Minutes of the Chevron Burnaby Refinery
Community Advisory Panel Meeting
Wednesday, November 21, 2012

7 – 9 pm at the Confederation Seniors Centre

PRESENT
Rob McLean, Al Mytkowicz, Rob Firkins, Pat Connelly, Art Quan, Bonnie Hayward, Maziar Kazemi, Kathy Mezei,

Chevron representatives:
Jill Donnelly, Health Environment & Safety Manager; Jim Gable, Refinery Manager; Ray Lord, Public & Govt. Affairs Manager,

Metro Vancouver Representatives:
Larry Avanthay, Regulatory Representative, Metro Vancouver
Darrell Wakelin, Regulatory Representative, Metro Vancouver

Facilitator:
Catherine Rockandel, Rockandel & Associates

Regrets:
Eileen Luongo, Ian Lacoursiere, Kathy Curran

Guests: 17 members of the pubic, and four senior Chevron Burnaby Refinery staff: Eric Butler, Technical Services Manager, Peter Turner, Maintenance Manager, Eugene Krawchuk, Accounting Manager, Chris Boys, Environmental Specialist.

CAP BUSINESS

1. Opening Remarks

- Catherine Rockandel welcomed CAP members and members of the public. She reviewed the agenda.

2. Burnaby Refinery Operational Update - Jim Gable and Ray Lord

- Enjoyed another damp but safe Halloween thanks to the great work of our security teams working very closely with the local RCMP. Extra security staff on site with regular patrols once again helped ensure a safe and fun evening.

- Our fall pit stops on the iC8 plant and crude unit proceeded on schedule and without incident. The crude unit turnaround started on Oct 19th and wrapped up about two weeks later. The work performed included inspections, cleaning and preventative maintenance on heat exchanges, valves and pumps. Throughout this period, the rest of the refinery continued to operate normally.

- Ongoing tank maintenance work for 2012 continues in Area 1. T-119 work is now complete and the tank was returned to service on schedule in late September. Activity is now underway at T-152. Work begin down includes inspection and cleaning followed by any

around that will be starting in Feb 2013. Tank 81 located closer to the fenceline is also undergoing maintenance inspections and will likely be out of service until early next year.

- Area 1 is also busy due to ongoing construction work near the wharf in what we call "Area 3" related to the new crude by rail offloading facility that we've spoken of earlier. This is part of our strategy to mitigate the ongoing challenges caused by crude pipeline apportionment

- Refinery crude supply continues to be a major area of focus for us as we discussed at our Sept meeting. The National Energy Board's (NEB) process for considering Chevron's application for Priority Destination Designation (PDD) continues leading up to the public hearings in Calgary on Jan 15, 2013. Coming up a little later, we will provide an introductory overview of our crude supply challenges and our application to the NEB.

- City water main work is ongoing along Penzance Drive. Have been working with the City to assist their contractor to expedite the job and to minimize any potential interruption to the refinery's water supply.

- On November 13, the refinery conducted its annual emergency response drill. The scenario exercised during this drill involved a rail car derailment. Several regulatory and agency representative participated in the exercise including the Provincial Ministry of the Environment, Port Metro Vancouver, Burnaby RCMP and Transport Canada.

- Work also continues in management of the Area 2 seep. Jill will offer a very brief update later or as part of the Q&A session.

- Construction of the refinery's new fire hall, where we will store and manage our fire fighting vehicles and equipment has not yet started due to permitting delays but things should get underway early in the New Year.

3. Metro Vancouver Update - Larry Avanthay

- Reviewed the last meeting minutes and there is nothing new to report

Questions for Metro Vancouver include:

Q1: At the last CAP meeting you said there was a Burrard Inlet Local Area Air Quality Study underway on emissions around Burrard Inlet, where is this at?

A1: Burrard Inlet Area Local Air Quality Study (BIALAQS) technical report has not yet been finalized. The executive summary is now available, and the full report is to be released on our website soon. We can notify CAP when that occurs. The report presented to the Metro Vancouver Environment and Parks Committee in October together with the executive summary of the study (Section 5.5, pages 119 to 126) is attached. **(SEE Attachment 3)**

Q2: Have there been any odor complaints lodged with Metro Vancouver recently?

A2: An element of Chevron's Odour Management Plan is that they submit a monthly report summarizing their investigation into air quality complaints reported to them from Metro Vancouver. There were a total of seven complaints reported for September and three in October.

Q3: Could you outline the nature of those complaints and how they are reported?

A3: Looking at the air quality complaints identified a wide range of odours including gasoline, sulphur smells, rotten egg smells and oily sewer. There was a number of locations identified which included the: 4000 block Pandora, 4000 block Oxford, 4000 and 4700 block of Cambridge. A number of complaints had been received for one episode which included the 3700 block of Triumph located in East Vancouver. It is high probability based on the information available that the source for this particular complaint was not the Chevron facility. Our process is that anytime a complaint is registered in North Burnaby of a petroleum type odour the Chevron refinery will typically be called. This does not mean that all the odour complaints were a result of Chevron activities. The Chevron Shift Supervisor will investigate the complaint, which typically involves a tour of the area and then reports back to Metro Vancouver on their findings. The majority of complaints in October reported an oily sewer smell, which is a very localized issue.

Q4: How are the complaints measured, are there any measures on the odors, and how are measurements recorded? Can I obtain a record of the complaints?

A4: Yes, we would ask that a written request be submitted to our office to obtain a summary of our complaint records. Typically if I am available at the time of the complaint I will attend the location to determine if an odour is detected. In addition, random odour surveys are routinely conducted in the neighbourhood and the findings documented. A copy of these odour surveys are also supplied to Chevron for their records. The human nose remains a primary tool in odour complaint investigations. There are two ambient air quality monitoring stations as well located in the neighbourhood both near the refinery and also the tank farm which provides real time data for a range of air contaminants together with wind direction. This information can be used to assist with investigations of odour complaints in the neighbourhood.

4. 2012 CAP Review - Catherine Rockandel (see Attachment 1)

- There have been four meetings in 2012 including the public meeting last November.
- Telephone calls are conducted with CAP members prior to each meeting to identify issues.
- CAP is an open and transparent process. Meeting minutes, technical reports and presentations are posted on the CAP website after each meeting.
- Catherine reviewed the 2012 CAP Topic suggestions that were brainstormed at the 2011 neighbourhood meeting and the three top priorities from that list that were identified by CAP at the January 26, 2012 meeting for further discussion during the course of the year.
- Each meeting included ongoing discussions & updates on the Area 2 seep remediation and ongoing efforts with the City of Burnaby towards the development of an emergency notification system.

5. Refinery Crude Supply: NEB Priority Destination Designation Application - Ray Lord (see Attachment 2 - Burnaby Refinery Crude Supply Overview)

Ray provided an overview presentation of the refinery's crude supply and the challenges

currently being experienced due to recurrent apportionment on the Trans Mountain pipeline system.

Questions about Refinery Crude Supply include:

Q1: Why is there a difference between waterborne and continental crude in terms of price? Is it that the crude is discounted to motivate shippers to get it out of Alberta because there is more demand than supply methods?

A1: In a way yes. The price differential is the result of the inability of Canadian crude producers to get the crude to markets because of the lack of pipeline transportation infrastructure. This "bottleneck" creates a situation where crude inventories keep building, forcing producers to offer it to customers at discounted prices to keep it moving.

Q2: Does "70% apportionment" mean you get 70% of the crude you request?

A2: No it means we get only 30% of the amount we are requesting.

Q3: Does that mean that the Kinder Morgan pipeline is empty a lot of the time because you are getting 70% less?

A3: No, the pipeline typically operates at capacity. There are many other shippers and they are also getting crude or other products through the same pipeline. The line is oversubscribed and Chevron's share of the pipeline space is reduced by the same amount as the other "spot shippers.'

Q4: Why is Chevron not on a long-term contract?

A4: Chevron continues to examine its options for long-term crude supply for the refinery. A commitment of volume remains one of those options and we are in regular communication with Kinder Morgan to ensure they understand our intention to continue to be a long-term customer of their system. We are one of the original owners and builders of the pipeline but are now getting pushed out in the monthly bidding process by shippers in Alberta and Washington State that can gain leverage on the system and cause escalating apportionment levels.

Chevron is not looking for any concession or special discounts on the crude oil we need and we are prepared to pay market prices. But any expansion of the Trans Mountain system is at least five or six years out and a long-term commitment is immaterial if we cannot secure access to the crude we need during the interim period.

Q5: Is asking for priority designation a violation of North American free trade agreements? It appears as if you are asking for preferential treatment in terms of allocating space on the pipeline.

A5: Provision for priority destination exists under the current pipeline tariff and is not a violation of NAFTA and future agreements. Details on the current pipeline tariff structure can be found on the Kinder Morgan website at:

http://www.kindermorgan.com/business/canada/transmountain_tariffs.cfm

Once again, Chevron is not requesting any concessions, discounts or special consideration under any trade agreements for the crude oil we need and we are prepared to pay market prices.

Q6: Where do other gas stations your competitors get gas from?

A6: The pipeline is a mixed-use pipeline so finished products like gasoline and diesel are also moving in the pipeline from Alberta to BC. Those products then go to our competitors' former lower mainland refinery sites that now operate as terminals where they are then distributed to locations around the Lower Mainland and BC.

Q7: So are they getting less fuel as well from apportionment?

A7: During a period of apportionment, all shippers are apportioned equally. But the level of apportionment may affect different shippers differently. Pipeline apportionment is related to a shipper's "connected capacity" to the pipeline. A larger facility, for which the pipeline is only one of several distribution or supply options, may bid for more barrels than they actually require by over-nominating pipeline capacity. Our refinery does not have that supply flexibility, so every month we bid 100% of the volume of crude we need to run the refinery and are unable to bid for more. The current levels of apportionment – recently over 70% - creates a fundamental disadvantage for us since we do not have alternative means of supply.

Q8: If and when the pipeline expands does Chevron have any plans in growing the refinery?

A8: No, there are no plans to expand this refinery.

Q9: If you get your priority destination designation application approved would you be satisfied; would it solve your problem so that the expanded pipeline capacity being proposed by Kinder Morgan would not be needed?

A9: It depends on the NEB ruling. Chevron has been a longstanding customer of the existing pipeline and reliable, cost-effective access to the Trans Mountain Pipeline system is critical to the ongoing operations of the Burnaby refinery. We support the safe and efficient, movement of Canadian energy resources to diversified markets but the issue we're addressing through our application to the NEB is to ensure the Burnaby refinery has a reliable and economic source of crude. Our application for Priority Destination Designation is key to ensuring cost-effective access to the crude feedstock we need, whether on the existing or an expanded pipeline system in the future.

6. Coffee Break

7. Facilitated Q & A

Q1: Earlier this year an accident occurred at Chevron's refinery in Richmond California. Newspapers said it was from corrosion. I am very concerned that when I drive by

the refinery I see rust that to me is a sign of corrosion. I was on CAP and we have been fighting for emergency notification for 16 years in case of a similar accident here.

A1: It is a valid concern. At the Richmond California plant, the issue was with a certain type of carbon steel used in pipe that in the presence of sulphur and high temperature, was found to have thinned or corroded the pipe from the inside.

Whenever events like this happen, things are learned and shared with other facilities both within Chevron and across the industry. Here at Burnaby, we have evaluated how this may affect us and have developed plans to address this issue. We have an inspection program that evaluates the condition of our equipment. Refinery employees and specialized full time contractors regularly inspect equipment like pressure vessels and piping.

There are three types of corrosion of particular concern: internal corrosion, corrosion under insulation, and external corrosion. External corrosion is the one you see as rust on the outside of something. Although visible, it is the least risky. Corrosion under insulation is more of a concern. This is where moisture trapped under insulation on a pipe causes corrosion you can't see, resulting in pitting of the steel. The most significant corrosion is internal where certain materials in the presence of heat and pressure can cause a vessel to corrode from the inside out. Here in Burnaby, we have a systematic reliability plan that involves routine internal inspections and regular monitoring that includes thousands of thickness measurements being taken on locations around the facility every year.

Q2: Is this inspection program standard across all Chevron refineries?

A2: Yes, we follow very similar processes.

Q3: So if this is the case, and there was an explosion it seems to me that the priority should be to develop an emergency notification system for the community

A3: In the past two years we've been working with CAP to propose and develop a system with the City of Burnaby. A system such as a "Reverse 911" notification system would be one of the tools used by the refinery, local emergency services and first responders working together in a combined incident command system to notify the surrounding community, our employees and our facilities during an emergency.

Chevron has presented one possible approach for a web-based, multi platform notification system to staff at the City of Burnaby and offered to assist in the funding of such a system for our North Burnaby neighbourhood. For the past year a half, we have conveyed the potential benefits of such a system to City officials. City staff have advised us that they are currently exploring systems that would enable the City to deal with a broad variety of potential emergencies beyond those just associated with this refinery.

We've met on this subject with Mayor Derrick Corrigan and have been in ongoing dialogue with Chad Turpin, Deputy City Manager and Charmaigne Pflugrath, The City's Emergency Program Coordinator. Ray Lord, CAP member Art Kwan and Jim Gable will continue in their efforts to advance the idea with the City of Burnaby.

Q4: As a good neighbor, can Chevron just say that you are going to go ahead with this local reverse 911 system because we are the ones that are going to be affected. It is our families that are going to be sent to hospital or worse.

A4: We understand that this is a consistent priority for CAP for many years. We have advanced this issue with City staff and in their opinion a city wide notification system would have to involve the City in all facets of the acquisition, management and operation of such a system. Chevron agrees.

Chevron cannot instruct the public to evacuate their homes and neighbourhoods in the event of an emergency. The City has emergency response procedures in place with police, fire and other emergency response agencies and resources that would be deployed. Chevron also has very formal emergency response plans and procedures and conducts training and drills for our staff who would work with the Burnaby Fire Department, Burnaby RCMP, the Fraser Health Authority, Metro Vancouver and others to protect our neighbours if there was an emergency event here at the refinery. Our job is to prevent incidents, to mitigate and manage the inherent risk and to be prepared to respond effectively during an emergency.

For further information on the status of Chevron's discussions with senior officials from the City of Burnaby, CAP members and refinery neighbours may contact Chad Turpin Deputy City Manager, City of Burnaby: chad.turpin@burnaby.ca

Q5: Are the notification procedures the same now as when I was on CAP two years ago, whereby the neighbours are notified of issues by pamphlets - possibly days after the event, knocking on doors and possibly notifying the police? Why has CAP not seen the proposal to the City of Burnaby?

A5: As discussed at previous CAP meetings, Chevron has emergency response plans and procedures in place. City of Burnaby Staff were invited to attend the Jan 20, 2011 CAP meeting to review the City's existing Emergency program and to provide their perspective on the benefits and limitations of an emergency notification system. An update on Chevron's proposal to the City of Burnaby to assist with the acquisition and funding of a system from a potential notification service vendor was reviewed at the May 2, 2012 CAP meeting. That proposal is under consideration by staff at the City of Burnaby.

Q6: A year ago we heard about soil and ground water contamination that results in the seep, can you provide an update on mitigation that has been happening?

A6: Approximately two and half years ago, some hydrocarbon (or oil) was discovered seeping into Burrard Inlet below the refinery property. We have done work to stop migration from our site and further ingress into the inlet. Along the refinery perimeter, 44 extraction wells have been installed and are pumping ground water and associated hydrocarbons back to the refinery to be treated in our water treatment facility.
At the railway, a 75 metre long trench has been installed and is also pumping groundwater and hydrocarbon back to the refinery. Over the summer period, the railway trench was dry with little water or hydrocarbon found. With the rainy season returning there is water and not much hydrocarbon. At the beach, we have installed an engineered, absorbent clay and mat system that is preventing liquid hydrocarbon from entering the

inlet. We have not seen sheen at the foreshore for some time. We have replaced the precautionary containment boom at the beach site because summer boat traffic created more waves action than we've seen with winter storms.

Q7: What is the source of the seep?

A7: Our investigation determined that the refinery's oil/water sewer on the north side of the refinery was leaking and that it was a contributing source of this underground contamination. We have taken the North sewer out of service and are in the process of replacing it. It is also known that as a mature heavy industrial facility, there are levels of historic contamination below an active refinery. We have drilled extensively throughout the refinery looking for other active contributing sources and have not found any.

Q8: So the source is contained?

A8: The sewer system was a contributing source. There is hydrocarbon in the ground that is historic in nature but we have installed a perimeter well extraction system that is effectively preventing material from migrating beyond the refinery site.

Q9: What is the volume that you pump out of those wells per day?

A9: We don't have a figure for daily volume, but we measure success by how much the water table is being drawn into those wells. In the interests of time tonight, further information on our seep management efforts and progress can be found in the regulatory updates that are posted on the CAP website under "Resources – Current Issues."

Q10: Has CAP ever looked at cancer rates close to the refinery? Has Chevron ever seen any studies on cancer rates amongst refinery workers in Canada or Europe?

A10: Chevron was not aware of any studies on cancer rates amongst refinery workers.

The Metro Vancouver representative referred to the 2002 UBC Health Study in 2002 which looked at VOC's and a number of risks. This is important document that may provide some insights. The study is available online at: https://circle.ubc.ca/handle/2429/968

Q11: What programs does Chevron have that are concerned with health for workers?

A11: We have industrial hygiene programs where we do monitor environments our workers are working in.

Q12: Is that a public document?

A12: No it is not.

Q13: How could CAP better serve the public in terms of exploring this issue or sharing information?

A13: This could be a topic for CAP to discuss and determine how they could approach it.

Q14: Would it be helpful to evaluate the risks for workers at a refinery like Chevron?

A14: We do look at health risks associated with exposures related to activities of Chevron employees on site. In addition to Chevron's own internal safety and industrial hygiene systems including the use of required personal protective equipment, training such as WHMIS and hazardous material handling and the use of Material Safety Data Sheets (MSDS), Worksafe BC and other public agencies regulate and provide oversight of Chevron's compliance with regulatory worker safety requirements on the site.

Q15: Is any of that material public?

A15: Material safety data sheets are widely available to the public online through several public web sites.

Q16: In terms of emergency notification how big is the neighbourhood? And, in the event of an earthquake what happens to the tanks and processing?

A16: After the 2010 event in Japan, earthquake and seismic preparedness became a topic of interest to CAP. Chevron engineering staff did a presentation at CAP on seismic safety and issues related to earthquake preparedness at the April 6, 2011 CAP meeting. Details on that presentation are available on the CAP website at: http://www.chevroncap.com/files/documents/CAPMinutesApr6-2011-KB.pdf

Q17: Are there refinery fence line monitors for chemicals emissions?

A17: (MV) We have reviewed fence line monitoring, a copy of the review and document can be provided. Metro Vancouver is also commissioning a new mobile ambient monitoring station. The current one has issues. However, it depends where it is deployed. We have monitoring stations in the immediate community. We require Chevron through their Odor and Incident Management Plan to respond to community calls regarding odours.

8. 2013 CAP Topic Planning – Catherine Rockandel

A facilitated brainstorming session identified the following proposed topics for 2013:

- Community Emergency Notification
- Soil Contamination and Seep management - ongoing monitoring
- Health Concerns – Impact of living near a refinery
- Odor management, noise monitoring and mitigation
- Increased participation of CAP members - sitting on sub-committees
- Explore two-way social media tools to get public input
- External independent consultant to do a corrosion safety protocol audit

These topics will be reviewed and prioritized at CAP's first quarterly meeting in 2013

Next CAP Meeting: TBA