South Perth Western Australia 6151		
Reporting period:	01/04 /2024 to 31 /03/ 2025		

Section B – Statement of compliance with licence conditions
Did you comply with all of your licence conditions during the reporting period? (please tick the appropriate box)
<input checked="" type="checkbox"/> Yes – please complete: <ul style="list-style-type: none"><li>• section C;</li><li>• section D (if required); and</li><li>• sign the declaration in Section F.</li></ul>
<input type="checkbox"/> No – please complete: <ul style="list-style-type: none"><li>• section C;</li><li>• section D (if required);</li><li>• section E; and</li><li>• sign the declaration in Section F.</li></ul>

Section C – Statement of actual production	
Provide the actual production quantity for this reporting period. Supporting documentation is to be attached.	
Prescribed premises category	Actual production quantity
5 - Processing or beneficiation of metallic ore or non-metallic ore	1,535,416 tonnes
52 - Electric power generation: premises (other than premises within category 53 or an emergency or standby power generating plant) on which electrical power is generated using a fuel.	61,755 MWh



### Section D – Statement of actual Part 2 waste discharge quantity

Provide the actual Part 2 waste discharge quantity for this reporting period. Supporting documentation is to be attached.

Prescribed premises category	Actual Part 2 waste discharge quantity
54 - Sewage facility premises	21,844 m3
64 - Class II or III putrescible landfill site	1,169 tonnes

### Section E – Details of non-compliance with licence condition

Please use a separate page for each condition with which the licence holder was non-compliant at a time during the reporting period.

Condition no:		Date(s) of non-compliance:	
---------------	--	----------------------------	--

Details of non-compliance:

What was the actual (or suspected) environmental impact of the non-compliance?

**NOTE** – please attach maps or diagrams to provide insight into the precise location of where the non-compliance took place.

Cause (or suspected cause) of non-compliance:

Action taken to mitigate any adverse effects of non-compliance and prevent recurrence of the non-compliance:

Was this non-compliance previously reported to DWER?

Yes, and



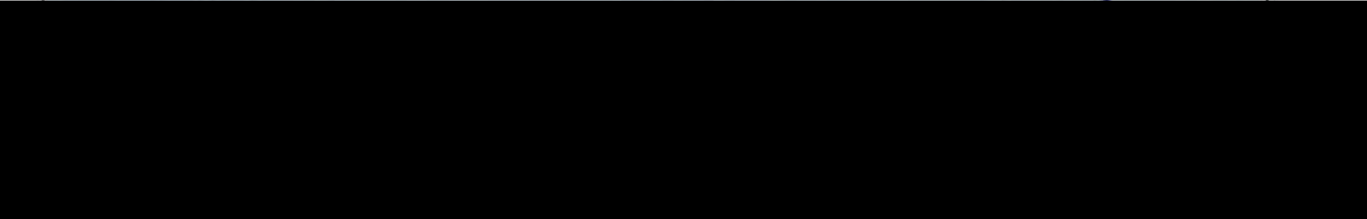
**Section E – Details of non-compliance with licence condition**

<input type="checkbox"/> Reported to DWER verbally	Date: / /
<input type="checkbox"/> Reported to DWER in writing	Date: / /

**Section F – Declaration**

I / We declare that the information in this Annual Audit Compliance Report is true and correct and is not false or misleading in a material particular<sup>1</sup>.

I / We consent to the Annual Audit Compliance Report being published on the Department of Water and Environmental Regulation's (DWER) website.



Date:	20/04/2025	Date:	09/01/2026.
Seal (if signing under seal):			

<sup>1</sup> It is an offence under section 112 of the *Environmental Protection Act 1986* for a person to give information on this form that to their knowledge is false or misleading in a material particular.

<sup>2</sup> AACRs can only be signed by the licence holder or an authorised person with the legal authority to sign on behalf of the licence holder.

