2014 ANNUAL ENVIRONMENTAL REPORT

LENNON QUARRIES LIMITED,

SOIL RECOVERY FACILITY,

TALLAGH HILL, BELMULLET, CO. MAYO

Waste Licence Reg. No. WO-256-02

(Reporting Period January 2014– December 2014)

Prepared For:

The Environmental Protection Agency (E.P.A)

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INTRODUCTION

This Annual Environmental Report provides information on environmental compliance at the Lennon Quarries Limited Soil Recovery Facility, Tallagh Hill, Belmullet, Co. Mayo.

The Environmental Protection Agency issued Lennon Quarries Limited, Glencastle, Bunnahowen, Ballina, Co. Mayo with a Waste Licence on the 20th of May, 2011 (WO256-01). A review of that Licence was successfully undertaken in 2014 to increase the annual intake capacity at the facility from 24,900 to 90,000 tonnes. Licence W0256-01 was replaced by W0256-02 on the 14th of August 2014.

In accordance with Schedule E of the Waste Licence (WO256-01) an Annual Environmental Report (AER) is to be prepared and submitted yearly.

The period covered by this Annual Environmental Report is from the 1st of January 2014 to the 31st of December 2014.

1. ENVIRONMENTAL MONITORING AT THE FACILITY

1.1. Environmental Monitoring at Tallagh Hill Soil Recovery Facility.

During the year 2014 environmental monitoring was undertaken at the site in accordance with conditions of waste licence W0256-02.

The following environmental parameters were monitored in accordance with conditions Schedule C:

- Dust (3 Monitoring Points – D1, D2, D3- twice annually)
- Surface Water (5 Monitoring Points – SW1, SW2, SW3, SW4, SW5 – 4 times annually)
- Noise (No specified frequency)

1.2. Dust Monitoring

1.2.1 Dust Monitoring

Dust Deposition Monitoring was undertaken twice annually in 2014 as per Schedule C of the Licence.

Dust deposition monitoring was based on the modified version of the Bergerhoff Method VDI2119 – "Measurement of Dustfall using the Bergerhoff Instrument" (Standard Method). A 30 day composite sample with results expressed as mg/ m^2/day.

Dust Deposition Limits – 350mg/m^2/day.

Table 1 - 2014 - Dust Deposition Results Summary

Sampling Date	Location	Dust Deposition Result (mg/m^2/day)	Limit (mg/m^2/day)
30/7/14	DS1	**60**	350
	DS2	**40**	
	DS3	**29**	

Table 2 - 2014 - Dust Deposition Results Summary

Sampling Date	Location	Dust Deposition Result ($mg/m^2/day$)	Limit ($mg/m^2/day$)
30/7/14	DS1	**106**	350
	DS2	**130**	
	DS3	**137**	

1.3 Surface Water Monitoring

In accordance with Schedule C of the Waste Facility Permit, Surface water monitoring of grab samples was undertaken on four occasions (quarterly) at the facility during 2014. Samples were analysed by CLS Laboratories in Rosmuc, Co. Galway. Weekly visual inspection of surfacewater was also carried out weekly.

Table 3. 2014 Surface Water Analysis Summary –SW1 – Tallagh Hill

SURFACE WATER MONITORING – W0256-02					
Sampling Point Ref:	**SW1**				**Limit (as per WL)**
Sampling Dates:	**29/01/14**	**30/04/14**	**16/07/14**	**17/10/14**	
Parameter	**Results**	**Results**	**Results**	**Results**	
pH (units)	6.8	7.1	7.4	7.7	**No Value Stated**
Conductivity (us/cm)	471	308	289	291	**No Value Stated**
Mineral Oil (ug/l)	73	318	31	70	**No Value Stated**
Total Suspended Solids (mg/l)	4	<2	<2	<2	**25 mg/l**
Total Heavy Metals	25	1.7	23.9	2.9	**No Value Stated**

Table 4. 2014 Surface Water Analysis Summary –SW2 – Tallagh Hill

SURFACE WATER MONITORING – W0256-02					
Sampling Point Ref:	**SW2**				**Limit (as per WL)**
Sampling Dates:	**29/01/14**	**30/04/14**	**16/07/14**	**17/10/14**	
Parameter	**Results**	**Results**	**Results**	**Results**	
pH (units)	6.8	7.1	7.7	6.8	**No Value Stated**
Conductivity (us/cm)	978	158	371	328	**No Value Stated**
Mineral Oil (ug/l)	79	85	90	86	**No Value Stated**
Total Suspended Solids (mg/l)	5	<2	9	<2	**25 mg/l**
Total Heavy Metals	39.6	1.4	8.9	5	**No Value Stated**

Table 5. 2014 Surface Water Analysis Summary –SW3 – Tallagh Hill

SURFACE WATER MONITORING – W0256-02					
Sampling Point Ref:	**SW3**				**Limit (as per WL)**
Sampling Dates:	**29/01/14**	**30/04/14**	**16/07/14**	**17/10/14**	
Parameter	**Results**	**Results**	**Results**	**Results**	
pH (units)	6.7	6.6	8.4	6.3	No Value Stated
Conductivity (us/cm)	978	158	371	328	No Value Stated
Mineral Oil (ug/l)	58	254	471	87	No Value Stated
Total Suspended Solids (mg/l)	7	<2	<2	6	25 mg/l
Total Heavy Metals	38.5	1	8.2	8.6	No Value Stated

Table 6. 2014 Surface Water Analysis Summary –SW4 – Tallagh Hill

SURFACE WATER MONITORING – W0256-02					
Sampling Point Ref:	SW4				Limit (as per WL)
Sampling Dates:	29/01/14	30/04/14	16/07/14	17/10/14	
Parameter	Results	Results	Results	Results	
pH (units)	6.6	6.0	8.4	6.3	No Value Stated
Conductivity (us/cm)	976	345	360	335	No Value Stated
Mineral Oil (ug/l)	82	226	47	56	No Value Stated
Total Suspended Solids (mg/l)	4	<2	12	<2	25 mg/l
Total Heavy Metals	42	2.4	15.3	<0.5	No Value Stated

Table 7. 2014 Surface Water Analysis Summary –SW5 – Tallagh Hill

SURFACE WATER MONITORING – W0256-02					
Sampling Point Ref:	**SW5**				**Limit (as per WL)**
Sampling Dates:	**29/01/14**	**30/04/14**	**16/07/14**	**17/10/14**	
Parameter	**Results**	**Results**	**Results**	**Results**	
pH (units)	6.5	6.3	7.7	6.4	**No Value Stated**
Conductivity (us/cm)	977	350	358	334	**No Value Stated**
Mineral Oil (ug/l)	55	112	129	42	**No Value Stated**
Total Suspended Solids (mg/l)	3	5	13	<2	**25 mg/l**
Total Heavy Metals	38.7	3.0	17.7	3.0	**No Value Stated**

All of the Surface Water results shown above are in compliance with the conditions of the Waste Licence W0256-02 and are within the Emission Limit Values prescribed and expected.

1.4 Noise Monitoring

Table 8: Noise Emission Limits

Day dB(A) L_{Aeq} [15 minutes]	***Night dB(A) L_{Aeq} [15 minutes]***
55	*45*

Noise Monitoring was not undertaken at the facility during 2014. No nuisance noise emissions were identified nor were any noise related complaints received and as such there was no requirement to carry out Noise Monitoring.

2. WASTE MANAGEMENT AT THE FACILITY

2.1 Waste Management and Recovery at the facility

Only waste fill conforming to European Waste Catalogue Code *17 05 04 Soil and Stones* was accepted at the facility during 2014. All waste to the facility was recorded and weighed over the certified weighbridge at the Lennon Quarries, Glencastle Quarry and Processing site prior to being deposited at the Tallagh Hill. The majority of waste fill accepted at the facility emanated from excavation works at the nearby Corrib Gas Project in Glenamoy, North Mayo. All fills brought to the site were uncontaminated and consisted primarily of virgin soil. Analysis was undertaken on single source material (>2000 tonnes). Refer to Appendix 3.

All waste collection contractors to the Tallagh Hill facility were assessed on the validity of their Waste Collection Permits. All contractors were issued acceptance letters from Lennon Quarries for the W0256-02 licensed site. The following table outlines the list of Waste Contractors that carried waste to the site during the reporting period and their associated vehicles and Waste Collection Permit registration numbers.

Table 9 – Waste Collection Contractors accepted at Lennon Quarries Soil Recovery Facility, Tallagh Hill in 2014.

Company Name	Waste Collection Permit Reg. Number	Vehicle Registration Numbers
Lennon Quarries Ltd	WCP-MO-09-0276-01	10MO10816 141MO1 07MH4823 05WW3321 07KE2739 06MO5 08MO2 08C13638 03MO6 03KY4051
Barry Quinn Transport Ltd	WCP-MO-10-282-01	02MO2920 05KK315 04LK6408 04MO2783 99CE4408
Barretts Quarry Ltd	WCP-MO-11-0667-01	07D88394 12MO1669 06RN2706 07D88384 07G8620 08MO2594 08SO1492 12MO1669 141MO873
Coolturk Quarries Ltd	NWCPO-13-11222-01	07MO4410 05SO2976

3.1.1 Total Waste in 2014

Table 10 – Total Waste Handled in 2014- Lennon Quarries Limited, Tallagh Hill Soil Recovery Facility (WO-256-02)

TOTAL WASTE HANDLED in 2014:	30,222.00 Tonnes

Table 11 : Monthly Breakdown of Tonnage to Lennon Quarries Soil Recovery Facility.

Tallagh Hill 2014		
Jan	6096	
Feb	3229	
Mar	3373	
Apr	4302	
May	5356	
Jun	1984	
Jul	12	
Aug	-	
Sep	840	
Oct	1024	
Nov	1234	
Dec	2772	
Total	**30222**	**Tons**

2.2 Waste Recovery

All waste fill taken to the site was recovered at the facility. The careful placement of fill and the subsequent reseeding, rolling etc. ensured that the resultant ground was agriculturally viable.

No waste loads were rejected from the facility during 2014. All waste accepted at the site was in compliance with conditions of the Waste Facility Permit.

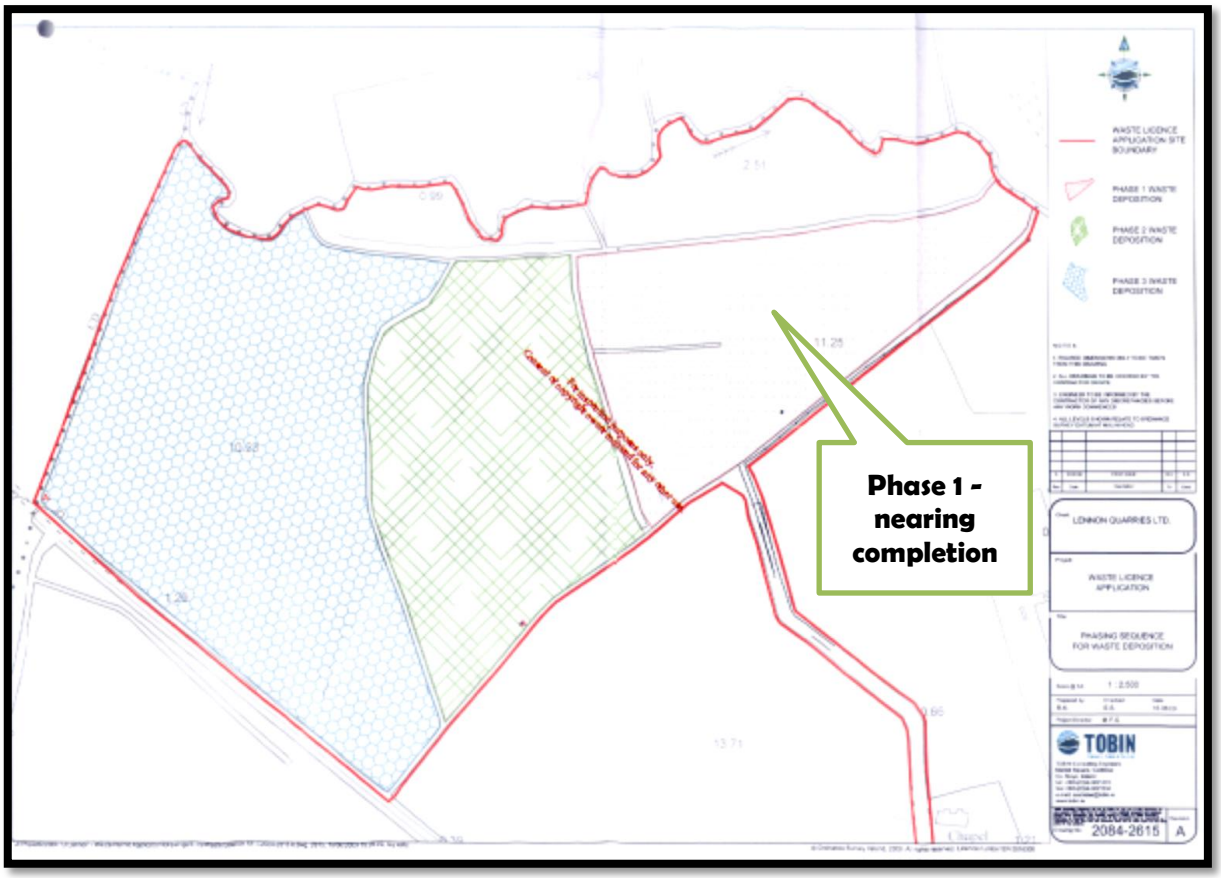
Some extraneous individual items of non-complaint materials were extracted from loads during offloading at the Inspection zone. These items included pieces of plastic piping / ducting, geo-textiles, reinforcing steel bars and some items of PPE (hard-hat, gloves etc.). These waste items were placed in a covered 14 cu y skip located in the on-site Waste Quarantine Area. The material (when skip is full) will be brought to the Lennon Quarries Material Recovery and Transfer Facility, Glencastle, Belmullet for recovery early in 2015.

3. SITE WORKS

3.1 Progress of Waste Deposition Works

The site was approximately 40% filled by end of 2014. All wastes taken to the site have been deposited in accordance with the phased filling plan. Phase 1 (the eastern section of the site) is nearing completion. Reseeding and the rendering of filled areas as suitable for agriculture have been undertaken in sub-phases of Phase 1. This ensured that the amount of exposed bare earth was limited to only fresh fill and it also reduced the impact from dust to the atmosphere and suspended solids to the drainage system and freshwaters.

Fig 1. Filling Phases of Tallagh Hill Facility



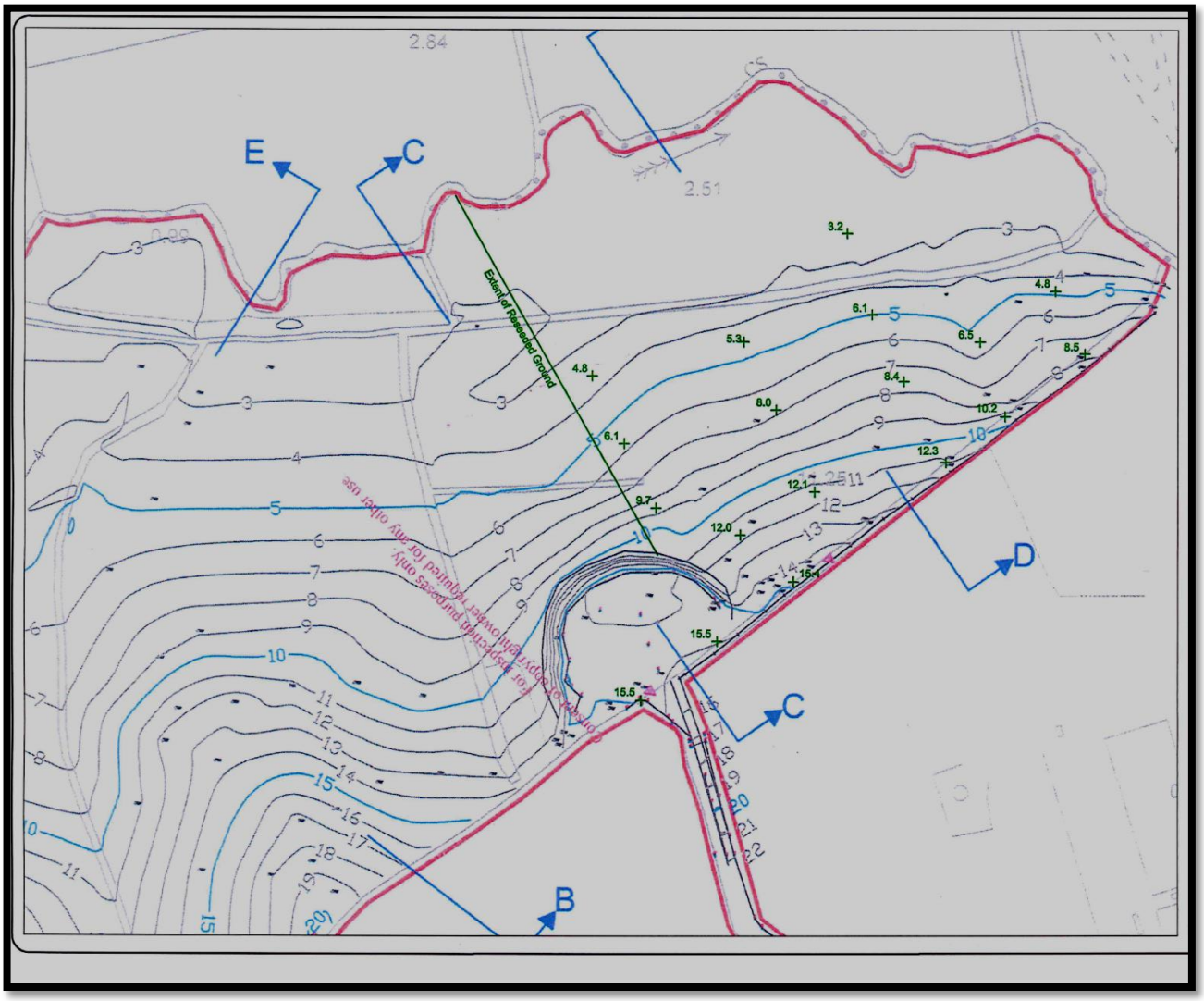
3.2 Expected Project Completion Date

The expected completion date for the project is unknown at this date as it is dependent on the upcoming availability of suitable volumes of fill in the catchment area.

3.3 Topographical Survey

A topographical survey was undertaken in November 2015 by Earth Science Partnership Consultants.

Fig 2. Topographical Survey ofTallagh Hill Facility



3.4 Stability Assessment

An over of the Stability at the site was undertaken by Darlot Consultants Ltd, Civil Engineers. The report is included in Appendix 2

4. RESOURCE MANAGEMENT AT THE FACILITY

4.1 Resource Consumption, Use and Energy Efficiency Report

All items of plant used at the facility are powered by diesel combustion engines. A tracked excavator was utilised to place and level incoming fill material at the facility. A 4-wheel drive tractor was used to spread grass seed on the areas readied for reclamation. No electricity is utilized at the site.

Table 12 – Total Fuel Usage in 2014- Lennon Quarries Limited, Tallagh Hill Soil Recovery Facility (WO-256-02)

TOTAL FUEL USED in 2014:	4,256 Litres
Equivalent kWh:	43,279

5. COMPLAINTS SUMMARY

5.1 Complaints

Details of all complaints made by the public are recorded in a Complaints Register. Complaints can be registered by contacting management or staff at the site. The register includes the name of the complainant, the nature of the complaint, the date of the complaint and the actions taken to remedy the complaint. The Managing Director / Facility Manager must sign off all completed forms.

There were no complaints received during the reporting period.

6. ENVIRONMENTAL MANAGEMENT AT THE FACILITY

6.1 Schedule of Environmental Objectives and Targets

- To comply fully with the conditions of EPA Waste Licence W0256-01;
- To comply with applicable environmental legislation and best industry practice;
- To be a good neighbour
- To respect the legitimate concerns and interests of the community;
- To achieve continuous improvement in environmental performance;
- Carry out the business of soil/stones recovery in a manner which will minimise adverse
- effects on the environment and the local community;
- Conserve resources by making efficient use of energy and raw materials;
- Ensure that employees and contractors perform their duties in a manner consistent with this
- environmental code;
- Be committed to good environmental management.
- To protect and develop suitable habitat for the endangered Corncrake (*Crex crex*)

6.2 Environmental Management Programme – Report for 2014

The EMP was followed as prescribed in 2014 with good environmental performance and compliance all round at the facility. No environmental issues surfaced throughout the year.

During 2014 a decision was made to focus on and assist the NWPS with their efforts in conservation of the endangered Corncrake species. The Lennon Quarries Tallagh Hill Facility had at one time up to seven calling males in and adjacent to the site. After discussion with personnel from the NWPS, Lennon Quarries agreed to set-aside over 1 hectare of reclaimed land in order to provide ideal, undisturbed habitat for the Corncrake to nest. The area selected was reseeded with grass seed and with nettles to offer cover for the birds. This was deemed a success and the area was fenced off right throughout the nesting period. Calling males were spotted in this habitat. The Tallagh area is one of the most important Corncrake reserves in the country.

6.3 Environmental Management Programme – Proposal for 2015

Lennon Quarries aim to continue their efforts in conservation of the Corncrake for 2015. Over 50% of the available site will be filled (should the supply of suitable fill continue at current rates) and a review of ELRA and CRAMP will also be carried out.

7. BIRD SURVEY REPORT

A Breeding Bird Survey was undertaken by Kelly Environmental Consultants during 2014. The report is attached in Appendix 1.

8. TANK AND PIPELINE TESTING AND INSPECTION REPORT

8.1 Tank and Pipeline Testing / Inspection

There are no items requiring testing or inspection at the facility. No oils or fuels are stored on the site. No chemicals are stored at the facility. Re-fueling is undertaken using mobile fuel bowser (self-bunded).

There are 5 no. Settlement Ponds at the facility for the removal of suspended solids from surfacewater discharges. A weekly inspection of these infrastructures is undertaken and recorded by Lennon Quarries personnel.

9. REPORTED INCIDENTS SUMMARY

9.1. Reported Incidents Summary

There were no reportable incidents at the facility during 2014

10. FACILITY MANAGEMENT

10.1 Management and Staffing Structure at the Facility

The facility is managed by Mr. Dermot Lennon with Mr. T.J. Lennon (Jnr) as Assistant Manager. The Soil Recovery Facility is an associated activity of the Lennon's quarrying and processing business and a number of employees operate between both arms of the company. Figure 1 below outlines the current organizational structure at the MRF.

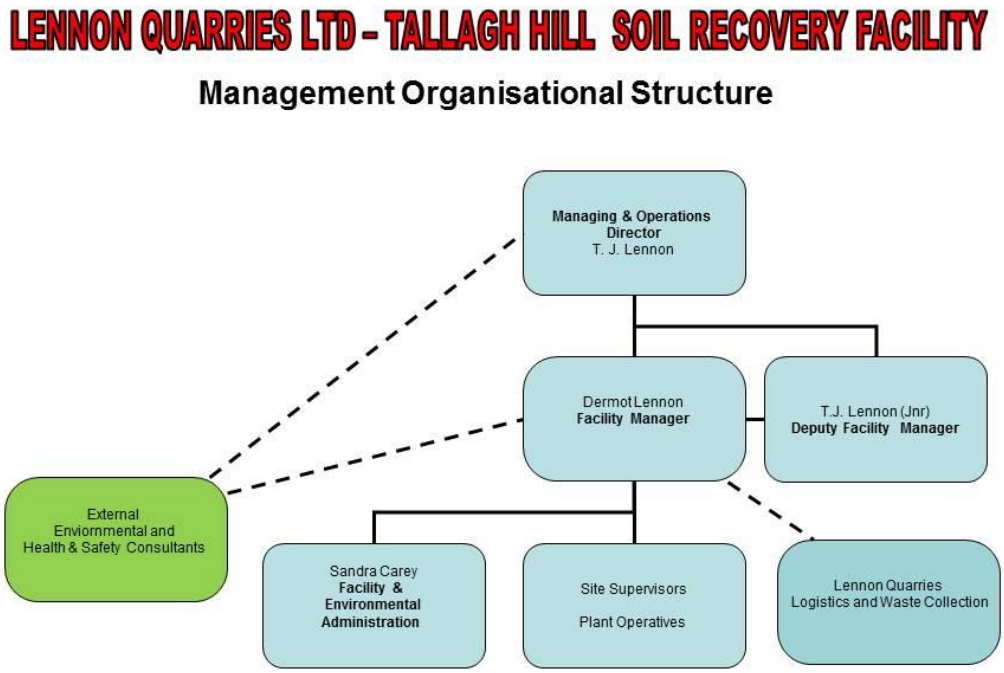


Fig 1 Management and Staffing Structure at Lennon Quarries Soil Recovery Facility, Tallagh Hill.

11. PROGRAMME FOR PUBLIC INFORMATION

11.1 Programme for Public Information

A Communications Programme is in place for the facility as part of the Environmental Management System. This includes;

- The Public Notice Board located adjacent to entrance to the site from the public road. Contact details and emergency out-of-hours contact details are listed on the sign.
- A porta cabin office located at the site which houses a copy of the Waste Licence and compliance documentation
- Access to Lennon Quarries Head Office in Glencastle – where comprehensive information on the facility is available within working hours,
- Availability of Company Director T.J. Lennon, Facility Manager Dermot Lennon or Assistant Facility Manager T.J. Lennon (jnr) at all reasonable times in person or by telephone to discuss any issues or answer questions from interested parties.

As part of the review process of Waste Licence W0256-01, communication with all interested parties in the vicinity of the facility was undertaken during 2014. Door to door visits were made to all relevant parties in conjunction with the sending of informational letters from Lennon Quarries. All relevant parties (from private householders to local organisations such as the G.A.A to public bodies such as The North Western Region Fisheries Board, NWPS) were notified of the proposed alterations to the facility i.e. an increase in the annual intake capacity.

No objections were lodged against the proposed increase in annual capacity and active, open communication with the local community remains a priority for Lennon Quarries.

12. REVIEW OF CLOSURE, RESTORATION AND AFTERCARE MANAGEMENT PLAN (CRAMP)

12.1 CRAMP Review

A comprehensive Closure, Aftercare and Management Plan (CRAMP) is in place for the facility having been developed by Tobin Engineering Consultants. The plan was assessed as part of an environmental and operational review of the facility in 2014. No alterations were deemed necessary. A further review of the CRAMP will be undertaken in 2015 as it is predicted that over 50% of the site area will have been filled, reclaimed and reseeded by end of that year.

13. ENVIRONMENTAL LIABILITIES RISK ASSESSMENT REVIEW

13.1 ELRA Review

This was not scheduled for review during the reporting period.

14. OTHER ITEMS

14.1 List of other items specified by the Agency

No further items have been specified by the Agency for inclusion in the Annual Environmental Report for 2014.

APPENDIX 1

BREEDING BIRD SURVEY

Breeding Bird Survey 2014

Lennon Quarries Limited.

at

Tallagh Soil Recovery Facility, Belmullet, Co Mayo

(E.P.A LICENCE REG. NO. W0256-02)

Prepared by:

KELLY ENVIRONMENTAL, CONSULTING & ADVISORY SERVICES
OFFICE 2, THE RESOURCE CENTRE,
BALLYCASTE
COUNTY MAYO.

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1. INTRODUCTION

In accordance with condition 6.15 of the Lennon Quarries EPA Waste License (registration no: W0256-02), an annual breeding bird survey is to be undertaken at their Soil Recovery Facility at Tallagh, Belmullet, Co. Mayo, unless otherwise required by the agency. It states, the survey should record the number of birds of conservation concern utilising the site. The results of the survey are demonstrated in this document.

The breeding bird survey was undertaken on May 24th 2014 at the site. The Survey consisted of approximately 3 hour watches from each of 3 vantage points (VPs 1, 2 and 3). The Survey also included observation of any habitat or breeding species within a 100m range outside of the site boundary in question.

2. SITE DESCRIPTION

The facility consists of a 27 hectare site located 3km north of Belmullet town. The site is principally dominated by cutover bog habitat which has been used for peat fuel supply and sheep grazing in the past. The site is currently active as a Soil Recovery Facility with an annual intake of 90,000 tonnes licensed. The site is being reclaimed for agricultural purposes using clean soil / stone (EWC 17 05 04) and filling is undertaken in a phased approach. At present approximately 45 % of the licensed area has been filled. To the north of the site runs the Clooneen River flowing in an easterly direction to the sea. This is protected from inflow of silts from activities at the site by a number of settlement ponds.

The land use surrounding the site is mainly rough grazing agricultural and consists of bogland, cut away bogland, with little tree-cover, some hedgerows and scattered private dwellings.

It must be noted the site is adjacent to a derelict former intensive mushroom growing facility. The grounds around the former industry are not grazed and are lush with vegetation (primarily the Annual Nettle- *Utrica urens*) as illustrated in figure 2.

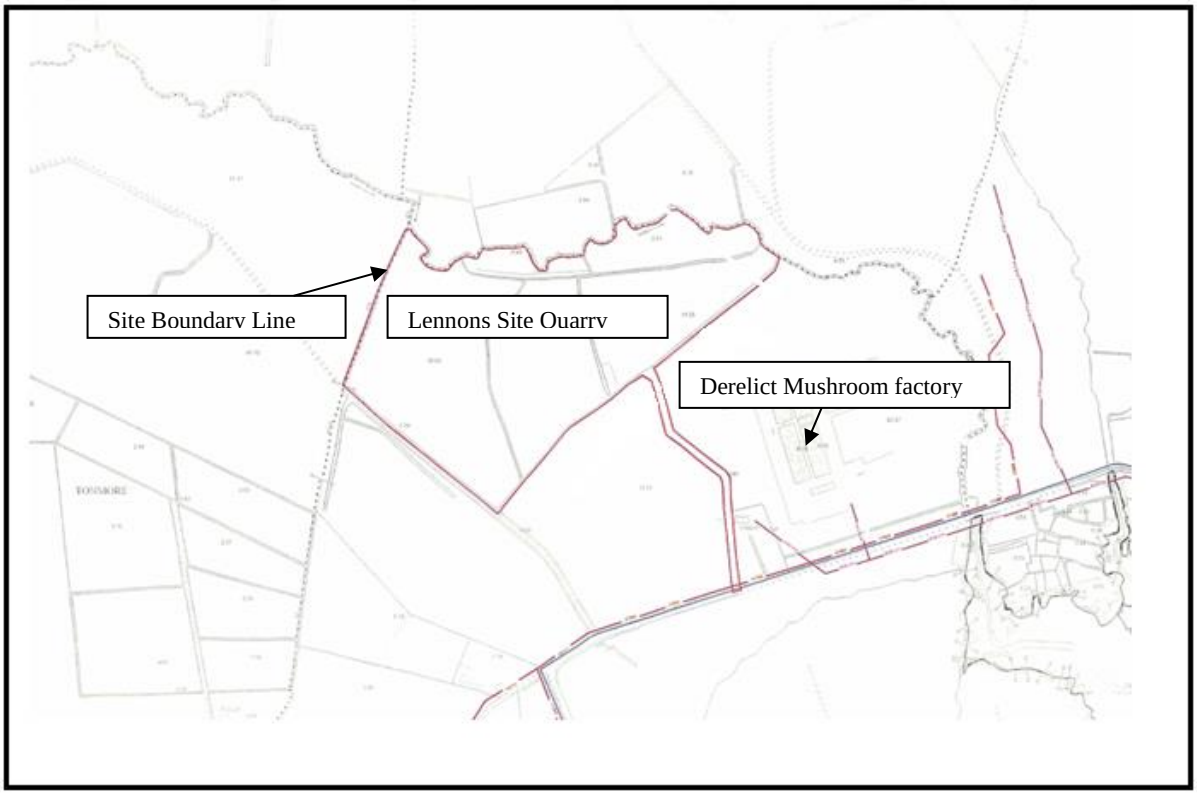

Figure 1: Site Layout

3. METHODS/ METHODOLOGY

The site was surveyed on the 24h May, 2014, as the bird nesting season runs from 1st March to the 31st September this was an ideal time to verify any breeding birds on the site.
The survey areas included three vantage points plus a buffer zone of approximately 100m around the site boundary; however the full site boundary was inaccessible from the ground

The breeding bird survey was conducted in accordance with the Countryside Bird Survey (CBS) by conducting two transects across the survey area, walk of site boundary and Vantage point watches.

Vantage Point Watches

These vantage points are marked in figure 3 and were chosen as they provide a good view over the site. The location was also chosen as this sector of the site is where the majority of filling and restoration activity occurs. Three-hour watches were undertaken at each of the points.

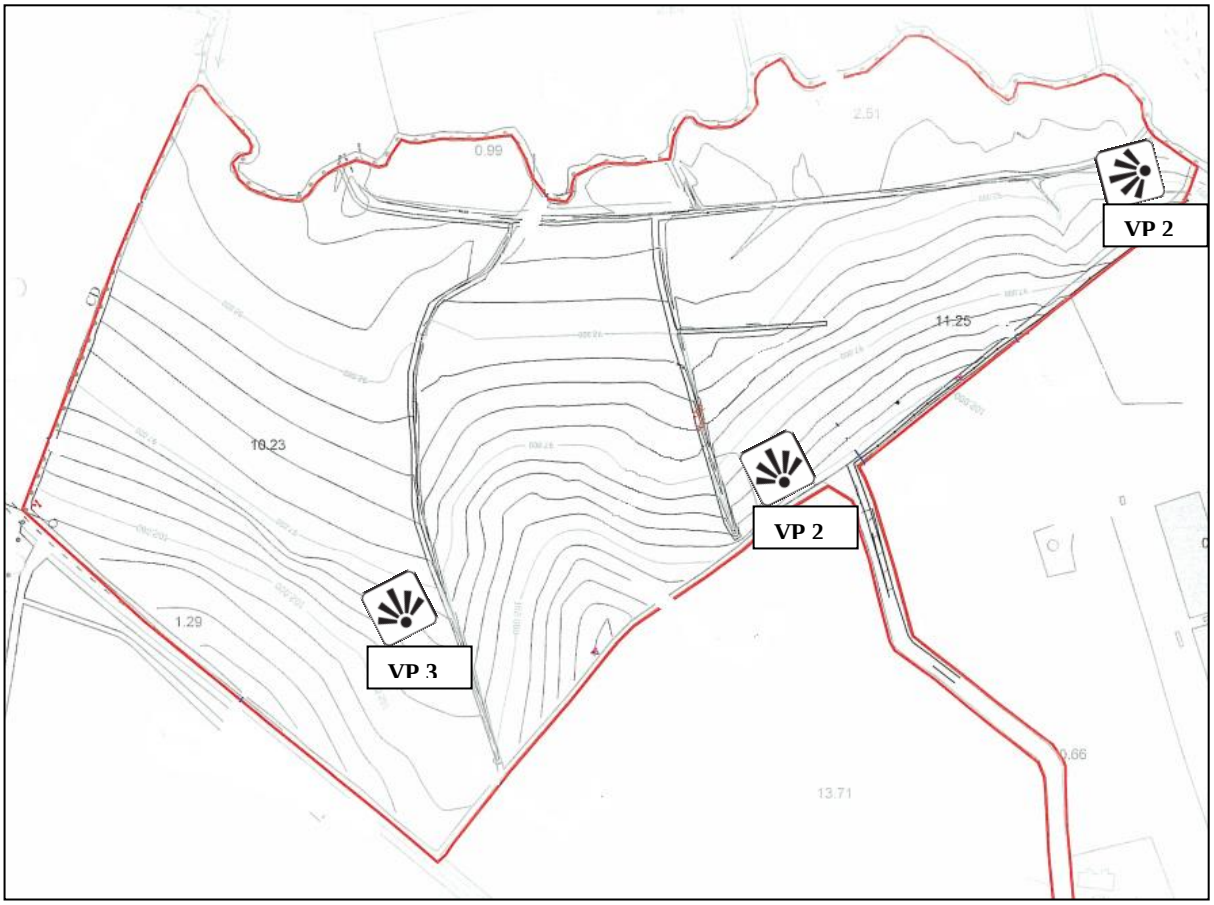

Figure 2: Location of Vantage Points at Tallagh Soil Recovery Site

Transect and Walk Survey

This methodology involved walking two transects across the site, including a walk of the boundary (100m approx.) however not the entire boundary was accessible. During this survey a number of stops were made to examine and listen for any overhead of low lying birds, also examining beyond the site boundary.

Site visits were carried out from 07:00 to 16:00. Weather conditions were good with some cloud cover, light wind and no rain. The weather conditions were suitable for the survey.

The conservation value of birds within the EU is based on the species listed in Annex I of the "Birds Directive", which are protected under Irish and European law. The species mentioned in Annex I of the Directive "shall be the subject of special conservation measures concerning their habitat in order to ensure their survival and reproduction in their area of distribution" (EEC, 1979). Within Ireland, BirdWatch Ireland has agreed a list of priority bird species for conservation action on the island of Ireland. These Birds of Conservation Concern in Ireland are published in a list known as the BoCCI list (lynas *et al.* 2007). In this BoCCI List, birds

are classified into three separate lists (Red, Amber and Green), based on the conservation status of the bird and hence conservation priority. The Red Listed birds are of high conservation concern, the Amber List birds are of medium conservation concern and the Green List birds are not considered threatened. Specific criteria are used to classify a bird into one of these three categories.

4. RESULTS

VP	Common Name	Scientific Name	No. Of Sightings	Conservation Status	Comments
VP 1	SkyLark	*Alaudia avensis*	1	Amber	Heard singing overhead
	Common Gull	*Larus canus*	4	Amber	Flew West of the site
	Linnet	*Carduelia Cannabina*	1	Amber	Seen flying North overhead
VP2	Swallow	*Hirunda Rustica*	3	Amber	seen overhead and foraging on site
	Concrake	*Crex crex*	4*	Red	Heard offsite in nettles adjacent to old mushroom Factory.
VP3	Swallow	*Hirunda rustica*	2	Amber	seen flying overhead
	SkyLark	*Alaudia avensis*	2	Amber	Heard singing overhead
	Rook	*Corvus frugilegus*	1	Green	Seen flying West overhead

Total Number of Birds Species Recorded during the Viewpoint Survey: **6**
Note* - No actual sighting of the Corncrake – 4 distinct individual males heard calling from adjacent to the site in nettle cover.

Table 1: Results from Viewpoints

Common Name	Scientific Name	No. Of Sightings	Conservation Status	Comment
SkyLark	*Alaudia avensis*	3	Amber	Seen singing overhead

Common Gull	*Larus canus*	1	Amber	Flew West of the site
Pied Wagtail	Motacilla Alba Yarrellii	1	Green	Seen landing on bare soil ground for approx. 1 min before flying west
Starling	Stumus Vulgaiis	5	Amber	Seen flying South overhead
Hooded Crow	Convus Corone Cornix	1	Green	Seen flying East overhead

Total Number of Birds Species Recorded During the Transect/Walkover : **5**

Table 2: Results from Transect/Walkover Survey

Total Number of Birds Species Surveyed at the Lennon Quarries Soil Recovery Facility	**9**

Figure 3 demonstrates the location of the birds from the three viewpoints

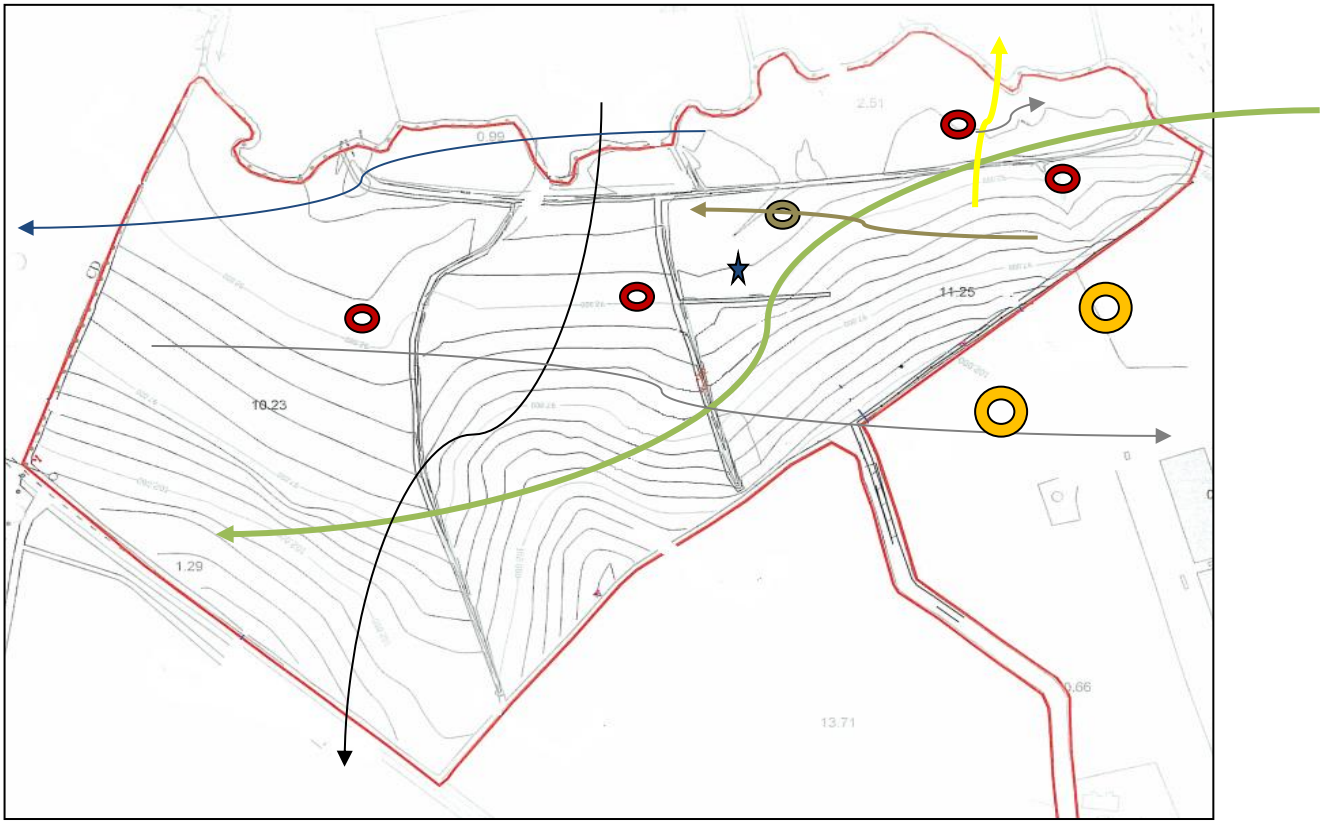

Figure 3: Location Birds Noted On-Site

	Skylarks heard overhead, possible breeding on-site due to locality, however no evidence from survey
	Common Gull flew north of the site
	Swallows overhead and foraging on site
	Concrakes heard offsite in nettles
	1 **Linnet** seen flying overhead
	Rook Heading West
	Pied Wagtail on bare ground (freshly placed soil fill)
	Starling flying South overhead
	Hooded Crow seen flying East

Table 3: Location and Direction of Species on-site

There was a total of 6 bird species which would be of moderate conservation concern recorded at the site. No evidence of breeding on the site was recorded during the survey. The active section of the facility (where soil is being imported as fill and where ground is being reclaimed) does not provide opportunity for nesting birds due to the exposed earth and disturbance from activity. The evidence of Skylark *(Alaudia avensis)* overhead in a number of locations would point to such species breeding within the site or adjacent to it – possibly within the undisturbed section or within drainage ditches. However no evidence of this was recorded during the Survey.

There were possible 4no. Red Annex 1 bird species recorded, the Corncrake *(Crex crex). Up to 4* males of this species were heard calling from a location off-site but visual contact was not made. The birds were probably hidden amongst the nettles and grass in an area adjacent to the site, i.e. the derelict mushroom growing facility. It has been ascertained that the Corncrake (*Crex crex)* has been observed and recorded in that particular site over a number of seasons by personnel from the National Parks and Wildlife Service and Birdwatch Ireland.

5. CONCLUSION

The site is being filled for reclamation in a phased manner. Approximately one third of the entire the site remains in an undisturbed condition. Where activity is taking place, i.e. the portion of the site being currently filled, earthmoving plant and machinery provides a deterrent to birds from nesting in that area. The filling of the site with clean soil and stone does not appear to have any negative impact on bird life in and around the area.

Apart from one endangered species encountered the bird life in and around the vicinity of the site was as expected in that particular area of North West Mayo and all observed were overhead or flying through apart from the Pied Wagtail (*Motacilla Alba Yarrellii).*

Special note was taken of the Red Annex 1 Corncrakes *(Crex Crex)* – one of Ireland's most endangered bird species – which were heard calling from an area off- site adjacent to the facility being surveyed. A telephone conversation was held with a member of the National Parks and Wildlife Service (NWPS) in relation to the presence of the Corncrake and they noted that the infilling activities on the Lennon Quarries site did not appear to be impacting upon it whatsoever. On a number of site visits during early May 2015, NWPS informed that no less than 6 no. males of the species were heard calling on one evening. Lennon Quarries have committed to working with the NWPS to assist with conservations efforts at this location. Lennon Quarries have set aside approx. 4 acres of the newly reclaimed section of the Tallagh site as prime habitat for the Corncrake. They area is being fenced off, seeded with nettle vegetation for cover and will remain uncut to allow for ideal habitat to attract further numbers of the bird to the area.

The continuation of a phased filling approach as prescribed by conditions of the EPA Waste Licence W0256-01 is important as any bird species will be dissuaded from nesting in the active area. Prior to filling a new section of the site particularly in the nesting season, Lennon Quarries have been advised to undertake a walkover of that area to ascertain whether bird nests are present.

The preserving of prescribed buffer zones between the site and the Clooneen River is also essential to provide undisturbed habitat even after activity has ceased.

The facility is being well managed with special attention being given to the preservation of the endangered Corncrake (*Crex crex*).

APPENDIX 2

STABILITY OVERVIEW

STABILITY OVERVIEW- Tallagh Hill Soil Recovery Site

CLIENT:	MR. T.J. LENNON, LENNON QUARRIES	**DATE:**	14 October 2014
ENGINEER:	MICHAEL KELLY, DARLOT CONSULTANTS.		
PRESENT AT SITE VISIT:	DERMOT LENNON, FACILITY MANAGER.		
JOB:	**OVERVIEW OF STABILITY AT LENNON QUARRIES SOIL RECOVERY FACILITY, TALLAGH HILL, BELMULLET, CO. MAYO**		

INTRODUCTION

Lennon Quarries operate a Soil Recovery Facility at Tallagh Hill, Belmullet, Co. Mayo. The site accepts clean inert fill material from excavation works in the region. The fill conforms to EWC Code 17 05 04 Soil and Stone. The majority of fill taken to the site is from a nearby gas pipeline installation and terminal construction project. The filling of the site is approximately 35-40% complete.

Darlot Consultants were requested to carry out an overview assessment of stability conditions at the facility in Tallagh Hill. To this effect, a site walkover was held on Tuesday 14th of October 2014. A topographical surveying was carried out by Earth Science Partnership prior to this assessment.

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OBSERVATIONS FROM SITE VISIT AND WALKOVER

The site visit was carried out on the 14th of October, 2014. The following summarises observations from this site visit;

- Weather Conditions – Light rain on the day. There had been heavy rain during the preceding days.
- The site was actively been filled. During the site visit approximately 8 no. tipper trucks offloaded material at the Tipping Zone / turnaround circle. A 25 tonne Komatsu tracked excavator was on site placing material.
- No existing slope is greater than 25% at that facility (other than at tipping zone / turning circle)
- The original topsoil (which consists mainly of regenerated / cutover shallow peat) had been stripped from the active filling area and placed in temporary berms.
- The site is well drained with 5no. silt removal ponds combined with a network of old and new land drains. The surface water flowing to the adjacent river (Clooneen) had less suspended material than the water flowing in the river itself.
- On visual examination that the majority of the soils being taken to the facility are of mainly unsorted glacial tills. These are similar in nature to the subsoils exposed at the site.
- No evidence of groundwater seepages in the site. There was some ponding of surfacewater in the low-lying are to the North of the site mainly as a result of the heavy rain previous to the visit.
- All completed sections of the site were covered in grassland vegetation.
- The placement of recovered fills at the site is to an average depth of

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approximately 1m.

- No laboratory or site tests were undertaken. Access for reference purposes was provided to analysis undertaken by Roadbridge Civil Engineering personnel at the Corrib Gas Project.

From observation the paced fill soils show good cohesion due to their nature and the placement methodology used (stripping back of peat topsoils, scarifying or underlying subsoil, breaking any iron pan layer, the mixing of the organic topsoil with the incoming fill prior to placement of this, the immediate reseeding of the filled section and the subsequent rolling and compaction of this resulting in agricultural grassland.)

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CONCLUSIONS / RECOMMENDATIONS

The only location where soil is exposed extensively is on the slope faces of the offloading area / turning circle. The silty clay that this consists of is by its nature is susceptible to erosion and degradation with exposure to weather. However this feature is temporary in nature and only necessary until the entire site has been filled. It is will be then levelled and reinstated as required. It would be recommended that the slopes in this site feature be further stabilised and protected by battering.

Where an area of the site has been newly filled and worked, reasonable precautions should be exercised to avoid extended tracking of heavy equipment. This would eliminate the potential for surfacewater ponding at the site.

Conditions that result in good soil stability at the facility are as follows;

- existing vegetation is maintained on the areas of the site not yet filled,
- only a localised area is stripped and exposed for filling at one time
- reinstated areas are vegetated with grass crop almost immediately after filling
- there is a good drainage network on site
- the average depth of fill is approximately 1m
- the maximum slope at the site is less than 25%
- the existing topsoil (highly organic in nature) is removed prior to filling
- the exposed subsoils are scarified and mixed using excavator breaking any iron pan
- peat topsoil is mixed with not placed on incoming fill to create new organic rich topsoil

From observations at the site during walkover survey the current slopes are stable, would be expected to become more stable over time from settlement of placed fill and from binding effect of vegetation.

Michael Kelly B.Eng. (Civil) MIEI

Darlot Ltd. - Civil Engineering Consultants

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APPENDIX 3

WASTE ANALYSIS

LAB ANALYSIS OF SOIL FILL TAKEN TO TALLAGH HILL W0256-02

Complete Laboratory Solutions
Ros Muc, Co. Galway.
[Tel] 091 574355
[Fax] 091 574356
[Email] services@cls.ie
[web] www.completelabsolutions.com

Client	:	Saad Siddique Roadbridge Ltd C/O Shell E&P Ireland Limited, 3 Údarás na Gaeltachta, Belmullet , Co. Mayo.	Report No. Date of Receipt Start Date of Analysis Date of Report Order Number Sample taken by	: : : : : :	230414 13/06/2014 13/06/2014 02/07/2014 Client

CERTIFICATE OF ANALYSIS

Lab No	Sample Description	Test	Result	Units
522999	S/091. Stockpile @ Terminal. 16/05/14	WAC single stage, 10:1 leachate	See attached report	

Approved by: Barbara Lee
Barbara Lee
Environmental Scientist

See page 2 for test specifications and accreditation status

Waste Acceptance Criteria Testing BS EN 12457
Part 3, 2 Stage Process
Issue 2

Sample Details		Test Values	
Sample Number	14095916	Mass of Raw Test Portion (MW) kg	0.176
Job Number	1117460	Mass of Dried Test Portion (MD) kg	0.175
Sample ID	522999	Moisture Content Ratio (MC) %	0.3
Site		Dry Matter Content Ratio (DR) %	99.7
Job Description	Routine Analysis	Moisture Content @ 105c	0.3
Date Sampled		Leachant Volume (1) (L2) Litre	0.349
Date Received	17/06/2014	Leachant Volume (2) (L8) Litre	1.4
Particle Size (<4mm)	<=95%	Eluate Volume (1) (VE1) Litre	0.285
Method of size reduction	Jaw Crusher	Eluate Volume (2) (VE2) Litre	1.28
Non-crushable matter	N/A		

Eluate Analysis	Concentration in Eluate		Amount Leached		Landfill Waste Acceptance Criteria		
Liquid:Waste Ratio	2:1	8:1	2:1	10:1	BS EN 12457-3 Limit Values (mg/Kg) at L:S 10:1		
Sample Number	14095917	14095918					
pH	8.08	7.73					
Temperature °C	19	20					
Conductivity uS/cm	297	101					
					Inert Waste	*Stable Non-Reactive hazardous waste in non-hazardous*	*Hazardous Waste*
	mg/l	mg/l	mg/Kg	mg/Kg			
Arsenic as As	0.009	0.008	0.018	**0.082**	*0.5*	*2*	*25*
Barium as Ba	0.028	0.017	0.056	**0.19**	*20*	*100*	*300*
Cadmium as Cd	0.003	<0.00010	0.006	**0.0049**	*0.04*	*1*	*5*
Chromium as Cr	0.005	0.004	0.01	**0.042**	*0.5*	*10*	*70*
Copper as Cu	0.015	<0.010	0.03	**0.024**	*2*	*50*	*100*
Mercury as Hg	0.001	<0.00050	0.002	**0.0016**	*0.01*	*0.2*	*2*
Molybdenum as Mo	0.004	<0.0020	0.008	**0.0065**	*0.5*	*10*	*30*
Nickel as Ni	<0.020	<0.020	<0.040	**<0.20**	*0.4*	*10*	*40*
Lead as Pb	0.012	<0.010	0.024	**0.02**	*0.5*	*10*	*50*
Antimony as Sb	<0.0060	<0.0060	<0.012	**<0.060**	*0.06*	*0.7*	*5*
Selenium as Se	<0.010	<0.010	<0.020	**<0.100**	*0.1*	*0.5*	*7*
Zinc as Zn	<0.025	<0.025	<0.050	**<0.25**	*4*	*50*	*200*
Chloride as Cl	9.54	<3.00	19	**16**	*800*	*15000*	*25000*
Fluoride as F	0.6	0.3	1.2	**3.5**	*10*	*150*	*500*
Sulphate as SO4	31.4	2.4	63	**71**	*1000*	*20000*	*50000*
Total Dissolved Solids (TDS)	242	92	480	**1200**	*4000*	*60000*	*100000*
Phenol Index	<0.15	<0.15	<0.30	**<1.5**	*1*		
Dissolved Organic Carbon (DOC)	14.9	5.4	30	**69**	*500*	*800*	*1000*
Waste Analysis							
Total Organic Carbon w/w %					*3%*	*5%*	*6%*
Loss on Ignition %							*10%*
BTEX mg/Kg					*6*		
PCBs (7 congeners) mg/Kg					*1*		
Mineral Oil (C10-C40) mg/Kg				**170**	*500*		
PAHs mg/Kg				**<2.0**	*100*		
pH				**8**		*>6*	
Acid Neutralisation Capacity (pH4) mol/Kg						*To be evaluated*	*To be evaluated*
Acid Neutralisation Capacity (pH7) mol/Kg						*To be evaluated*	*To be evaluated*

Disclaimer: Eluate concentrations below the detection limit are assumed to be negligible when calculating mg/kg values. The limits quoted for Waste Acceptance are derived from the Landfill (England and Wales) Regulations 2002 (as amended) and are provided as guidance only. ALS Environmental does not take responsibility for any errors or omissions with regard to these limits.

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Report Number: **COV/1117460/2014** Issue **1**
Laboratory Number: **14095916** Sample **7** of **18**

Sample Source: **Complete Laboratory Solutions**
Sample Point Description: **Complete Laboratory Solutions**
Sample Description: **522999**
Sample Matrix: **Soil**
Sample Date/Time:
Sample Received: **17 June 2014**
Analysis Complete: **02 July 2014**

Test Description	Result	Units	Analysis Date	Accreditation		Method
Total Organic Carbon by IR	3.31	%	02/07/2014	N	S	SUBCON
Sum of 7 PCBs	<0.021	mg/kg DW	30/06/2014	N	S	SUBCON
EN 12457-3 Leachate	Y		18/06/2014	N	Cov	EN12457-3
Moisture Content Ratio at 105C	0.30	% ratio	19/06/2014	N	Cov	33
Conductivity @ 20 C	130	uS/cm	24/06/2014	N	Cov	19A
Moisture at 105C	0.30	%	19/06/2014	N	Cov	33
pH	8.0	pH units	27/06/2014	Y	Cov	39
Mineral Oils >C10 - C40	170	mg/kg	23/06/2014	Y	Cov	317
PAH, Total of 17 WAC	<2.0	mg/kg	25/06/2014	N	Cov	307
Benzene	<2.5	mg/kg	25/06/2014	Y	Cov	327
Toluene	<2.5	mg/kg	25/06/2014	Y	Cov	327
Ethylbenzene	<2.5	mg/kg	25/06/2014	Y	Cov	327
m&p-Xylene	<5.0	mg/kg	25/06/2014	Y	Cov	327
o-Xylene	<2.5	mg/kg	25/06/2014	Y	Cov	327
Dry Ratio (BSEN 12457)	99.70	%	19/06/2014	N	Cov	Calculated

Analyst Comments for 14095916:

The date of sampling has not been provided and therefore sample stability times cannot be assessed. It is therefore possible that the results provided may be compromised. {/*}Incorrect sample container received for EH Soils, testing performed on subsample from plastic container. Therefore, the EH soils result is indicative only and not covered by our accreditation.
The sample for VOC HS Solils was received in a container inappropriate for this parameter. It is therefore possible that the results provided may be compromised.
Reporting limits raised for VOC HS Solis due to nature of sample matrix.
PAH soils WAC - detection limit raised due to interference from sample matrix.{*/}

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: Cov = Coventry(CV4 9GU), Run = Runcorn(WA7 1SL), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).
I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed: CAColley
Name: **G. Coiley** Date: **02 July 2014**
Title: **Coventry Operations Manager**

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Report Number: **COV/1117460/2014** Issue **1**
Laboratory Number: **14095917** Sample **8** of **18**

Sample Source: **Complete Laboratory Solutions**
Sample Point Description: **Complete Laboratory Solutions**
Sample Description: **522999 2:1**
Sample Matrix: **Soil**
Sample Date/Time:
Sample Received: **17 June 2014**
Analysis Complete: **02 July 2014**

Test Description	Result	Units	Analysis Date	Accreditation		Method
EN Leachate 2:1	Y	g	20/06/2014	N	Cov	EN12457-3 2:
Molybdenum, Soluble WAC	0.0040	mg/l	01/07/2014	N	Cov	56 WAC
Antimony, Soluble WAC	<0.0060	mg/l	01/07/2014	N	Cov	56 WAC
Arsenic, Soluble WAC	0.0090	mg/l	01/07/2014	N	Cov	56 WAC
Barium, Soluble WAC	0.028	mg/l	01/07/2014	N	Cov	56 WAC
Cadmium, Soluble WAC	0.0030	mg/l	01/07/2014	N	Cov	56 WAC
Chromium, Soluble WAC	0.0050	mg/l	01/07/2014	N	Cov	56 WAC
Copper, Soluble WAC	0.015	mg/l	01/07/2014	N	Cov	56 WAC
Lead, Soluble WAC	0.012	mg/l	01/07/2014	N	Cov	56 WAC
Mercury, Soluble WAC	0.0010	mg/l	01/07/2014	N	Cov	56 WAC
Nickel, Soluble WAC	<0.020	mg/l	01/07/2014	N	Cov	56 WAC
Selenium, Soluble WAC	<0.010	mg/l	01/07/2014	N	Cov	56 WAC
Zinc, Soluble WAC	<0.025	mg/l	01/07/2014	N	Cov	56 WAC
Chloride as Cl	9.54	mg/l	25/06/2014	Y	Cov	WAS036
Sulphate as SO4	31.4	mg/l	25/06/2014	Y	Cov	WAS036
Solids, Tot Dissolved 180 DegC	242	mg/l	28/06/2014	N	Cov	WAS010
TOC (Filtered)	14.9	mg/l	24/06/2014	Y	Cov	WAS005
Phenols Mono (Phenol Index)	<0.15	mg/l	26/06/2014	Y	Cov	WAS019
Fluoride as F	0.6	mg/l	26/06/2014	Y	Cov	WAS029

Analyst Comments for 14095917: No Analyst Comment

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: Cov = Coventry(CV4 9GU), Run = Runcorn(WA7 1SL), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).
I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed: CAColley Name: **G. Coiley** Date: **02 July 2014**
Title: **Coventry Operations Manager**

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Report Number: **COV/1117460/2014** Issue **1**
Laboratory Number: **14095918** Sample **9** of **18**

Sample Source: **Complete Laboratory Solutions**
Sample Point Description: **Complete Laboratory Solutions**
Sample Description: **522999 8:1**
Sample Matrix: **Soil**
Sample Date/Time:
Sample Received: **17 June 2014**
Analysis Complete: **02 July 2014**

Test Description	Result	Units	Analysis Date	Accreditation		Method
EN Leachate 8:1	Y	g	23/06/2014	N	Cov	EN12457-3 8:
Molybdenum, Soluble WAC	<0.0020	mg/l	01/07/2014	N	Cov	56 WAC
Antimony, Soluble WAC	<0.0060	mg/l	01/07/2014	N	Cov	56 WAC
Arsenic, Soluble WAC	0.0080	mg/l	01/07/2014	N	Cov	56 WAC
Barium, Soluble WAC	0.017	mg/l	01/07/2014	N	Cov	56 WAC
Cadmium, Soluble WAC	<0.00010	mg/l	01/07/2014	N	Cov	56 WAC
Chromium, Soluble WAC	0.0040	mg/l	01/07/2014	N	Cov	56 WAC
Copper, Soluble WAC	<0.010	mg/l	01/07/2014	N	Cov	56 WAC
Lead, Soluble WAC	<0.010	mg/l	01/07/2014	N	Cov	56 WAC
Mercury, Soluble WAC	<0.00050	mg/l	01/07/2014	N	Cov	56 WAC
Nickel, Soluble WAC	<0.020	mg/l	01/07/2014	N	Cov	56 WAC
Selenium, Soluble WAC	<0.010	mg/l	01/07/2014	N	Cov	56 WAC
Zinc, Soluble WAC	<0.025	mg/l	01/07/2014	N	Cov	56 WAC
Chloride as Cl	<3.00	mg/l	25/06/2014	Y	Cov	WAS036
Sulphate as SO4	2.4	mg/l	25/06/2014	Y	Cov	WAS036
Solids, Tot Dissolved 180 DegC	92	mg/l	28/06/2014	N	Cov	WAS010
TOC (Filtered)	5.4	mg/l	25/06/2014	Y	Cov	WAS005
Phenols Mono (Phenol Index)	<0.15	mg/l	27/06/2014	Y	Cov	WAS019
Fluoride as F	0.3	mg/l	26/06/2014	Y	Cov	WAS029

Analyst Comments for 14095918: No Analyst Comment

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: Cov = Coventry(CV4 9GU), Run = Runcorn(WA7 1SL), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).
I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed: CAColley Name: **G. Coiley** Date: **02 July 2014**
Title: **Coventry Operations Manager**

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Complete Laboratory Solutions
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[Fax] 091 574356
[Email] services@cls.ie
[web] www.completelabsolutions.com

Client	: Saad Siddique	Report No.	:	230415
	Roadbridge Ltd	Date of Receipt	:	13/06/2014
	C/O Shell E&P Ireland Limited,	Start Date of Analysis	:	13/06/2014
	3 Údarás na Gaeltachta,	Date of Report	:	02/07/2014
	Belmullet , Co. Mayo.	Order Number	:	
		Sample taken by	:	Client

CERTIFICATE OF ANALYSIS

Lab No	Sample Description	Test	Result	Units
523000	S/092. Stockpile @ Terminal. 24/05/14	WAC single stage, 10:1 leachate	See attached report	

Approved by: Barbara Lee

Barbara Lee
Environmental Scientist

See page 2 for test specifications and accreditation status

Waste Acceptance Criteria Testing BS EN 12457
Part 3, 2 Stage Process
Issue 2

Sample Details		Test Values	
Sample Number	14095919	Mass of Raw Test Portion (MW) kg	0.176
Job Number	1117460	Mass of Dried Test Portion (MD) kg	0.175
Sample ID	523000	Moisture Content Ratio (MC) %	0.5
Site		Dry Matter Content Ratio (DR) %	99.5
Job Description	Routine Analysis	Moisture Content @ 105c	0.5
Date Sampled		Leachant Volume (1) (L2) Litre	0.349
Date Received	17/06/2014	Leachant Volume (2) (L8) Litre	1.4
Particle Size (<4mm)	<=95%	Eluate Volume (1) (VE1) Litre	0.27
Method of size reduction	Jaw Crusher	Eluate Volume (2) (VE2) Litre	1.27
Non-crushable matter	N/A		

Eluate Analysis	Concentration in Eluate		Amount Leached		Landfill Waste Acceptance Criteria		
Liquid:Waste Ratio	2:1	8:1	2:1	10:1	BS EN 12457-3 Limit Values (mg/Kg) at L:S 10:1		
Sample Number	14095920	14095921					
pH	7.84	7.77					
Temperature °C	19	20					
Conductivity uS/cm	353	144.8					
					Inert Waste	*Stable Non-Reactive hazardous waste in non-hazardous*	*Hazardous Waste*
	mg/l	mg/l	mg/Kg	mg/Kg			
Arsenic as As	0.008	0.01	0.016	**0.097**	*0.5*	*2*	*25*
Barium as Ba	0.028	<0.010	0.056	**0.043**	*20*	*100*	*300*
Cadmium as Cd	<0.00010	<0.00010	<0.00020	**<0.0010**	*0.04*	*1*	*5*
Chromium as Cr	0.006	0.004	0.012	**0.043**	*0.5*	*10*	*70*
Copper as Cu	<0.010	<0.010	<0.020	**<0.10**	*2*	*50*	*100*
Mercury as Hg	<0.00050	<0.00050	<0.0010	**<0.0050**	*0.01*	*0.2*	*2*
Molybdenum as Mo	0.004	<0.0020	0.008	**0.0062**	*0.5*	*10*	*30*
Nickel as Ni	<0.020	<0.020	<0.040	**<0.20**	*0.4*	*10*	*40*
Lead as Pb	<0.010	0.062	<0.020	**0.52**	*0.5*	*10*	*50*
Antimony as Sb	<0.0060	<0.0060	<0.012	**<0.060**	*0.06*	*0.7*	*5*
Selenium as Se	<0.010	<0.010	<0.020	**<0.10**	*0.1*	*0.5*	*7*
Zinc as Zn	<0.025	<0.025	<0.050	**<0.25**	*4*	*50*	*200*
Chloride as Cl	12.1	<3.00	24	**19**	*800*	*15000*	*25000*
Fluoride as F	0.4	0.4	0.8	**4**	*10*	*150*	*500*
Sulphate as SO4	42.5	2	85	**82**	*1000*	*20000*	*50000*
Total Dissolved Solids (TDS)	267	99	530	**1200**	*4000*	*60000*	*100000*
Phenol Index	<0.15	<0.15	<0.30	**<1.5**	*1*		
Dissolved Organic Carbon (DOC)	16.8	7.1	34	**86**	*500*	*800*	*1000*
Waste Analysis							
Total Organic Carbon w/w %					*3%*	*5%*	*6%*
Loss on Ignition %							*10%*
BTEX mg/Kg					*6*		
PCBs (7 congeners) mg/Kg					*1*		
Mineral Oil (C10-C40) mg/Kg				**180**	*500*		
PAHs mg/Kg				**<9.0**	*100*		
pH				**7.5**		>6	
Acid Neutralisation Capacity (pH4) mol/Kg						*To be evaluated*	*To be evaluated*
Acid Neutralisation Capacity (pH7) mol/Kg						*To be evaluated*	*To be evaluated*

Disclaimer: Eluate concentrations below the detection limit are assumed to be negligible when calculating mg/kg values. The limits quoted for Waste Acceptance are derived from the Landfill (England and Wales) Regulations 2002 (as amended) and are provided as guidance only. ALS Environmental does not take responsibility for any errors or omissions with regard to these limits.

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Report Number: **COV/1117460/2014**
Laboratory Number: **14095919**

Issue **1**
Sample **10** of **18**

Sample Source: **Complete Laboratory Solutions**
Sample Point Description: **Complete Laboratory Solutions**
Sample Description: **523000**
Sample Matrix: **Soil**
Sample Date/Time:
Sample Received: **17 June 2014**
Analysis Complete: **02 July 2014**

Test Description	Result	Units	Analysis Date	Accreditation		Method
Total Organic Carbon by IR	3.95	%	02/07/2014	N	S	SUBCON
Sum of 7 PCBs	<0.021	mg/kg DW	30/06/2014	N	S	SUBCON
EN 12457-3 Leachate	Y		18/06/2014	N	Cov	EN12457-3
Moisture Content Ratio at 105C	0.50	% ratio	19/06/2014	N	Cov	33
Conductivity @ 20 C	190	uS/cm	24/06/2014	N	Cov	19A
Moisture at 105C	0.50	%	19/06/2014	N	Cov	33
pH	7.5	pH units	27/06/2014	Y	Cov	39
Mineral Oils >C10 - C40	180	mg/kg	23/06/2014	Y	Cov	317
PAH, Total of 17 WAC	<9.0	mg/kg	25/06/2014	N	Cov	307
Benzene	<0.10	mg/kg	23/06/2014	Y	Cov	327
Toluene	<0.10	mg/kg	23/06/2014	Y	Cov	327
Ethylbenzene	<2.5	mg/kg	25/06/2014	Y	Cov	327
m&p-Xylene	<5.0	mg/kg	25/06/2014	Y	Cov	327
o-Xylene	<2.5	mg/kg	25/06/2014	Y	Cov	327
Dry Ratio (BSEN 12457)	99.50	%	19/06/2014	N	Cov	Calculated

Analyst Comments for 14095919:

The date of sampling has not been provided and therefore sample stability times cannot be assessed. It is therefore possible that the results provided may be compromised. {/*}Incorrect sample container received for EH Soils, testing performed on subsample from plastic container. Therefore, the EH soils result is indicative only and not covered by our accreditation.
The sample for VOC Soils HS was received in a container inappropriate for this parameter. It is therefore possible that the results provided may be compromised.
Reporting limits raised for VOC HS Solis due to nature of sample matrix.
PAH soils WAC - detection limit raised due to interference from sample matrix.{*/}

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: Cov = Coventry(CV4 9GU), Run = Runcorn(WA7 1SL), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).
I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed: CACoiley

Name: **G. Coiley** Date: **02 July 2014**

Title: **Coventry Operations Manager**

ALS Environmental Ltd
Torrington Avenue, Coventry, CV4 9GU
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4409

ALS Environmental

Report Number: **COV/1117460/2014** Issue **1**
Laboratory Number: **14095920** Sample **11** of **18**

Sample Source: **Complete Laboratory Solutions**
Sample Point Description: **Complete Laboratory Solutions**
Sample Description: **523000 2:1**
Sample Matrix: **Soil**
Sample Date/Time:
Sample Received: **17 June 2014**
Analysis Complete: **02 July 2014**

Test Description	Result	Units	Analysis Date	Accreditation		Method
EN Leachate 2:1	Y	g	20/06/2014	N	Cov	EN12457-3 2:
Molybdenum, Soluble WAC	0.0040	mg/l	01/07/2014	N	Cov	56 WAC
Antimony, Soluble WAC	<0.0060	mg/l	01/07/2014	N	Cov	56 WAC
Arsenic, Soluble WAC	0.0080	mg/l	01/07/2014	N	Cov	56 WAC
Barium, Soluble WAC	0.028	mg/l	01/07/2014	N	Cov	56 WAC
Cadmium, Soluble WAC	<0.00010	mg/l	01/07/2014	N	Cov	56 WAC
Chromium, Soluble WAC	0.0060	mg/l	01/07/2014	N	Cov	56 WAC
Copper, Soluble WAC	<0.010	mg/l	01/07/2014	N	Cov	56 WAC
Lead, Soluble WAC	<0.010	mg/l	01/07/2014	N	Cov	56 WAC
Mercury, Soluble WAC	<0.00050	mg/l	01/07/2014	N	Cov	56 WAC
Nickel, Soluble WAC	<0.020	mg/l	01/07/2014	N	Cov	56 WAC
Selenium, Soluble WAC	<0.010	mg/l	01/07/2014	N	Cov	56 WAC
Zinc, Soluble WAC	<0.025	mg/l	01/07/2014	N	Cov	56 WAC
Chloride as Cl	12.1	mg/l	25/06/2014	Y	Cov	WAS036
Sulphate as SO4	42.5	mg/l	25/06/2014	Y	Cov	WAS036
Solids, Tot Dissolved 180 DegC	267	mg/l	28/06/2014	N	Cov	WAS010
TOC (Filtered)	16.8	mg/l	24/06/2014	Y	Cov	WAS005
Phenols Mono (Phenol Index)	<0.15	mg/l	26/06/2014	Y	Cov	WAS019
Fluoride as F	0.4	mg/l	26/06/2014	Y	Cov	WAS029

Analyst Comments for 14095920: No Analyst Comment

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: Cov = Coventry(CV4 9GU), Run = Runcorn(WA7 1SL), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).
I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed: G Coiley
Name: **G. Coiley** Date: **02 July 2014**
Title: **Coventry Operations Manager**

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ALS Environmental

Report Number: **COV/1117460/2014**
Laboratory Number: **14095921**

Issue **1**
Sample **12** of **18**

Sample Source: **Complete Laboratory Solutions**
Sample Point Description: **Complete Laboratory Solutions**
Sample Description: **523000 8:1**
Sample Matrix: **Soil**
Sample Date/Time:
Sample Received: **17 June 2014**
Analysis Complete: **02 July 2014**

Test Description	Result	Units	Analysis Date	Accreditation		Method
EN Leachate 8:1	Y	g	23/06/2014	N	Cov	EN12457-3 8:
Molybdenum, Soluble WAC	<0.0020	mg/l	01/07/2014	N	Cov	56 WAC
Antimony, Soluble WAC	<0.0060	mg/l	01/07/2014	N	Cov	56 WAC
Arsenic, Soluble WAC	0.010	mg/l	01/07/2014	N	Cov	56 WAC
Barium, Soluble WAC	<0.010	mg/l	01/07/2014	N	Cov	56 WAC
Cadmium, Soluble WAC	<0.00010	mg/l	01/07/2014	N	Cov	56 WAC
Chromium, Soluble WAC	0.0040	mg/l	01/07/2014	N	Cov	56 WAC
Copper, Soluble WAC	<0.010	mg/l	01/07/2014	N	Cov	56 WAC
Lead, Soluble WAC	0.062	mg/l	01/07/2014	N	Cov	56 WAC
Mercury, Soluble WAC	<0.00050	mg/l	01/07/2014	N	Cov	56 WAC
Nickel, Soluble WAC	<0.020	mg/l	01/07/2014	N	Cov	56 WAC
Selenium, Soluble WAC	<0.010	mg/l	01/07/2014	N	Cov	56 WAC
Zinc, Soluble WAC	<0.025	mg/l	01/07/2014	N	Cov	56 WAC
Chloride as Cl	<3.00	mg/l	25/06/2014	Y	Cov	WAS036
Sulphate as SO4	2.0	mg/l	25/06/2014	Y	Cov	WAS036
Solids, Tot Dissolved 180 DegC	99	mg/l	28/06/2014	N	Cov	WAS010
TOC (Filtered)	7.1	mg/l	25/06/2014	Y	Cov	WAS005
Phenols Mono (Phenol Index)	<0.15	mg/l	27/06/2014	Y	Cov	WAS019
Fluoride as F	0.4	mg/l	26/06/2014	Y	Cov	WAS029

Analyst Comments for 14095921: No Analyst Comment

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS.
Analysed at: Cov = Coventry(CV4 9GU), Run = Runcorn(WA7 1SL), S = Subcontracted, Trb = Subcontracted to Trowbridge(BA14 0XD), Wak = Wakefield(WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).
I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed: CAColley

Name: **G. Coiley** Date: **02 July 2014**
Title: **Coventry Operations Manager**

APPENDIX 4

PRTR TABLE

Guidance to completing the PRTR workbook

AER Returns Workbook

Version 1.1.18

REFERENCE YEAR	2014

1. FACILITY IDENTIFICATION

Parent Company Name	Lennon Quarries Limited
Facility Name	Lennon Quarries Limited
PRTR Identification Number	W0256
Licence Number	W0256-01

Classes of Activity

No.	class_name
-	Refer to PRTR class activities below

Address 1	Tallagh
Address 2	Belmullet
Address 3	
Address 4	
	Mayo
Country	Ireland
Coordinates of Location	-9.99583441855 54.265668
River Basin District	IEWE
NACE Code	3832
Main Economic Activity	Recovery of sorted materials
AER Returns Contact Name	Sandra Carey
AER Returns Contact Email Address	sandra@lennonquarries.com
AER Returns Contact Position	Administration
AER Returns Contact Telephone Number	097 81297
AER Returns Contact Mobile Phone Number	
AER Returns Contact Fax Number	097 81734
Production Volume	0.0
Production Volume Units	
Number of Installations	0
Number of Operating Hours in Year	0
Number of Employees	3
User Feedback/Comments	
Web Address	

2. PRTR CLASS ACTIVITIES

Activity Number	Activity Name
50.1	General

3. SOLVENTS REGULATIONS (S.I. No. 543 of 2002)

Is it applicable?	No
Have you been granted an exemption ?	No
If applicable which activity class applies (as per Schedule 2 of the regulations) ?	
Is the reduction scheme compliance route being used ?	

4. WASTE IMPORTED/ACCEPTED ONTO SITE

Guidance on waste imported/accepted onto site

Do you import/accept waste onto your site for on-site treatment (either recovery or disposal activities) ?	

This question is only applicable if you are an IPPC or Quarry site

Release to Air – (only applicable table) 2014

4.1 RELEASES TO AIR Link to previous years emissions data | PRTR# : W0256 | Facility Name : Lennon Quarries Limited | Filename : w0256_2014.xlsx | Return Year : 2014 | 22/07/2015 10:32

SECTION A : SECTOR SPECIFIC PRTR POLLUTANTS

RELEASES TO AIR					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			ADD EMISSION POINT	QUANTITY		
			Method Used					
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

ADD NEW ROW DELETE ROW * * Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION B : REMAINING PRTR POLLUTANTS

RELEASES TO AIR					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			ADD EMISSION POINT	QUANTITY		
			Method Used					
No. Annex II	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
					0.0	0.0	0.0	0.0

ADD NEW ROW DELETE ROW * * Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button

SECTION C : REMAINING POLLUTANT EMISSIONS (As required in your Licence)

RELEASES TO AIR					Please enter all quantities in this section in KGs			
POLLUTANT		METHOD			ADD EMISSION POINT	QUANTITY		
			Method Used					
Pollutant No.	Name	M/C/E	Method Code	Designation or Description	Emission Point 1	T (Total) KG/Year	A (Accidental) KG/Year	F (Fugitive) KG/Year
210	Dust	E	MAB	Data from Bergerhoff guage monitoring extrapolated to calculate emissions from active site area per annum	0.0	108.0	0.0	108.0

ADD NEW ROW DELETE ROW * * Select a row by double-clicking on the Pollutant Name (Column B) then click the delete button