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Case Analysis Worksheet (Non-Financial Record Review) for: North Pole Refinery Flint Hill Resources Alaska LLC (FHR)

Facility Address: RCRA/EPA Identification No. 1100 H & H Lane, North Pole, Alaska 99705

Case Officer Name/Signature: /s/Cheryl Williams

NRR date: November 13, 2013

RCRA Law Sections:

X **RCRA 3002 Standards Applicable to Generators of Hazardous Waste/Gen Hazardous Waste Mgmt**
RCRA 3003 Standards Applicable to Transporters of Hazardous Waste/Gen Hazardous Waste Mgmt
RCRA 3004 Hazardous Waste Treatment Storage and Disposal Standards/Gen Hazardous Waste Mgmt
RCRA 3005 Permits for Treatment, Storage or Disposal of Hazardous Waste/Hazardous Waste Mgmt
RCRA 3010 Notification of Hazardous Waste Activity/Gen Hazardous Waste Mgmt - Subtitle C
RCRA 3013 Monitoring, Analysis, Testing/Monitoring, Analysis, Testing
RCRA 3014 Restrictions on Recycled Oil/Restrictions on Recycled Oil
RCRA 3017 Export of Hazardous Waste/Gen Hazardous Waste Mgmt - Subtitle C
RCRA 3020 Interim Control of Hazardous Waste Injection/Gen Hazardous Waste Mgmt - Subtitle C

Manager Decision: ☑ **refer to ORC** ☑ **yes SNC** ☐ **no SNC** Scott E Downey / 11/13/13 , **Manager ARCU/ Date**

☐ **copy of signed worksheet sent to Data Manager**

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Background

1. **Inspection Date/Lead Inspector:** FHR sent notification to EPA that is implemented its of Contingency Plan July 3, 2013. EPA followed with a 3007 Information Request on September 19, 2013. Facility responded to the 3007 on October 22, 2013.
2. **Regulatory Status: Type of Business:** Facility is a Petroleum Refinery and one of the largest hazardous waste generators (LQGs) in the State of Alaska. In 2012, FHR reported on its 2012 Biennial Report (BR) that it generated 256.3 tons of hazardous waste.

   In February 1990 FHR is reported to have clean closed a container storage area. Additionally, RCRAInfo also shows that in February 1990 a Surface Impoundment (LagoonB), Other Storage (sumps), and Tank Storage (Tank 192) were all clean closed and the waste associated with these units was delisted. The facility is currently subject to corrective action as well as facility clean up by ADEC. In the late-1990's EPA and ADEC signed a Communication Agreement by which EPA delayed additional closure/corrective action while ADEC pursued site-wide clean up under state authority.
3. **Are there any exemptions or exclusions applicable to this Facility? Explain.** None that apply to the allegations.
4. **Is this facility in an EJ area? If so is there an engaged community?** According to EJScreen, FHR is not in an EJ area.
5. **Do you think the Facility is willing to settle via pre-filing or are they likely to be litigious?** I see no reason to believe the facility will be litigious since this is a self-reported violation (not reported under the self disclosure rules) and they did not object to the 3007 questions.
6. **Summary of Facility operations/business:** Flint Hills Resources' North Pole Refinery near Fairbanks has a crude oil processing capacity of about 85,000 barrels per day. It processes North Slope crude oil and supplies gasoline, jet fuel, heating oil, diesel, gasoil and asphalt to Alaska markets. About 60 percent of the refinery's production is destined for the aviation market. See FHR.com for more information.

   The Flint Hills North Pole Refinery is one of the largest cleanups actions under ADEC Contaminated Sites Program. The discovery in late 2009 of sulfolane in drinking water wells near the North Pole Refinery, about 15 miles east of Fairbanks, has led to an extensive investigation of contaminated groundwater. The plume is nearly 2.5 miles wide and 3 miles long, one of the largest in the state. A full background of the site characterization and cleanup activities can be found here: http://dec.alaska.gov/spar/csp/sites/north-pole-refinery/index.htm

   Wikipedia provides a good definition of sulfolane here: http://en.wikipedia.org/wiki/Sulfolane. Currently Solfolane is not a hazardous waste.

7. **Based on the analysis of the following violations and the ERP, do you recommend that the facility be considered a SNC? Explain**

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Yes. This facility should be characterized as a SNC facility for the dates of June 18, 2013 through June 22, 2013. June 18, 2013 is the date that the waste in question was generated and June 22, 2013 is the date that the Facility returned to physical compliance.

SNC are defined by those facilities whose actions are those violators that have caused actual exposure or a substantial likelihood of exposure to hazardous waste hazardous waste constituents... or deviate substantially from ...the regulatory requirements. The Enforcement Response Policy specifically states that "a violator that did not determine that the waste it generates is a hazardous waste and the waste is not managed properly " should be considered a SNC. Finally the ERP states that, "In weighing the violations that make up a regulated entity's compliance history, EPA and States should give the heaviest weight to similar violations and to **multiple violations at the same process or unit."** (Emphasis added)

Flint Hill Resources – North Pole Refinery (FHR) failed to make a determination that the groundwater pre-filters were a D003 and/or D001 hazardous waste. The lack of a positive hazardous waste determination resulted in the iron sulfide containing paste that was on the groundwater filters to self ignite as the paste dried out. The resulting fire was substantial enough that the local fire department was called to assist the facility in extinguishing the fire. After the fire was extinguished the debris was left in the original roll off container and a second fire fueled by the same filters started a few days later.

8. Initial Penalty Summary: Statutory Maximum: Count 1: $37,500 (no multi-day, no EB), Count 2: $65,860 (multi-day = 4, no EB) Total 37,500 +65,860=$103,360

No adjustments to the penalty have been made at this time. Though, it is possible the facility may wish to negotiate a reduction of penalty for its good faith efforts that is: the change in managing the groundwater pre-filters that the facility initiated after the second fire. FHR states that it now conservatively manages all such filters as D001/D003.

Count 1: Failure to make a hazardous waste determination				
Regulatory Citation /Violation title	**Evidence & Proof**	**Additional Evidence Needed?**	**Comments, Caveats, Circumstances, Etc.**	**Preliminary Penalty Matrix**
40 CFR 262.11: A person who generates a solid waste, as defined in 40 CFR 261.2, must determine if that waste is a hazardous waste using the outlined method.	See discussion of 2011 waste determination in 3007 response: -Answer to Question 7: Because of a fire stemming from groundwater filters containing iron sulfide in 2011, the facility made a determination that if there was a large amount of scale or sand in the filters then the filters were D003. In 2013 the Facility asserts that the two fires were caused groundwater filters contaminated with iron sulfide paste. They provided no evidence that they deemed the **paste** as a newly generated solid waste different from groundwater filters containing **scale or sand** thus requiring the 40 CFR 262.11 determination. -Answers to Question 8.d. for each fire: The Facility states that the filters were not characterized as HW at the time they were put into the roll off container.	none	On June 20, 2013 at 12:20 am and June 22, 2013 at 8:49 pm there was a fire and re-ignition fire inside a roll-off container. The Facility states in its 3007 response that the fires were caused by used groundwater filters contaminated with an iron sulfide paste. A similar fire occurred in 2011 and a subsequent analysis determined that filters that contain a large amount of iron scale or sand at the point of generation may result in an increase in iron sulfides which are polyphoric and may spontaneously ignite and were therefore determined to be D003. The iron sulfide is D003 because it is readily capable of detonation or explosive decomposition at standard temperature and pressure. See response to 3007. At the same time they determined that if there was not a large amount of scale or sand the filters would not be a hazardous waste. In addition the iron sulfide may be D001 because it is not a liquid and is capable under standard temperature and pressure of causing fire through ...spontaneous chemical changes and when ignited burns so vigorously and persistently that it creates a hazard. See also 45 FR 33108 and the June 1, 1990 Preamble 55 FR 22535. Currently the facility is using both D001 and D003 to designate this waste stream. Though not directly to the issue of groundwater filters, this website address the likelihood of iron sulfide fires at Refineries: http;//www.cheresources.com/contents/articles/safety/pyrophoric-iron-fires This website addresses fire caused by iron sulfide "sludge" which is likely similar to "paste" http://www.sozogaku.com/fkd/en/cfen/CC1000078.html	**Potential for harm**: **Major** -Two fires occurred because the waste had not been adequately characterized as D003 and/or D001 at the point of generation. -Also harm to the program because making an adequate determination is the first step in compliance with the remainder of the RCRA regulations. **Extent of deviation**: **Major** -Failed to recognize that a solid waste with no previous waste determination had been generated -One of largest LQGs in AK (familiar with RCRA) -Known polyphoric potential if any iron sulfides present -resulted in 2 fires on same waste **Multi-day** - none: making a waste determination is a one-time activity per waste stream. **Economic Benefit**: None -Have onsite knowledge to make this determination yet failed to do **Total Penalty:** Top of box $37,500

Count 2: Operating without a Storage Permit/Failure to comply with the conditions to operate without a Permit or Interim Status. 40 CFR 262.34 states that a generator may accumulate hazardous waste on-site for 90 days or less without a permit or without having interim status provided that they comply with certain conditions. FHR did not comply with the following conditions:				
Regulatory Citation /Violation title	**Evidence & Proof**	**Additional Evidence Needed? (3007 issues)**	**Comments, Caveats, Circumstances, Etc.**	**Preliminary Penalty Matrix**
a. Failure to operate the facility to minimize the possibility of a fire, explosion, or any sudden or non-sudden release of HW. The condition found at 40 CFR 262.34(a)(4) requires a LQG to comply with the requirements for owner or operators in subparts C and D in 40 CFR Part 265. 40 CFR 265.31 requires that facilities must be maintained and operated to minimize the possibility of a fire, explosion, or any unplanned or sudden or non-sudden release of hazardous waste or hazardous waste constituents into the air, soil, or surface water which could threaten human health or the environment.	Letter from facility dated July 3, 2013 documenting the two fires caused by groundwater filters containing iron sulfides Incident reports from the local fire department for both fires. The first report states that the employees stated this has happened before, the filters for the plant water are thrown in the dumpster when they are done with them and they can self-ignite.	none	3007 response to question #5 discusses the facility's written contingency plan, training, Emergency Response Team and coordination with local fire department. Although these actions and plans are required for emergency response to a fire, explosion or release of hazardous waste they are not measures used to minimize the possibility of such event. Page 4 of the 3007 response, first paragraph states that, "Since the June incident, all filters are conservatively being managed as hazardous waste with the D001 and D003 waste codes. These filters are placed in 55-gallon drums and ten gallons of water is added to each drum to ensure a moist environment is maintained inside the closed container. The labeled drum is sealed and stored in the 90-day accumulation area. The drums are sent to the Burlington Environmental Kent Washington Facility and then to Ross Incineration in Grafton, Ohio for final incineration.	Although each instance that a facility fails to comply with the conditions to operate without a permit may be assess a separate penalty the Agency believes in this case that all underlying conditions documenting such failure should be compressed into one count. **Potential for Harm: Major** Failure to comply with container management standards resulted a fire at the facility thus not **minimizing** the potential for a fire. The fires were significant enough that the local fire department was called in to help extinguish the fires. **Extent of Deviation: Major** The container management conditions that were most likely to contribute to

b. Failure to comply with container management requirement (closed, labeled, dated) The condition at 40 CFR 262.34 (a)(1)(i)/265.173 requires that container holding HW must be closed expect when adding or removing waste. The condition at 262.34 (a)(2) requires the date upon which each period of accumulation begins is clearly marked and visible for inspection on each container. The condition at 262.34(a)(3) requires that while being accumulated on-site, each container and tank is labeled or marked clearly with the words, "Hazardous Waste)	See answer to question 8 of the 3007. The Respondent had not determined that the gw filters were hazardous waste and so did not follow the conditions to accumulate hazardous waste without a permit or interim status.	none		minimizing the potential for a fire were not complied with. **Multi-day/Multiple Penalty: Top of Box:** 3007 response (Q7, page 3) states that the pre-filters were sampled on June 18, Thus June 18 is being used as day one for the multi-day calculation as it seems likely the filters needed to be generated in order for sampling to occur. On June 22 a second fire occurred on the unburned filter material this fire occurred at 8:49 pm. The filters were placed in containers with water after this fire. There for the multiday calculation is 4 days. (June 18 (not included). Even though evidence indicate the facility complied with these regulations on June 22, it was late in the evening AFTER the second fire and therefore June 22 is included in the multiday calculation **Economic Benefit** **Total Penaly: $65,860** **(37, 500 + (7,090x4)=65,860)**