Good Neighbor Agreement, Section 4.9.2 *Annual Report*
ESCO Corporation, Portland, Oregon
Calendar Year 2015

Introduction

This 2015 Annual Report has been prepared by ESCO Corporation (ESCO) for the Neighborhood Advisory Committee (NAC), in accordance with Section 4.9.2 of the Good Neighbor Agreement effective November 22, 2011 (GNA):

> 4.9.2 *Annual Report.* At least once each year, ESCO shall provide the complaint log described in paragraph 5.4 for NAC review, and present an annual report at a regular NAC meeting. The annual report shall include:
>
> a) General summary of the state of ESCO's business, including a qualitative assessment of its success and challenges as an on-going business.
> b) Report on air emissions, monitoring activity, and excess emissions events during the preceding year, including a copy of any reports provided to Neighbor Groups pursuant to paragraph 2 of this Agreement.
> c) Summary of complaints received and how complaints were resolved.
> d) Summary of any inspections or enforcement actions by DEQ or EPA during the preceding year and ESCO's corrective action as needed.
> e) The annual report shall be made available to the public on the NAC webpage described in paragraph 4.10.2.

Corporate Overview

The past year has been the toughest yet for ESCO. Continuing the downturn experienced in 2014, crude oil and primary metals prices remained low and led to reduced demand for ESCO products. Due to market conditions, we made the difficult decision to shut down one of our foundries and several fabrication and service facilities globally. The work performed at those sites was transferred to other ESCO locations. We also announced the future closure of our foundry located near Vancouver, BC, likely in 2017 or 2018.

In Portland, after a long and difficult evaluation, it was announced in November 2015 that the remaining production at the Main Plant would permanently shut down, likely in late 2016 or early 2017. This comes on top of the Doghouse shutdown at the end of 2014.

Summary of Air Emissions

Emissions from ESCO's Portland plants were reduced in 2015 compared to 2014. Overall, Hazardous Air Pollutant emissions were decreased approximately 20% in 2015 compared to 2014. This decrease in emissions is explained by three main factors:

Reduced Production

As mentioned previously, the Doghouse at the Main Plant was not in operation in 2015 and resulted in reduced emissions. The Doghouse historically accounted for more than half of the Main Plant's production. The remaining Main Plant production, occurring in Plant 1, was

reduced approximately 12% compared to 2014. Plant 3 production was stable and very similar compared to 2014.

Construction Projects and Process Improvements
ESCO added two smog hog dust collection units to an existing dust collector at the Main Plant. The additional dust collection points will further improve particulate matter emissions generated from welding and finishing activities.

Good Neighbor Agreement - Attachment A Project Implementation
As noted in 2015, the hood at the Main Plant Argon Oxygen Decarburization (AOD) vessel was modified to improve emissions capture. In particular, the modified hood provides better emissions capture during charging, tapping, and the addition of alloys into the vessel. New operating procedures were developed and AOD operators received proper training in 2015 to consistently improve capture using the new hood. Plant neighbors inspected the newly implemented AOD procedures and equipment in June 2015.

Additionally, the thermal sand reclaimer at Plant 3 was tested for VOC content and HAPs after study in 2014, which resulted in the recommendation for a 1200 °F operating temperature. The testing confirmed that 1200 °F is the appropriate minimum operating temperature to ensure organic compound destruction. The reclaimer is now set to operate with minimum operating temperature of 1200 °F and this results in an average temperature of approximately 1230°F. This consistent and higher temperature, compared to historic operation, reduces VOC and Organic HAP emissions.

Progress Update on GNA Emission Reduction Projects
The following list shows the Control Strategy for each Emission Reduction Project, followed by a short update on the project. If the Method of Confirmation is complete, then it is noted in the heading next to the item number, indicating no further action is required:

Item 1
Complete. Two dust collectors were installed to improve capture and control of Doghouse Pouring-Cooling-Shakeout emissions. The collectors were tested in January 2014, and dust was weighed and correlated to tons of metal poured in the Doghouse. Because Plant 2/Doghouse operations shut down on November 12, 2014, these dust collectors are no longer in service.

Item 2
Complete. The Main Plant, Lower Finishing Area (LFA) Bay-1 Air Arc Cutting emissions were routed to the existing Bay-2 Powder Burn dust collector (301260); this was completed March 7, 2011. Installation of an additional dust collector, the LFA Bay-2 Air Arc dust collector (301120), was completed August 12, 2011. As the method of confirmation, the Bay-2 Air Arc dust collector dust was weighed for six consecutive months, averaging 500 - 600 pounds of dust collected per month of operation.

Item 3
Complete. The Main Plant, Upper Finishing Area (UFA) chain table filtration unit is functioning. For the method of confirmation, one month of data was collected, totaling 4.4 pounds of dust.

Item 4

Complete. In the Plant 3 cooling room, pouring and shakeout areas, we increased our inspection frequency by ESCO maintenance personnel to semi-annually in an effort to reduce potential fugitive emissions. The cooling room enclosure is also inspected monthly by ESCO staff.

Item 5
Complete. In July 2013, Plant 3 converted to a lower phenol binder system. This system was tested in August 2013, and the calculated reduction of emissions per the method specified in the permit was 70.5%. The permit requirement of at least a 35-40% reduction has been met.

Item 6
The Main Plant Chain Room switched to the Pep Set Quantum line of binder and catalyst. There is a slight increase in Volatile Organic Compounds (VOCs) during molding, but a significant decrease in Hazardous Air Pollutants (HAPs) from the molding, pouring, cooling and shakeout processes.

Item 7
Complete. We have installed bag leak detection probes. The Main Plant Electric Arc Furnace (EAF) dust collector, AOD dust collector, Plant 3 EAF dust collectors and Plant 3 Pouring-Cooling-Shakeout dust collector all have probes installed and operational. The alarm settings and response procedures have been added to the Air Emission Control Device Operating Plan.

Item 8
Complete. ESCO modified its Overhead Door Plan to better address issues associated with capture at the EAFs and AOD process.

Item 9
Complete. The EAF operating procedures were reviewed and updated to optimize capture of particulate matter.

Item 10
Complete. We installed a coarse fraction separator in January 2011 to reduce wear on the thermal sand reclaim baghouse filters. Due to wear in the bottom portion of the cyclone, it was replaced in-kind in June 2012. We then designed a longer-term solution, which included a 1” ceramic liner and this was installed in July 2013. The Plant 3 thermal sand reclaim dust collector and the coarse fraction separator are inspected per the permit by ESCO staff.

Items 11 and 12
Complete. The production teams at the Main Plant and Plant 3 modified their procedures to reduce the use of the dump back processes at both plants. Jim Karas and Fred Tanaka visited both Plants on June 28 and 29, 2012, viewing the dump back process in use as well as progress in reducing the use of the dump back process. A report was prepared to recap their visit.

Item 13
Complete. A study was conducted and determined the recommended operating exhaust temperature of at least 1200 °F. The study was submitted to DEQ and approved, but NAC members requested more detailed information about VOC emissions. An expanded study was completed with neighbor involvement including additional testing in June 2015. The expanded study confirmed the recommended exhaust temperature of at least 1200 °F.

Item 14
Complete. The AOD hood has been modified to improve emissions capture, particularly while charging the vessel. AOD operators were trained on new operating procedures to improve capture using the new hood. Neighbors inspected the AOD procedures and equipment in June 2015, and further improvements to procedures have been implemented.

Item 15
Complete. Additional ventilation snorkels were installed at workbenches. Operating procedures were revised so operators are required to use the snorkels and channel air from the workbenches to pollution control and capture equipment. Work Instructions are posted in these areas.

Item 16
Complete. An Atypical Incident Investigation Plan was developed and implemented at the Main Plant and Plant 3. Employees have been trained to identify and report Atypical Incidents. ESCO presented a sample atypical incident investigation to NAC members.

Item 17
This item calls for a Slinger Bay engineering study of feasible capture and control methods for emissions from pour points. We have not started on project 17 of Attachment A due to the pending closure of the Main Plant.

Summary of Portland Air Complaints
ESCO began using a formal complaints process through EthicsPoint, also known as the ESCO Environmental Hotline, on May 1, 2012. The process is designed to be responsive and provide meaningful data to ESCO and the NAC. ESCO selected EthicsPoint to address the following key objectives:

- Neighbors with an ESCO-specific environmental concern should communicate with a live person, through either phone conversation or submission of information to a website, 24 hours per day, seven days per week.
- The data collected should provide the NAC with useful information.
- The data collected should provide ESCO with information that helps identify and resolve environmental concerns.

ESCO received 24 complaints for 2015; all were entered into Ethicspoint. All but one were odor-related. Based on wind direction and production schedules, odor described in 22 of the 23 odor complaints may have come from ESCO.

The other two complaints were likely not related to ESCO activities, or there was insufficient information provided; so they are not included in further analysis.

- One complaint was made during a time when no recent plant-related activity was occurring.
- One complaint about visible emissions occurred at a time when no relevant activity was occurring at the Main Plant (where the visible emissions were identified). Based on the proximity of other industrial sites, it’s possible the visible emissions were generated by another facility.

Of those 22 odor complaints, one occurred at a time relevant to production at ESCO's Main Plant facility. The facility pours in three separate areas: V-Process, Main Floor, and the Chain Room. The complaints are distributed among these processes; more than one area may have relevance to each complaint.

- 1 complaints occurred at time relevant to Main Floor pouring processes.
- 0 complaints occurred at times relevant to V-Process pouring processes.
- 0 complaints occurred at times relevant to Chain Room pouring processes.
- 0 complaints occurred during ladle curing and other non-pouring processes.

Of the 22 odor complaints, all 22 occurred at times relevant to Plant 3 production. Production may have occurred at both Main Plant and Plant 3 at the same time, so there is overlap between potential sources.

After receiving an air complaint, ESCO begins investigation within one business day of receipt and completes the investigation within five business days, or within such longer time as is reasonably necessary. The investigations provide the information used to analyze the air complaints. The above analysis shows that the greatest potential contributor to odor in 2015 was Plant 3.

The known air complaint totals for ESCO in Portland over the previous seven years, 2009 through 2015, are presented in Figure 1. These data demonstrate an overall reduction in complaints. Figure 2 gives the total complaints for each quarter since 2013. The number of complaints that may have been relevant to production at the Main Plant and Plant 3 is also provided.

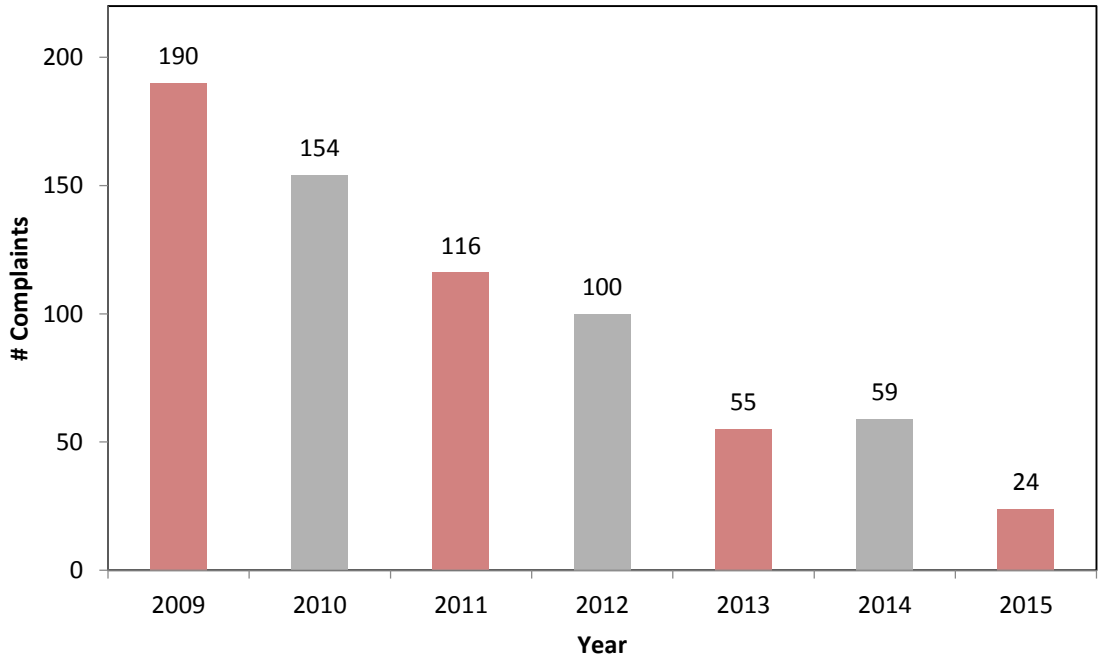

Figure 1: Annual air complaints at ESCO – Portland since 2009. Data based on combined records from DEQ and ESCO. On May 1, 2012, a new complaint process was launched. The process considers specific pouring processes and their potential contribution to odor.

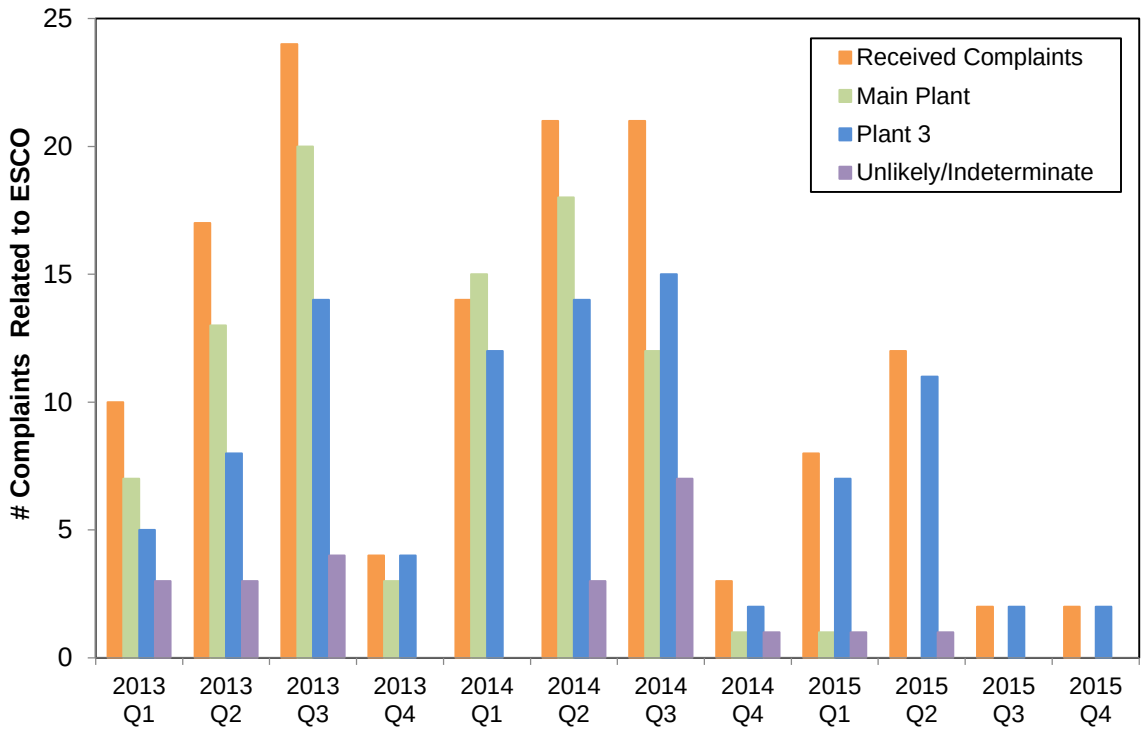

Figure 2: Quarterly odor complaints by relevancy of occurrence time to production activities at Main Plant and Plant 3.

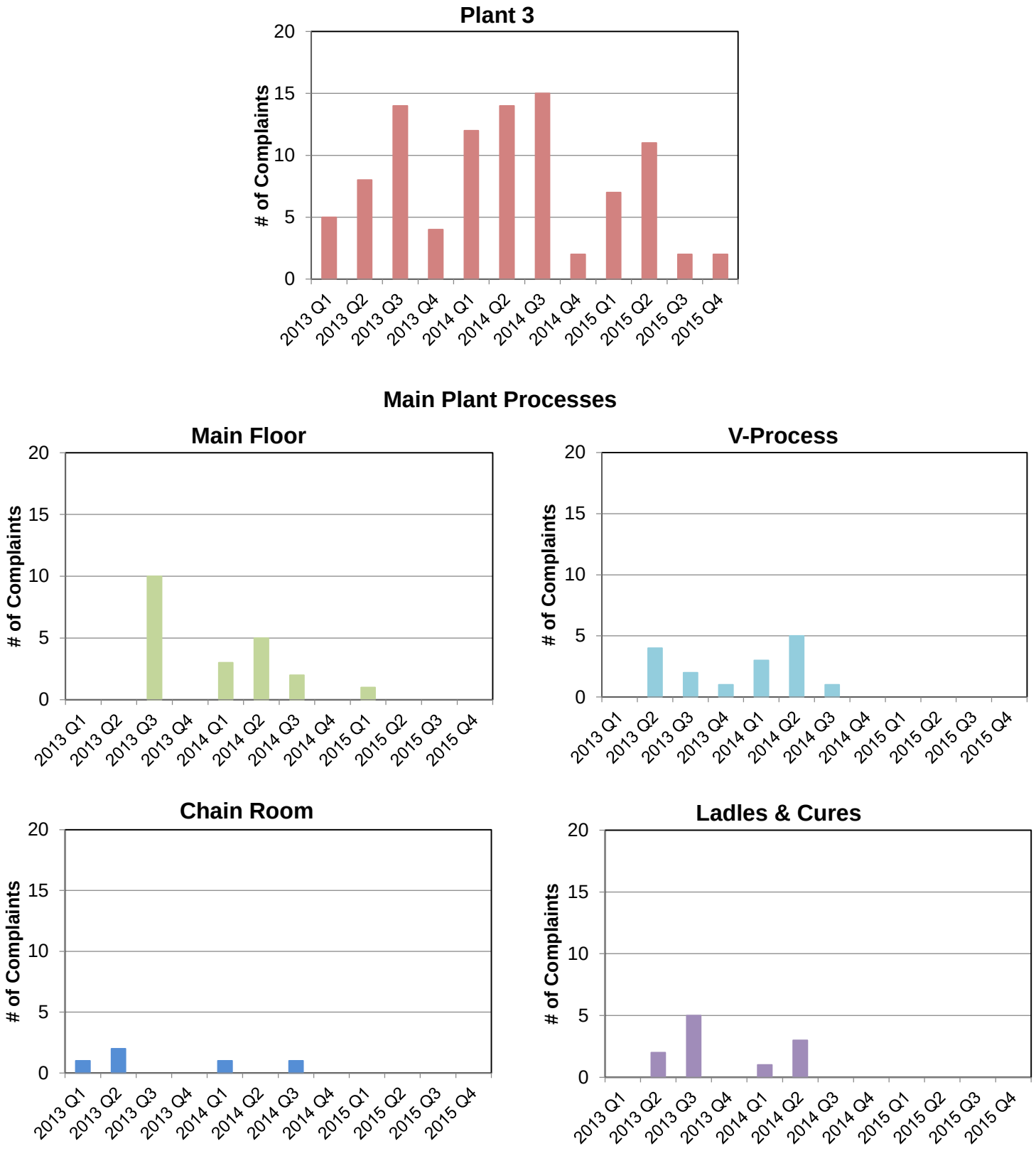

Figure 3: Quarterly odor complaints by relevancy of occurrence time to production activities.

Summary of ESCO Air Permit - Events, Inspections & Enforcement Actions in Portland
ESCO did not submit any deviation reports in 2015, nor did DEQ take enforcement action against ESCO in 2015.

Availability of This Report
This annual report is available on the NAC webpage at www.PortlandNAC.com.

Conclusion
For the third year in a row ESCO reduced overall air emissions from its Portland plants and also continued to see a downward trend in odor complaints. Completing fifteen of the seventeen Attachment A projects within the timeframe they were due, with one ongoing project, indicates another successful year and a successful GNA implementation for ESCO and the neighborhood.