

# Hallam Road Landfill – Odour Management

## ALOA Workshop

29 November 2016.

SUEZ Australia



### Optimising Odour Management at the site

Identifying odour sources; what has the potential to cause odour issues at landfill?

- Focus on the main elements of potential for odour at landfill;
  - Waste filling operations
  - Landfill Gas and;
  - Leachate

Waste filling operations;

- Planning and waste 'pad/face' filling orientation. Tip face size, seasonal positioning of tip face, disposal of odourous loads appropriately etc. Cell Fill Sequence Plan.
- Daily cover use – appropriate use of daily cover & stripping.
- Implementation of further odour neutralising systems;
  - ADC equipped with an on-board odour neutralising product. Sprayed onto the pad upon ADC deployment
  - A 'batwing' odour neutralising system operated overnight strategically placed within an operating cell
  - Odour suppressant or neutralising products in dust suppression – Dust suppression focus mitigates transportation of odour offsite.



21



### Optimising Odour Management at the site



'Batwing' Odour Neutralising System at the active cell



ADC – Landfill Tarp Cover with Odour suppression system

31



### Optimising Odour Management at the site



Internal waste batter – Lining example

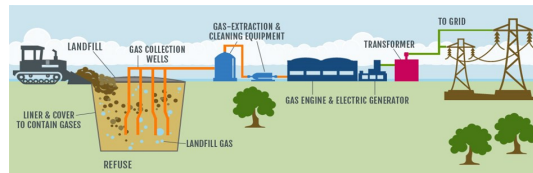
41



## Optimising Odour Management at the site

### Landfill Gas

- Assessment of gas field infrastructure to improve on;
  - Sealing. Seal cap well heads **NO DUCT TAPE!!**
  - Protrusion emissions & Surface emissions, intermediate & final caps – waste batters. SEM monitoring
  - Pipework modifications as required.
  - Replacement of gas sample points as required.
  - Adjustment of gas flex lines on wells as required. Liquid level gauging within wells – produce leachate “heat” maps – target dewatering effort.
  - Well integrity assessments – for blockages, pump suitability, leachate, damage (including flowlines).
  - Assessment and adjustments on wells with ‘pneumatic’ pumps installed as required – scheduled.
  - Well diameter – larger the better, but be mindful of costs. 200-220mm ideal.
  - Overall gas field integrity assessment – ROI (triangulation), balancing, pressure monitoring within GCS, leachate levels etc.
  - Operational gas management/extraction – Horizontal gas extraction lines.
  - Future planning for gas field expansion and remediation/redrill works – master planning.
  - Lining of internal waste batters as required; waste batters from adjacent landfill cells – including LFG relief systems (avoiding “ballooning”).
  - Landfill seams – landfill perimeter tie in points – look for settlement or cracking.



51



## Optimising Odour Management at the site

### Leachate

- Ongoing aeration of leachate within treatment ponds & subsequent discharge to sewer.
- Promptly addressing leachate “break outs”
- Use of ADC or improved stripping of cover soils – managing generation of ‘perched’ leachate within waste mass.
- Odour neutralising curtain system operation around the leachate treatment ponds.
- Improvements to stormwater diversion from active landfill areas.
- Lining of internal waste batters.



61



## Optimising Odour Management at the site

### Odour Action Plan

- Identified actions and development of response – assign responsibility amongst landfill team.
- Weekly tracking or as required to maintain velocity.
- Updating community as required of actions.
- Includes monitoring of costs, timing, progress & improvements observed.
- Living document; new actions added or actions complete noted (monitoring thereafter).

HRL LF ODOUR CONTROL ACTION ITEMS

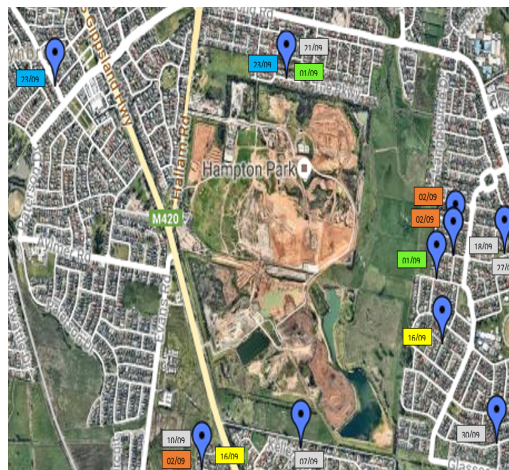
DATE LISTED	ACTION ITEM	FORECAST COST	ACTUAL COST	ESTIMATED START DATE	ESTIMATED COMPLETION DATE	COMPLETED ON TIME YES/NO	SUMMARY OF ACTIONS TAKEN	RESPONSIBLE PERSON	COMMENTS
8-Sep	Conduct odour survey per the "Odour Control Monitoring Plan" inserted above. (Development of cost)	50.00	50.00		16/09/2016	YES	Once daily conduct an internal and external odour survey. Send out to group tomorrow and commence as of 18/09/16.	Mick B	Poster developed and sent out. Odour round roster commenced. CW briefed out. Noise Calibration to be scheduled in November 16.
8-Sep	Commence full time use of TarpAmour - TarpAmour as preferred method (on occasion cover soil will be required)	\$2,500.00	\$1,000.00	17/09/2016	Ongoing	YES	GL conducted some trials of the TarpAmour system. Fulltime use commenced 18/09/16.	Jody B	Monitoring ongoing for effectiveness. Photos uploaded to i drive daily.
8-Sep	Develop and implement action plan to position atomizer sprayers downwind daily	\$2,000.00	\$500.00	17/09/2016	Ongoing	YES	Assess condition of units initially and then implement. Escorte units. Mick Ryan has moved to workshop to assess and try to get them operational. If not operational seek external supplier to rectify and commission.	Jody B	Atomizers operational, pending minor electrical work. Expecting to be fully operational Tuesday 4th Oct. Atomizers have been completed. Trial run completed for 3hrs straight. To be deployed on site following.
8-Sep	Rent & trial a larger odour suppressant unit for 2 months	\$3,200.00	50.00	18/09/2016	18/11/2016	YES	Obtain quote and install unit. Unit is delivered to Epping site. Mick B to pick up on 16/09/16 and bring to HRL. Waiting for supplier to send out the operations manual and to make an assessment on the unit and develop V&A file use prior to commissioning.	Mick B	System has been delivered and in operation. Monitoring performance ongoing.
8-Sep	Inspect and tune gas well field and leachate						Discuss with LMS a 3 month period of fortnightly. Discussion had with LMS. Daniel L		

7 |



## Optimising Odour Management at the site

### Mapping Odour Complaints



8 |



## Optimising Odour Management at the site

Mapping Odour Complaints;

*We can then focus attention towards;*

- Weather conditions and its effect. Wind direction, barometric pressure, increased rainfall, high/low wind, time of day etc.
- What was occurring operationally during particular days?
- What is our monitoring of the landfill telling us in relation potential for odour?
- What recent works or changes have we made at the landfill and has that affected potential for odour? - for example tree removal on the Eastern Boundary.
- Allows us to focus on odour control - strategic positioning of mobile odour neutralising equipment or improvements to our perimeter odour curtain.
- We can focus our daily external perimeter odour surveys as required above and beyond our routine route.

9 |



## Optimising Odour Management at the site

Further actions include;

- Screening of the landfill – is it out of sight and out of mind?
- Keeping the community awareness maintained – education, updates as well as community updates on works on the site that may have the potential to cause odour issues – LFG well installations etc.
- Offer a community Hotline for complaints, questions etc.
- Working with the EPA on odour reports, site updates, works that have the potential to cause odour issues.
- Daily internal and external odour surveys – including daily cover inspections. (Staff scheduled to have noses 'calibrated').
- Continuous improvement approach – ongoing research and trialling of odour neutralising products, systems, work methods etc. (Odour Action Plan).
- Improved horizontal landfill gas line design.
- Progressive landfill final capping.
- *Performance to date is positive... from >30 complaints per month to <15 to less than 10... November 2016 to date 7. Trending downwards...*

10 |

